

CUMULATIVE IMPACT AND CARRYING CAPACITY STUDY OF SIANG SUB-BASIN INCLUDING DOWNSTREAM IMPACTS



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LIST OF PLANT SPECIES REPORTED FROM SIANG BASIN

(PREPARED FROM SECONDARY DATA & FIELD SURVEYS)

Angiosperms

S.No	Family	Name of Species
1	Acanthaceae	<i>Blepharis maderaspatensis</i>
2	Acanthaceae	<i>Dicliptera bupleuroides</i>
3	Acanthaceae	<i>Phlogacanthus thyrsoiflorus</i>
4	Acanthaceae	<i>Pteracanthus cusia</i>
5	Acanthaceae	<i>Pteracanthus rubescens</i>
6	Acanthaceae	<i>Rungia pectinata</i>
7	Acanthaceae	<i>Strobilanthes echinata</i>
8	Acanthaceae	<i>Strobilanthes extensa</i>
9	Acanthaceae	<i>Strobilanthes hamiltoniana</i>
10	Acanthaceae	<i>Strobilanthes thomsonii</i>
11	Acanthaceae	<i>Thunbergia coccinea</i>
12	Aceraceae	<i>Acer acuminatum</i>
13	Aceraceae	<i>Acer campbellii</i>
14	Aceraceae	<i>Acer caudatum</i>
15	Aceraceae	<i>Acer laevigatum</i>
16	Aceraceae	<i>Acer oblongum</i> var. <i>microcarpum</i>
17	Aceraceae	<i>Acer thomsonii</i>
18	Aceraceae	<i>Acer caesium</i>
19	Acoraceae	<i>Acorus calamus</i>
20	Actinidiaceae	<i>Actinidia callosa</i>
21	Actinidiaceae	<i>Saurauia macrotricha</i>
22	Actinidiaceae	<i>Saurauia napaulensis</i>
23	Actinidiaceae	<i>Saurauia punduana</i>
24	Actinidiaceae	<i>Saurauia roxburghii</i>
25	Alangiaceae	<i>Alangium begonifolium</i>

S.No	Family	Name of Species
26	Alangiaceae	<i>Alangium chinense</i>
27	Alangiaceae	<i>Alangium salviifolium</i>
28	Altingiaceae	<i>Altingia excelsa</i>
29	Amaranthaceae	<i>Achyranthes aspera</i>
30	Amaranthaceae	<i>Alternanthera sessilis</i>
31	Amaranthaceae	<i>Amaranthus spinosus</i>
32	Amaranthaceae	<i>Amaranthus viridis</i>
33	Amaranthaceae	<i>Cyathula prostrata</i>
34	Amaranthaceae	<i>Cyathula tomentosa</i>
35	Amaranthaceae	<i>Deeringia celosioides</i>
36	Amaranthaceae	<i>Gomphrena celosioides</i>
37	Amaranthaceae	<i>Gomphrena globosa</i>
38	Anacardiaceae	<i>Choerospondias axillaris</i>
39	Anacardiaceae	<i>Choerospondias pinnata</i>
40	Anacardiaceae	<i>Holigarna longifolia</i>
41	Anacardiaceae	<i>Lannea coromandelica</i>
42	Anacardiaceae	<i>Mangifera indica</i>
43	Anacardiaceae	<i>Mangifera sylvatica</i>
44	Anacardiaceae	<i>Rhus acuminata</i>
45	Anacardiaceae	<i>Rhus alatus</i>
46	Anacardiaceae	<i>Rhus chinensis</i>
47	Anacardiaceae	<i>Rhus javanica</i>
48	Anacardiaceae	<i>Rhus succedanea</i>
49	Anacardiaceae	<i>Spondias pinnata</i>
50	Annonaceae	<i>Annona reticulata</i>

S.No	Family	Name of Species
51	Annonaceae	<i>Desmos praecox</i>
52	Annonaceae	<i>Milusa globosa</i>
53	Annonaceae	<i>Milusa roxburghiana</i>
54	Annonaceae	<i>Alphonsea kingii</i>
55	Apiaceae	<i>Apium graveolens</i>
56	Apiaceae	<i>Eryngium foetidum</i>
57	Apiaceae	<i>Hydrocotyle nepalensis</i>
58	Apiaceae	<i>Oenanthe javanica</i>
59	Apiaceae	<i>Pimpinella diversifolia</i>
60	Apiaceae	<i>Centella asiatica</i>
61	Apocynaceae	<i>Alstonia scholaris</i>
62	Apocynaceae	<i>Catharanthus roseus</i>
63	Apocynaceae	<i>Cryptolepis buchanani</i>
64	Apocynaceae	<i>Rauwolfia serpentina</i>
65	Apocynaceae	<i>Tabernaemontana divaricata</i>
66	Apocynaceae	<i>Trachelospermum fragrans</i>
67	Apocynaceae	<i>Wrightia tomentosa</i>
68	Aquifoliaceae	<i>Hypericum uralum</i>
69	Aquifoliaceae	<i>Ilex diphyrena</i>
70	Aquifoliaceae	<i>Ilex sikkimensis</i>
71	Araceae	<i>Arisaema concinnum</i>
72	Araceae	<i>Arisaema setosum</i>
73	Araceae	<i>Arisaema siangense</i>
74	Araceae	<i>Arisaema tortuosum</i>
75	Araceae	<i>Colocasia affinis</i>

S.No	Family	Name of Species
76	Araceae	<i>Colocasia esculenta</i>
77	Araceae	<i>Colocasia fallax</i>
78	Araceae	<i>Pistia stratiotes</i>
79	Araceae	<i>Pothos cathcartii</i>
80	Araceae	<i>Rhaphidophora decursiva</i>
81	Araceae	<i>Arisaema album</i>
82	Araceae	<i>Arisaema setosum</i>
83	Araceae	<i>Alocasia macrorrhizos</i>
84	Araceae	<i>Arisaema erubescens</i>
85	Araceae	<i>Arisaema speciosum</i>
86	Araliaceae	<i>Aralia armata</i>
87	Araliaceae	<i>Aralia leschenaultii</i> (= <i>Pentapanax leschenaultii</i>)
88	Araliaceae	<i>Brassaiopsis aculeata</i>
89	Araliaceae	<i>Brassaiopsis griffithii</i>
90	Araliaceae	<i>Brassaiopsis mitis</i>
91	Araliaceae	<i>Gamblea ciliata</i>
92	Araliaceae	<i>Hedera nepalensis</i>
93	Araliaceae	<i>Hedera trifoliatus</i>
94	Araliaceae	<i>Macropanax undulatus</i>
95	Araliaceae	<i>Schefflera bengalensis</i>
96	Araliaceae	<i>Schefflera impressa</i>
97	Araliaceae	<i>Schefflera venulosa</i>
98	Araliaceae	<i>Schefflera wallichiana</i>
99	Araliaceae	<i>Trevesia palmata</i>
100	Araliaceae	<i>Brassaiopsis hispida</i>

S.No	Family	Name of Species
101	Araliaceae	<i>Brassiopsis simplicifolia</i>
102	Araliaceae	<i>Macropanax dispersum</i>
103	Araliaceae	<i>Macropanax oreophilus</i>
104	Arecaceae	<i>Calamus floribundus</i>
105	Arecaceae	<i>Calamus guruba</i>
106	Arecaceae	<i>Calamus inermis</i>
107	Arecaceae	<i>Calamus latifolius</i>
108	Arecaceae	<i>Calamus leptospadix</i>
109	Arecaceae	<i>Calamus tenuis</i>
110	Arecaceae	<i>Calamus viminalis</i>
111	Arecaceae	<i>Arenga saccharifera</i>
112	Arecaceae	<i>Calamus erectus</i>
113	Arecaceae	<i>Calamus flagellum</i>
114	Arecaceae	<i>Calamus acanthospathus</i>
115	Arecaceae	<i>Calamus arunachalensis</i>
116	Arecaceae	<i>Calamus latifolius</i>
117	Arecaceae	<i>Korthalsia flagellaris</i>
118	Arecaceae	<i>Livistona jenkinsiana</i>
119	Arecaceae	<i>Pinanga gracilis</i>
120	Arecaceae	<i>Plectocomia assamica</i>
121	Arecaceae	<i>Plectocomia himalayana</i>
122	Arecaceae	<i>Trachycarpustakil</i>
123	Arecaceae	<i>Zalaccasecunda</i>
124	Asclepiadaceae	<i>Calotropis procera</i>
125	Asclepiadaceae	<i>Marsdenia roylei</i>

S.No	Family	Name of Species
126	Asparagaceae	<i>Dracaena angustifolia</i>
127	Asparagaceae	<i>Peliosantheseta</i>
128	Asparagaceae	<i>Peliosanthes macrophylla</i>
129	Asteraceae	<i>Ageratina adenophora</i>
130	Asteraceae	<i>Ageratum conyzoides</i>
131	Asteraceae	<i>Ambrosia artemisiifolia</i>
132	Asteraceae	<i>Anaphalis busua</i>
133	Asteraceae	<i>Anaphalis contorta</i>
134	Asteraceae	<i>Anaphalis triplinervis</i>
135	Asteraceae	<i>Eclipta prostrata</i>
136	Asteraceae	<i>Erigeron canadensis</i>
137	Asteraceae	<i>Eupatorium odoratum</i>
138	Asteraceae	<i>Galinsoga parviflora</i>
139	Asteraceae	<i>Gamochaeta purpurea (=Gnaphalium pensylvanicum)</i>
140	Asteraceae	<i>Gerbera piloselloides</i>
141	Asteraceae	<i>Gnaphalium affine</i>
142	Asteraceae	<i>Gnaphalium hypoleucum</i>
143	Asteraceae	<i>Gynura cusimbua</i>
144	Asteraceae	<i>Hypochaeris radicata</i>
145	Asteraceae	<i>Inula cappa</i>
146	Asteraceae	<i>Mikania micrantha</i>
147	Asteraceae	<i>Saussurea nepalensis</i>
148	Asteraceae	<i>Senecio scandens</i>
149	Asteraceae	<i>Sonchus oleraceus</i>
150	Asteraceae	<i>Tagetes minuta</i>

S.No	Family	Name of Species
151	Asteraceae	<i>Tridax procumbens</i>
152	Asteraceae	<i>Vernonia cinerea</i>
153	Asteraceae	<i>Vernonia silhetensis</i>
154	Asteraceae	<i>Vernonia volkemerifolia</i>
155	Asteraceae	<i>Youngia gracilis</i>
156	Asteraceae	<i>Youngia japonica</i>
157	Asteraceae	<i>Cirsium interpositum</i>
158	Asteraceae	<i>Artemisia nilagirica</i>
159	Asteraceae	<i>Aster albescens</i>
160	Asteraceae	<i>Aster molliusculus</i>
161	Asteraceae	<i>Bidens bipinnata</i>
162	Asteraceae	<i>Bidens pilosa</i>
163	Asteraceae	<i>Blumea balsamifera</i>
164	Asteraceae	<i>Blumea fistulosa</i>
165	Asteraceae	<i>Blumea hieracifolia</i>
166	Asteraceae	<i>Carduus edelbergii</i>
167	Asteraceae	<i>Chromolaena odorata</i>
168	Asteraceae	<i>Cirsium wallichii</i>
169	Asteraceae	<i>Cissampelopsis buimalia</i>
170	Asteraceae	<i>Conyza bonariensis</i>
171	Asteraceae	<i>Conyza canadensis</i>
172	Asteraceae	<i>Conyza japonica</i>
173	Asteraceae	<i>Conyza stricta</i>
174	Asteraceae	<i>Cotoneaster microphyllus</i>
175	Asteraceae	<i>Cotula australis</i>

S.No	Family	Name of Species
176	Asteraceae	<i>Cotula hemisphaerica</i>
177	Asteraceae	<i>Crassocephalum crepidioides</i>
178	Asteraceae	<i>Crassocephalum rubens</i>
179	Asteraceae	<i>Crepis japonica</i>
180	Asteraceae	<i>Dichrocephala chrysanthemifolia</i>
181	Asteraceae	<i>Dichrocephala chrysanthemoides</i>
182	Asteraceae	<i>Dichrocephala integrifolia</i>
183	Asteraceae	<i>Dubyaea hispida</i>
184	Asteraceae	<i>Duhaldea gossypina</i>
185	Asteraceae	<i>Duhaldea rubricaulis</i>
186	Asteraceae	<i>Adenostemmalavenia</i>
187	Asteraceae	<i>Artemisia indica</i>
188	Asteraceae	<i>Prenanthes scandens</i>
189	Asteraceae	<i>Spilanthes oleracea</i>
190	Asteraceae	<i>Spilanthes paniculata</i>
191	Asteraceae	<i>Xanthium indicum</i>
192	Asteraceae	<i>Xanthium strumarium</i>
193	Balsaminaceae	<i>Impatiens angustiflora</i>
194	Balsaminaceae	<i>Impatiens arguta</i>
195	Balsaminaceae	<i>Impatiens bicornuta</i>
196	Balsaminaceae	<i>Impatiens brachycentra</i>
197	Balsaminaceae	<i>Impatiens cathcartii</i>
198	Balsaminaceae	<i>Impatiens chinensis</i>
199	Balsaminaceae	<i>Impatiens drepanophora</i>
200	Balsaminaceae	<i>Impatiens laevigata</i>

S.No	Family	Name of Species
201	Balsaminaceae	<i>Impatiens racemosa</i>
202	Balsaminaceae	<i>Impatiens tripetala</i>
203	Balsaminaceae	<i>Impatiens violaeiflora</i>
204	Balsaminaceae	<i>Impatiens scabrida</i>
205	Begoniaceae	<i>Begonia aborensis</i>
206	Begoniaceae	<i>Begonia burkillii</i>
207	Begoniaceae	<i>Begonia josephi</i>
208	Begoniaceae	<i>Begonia nepalensis</i>
209	Begoniaceae	<i>Begonia sikkimensis</i>
210	Begoniaceae	<i>Begonia tessaricarpa</i>
211	Begoniaceae	<i>Begonia thomsonii</i>
212	Begoniaceae	<i>Begonia tessaricarpa</i>
213	Begoniaceae	<i>Begonia annulata</i>
214	Begoniaceae	<i>Begonia griffithiana</i>
215	Begoniaceae	<i>Begonia megaptera</i>
216	Begoniaceae	<i>Begonia palmata</i>
217	Begoniaceae	<i>Begonia picta</i>
218	Begoniaceae	<i>Begonia roxburghii</i>
219	Begoniaceae	<i>Begonia scintillans</i>
220	Berberidaceae	<i>Berberis asiatica</i>
221	Berberidaceae	<i>Berberis hookeri</i>
222	Berberidaceae	<i>Berberis wallichiana</i>
223	Betulaceae	<i>Alnus nepalensis</i>
224	Betulaceae	<i>Alnus nitida</i>
225	Betulaceae	<i>Carpinus viminea</i>

S.No	Family	Name of Species
226	Betulaceae	<i>Betula alnoides</i>
227	Bignoniaceae	<i>Oroxylum indicum</i>
228	Bignoniaceae	<i>Radermachera gigantea</i>
229	Bignoniaceae	<i>Stereospermum personatum</i>
230	Boraginaceae	<i>Cynoglossum glochidiatus</i>
231	Boraginaceae	<i>Eritrichium canum</i>
232	Brassicaceae	<i>Brassica juncea</i>
233	Brassicaceae	<i>Brassica nigra</i>
234	Brassicaceae	<i>Cardamine hirsuta</i>
235	Brassicaceae	<i>Cardamine hispidula</i>
236	Brassicaceae	<i>Cardamine scutata</i>
237	Buddlejaceae	<i>Buddleja asiatica</i>
238	Buddlejaceae	<i>Buddleja paniculata</i>
239	Burseraceae	<i>Boswellia serrata</i>
240	Burseraceae	<i>Canarium euphyllum</i>
241	Burseraceae	<i>Canarium resiniferum</i>
242	Burseraceae	<i>Canarium strictum</i>
243	Burseraceae	<i>Garuga gamblei</i>
244	Burseraceae	<i>Garuga pinnata</i>
245	Caesalpiniaceae	<i>Bauhinia vahlia</i>
246	Caesalpiniaceae	<i>Bauhinia variegata</i>
247	Calophyllaceae	<i>Calophyllum polyanthum</i> (= <i>C. elatum</i>)
248	Campanulaceae	<i>Campanula pallida</i>
249	Campanulaceae	<i>Campanula sylvatica</i>
250	Cannabaceae	<i>Celtis tetrandra</i>

S.No	Family	Name of Species
251	Cannabaceae	<i>Celtis timorensis</i>
252	Cannabaceae	<i>Trema amboinensis</i>
253	Cannabaceae	<i>Trema politora</i>
254	Capparaceae	<i>Capparis assamica</i>
255	Capparaceae	<i>Capparis multiflora</i>
256	Capparaceae	<i>Capparis roxburghii</i>
257	Capparaceae	<i>Capparis tenera</i>
258	Caprifoliaceae	<i>Leycesteria formosa</i>
259	Caprifoliaceae	<i>Lonicera angustifolia</i>
260	Caprifoliaceae	<i>Lonicera obovata</i>
261	Caprifoliaceae	<i>Sambucus javanica</i>
262	Caprifoliaceae	<i>Viburnum colebrookianum</i>
263	Caprifoliaceae	<i>Viburnum coriaceum</i>
264	Caprifoliaceae	<i>Viburnum cotinifolium</i>
265	Caprifoliaceae	<i>Viburnum cylindricum</i>
266	Caprifoliaceae	<i>Viburnum corylifolium</i>
267	Caryophyllaceae	<i>Drymaria cordata</i>
268	Caryophyllaceae	<i>Drymaria diandra</i>
269	Caryophyllaceae	<i>Stellaria decumbens</i>
270	Caryophyllaceae	<i>Arenaria neelgherrensis</i>
271	Caryophyllaceae	<i>Arenaria orbiculata</i>
272	Caryophyllaceae	<i>Brachystelma calycinum</i>
273	Caryophyllaceae	<i>Cerastium nigrescens</i>
274	Caryophyllaceae	<i>Drymaria diandra</i>
275	Caryophyllaceae	<i>Drymaria mollis</i>

S.No	Family	Name of Species
276	Casuarinaceae	<i>Casuarina equisetifolia</i>
277	Celastraceae	<i>Celastrus championii</i>
278	Celastraceae	<i>Euonymus attenuatus</i>
279	Celastraceae	<i>Euonymus glaber</i>
280	Celastraceae	<i>Euonymus hamiltonianus</i>
281	Celastraceae	<i>Euonymus latifolius</i>
282	Celastraceae	<i>Euonymus lawsonii</i>
283	Chenopodiaceae	<i>Chenopodium album</i>
284	Chenopodiaceae	<i>Chenopodium aromaticum</i>
285	Circaeasteraceae	<i>Circaeaster agrestis</i>
286	Clusiaceae	<i>Garcinia acuminata</i>
287	Clusiaceae	<i>Garcinia anomala</i>
288	Clusiaceae	<i>Garcinia cowa</i>
289	Clusiaceae	<i>Garcinia pedunculata</i>
290	Clusiaceae	<i>Kaya assamica</i>
291	Combretaceae	<i>Anogeissus latifolia</i>
292	Combretaceae	<i>Anogeissus pendula</i>
293	Combretaceae	<i>Terminalia alata</i>
294	Combretaceae	<i>Terminalia bellerica</i>
295	Combretaceae	<i>Terminalia chebula</i>
296	Combretaceae	<i>Terminalia myriocarpa</i>
297	Combretaceae	<i>Terminalia tomentosa</i>
298	Commelinaceae	<i>Amischototipemollissima</i>
299	Commelinaceae	<i>Commelina benghalensis</i>
300	Commelinaceae	<i>Cyanotis cristata</i>

S.No	Family	Name of Species
301	Commelinaceae	<i>Floscopa scandens</i>
302	Commelinaceae	<i>Murdannia divergens</i>
303	Commelinaceae	<i>Murdannia japonica</i>
304	Commelinaceae	<i>Murdannia nudiflora</i>
305	Commelinaceae	<i>Murdannia scapiflora</i>
306	Commelinaceae	<i>Pollia hasskarlii</i>
307	Commelinaceae	<i>Pollia subumbellata</i>
308	Commelinaceae	<i>Commelina paludosa</i>
309	Convolvulaceae	<i>Ipomoea carnea</i>
310	Convolvulaceae	<i>Ipomoea purpurea</i>
311	Cornaceae	<i>Cornus capitata</i>
312	Cornaceae	<i>Helwingia himalaica</i>
313	Cornaceae	<i>Nyssa sylvatica</i>
314	Crassulaceae	<i>Sedum triactina</i>
315	Cucurbitaceae	<i>Benincasa hispida</i>
316	Cucurbitaceae	<i>Cucumis melo</i>
317	Cucurbitaceae	<i>Indofevillea khasiana</i>
318	Cupressaceae	<i>Juniperus recurva</i>
319	Cuscutaceae	<i>Cuscuta reflexa</i>
320	Cyperaceae	<i>Cyperus compressus</i>
321	Cyperaceae	<i>Cyperus cyperinus</i>
322	Cyperaceae	<i>Cyperus cyperoides</i>
323	Cyperaceae	<i>Cyperus iria</i>
324	Cyperaceae	<i>Cyperus niveus</i>
325	Cyperaceae	<i>Cyperus rotundus</i>

S.No	Family	Name of Species
326	Cyperaceae	<i>Cyperus squarrosus</i>
327	Cyperaceae	<i>Eleocharis congesta</i>
328	Cyperaceae	<i>Eriophorum comosum</i>
329	Cyperaceae	<i>Fimbristylis dichotoma</i>
330	Cyperaceae	<i>Fimbristylis junciformis</i>
331	Cyperaceae	<i>Kyllinga brevifolia</i>
332	Cyperaceae	<i>Rhynchospora rugosa</i>
333	Cyperaceae	<i>Schoenoplectus mucronatus</i>
334	Cyperaceae	<i>Schoenoplectus triqueter</i>
335	Cyperaceae	<i>Schumannianthus dichotoma</i>
336	Cyperaceae	<i>Scirpus mysorensis</i>
337	Cyperaceae	<i>Scirpus teratanus</i>
338	Cyperaceae	<i>Bulbostylis densa</i>
339	Cyperaceae	<i>Carex cruciata</i>
340	Cyperaceae	<i>Carex decora</i>
341	Cyperaceae	<i>Carex filicina</i>
342	Cyperaceae	<i>Carex irria</i>
343	Cyperaceae	<i>Carex longipes</i>
344	Cyperaceae	<i>Carex longisetosus</i>
345	Cyperaceae	<i>Carex myosurus</i>
346	Cyperaceae	<i>Carex nivea</i>
347	Cyperaceae	<i>Carex nubigena</i>
348	Cyperaceae	<i>Carex speciosa ssp. varmae</i>
349	Cyperaceae	<i>Cyperus exaltatus</i>
350	Datiscaceae	<i>Tetrameles nudiflora</i>

S.No	Family	Name of Species
351	Dilleniaceae	<i>Dillenia indica</i>
352	Dilleniaceae	<i>Dillenia pentagyna</i>
353	Dioscoreaceae	<i>Dioscorea alata</i>
354	Dioscoreaceae	<i>Dioscorea bulbifera</i>
355	Dioscoreaceae	<i>Dioscorea decipiens</i>
356	Dioscoreaceae	<i>Dioscorea exaltata</i>
357	Dioscoreaceae	<i>Dioscorea glabra</i>
358	Dioscoreaceae	<i>Dioscorea hamiltonii</i>
359	Dioscoreaceae	<i>Dioscorea laurifolia</i>
360	Dioscoreaceae	<i>Dioscorea oppositifolia</i>
361	Dioscoreaceae	<i>Dioscorea paradoxa</i>
362	Dioscoreaceae	<i>Dioscorea pentaphylla</i>
363	Dioscoreaceae	<i>Dioscorea polyphylla</i>
364	Dioscoreaceae	<i>Dioscorea pubra</i>
365	Dioscoreaceae	<i>Dioscorea pyrifolia</i>
366	Dioscoreaceae	<i>Dioscorea wallichii</i>
367	Dioscoreaceae	<i>Dioscorea watti</i>
368	Dipterocarpaceae	<i>Dipterocarpus macrocarpus</i>
369	Dipterocarpaceae	<i>Dipterocarpus retusus</i>
370	Dipterocarpaceae	<i>Dipterocarpus turbinatus</i>
371	Dipterocarpaceae	<i>Hopea parviflora</i>
372	Dipterocarpaceae	<i>Hopea shinkeng</i>
373	Dipterocarpaceae	<i>Vatica lanceaefolia</i>
374	Elaeocarpaceae	<i>Echinocarpus dasycarpus</i>
375	Elaeocarpaceae	<i>Elaeagnus varunua</i>

S.No	Family	Name of Species
376	Elaeocarpaceae	<i>Elaeocarpus ganitrus</i>
377	Elaeocarpaceae	<i>Elaeocarpus robustus</i>
378	Elaeocarpaceae	<i>Elaeocarpus varuna</i>
379	Elaeocarpaceae	<i>Sloanea sterculiaceae</i>
380	Elaeocarpaceae	<i>Sloanea tomentosa</i>
381	Ericaceae	<i>Gaultheria seshagiriana</i>
382	Ericaceae	<i>Gaultheria trichophylla</i>
383	Ericaceae	<i>Leucothoe griffithiana</i>
384	Ericaceae	<i>Lyonia ovalifolia</i>
385	Ericaceae	<i>Pieris formosa</i>
386	Ericaceae	<i>Rhododendron mechucae</i>
387	Ericaceae	<i>Vaccinium dunalianum</i>
388	Ericaceae	<i>Vaccinium nummularia</i>
389	Ericaceae	<i>Vaccinium retusum</i>
390	Ericaceae	<i>Vaccinium venosum</i>
391	Ericaceae	<i>Rhododendron arboreum</i>
392	Ericaceae	<i>Rhododendron arizelum</i>
393	Ericaceae	<i>Rhododendron barbatum</i>
394	Ericaceae	<i>Rhododendron boothii</i>
395	Ericaceae	<i>Rhododendron campanulatum</i>
396	Ericaceae	<i>Rhododendron dalhousiae</i> var. <i>rhabdotum</i>
397	Ericaceae	<i>Rhododendron edgeworthii</i>
398	Ericaceae	<i>Rhododendron falconeri</i> ssp. <i>eximium</i>
399	Ericaceae	<i>Rhododendron grande</i>
400	Ericaceae	<i>Rhododendron griffithianum</i>

S.No	Family	Name of Species
401	Ericaceae	<i>Rhododendron hodgsonii</i>
402	Ericaceae	<i>Rhododendron kenderickii</i>
403	Ericaceae	<i>Rhododendron ponticum</i>
404	Ericaceae	<i>Rhododendron vaccinoides</i>
405	Ericaceae	<i>Rhododendron wightii</i>
406	Ericaceae	<i>Agapetes siangensis</i>
407	Ericaceae	<i>Agapetes variegata</i>
408	Ericaceae	<i>Gaultheria condonantha</i>
409	Ericaceae	<i>Gaultheria fragrantissima</i>
410	Ericaceae	<i>Gaultheria hookeri</i>
411	Ericaceae	<i>Gaultheria nummularioides</i>
412	Eriocaulaceae	<i>Eriocaulon cristatum</i>
413	Eriocaulaceae	<i>Eriocaulon viride</i>
414	Euphorbiaceae	<i>Baliospermum calycium</i>
415	Euphorbiaceae	<i>Bridelia retusa</i>
416	Euphorbiaceae	<i>Claoxylon indicum</i>
417	Euphorbiaceae	<i>Claoxylon longipetiolatum</i>
418	Euphorbiaceae	<i>Croton oblongifolius</i>
419	Euphorbiaceae	<i>Emblica officinalis</i>
420	Euphorbiaceae	<i>Euphorbia antiquorum</i>
421	Euphorbiaceae	<i>Euphorbia hirta</i>
422	Euphorbiaceae	<i>Euphorbia stracheyi</i>
423	Euphorbiaceae	<i>Glochidion assamicus</i>
424	Euphorbiaceae	<i>Glochidion lanceolarium</i>
425	Euphorbiaceae	<i>Glochidion multiloculare</i>

S.No	Family	Name of Species
426	Euphorbiaceae	<i>Macaranga denticulata</i>
427	Euphorbiaceae	<i>Macaranga peltata</i>
428	Euphorbiaceae	<i>Mallotus philippensis</i>
429	Euphorbiaceae	<i>Ostodes paniculata</i>
430	Euphorbiaceae	<i>Phyllanthus niruri</i>
431	Euphorbiaceae	<i>Phyllanthus uranus</i>
432	Euphorbiaceae	<i>Phyllanthus virgatus</i>
433	Euphorbiaceae	<i>Ricinus communis</i>
434	Euphorbiaceae	<i>Sapium baccatum</i>
435	Euphorbiaceae	<i>Sapium ougenifolium</i>
436	Euphorbiaceae	<i>Sapium sebiferum</i>
437	Euphorbiaceae	<i>Trewia nudiflora</i>
438	Fabaceae	<i>Bauhinia variegata</i>
439	Fabaceae	<i>Cajanus cajan</i>
440	Fabaceae	<i>Cassia tora</i>
441	Fabaceae	<i>Dalbergia thomsonii</i>
442	Fabaceae	<i>Derris scandens</i>
443	Fabaceae	<i>Desmodium gangeticum</i>
444	Fabaceae	<i>Desmodium heterocarpon</i>
445	Fabaceae	<i>Desmodium microphyllum</i>
446	Fabaceae	<i>Desmodium polistachya</i>
447	Fabaceae	<i>Desmodium triflorum</i>
448	Fabaceae	<i>Entada phaseoloides</i>
449	Fabaceae	<i>Entada pursaetha</i>
450	Fabaceae	<i>Erythrina stricta</i>

S.No	Family	Name of Species
451	Fabaceae	<i>Gymnocladus burmanicus</i>
452	Fabaceae	<i>Indigofera dosua</i>
453	Fabaceae	<i>Indigofera gerardiana</i>
454	Fabaceae	<i>Indigofera heterantha</i>
455	Fabaceae	<i>Millettia pachycarpa</i>
456	Fabaceae	<i>Mimosa pudica</i>
457	Fabaceae	<i>Pongamia pinnata</i>
458	Fabaceae	<i>Pterocarpus marsupium</i>
459	Fabaceae	<i>Lespedeza juncea</i>
460	Fabaceae	<i>Indigofera sesquipedalis</i>
461	Fabaceae	<i>Acacia pennata</i>
462	Fabaceae	<i>Acacia rugata</i>
463	Fabaceae	<i>Bauhinia acuminata</i>
464	Fabaceae	<i>Bauhinia purpurea</i>
465	Fabaceae	<i>Bauhinia vahlii</i>
466	Fabaceae	<i>Butea monosperma</i>
467	Fabaceae	<i>Dalbergia assamica</i>
468	Fabaceae	<i>Dalbergia sissoo</i>
469	Fabaceae	<i>Dalbergia stipulacea</i>
470	Fabaceae	<i>Dalbergia thomsonii</i>
471	Fabaceae	<i>Desmodium scandens</i>
472	Fabaceae	<i>Desmodium triflorum</i>
473	Fabaceae	<i>Hardwickia binata</i>
474	Fabaceae	<i>Mimosa pudica</i>
475	Fagaceae	<i>Castanea sativa</i>

S.No	Family	Name of Species
476	Fagaceae	<i>Castanopsis armata</i>
477	Fagaceae	<i>Castanopsis hystrix</i>
478	Fagaceae	<i>Castanopsis obtusifolium</i>
479	Fagaceae	<i>Castanopsis tribuloides</i>
480	Fagaceae	<i>Lithocarpus elegans</i>
481	Fagaceae	<i>Lithocarpus listeri</i>
482	Fagaceae	<i>Lithocarpus pachyphyllus</i>
483	Fagaceae	<i>Lithocarpus spicatus</i>
484	Fagaceae	<i>Lithocarpus wrayi</i>
485	Fagaceae	<i>Quercus dealbata</i>
486	Fagaceae	<i>Quercus floribunda</i>
487	Fagaceae	<i>Quercus glauca</i>
488	Fagaceae	<i>Quercus griffithii</i>
489	Fagaceae	<i>Quercus ilex</i>
490	Fagaceae	<i>Quercus lamellosa</i>
491	Fagaceae	<i>Quercus leucotrichophora</i>
492	Fagaceae	<i>Quercus lineata</i>
493	Fagaceae	<i>Quercus pachyphylla</i>
494	Fagaceae	<i>Quercus semecarpifolia</i>
495	Fagaceae	<i>Quercus semiserrata</i>
496	Fagaceae	<i>Quercus serrata</i>
497	Fagaceae	<i>Quercus spicata</i>
498	Fagaceae	<i>Quercus thomsonii</i>
499	Fagaceae	<i>Castanopsis armata</i>
500	Fagaceae	<i>Castanopsis castanicaarpa</i>

S.No	Family	Name of Species
501	Fagaceae	<i>Castanopsis indica</i>
502	Flacourtiaceae	<i>Casearia vareca</i>
503	Flacourtiaceae	<i>Gynocardia odorata</i>
504	Flacourtiaceae	<i>Xylosma longifolium</i>
505	Fumariaceae	<i>Dicentra scandens</i>
506	Gentianaceae	<i>Crawfurdia speciosa</i>
507	Gentianaceae	<i>Gentiana quadrifaria</i>
508	Gentianaceae	<i>Halenia elliptica</i>
509	Geraniaceae	<i>Geranium polyanthes</i>
510	Geraniaceae	<i>Geranium pratense</i>
511	Gesneriaceae	<i>Aeschynanthus gracilis</i>
512	Gesneriaceae	<i>Aeschynanthus parasiticus</i>
513	Gesneriaceae	<i>Chirita pumila</i>
514	Gesneriaceae	<i>Didymocarpus andersonii</i>
515	Gesneriaceae	<i>Didymocarpus oblongus</i>
516	Gesneriaceae	<i>Didymocarpus pulcher</i>
517	Gesneriaceae	<i>Platystoma violoides</i>
518	Gesneriaceae	<i>Rhynchoglossum lazulinum</i>
519	Gesneriaceae	<i>Rhynchotechum ellipticum</i>
520	Gesneriaceae	<i>Chirita hookerii</i>
521	Gesneriaceae	<i>Chirita macrophylla</i>
522	Gesneriaceae	<i>Rhynchotechum alternifolium</i>
523	Hamamelidaceae	<i>Exbucklandia populnea</i>
524	Hydrangeaceae	<i>Hydrangea anomala</i>
525	Hydrangeaceae	<i>Hydrangea obovata</i>

S.No	Family	Name of Species
526	Hydrangeaceae	<i>Hydrangea robusta</i>
527	Hydrangeaceae	<i>Hydrangea serrata</i>
528	Hydrocharitaceae	<i>Hydrilla verticillata</i>
529	Hydrocharitaceae	<i>Vallisneria spiralis</i>
530	Hypericaceae	<i>Hypericum elodes</i>
531	Hypericaceae	<i>Hypericum japonicum</i>
532	Hypoxidaceae	<i>Molineria capitulata</i>
533	Hypoxidaceae	<i>Molineria curculigoides</i>
534	Juglandaceae	<i>Engelhardtia spicata</i>
535	Juglandaceae	<i>Juglans regia</i>
536	Juncaceae	<i>Juncus inflexus</i>
537	Lamiaceae	<i>Plectranthus barbatus</i>
538	Lamiaceae	<i>Pogostemon benghalensis</i>
539	Lamiaceae	<i>Premna latifolia</i>
540	Lamiaceae	<i>Prunella vulgaris</i>
541	Lamiaceae	<i>Salvia plebeia</i>
542	Lamiaceae	<i>Scutellaria plectranthoides</i>
543	Lamiaceae	<i>Scutellaria scandens</i>
544	Lamiaceae	<i>Vitex trifolia</i>
545	Lamiaceae	<i>Plectranthus griffithii</i>
546	Lamiaceae	<i>Pogostemon amarantoides</i>
547	Lamiaceae	<i>Achyropermum densiflorum</i>
548	Lamiaceae	<i>Ajuga bracteosa</i>
549	Lamiaceae	<i>Ajuga macrosperma</i>
550	Lamiaceae	<i>Anisochilus pallidus</i>

S.No	Family	Name of Species
551	Lamiaceae	<i>Anisomeles discolor</i>
552	Lamiaceae	<i>Anisomeles indica</i>
553	Lamiaceae	<i>Colquhounia coccinea</i>
554	Lamiaceae	<i>Colquhounia indica</i>
555	Lamiaceae	<i>Colquhounia vestita</i>
556	Lamiaceae	<i>Elsholtzia ciliata</i>
557	Lamiaceae	<i>Elsholtzia fruticosa</i>
558	Lamiaceae	<i>Elsholtzia strobilifera</i>
559	Lamiaceae	<i>Leucosceptrum canum</i>
560	Lamiaceae	<i>Nepeta ciliaris</i>
561	Lamiaceae	<i>Nepeta lamiopsis</i>
562	Lamiaceae	<i>Ocimum gratissimum</i>
563	Lamiaceae	<i>Origanum vulgare</i>
564	Lamiaceae	<i>Perilla frutescens</i>
565	Lauraceae	<i>Actinodaphne obovata</i>
566	Lauraceae	<i>Beilschmiedia dalzellii</i>
567	Lauraceae	<i>Beilschmiedia roxburghiana</i>
568	Lauraceae	<i>Cinnamomum glaucescens</i>
569	Lauraceae	<i>Cinnamomum obtusifolium</i>
570	Lauraceae	<i>Cinnamomum tamala</i>
571	Lauraceae	<i>Itea macrophylla</i>
572	Lauraceae	<i>Litsea citrata</i>
573	Lauraceae	<i>Litsea glutinosa</i>
574	Lauraceae	<i>Litsea kingii</i>
575	Lauraceae	<i>Litsea sericea</i>

S.No	Family	Name of Species
576	Lauraceae	<i>Machilus edulis</i>
577	Lauraceae	<i>Machilus robusta</i>
578	Lauraceae	<i>Persea robusta</i>
579	Lauraceae	<i>Phoebe attenuata</i>
580	Lauraceae	<i>Phoebe goalparensis</i>
581	Lauraceae	<i>Phoebe hainesiana</i>
582	Lauraceae	<i>Phoebe lanceolata</i>
583	Lauraceae	<i>Beilschmiedia brandisii</i>
584	Lauraceae	<i>Beilschmiedia pseudomicropora</i>
585	Lauraceae	<i>Persea minutiflora</i>
586	Lauraceae	<i>Phoebe goalparensis</i>
587	Lauraceae	<i>Actinodaphne angustifolia</i>
588	Lauraceae	<i>Cinnamomum pauciflorum</i>
589	Lauraceae	<i>Litsea glutinosa</i>
590	Lauraceae	<i>Litsea mishmiensis</i>
591	Lauraceae	<i>Litsea monopetala</i>
592	Lauraceae	<i>Litsea panamanja</i>
593	Lauraceae	<i>Litsea salicifolia</i>
594	Lauraceae	<i>Persea bombycina</i>
595	Lauraceae	<i>Persea odoratissima</i>
596	Lecythidaceae	<i>Barringtonia acutangula</i>
597	Lecythidaceae	<i>Careya arborea</i>
598	Leguminosae	<i>Acacia pennata</i>
599	Leguminosae	<i>Canavaliagradiata</i>
600	Leguminosae	<i>Millettia glaucescens</i>

S.No	Family	Name of Species
601	Leguminosae	<i>Millettia pulchra</i>
602	Liliaceae	<i>Polygonatum oppositifolium</i>
603	Liliaceae	<i>Smilacina purpurea</i>
604	Loranthaceae	<i>Loranthus odoratus</i>
605	Loranthaceae	<i>Scurrula umbeliflora</i>
606	Loranthaceae	<i>Taxillus umbelifera</i>
607	Loranthaceae	<i>Elytranthepsilantha</i>
608	Lythraceae	<i>Duabanga grandiflora</i>
609	Lythraceae	<i>Lagerstroemia lanceolata</i>
610	Magnoliaceae	<i>Magnolia gustavii</i>
611	Magnoliaceae	<i>Magnolia hodgsonii</i>
612	Magnoliaceae	<i>Magnolia pealiana</i>
613	Magnoliaceae	<i>Magnolia pterocarpa</i>
614	Magnoliaceae	<i>Magnolia rabaniana</i>
615	Magnoliaceae	<i>Manglietia insignis</i>
616	Magnoliaceae	<i>Michelia champaca</i>
617	Magnoliaceae	<i>Michelia doltsopa</i>
618	Magnoliaceae	<i>Michelia glabra</i>
619	Magnoliaceae	<i>Michelia kisopa</i>
620	Magnoliaceae	<i>Michelia oblonga</i>
621	Magnoliaceae	<i>Michelia punduana</i>
622	Magnoliaceae	<i>Michelia velutina</i>
623	Magnoliaceae	<i>Talauma hodgsonii</i>
624	Magnoliaceae	<i>Magnolia campbellii</i>
625	Malpighiaceae	<i>Hiptage benghalensis</i>

S.No	Family	Name of Species
626	Malvaceae	<i>Abelmoschus manihot</i>
627	Malvaceae	<i>Abroma angusta</i>
628	Malvaceae	<i>Abroma angustifolia</i>
629	Malvaceae	<i>Bombax ceiba</i>
630	Malvaceae	<i>Kydia calycina</i>
631	Malvaceae	<i>Pterospermum acerifolium</i>
632	Malvaceae	<i>Pterospermum reticulatum</i>
633	Malvaceae	<i>Pterygota alata</i>
634	Malvaceae	<i>Sida acuta</i>
635	Malvaceae	<i>Sida rhombifolia</i>
636	Malvaceae	<i>Urena lobata</i>
637	Malvaceae	<i>Malva neglecta</i>
638	Melastomataceae	<i>Melastoma erythrophylla</i>
639	Melastomataceae	<i>Medinilla assamica (=Pseudodissochaeta assamica)</i>
640	Melastomataceae	<i>Melastoma malabathricum</i>
641	Melastomataceae	<i>Melastoma normale</i>
642	Melastomataceae	<i>Osbeckia chinensis</i>
643	Melastomataceae	<i>Osbeckia normale</i>
644	Melastomataceae	<i>Osbeckia stellata</i>
645	Melastomataceae	<i>Oxyspora paniculata</i>
646	Melastomataceae	<i>Sonerila khasiana</i>
647	Meliaceae	<i>Aglaia edulis</i>
648	Meliaceae	<i>Aglaia hierne</i>
649	Meliaceae	<i>Aglaia spectabilis</i>
650	Meliaceae	<i>Amoora wallichii</i>

S.No	Family	Name of Species
651	Meliaceae	<i>Aphanamixispolystachya</i>
652	Meliaceae	<i>Chukrasia tabularis</i>
653	Meliaceae	<i>Dysoxylum gobara</i>
654	Meliaceae	<i>Dysoxylum grande</i>
655	Meliaceae	<i>Dysoxylum hamiltonii</i>
656	Meliaceae	<i>Dysoxylum javanicum</i>
657	Meliaceae	<i>Dysoxylum procerum</i>
658	Meliaceae	<i>Melia azedarach</i>
659	Meliaceae	<i>Toona ciliata</i>
660	Meliaceae	<i>Toona microcarpa</i>
661	Menispermaceae	<i>Cissampelos pareira</i>
662	Menispermaceae	<i>Stephania elegans</i>
663	Menispermaceae	<i>Stephania elegans</i>
664	Menispermaceae	<i>Stephania glandulifera</i>
665	Menispermaceae	<i>Tinospora crispa</i>
666	Mimosaceae	<i>Albizia lucida</i>
667	Mimosaceae	<i>Albizia odoratissima</i>
668	Mimosaceae	<i>Albizia procera</i>
669	Mimosaceae	<i>Leucaena leucocephala</i>
670	Mimosaceae	<i>Albizia lebbeck</i>
671	Monotropaceae	<i>Monotropa uniflora</i>
672	Moraceae	<i>Ficus auriculata</i>
673	Moraceae	<i>Ficus glaberrima</i>
674	Moraceae	<i>Ficus heterophylla</i>
675	Moraceae	<i>Ficus hirta</i>

S.No	Family	Name of Species
676	Moraceae	<i>Ficus oligodon</i>
677	Moraceae	<i>Ficus ovata</i>
678	Moraceae	<i>Ficus racemosa</i>
679	Moraceae	<i>Ficus religiosa</i>
680	Moraceae	<i>Ficus semicordata</i>
681	Moraceae	<i>Ficus subulata</i>
682	Moraceae	<i>Ficus virens</i>
683	Moraceae	<i>Morus laevigata</i>
684	Moraceae	<i>Morus macrouravar.laxiflora</i>
685	Moraceae	<i>Artocarpus chama</i>
686	Moraceae	<i>Artocarpus chaplasha</i>
687	Moraceae	<i>Artocarpus heterophyllus</i>
688	Moraceae	<i>Artocarpus integrifolia</i>
689	Moraceae	<i>Artocarpus lakoocha</i>
690	Moraceae	<i>Ficus abelii</i>
691	Moraceae	<i>Ficus benjamina</i>
692	Moraceae	<i>Ficus cunia</i>
693	Moraceae	<i>Ficus dumosa</i>
694	Moraceae	<i>Ficus elmeri</i>
695	Moraceae	<i>Ficus euophylla</i>
696	Moraceae	<i>Morus acidosa</i>
697	Moraceae	<i>Morus alba</i>
698	Musaceae	<i>Ensetesuperbum</i>
699	Musaceae	<i>Musa acuminata</i>
700	Musaceae	<i>Musa balbisiana</i>

S.No	Family	Name of Species
701	Musaceae	<i>Musa oppositifolia</i>
702	Musaceae	<i>Musa paradisiaca</i>
703	Musaceae	<i>Musa rosea</i>
704	Musaceae	<i>Musa velutina</i>
705	Musaceae	<i>Musa sikkimensis</i>
706	Myricaceae	<i>Myrica nagi</i>
707	Myristicaceae	<i>Myristica fragrans</i>
708	Myristicaceae	<i>Myristica wallichii</i>
709	Myrtaceae	<i>Syzygium aborense</i>
710	Myrtaceae	<i>Syzygium assamicum</i>
711	Myrtaceae	<i>Syzygium formosum</i>
712	Oleaceae	<i>Jasminum amplexicaule</i>
713	Oleaceae	<i>Jasminum humile</i>
714	Oleaceae	<i>Jasminum multiflorum</i>
715	Oleaceae	<i>Olea cuspidata</i>
716	Oleaceae	<i>Olea dioica</i>
717	Oleaceae	<i>Jasminum caudatum</i>
718	Oleaceae	<i>Chionanthus macrophylla</i>
719	Onagraceae	<i>Epilobium parviflorum</i>
720	Onagraceae	<i>Ludwigia octovalvis</i>
721	Orchidaceae	<i>Acanthophippium sylheinese</i>
722	Orchidaceae	<i>Aerides multiflorum</i>
723	Orchidaceae	<i>Aerides williamsii</i>
724	Orchidaceae	<i>Agrostophyllum brevipes</i>
725	Orchidaceae	<i>Anthogonium gracile</i>

S.No	Family	Name of Species
726	Orchidaceae	<i>Arachnis clarkii</i>
727	Orchidaceae	<i>Arundina graminifolia</i>
728	Orchidaceae	<i>Beirmannia bimaculaia</i>
729	Orchidaceae	<i>Bulbophyllum affine</i>
730	Orchidaceae	<i>Bulbophyllum apodum</i>
731	Orchidaceae	<i>Bulbophyllum capillipes</i>
732	Orchidaceae	<i>Bulbophyllum delitescens</i>
733	Orchidaceae	<i>Bulbophyllum hirtum</i>
734	Orchidaceae	<i>Bulbophyllum leopardinum</i>
735	Orchidaceae	<i>Bulbophyllum penicillium</i>
736	Orchidaceae	<i>Bulbophyllum sikkimensis</i>
737	Orchidaceae	<i>Calanthe biloba</i>
738	Orchidaceae	<i>Calanthe densiflora</i>
739	Orchidaceae	<i>Calanthe mannii</i>
740	Orchidaceae	<i>Calanthe ovalis</i>
741	Orchidaceae	<i>Calanthe ovata</i>
742	Orchidaceae	<i>Cattleya labiata</i>
743	Orchidaceae	<i>Ceratostylis teres</i>
744	Orchidaceae	<i>Chiloschista lunifera</i>
745	Orchidaceae	<i>Cleisocentrom trichromum</i>
746	Orchidaceae	<i>Cleisostoma filiforme</i>
747	Orchidaceae	<i>Cleisostoma racemiferum</i>
748	Orchidaceae	<i>Coelogyne barbata</i>
749	Orchidaceae	<i>Eria spicata</i>
750	Orchidaceae	<i>Eria stricta</i>

S.No	Family	Name of Species
751	Orchidaceae	<i>Erica discolor</i>
752	Orchidaceae	<i>Galeola falconeri</i>
753	Orchidaceae	<i>Gastrochilus calceolaris</i>
754	Orchidaceae	<i>Gastrochilus dasypogon</i>
755	Orchidaceae	<i>Geodorum pulchellum</i>
756	Orchidaceae	<i>Goodyera procera</i>
757	Orchidaceae	<i>Kingidium deliciosum</i>
758	Orchidaceae	<i>Liparis dongchenii</i>
759	Orchidaceae	<i>Liparis plantaginea</i>
760	Orchidaceae	<i>Luisia filiformis</i>
761	Orchidaceae	<i>Luisia tenuifolia</i>
762	Orchidaceae	<i>Malaxis cathcartii</i>
763	Orchidaceae	<i>Malaxis latifolia</i>
764	Orchidaceae	<i>Micropera mannii</i>
765	Orchidaceae	<i>Nervilia gammieana</i>
766	Orchidaceae	<i>Oberonia maxima</i>
767	Orchidaceae	<i>Oreorchis micrantha</i>
768	Orchidaceae	<i>Ornithochilus difformis</i>
769	Orchidaceae	<i>Otochyllus fuscus</i>
770	Orchidaceae	<i>Paphiopedilum fairrieianum</i>
771	Orchidaceae	<i>Papilionanthe teres</i>
772	Orchidaceae	<i>Phaius flavus</i>
773	Orchidaceae	<i>Phaius tankervilleae</i>
774	Orchidaceae	<i>Phalaenopsis parishii</i>
775	Orchidaceae	<i>Pholidota articulata</i>

S.No	Family	Name of Species
776	Orchidaceae	<i>Phreatia elegans</i>
777	Orchidaceae	<i>Acampe papillosa</i>
778	Orchidaceae	<i>Acampe rigida</i>
779	Orchidaceae	<i>Coelogyne flaccida</i>
780	Orchidaceae	<i>Coelogyne flavida</i>
781	Orchidaceae	<i>Coelogyne griffithii</i>
782	Orchidaceae	<i>Coelogyne nitida</i>
783	Orchidaceae	<i>Coelogyne prolifera</i>
784	Orchidaceae	<i>Coelogyne schultesii</i>
785	Orchidaceae	<i>Cryptochilus sanguineus</i>
786	Orchidaceae	<i>Cymbidium aloifolium</i>
787	Orchidaceae	<i>Cymbidium eburneum</i>
788	Orchidaceae	<i>Dendrobium acinaciforme</i>
789	Orchidaceae	<i>Dendrobium amoenum</i>
790	Orchidaceae	<i>Dendrobium aphyllum</i>
791	Orchidaceae	<i>Dendrobium cathcartii</i>
792	Orchidaceae	<i>Dendrobium cumulatum</i>
793	Orchidaceae	<i>Dendrobium densiflorum</i>
794	Orchidaceae	<i>Dendrobium falconeri</i>
795	Orchidaceae	<i>Dendrobium fimbriatum</i>
796	Orchidaceae	<i>Dendrobium hookerianum</i>
797	Orchidaceae	<i>Dendrobium jenkinsii</i>
798	Orchidaceae	<i>Dendrobium longicornu</i>
799	Orchidaceae	<i>Dendrobium nobile</i>
800	Orchidaceae	<i>Dendrobium pendulum</i>

S.No	Family	Name of Species
801	Orchidaceae	<i>Dendrobium porphyrochilum</i>
802	Orchidaceae	<i>Diplomeris hirsuta</i>
803	Orchidaceae	<i>Epigeneium amplum</i>
804	Orchidaceae	<i>Eria acervata</i>
805	Orchidaceae	<i>Eria floribunda</i>
806	Orchidaceae	<i>Eria graminifolia</i>
807	Orchidaceae	<i>Pleione praecox</i>
808	Orchidaceae	<i>Pomatocalpa armigerum</i>
809	Orchidaceae	<i>Pteroceras suaveolens</i>
810	Orchidaceae	<i>Renanthera indica</i>
811	Orchidaceae	<i>Rhynchostylis retusa</i>
812	Orchidaceae	<i>Spiranthes sinensis</i>
813	Orchidaceae	<i>Thelasis longifolia</i>
814	Orchidaceae	<i>Thelasis pygmaea</i>
815	Orchidaceae	<i>Vanda alpina</i>
816	Orchidaceae	<i>Vanda coerulea</i>
817	Orchidaceae	<i>Zeuxine strateumatica</i>
818	Orchidaceae	<i>Anoectochilus sikkimensis</i>
819	Orchidaceae	<i>Coelogyne arunachalensis</i>
820	Orchidaceae	<i>Eria jenggingensis</i>
821	Orchidaceae	<i>Goodyera recurva</i>
822	Orchidaceae	<i>Platanthera cumminsiana</i>
823	Oxalidaceae	<i>Averrhoa carambola</i>
824	Oxalidaceae	<i>Oxalis corniculata</i>
825	Oxalidaceae	<i>Oxalis latifolia</i>

S.No	Family	Name of Species
826	Pandanaceae	<i>Pandanus furcatus</i>
827	Pandanaceae	<i>Pandanus nepalensis</i>
828	Papaveraceae	<i>Corydalis stricta</i>
829	Papilionaceae	<i>Trifolium repens</i>
830	Phrymaceae	<i>Mazus delavayi</i>
831	Phrymaceae	<i>Mazus japonicus</i>
832	Phrymaceae	<i>Mazus pumilus</i>
833	Phrymaceae	<i>Mazus surculosus</i>
834	Phyllanthaceae	<i>Baccaurea sapida</i>
835	Phyllanthaceae	<i>Bischofia javanica</i>
836	Phyllanthaceae	<i>Baccaurea ramiflora</i>
837	Piperaceae	<i>Peperomia glabra</i>
838	Piperaceae	<i>Peperomia heyneana</i>
839	Piperaceae	<i>Peperomia reflexa</i>
840	Piperaceae	<i>Piper attenuatum</i>
841	Piperaceae	<i>Piper longum</i>
842	Piperaceae	<i>Piper nigrum</i>
843	Piperaceae	<i>Piper pedicellatum</i>
844	Piperaceae	<i>Piper peepuloides</i>
845	Piperaceae	<i>Piper sylvaticum</i>
846	Plantaginaceae	<i>Plantago erosa</i>
847	Plantaginaceae	<i>Plantago major</i>
848	Poaceae	<i>Agrostis gigantea</i>
849	Poaceae	<i>Agrostis micrantha</i>
850	Poaceae	<i>Agrostis vinealis</i>

S.No	Family	Name of Species
851	Poaceae	<i>Apluda mutica</i>
852	Poaceae	<i>Arthraxon hispidus</i>
853	Poaceae	<i>Arthraxon lancifolius</i>
854	Poaceae	<i>Arundinella nepalensis</i>
855	Poaceae	<i>Arundo donax</i>
856	Poaceae	<i>Bambusa balcooa</i>
857	Poaceae	<i>Bambusa longispiculata</i>
858	Poaceae	<i>Bambusa nutans</i>
859	Poaceae	<i>Bambusa pallida</i>
860	Poaceae	<i>Bambusa tulda</i>
861	Poaceae	<i>Brachiaria ramosa</i>
862	Poaceae	<i>Brachypodium sylvaticum</i>
863	Poaceae	<i>Muhlenbergia viridissima</i>
864	Poaceae	<i>Oplismenus compositus</i>
865	Poaceae	<i>Oryzopsis munroi</i>
866	Poaceae	<i>Panicum antidotale</i>
867	Poaceae	<i>Panicum psilopodium</i>
868	Poaceae	<i>Panicum sumatrense</i>
869	Poaceae	<i>Paspalum paspaloides</i>
870	Poaceae	<i>Paspalum scrobiculatum</i>
871	Poaceae	<i>Phragmites karka</i>
872	Poaceae	<i>Phyllostachys bambusoides</i>
873	Poaceae	<i>Poa annua</i>
874	Poaceae	<i>Pogonatherum paniceum</i>
875	Poaceae	<i>Saccharum elephantus</i>

S.No	Family	Name of Species
876	Poaceae	<i>Saccharum longisetosum</i>
877	Poaceae	<i>Saccharum longisetosus</i>
878	Poaceae	<i>Saccharum narenga</i>
879	Poaceae	<i>Saccharum procerum</i>
880	Poaceae	<i>Saccharum spontaneum</i>
881	Poaceae	<i>Schizostachyum arunachalensis</i>
882	Poaceae	<i>Schizostachyum fuchsianum</i>
883	Poaceae	<i>Schizostachyum polymorphum</i>
884	Poaceae	<i>Schlerostachya furca</i>
885	Poaceae	<i>Setaria glauca</i>
886	Poaceae	<i>Setaria palmifolia</i>
887	Poaceae	<i>Setaria verticillata</i>
888	Poaceae	<i>Sinarundinaria falcata</i>
889	Poaceae	<i>Sporobolus diander</i>
890	Poaceae	<i>Thamnocalamus aristatus</i>
891	Poaceae	<i>Calamagrostis emodensis</i>
892	Poaceae	<i>Calamagrostis stricta</i>
893	Poaceae	<i>Capillipedium assimile</i>
894	Poaceae	<i>Chrysopogon acicularis</i>
895	Poaceae	<i>Chrysopogon gryllus</i>
896	Poaceae	<i>Cynodon dactylon</i>
897	Poaceae	<i>Dendrocalamus hamiltonii</i>
898	Poaceae	<i>Dendrocalamus strictus</i>
899	Poaceae	<i>Digitaria ciliaris</i>
900	Poaceae	<i>Digitaria cruciata</i>

S.No	Family	Name of Species
901	Poaceae	<i>Digitaria stricta</i>
902	Poaceae	<i>Eleusine coracana</i>
903	Poaceae	<i>Eleusine indica</i>
904	Poaceae	<i>Eragrostis nigra</i>
905	Poaceae	<i>Eragrostis pilosa</i>
906	Poaceae	<i>Eragrostis tenella</i>
907	Poaceae	<i>Erianthus rufipilus</i>
908	Poaceae	<i>Helictotrichon parviflorum</i>
909	Poaceae	<i>Helictotrichon virescens</i>
910	Poaceae	<i>Imperata cylindrica</i>
911	Poaceae	<i>Isachne albens</i>
912	Poaceae	<i>Isachne longiflora</i>
913	Poaceae	<i>Melocalamus compactiflorus</i>
914	Poaceae	<i>Melocanna baccifera</i> (= <i>Melocanna bambusoides</i>)
915	Poaceae	<i>Microstegium vagans</i>
916	Poaceae	<i>Miscanthus nepalensis</i>
917	Poaceae	<i>Miscanthus nudipes</i>
918	Poaceae	<i>Muhlenbergia huegelii</i>
919	Poaceae	<i>Thamnocalamus spathiflorus</i>
920	Poaceae	<i>Themeda anathera</i>
921	Poaceae	<i>Themeda arundinacea</i>
922	Poaceae	<i>Thysanolaena latifolia</i>
923	Poaceae	<i>Typha elephantina</i>
924	Poaceae	<i>Vetiveria zizanioides</i>
925	Poaceae	<i>Zea mays</i>

S.No	Family	Name of Species
926	Poaceae	<i>Arthraxon quarlinianus</i> var. <i>glabrescens</i>
927	Poaceae	<i>Arundinella khaseana</i>
928	Poaceae	<i>Baliospermum calycinum</i>
929	Poaceae	<i>Bambusa barpatharica</i>
930	Poaceae	<i>Bambusa rangensis</i>
931	Poaceae	<i>Schizostachyum helferi</i>
932	Poaceae	<i>Schizostachyum pergracile</i>
933	Poaceae	<i>Schizostachyum polymorphum</i>
934	Poaceae	<i>Schizostachyum seshagiriana</i>
935	Poaceae	<i>Cyrtococcum accrescens</i>
936	Poaceae	<i>Dactyloctenium aegyptium</i>
937	Poaceae	<i>Setaria paniculifera</i>
938	Poaceae	<i>Setaria sphacelata</i>
939	Polygonaceae	<i>Polygonum amplexicaule</i>
940	Polygonaceae	<i>Polygonum capitatum</i>
941	Polygonaceae	<i>Polygonum chinense</i>
942	Polygonaceae	<i>Polygonum hydropiper</i>
943	Polygonaceae	<i>Polygonum nepalense</i>
944	Polygonaceae	<i>Polygonum plebeium</i>
945	Polygonaceae	<i>Polygonum pubescens</i>
946	Polygonaceae	<i>Rumex nepalensis</i>
947	Polygonaceae	<i>Aconogonum molle</i>
948	Polygonaceae	<i>Fagopyrum esculentum</i>
949	Polygonaceae	<i>Persicaria barbata</i>
950	Polygonaceae	<i>Persicaria capitata</i>

S.No	Family	Name of Species
951	Polygonaceae	<i>Persicaria chinensis</i>
952	Polygonaceae	<i>Persicaria nepalensis</i>
953	Polygonaceae	<i>Persicaria posumbu</i>
954	Polygonaceae	<i>Persicaria pubescens</i>
955	Polygonaceae	<i>Bistorta amplexicaulis</i>
956	Polygonaceae	<i>Fagopyrum dibotrys</i>
957	Pontederiaceae	<i>Eichhornia crassipes</i>
958	Primulaceae	<i>Ardisia humilis</i>
959	Primulaceae	<i>Ardisia khasiana</i>
960	Primulaceae	<i>Ardisia solanacea</i>
961	Primulaceae	<i>Ardisia thyrsiflora</i>
962	Primulaceae	<i>Embelia ribes</i>
963	Primulaceae	<i>Embelia tsjeriam-cottam</i>
964	Primulaceae	<i>Maesa chisia</i>
965	Primulaceae	<i>Maesa indica</i>
966	Primulaceae	<i>Maesa montana (=Maesa castaneifolia)</i>
967	Primulaceae	<i>Maesa robusta</i>
968	Primulaceae	<i>Myrsine semiserrata</i>
969	Primulaceae	<i>Primula denticulata</i>
970	Primulaceae	<i>Primula melanodonta</i>
971	Primulaceae	<i>Ardisia pedunculosa</i>
972	Proteaceae	<i>Helicia erratica</i>
973	Proteaceae	<i>Helicia robusta</i>
974	Ranunculaceae	<i>Aconitum lethale</i>
975	Ranunculaceae	<i>Anemone vitifolia</i>

S.No	Family	Name of Species
976	Ranunculaceae	<i>Clematis buchananiana</i>
977	Ranunculaceae	<i>Clematis gouriana</i>
978	Ranunculaceae	<i>Coptis teeta</i>
979	Ranunculaceae	<i>Ranunculus cantoniensis</i>
980	Ranunculaceae	<i>Thalictrum foliolosum</i>
981	Ranunculaceae	<i>Thalictrum javanicum</i>
982	Ranunculaceae	<i>Ranunculus sceleratus</i>
983	Rhamnaceae	<i>Berchemia floribunda</i>
984	Rhamnaceae	<i>Rhamnus nepalensis</i>
985	Rhamnaceae	<i>Ziziphus mauritiana</i>
986	Rhamnaceae	<i>Ziziphus rugosa var. glabrescens</i>
987	Rhizophoraceae	<i>Carallia brachiata</i>
988	Rosaceae	<i>Prunus rufa</i>
989	Rosaceae	<i>Pyrus communis</i>
990	Rosaceae	<i>Pyrus pashia</i>
991	Rosaceae	<i>Rhus burchellii</i>
992	Rosaceae	<i>Rosa brunonii</i>
993	Rosaceae	<i>Rosa chinensis</i>
994	Rosaceae	<i>Rosa macrophylla</i>
995	Rosaceae	<i>Rubus burkillii</i>
996	Rosaceae	<i>Rubus calycinus</i>
997	Rosaceae	<i>Rubus ellipticus</i>
998	Rosaceae	<i>Rubus hamiltonii</i>
999	Rosaceae	<i>Rubus hoffmeisterianus</i>
1000	Rosaceae	<i>Rubus lineatus</i>

S.No	Family	Name of Species
1001	Rosaceae	<i>Rubus nepalensis</i>
1002	Rosaceae	<i>Rubus niveus</i>
1003	Rosaceae	<i>Rubus rosifolius</i>
1004	Rosaceae	<i>Cotoneaster acuminatus</i>
1005	Rosaceae	<i>Cotoneaster bacillaris</i>
1006	Rosaceae	<i>Duchesnea indica</i>
1007	Rosaceae	<i>Eriobotrya dubia</i>
1008	Rosaceae	<i>Fragaria ananassa</i>
1009	Rosaceae	<i>Fragaria indica</i>
1010	Rosaceae	<i>Fragaria nubicola</i>
1011	Rosaceae	<i>Galeola lindleyana</i>
1012	Rosaceae	<i>Neillia thyrsiflora</i>
1013	Rosaceae	<i>Photinia cuspidata</i>
1014	Rosaceae	<i>Potentilla nepalensis</i>
1015	Rosaceae	<i>Potentilla sundersiana</i>
1016	Rosaceae	<i>Prunus acuminata</i>
1017	Rosaceae	<i>Prunus cerasoides</i>
1018	Rosaceae	<i>Prunus persica</i>
1019	Rosaceae	<i>Prunus prostrata</i>
1020	Rosaceae	<i>Fragaria vesca</i>
1021	Rosaceae	<i>Potentilla microphylla</i>
1022	Rosaceae	<i>Spiraea canescens</i>
1023	Rubiaceae	<i>Ixora acuminata</i>
1024	Rubiaceae	<i>Anthocephalus cadamba</i>
1025	Rubiaceae	<i>Anthocephalus chinensis</i>

S.No	Family	Name of Species
1026	Rubiaceae	<i>Galium aparine</i>
1027	Rubiaceae	<i>Galium asperuloides</i>
1028	Rubiaceae	<i>Galium triflorum</i>
1029	Rubiaceae	<i>Hedyotis scandens</i>
1030	Rubiaceae	<i>Hedyotis vestita</i>
1031	Rubiaceae	<i>Hymenodictyon excelsum</i>
1032	Rubiaceae	<i>Ophiorrhiza repens</i>
1033	Rubiaceae	<i>Psychotria silhetensis</i> var. <i>tomentosa</i>
1034	Rubiaceae	<i>Randia griffithii</i>
1035	Rubiaceae	<i>Rubus lucens</i>
1036	Rubiaceae	<i>Hymenodictyon vista</i>
1037	Rubiaceae	<i>Knoxia sumatrensis</i>
1038	Rubiaceae	<i>Lasianthus biermanii</i>
1039	Rubiaceae	<i>Lasianthus longicauda</i>
1040	Rubiaceae	<i>Leptodermis suaveolens</i>
1041	Rubiaceae	<i>Luculia pinceana</i>
1042	Rubiaceae	<i>Mitragyna parviflora</i>
1043	Rubiaceae	<i>Mussaenda roxburghii</i>
1044	Rubiaceae	<i>Mycetia longifolia</i>
1045	Rubiaceae	<i>Ophiorrhiza calcarata</i>
1046	Rubiaceae	<i>Ophiorrhiza glabra</i>
1047	Rubiaceae	<i>Ophiorrhiza trichocarpa</i>
1048	Rubiaceae	<i>Paederia foetida</i>
1049	Rubiaceae	<i>Psychotria aborensis</i>
1050	Rubiaceae	<i>Psychotria calocarpa</i>

S.No	Family	Name of Species
1051	Rubiaceae	<i>Psychotria griffithii</i>
1052	Rubiaceae	<i>Psychotria viridis</i>
1053	Rubiaceae	<i>Randia dumetorum</i>
1054	Rubiaceae	<i>Randia grandis</i>
1055	Rubiaceae	<i>Randia griffithii</i>
1056	Rubiaceae	<i>Randia tetrasperma</i>
1057	Rubiaceae	<i>Randia wallichii</i>
1058	Rubiaceae	<i>Rubia lineata</i>
1059	Rubiaceae	<i>Rubia sikkimensis</i>
1060	Rubiaceae	<i>Wendlandia sikkimensis</i>
1061	Rubiaceae	<i>Ixora subsessilis</i>
1062	Rubiaceae	<i>Neonaucleagageana</i>
1063	Rubiaceae	<i>Ophiorrhiza succirubra</i>
1064	Rubiaceae	<i>Hedyotis corymbosa</i>
1065	Rubiaceae	<i>Ophiorrhiza heterostyla</i>
1066	Rubiaceae	<i>Ophiorrhiza rugosa</i>
1067	Rubiaceae	<i>Rubia cordifolia</i>
1068	Rutaceae	<i>Aegle marmelos</i>
1069	Rutaceae	<i>Citrus aurantiifolia</i>
1070	Rutaceae	<i>Citrus aurantium (=Citrus x karna)</i>
1071	Rutaceae	<i>Citrus jambhiri</i>
1072	Rutaceae	<i>Citrus latipes</i>
1073	Rutaceae	<i>Citrus limetta</i>
1074	Rutaceae	<i>Citrus limon</i>
1075	Rutaceae	<i>Citrus maxima (=Citrus grandis)</i>

S.No	Family	Name of Species
1076	Rutaceae	<i>Citrus medica</i>
1077	Rutaceae	<i>Citrus reticulata</i>
1078	Rutaceae	<i>Citrus sinensis</i>
1079	Rutaceae	<i>Clausena excavata</i>
1080	Rutaceae	<i>Clausena heptaphylla</i>
1081	Rutaceae	<i>Euodia trichotoma</i>
1082	Rutaceae	<i>Micromelum integrifolium</i>
1083	Rutaceae	<i>Murraya exotica</i>
1084	Rutaceae	<i>Murraya paniculata</i>
1085	Rutaceae	<i>Tetradium fraxinifolium</i>
1086	Rutaceae	<i>Tetradium rutaecarpa</i>
1087	Rutaceae	<i>Toddalia asiatica</i>
1088	Rutaceae	<i>Zanthoxylum acanthopodium</i>
1089	Rutaceae	<i>Zanthoxylum nitidum</i>
1090	Rutaceae	<i>Zanthoxylum rhetsa</i>
1091	Rutaceae	<i>Zanthoxylum armatum</i>
1092	Rutaceae	<i>Zanthoxylum hamiltonianum</i>
1093	Sabiaceae	<i>Meliosma pinnata</i>
1094	Sabiaceae	<i>Meliosma simplicifolia</i>
1095	Salicaceae	<i>Populus australis</i>
1096	Salicaceae	<i>Salix wallichiana</i>
1097	Salicaceae	<i>Populus ciliata</i>
1098	Sapindaceae	<i>Aesculus assamica</i>
1099	Sapindaceae	<i>Aesculus indica</i>
1100	Sapindaceae	<i>Allophylus serratus</i>

S.No	Family	Name of Species
1101	Sapindaceae	<i>Harpullia arborea</i>
1102	Sapindaceae	<i>Lepisanthes senegalensis</i>
1103	Sapindaceae	<i>Lepisanthes tetraphylla</i>
1104	Sapotaceae	<i>Palaquium ellipticum</i>
1105	Sapotaceae	<i>Palaquium polyanthum</i>
1106	Saururaceae	<i>Houttuynia cordata</i>
1107	Saxifragaceae	<i>Bergenia ciliata</i>
1108	Saxifragaceae	<i>Dichroa febrifuga</i>
1109	Schisandraceae	<i>Illicium griffithii</i>
1110	Scrophulariaceae	<i>Majus surculosa</i>
1111	Scrophulariaceae	<i>Mimulus nepalensis</i>
1112	Scrophulariaceae	<i>Picrorhizakurroa</i>
1113	Scrophulariaceae	<i>Scrophularia urticifolia</i>
1114	Scrophulariaceae	<i>Scurrula elata</i>
1115	Scrophulariaceae	<i>Verbascum thapsus</i>
1116	Scrophulariaceae	<i>Veronica anagallis-aquatica</i>
1117	Scrophulariaceae	<i>Wulfenia amherstiana</i>
1118	Scrophulariaceae	<i>Lindera antipoda</i>
1119	Scrophulariaceae	<i>Lindera bifaria</i>
1120	Scrophulariaceae	<i>Lindera latifolia</i>
1121	Scrophulariaceae	<i>Lindera neesiana</i>
1122	Scrophulariaceae	<i>Lindernia ciliata</i>
1123	Scrophulariaceae	<i>Lindernia crustacea</i>
1124	Simaroubaceae	<i>Ailanthus grandis</i>
1125	Simaroubaceae	<i>Ailanthus integrifolia</i>

S.No	Family	Name of Species
1126	Simaroubaceae	<i>Picrasma javanica</i>
1127	Smilacaceae	<i>Smilax aspera</i>
1128	Smilacaceae	<i>Smilax aspericaulis</i>
1129	Smilacaceae	<i>Smilax glabra</i>
1130	Smilacaceae	<i>Smilax minutiflora</i>
1131	Solanaceae	<i>Datura stramonium</i>
1132	Solanaceae	<i>Paui belladonna</i>
1133	Solanaceae	<i>Physalis minima</i>
1134	Solanaceae	<i>Solanum americanum</i> (=S. nigrum)
1135	Solanaceae	<i>Solanum capsicoides</i> (=S. khasianum)
1136	Solanaceae	<i>Solanum donianum</i> (=S. verbascifolium)
1137	Solanaceae	<i>Solanum erianthum</i>
1138	Solanaceae	<i>Solanum kurzii</i>
1139	Solanaceae	<i>Solanum mauritianum</i>
1140	Solanaceae	<i>Solanum rudepannum</i> (=S. torvum)
1141	Solanaceae	<i>Solanum spirale</i>
1142	Solanaceae	<i>Solanum viarum</i>
1143	Solanaceae	<i>Solanum virginianum</i> (= S. surattense)
1144	Solanaceae	<i>Solanum xanthocarpum</i>
1145	Sterculiaceae	<i>Endospermum chinense</i>
1146	Sterculiaceae	<i>Sterculia guttata</i>
1147	Sterculiaceae	<i>Sterculia villosa</i>
1148	Symplocaceae	<i>Symplocos glomerata</i>
1149	Symplocaceae	<i>Symplocos ramosissima</i>
1150	Symplocaceae	<i>Symplocos theifolia</i>

S.No	Family	Name of Species
1151	Taccaceae	<i>Tacca laevis</i>
1152	Theaceae	<i>Camellia caudata</i>
1153	Theaceae	<i>Camellia kissi</i>
1154	Theaceae	<i>Camellia siangensis</i>
1155	Theaceae	<i>Camellia sinensis</i>
1156	Theaceae	<i>Eurya acuminata</i>
1157	Theaceae	<i>Eurya cerasifolia</i>
1158	Theaceae	<i>Eurya nitida</i>
1159	Theaceae	<i>Eurya siangensis</i>
1160	Theaceae	<i>Pyrenaria barringtoniifolia</i>
1161	Theaceae	<i>Schima wallichii</i>
1162	Thymelaeaceae	<i>Daphne obovata</i>
1163	Thymelaeaceae	<i>Daphne papyracea</i>
1164	Tiliaceae	<i>Grewia oppositifolia</i>
1165	Tiliaceae	<i>Grewia polygama</i>
1166	Tiliaceae	<i>Grewia tenax</i>
1167	Trilliaceae	<i>Paris polyphylla</i>
1168	Ulmaceae	<i>Ulmus lanceifolia</i>
1169	Urticaceae	<i>Boehmeria macrophylla</i>
1170	Urticaceae	<i>Boehmeria nivea</i>
1171	Urticaceae	<i>Boehmeria penduliflora</i>
1172	Urticaceae	<i>Boehmeria platyphylla</i>
1173	Urticaceae	<i>Boehmeria polystachya</i>
1174	Urticaceae	<i>Boehmeria rugulosa</i>
1175	Urticaceae	<i>Conocephalus suaveolens</i>

S.No	Family	Name of Species
1176	Urticaceae	<i>Debregeasia longifolia</i>
1177	Urticaceae	<i>Dendrocnide sinuata</i>
1178	Urticaceae	<i>Elatostema aquifolium</i>
1179	Urticaceae	<i>Elatostema glabra</i>
1180	Urticaceae	<i>Elatostema lineolatum</i>
1181	Urticaceae	<i>Elatostema sesquifolium</i>
1182	Urticaceae	<i>Elatostema sessile</i>
1183	Urticaceae	<i>Girardinia diversifolia</i>
1184	Urticaceae	<i>Gonostegia hirta</i> (= <i>Pouzolzia hirta</i>)
1185	Urticaceae	<i>Laportea crenulata</i>
1186	Urticaceae	<i>Laportea pterostigma</i>
1187	Urticaceae	<i>Lecanthus peduncularis</i>
1188	Urticaceae	<i>Oreocnide frutescens</i>
1189	Urticaceae	<i>Oreocnide integrifolia</i>
1190	Urticaceae	<i>Oreocnide rubescens</i>
1191	Urticaceae	<i>Pilea bracteosa</i>
1192	Urticaceae	<i>Pilea glaberrima</i>
1193	Urticaceae	<i>Pilea scripta</i>
1194	Urticaceae	<i>Pilea umbrosa</i>
1195	Urticaceae	<i>Pouzolzia zeylanica</i>
1196	Urticaceae	<i>Urtica ardens</i>
1197	Urticaceae	<i>Aboriella myriantha</i>
1198	Urticaceae	<i>Boehmeria glomerulifera</i>
1199	Urticaceae	<i>Boehmeria longifolia</i>
1200	Urticaceae	<i>Urtica dioica</i>
1201	Urticaceae	<i>Urtica parviflora</i>

S.No	Family	Name of Species
1202	Urticaceae	<i>Elatostema sikkimense</i>
1203	Urticaceae	<i>Elatostema longicaudatum</i>
1204	Urticaceae	<i>Elatostema platyphyllum</i>
1205	Urticaceae	<i>Sarcochlamys pulcherrima</i>
1206	Valerianaceae	<i>Valeriana hardwickii</i>
1207	Valerianaceae	<i>Valeriana jatamansi</i>
1208	Verbenaceae	<i>Caryopteris odorata</i>
1209	Verbenaceae	<i>Callicarpa arborea</i>
1210	Verbenaceae	<i>Callicarpa vestita</i>
1211	Verbenaceae	<i>Calophyllum elatum</i>
1212	Verbenaceae	<i>Clerodendrum bracteatum</i>
1213	Verbenaceae	<i>Clerodendrum colebrookianum</i>
1214	Verbenaceae	<i>Clerodendrum viscosum</i>
1215	Verbenaceae	<i>Gmelina arborea</i>
1216	Verbenaceae	<i>Lantana camara</i>
1217	Violaceae	<i>Viola betonicifolia</i>
1218	Violaceae	<i>Viola canescens</i>
1219	Violaceae	<i>Viola diffusa</i>
1220	Violaceae	<i>Viola pilosa</i>
1221	Vitaceae	<i>Cayratia japonica</i>
1222	Vitaceae	<i>Cissus heyneana</i>
1223	Vitaceae	<i>Cissus japonica</i>
1224	Vitaceae	<i>Leea aequata</i>
1225	Vitaceae	<i>Leea asiatica</i>
1226	Vitaceae	<i>Leea indica</i>
1227	Vitaceae	<i>Leea sambucina</i>

S.No	Family	Name of Species
1228	Vitaceae	<i>Parthenocissus semicordata</i>
1229	Vitaceae	<i>Tetrastigma serrulatum</i>
1230	Vitaceae	<i>Vitis himalayana</i> (= <i>Parthenocissus semicordata</i>)
1231	Vitaceae	<i>Tetrastigma planicaule</i>
1232	Vitaceae	<i>Vitis planicaulis</i>
1233	Vitaceae	<i>Leea compactiflora</i>
1234	Xanthophyllaceae	<i>Xanthophyllum burkillii</i>
1235	Zingiberaceae	<i>Amomum aromaticum</i>
1236	Zingiberaceae	<i>Amomum subulatum</i>
1237	Zingiberaceae	<i>Costus speciosus</i>
1238	Zingiberaceae	<i>Curcuma amada</i>
1239	Zingiberaceae	<i>Curcuma aromatica</i>
1240	Zingiberaceae	<i>Curcuma longa</i>
1241	Zingiberaceae	<i>Hedychium coccineum</i>
1242	Zingiberaceae	<i>Hedychium coronarium</i>
1243	Zingiberaceae	<i>Hedychium spicatum</i>
1244	Zingiberaceae	<i>Hedychium thyrsiforme</i>
1245	Zingiberaceae	<i>Zingiber officinale</i>
1246	Zingiberaceae	<i>Alpinia malaccensis</i>
1247	Zingiberaceae	<i>Alpinia nigra</i> (= <i>Alpinia allughas</i>)
1248	Zingiberaceae	<i>Cautleya spicata</i>
1249	Zingiberaceae	<i>Costus spicatus</i>

Gymnosperms

S.No.	Family	Species
1	Cephalotaxaceae	<i>Cephalotaxus griffithii</i>
2	Pinaceae	<i>Abies delavayi</i>
3	Pinaceae	<i>Abies spectabilis</i>
4	Pinaceae	<i>Piceasmithiana</i>
5	Pinaceae	<i>Pinus kesiya</i>
6	Pinaceae	<i>Pinus wallichiana</i>
7	Pinaceae	<i>Tsuga dumosa</i>
8	Pinaceae	<i>Abies densa</i>
9	Podocarpaceae	<i>Podocarpus neriifolius</i>
10	Taxaceae	<i>Amentotaxus assamica</i>
11	Taxaceae	<i>Taxus wallichiana</i>

LIST OF PLANT SPECIES RECORDED FROM
DIFFERENT SUB BASINS
OF SIANG DURING FIELD SAMPLING

Siang Sub Basin-I

Angiosperms

S.No	Family	Species	S.No	Family	Species
1	Acanthaceae	<i>Pteracanthus rubescens</i>	27	Boraginaceae	<i>Cynoglossum glochidiatum</i>
2	Actinidiaceae	<i>Actinidia callosa</i>	28	Brassicaceae	<i>Cardamine hirsuta</i>
3	Actinidiaceae	<i>Saurauia punduana</i>	29	Burseraceae	<i>Canarium strictum</i>
4	Amaranthaceae	<i>Achyranthes aspera</i>	30	Capparaceae	<i>Capparis roxburghii</i>
5	Anacardiaceae	<i>Lannea coromandelica</i>	31	Capparaceae	<i>Capparis tenera</i>
6	Annonaceae	<i>Miliusa globosa</i>	32	Caryophyllaceae	<i>Drymaria mollis</i>
7	Apiaceae	<i>Hydrocotyle nepalensis</i>	33	Celastraceae	<i>Euonymus attenuatus</i>
8	Araceae	<i>Arisaema erubescens</i>	34	Combretaceae	<i>Terminalia myriocarpa</i>
9	Araceae	<i>Colocasia esculenta</i>	35	Commelinaceae	<i>Commelina benghalensis</i>
10	Araliaceae	<i>Brassaiaopsis mitis</i>	36	Commelinaceae	<i>Commelina paludosa</i>
11	Arecaceae	<i>Calamus tenuis</i>	37	Cucurbitaceae	<i>Cucumis melo</i>
12	Arecaceae	<i>Korthalsia flagellaris</i>	38	Cyperaceae	<i>Carex cruciata</i>
13	Asteraceae	<i>Ageratum conyzoides</i>	39	Cyperaceae	<i>Carex nivea</i>
14	Asteraceae	<i>Bidens bipinnata</i>	40	Cyperaceae	<i>Kyllinga brevifolia</i>
15	Asteraceae	<i>Bidens pilosa</i>	41	Dipterocarpaceae	<i>Dipterocarpus retusus</i>
16	Asteraceae	<i>Blumea hieracifolia</i>	42	Euphorbiaceae	<i>Macaranga denticulata</i>
17	Asteraceae	<i>Chromolaena odorata</i>	43	Euphorbiaceae	<i>Mallotus philippensis</i>
18	Asteraceae	<i>Conyza japonica</i>	44	Fabaceae	<i>Desmodium heterocarpon</i>
19	Asteraceae	<i>Conyza stricta</i>	45	Fabaceae	<i>Millettia pulchra</i>
20	Asteraceae	<i>Crassocephalum crepidioides</i>	46	Fagaceae	<i>Castanopsis indica</i>
21	Asteraceae	<i>Dichrocephala chrysanthemifolia</i>	47	Fagaceae	<i>Lithocarpus elegans</i>
22	Asteraceae	<i>Gnaphalium affine</i>	48	Gentianaceae	<i>Crawfordia speciosa</i>
23	Asteraceae	<i>Mikania micrantha</i>	49	Gesneriaceae	<i>Chirita pumila</i>
24	Balsaminaceae	<i>Impatiens violaeiflora</i>	50	Lamiaceae	<i>Nepeta lamiopsis</i>
25	Begoniaceae	<i>Begonia megaptera</i>	51	Lamiaceae	<i>Perilla frutescens</i>
26	Bignoniaceae	<i>Oroxylum indicum</i>	52	Lamiaceae	<i>Scutellaria scandens</i>

S.No	Family	Species	S.No	Family	Species
53	Lauraceae	<i>Cinnamomum pauciflorum</i>	82	Polygonaceae	<i>Bistorta amplexicaulis</i>
54	Lythraceae	<i>Duabanga grandiflora</i>	83	Polygonaceae	<i>Persicaria barbata</i>
55	Magnoliaceae	<i>Magnolia hodgsonii</i>	84	Polygonaceae	<i>Persicaria capitata</i>
56	Magnoliaceae	<i>Michelia glabra</i>	85	Polygonaceae	<i>Rumex nepalensis</i>
57	Malvaceae	<i>Abroma angustifolia</i>	86	Rosaceae	<i>Rubus ellipticus</i>
58	Malvaceae	<i>Kydia calycina</i>	87	Rosaceae	<i>Rubus nepalensis</i>
59	Malvaceae	<i>Pterospermum acerifolium</i>	88	Rubiaceae	<i>Anthocephalus cadamba</i>
60	Malvaceae	<i>Urena lobata</i>	89	Rubiaceae	<i>Hedyotis vestita</i>
61	Melastomataceae	<i>Oxyspora paniculata</i>	90	Rubiaceae	<i>Psychotria calocarpa</i>
62	Moraceae	<i>Ficus racemosa</i>	91	Rubiaceae	<i>Rubia cordifolia</i>
63	Moraceae	<i>Ficus semicordata</i>	92	Rubiaceae	<i>Ophiorrhiza heterostyla</i>
64	Myrsinaceae	<i>Maesa chisia</i>	93	Sapindaceae	<i>Aesculus assamica</i>
65	Pandanaceae	<i>Pandanus nepalensis</i>	94	Scrophulariaceae	<i>Mazus surculosus</i>
66	Phyllanthaceae	<i>Bischofia javanica</i>	95	Simaroubaceae	<i>Ailanthus integrifolia</i>
67	Piperaceae	<i>Piper pedicellatum</i>	96	Simaroubaceae	<i>Picrasma javanica</i>
68	Plantaginaceae	<i>Plantago erosa</i>	97	Solanaceae	<i>Solanum surattense</i>
69	Poaceae	<i>Arthraxon hispidus</i>	98	Solanaceae	<i>Solanum torvum</i>
70	Poaceae	<i>Capillipedium assimile</i>	99	Solanaceae	<i>Solanum verbascifolium</i>
71	Poaceae	<i>Capillipedium assimile</i>	100	Urticaceae	<i>Boehmeria glomerulifera</i>
72	Poaceae	<i>Digitaria ciliaris</i>	101	Urticaceae	<i>Boehmeria macrophylla</i>
73	Poaceae	<i>Digitaria stricta</i>	102	Urticaceae	<i>Boehmeria rugulosa</i>
74	Poaceae	<i>Isachne albens</i>	103	Urticaceae	<i>Debregeasia longifolia</i>
75	Poaceae	<i>Melocalamus compactiflorus</i>	104	Urticaceae	<i>Elatostema lineolatum</i>
76	Poaceae	<i>Oplismenus compositus</i>	105	Urticaceae	<i>Elatostema longicaudatum</i>
77	Poaceae	<i>Saccharum longisetosus</i>	106	Urticaceae	<i>Elatostema sesquifolium</i>
78	Poaceae	<i>Saccharum narenga</i>	107	Urticaceae	<i>Elatostema sessile</i>
79	Poaceae	<i>Sporobolus diander</i>	108	Urticaceae	<i>Gerardinia diversifolia</i>
80	Poaceae	<i>Thysanolaena latifolia</i>	109	Urticaceae	<i>Lecanthus peduncularis</i>
81	Poaceae	<i>Cyrtococcum accrescens</i>	110	Urticaceae	<i>Pilea glaberrima</i>

S.No.	Family	Species
111	Urticaceae	<i>Pilea scripta</i>
112	Urticaceae	<i>Pilea umbrosa</i>
113	Verbenaceae	<i>Caryopteris odorata</i>
114	Vitaceae	<i>Leea asiatica</i>
115	Vitaceae	<i>Leea indica</i>
116	Zingiberaceae	<i>Amomum subulatum</i>
117	Zingiberaceae	<i>Hedychium spicatum</i>

Pteridophytes

S.No.	Family	Species
1	Dryopteridaceae	<i>Tectaria polymorpha</i>
2	Equisetaceae	<i>Equisetum diffusum</i>
3	Equisetaceae	<i>Equisetum ramosissimum</i>
4	Marattiaceae	<i>Angiopteris assamica</i>
5	Nephrolepidaceae	<i>Nephrolepis biauriculate</i>

Siang Sub Basin-II

Angiosperms

S.No	Family	Species	S.No	Family	Species
1	Acanthaceae	<i>Pteracanthus cusia</i>	27	Euphorbiaceae	<i>Macaranga denticulata</i>
2	Acanthaceae	<i>Pteracanthus rubescens</i>	28	Fabaceae	<i>Desmodium heterocarpon</i>
3	Actinidiaceae	<i>Actinidia callosa</i>	29	Fagaceae	<i>Castanopsis indica</i>
4	Actinidiaceae	<i>Saurauia punduana</i>	30	Hydrangeaceae	<i>Hydrangea robusta</i>
5	Altingiaceae	<i>Altingia excelsa</i>	31	Lamiaceae	<i>Colquhounia vestita</i>
6	Anacardiaceae	<i>Lannea coromandelica</i>	32	Lamiaceae	<i>Nepeta lamiopsis</i>
7	Apiaceae	<i>Hydrocotyle nepalensis</i>	33	Lamiaceae	<i>Perilla frutescens</i>
8	Araceae	<i>Colocasia esculenta</i>	34	Lythraceae	<i>Duabanga grandiflora</i>
9	Araliaceae	<i>Brassaiopsis mitis</i>	35	Magnoliaceae	<i>Magnolia hodgsonii</i>
10	Araliaceae	<i>Schefflera venulosa</i>	36	Malvaceae	<i>Urena lobata</i>
11	Asteraceae	<i>Ageratum conyzoides</i>	37	Melastomataceae	<i>Melastoma normale</i>
12	Asteraceae	<i>Bidens bipinnata</i>	38	Melastomataceae	<i>Oxyspora paniculata</i>
13	Asteraceae	<i>Bidens pilosa</i>	39	Mimosaceae	<i>Albizia odoratissima</i>
14	Asteraceae	<i>Chromolaena odorata</i>	40	Moraceae	<i>Ficus racemosa</i>
15	Asteraceae	<i>Conyza japonica</i>	41	Moraceae	<i>Ficus semicordata</i>
16	Asteraceae	<i>Conyza stricta</i>	42	Musaceae	<i>Musa balbisiana</i>
17	Asteraceae	<i>Crassocephalum crepidioides</i>	43	Myrsinaceae	<i>Maesa chisia</i>
18	Asteraceae	<i>Mikania micrantha</i>	44	Myrsinaceae	<i>Maesa robusta</i>
19	Begoniaceae	<i>Begonia nepalensis</i>	45	Orchidaceae	<i>Bulbophyllum affine</i>
20	Betulaceae	<i>Alnus nepalensis</i>	46	Orchidaceae	<i>Spiranthes sinensis</i>
21	Brassicaceae	<i>Cardamine hirsuta</i>	47	Orchidaceae	<i>Spiranthes sinensis</i>
22	Caryophyllaceae	<i>Drymaria mollis</i>	48	Oxalidaceae	<i>Oxalis corniculata</i>
23	Combretaceae	<i>Terminalia myriocarpa</i>	49	Phyllanthaceae	<i>Bischofia javanica</i>
24	Commelinaceae	<i>Commelina benghalensis</i>	50	Poaceae	<i>Agrostis vinealis</i>
25	Cyperaceae	<i>Carex nivea</i>	51	Poaceae	<i>Arthraxon hispidus</i>
26	Cyperaceae	<i>Kyllinga brevifolia</i>	52	Poaceae	<i>Capillipedium assimile</i>

S.No	Family	Species
53	Poaceae	<i>Chrysopogon aciculatus</i>
54	Poaceae	<i>Digitaria stricta</i>
55	Poaceae	<i>Imperata cylindrica</i>
56	Poaceae	<i>Melocalamus compactiflorus</i>
57	Poaceae	<i>Oplismenus compositus</i>
58	Poaceae	<i>Paspalum scrobiculatum</i>
59	Poaceae	<i>Saccharum longisetosus</i>
60	Poaceae	<i>Saccharum narenga</i>
61	Poaceae	<i>Sporobolus diander</i>
62	Poaceae	<i>Cyrtococcum accrescens</i>
63	Polygonaceae	<i>Aconogonum molle</i>
64	Polygonaceae	<i>Persicaria capitata</i>
65	Rhamnaceae	<i>Rhamnus nepalensis</i>
66	Rosaceae	<i>Rubus ellipticus</i>
67	Rubiaceae	<i>Leptodermis suaveolens</i>
68	Rubiaceae	<i>Ophiorrhiza heterostyla</i>
69	Solanaceae	<i>Solanum surattense</i>
70	Ulmaceae	<i>Ulmus lanceifolia</i>
71	Urticaceae	<i>Boehmeria macrophylla</i>
72	Urticaceae	<i>Boehmeria rugulosa</i>
73	Urticaceae	<i>Debregeasia longifolia</i>
74	Urticaceae	<i>Elatostema longicaudatum</i>
75	Urticaceae	<i>Elatostema sessile</i>
76	Urticaceae	<i>Girardinia diversifolia</i>
77	Urticaceae	<i>Lecanthus peduncularis</i>
78	Urticaceae	<i>Pilea scripta</i>
79	Urticaceae	<i>Sarcochlamys pulcherrima</i>
80	Verbenaceae	<i>Caryopteris odorata</i>

S.No	Family	Species
81	Vitaceae	<i>Leea asiatica</i>
82	Zingiberaceae	<i>Amomum subulatum</i>
83	Zingiberaceae	<i>Hedychium spicatum</i>
84	Urticaceae	<i>Sarcochlamys pulcherrima</i>
85	Verbenaceae	<i>Caryopteris odorata</i>
86	Vitaceae	<i>Leea asiatica</i>
87	Zingiberaceae	<i>Amomum subulatum</i>
88	Zingiberaceae	<i>Hedychium spicatum</i>

Pteridophytes

S.No	Family	Name of Species
1	Cyatheaceae	<i>Alsophila spinulosa</i>
2	Equisetaceae	<i>Equisetum diffusum</i>
3	Marattiaceae	<i>Angiopteris assamica</i>
4	Pteridaceae	<i>Pteris biaurita</i>
5	Pteridaceae	<i>Pteris nervosa</i>
6	Pteridaceae	<i>Pteridium aquilinum</i>
7	Selaginellaceae	<i>Selaginella decipiens</i>
8	Selaginellaceae	<i>Selaginella inaequalifolia</i>
9	Selaginellaceae	<i>Selaginella indica</i>
10	Woodsiaceae	<i>Athyrium angustum</i>

Siang Sub Basin-III

Angiosperms

S.No	Family	Species
1	Acanthaceae	<i>Strobilanthes echinata</i>
2	Actinidiaceae	<i>Actinidia callosa</i>
3	Actinidiaceae	<i>Saurauia punduana</i>
4	Alangiaceae	<i>Alangium chinense</i>
5	Altingiaceae	<i>Altingia excelsa</i>
6	Anacardiaceae	<i>Lannea coromandelica</i>
7	Araceae	<i>Colocasia affinis</i>
8	Araceae	<i>Pinanga gracilis</i>
9	Araliaceae	<i>Brassaiopsis mitis</i>
10	Araliaceae	<i>Pentapanax leschenaultiana</i>
11	Asteraceae	<i>Ageratum conyzoides</i>
12	Asteraceae	<i>Artemisia nilagirica</i>
13	Asteraceae	<i>Bidens bipinnata</i>
14	Asteraceae	<i>Chromolaena odorata</i>
15	Asteraceae	<i>Conyza japonica</i>
16	Asteraceae	<i>Conyza stricta</i>
17	Asteraceae	<i>Vernonia volkemerifolia</i>
18	Begoniaceae	<i>Begonia nepalensis</i>
19	Betulaceae	<i>Alnus nepalensis</i>
20	Brassicaceae	<i>Cudrania javanensis</i>
21	Combretaceae	<i>Terminalia myriocarpa</i>
22	Cyperaceae	<i>Carex nivea</i>
23	Cyperaceae	<i>Cyperus cyperinus</i>
24	Cyperaceae	<i>Kyllinga brevifolia</i>
25	Dipterocarpaceae	<i>Dipterocarpus retusus</i>
26	Euphorbiaceae	<i>Macaranga denticulata</i>
27	Fabaceae	<i>Desmodium heterocarpon</i>

S.No	Family	Species
28	Fabaceae	<i>Millettia pulchra</i>
29	Fagaceae	<i>Castanopsis indica</i>
30	Flacourtiaceae	<i>Casearia vareca</i>
31	Gentianaceae	<i>Crawfurdia speciosa</i>
32	Gesneriaceae	<i>Didymocarpus oblongus</i>
33	Hypoxidaceae	<i>Molineria capitulata</i>
34	Lamiaceae	<i>Nepeta lamiopsis</i>
35	Lauraceae	<i>Cinnamomum pauciflorum</i>
36	Lythraceae	<i>Duabanga grandiflora</i>
37	Magnoliaceae	<i>Magnolia hodgsonii</i>
38	Magnoliaceae	<i>Michelia glabra</i>
39	Malvaceae	<i>Urena lobata</i>
40	Melastomataceae	<i>Oxyspora paniculata</i>
41	Moraceae	<i>Ficus heterophylla</i>
42	Moraceae	<i>Ficus racemosa</i>
43	Moraceae	<i>Ficus semicordata</i>
44	Myrsinaceae	<i>Maesa chisia</i>
45	Phyllanthaceae	<i>Bischofia javanica</i>
46	Piperaceae	<i>Piper pedicellatum</i>
47	Poaceae	<i>Capillipedium assimile</i>
48	Poaceae	<i>Cynodon dactylon</i>
49	Poaceae	<i>Cyrtococcum accrescens</i>
50	Poaceae	<i>Digitaria stricta</i>
51	Poaceae	<i>Imperata cylindrica</i>
52	Poaceae	<i>Ixora acuminata</i>
53	Poaceae	<i>Melocalamus compactiflorus</i>
54	Poaceae	<i>Miscanthus nepalensis</i>

S.No	Family	Species
55	Poaceae	<i>Oplismenus compositus</i>
56	Poaceae	<i>Paspalum scrobiculatum</i>
57	Poaceae	<i>Saccharum elephantus</i>
58	Poaceae	<i>Saccharum narenga</i>
59	Poaceae	<i>Saccharum spontaneum</i>
60	Poaceae	<i>Sinarundinaria falcata</i>
61	Poaceae	<i>Thysanolaena latifolia</i>
62	Polygonaceae	<i>Persicaria barbata</i>
63	Polygonaceae	<i>Persicaria capitata</i>
64	Proteaceae	<i>Helicia erratica</i>
65	Proteaceae	<i>Helictotrichon virescens</i>
66	Rosaceae	<i>Rubus ellipticus</i>
67	Rubiaceae	<i>Hedyotis vestita</i>
68	Rubiaceae	<i>Leptodermis suaveolens</i>
69	Rubiaceae	<i>Ophiorrhiza heterostyla</i>
70	Rutaceae	<i>Tetradium fraxinifolium</i>
71	Simaroubaceae	<i>Ailanthus integrifolia</i>
72	Solanaceae	<i>Solanum surattense</i>
73	Tiliaceae	<i>Grewia polygama</i>
74	Ulmaceae	<i>Trema amboinensis</i>
75	Urticaceae	<i>Boehmeria macrophylla</i>
76	Urticaceae	<i>Boehmeria platyphylla</i>
77	Urticaceae	<i>Boehmeria rugulosa</i>
78	Urticaceae	<i>Conocephalus suaveolens</i>
79	Urticaceae	<i>Sarcochlamys pulcherrima</i>
80	Verbenaceae	<i>Caryopteris odorata</i>
81	Vitaceae	<i>Leea asiatica</i>
82	Zingiberaceae	<i>Amomum subulatum</i>

S.No	Family	Species
83	Zingiberaceae	<i>Hedychium spicatum</i>
84	Urticaceae	<i>Debregeasia longifolia</i>
85	Urticaceae	<i>Elatostema glabra</i>
86	Urticaceae	<i>Elatostema sesquifolium</i>
87	Urticaceae	<i>Elatostema sessile</i>
88	Urticaceae	<i>Girardinia diversifolia</i>
89	Urticaceae	<i>Pilea scripta</i>
90	Urticaceae	<i>Pilea umbrosa</i>
91	Urticaceae	<i>Urtica dioica</i>
92	Verbenaceae	<i>Caryopteris odorata</i>
93	Vitaceae	<i>Leea asiatica</i>

Pteridophytes

S.No.	Family	Name of Species
1	Cyatheaceae	<i>Alsophila spinulosa</i>
2	Dryopteridaceae	<i>Tectaria polymorpha</i>
3	Dryopteridaceae	<i>Polystichum aleuticum</i>
4	Equisetaceae	<i>Equisetum diffusum</i>
5	Equisetaceae	<i>Equisetum ramosissimum</i>
6	Marattiaceae	<i>Angiopteris assamica</i>
7	Nephrolepidaceae	<i>Nephrolepis biauriculate</i>
8	Pteridaceae	<i>Pteris biaurita</i>
9	Pteridaceae	<i>Pteris nervosa</i>
10	Pteridaceae	<i>Pteris stenophylla</i>
11	Pteridaceae	<i>Pteris subindivisa</i>
12	Pteridaceae	<i>Pteridium aquilinum</i>
13	Selaginellaceae	<i>Selaginella decipiens</i>
14	Selaginellaceae	<i>Selaginella inaequalifolia</i>
15	Selaginellaceae	<i>Selaginella indica</i>
16	Woodsiaceae	<i>Athyrium angustum</i>
17	Woodsiaceae	<i>Athyrium drepanopterum</i>

Siang Sub Basin-IV

Angiosperms

S.No	Family	Species
1	Acanthaceae	<i>Pteracanthus rubescens</i>
2	Actinidiaceae	<i>Actinidia callosa</i>
3	Actinidiaceae	<i>Saurauia punduana</i>
4	Altingiaceae	<i>Altingia excelsa</i>
5	Amaranthaceae	<i>Gomphrena globosa</i>
6	Anacardiaceae	<i>Lannea coromandelica</i>
7	Araceae	<i>Colocasia affinis</i>
8	Araceae	<i>Arisaema speciosum</i>
9	Araliaceae	<i>Brassaiopsis aculeata</i>
10	Araliaceae	<i>Brassaiopsis mitis</i>
11	Araliaceae	<i>Pentapanax leschenaultiana</i>
12	Araliaceae	<i>Trevesia palmata</i>
13	Arecaceae	<i>Pinanga gracilis</i>
14	Asteraceae	<i>Ageratum conyzoides</i>
15	Asteraceae	<i>Bidens bipinnata</i>
16	Asteraceae	<i>Bidens pilosa</i>
17	Asteraceae	<i>Conyza japonica</i>
18	Asteraceae	<i>Conyza stricta</i>
19	Asteraceae	<i>Eupatorium odoratum</i>
20	Balsaminaceae	<i>Impatiens brachycentra</i>
21	Balsaminaceae	<i>Impatiens bicornuta</i>
22	Begoniaceae	<i>Begonia nepalensis</i>
23	Begoniaceae	<i>Begonia roxburghii</i>
24	Begoniaceae	<i>Begonia griffithiana</i>
25	Begoniaceae	<i>Begonia megaptera</i>
26	Betulaceae	<i>Alnus nepalensis</i>
27	Betulaceae	<i>Carpinus viminea</i>

S.No	Family	Species
28	Boraginaceae	<i>Cynoglossum glochidiatum</i>
29	Cannabaceae	<i>Trema amboinensis</i>
30	Caryophyllaceae	<i>Drymaria mollis</i>
31	Combretaceae	<i>Terminalia myriocarpa</i>
32	Commelinaceae	<i>Commelina benghalensis</i>
33	Commelinaceae	<i>Murdannia japonica</i>
34	Cyperaceae	<i>Kyllinga brevifolia</i>
35	Euphorbiaceae	<i>Macaranga denticulata</i>
36	Euphorbiaceae	<i>Ostodes paniculata</i>
37	Fabaceae	<i>Cassia tora</i>
38	Fabaceae	<i>Millettia pulchra</i>
39	Fagaceae	<i>Castanopsis indica</i>
40	Flacourtiaceae	<i>Casearia vareca</i>
41	Flacourtiaceae	<i>Gynocardia odorata</i>
42	Gesneriaceae	<i>Didymocarpus oblongus</i>
43	Hydrangeaceae	<i>Hydrangea robusta</i>
44	Lamiaceae	<i>Leucosceptrum canum</i>
45	Lamiaceae	<i>Perilla frutescens</i>
46	Lauraceae	<i>Cinnamomum glaucescens</i>
47	Lythraceae	<i>Duabanga grandiflora</i>
48	Malvaceae	<i>Urena lobata</i>
49	Melastomataceae	<i>Melastoma normale</i>
50	Melastomataceae	<i>Oxyspora paniculata</i>
51	Mimosaceae	<i>Albizia odoratissima</i>
52	Moraceae	<i>Ficus heterophylla</i>
53	Moraceae	<i>Ficus oligodon</i>
54	Moraceae	<i>Ficus semicordata</i>

S.No	Family	Species
55	Musaceae	<i>Musa balbisiana</i>
56	Myrsinaceae	<i>Ardisia thyrsiflora</i>
57	Myrsinaceae	<i>Maesa chisia</i>
58	Myrsinaceae	<i>Maesa robusta</i>
59	Oxalidaceae	<i>Oxalis corniculata</i>
60	Phrymaceae	<i>Majus balbisiana</i>
61	Phrymaceae	<i>Mazus japonica</i>
62	Phyllanthaceae	<i>Baccaurea ramiflora</i>
63	Phyllanthaceae	<i>Bischofia javanica</i>
64	Piperaceae	<i>Piper pedicellatum</i>
65	Plantaginaceae	<i>Plantago erosa</i>
66	Poaceae	<i>Agrostis vinealis</i>
67	Poaceae	<i>Arundo donax</i>
68	Poaceae	<i>Bambusa pallida</i>
69	Poaceae	<i>Capillipedium assimile</i>
70	Poaceae	<i>Cynodon dactylon</i>
71	Poaceae	<i>Digitaria ciliaris</i>
72	Poaceae	<i>Imperata cylindrica</i>
73	Poaceae	<i>Ixora acuminata</i>
74	Poaceae	<i>Melocalamus compactiflora</i>
75	Poaceae	<i>Miscanthus nepalensis</i>
76	Poaceae	<i>Oplismenus compositus</i>
77	Poaceae	<i>Paspalum scrobiculatum</i>
78	Poaceae	<i>Saccharum narenga</i>
79	Poaceae	<i>Saccharum spontaneum</i>
80	Poaceae	<i>Sinarundinaria falcata</i>
81	Poaceae	<i>Thysanolaena latifolia</i>
82	Polygonaceae	<i>Aconogonum molle</i>

S.No	Family	Species
83	Polygonaceae	<i>Fagopyrum dibotrys</i>
84	Polygonaceae	<i>Persicaria barbata</i>
85	Polygonaceae	<i>Persicaria capitata</i>
86	Polygonaceae	<i>Polygonum capitatum</i>
87	Proteaceae	<i>Helicia erratica</i>
88	Rosaceae	<i>Fragaria indica</i>
89	Rosaceae	<i>Rubus ellipticus</i>
90	Rosaceae	<i>Rubus lineatus</i>
91	Rosaceae	<i>Rubus lucens</i>
92	Rubiaceae	<i>Hedyotis visita</i>
93	Rubiaceae	<i>Leptodermis suaveolens</i>
94	Rubiaceae	<i>Ophiorrhiza heterostyla</i>
95	Solanaceae	<i>Solanum surattense</i>
96	Solanaceae	<i>Solanum torvum</i>
97	Tiliaceae	<i>Grewia polygama</i>
98	Ulmaceae	<i>Ulmus lanceifolia</i>
99	Urticaceae	<i>Boehmeria macrophylla</i>
100	Urticaceae	<i>Boehmeria penduliflora</i>
101	Urticaceae	<i>Boehmeria rugulosa</i>
102	Urticaceae	<i>Conocephalus suaveolens</i>
103	Urticaceae	<i>Debregeasia longifolia</i>
104	Urticaceae	<i>Elatostema glabra</i>
105	Urticaceae	<i>Elatostema sessile</i>
106	Urticaceae	<i>Pilea scripta</i>
107	Verbenaceae	<i>Caryopteris odorata</i>
108	Verbenaceae	<i>Clerodendrum bracteatum</i>
109	Violaceae	<i>Viola betonicifolia</i>
110	Vitaceae	<i>Leea asiatica</i>

S.No.	Family	Name of Species
111	Vitaceae	<i>Leea compactiflora</i>
112	Zingiberaceae	<i>Amomum subulatum</i>
113	Zingiberaceae	<i>Curcuma aromatica</i>
114	Zingiberaceae	<i>Hedychium spicatum</i>
115	Zingiberaceae	<i>Alpinia allughas</i>

Pteridophytes

S.No.	Family	Name of Species
1	Cyatheaceae	<i>Alsophila spinulosa</i>
2	Dryopteridaceae	<i>Polystichum aleuticum</i>
3	Equisetaceae	<i>Equisetum diffusum</i>
4	Pteridaceae	<i>Adiantum philippensis</i>
5	Pteridaceae	<i>Cheilanthes albomarginata</i>
6	Pteridaceae	<i>Pteris quadriaurita</i>
7	Pteridaceae	<i>Pteris subindivisa</i>
8	Pteridaceae	<i>Pteridium aquilinum</i>
9	Selaginellaceae	<i>Selaginella indica</i>
10	Woodsiaceae	<i>Athyrium angustum</i>
11	Woodsiaceae	<i>Athyrium drepanopterum</i>

Yamne Sub Basin

Angisperms

S.No	Family	Species
1	Acanthaceae	<i>Blepharis maderaspatensis</i>
2	Acanthaceae	<i>Pteracanthus rubescens</i>
3	Acanthaceae	<i>Rungia pectinata</i>
4	Acanthaceae	<i>Strobilanthes echinata</i>
5	Actinidiaceae	<i>Actinidia callosa</i>
6	Actinidiaceae	<i>Saurauia punduana</i>
7	Altingiaceae	<i>Altingia excelsa</i>
8	Amaranthaceae	<i>Achyranthes aspera</i>
9	Anacardiaceae	<i>Lannea coromandelica</i>
10	Apiaceae	<i>Hydrocotyle nepalensis</i>
11	Araceae	<i>Colocasia affinis</i>
12	Araceae	<i>Colocasia esculenta</i>
13	Araliaceae	<i>Brassaiopsis aculeata</i>
14	Araliaceae	<i>Brassaiopsis mitis</i>
15	Araliaceae	<i>Pentapanax leschenaultiana</i>
16	Araliaceae	<i>Trevesia palmata</i>
17	Araliaceae	<i>Macropanax dispermus</i>
18	Araliaceae	<i>Macropanax oreophilus</i>
19	Arecaceae	<i>Calamus tenuis</i>
20	Asteraceae	<i>Ageratum conyzoides</i>
21	Asteraceae	<i>Artemisia nilagirica</i>
22	Asteraceae	<i>Bidens bipinnata</i>
23	Asteraceae	<i>Bidens pilosa</i>
24	Asteraceae	<i>Chromolaena odorata</i>
25	Asteraceae	<i>Conyza stricta</i>
26	Asteraceae	<i>Crassocephalum crepidioides</i>

S.No	Family	Species
27	Asteraceae	<i>Gnaphalium affine</i>
28	Asteraceae	<i>Mikania micrantha</i>
29	Asteraceae	<i>Vernonia volkemerifolia</i>
30	Begoniaceae	<i>Begonia nepalensis</i>
31	Betulaceae	<i>Carpinus viminea</i>
32	Boraginaceae	<i>Cynoglossum glochidiatum</i>
33	Burseraceae	<i>Canarium strictum</i>
34	Burseraceae	<i>Garuga pinnata</i>
35	Clusiaceae	<i>Garcinia acuminata</i>
36	Combretaceae	<i>Terminalia myriocarpa</i>
37	Commelinaceae	<i>Commelina benghalensis</i>
38	Commelinaceae	<i>Murdannia divergens</i>
39	Cyperaceae	<i>Carex longipes</i>
40	Cyperaceae	<i>Carex nivea</i>
41	Cyperaceae	<i>Kyllinga brevifolia</i>
42	Euphorbiaceae	<i>Bridelia retusa</i>
43	Euphorbiaceae	<i>Claoxylon indicum</i>
44	Euphorbiaceae	<i>Euphorbia hirta</i>
45	Euphorbiaceae	<i>Glochidion assamicum</i>
46	Euphorbiaceae	<i>Macaranga denticulata</i>
47	Euphorbiaceae	<i>Ostodes paniculata</i>
48	Fabaceae	<i>Bauhinia variegata</i>
49	Fabaceae	<i>Desmodium heterocarpon</i>
50	Fabaceae	<i>Desmodium microphyllum</i>
51	Fabaceae	<i>Indigofera dosua</i>
52	Fabaceae	<i>Desmodium scandens</i>

S.No	Family	Species
53	Fagaceae	<i>Castanopsis indica</i>
54	Juglandaceae	<i>Engelhardtia spicata</i>
55	Lamiaceae	<i>Ajuga bracteosa</i>
56	Lamiaceae	<i>Anisomeles indica</i>
57	Lamiaceae	<i>Nepeta lamiopsis</i>
58	Lamiaceae	<i>Origanum vulgare</i>
59	Lamiaceae	<i>Perilla frutescens</i>
60	Lauraceae	<i>Actinodaphne obovata</i>
61	Lauraceae	<i>Beilschmiedia roxburghiana</i>
62	Lauraceae	<i>Cinnamomum glaucescens</i>
63	Lauraceae	<i>Persea robusta</i>
64	Lauraceae	<i>Phoebe hainesiana</i>
65	Lythraceae	<i>Duabanga grandiflora</i>
66	Magnoliaceae	<i>Magnolia hodgsonii</i>
67	Malvaceae	<i>Sida rhombifolia</i>
68	Malvaceae	<i>Urena lobata</i>
69	Melastomataceae	<i>Melastoma normale</i>
70	Melastomataceae	<i>Oxyspora paniculata</i>
71	Meliaceae	<i>Aglaia spectabilis</i>
72	Mimosaceae	<i>Albizia lucida</i>
73	Mimosaceae	<i>Albizia odoratissima</i>
74	Mimosaceae	<i>Albizia procera</i>
75	Moraceae	<i>Ficus auriculata</i>
76	Moraceae	<i>Ficus glaberrima</i>
77	Moraceae	<i>Ficus ovata</i>
78	Moraceae	<i>Ficus racemosa</i>
79	Moraceae	<i>Ficus semicordata</i>
80	Moraceae	<i>Artocarpus lakoocha</i>
81	Myrsinaceae	<i>Ardisia humilis</i>
82	Myrsinaceae	<i>Ardisia thyrsoiflora</i>

S.No	Family	Species
83	Myrsinaceae	<i>Maesa chisia</i>
84	Oxalidaceae	<i>Oxalis corniculata</i>
85	Pandanaceae	<i>Pandanus nepalensis</i>
86	Phrymaceae	<i>Mazus delavayi</i>
87	Phrymaceae	<i>Mazus japonica</i>
88	Phyllanthaceae	<i>Bischofia javanica</i>
89	Piperaceae	<i>Piper pedicellatum</i>
90	Plantaginaceae	<i>Plantago erosa</i>
91	Poaceae	<i>Melocalamus compactiflorus</i>
92	Poaceae	<i>Arthraxon hispidus</i>
93	Poaceae	<i>Arundo donax</i>
94	Poaceae	<i>Bambusa tulda</i>
95	Poaceae	<i>Capillipedium assimile</i>
96	Poaceae	<i>Chrysopogon acicularis</i>
97	Poaceae	<i>Cynodon dactylon</i>
98	Poaceae	<i>Digitaria ciliaris</i>
99	Poaceae	<i>Imperata cylindrica</i>
100	Poaceae	<i>Miscanthus nepalensis</i>
101	Poaceae	<i>Oplismenus compositus</i>
102	Poaceae	<i>Paspalum scrobiculatum</i>
103	Poaceae	<i>Pogonatherum paniceum</i>
104	Poaceae	<i>Saccharum longisetosus</i>
105	Poaceae	<i>Saccharum narenga</i>
106	Poaceae	<i>Cyrtococcum accrescens</i>
107	Polygonaceae	<i>Persicaria barbata</i>
108	Polygonaceae	<i>Persicaria capitata</i>
109	Rhamnaceae	<i>Rhamnus nepalensis</i>
110	Rhamnaceae	<i>Rhamnus nepalensis</i>
111	Rosaceae	<i>Duchesnea indica</i>
112	Rosaceae	<i>Rubus ellipticus</i>

S.No	Family	Species
113	Rubiaceae	<i>Hedyotis vistita</i>
114	Rubiaceae	<i>Heminodictyon vistita</i>
115	Rubiaceae	<i>Ophiorrhiza rugosa</i>
116	Rubiaceae	<i>Randia tetrasperma</i>
117	Rubiaceae	<i>Randia wallichii</i>
118	Rubiaceae	<i>Rubia sikkimensis</i>
119	Rubiaceae	<i>Ophiorrhiza heterostyla</i>
120	Rutaceae	<i>Murraya exotica</i>
121	Rutaceae	<i>Tetradium fraxinifolium</i>
122	Scrophulariaceae	<i>Verbascum thapsus</i>
123	Solanaceae	<i>Solanum surattense</i>
124	Solanaceae	<i>Solanum verbascifolium</i>
125	Sterculiaceae	<i>Abroma angustifolia</i>
126	Thymelaeaceae	<i>Daphne obovata</i>
127	Tiliaceae	<i>Grewia tenax</i>
128	Urticaceae	<i>Boehmeria macrophylla</i>
129	Urticaceae	<i>Boehmeria penduliflora</i>
130	Urticaceae	<i>Debregeasia longifolia</i>
131	Urticaceae	<i>Elatostema aquifolium</i>
132	Urticaceae	<i>Lecanthus peduncularis</i>
133	Urticaceae	<i>Pilea scripta</i>
134	Urticaceae	<i>Pilea umbrosa</i>
135	Urticaceae	<i>Piper nigrum</i>
136	Urticaceae	<i>Urtica ardens</i>
137	Urticaceae	<i>Urtica parviflora</i>
138	Verbenaceae	<i>Caryopteris odorata</i>
139	Violaceae	<i>Viola betonicifolia</i>
140	Violaceae	<i>Viola pilosa</i>
141	Zingiberaceae	<i>Amomum subulatum</i>
142	Zingiberaceae	<i>Alpinia allughas</i>

Pteridophytes

S.No	Family	Species
1	Cyatheaceae	<i>Alsophila spinulosa</i>
2	Dryopteridaceae	<i>Tectaria polymorpha</i>
3	Gleicheniaceae	<i>Dicranopteris linearis</i>
4	Lycopodiaceae	<i>Lycopodium japonicum</i>
5	Nephrolepidaceae	<i>Nephrolepis biauriculate</i>
6	Pteridaceae	<i>Pteridium aquilinum</i>
7	Pteridaceae	<i>Pteris quadriaurita</i>
8	Pteridaceae	<i>Pteris nervosa</i>
9	Pteridaceae	<i>Pteris subindivisa</i>
10	Pteridaceae	<i>Pteris vittata</i>
11	Selaginellaceae	<i>Selaginella indica</i>
12	Woodsiaceae	<i>Athyrium angustum</i>
13	Woodsiaceae	<i>Athyrium attenuatum</i>
14	Woodsiaceae	<i>Athyrium drepanopterum</i>

Simang Sub Basin

Angiosperms

S.No	Family	Species
1	Acanthaceae	<i>Pteracanthus rubescens</i>
2	Actinidiaceae	<i>Actinidia callosa</i>
3	Actinidiaceae	<i>Saurauia punduana</i>
4	Altingiaceae	<i>Altingia excelsa</i>
5	Apiaceae	<i>Apium graveolens</i>
6	Apiaceae	<i>Hydrocotyle nepalensis</i>
7	Apiaceae	<i>Centella asiatica</i>
8	Apocynaceae	<i>Rauwolfia serpentina</i>
9	Araceae	<i>Arisaema concinnum</i>
10	Araceae	<i>Colocasia esculenta</i>
11	Araceae	<i>Colocasia fallax</i>
12	Araceae	<i>Alocasia macrorrhizos</i>
13	Araliaceae	<i>Brassaiopsis aculeata</i>
14	Araliaceae	<i>Brassaiopsis mitis</i>
15	Asteraceae	<i>Ageratum conyzoides</i>
16	Asteraceae	<i>Bidens bipinnata</i>
17	Asteraceae	<i>Bidens pilosa</i>
18	Asteraceae	<i>Chromolaena odorata</i>
19	Asteraceae	<i>Conyza japonica</i>
20	Asteraceae	<i>Cotula australis</i>
21	Asteraceae	<i>Dichrocephala chrysanthemifolia</i>
22	Asteraceae	<i>Eclipta alba</i>
23	Asteraceae	<i>Eupatorium odoratum</i>
24	Asteraceae	<i>Mikania micrantha</i>
25	Balsaminaceae	<i>Impatiens laevigata</i>
26	Begoniaceae	<i>Begonia nepalensis</i>

S.No	Family	Species
27	Betulaceae	<i>Alnus nepalensis</i>
28	Boraginaceae	<i>Cynoglossum glochidiatum</i>
29	Brassicaceae	<i>Cardamine hirsuta</i>
30	Brassicaceae	<i>Cardamine hispida</i>
31	Buddlejaceae	<i>Buddleja asiatica</i>
32	Caryophyllaceae	<i>Drymaria mollis</i>
33	Chenopodiaceae	<i>Chenopodium album</i>
34	Combretaceae	<i>Terminalia myriocarpa</i>
35	Commelinaceae	<i>Commelina bengalensis</i>
36	Commelinaceae	<i>Commelina paludosa</i>
37	Cyperaceae	<i>Carex nivea</i>
38	Cyperaceae	<i>Eleocharis congesta</i>
39	Cyperaceae	<i>Fimbristylis dichotoma</i>
40	Cyperaceae	<i>Kyllinga brevifolia</i>
41	Dilleniaceae	<i>Dillenia indica</i>
42	Euphorbiaceae	<i>Bridelia retusa</i>
43	Euphorbiaceae	<i>Bridelia retusa</i>
44	Euphorbiaceae	<i>Claoxylon indicum</i>
45	Euphorbiaceae	<i>Euphorbia hirta</i>
46	Euphorbiaceae	<i>Glochidion assamicum</i>
47	Euphorbiaceae	<i>Macaranga denticulata</i>
48	Euphorbiaceae	<i>Ostodes paniculata</i>
49	Fabaceae	<i>Desmodium heterocarpon</i>
50	Fabaceae	<i>Desmodium tenuifolium</i>
51	Fabaceae	<i>Trifolium repens</i>
52	Fagaceae	<i>Castanopsis indica</i>

S.No	Family	Species
53	Lamiaceae	<i>Citrus limetta</i>
54	Lamiaceae	<i>Perilla frutescens</i>
55	Lauraceae	<i>Beilschmiedia roxburghiana</i>
56	Lauraceae	<i>Cinnamomum glaucescens</i>
57	Lauraceae	<i>Cinnamomum obtusifolium</i>
58	Lauraceae	<i>Cinnamomum pauciflorum</i>
59	Lauraceae	<i>Cinnamomum tamala</i>
60	Lythraceae	<i>Duabanga grandiflora</i>
61	Malvaceae	<i>Bombax ceiba</i>
62	Malvaceae	<i>Kydia calycina</i>
63	Malvaceae	<i>Pterospermum acerifolium</i>
64	Malvaceae	<i>Sida acuta</i>
65	Malvaceae	<i>Urena lobata</i>
66	Melastomataceae	<i>Melastoma malabathricum</i>
67	Melastomataceae	<i>Melastoma normale</i>
68	Melastomataceae	<i>Oxyspora paniculata</i>
69	Meliaceae	<i>Chukrasia tabularis</i>
70	Mimosaceae	<i>Albizia odoratissima</i>
71	Mimosaceae	<i>Albizia procera</i>
72	Moraceae	<i>Ficus auriculata</i>
73	Moraceae	<i>Ficus oligodon</i>
74	Moraceae	<i>Ficus semicordata</i>
75	Moraceae	<i>Artocarpus heterophyllus</i>
76	Moraceae	<i>Artocarpus integrifolia</i>
77	Musaceae	<i>Musa balbisiana</i>
78	Myrsinaceae	<i>Maesa chisia</i>
79	Myrsinaceae	<i>Maesa robusta</i>
80	Myrtaceae	<i>Syzygium assamicum</i>
81	Oxalidaceae	<i>Oxalis corniculata</i>
82	Oxalidaceae	<i>Oxalis latifolia</i>

S.No	Family	Species
83	Phrymaceae	<i>Mazus japonica</i>
84	Phyllanthaceae	<i>Bischofia javanica</i>
85	Piperaceae	<i>Piper attenuatum</i>
86	Piperaceae	<i>Piper pedicellatum</i>
87	Poaceae	<i>Agrostis vinealis</i>
88	Poaceae	<i>Arthraxon hispidus</i>
89	Poaceae	<i>Cynodon dactylon</i>
90	Poaceae	<i>Digitaria ciliaris</i>
91	Poaceae	<i>Eragrostis tenella</i>
92	Poaceae	<i>Imperata cylindrica</i>
93	Poaceae	<i>Ixora acuminata</i>
94	Poaceae	<i>Oplismenus compositus</i>
95	Poaceae	<i>Panicum psilopodium</i>
96	Poaceae	<i>Paspalum scrobiculatum</i>
97	Poaceae	<i>Cyrtococcum accrescens</i>
98	Poaceae	<i>Setaria palmifolia</i>
99	Poaceae	<i>Setaria paniculifera</i>
100	Polygonaceae	<i>Aconogonum molle</i>
101	Polygonaceae	<i>Persicaria barbata</i>
102	Polygonaceae	<i>Persicaria capitata</i>
103	Polygonaceae	<i>Polygonum capitatum</i>
104	Polygonaceae	<i>Polygonum nepalense</i>
105	Polygonaceae	<i>Polygonum plebeium</i>
106	Proteaceae	<i>Helicia robusta</i>
107	Rosaceae	<i>Duchesnea indica</i>
108	Rosaceae	<i>Fragaria nubicola</i>
109	Rubiaceae	<i>Anthocephalus cadamba</i>
110	Rubiaceae	<i>Hedyotis vestita</i>
111	Rubiaceae	<i>Heminodictyon vistita</i>
112	Rubiaceae	<i>Leptodermis suaveolens</i>

S.No	Family	Species
113	Rubiaceae	<i>Psychotria calocarpa</i>
114	Rubiaceae	<i>Psychotria griffithii</i>
115	Rubiaceae	<i>Randia wallichii</i>
116	Rubiaceae	<i>Ophiorrhiza heterostyla</i>
117	Rubiaceae	<i>Ophiorrhiza rugosa</i>
118	Simaroubaceae	<i>Ailanthus integrifolia</i>
119	Solanaceae	<i>Solanum erianthum</i>
120	Sterculiaceae	<i>Endospermum chinense</i>
121	Tiliaceae	<i>Grewia tenax</i>
122	Ulmaceae	<i>Ulmus lanceifolia</i>
123	Urticaceae	<i>Boehmeria macrophylla</i>
124	Urticaceae	<i>Boehmeria penduliflora</i>
125	Urticaceae	<i>Boehmeria rugulosa</i>
126	Urticaceae	<i>Debregeasia longifolia</i>
127	Urticaceae	<i>Girardinia diversifolia</i>
128	Urticaceae	<i>Gonostegia hirta</i>
129	Urticaceae	<i>Pilea scripta</i>
130	Urticaceae	<i>Pilea umbrosa</i>
131	Urticaceae	<i>Urtica ardens</i>
132	Urticaceae	<i>Urtica parviflora</i>
133	Vitaceae	<i>Leea asiatica</i>
134	Zingiberaceae	<i>Alpinia allughas</i>
135	Zingiberaceae	<i>Amomum subulatum</i>
136	Zingiberaceae	<i>Hedychium spicatum</i>

Pteridophytes

S.No.	Family	Species
1	Cyatheaceae	<i>Alsophila spinulosa</i>
2	Equisetaceae	<i>Equisetum diffusum</i>
3	Equisetaceae	<i>Equisetum ramosissimum</i>
4	Nephrolepidaceae	<i>Nephrolepis biauriculata</i>
5	Nephrolepidaceae	<i>Nephrolepis cordifolia</i>
6	Polypodiaceae	<i>Microsorium pteropus</i>
7	Pteridaceae	<i>Cheilanthes tenuifolia</i>
8	Pteridaceae	<i>Pteris biaurita</i>
9	Pteridaceae	<i>Pteris cretica</i>
10	Pteridaceae	<i>Pteris quadriaurita</i>
11	Pteridaceae	<i>Pteris tripartita</i>
12	Pteridaceae	<i>Pteris wallichiana</i>
13	Selaginellaceae	<i>Selaginella decipiens</i>
14	Woodsiaceae	<i>Athyrium angustum</i>

Hirit Sub Basin

Angiosperms

S.No	Family	Species
1	Acanthaceae	<i>Pteracanthus rubescens</i>
2	Altingiaceae	<i>Altingia excelsa</i>
3	Amaranthaceae	<i>Achyranthes aspera</i>
4	Anacardiaceae	<i>Holigarna longifolia</i>
5	Anacardiaceae	<i>Lannea coromandelica</i>
6	Annonaceae	<i>Annona reticulata</i>
7	Apiaceae	<i>Hydrocotyle nepalensis</i>
8	Araceae	<i>Arisaema erubescens</i>
9	Araceae	<i>Colocasia affinis</i>
10	Araceae	<i>Colocasia esculenta</i>
11	Araliaceae	<i>Trevesia palmata</i>
12	Arecaceae	<i>Calamus flagellum</i>
13	Arecaceae	<i>Calamus floribundus</i>
14	Arecaceae	<i>Calamus inermis</i>
15	Arecaceae	<i>Calamus tenuis</i>
16	Arecaceae	<i>Korthalsia flagellaris</i>
17	Arecaceae	<i>Pinanga gracilis</i>
18	Asteraceae	<i>Ageratum conyzoides</i>
19	Asteraceae	<i>Bidens bipinnata</i>
20	Asteraceae	<i>Bidens pilosa</i>
21	Asteraceae	<i>Blumea hieracifolia</i>
22	Asteraceae	<i>Chromolaena odorata</i>
23	Asteraceae	<i>Conyza japonica</i>
24	Asteraceae	<i>Conyza stricta</i>
25	Asteraceae	<i>Dichrocephala chrysanthemifolia</i>
26	Asteraceae	<i>Gnaphalium affine</i>
27	Asteraceae	<i>Mikania micrantha</i>

S.No	Family	Species
28	Asteraceae	<i>Vernonia volkemerifolia</i>
29	Balsaminaceae	<i>Impatiens arguta</i>
30	Balsaminaceae	<i>Impatiens violaeiflora</i>
31	Begoniaceae	<i>Begonia megaptera</i>
32	Begoniaceae	<i>Begonia nepalensis</i>
33	Boraginaceae	<i>Cynoglossum glochidiatum</i>
34	Brassicaceae	<i>Cardamine hirsuta</i>
35	Burseraceae	<i>Canarium strictum</i>
36	Caryophyllaceae	<i>Drymaria mollis</i>
37	Combretaceae	<i>Terminalia myriocarpa</i>
38	Commelinaceae	<i>Commelina benghalensis</i>
39	Commelinaceae	<i>Pollia hasskarlii</i>
40	Cucurbitaceae	<i>Cucumis melo</i>
41	Cyperaceae	<i>Carex longisetosus</i>
42	Cyperaceae	<i>Carex nivea</i>
43	Cyperaceae	<i>Cyperus rotundus</i>
44	Cyperaceae	<i>Kyllinga brevifolia</i>
45	Euphorbiaceae	<i>Glochidion velutinum</i>
46	Euphorbiaceae	<i>Macaranga denticulata</i>
47	Euphorbiaceae	<i>Ostodes paniculata</i>
48	Fabaceae	<i>Bauhinia purpurea</i>
49	Fabaceae	<i>Desmodium heterocarpon</i>
50	Fabaceae	<i>Pongamia pinnata</i>
51	Fagaceae	<i>Castanopsis indica</i>
52	Gentianaceae	<i>Crawfurdia speciosa</i>
53	Gesneriaceae	<i>Chirita pumila</i>
54	Gesneriaceae	<i>Didymocarpus oblongus</i>

S.No	Family	Species
55	Juglandaceae	<i>Engelhardtia spicata</i>
56	Lamiaceae	<i>Nepeta lamiopsis</i>
57	Lamiaceae	<i>Perilla frutescens</i>
58	Lamiaceae	<i>Scutellaria scandens</i>
59	Lythraceae	<i>Duabanga grandiflora</i>
60	Magnoliaceae	<i>Michelia glabra</i>
61	Malvaceae	<i>Bombax ceiba</i>
62	Malvaceae	<i>Kydia calycina</i>
63	Malvaceae	<i>Pterospermum acerifolium</i>
64	Malvaceae	<i>Sida rhombifolia</i>
65	Malvaceae	<i>Urena lobata</i>
66	Melastomataceae	<i>Oxyspora paniculata</i>
67	Meliaceae	<i>Chukrasia tabularis</i>
68	Meliaceae	<i>Dysoxylum grande</i>
69	Meliaceae	<i>Toona microcarpa</i>
70	Mimosaceae	<i>Albizia lucida</i>
71	Moraceae	<i>Ficus heterophylla</i>
72	Moraceae	<i>Ficus oligodon</i>
73	Moraceae	<i>Artocarpus chaplasha</i>
74	Moraceae	<i>Artocarpus integrifolia</i>
75	Musaceae	<i>Musa acuminata</i>
76	Musaceae	<i>Musa balbisiana</i>
77	Myrsinaceae	<i>Embelia ribes</i>
78	Myrsinaceae	<i>Maesa chisia</i>
79	Oxalidaceae	<i>Oxalis corniculata</i>
80	Pandanaceae	<i>Pandanus nepalensis</i>
81	Piperaceae	<i>Piper pedicellatum</i>
82	Piperaceae	<i>Piper peploides</i>
83	Plantaginaceae	<i>Plantago erosa</i>
84	Poaceae	<i>Agrostis vinealis</i>

S.No	Family	Species
85	Poaceae	<i>Arthraxon hispidus</i>
86	Poaceae	<i>Bambusa tulda</i>
87	Poaceae	<i>Capillipedium assimile</i>
88	Poaceae	<i>Cyrtococcum accrescens</i>
89	Poaceae	<i>Dendrocalamus hamiltonii</i>
90	Poaceae	<i>Digitaria ciliaris</i>
91	Poaceae	<i>Imperata cylindrica</i>
92	Poaceae	<i>Isachne albens</i>
93	Poaceae	<i>Melocalamus compactiflorus</i>
94	Poaceae	<i>Oplismenus compositus</i>
95	Poaceae	<i>Saccharum longifolium</i>
96	Poaceae	<i>Sporobolus diander</i>
97	Poaceae	<i>Thysanolaena latifolia</i>
98	Podocarpaceae	<i>Podocarpus neriifolius</i>
99	Polygonaceae	<i>Persicaria barbata</i>
100	Polygonaceae	<i>Persicaria capitata</i>
101	Polygonaceae	<i>Persicaria pubescens</i>
102	Polygonaceae	<i>Polygonum amplexicaule</i>
103	Polygonaceae	<i>Bistorta amplexicaulis</i>
104	Rhizophoraceae	<i>Carallia brachiata</i>
105	Rosaceae	<i>Neillia thyrsoflora</i>
106	Rubiaceae	<i>Galium aparine</i>
107	Rubiaceae	<i>Luculia pinceana</i>
108	Rubiaceae	<i>Psychotria calocarpa</i>
109	Rubiaceae	<i>Randia wallichii</i>
110	Rubiaceae	<i>Rubus calycinus</i>
111	Rubiaceae	<i>Rubus ellipticus</i>
112	Rubiaceae	<i>Rubus nepalensis</i>
113	Rubiaceae	<i>Ophiorrhiza heterostyla</i>
114	Sapindaceae	<i>Harpullia arborea</i>

S.No	Family	Species
115	Solanaceae	<i>Solanum erianthum</i>
116	Solanaceae	<i>Solanum torvum</i>
117	Urticaceae	<i>Boehmeria glomerulifera</i>
118	Urticaceae	<i>Boehmeria longifolia</i>
119	Urticaceae	<i>Boehmeria macrophylla</i>
120	Urticaceae	<i>Elatostema glabra</i>
121	Urticaceae	<i>Elatostema sessile</i>
122	Urticaceae	<i>Girardinia diversifolia</i>
123	Urticaceae	<i>Lecanthus peduncularis</i>
124	Urticaceae	<i>Pilea glaberrima</i>
125	Urticaceae	<i>Pilea umbrosa</i>
126	Verbenaceae	<i>Callicarpa arborea</i>
127	Vitaceae	<i>Leea asiatica</i>
128	Zingiberaceae	<i>Amomum subulatum</i>
129	Zingiberaceae	<i>Hedychium spicatum</i>
130	Zingiberaceae	<i>Alpinia allughas</i>

Pteridophytes

S.No.	Family	Species
1	Cyatheaceae	<i>Alsophila spinulosa</i>
2	Dryopteridaceae	<i>Tectaria polymorpha</i>
3	Nephrolepidaceae	<i>Nephrolepis biauriculate</i>
4	Pteridaceae	<i>Pteris subindivisa</i>
5	Pteridaceae	<i>Pteridium aquilinum</i>
6	Selaginellaceae	<i>Selaginella indica</i>
7	Woodsiaceae	<i>Athyrium angustum</i>
8	Woodsiaceae	<i>Athyrium drepanopterum</i>

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Angiosperms

S.No	Family	Species
1	Actinidiaceae	<i>Saurauia napaulensis</i>
2	Actinidiaceae	<i>Saurauia nepalensis</i>
3	Alangiaceae	<i>Alangium chinense</i>
4	Apiaceae	<i>Hydrocotyle nepalensis</i>
5	Araceae	<i>Arisaema tortuosum</i>
6	Araceae	<i>Colocasia affinis</i>
7	Araceae	<i>Colocasia esculenta</i>
8	Araceae	<i>Arisaema erubescens</i>
9	Araliaceae	<i>Aralia armata</i>
10	Araliaceae	<i>Aralia chinensis</i>
11	Araliaceae	<i>Schefflera bengalensis</i>
12	Araliaceae	<i>Trevesia palmata</i>
13	Araliaceae	<i>Macropanax dispermus</i>
14	Arecaceae	<i>Calamus flagellum</i>
15	Arecaceae	<i>Calamus floribundus</i>
16	Asteraceae	<i>Ageratum conyzoides</i>
17	Asteraceae	<i>Bidens bipinnata</i>
18	Asteraceae	<i>Bidens pilosa</i>
19	Asteraceae	<i>Blumea hieracifolia</i>
20	Asteraceae	<i>Conyza stricta</i>
21	Asteraceae	<i>Dichrocephala chrysanthemifolia</i>
22	Asteraceae	<i>Gnaphalium affine</i>
23	Asteraceae	<i>Vernonia volkemerifolia</i>
24	Balsaminaceae	<i>Impatiens angustiflora</i>
25	Balsaminaceae	<i>Impatiens arguta</i>
26	Balsaminaceae	<i>Impatiens tripetala</i>

S.No	Family	Species
27	Balsaminaceae	<i>Impatiens violaeiflora</i>
28	Begoniaceae	<i>Begonia megaptera</i>
29	Betulaceae	<i>Alnus nepalensis</i>
30	Boraginaceae	<i>Cynoglossum glochidiatum</i>
31	Brassicaceae	<i>Cardamine hirsuta</i>
32	Buddlejaceae	<i>Buddleja asiatica</i>
33	Buddlejaceae	<i>Buddleja paniculata</i>
34	Burseraceae	<i>Canarium strictum</i>
35	Cannabaceae	<i>Trema amboinensis</i>
36	Caryophyllaceae	<i>Cerastium nigrescens</i>
37	Caryophyllaceae	<i>Drymaria mollis</i>
38	Caryophyllaceae	<i>Stellaria decumbens</i>
39	Combretaceae	<i>Terminalia myriocarpa</i>
40	Commelinaceae	<i>Commelina benghalensis</i>
41	Commelinaceae	<i>Murdannia divergens</i>
42	Commelinaceae	<i>Murdannia japonica</i>
43	Cucurbitaceae	<i>Cucumis melo</i>
44	Cyperaceae	<i>Carex myosurus</i>
45	Cyperaceae	<i>Carex nivea</i>
46	Cyperaceae	<i>Cyperus rotundus</i>
47	Cyperaceae	<i>Kyllinga brevifolia</i>
48	Datisceae	<i>Tetrameles nudiflora</i>
49	Euphorbiaceae	<i>Glochidion velutinum</i>
50	Euphorbiaceae	<i>Macaranga denticulata</i>
51	Fabaceae	<i>Desmodium heterocarpon</i>
52	Fabaceae	<i>Millettia pulchra</i>

S.No	Family	Species
53	Fagaceae	<i>Castanopsis indica</i>
54	Fagaceae	<i>Lithocarpus listeri</i>
55	Gentianaceae	<i>Crawfurdia speciosa</i>
56	Gesneriaceae	<i>Chirita pumila</i>
57	Juglandaceae	<i>Engelhardtia spicata</i>
58	Lamiaceae	<i>Nepeta lamiopsis</i>
59	Lamiaceae	<i>Perilla frutescens</i>
60	Lamiaceae	<i>Scutellaria plectranthoides</i>
61	Lamiaceae	<i>Scutellaria scandens</i>
62	Lauraceae	<i>Cinnamomum pauciflorum</i>
63	Lythraceae	<i>Duabanga grandiflora</i>
64	Melastomataceae	<i>Oxyspora paniculata</i>
65	Mimosaceae	<i>Albizia lucida</i>
66	Moraceae	<i>Ficus oligodon</i>
67	Moraceae	<i>Ficus semicordata</i>
68	Musaceae	<i>Musa acuminata</i>
69	Myrsinaceae	<i>Embelia ribes</i>
70	Myrsinaceae	<i>Maesa chisia</i>
71	Myrtaceae	<i>Syzygium assamicum</i>
72	Piperaceae	<i>Piper pedicellatum</i>
73	Piperaceae	<i>Piper peploides</i>
74	Piperaceae	<i>Piper sylvaticum</i>
75	Plantaginaceae	<i>Plantago erosa</i>
76	Poaceae	<i>Arthraxon hispidus</i>
77	Poaceae	<i>Bambusa pallida</i>
78	Poaceae	<i>Bambusa tulda</i>
79	Poaceae	<i>Capillipedium assimile</i>
80	Poaceae	<i>Cyrtococcum accrescens</i>
81	Poaceae	<i>Dendrocalamus hamiltonii</i>
82	Poaceae	<i>Dendrocalamus strictus</i>

S.No	Family	Species
83	Poaceae	<i>Isachne albens</i>
84	Poaceae	<i>Melocalamus compactiflorus</i>
85	Poaceae	<i>Miscanthus nepalensis</i>
86	Poaceae	<i>Oplismenus compositus</i>
87	Poaceae	<i>Saccharum longisetosus</i>
88	Poaceae	<i>Saccharum narenga</i>
89	Poaceae	<i>Setaria palmifolia</i>
90	Poaceae	<i>Setaria sphacelata</i>
91	Poaceae	<i>Thysanolaena latifolia</i>
92	Polygonaceae	<i>Aconogonum molle</i>
93	Polygonaceae	<i>Persicaria barbata</i>
94	Polygonaceae	<i>Persicaria capitata</i>
95	Polygonaceae	<i>Persicaria nepalensis</i>
96	Polygonaceae	<i>Persicaria pubescens</i>
97	Polygonaceae	<i>Polygonum amplexicaule</i>
98	Polygonaceae	<i>Polygonum capitatum</i>
99	Polygonaceae	<i>Bistorta amplexicaulis</i>
100	Rosaceae	<i>Neillia thyrsoflora</i>
101	Rosaceae	<i>Rosa brunonii</i>
102	Rosaceae	<i>Rubus ellipticus</i>
103	Rosaceae	<i>Rubus nepalensis</i>
104	Rubiaceae	<i>Galium aparine</i>
105	Rubiaceae	<i>Galium triflorum</i>
106	Rubiaceae	<i>Luculia pinceana</i>
107	Rubiaceae	<i>Psychotria aborensis</i>
108	Rubiaceae	<i>Randia tetrasperma</i>
109	Rubiaceae	<i>Randia wallichii</i>
110	Rubiaceae	<i>Rubia cordifolia</i>
111	Scrophulariaceae	<i>Majus surculosa</i>
112	Scrophulariaceae	<i>Wulfenia amherstiana</i>

113	Simaroubaceae	<i>Ailanthus grandis</i>
114	Solanaceae	<i>Solanum torvum</i>
115	Urticaceae	<i>Boehmeria longifolia</i>
116	Urticaceae	<i>Boehmeria macrophylla</i>
117	Urticaceae	<i>Boehmeria nivea</i>
118	Urticaceae	<i>Debregeasia longifolia</i>
119	Urticaceae	<i>Elatostema sessile</i>
120	Urticaceae	<i>Girardinia diversifolia</i>
121	Urticaceae	<i>Lecanthus peduncularis</i>
122	Urticaceae	<i>Oreocnide integrifolia</i>
123	Urticaceae	<i>Pilea glaberrima</i>
124	Urticaceae	<i>Pilea scripta</i>
125	Urticaceae	<i>Pilea umbrosa</i>
126	Urticaceae	<i>Urtica parviflora</i>
127	Urticaceae	<i>Sarcochlamys pulcherrima</i>
128	Verbenaceae	<i>Clerodendrum bracteatum</i>
129	Verbenaceae	<i>Clerodendrum colebrookianum</i>
130	Violaceae	<i>Viola betonicifolia</i>
131	Vitaceae	<i>Leea asiatica</i>
131	Zingiberaceae	<i>Amomum subulatum</i>
132	Zingiberaceae	<i>Curcuma aromatica</i>
133	Zingiberaceae	<i>Hedychium spicatum</i>

Pteridophytes

S.No	Family	Species
1	Cyatheaceae	<i>Alsophila spinulosa</i>
2	Dryopteridaceae	<i>Tectaria polymorpha</i>
3	Equisetaceae	<i>Equisetum diffusum</i>
4	Equisetaceae	<i>Equisetum ramosissimum</i>
5	Nephrolepidaceae	<i>Nephrolepis biauriculate</i>
6	Pteridaceae	<i>Pteris stenophylla</i>
7	Pteridaceae	<i>Pteris subindivisa</i>
8	Selaginellaceae	<i>Selaginella indica</i>
9	Woodsiaceae	<i>Athyrium drepanopterum</i>

Siyom II Sub Basin

Angiosperms

S.No	Family	Species
1	Actinidiaceae	<i>Saurauia nepalensis</i>
2	Actinidiaceae	<i>Saurauia punduana</i>
3	Alangiaceae	<i>Alangium begonifolium</i>
4	Alangiaceae	<i>Alangium chinense</i>
5	Altingiaceae	<i>Altingia excelsa</i>
6	Anacardiaceae	<i>Lannea coromandelica</i>
7	Anacardiaceae	<i>Rhus chinensis</i>
8	Anacardiaceae	<i>Spondias pinnata</i>
9	Araceae	<i>Colocasia esculenta</i>
10	Araceae	<i>Arisaema erubescens</i>
11	Araceae	<i>Arisaema tortuosum</i>
12	Araliaceae	<i>Brassaiopsis griffithii</i>
13	Araliaceae	<i>Brassaiopsis mitis</i>
14	Araliaceae	<i>Schefflera bengalensis</i>
15	Araliaceae	<i>Schefflera venulosa</i>
16	Araliaceae	<i>Trevesia palmata</i>
17	Araliaceae	<i>Macropanax dispersum</i>
18	Araliaceae	<i>Macropanax oreophilus</i>
19	Arecaceae	<i>Arenga saccharifera</i>
20	Arecaceae	<i>Calamus flagellum</i>
21	Arecaceae	<i>Calamus floribundus</i>
22	Arecaceae	<i>Pinanga gracilis</i>
23	Asteraceae	<i>Ageratum conyzoides</i>
24	Asteraceae	<i>Artemisia nilagirica</i>
25	Asteraceae	<i>Bidens bipinnata</i>
26	Asteraceae	<i>Crassocephalum crepidioides</i>
27	Asteraceae	<i>Prenanthes scandens</i>

S.No	Family	Species
28	Asteraceae	<i>Xanthium strumarium (Xanthium indicum)</i>
29	Balsaminaceae	<i>Impatiens angustiflora</i>
30	Balsaminaceae	<i>Impatiens chinensis</i>
31	Begoniaceae	<i>Begonia nepalensis</i>
32	Betulaceae	<i>Alnus nepalensis</i>
33	Bignoniaceae	<i>Oroxylum indicum</i>
34	Burseraceae	<i>Garuga pinnata</i>
35	Cannabaceae	<i>Trema amboinensis</i>
36	Caryophyllaceae	<i>Cerastium nigrescens</i>
37	Caryophyllaceae	<i>Stellaria decumbens</i>
38	Combretaceae	<i>Terminalia myriocarpa</i>
39	Commelinaceae	<i>Commelina benghalensis</i>
40	Cyperaceae	<i>Carex cruciata</i>
41	Cyperaceae	<i>Cyperus iria</i>
42	Cyperaceae	<i>Cyperus rotundus</i>
43	Euphorbiaceae	<i>Macaranga denticulata</i>
44	Flacourtiaceae	<i>Xylosma longifolium</i>
45	Gesneriaceae	<i>Chirita pumila</i>
46	Hydrangeaceae	<i>Hydrangea robusta</i>
47	Hypoxidaceae	<i>Molineria capitulata</i>
48	Lamiaceae	<i>Colquhounia vestita</i>
49	Lamiaceae	<i>Scutellaria plectranthoides</i>
50	Lauraceae	<i>Cinnamomum glaucescens</i>
51	Lauraceae	<i>Actinodaphne angustifolia</i>
52	Melastomataceae	<i>Oxyspora paniculata</i>
53	Mimosaceae	<i>Albizia lucida</i>
54	Mimosaceae	<i>Albizia odoratissima</i>

S.No	Family	Species
55	Moraceae	<i>Ficus auriculata</i>
56	Moraceae	<i>Ficus racemosa</i>
57	Moraceae	<i>Ficus semicordata</i>
58	Moraceae	<i>Ficus virens</i>
59	Musaceae	<i>Musa acuminata</i>
60	Musaceae	<i>Musa balbisiana</i>
61	Myrsinaceae	<i>Maesa chisia</i>
62	Piperaceae	<i>Piper pedicellatum</i>
63	Piperaceae	<i>Piper peploides</i>
64	Poaceae	<i>Arthraxon hispidus</i>
65	Poaceae	<i>Bambusa pallida</i>
66	Poaceae	<i>Dendrocalamus hamiltonii</i>
67	Poaceae	<i>Dendrocalamus strictus</i>
68	Poaceae	<i>Isachne longiflora</i>
69	Poaceae	<i>Ixora acuminata</i>
70	Poaceae	<i>Melocalamus compactiflorus</i>
71	Poaceae	<i>Miscanthus nepalensis</i>
72	Poaceae	<i>Oplismenus compositus</i>
73	Poaceae	<i>Paspalum paspalodes</i>
74	Poaceae	<i>Saccharum narenga</i>
75	Poaceae	<i>Setaria palmifolia</i>
76	Poaceae	<i>Cyrtococcum accrescens</i>
77	Polygonaceae	<i>Aconogonum molle</i>
78	Polygonaceae	<i>Persicaria capitata</i>
79	Polygonaceae	<i>Persicaria pubescens</i>
80	Polygonaceae	<i>Polygonum capitatum</i>
81	Polygonaceae	<i>Polygonum chinense</i>
82	Rhamnaceae	<i>Rhamnus nepalensis</i>
83	Rosaceae	<i>Rosa brunonii</i>

S.No	Family	Species
84	Rosaceae	<i>Rubus ellipticus</i>
85	Rubiaceae	<i>Galium triflorum</i>
86	Rubiaceae	<i>Hedyotis corymbosa</i>
87	Rubiaceae	<i>Rubia cordifolia</i>
88	Rutaceae	<i>Clausena heptaphylla</i>
89	Sapindaceae	<i>Lepisanthes tetraphylla</i>
90	Sapotaceae	<i>Palaquium polyanthum</i>
91	Scrophulariaceae	<i>Wulfenia amherstiana</i>
92	Simaroubaceae	<i>Ailanthus grandis</i>
93	Solanaceae	<i>Solanum torvum</i>
94	Urticaceae	<i>Boehmeria longifolia</i>
95	Urticaceae	<i>Boehmeria macrophylla</i>
96	Urticaceae	<i>Boehmeria nivea</i>
97	Urticaceae	<i>Boehmeria platyphylla</i>
98	Urticaceae	<i>Debregeasia longifolia</i>
99	Urticaceae	<i>Elatostema glabra</i>
100	Urticaceae	<i>Elatostema sesquifolium</i>
101	Urticaceae	<i>Elatostema sessile</i>
102	Urticaceae	<i>Oreocnide rubescens</i>
103	Urticaceae	<i>Pilea scripta</i>
104	Urticaceae	<i>Pilea umbrosa</i>
105	Urticaceae	<i>Pouzolzia zeylanica</i>
106	Urticaceae	<i>Urtica ardens</i>
107	Urticaceae	<i>Sarcochlamys pulcherrima</i>
108	Verbenaceae	<i>Clerodendrum colebrookianum</i>
109	Vitaceae	<i>Leea asiatica</i>
110	Vitaceae	<i>Leea compactiflora</i>
111	Zingiberaceae	<i>Costus speciosus</i>
112	Zingiberaceae	<i>Hedychium spicatum</i>

Pteridophytes

Family	Species
Cyatheaceae	<i>Alsophila spinulosa</i>
Equisetaceae	<i>Equisetum diffusum</i>
Equisetaceae	<i>Equisetum ramosissimum</i>
Pteridaceae	<i>Adiantum lunulatum</i>
Pteridaceae	<i>Pteris stenophylla</i>
Selaginellaceae	<i>Selaginella indica</i>
Woodsiaceae	<i>Athyrium angustum</i>

Siyom III Sub Basin

Angiosperms

S.No	Family	Species
1	Actinidiaceae	<i>Saurauia napaulensis</i>
2	Actinidiaceae	<i>Saurauia roxburghii</i>
3	Alangiaceae	<i>Alangium chinense</i>
4	Altingiaceae	<i>Altingia excelsa</i>
5	Amaranthaceae	<i>Achyranthes aspera</i>
6	Amaranthaceae	<i>Cyathula tomentosa</i>
7	Anacardiaceae	<i>Lannea coromandelica</i>
8	Anacardiaceae	<i>Rhus chinensis</i>
9	Apiaceae	<i>Hydrocotyle nepalensis</i>
10	Apiaceae	<i>Oenanthe javanica</i>
11	Araceae	<i>Arisaema tortuosum</i>
12	Araceae	<i>Colocasia esculenta</i>
13	Araliaceae	<i>Brassaiopsis aculeata</i>
14	Araliaceae	<i>Brassaiopsis griffithii</i>
15	Araliaceae	<i>Brassaiopsis mitis</i>
16	Araliaceae	<i>Schefflera bengalensis</i>
17	Araliaceae	<i>Schefflera impressa</i>
18	Arecaceae	<i>Arenga saccharifera</i>
19	Arecaceae	<i>Calamus floribundus</i>
20	Asteraceae	<i>Ageratum conyzoides</i>
21	Asteraceae	<i>Artemisia nilagirica</i>
22	Asteraceae	<i>Bidens bipinnata</i>
23	Asteraceae	<i>Conyza japonica</i>
24	Asteraceae	<i>Crassocephalum crepidioides</i>
25	Asteraceae	<i>Dichrocephala chrysanthemoides</i>
26	Asteraceae	<i>Dubyaea hispida</i>
27	Asteraceae	<i>Gnaphalium affine</i>

S.No	Family	Species
28	Asteraceae	<i>Senecio scandens</i>
29	Asteraceae	<i>Vernonia silhetensis</i>
30	Asteraceae	<i>Xanthium strumarium</i>
31	Asteraceae	<i>Youngia gracilis</i>
32	Balsaminaceae	<i>Impatiens angustiflora</i>
33	Balsaminaceae	<i>Impatiens cathcartii</i>
34	Balsaminaceae	<i>Impatiens tripetala</i>
35	Begoniaceae	<i>Begonia megaptera</i>
36	Begoniaceae	<i>Begonia palmata</i>
37	Betulaceae	<i>Alnus nepalensis</i>
38	Bignoniaceae	<i>Oroxylum indicum</i>
39	Boraginaceae	<i>Cynoglossum glochidiatum</i>
40	Cannabaceae	<i>Celtis tetrandra</i>
41	Caprifoliaceae	<i>Viburnum colebrookianum</i>
42	Caprifoliaceae	<i>Viburnum cylindricum</i>
43	Caprifoliaceae	<i>Viburnum erubescens</i>
44	Caryophyllaceae	<i>Drymaria mollis</i>
45	Combretaceae	<i>Terminalia bellerica</i>
46	Commelinaceae	<i>Commelina benghalensis</i>
47	Cyperaceae	<i>Carex cruciata</i>
48	Cyperaceae	<i>Carex longipes</i>
49	Cyperaceae	<i>Carex myosurus</i>
50	Cyperaceae	<i>Carex nivea</i>
51	Cyperaceae	<i>Fimbristylis dichotoma</i>
52	Cyperaceae	<i>Kyllinga brevifolia</i>
53	Cyperaceae	<i>Scirpus teratanus</i>
54	Elaeocarpaceae	<i>Elaeocarpus varuna</i>

S.No	Family	Species
55	Ericaceae	<i>Rhododendron dalhousiae</i> var. <i>rhabdotum</i>
56	Euphorbiaceae	<i>Croton oblongifolius</i>
57	Euphorbiaceae	<i>Macaranga denticulata</i>
58	Euphorbiaceae	<i>Mallotus philippensis</i>
59	Fabaceae	<i>Desmodium gangeticum</i>
60	Fabaceae	<i>Indigofera heterantha</i>
61	Fagaceae	<i>Castanopsis indica</i>
62	Fagaceae	<i>Quercus thomsonii</i>
63	Flacourtiaceae	<i>Xylosma longifolium</i>
64	Geraniaceae	<i>Geranium pratense</i>
65	Gesneriaceae	<i>Didymocarpus oblongus</i>
66	Hydrangeaceae	<i>Hydrangea obovata</i>
67	Hypoxidaceae	<i>Molineria capitulata</i>
68	Juglandaceae	<i>Engelhardtia spicata</i>
69	Lamiaceae	<i>Leucosceptrum canum</i>
70	Lamiaceae	<i>Perilla frutescens</i>
71	Lauraceae	<i>Cinnamomum glaucescens</i>
72	Malvaceae	<i>Kydia calycina</i>
73	Malvaceae	<i>Urena lobata</i>
74	Melastomataceae	<i>Oxyspora paniculata</i>
75	Menispermaceae	<i>Stephania elegans</i>
76	Mimosaceae	<i>Albizia lucida</i>
77	Mimosaceae	<i>Albizia odoratissima</i>
78	Moraceae	<i>Ficus auriculata</i>
79	Moraceae	<i>Ficus semicordata</i>
80	Moraceae	<i>Ficus benjamina</i>
81	Musaceae	<i>Musa acuminata</i>
82	Myristicaceae	<i>Myristica wallichii</i>
83	Myrsinaceae	<i>Embelia ribes</i>
84	Myrsinaceae	<i>Maesa chisia</i>

S.No	Family	Species
85	Oxalidaceae	<i>Oxalis corniculata</i>
86	Papaveraceae	<i>Corydalis stricta</i>
87	Phrymaceae	<i>Mazus japonicus</i>
88	Phyllanthaceae	<i>Bischofia javanica</i>
89	Piperaceae	<i>Piper pedicellatum</i>
90	Piperaceae	<i>Piper peploides</i>
91	Poaceae	<i>Bambusa tulda</i>
92	Poaceae	<i>Capillipedium assimile</i>
93	Poaceae	<i>Cyrtococcum accrescens</i>
94	Poaceae	<i>Isachne albens</i>
95	Poaceae	<i>Melocalamus compactiflorus</i>
96	Poaceae	<i>Microstegium vagans</i>
97	Poaceae	<i>Miscanthus nepalensis</i>
98	Poaceae	<i>Oplismenus compositus</i>
99	Poaceae	<i>Thysanolaena latifolia</i>
100	Poaceae	<i>Setaria paniculifera</i>
101	Poaceae	<i>Setaria sphacelata</i>
102	Polygonaceae	<i>Aconogonum molle</i>
103	Polygonaceae	<i>Persicaria barbata</i>
104	Ranunculaceae	<i>Ranunculus sceleratus</i>
105	Rosaceae	<i>Duchesnea indica</i>
106	Rosaceae	<i>Rubus burkillii</i>
107	Rosaceae	<i>Rubus ellipticus</i>
108	Rosaceae	<i>Rubus lineata</i>
109	Rosaceae	<i>Rubus lineatus</i>
110	Rubiaceae	<i>Luculia pinceana</i>
111	Rubiaceae	<i>Ophiorrhiza heterostyla</i>
112	Rubiaceae	<i>Randia tetrasperma</i>
113	Rubiaceae	<i>Randia wallichii</i>
114	Rubiaceae	<i>Rubia sikkimensis</i>

S.No	Family	Species
115	Rutaceae	<i>Tetradium fraxinifolium</i>
116	Scrophulariaceae	<i>Majus surculosa</i>
117	Solanaceae	<i>Pauia belladonna</i>
118	Theaceae	<i>Schima wallichii</i>
119	Trilliaceae	<i>Paris polyphylla</i>
120	Urticaceae	<i>Boehmeria macrophylla</i>
121	Urticaceae	<i>Boehmeria penduliflora</i>
122	Urticaceae	<i>Boehmeria platyphylla</i>
123	Urticaceae	<i>Boehmeria polystachya</i>
124	Urticaceae	<i>Debregeasia longifolia</i>
125	Urticaceae	<i>Elatostema sessile</i>
126	Urticaceae	<i>Lecanthus peduncularis</i>
127	Urticaceae	<i>Pilea scripta</i>
128	Urticaceae	<i>Pilea umbrosa</i>
129	Urticaceae	<i>Urtica parviflora</i>
130	Urticaceae	<i>Sarcochlamys pulcherrima</i>
131	Rosaceae	<i>Rubus ellipticus</i>
131	Violaceae	<i>Viola betonicifolia</i>
132	Zingiberaceae	<i>Hedychium spicatum</i>
133	Zingiberaceae	<i>Cautleya spicata</i>

Gymnosperms

S.No	Family	Species
1	Pinaceae	<i>Pinus kesiya</i>

Pteridophytes

S.No	Family	Species
1	Dryopteridaceae	<i>Tectaria polymorpha</i>
2	Dryopteridaceae	<i>Dryopteris juxtaposita</i>
3	Dryopteridaceae	<i>Dryopteris stenolepis</i>
4	Equisetaceae	<i>Equisetum diffusum</i>
5	Equisetaceae	<i>Equisetum ramosissimum</i>
6	Polypodiaceae	<i>Polypodioides microrhizon</i>
7	Pteridaceae	<i>Adiantum lunulatum</i>
8	Pteridaceae	<i>Pteris cretica</i>
9	Pteridaceae	<i>Pteris nervosa</i>
10	Pteridaceae	<i>Pteris stenophylla</i>
11	Pteridaceae	<i>Pteris subindivisa</i>
12	Pteridaceae	<i>Pteris wallichiana</i>
13	Pteridaceae	<i>Pteridium aquilinum</i>
14	Selaginellaceae	<i>Selaginella inaequalifolia</i>
15	Woodsiaceae	<i>Athyrium angustum</i>

Yargyap Chu Sub Basin

Angiosperms

S.No	Family	Species
1	Acanthaceae	<i>Strobilanthes echinata</i>
2	Acanthaceae	<i>Strobilanthes extensa</i>
3	Acanthaceae	<i>Strobilanthes thomsonii</i>
4	Aceraceae	<i>Acer acuminatum</i>
5	Aceraceae	<i>Acer caudatum</i>
6	Aceraceae	<i>Acer thomsonii</i>
7	Acoraceae	<i>Acorus calamus</i>
8	Actinidiaceae	<i>Saurauia napaulensis</i>
9	Actinidiaceae	<i>Saurauia nepalensis</i>
10	Actinidiaceae	<i>Saurauia punduana</i>
11	Actinidiaceae	<i>Saurauia roxburghii</i>
12	Alangiaceae	<i>Alangium chinense</i>
13	Altingiaceae	<i>Altingia excelsa</i>
14	Amaranthaceae	<i>Achyranthes aspera</i>
15	Anacardiaceae	<i>Rhus alatus</i>
16	Anacardiaceae	<i>Rhus chinensis</i>
17	Apiaceae	<i>Centella asiatica</i>
18	Apiaceae	<i>Hydrocotyle nepalensis</i>
19	Apiaceae	<i>Oenanthe javanica</i>
20	Apiaceae	<i>Pimpinella diversifolia</i>
21	Araceae	<i>Arisaema concinnum</i>
22	Araceae	<i>Arisaema nepalensis</i>
23	Araceae	<i>Arisaema tortuosum</i>
24	Araceae	<i>Colocasia esculenta</i>
25	Araliaceae	<i>Brassaiopsis aculeata</i>
26	Araliaceae	<i>Brassaiopsis griffithii</i>

S.No	Family	Species
27	Araliaceae	<i>Brassaiopsis mitis</i>
28	Araliaceae	<i>Gamblea ciliata</i>
29	Araliaceae	<i>Hedera nepalensis</i>
30	Araliaceae	<i>Pentapanax leschenaultii</i>
31	Araliaceae	<i>Schefflera bengalensis</i>
32	Araliaceae	<i>Schefflera impressa</i>
33	Araliaceae	<i>Schefflera venulosa</i>
34	Araliaceae	<i>Schefflera wallichiana</i>
35	Araliaceae	<i>Trevesia palmata</i>
36	Araliaceae	<i>Macropanax dispermus</i>
37	Arecaceae	<i>Arenga saccharifera</i>
38	Arecaceae	<i>Calamus floribundus</i>
39	Asteraceae	<i>Ageratum conyzoides</i>
40	Asteraceae	<i>Anaphalis busua</i>
41	Asteraceae	<i>Anaphalis contorta</i>
42	Asteraceae	<i>Artemisia nilagirica</i>
43	Asteraceae	<i>Artemisia parviflora</i>
44	Asteraceae	<i>Aster molliusculus</i>
45	Asteraceae	<i>Bidens bipinnata</i>
46	Asteraceae	<i>Bidens pilosa</i>
47	Asteraceae	<i>Carduus edelbergii</i>
48	Asteraceae	<i>Chromolaena odorata</i>
49	Asteraceae	<i>Cirsium wallichii</i>
50	Asteraceae	<i>Cissampelopsis buimalia</i>
51	Asteraceae	<i>Conyza japonica</i>
52	Asteraceae	<i>Cotoneaster microphyllus</i>

S.No	Family	Species
53	Asteraceae	<i>Crassocephalum crepidioides</i>
54	Asteraceae	<i>Crassocephalum rubens</i>
55	Asteraceae	<i>Dichrocephala chrysanthemoides</i>
56	Asteraceae	<i>Gerbera piloselloides</i>
57	Asteraceae	<i>Gnaphalium affine</i>
58	Asteraceae	<i>Inula cappa</i>
59	Asteraceae	<i>Saussurea nepalensis</i>
60	Asteraceae	<i>Senecio scandens</i>
61	Asteraceae	<i>Xanthium indicum</i>
62	Asteraceae	<i>Xanthium strumarium</i>
63	Asteraceae	<i>Youngia gracilis</i>
64	Asteraceae	<i>Youngia japonica</i>
65	Asteraceae	<i>Artemisia indica</i>
66	Balsaminaceae	<i>Impatiens angustiflora</i>
67	Balsaminaceae	<i>Impatiens bicornuta</i>
68	Balsaminaceae	<i>Impatiens cathcartii</i>
69	Balsaminaceae	<i>Impatiens chinensis</i>
70	Balsaminaceae	<i>Impatiens tripetala</i>
71	Balsaminaceae	<i>Impatiens violae flora</i>
72	Begoniaceae	<i>Begonia megaptera</i>
73	Begoniaceae	<i>Begonia nepalensis</i>
74	Begoniaceae	<i>Begonia roxburghii</i>
75	Begoniaceae	<i>Begonia palmata</i>
76	Berberidaceae	<i>Berberis asiatica</i>
77	Berberidaceae	<i>Berberis wallichiana</i>
78	Betulaceae	<i>Alnus nepalensis</i>
79	Bignoniaceae	<i>Oroxylum indicum</i>
80	Boraginaceae	<i>Cynoglossum glochidiatum</i>
81	Brassicaceae	<i>Cardamine hirsuta</i>
82	Buddlejaceae	<i>Buddleja paniculata</i>

S.No	Family	Species
83	Cannabaceae	<i>Celtis tetrandra</i>
84	Caprifoliaceae	<i>Lonicera angustifolia</i>
85	Caprifoliaceae	<i>Viburnum cotinifolium</i>
86	Caprifoliaceae	<i>Viburnum cylindricum</i>
87	Caryophyllaceae	<i>Arenaria neelgherrensis</i>
88	Caryophyllaceae	<i>Arenaria orbiculata</i>
89	Caryophyllaceae	<i>Cerastium nigrescens</i>
90	Caryophyllaceae	<i>Drymaria diandra</i>
91	Caryophyllaceae	<i>Drymaria mollis</i>
92	Caryophyllaceae	<i>Stellaria decumbens</i>
93	Celastraceae	<i>Euonymus hamiltonianus</i>
94	Clusiaceae	<i>Garcinia anomala</i>
95	Combretaceae	<i>Terminalia myriocarpa</i>
96	Commelinaceae	<i>Commelina benghalensis</i>
97	Commelinaceae	<i>Commelina paludosa</i>
98	Commelinaceae	<i>Murdannia divergens</i>
99	Commelinaceae	<i>Polia hasskarlii</i>
100	Commelinaceae	<i>Polia subumbellata</i>
101	Cyatheaceae	<i>Gymnosphaera gigantea</i>
102	Cyperaceae	<i>Carex cruciata</i>
103	Cyperaceae	<i>Carex filicina</i>
104	Cyperaceae	<i>Carex longipes</i>
105	Cyperaceae	<i>Carex myosurus</i>
106	Cyperaceae	<i>Carex nivea</i>
107	Cyperaceae	<i>Cyperus rotundus</i>
108	Cyperaceae	<i>Fimbristylis dichotoma</i>
109	Cyperaceae	<i>Kyllinga brevifolia</i>
110	Cyperaceae	<i>Schoenoplectus mucronatus</i>
111	Cyperaceae	<i>Scirpus ternatanus</i>
112	Elaeocarpaceae	<i>Elaeocarpus ganitrus</i>

S.No	Family	Species
113	Elaeocarpaceae	<i>Elaeocarpus robustus</i>
114	Elatinaceae	<i>Elatine ambigua</i>
115	Ericaceae	<i>Agapetes variegata</i>
116	Ericaceae	<i>Gaultheria trichophylla</i>
117	Ericaceae	<i>Lyonia ovalifolia</i>
118	Ericaceae	<i>Vaccinium retusum</i>
119	Ericaceae	<i>Rhododendron arboreum</i>
120	Ericaceae	<i>Rhododendron ponticum</i>
121	Euphorbiaceae	<i>Macaranga denticulata</i>
122	Euphorbiaceae	<i>Phyllanthus virgatus</i>
123	Fabaceae	<i>Acacia pennata</i>
124	Fabaceae	<i>Bauhinia vahlii</i>
125	Fabaceae	<i>Desmodium caudatum</i>
126	Fabaceae	<i>Desmodium gangeticum</i>
127	Fabaceae	<i>Erythrina stricta</i>
128	Fabaceae	<i>Indigofera dosua</i>
129	Fabaceae	<i>Melilotus indica</i>
130	Fabaceae	<i>Millettia pulchra</i>
131	Fabaceae	<i>Mimosa pudica</i>
132	Fagaceae	<i>Castanopsis hystrix</i>
133	Fagaceae	<i>Castanopsis indica</i>
134	Fagaceae	<i>Lithocarpus elegans</i>
135	Fagaceae	<i>Quercus serrata</i>
136	Flacourtiaceae	<i>Casearia vareca</i>
137	Flacourtiaceae	<i>Gynocardia odorata</i>
138	Flacourtiaceae	<i>Xylosma longifolium</i>
139	Geraniaceae	<i>Geranium pratense</i>
140	Gesneriaceae	<i>Chirita pumila</i>
141	Gesneriaceae	<i>Didymocarpus oblongus</i>
142	Hamamelidaceae	<i>Exbucklandia populnea</i>

S.No	Family	Species
143	Hydrangeaceae	<i>Hydrangea robusta</i>
144	Hypoxidaceae	<i>Molineria capitulata</i>
145	Juglandaceae	<i>Engelhardtia spicata</i>
146	Juglandaceae	<i>Juglans regia</i>
147	Lamiaceae	<i>Elsholtzia strobilifera</i>
148	Lamiaceae	<i>Leucosceptrum canum</i>
149	Lamiaceae	<i>Nepeta ciliaris</i>
150	Lamiaceae	<i>Perilla frutescens</i>
151	Lamiaceae	<i>Prunella vulgaris</i>
152	Lamiaceae	<i>Scutellaria plectranthoides</i>
153	Lauraceae	<i>Cinnamomum glaucescens</i>
154	Lauraceae	<i>Phoebe attenuata</i>
155	Lauraceae	<i>Actinodaphne angustifolia</i>
156	Magnoliaceae	<i>Michelia glabra</i>
157	Malvaceae	<i>Kydia calycina</i>
158	Malvaceae	<i>Sida rhombifolia</i>
159	Malvaceae	<i>Urena lobata</i>
160	Marantaceae	<i>Phrynium imbricatum</i>
161	Melanthiaceae	<i>Paris polyphylla</i>
162	Melastomataceae	<i>Melastoma malabathricum</i>
163	Melastomataceae	<i>Oxyspora paniculata</i>
164	Meliaceae	<i>Amoora wallichii</i>
165	Meliaceae	<i>Toona ciliata</i>
166	Menispermaceae	<i>Stephania elegans</i>
167	Mimosaceae	<i>Albizia lucida</i>
168	Mimosaceae	<i>Albizia odoratissima</i>
169	Moraceae	<i>Ficus auriculata</i>
170	Moraceae	<i>Ficus oligodon</i>
171	Moraceae	<i>Ficus semicordata</i>
172	Moraceae	<i>Ficus subulata</i>

S.No	Family	Species
173	Moraceae	<i>Ficus virens</i>
174	Musaceae	<i>Musa acuminata</i>
175	Musaceae	<i>Musa balbisiana</i>
176	Musaceae	<i>Musa sikkimensis</i>
177	Myristicaceae	<i>Myristica wallichii</i>
178	Myrsinaceae	<i>Ardisia khasiana</i>
179	Myrsinaceae	<i>Embelia ribes</i>
180	Myrsinaceae	<i>Maesa chisia</i>
181	Myrsinaceae	<i>Maesa robusta</i>
182	Orchidaceae	<i>Bulbophyllum affine</i>
183	Oxalidaceae	<i>Oxalis corniculata</i>
184	Papaveraceae	<i>Dicentra scandens</i>
185	Pentaphylacaceae	<i>Eurya acuminata</i>
186	Phrymaceae	<i>Mazus japonica</i>
187	Phrymaceae	<i>Mazus pumilus</i>
188	Piperaceae	<i>Peperomia glabra</i>
189	Piperaceae	<i>Piper nigrum</i>
190	Piperaceae	<i>Piper sylvaticum</i>
191	Poaceae	<i>Agrostis gigantea</i>
192	Poaceae	<i>Arthraxon hispidus</i>
193	Poaceae	<i>Arthraxon lanceifolia</i>
194	Poaceae	<i>Arundinella nepalensis</i>
195	Poaceae	<i>Bambusa pallida</i>
196	Poaceae	<i>Capillipedium assimile</i>
197	Poaceae	<i>Chrysopogon aciculatus</i>
198	Poaceae	<i>Cynodon dactylon</i>
199	Poaceae	<i>Cyrtococcum accrescens</i>
200	Poaceae	<i>Dendrocalamus hamiltonii</i>
201	Poaceae	<i>Digitaria ciliaris</i>
202	Poaceae	<i>Digitaria cruciata</i>

S.No	Family	Species
203	Poaceae	<i>Digitaria stricta</i>
204	Poaceae	<i>Eragrostis nigra</i>
205	Poaceae	<i>Imperata cylindrica</i>
206	Poaceae	<i>Isachne albens</i>
207	Poaceae	<i>Melocalamus compactiflorus</i>
208	Poaceae	<i>Microstegium vagans</i>
209	Poaceae	<i>Miscanthus nepalensis</i>
210	Poaceae	<i>Miscanthus nudipes</i>
211	Poaceae	<i>Muhlenbergia huegelii</i>
212	Poaceae	<i>Muhlenbergia viminium</i>
213	Poaceae	<i>Oplismenus compositus</i>
214	Poaceae	<i>Pogonatherum paniceum</i>
215	Poaceae	<i>Saccharum longisetosum</i>
216	Poaceae	<i>Saccharum spontaneum</i>
217	Poaceae	<i>Setaria glauca</i>
218	Poaceae	<i>Setaria palmifolia</i>
219	Poaceae	<i>Sinarundinaria falcata</i>
220	Poaceae	<i>Thamnocalamus aristatus</i>
221	Poaceae	<i>Themeda arundinacea</i>
222	Poaceae	<i>Thysanolaena latifolia</i>
223	Poaceae	<i>Isachne longiflora</i>
224	Polygonaceae	<i>Aconogonum molle</i>
225	Polygonaceae	<i>Persicaria barbata</i>
226	Polygonaceae	<i>Persicaria capitata</i>
227	Polygonaceae	<i>Persicaria chinensis</i>
228	Polygonaceae	<i>Persicaria hydropiper (Polygonum</i>
229	Polygonaceae	<i>Persicaria pubescens</i>
230	Polygonaceae	<i>Rumex nepalensis</i>
231	Ranunculaceae	<i>Ranunculus sceleratus</i>
232	Ranunculaceae	<i>Anemone vitifolia</i>

S.No	Family	Species
233	Rhamnaceae	<i>Rhamnus nepalensis</i>
234	Rosaceae	<i>Galeola lindleyana</i>
235	Rosaceae	<i>Prunus cerasoides</i>
236	Rosaceae	<i>Prunus persica</i>
237	Rosaceae	<i>Prunus prostrata</i>
238	Rosaceae	<i>Prunus rufa</i>
239	Rosaceae	<i>Rosa chinensis</i>
240	Rosaceae	<i>Rosa macrophylla</i>
241	Rosaceae	<i>Rubus burkillii</i>
242	Rosaceae	<i>Rubus ellipticus</i>
243	Rosaceae	<i>Rubus hoffmeisterianus</i>
244	Rosaceae	<i>Fragaria vesca</i>
245	Rosaceae	<i>Potentilla microphylla</i>
246	Rosaceae	<i>Eriobotrya dubia</i>
247	Rubiaceae	<i>Galium asperuloides</i>
248	Rubiaceae	<i>Luculia pinceana</i>
249	Rubiaceae	<i>Ophiorrhiza glabra</i>
250	Rubiaceae	<i>Ophiorrhiza heterostyla</i>
251	Rubiaceae	<i>Rubia sikkimensis</i>
252	Rubiaceae	<i>Rubia cordifolia</i>
253	Rutaceae	<i>Tetradium fraxinifolium</i>
254	Rutaceae	<i>Tetradium rutaecarpa</i>
255	Rutaceae	<i>Zanthoxylum acanthopodium</i>
256	Salicaceae	<i>Salix wallichiana</i>
257	Sapindaceae	<i>Aesculus indica</i>
258	Sapindaceae	<i>Lepisanthes tetraphylla</i>
259	Scrophulariaceae	<i>Wulfenia amherstiana</i>
260	Simaroubaceae	<i>Ailanthus grandis</i>
261	Solanaceae	<i>Solanum erianthum</i>
262	Solanaceae	<i>Solanum kurzii</i>

S.No	Family	Species
263	Solanaceae	<i>Solanum nigrum</i>
264	Solanaceae	<i>Solanum surattense</i>
265	Solanaceae	<i>Solanum torvum</i>
266	Thymelaeaceae	<i>Daphne papyracea</i>
267	Urticaceae	<i>Boehmeria longifolia</i>
268	Urticaceae	<i>Boehmeria macrophylla</i>
269	Urticaceae	<i>Boehmeria nivea</i>
270	Urticaceae	<i>Boehmeria penduliflora</i>
271	Urticaceae	<i>Boehmeria rugulosa</i>
272	Urticaceae	<i>Debregeasia longifolia</i>
273	Urticaceae	<i>Elatostema aquifolium</i>
274	Urticaceae	<i>Elatostema glabra</i>
275	Urticaceae	<i>Elatostema lineolatum</i>
276	Urticaceae	<i>Elatostema sessile</i>
277	Urticaceae	<i>Girardinia diversifolia</i>
278	Urticaceae	<i>Girardinia diversifolia</i>
279	Urticaceae	<i>Lecanthus peduncularis</i>
280	Urticaceae	<i>Pilea scripta</i>
281	Urticaceae	<i>Pilea umbrosa</i>
282	Urticaceae	<i>Pouzolzia zeylanica</i>
283	Urticaceae	<i>Urtica dioica</i>
284	Urticaceae	<i>Urtica parviflora</i>
285	Urticaceae	<i>Elatostema platyphyllum</i>
286	Valerianaceae	<i>Valeriana hardwickii</i>
287	Verbenaceae	<i>Clerodendrum bracteatum</i>
288	Violaceae	<i>Viola betonicifolia</i>
289	Violaceae	<i>Viola pilosa</i>
290	Vitaceae	<i>Leea aequata</i>
291	Vitaceae	<i>Leea asiatica</i>
292	Zingiberaceae	<i>Amomum aromaticum</i>

S.No	Family	Species
293	Zingiberaceae	<i>Amomum subulatum</i>
294	Zingiberaceae	<i>Costus speciosus</i>
295	Zingiberaceae	<i>Hedychium spicatum</i>
296	Zingiberaceae	<i>Alpinia allughas</i>

Gymnosperms

S.No	Family	Species
1	Pinaceae	<i>Pinus kesiya</i>
2	Pinaceae	<i>Pinus wallichiana</i>

Pteridophytes

S.No.	Family	Species
1	Dryopteridaceae	<i>Tectaria polymorpha</i>
2	Dryopteridaceae	<i>Dryopteris juxtaposita</i>
3	Dryopteridaceae	<i>Dryopteris serrato-dentata</i>
4	Dryopteridaceae	<i>Dryopteris stenolepis</i>
5	Equisetaceae	<i>Equisetum diffusum</i>
6	Equisetaceae	<i>Equisetum ramosissimum</i>
7	Gleicheniaceae	<i>Dicranopteris linearis</i>
8	Lycopodiaceae	<i>Lycopodium pseudosclavatum</i>
9	Lygodiaceae	<i>Lygodium japonicum</i>
10	Marattiaceae	<i>Angiopteris assamica</i>
11	Pteridaceae	<i>Adiantum edgeworthii</i>
12	Pteridaceae	<i>Adiantum lunulatum</i>
13	Pteridaceae	<i>Pteris cretica</i>
14	Pteridaceae	<i>Pteris nervosa</i>
15	Pteridaceae	<i>Pteris scabristipes</i>
16	Pteridaceae	<i>Pteris stenophylla</i>
17	Pteridaceae	<i>Pteris subindivisa</i>
18	Pteridaceae	<i>Pteris wallichiana</i>
19	Pteridaceae	<i>Pteridium aquilinum</i>
20	Selaginellaceae	<i>Selaginella indica</i>
21	Woodsiaceae	<i>Athyrium angustum</i>

TERRESTRIAL ECOLOGY

COMMUNITY STRUCTURE

Vegetation Sampling sites & their Codes

Sl.No.	Code	Sampling Sites	Nearby Town/Village
Siang Sub Basin			
1	S1	Siang Lower HE project area	Near dam site - Bodak
2	S2	Siang Lower HE project area	D/s of Ranaghat
3	S3	Siang Lower HE project area	Ranaghat
4	S4	D/s of Siang & Siyom Confluence	Kebang
5	S5	Siang (d/s of confluence Simang with Siang)	Boleng
6	S6	Upper Siang-II HEP (dam site)	11km u/s of Hawaii camp
7	S7	Mirak HEP	near dam site
8	S8	Pango/Minnying HEP	near dam site
9	S9	Siang (D/s of Ringong riverconfluence)	u/s of Nunning
10	S10	Ringong (d/s of dam site)	8 km d/s of Tuting
11	S11	Siang (d/s of Yangsang confluence)	12 km d/s of Tuting
12	S12	U/s of Yangsang& Siang confluence	Tuting
13	S13	Jidu/Yang Sang HEP (dam site)	Jidu village
Yamne Sub Basin			
14	Y1	Lower Yamne Stage-II HEP	Jerring
15	Y2	Lower Yamne Stage-I HEP	U/s of Padu
16	Y3	Yamne Stage-II HEP (Barrage site)	Siyat
17	Y4	Yamne Stage-I HEP (dam site)	Lagru / Damro
Simang Sub Basin			
18	Sm1	Simang-I HEP Barrage site	Boleng
19	Sm2	Simang-I HEP (PH site)	Lileng
20	Sm3	Simang-II HEP (dam site)	Suple

Hirit Sub Basin			
21	SY1	D/s of Hirit&Siyom confluence	
22	SY2	Confluence of Hirit with Siyom	d/s of Kamba
23	SY3	Hirit HEP (near dam site)	u/s of PomaBasti
Siyom Sub Basin			
24	SY4	Siyom Middle HEP (near dam site)	U/s of ReyingBasti
25	SY5	Gameng HEP (near confluence)	Gameng river
26	SY6	Naying HEP (near powerhouse)	Pene
27	SY7	Naying HEP (near dam site)	Yapik
28	SY8	Tato-II HEP PowerHouse	Near PH
29	SY9	Confluence of Yargyap with Siyom	Near Tato-II dam site
30	SY10	Tagurshit HEP (dam site)	Tadogitu
31	SY11	Hirong HEP (PH site)	Before confluence of Yagyap Chu with Siyom river
32	SY12	Hirong HEP (dam site)	Lungte-D/s of SitinNala
33	SY13	Jarong HEP (near dam site)	U/s of Karo village
Yargyap Chhu Sub Basin			
34	YG1	Tato-I HEP	Near Trench weir site, Tato
35	YG2	Heo HEP	Near PH
36	YG3	Heo HEP	near dam site
37	YG4	Pauk HEP	Near PH dam site
38	YG5	Pauk HEP	near dam site
39	YG6	Rapum HEP	Near PH
40	YG7	Rapum HEP	near dam site
41	YG8	Rego HEP	Powerhouse
42	YG9	Rego HEP (near dam site)	Dam site

43	YG10	Kantangshiri HEP	Near PH
44	YG11	Kantangshiri HEP	near dam site
45	YG12	PemaShelphu HEP	Near PH
46	YG13	PemaShelphu HEP	near dam site
47	YG14	U/s of Hanuman Camp	Yarlong
Sites Located Outside the Siang Basin			
48	B2	Jiyadhol (d/s of dam site)	Jiyadhol
49	B1	Brahmaputra river (Dibrugarh)	Ghat (u/s of constr. Bridge) near Dibrugarh

HEP= hydro-electric Project; PH= PowerHouse

I. Winter Season

Siang Sub Basin-I

Sampling Site: S1

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m^2ha^{-1})	IVI
1	<i>Duabanga grandiflora</i>	10	10	1.52	12
2	<i>Milusa globosa</i>	10	10	0.91	11
3	<i>Oroxylum indicum</i>	10	20	2.58	17
4	<i>Magnolia hodgsonii</i>	10	10	0.80	11
5	<i>Lithocarpus elegans</i>	10	20	7.91	20
6	<i>Mallotus philippensis</i>	10	10	2.83	12
7	<i>Cinnamomum pauciflorum</i>	20	20	45.91	43
8	<i>Picrasma javanica</i>	10	10	25.43	23
9	<i>Castanopsis indica</i>	20	20	2.64	23
10	<i>Anthocephalus cadamba</i>	10	10	71.12	44
11	<i>Leea indica</i>	10	10	6.36	14
12	<i>Bischofia javanica</i>	10	10	5.28	13
13	<i>Aesculus assamica</i>	20	30	33.91	43
14	<i>Euonymus attenuatus</i>	10	10	4.78	13
	Total		200	211.98	

ind./ha: Individuals /ha

TBC (m^2ha^{-1}): Total Basal Cover $\text{m}^2/\text{ha}^{-1}$

IVI: Importance Value Index

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Chromolaena odoratum</i>	50	1840	15.93	64
2	<i>Calamus tenuis</i>	10	80	0.73	5
3	<i>Elatostema lineolatum</i>	30	960	8.15	34
4	<i>Boehmeria macrophylla</i>	70	1520	14.97	64
5	<i>Melocalamus compactiflorus</i>	20	240	0.04	9
6	<i>Piper pedicellatum</i>	50	1960	15.39	65
7	<i>Solanum torvum</i>	10	40	0.38	4
8	<i>Capparis roxburghii</i>	20	280	2.47	14
9	<i>Leea asiatica</i>	10	120	2.41	8
10	<i>Psychotria calocarpa</i>	20	280	2.42	13
11	<i>Capparis tenera</i>	30	200	2.04	15
12	<i>Debregeasia longifolia</i>	10	40	0.62	4
	Total		7560	65.54	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Achyranthes aspera</i>	10	20000	5.43	33
2	<i>Persicaria capitata</i>	10	14000	6.59	22
3	<i>Oplismenus compositus</i>	10	56000	4.58	71
4	<i>Mikania micrantha</i>	10	20000	0.90	39
5	<i>Colocasia esculenta</i>	10	2000	6.00	89
6	<i>Ageratum conyzoides</i>	10	3000	0.45	10
7	<i>Commelina paludosa</i>	20	2000	0.63	5
8	<i>Capillipedium assimile</i>	10	10000	0.90	11
9	<i>Kyllinga brevifolia</i>	20	14000	6.00	14
10	<i>Urena lobata</i>	10	1000	0.45	5
	Total		142000	31.93	

Sampling Site: S2

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Canarium strictum</i>	50	50	25.75	62
2	<i>Pandanus nepalensis</i>	50	50	10.29	51
3	<i>Pterospermum acerifolium</i>	30	30	13.07	36
4	<i>Kydia calycina</i>	10	10	66.02	54
5	<i>Millettia pulchra</i>	10	10	1.96	10
6	<i>Mallotus philippensis</i>	10	10	0.91	10
7	<i>Ailanthus integrifolia</i>	10	10	5.02	12
8	<i>Dipterocarpus retusus</i>	10	10	9.50	15
9	<i>Castanopsis indica</i>	10	10	7.54	14
10	<i>Vitex trifolia</i>	10	10	2.29	10
11	<i>Cinnamomum pauciflorum</i>	10	20	3.04	15
12	<i>Michelia glabra</i>	10	10	1.81	10
	Total		230	147.20	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria glomerulifera</i>	20	480	5.43	54
2	<i>Elatostema sesquifolium</i>	30	840	6.59	80
3	<i>Abroma angustifolia</i>	10	80	4.58	28
4	<i>Brassiopsis mitis</i>	20	80	0.90	21
5	<i>Melocalamus compactiflorus</i>	20	680	6.00	65
6	<i>Solanum verbascifolium</i>	10	40	0.45	10
7	<i>Chromolaena odoratum</i>	10	80	0.63	13
8	<i>Boehmeria macrophylla</i>	20	200	1.73	29
	Total		2480	26.31	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Pilea umbrosa</i>	50	14000	0.754	26
2	<i>Urtica parviflora</i>	20	7000	8.67	38
3	<i>Achyranthes aspera</i>	10	8000	3.895	27
4	<i>Bidens pilosa</i>	40	20000	8.597	26
5	<i>Mikania micrantha</i>	30	16000	2.191	40
6	<i>Digitaria ciliaris</i>	10	14000	1.963	19
7	<i>Cyrtococcum accrescens</i>	70	40000	2.123	37
8	<i>Colocasia esculenta</i>	10	3000	5.024	13
9	<i>Ageratum conyzoides</i>	10	16000	7.048	35
10	<i>Oplismenus compositus</i>	10	20000	4.416	32
11	<i>Urena lobata</i>	20	1000	0.755	7
	Total		159000	45.436	

Sampling Site: S3

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Terminalia myriocarpa</i>	30	30	38.63	32
2	<i>Saurauia punduana</i>	30	30	24.12	28
3	<i>Duabanga grandiflora</i>	80	140	291.48	146
4	<i>Macranga denticulata</i>	50	60	46.73	52
5	<i>Ficus semicordata</i>	20	20	37.70	24
6	<i>Ficus racemosa</i>	10	10	8.04	9
7	<i>Lannea coromandelica</i>	10	10	7.54	9
	Total		300	454.24	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Debregeasia longifolia</i>	20	80	36.17	18
2	<i>Maesa chisia</i>	50	400	61.54	42
3	<i>Boehmeria rugulosa</i>	20	200	62.8	28
4	<i>Solanum surattense</i>	10	40	3.46	5
5	<i>Pteracanthus rubescens</i>	40	640	58.6	43
6	<i>Boehmeria macrophylla</i>	30	200	22.61	20
7	<i>Rubus ellipticus</i>	10	80	9.04	7
8	<i>Chromolaena odoratum</i>	70	1600	37.99	70
9	<i>Caryopteris odorata</i>	10	80	9.04	7
10	<i>Elatostema sessile</i>	10	400	31.4	21
12	<i>Oxyspora paniculata</i>	10	40	3.66	5
13	<i>Urena lobata</i>	20	360	31.75	23
14	<i>Actinidia callosa</i>	10	160	14.65	11
	Total		4280	382.73	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Crassocephalum crepidioides</i>	10	3000	0.85	5
2	<i>Oplismenus compositus</i>	40	14000	0.44	17
3	<i>Arthraxon hispidus</i>	20	32000	1.22	21
4	<i>Bidens pilosa</i>	40	12000	1.15	18
5	<i>Hedychium spicatum</i>	40	11000	27.98	64
6	<i>Bidens bipinnata</i>	10	2000	0.10	4
7	<i>Mikania micrantha</i>	60	19000	1.17	26
8	<i>Saccharum narenga</i>	10	28000	10.77	34
9	<i>Cappillipedium assimile</i>	10	20000	0.51	12

10	<i>Ophiorrhiza heterostyla</i>	10	4000	0.28	5
11	<i>Angiopteris assamica</i>	20	9000	0.64	10
12	<i>Digitaria stricta</i>	10	10000	0.49	8
13	<i>Pilea scripta</i>	20	5000	0.98	9
14	<i>Equisetum diffusum</i>	10	2000	0.25	4
15	<i>Carex nivea</i>	10	2000	1.27	6
16	<i>Sporobolus diander</i>	10	20000	1.41	14
17	<i>Conyza japonica</i>	20	7000	0.88	10
18	<i>Ageratum conyzoides</i>	10	10000	2.83	12
19	<i>Saccharum longisetosum</i>	10	10000	3.85	14
20	<i>Persicaria capitata</i>	10	8000	0.57	7
	Total		228000	57.62	

Siang Sub Basin-II

Sampling Site: S4

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ficus semicordata</i>	20	50	45.64	39
2	<i>Albizia odoratissima</i>	10	10	7.54	11
3	<i>Macaranga denticulata</i>	20	50	86.70	47
4	<i>Saurauia punduana</i>	20	50	38.95	37
5	<i>Castanopsis indica</i>	20	20	85.97	36
6	<i>Alnus nepalensis</i>	10	30	21.91	21
7	<i>Altingia excelsa</i>	10	10	19.63	13
8	<i>Ulmus lancifolia</i>	10	10	21.23	14
9	<i>Duabanga grandiflora</i>	10	10	50.24	19
10	<i>Terminalia myriocarpa</i>	20	20	70.48	33
11	<i>Maesa robusta</i>	10	10	44.16	18
12	<i>Bischofia javanica</i>	10	10	9.62	11
	Total		280	502.05	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	20	120	10.99	19
2	<i>Alsophila spinulosa</i>	20	120	13.56	20
3	<i>Boehmeria macrophylla</i>	10	40	21.23	14
4	<i>Boehmeria rugulosa</i>	10	80	14.13	14
5	<i>Debregeasia longifolia</i>	40	440	45.68	57
6	<i>Leea asiatica</i>	60	720	130.58	109
7	<i>Leptodermis suaveolens</i>	10	80	22.67	16
8	<i>Maesa chisia</i>	10	40	3.46	8
9	<i>Oxyspora paniculata</i>	20	240	27.13	31
10	<i>Pteracanthus rubescens</i>	10	80	12.31	13
	Total		1960	301.74	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aconogonum molle</i>	20	7000	4.45	26
2	<i>Ageratum conyzoides</i>	20	18000	0.88	26
3	<i>Agrostis vinealis</i>	10	2000	0.08	6
4	<i>Amomum subulatum</i>	20	3000	0.21	11
5	<i>Athyrium angustum</i>	20	9000	0.34	17
6	<i>Begonia nepalensis</i>	20	12000	0.85	21
7	<i>Equisetum diffusum</i>	20	3000	2.26	17
8	<i>Hedychium spicatum</i>	40	35000	19.85	101
9	<i>Musa bulbisiana</i>	20	4000	0.28	12
10	<i>Oplismenus compositus</i>	30	12000	0.38	23
11	<i>Pilea scripta</i>	10	8000	0.25	11
12	<i>Pteridium aquilinum</i>	10	8000	6.28	28
	Total		121000	36.11	

Sampling Site: S5

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia odoratissima</i>	20	20	64.31	27
2	<i>Alnus nepalensis</i>	10	20	34.68	17
3	<i>Altingia excelsa</i>	40	40	37.63	36
4	<i>Bischofia javanica</i>	30	70	57.36	45
5	<i>Castanopsis indica</i>	20	30	51.27	28
6	<i>Duabanga grandiflora</i>	30	30	71.24	36
7	<i>Ficus semicordata</i>	10	10	28.26	13
8	<i>Macaranga denticulata</i>	10	10	9.07	9
9	<i>Maesa robusta</i>	20	30	21.91	22
10	<i>Saurauia punduana</i>	30	50	38.95	36
11	<i>Terminalia myriocarpa</i>	10	10	30.18	13
12	<i>Ulmus lanceifolia</i>	10	10	47.76	17
	Total		330	492.62	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Leea asiatica</i>	10	50	45.64	36
2	<i>Actinidia callosa</i>	10	10	7.54	12
3	<i>Alsophila spinulosa</i>	10	50	86.70	45
4	<i>Boehmeria macrophylla</i>	30	50	38.95	48
5	<i>Boehmeria rugulosa</i>	10	20	85.97	34
6	<i>Debregeasia longifolia</i>	30	30	21.91	36
7	<i>Leptodermis suaveolens</i>	20	10	19.63	22
8	<i>Maesa chisia</i>	10	10	21.23	15
9	<i>Oxyspora paniculata</i>	10	10	50.24	22
10	<i>Pteracanthus rubescens</i>	10	20	70.48	30
	Total		260	448.28	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Pilea scripta</i>	20	10000	0.38	22
2	<i>Aconogonum molle</i>	10	8000	0.20	13
3	<i>Agrostis vinealis</i>	20	4000	0.13	16
4	<i>Musa bulbisina</i>	20	96000	3.01	102
5	<i>Equisetum diffusum</i>	20	4000	2.54	41
6	<i>Athyrium angustum</i>	10	6000	0.42	14
7	<i>Hedychium spicatum</i>	10	7000	1.37	24
8	<i>Begonia nepalensis</i>	10	8000	0.25	13
9	<i>Amomum subulatum</i>	10	4000	0.64	15
10	<i>Pteridium aquilinum</i>	20	4000	0.13	16
11	<i>Oplismenus compositus</i>	10	3000	0.21	10
12	<i>Ageratum conyzoides</i>	10	9000	0.34	15
	Total		163000	9.62	

Sampling Site: S6

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Terminalia myriocarpa</i>	30	30	38.63	32
2	<i>Saurauia punduana</i>	30	30	24.12	28
3	<i>Duabanga grandiflora</i>	80	140	291.48	146
4	<i>Macaranga denticulata</i>	50	60	46.73	52
5	<i>Ficus semicordata</i>	20	20	37.70	24
6	<i>Ficus racemosa</i>	10	10	8.04	9
7	<i>Lannea coromandelica</i>	10	10	7.54	9
	Total		300	454.24	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Debregeasia longifolia</i>	20	80	36.17	18
2	<i>Maesa chisia</i>	50	400	61.54	42
3	<i>Boehmeria rugulosa</i>	20	200	62.80	28
4	<i>Solanum surattense</i>	10	40	3.46	5
5	<i>Pteracanthus rubescens</i>	40	640	58.60	43
6	<i>Boehmeria macrophylla</i>	30	200	22.61	20
7	<i>Rubus ellipticus</i>	10	80	9.04	7
8	<i>Chromolaena odoratum</i>	70	1600	37.99	70
9	<i>Caryopteris odorata</i>	10	80	9.04	7
10	<i>Elatostema sessile</i>	10	400	31.40	21
12	<i>Oxyspora paniculata</i>	10	40	3.66	5
13	<i>Urena lobata</i>	20	360	31.75	23
14	<i>Actinidia callosa</i>	10	160	14.65	11
	Total		4280	382.73	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Crassocephalum crepidioides</i>	10	3000	0.85	5
2	<i>Oplismenus compositus</i>	40	14000	0.44	17
3	<i>Arthraxon hispidus</i>	20	32000	1.22	21
4	<i>Bidens pilosa</i>	40	12000	1.15	18
5	<i>Hedychium spicatum</i>	40	11000	27.98	64
6	<i>Bidens bipinnata</i>	10	2000	0.10	4
7	<i>Mikania micrantha</i>	60	19000	1.17	26
8	<i>Saccharum narenga</i>	10	28000	10.77	34
9	<i>Cappillipedium assimile</i>	10	20000	0.51	12
10	<i>Ophiorrhiza heterostyla</i>	10	4000	0.28	5
11	<i>Angiopteris assamica</i>	20	9000	0.64	10
12	<i>Digitaria stricta</i>	10	10000	0.49	8
13	<i>Pilea scripta</i>	20	5000	0.98	9
14	<i>Equisetum diffusum</i>	10	2000	0.25	4
15	<i>Carex nivea</i>	10	2000	1.27	6
16	<i>Sporobolus diander</i>	10	20000	1.41	14
17	<i>Conyza japonica</i>	20	7000	0.88	10
18	<i>Ageratum conyzoides</i>	10	10000	2.83	12
19	<i>Saccharum longisetosum</i>	10	10000	3.85	14
20	<i>Persicaria capitata</i>	10	8000	0.57	7
	Total		228000	57.62	

Siang Sub Basin-III

Sampling Site: S7

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	30	30	38.63	15
2	<i>Bischofia javanica</i>	30	30	24.12	14
3	<i>Castanopsis indica</i>	80	140	291.48	67
4	<i>Duabanga grandiflora</i>	50	60	46.73	26
5	<i>Ficus racemosa</i>	20	20	37.70	11
6	<i>Ficus semicordata</i>	10	10	8.04	5
7	<i>Grewia polygama</i>	60	100	212.26	49
8	<i>Helicia erratica</i>	30	40	254.34	36
9	<i>Lannea coromandelica</i>	10	50	75.99	17
10	<i>Macaranga denticulata</i>	60	90	72.35	35
11	<i>Saurauia punduana</i>	30	40	66.44	19
12	<i>Terminalia myriocarpa</i>	10	10	15.20	5
	Total		620	1143.27	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	20	200	62.80	19
2	<i>Alsophila spinulosa</i>	60	600	136.12	50
3	<i>Boehmeria rugulosa</i>	40	920	4.51	32
4	<i>Caryopteris odorata</i>	20	160	18.09	12
5	<i>Conocephalus suaveolens</i>	20	160	18.09	12
6	<i>Debregeasia longifolia</i>	30	440	198.95	46
7	<i>Ficus heterophylla</i>	10	120	13.56	7
8	<i>Rubus ellipticus</i>	10	200	30.77	12
9	<i>Maesa chisia</i>	50	1000	113.04	52
10	<i>Oxyspora paniculata</i>	30	200	18.31	16
11	<i>Sinarundinaria falcata</i>	10	40	12.56	6
12	<i>Solanum surattense</i>	30	600	67.82	31
13	<i>Urena lobata</i>	10	120	10.58	7
	Total		4760	705.21	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alpinia allughas</i>	10	2000	0.57	6
2	<i>Athyrium angustum</i>	10	20000	5.65	22
3	<i>Begonia nepalensis</i>	20	26000	20.41	46
4	<i>Conyza japonica</i>	40	32000	1.00	36
5	<i>Hedychium spicatum</i>	20	9000	0.64	14
6	<i>Hedychium coronarium</i>	10	5000	8.83	16
7	<i>Helictotrichon virescens</i>	10	4000	7.07	14
8	<i>Mischanthus nepalensis</i>	10	8000	5.09	14
9	<i>Ophiorrhiza heterostyla</i>	10	7500	0.49	9
10	<i>Persicaria capitata</i>	30	8000	0.57	17
11	<i>Polystichum aleuticum</i>	20	14000	0.86	17
12	<i>Pteris subindivisa</i>	10	2000	1.00	6
13	<i>Angiopteris assamica</i>	20	9000	0.98	14
14	<i>Digitaria stricta</i>	10	10000	1.37	11
15	<i>Pilea scripta</i>	20	5000	36.93	51
16	<i>Persicaria capitata</i>	10	4000	0.79	7
			165500	92.24	

Sampling Site: S8

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ailanthus integrifolia</i>	50	50	25.75	58
2	<i>Altingia excelsa</i>	50	50	10.29	49
3	<i>Bischofia javanica</i>	30	30	13.07	34
4	<i>Castanopsis indica</i>	10	10	66.02	49
5	<i>Cinnamomum pauciflorum</i>	10	10	0.91	9
6	<i>Dipterocarpus retusus</i>	10	10	5.02	12
7	<i>Duabanga grandiflora</i>	10	10	9.50	14
8	<i>Elatostemas sessile</i>	10	10	7.54	13
9	<i>Ficus semicordata</i>	10	10	2.29	10

10	<i>Grewia polygama</i>	10	10	1.96	10
11	<i>Lannea coromandelica</i>	10	20	3.04	15
12	<i>Macaranga denticulata</i>	10	10	1.81	10
13	<i>Michelia glabra</i>	10	10	15.20	18
	Total		240	162.40	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	20	200	6.28	19
2	<i>Alsophila spinulosa</i>	60	600	13.612	50
3	<i>Boehmeria rugulosa</i>	40	920	0.451	32
4	<i>Caryopteris odorata</i>	20	160	1.809	12
5	<i>Conocephalus suaveolens</i>	20	160	1.809	12
6	<i>Debregeasia longifolia</i>	30	440	19.895	46
7	<i>Ficus heterophylla</i>	10	120	1.356	7
8	<i>Rubus ellipticus</i>	10	200	3.077	12
9	<i>Maesa chisia</i>	50	1000	11.304	52
10	<i>Oxyspora paniculata</i>	30	200	1.831	16
11	<i>Sinarundinaria falcata</i>	10	40	1.256	6
12	<i>Solanum surattense</i>	30	600	6.782	31
13	<i>Urena lobata</i>	10	120	1.058	7
	Total		4760	70.52	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alpinia allughas</i>	10	2000	0.57	6
2	<i>Angiopteris assamica</i>	20	9000	0.98	22
3	<i>Athyrium angustum</i>	10	20000	5.65	46

4	<i>Begonia nepalensis</i>	20	26000	20.41	36
5	<i>Conyza japonica</i>	40	32000	1.00	14
6	<i>Digitaria stricta</i>	10	10000	1.37	16
7	<i>Hedychium coronarium</i>	10	5000	8.83	14
8	<i>Hedychium spicatum</i>	20	9000	0.64	14
9	<i>Helictotrichon virescens</i>	10	4000	7.07	9
10	<i>Mischanthus nepalensis</i>	10	8000	5.09	17
11	<i>Ophiorrhiza heterostyla</i>	10	7500	0.49	17
12	<i>Persicaria capitata</i>	30	8000	0.57	6
13	<i>Pteris subindivisa</i>	10	4000	0.79	14
14	<i>Pilea scripta</i>	20	5000	36.93	11
15	<i>Polystichum aleuticum</i>	20	14000	0.86	51
16	<i>Pteris stenophylla</i>	10	2000	1.00	7
			165500	92.24	

Sampling Site: S9

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Saurauia punduana</i>	60	120	102.58	52
2	<i>Alnus nepalensis</i>	60	100	212.26	61
3	<i>Castanopsis indica</i>	30	40	254.34	45
4	<i>Helicia erratica</i>	10	50	75.99	21
5	<i>Ficus semicordata</i>	60	90	72.35	43
6	<i>Terminalia myriocarpa</i>	30	40	66.44	24
7	<i>Bischofia javanica</i>	10	10	15.20	7
8	<i>Grewia polygama</i>	10	10	24.62	8
9	<i>Actinidia callosa</i>	10	40	4.15	11

10	<i>Milletia pulchra</i>	10	10	19.63	7
11	<i>Casearia vareca</i>	10	10	8.04	6
12	<i>Lannea coromandelica</i>	10	10	7.54	6
13	<i>Mangnolia hodgsonii</i>	10	10	8.04	6
14	<i>Tetradium fraxinifolium</i>	10	10	8.04	6
	Total		550	879.22	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	10	160	1.465	7
2	<i>Alsophila spinulosa</i>	20	160	1.809	5
3	<i>Boehmeria rugulosa</i>	10	200	3.077	13
4	<i>Caryopteris odorata</i>	20	200	6.28	74
5	<i>Conocephalus suaveolens</i>	10	80	0.904	18
6	<i>Debregeasia longifolia</i>	10	120	1.356	26
7	<i>Elatostema sessile</i>	30	160	1.465	15
8	<i>Ficus heterophylla</i>	10	400	3.14	39
9	<i>Leptodermis suaveolens</i>	60	600	13.612	28
10	<i>Maesa chisia</i>	50	400	6.154	10
11	<i>Oxyspora paniculata</i>	30	440	19.895	35
12	<i>Pentapanax leschenaultiana</i>	80	960	36.474	6
13	<i>Rubus ellipticus</i>	40	240	3.693	9
14	<i>Sinarundinaria falcata</i>	10	80	0.904	12
15	<i>Urena lobata</i>	40	920	0.451	5
	Total		5120	100.679	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Conyza japonica</i>	10	2000	0.57	7

2	<i>Saccharum spontaneum</i>	10	20000	5.65	24
3	<i>Polystichum aleuticum</i>	20	26000	20.41	49
4	<i>Pteris subindivisa</i>	40	32000	1.00	41
5	<i>Alpinia allughas</i>	10	5000	8.83	18
6	<i>Hedychium spicatum</i>	10	4000	7.07	15
7	<i>Mischanthus nepalensis</i>	10	8000	5.09	16
8	<i>Athyrium angustum</i>	30	8000	0.57	21
9	<i>Persicaria capitata</i>	20	14000	0.86	20
10	<i>Begonia nepalensis</i>	10	2000	1.00	7
11	<i>Helictotrichon virescens</i>	10	28000	1.37	24
12	<i>Hedychium spicatum</i>	10	6000	36.93	50
13	<i>Ophiorrhiza heterostyla</i>	10	4000	0.79	8
	Total		159000	90.13	

Sampling Site: S10

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Saurauia punduana</i>	60	120	102.58	71
2	<i>Alnus nepalensis</i>	60	100	212.26	87
3	<i>Ficus semicordata</i>	60	90	72.35	58
4	<i>Terminalia myriocarpa</i>	30	40	66.44	34
5	<i>Bischofia javanica</i>	10	10	15.20	9
6	<i>Millettia pulchra</i>	10	10	19.63	10
7	<i>Casearia vareca</i>	10	10	8.04	8
8	<i>Lannea coromandelica</i>	10	10	7.54	8
9	<i>Castanopsis indica</i>	10	10	8.04	8
10	<i>Tetradium fraxinifolium</i>	10	10	8.04	8
	Total		410	520.12	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Oxyspora paniculata</i>	80	960	72.948	95
2	<i>Pentapanax leschenaultiana</i>	40	240	7.386	23
3	<i>Ficus heterophylla</i>	60	600	27.224	51
4	<i>Sinarundinaria falcata</i>	40	920	0.902	37
5	<i>Actinidia callosa</i>	20	160	3.618	13
6	<i>Maesa chisia</i>	30	440	39.79	45
7	<i>Conocephalus suaveolens</i>	10	120	2.712	8
8	<i>Alsophila spinulosa</i>	10	200	6.154	12
9	<i>Debregeasia longifolia</i>	30	160	2.93	15
	Total		3800	163.664	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Conyza japonica</i>	10	2000	0.06	6
2	<i>Athyrium angustum</i>	30	30000	2.12	34
3	<i>Saccharum narenga</i>	10	40000	25.43	59
4	<i>Colocasia affinis</i>	20	8000	3.08	18
5	<i>Hedychium spicatum</i>	10	4000	7.07	16
6	<i>Mischanthus nepalensis</i>	10	8000	5.09	16
7	<i>Elatostema glabra</i>	10	2000	6.28	14
8	<i>Didymocarpus oblonga</i>	10	5000	2.51	11
9	<i>Pteris subindivisa</i>	30	10000	0.31	20
10	<i>Thysanolaena latifolia</i>	30	37000	26.21	68
11	<i>Selaginella indica</i>	10	1000	0.03	5
12	<i>Helictotrichon virescens</i>	10	28000	1.37	22
13	<i>Crawfurdia speciosa</i>	10	1000	0.05	5
14	<i>Begonia nepalensis</i>	10	2000	1.00	7
	Total		178000	80.62	

Siang Sub Basin-IV

Sampling Site: S11

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	50	40	75.7	51
2	<i>Bischofia javanica</i>	30	20	47.9	30
3	<i>Casearia vareca</i>	70	40	21.4	42
4	<i>Castanopsis indica</i>	50	30	76	47
5	<i>Ficus semicordata</i>	20	25	16.9	20
6	<i>Lannea coromandelica</i>	10	10	9.2	9
7	<i>Millettia pulchra</i>	40	30	26.2	31
8	<i>Saurauia punduana</i>	20	15	16.6	16
9	<i>Terminalia myriocarpa</i>	40	30	64.2	41
10	<i>Ficus oligodon</i>	20	10	9.4	12
	Total		250	363.5	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	10	180	1.03	13
2	<i>Alsophila spinulosa</i>	20	260	1.202	19
3	<i>Conocephalus suaveolens</i>	30	260	1.003	22
4	<i>Debregeasia longifolia</i>	30	180	2.005	22
5	<i>Ficus heterophylla</i>	40	480	11.182	64
6	<i>Maesa chisia</i>	20	280	7	38
7	<i>Pentapanax leschenaultiana</i>	70	580	6.015	62
8	<i>Sinarundinaria falcata</i>	30	300	0.003	20
9	<i>Solanum torvum</i>	30	300	1.9	26
10	<i>Trevesia palmata</i>	20	140	1.001	14
	Total		2960	32.34	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Athyrium angustum</i>	18	10300	1.1	28
2	<i>Colocasia affinis</i>	9	8750	0.7	18
3	<i>Conyza japonica</i>	18	9510	2.8	40
4	<i>Didymocarpus oblonga</i>	9	5000	1	17
5	<i>Elatostema glabra</i>	18	4375	0.09	15
6	<i>Hedychium spicatum</i>	9	1125	0.5	10
7	<i>Mischanthus nepalensis</i>	9	2625	0.56	12
8	<i>Pteris subindivisa</i>	9	1250	0.85	13
9	<i>Saccharum narenga</i>	36	48125	1.05	72
10	<i>Selaginella indica</i>	27	3750	2.9	41
11	<i>Thysanolaena latifolia</i>	18	14375	1.37	34
	Total		109185	12.92	

Sampling Site: S12

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ficus semicordata</i>	60	130	206.65	98
2	<i>Albizia odoratissima</i>	20	40	93.27	35
3	<i>Macaranga denticulata</i>	10	10	7.54	9
4	<i>Saurauia punduana</i>	20	20	14.60	17
5	<i>Castanopsis indica</i>	10	10	7.54	9
6	<i>Alnus nepalensis</i>	20	30	25.65	22
7	<i>Altingia excelsa</i>	10	10	26.41	12
8	<i>Ulmus lanceifolia</i>	10	10	113.04	25
9	<i>Duabanga grandiflora</i>	10	10	105.63	24
10	<i>Terminalia myriocarpa</i>	30	30	32.24	28
11	<i>Maesa robusta</i>	10	10	8.04	9
12	<i>Bischofia javanica</i>	10	20	22.08	14
	Total		330	662.69	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	10	80	20.35	41
2	<i>Alsophila spinulosa</i>	60	680	76.87	8
3	<i>Boehmeria rugulosa</i>	10	40	24.62	106
4	<i>Boehmeria macrophylla</i>	20	120	13.56	60
5	<i>Debregeasia longifolia</i>	40	160	60.79	33
6	<i>Leea asiatica</i>	10	80	16.08	14
7	<i>Leptodermis suaveolens</i>	10	80	8.31	11
8	<i>Maesa chisia</i>	10	40	15.20	10
9	<i>Oxyspora paniculata</i>	50	400	45.22	8
10	<i>Pteracanthus rubescens</i>	50	1520	186.44	10
	Total		3200	467.42	300

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aconogonum molle</i>	20	6000	0.471	37
2	<i>Ageratum conyzoides</i>	20	10000	0.071	15
3	<i>Agrostis vinealis</i>	10	10000	0.028	14
4	<i>Amomum subulatum</i>	10	10000	6.154	93
5	<i>Athyrium angustum</i>	40	20000	0.251	14
6	<i>Begonia nepalensis</i>	10	4000	0.314	37
7	<i>Equisetum diffusum</i>	10	10000	0.071	23
8	<i>Hedychium spicatum</i>	30	6000	1.884	9
9	<i>Musa bulbisiana</i>	20	5000	39.25	26
10	<i>Oplismenus compositus</i>	10	2000	0.008	9
11	<i>Pilea scripta</i>	40	19000	0.731	6
12	<i>Pteridium aquilinum</i>	10	4000	0.201	18
	Total		106000	49.43	

Sampling Site: S13

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Terminalia myriocarpa</i>	20	50	118.73	34
2	<i>Ostodes paniculata</i>	30	40	36.30	26
3	<i>Saurauia punduana</i>	10	10	8.04	7
4	<i>Cinnamomum glaucescens</i>	30	50	38.95	29
5	<i>Castanopsis indica</i>	30	40	254.34	52
6	<i>Helicia erratica</i>	30	50	75.99	33
7	<i>Grewia polygama</i>	10	10	24.62	9
8	<i>Casearia vareca</i>	10	10	36.30	11
9	<i>Gynocardia odorata</i>	10	10	63.59	14
10	<i>Brassiopsis aculeata</i>	10	20	16.08	11
11	<i>Baccaurea ramiflora</i>	20	50	69.24	28
12	<i>Trema amboinensis</i>	10	10	12.56	8
13	<i>Macaranga denticulata</i>	10	10	67.89	14
14	<i>Carpinus viminea</i>	10	10	7.30	7
15	<i>Alnus nepalensis</i>	20	30	11.40	17
	Total		400	841.31	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Maesa chisia</i>	70	640	243.16	76
2	<i>Alsophila spinulosa</i>	50	1000	113.04	59
3	<i>Oxyspora paniculata</i>	30	200	18.31	18
4	<i>Caryopteris odorata</i>	10	40	12.56	6

5	<i>Ficus heterophylla</i>	30	600	67.82	36
6	<i>Urena lobata</i>	10	120	10.58	8
7	<i>Solanum surattense</i>	10	80	6.92	6
8	<i>Clerodendrum bracteatum</i>	10	120	37.68	12
9	<i>Pinanga gracilis</i>	10	80	7.19	6
10	<i>Rubus ellipticus</i>	10	480	96.46	30
11	<i>Boehmeria pendulifera</i>	10	40	4.52	5
12	<i>Leucocephalum canum</i>	30	400	37.99	26
13	<i>Actinidia callosa</i>	10	40	4.15	5
14	<i>Melastoma normale</i>	10	40	3.14	5
	Total		3880	663.55	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Polystichum aleuticum</i>	20	26000	20.41	50
2	<i>Pteris subindivisa</i>	40	32000	1.00	38
3	<i>Alpinia allughas</i>	10	5000	8.83	18
4	<i>Athyrium angustum</i>	30	8000	0.57	19
5	<i>Persicaria capitata</i>	20	14000	0.86	18
6	<i>Perilla frutescens</i>	30	12000	3.39	25
7	<i>Hedychium spicatum</i>	10	6000	36.93	54
8	<i>Ophiorrhiza heterostyla</i>	10	4000	0.79	8
9	<i>Begonia megaptera</i>	10	2000	0.77	7
10	<i>Oplismenus compositus</i>	20	6000	0.23	13
12	<i>Imperata cylindrica</i>	10	28000	0.88	22
13	<i>Conyza japonica</i>	10	2000	0.57	6
14	<i>Saccharum spontaneum</i>	10	20000	5.65	23
	Total	230	165000	80.87	300

Yamne Sub Basin

Sampling Site: Y1

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Tetradium fraxinifolium</i>	20	20	64.31	23
2	<i>Altingia excelsa</i>	10	20	34.68	14
3	<i>Saurauia punduana</i>	40	40	37.63	30
4	<i>Lannea corommandelica</i>	30	70	57.36	38
5	<i>Ficus racemosa</i>	20	30	51.27	23
6	<i>Terminalia myriocarpa</i>	30	30	71.24	30
7	<i>Albizia lucida</i>	10	10	28.26	11
8	<i>Brassiopsis aculeata</i>	10	10	9.07	8
9	<i>Capinus viminea</i>	20	30	21.91	18
10	<i>Macaranga denticulata</i>	30	50	38.95	30
11	<i>Aglaia spectabilis</i>	10	10	30.18	11
12	<i>Garuga pinnata</i>	10	10	47.76	14
13	<i>Phoebe hainseana</i>	10	10	38.47	12
14	<i>Castanopsis indica</i>	20	20	20.35	15
15	<i>Magnolia hodgsonii</i>	10	10	8.55	7
16	<i>Artocarpus lacucha</i>	10	10	50.24	14
Total			380	610.22	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Maesa chisia</i>	30	240	46.44	30
2	<i>Ardisia formosa</i>	20	120	10.99	14
3	<i>Boehmeria pendulifera</i>	20	120	13.56	14
4	<i>Rhamnus nepalensis</i>	10	40	21.23	10
5	<i>Oxyspora paniculata</i>	10	80	14.13	10

6	<i>Melastoma normale</i>	40	440	45.68	40
7	<i>Actinidia callosa</i>	60	720	130.58	76
8	<i>Debregeasia longifolia</i>	10	80	22.67	12
9	<i>Vernonia volkameriaefolia</i>	10	40	3.46	6
10	<i>Pteracanthus rubescens</i>	20	240	27.13	22
11	<i>Boehmeria macrophylla</i>	10	80	12.31	9
12	<i>Pteris subindivisa</i>	10	80	6.92	8
13	<i>Pteridium aquilinum</i>	10	800	62.80	44
14	<i>Solanum surattense</i>	10	40	3.59	6
	Total		3120	421.50	300

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Bidens pilosa</i>	30	17000	2.14	22
2	<i>Hydrocotyle nepalensis</i>	10	4000	0.38	6
3	<i>Artemisia nilagirica</i>	20	12000	7.63	33
4	<i>Crassocephalum crepidioides</i>	10	1000	0.50	5
5	<i>Pteris subindivisa</i>	50	44000	8.38	56
6	<i>Ageratum conyzoides</i>	10	10000	3.38	17
7	<i>Arthraxon hispidus</i>	10	8000	0.20	7
8	<i>Cyrtococcum accrescens</i>	10	4000	0.13	5
9	<i>Pogonatherum paniceum</i>	30	96000	3.01	54
10	<i>Saccharum longisetosum</i>	10	4000	2.54	12
11	<i>Athyrium angustum</i>	30	6000	0.42	13
12	<i>Lycopodium japonicum</i>	20	7000	1.37	13
13	<i>Imperata cylindrica</i>	10	8000	0.25	7
14	<i>Dicranopteris linearis</i>	10	4000	0.64	6
15	<i>Onchium lucidum</i>	10	4000	1.13	8
16	<i>Carex longipes</i>	30	20000	2.51	24
17	<i>Selaginella indica</i>	20	14000	0.44	13
	Total		263000	35.06	

Sampling Site: Y2

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Castanopsis indica</i>	50	100	141.79	71
2	<i>Macaranga denticulata</i>	20	50	45.64	29
3	<i>Cinnamomum glauscens</i>	10	10	7.54	8
4	<i>Lannea coromandelica</i>	20	50	86.70	36
5	<i>Pandanus nepalensis</i>	20	50	38.95	28
6	<i>Daphne obovata</i>	20	20	85.97	28
7	<i>Glochidion assamicum</i>	10	30	21.91	16
8	<i>Macropanax oreophilus</i>	10	10	19.63	10
9	<i>Ficus glaberrima</i>	10	10	21.23	10
10	<i>Beilschmidia roxburghiana</i>	10	10	50.24	15
11	<i>Bridelia retusa</i>	20	20	70.48	25
12	<i>Altingia excelsa</i>	10	10	44.16	14
13	<i>Ficus semicordata</i>	10	10	9.62	9
	Total		380	643.85	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Vernonia volkameriaefolia</i>	20	120	10.39	18
2	<i>Pteracanthus rubescens</i>	10	120	10.58	12
3	<i>Debregeasia longifolia</i>	10	40	15.20	10
4	<i>Indigofera dosua</i>	10	40	3.66	8
5	<i>Pentapanax leschenaultiana</i>	20	80	7.19	16
6	<i>Ardisia thyrsoiflora</i>	20	120	10.58	18
7	<i>Rhamnus nepalensis</i>	10	120	13.56	13
8	<i>Grewia tenax</i>	20	200	30.77	24
9	<i>Randia wallichii</i>	10	80	49.24	18

10	<i>Maesa chisia</i>	10	40	18.09	10
11	<i>Bambusa tulda</i>	20	1360	345.90	127
12	<i>Muraya exotica</i>	10	80	25.12	13
13	<i>Rubus ellipticus</i>	10	160	13.85	14
	Total		2560	554.13	300

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Capillipedium assimile</i>	40	22000	1.55	32
2	<i>Artemisia nilagirica</i>	20	5000	3.18	21
3	<i>Mischanthus nepalensis</i>	30	36000	15.90	85
4	<i>Crassocephalum crepidioides</i>	10	2000	0.77	8
5	<i>Athyrium angustum</i>	10	6000	1.70	13
6	<i>Hydrocotyle nepalensis</i>	20	8000	0.57	14
7	<i>Desmodium scandens</i>	10	2000	0.25	6
8	<i>Colocasia affinis</i>	10	2000	0.39	6
9	<i>Arthraxon hispidus</i>	10	4000	0.13	6
10	<i>Pteris subindivisa</i>	70	87000	2.73	82
11	<i>Carex longipes</i>	10	3000	0.59	8
12	<i>Mikania micrantha</i>	10	20000	1.41	19
	Total		197000	29.16	300

Sampling Site: Y3

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Terminalia myriocarpa</i>	20	20	76.93	21
2	<i>Macaranga denticulata</i>	20	20	21.49	15
3	<i>Altingia excelsa</i>	30	30	197.60	41
4	<i>Duabanga grandiflora</i>	20	30	190.76	37

5	<i>Persea robusta</i>	10	10	12.56	8
6	<i>Bischofia javanica</i>	10	10	50.24	12
7	<i>Ficus semicordata</i>	20	20	34.68	17
8	<i>Ostodes paniculata</i>	50	70	104.46	50
9	<i>Engelhardtia spicata</i>	10	10	38.47	11
10	<i>Garcinia acuminata</i>	10	10	15.90	8
12	<i>Bauhinia variegata</i>	10	10	11.34	8
13	<i>Canarium strictum</i>	10	10	15.20	8
14	<i>Lannea coromandelica</i>	30	50	62.80	32
15	<i>Beilschmidia roxburghiana</i>	10	10	22.89	9
16	<i>Castanopsis indica</i>	10	10	9.07	7
17	<i>Magnolia hodgsonii</i>	10	10	15.20	8
18	<i>Actinodaphne obovata</i>	10	10	12.56	8
	Total	290	340	892.13	300

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Randia wallichii</i>	160	160	60.79	39
2	<i>Ardisia thyrsoflora</i>	40	40	4.52	7
3	<i>Chromolaena odoratum</i>	120	2160	57.04	85
4	<i>Rhamnus nepalensis</i>	200	240	64.48	46
5	<i>Alsophylla spinulosa</i>	240	1000	122.66	87
6	<i>Oxyspora paniculata</i>	40	40	3.53	6
7	<i>Bambusa tulda</i>	40	40	7.07	7
8	<i>Boehmeria macrophylla</i>	40	160	14.65	13
9	<i>Trivisia palmata</i>	40	40	12.56	9
	Total	920	3880	347.29	300

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Saccharum narenga</i>	30	51000	25.62	82
2	<i>Colocasia affinis</i>	20	7000	4.45	18
3	<i>Capillipedium assimile</i>	20	18000	0.88	19
4	<i>Pteris subindivisa</i>	10	2000	0.08	5
5	<i>Mikania micrantha</i>	20	3000	0.21	9
6	<i>Hydrocotyle nepalensis</i>	20	9000	0.34	13
7	<i>Oplismenus compositus</i>	20	12000	0.85	15
8	<i>Begonia nepalensis</i>	20	3000	2.26	13
9	<i>Pilea scripta</i>	40	35000	19.85	67
10	<i>Athyrium angustum</i>	20	4000	0.28	10
11	<i>Selaginella indica</i>	30	12000	0.38	18
12	<i>Arthraxon hispidus</i>	10	8000	0.25	9
13	<i>Alpinia allughas</i>	10	8000	6.28	18
14	<i>Ophiorrhiza heterostyla</i>	10	1000	0.13	4
	Total		173000	61.86	300

Sampling Site: Y4

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ficus auriculata</i>	200	60	97.51	72
2	<i>Duabanga grandiflora</i>	40	60	820.67	72
3	<i>Ficus semicordata</i>	40	40	113.04	28
4	<i>Altingia excelsa</i>	10	10	18.09	6
5	<i>Albizia procera</i>	50	60	346.33	49
6	<i>Bridelia retusa</i>	10	10	8.04	6
7	<i>Lannea coromandelica</i>	40	70	261.62	44
8	<i>Albizia odoratissima</i>	10	10	153.86	14
9	<i>Cladoxylon indicum</i>	10	20	34.68	10
	Total		340	1853.83	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria macrophylla</i>	200	2480	280.34	169
2	<i>Vernonia volkameriaefolia</i>	40	160	13.85	14
3	<i>Maesa chisia</i>	160	200	18.31	35
4	<i>Pentapanax leschenaultiana</i>	40	160	18.09	15
5	<i>Solanum surattense</i>	80	160	24.62	23
6	<i>Chromolaena odoratum</i>	80	480	37.68	35
7	<i>Caryopteris odorata</i>	40	40	3.40	8
	Total		3680	396.28	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Mischanthus nepalensis</i>	20	12000	6.03	49
2	<i>Athyrium angustum</i>	40	11000	4.23	58
3	<i>Pteris vittata</i>	10	8000	56.52	96
4	<i>Amomum subulatum</i>	10	3000	5.30	21
5	<i>Mikania micrantha</i>	20	4000	0.25	23
6	<i>Rubia sikkimensis</i>	20	3000	0.20	21
7	<i>Urtica ardens</i>	10	2000	6.28	20
8	<i>Piper pedicellatum</i>	10	2000	0.20	12
	Total		45000	79.01	

Simang Sub Basin

Sampling Site: Sm1

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Terminalia myriocarpa</i>	70	70	353.44	87
2	<i>Bridelia retusa</i>	10	10	12.56	8
3	<i>Claoxylon indicum</i>	30	30	45.59	26
4	<i>Cinnamomum glaucescens</i>	30	30	22.63	24
5	<i>Altingia excelsa</i>	40	40	114.93	40
6	<i>Albizia procera</i>	10	20	153.88	27
7	<i>Brassiopsis aculeata</i>	10	20	19.79	12
9	<i>Macaranga denticulata</i>	10	10	7.30	8
10	<i>Kydia calycina</i>	10	10	105.63	18
11	<i>Ostodes paniculata</i>	20	30	30.52	21
12	<i>Endospermum chinense</i>	10	10	16.61	9
13	<i>Syzygium assamicum</i>	10	10	21.23	9
14	<i>Beilschmidia roxburghiana</i>	10	10	32.15	10
	Total		300	936.26	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Randia wallichii</i>	20	160	47.76	27
2	<i>Pteracanthus rubescens</i>	90	3800	394.50	231
3	<i>Piper pedicillatum</i>	30	320	27.69	33
4	<i>Maesa chisia</i>	10	40	6.15	9
	Total		4320	476.11	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Athyrium angustum</i>	20	20000	1.92	21
2	<i>Persicaria capitata</i>	20	14000	0.69	15
3	<i>Oxalis corniculata</i>	10	12000	0.31	10
4	<i>Mikania micrantha</i>	50	38000	2.68	41
5	<i>Fragaria nubicola</i>	30	14000	0.44	17
6	<i>Pilea scripta</i>	20	7000	0.67	11
7	<i>Arthraxon hispidus</i>	20	6000	0.29	10
8	<i>Polygonum nepalense</i>	20	8000	0.25	10
9	<i>Drymaria mollis</i>	20	6000	0.15	9
10	<i>Urtica ardens</i>	20	5000	15.70	51
11	<i>Oplismenus compositus</i>	40	16000	0.50	21
12	<i>Pteris tripetata</i>	30	12000	6.03	31
13	<i>Alpinia allughas</i>	10	6000	3.82	16
14	<i>Hydrocotyle nepalensis</i>	10	6000	0.19	6
15	<i>Setaria paniculifera</i>	10	4000	1.13	8
17	<i>Commelina paludosa</i>	10	6000	0.37	7
18	<i>Bidens pilosa</i>	10	8000	1.00	10
19	<i>Carex niveus</i>	10	3000	0.11	5
	Total		191000	36.26	

Sampling Site: Sm2

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Anthocephalus cadamba</i>	10	10	226.87	16
2	<i>Helicia robusta</i>	20	20	88.31	21
3	<i>Pterospermum acerifolium</i>	10	20	76.93	16
4	<i>Cinnamomum glaucescens</i>	10	10	30.18	10

5	<i>Duabanga grandiflora</i>	60	60	2279.64	126
6	<i>Albizia procera</i>	10	10	28.26	10
7	<i>Bischofia javanica</i>	20	20	45.78	20
8	<i>Ailanthus integrifolia</i>	10	10	12.56	10
9	<i>Ficus auriculata</i>	10	10	10.17	9
10	<i>Glochidion assamicum</i>	10	20	17.62	14
11	<i>Terminalia myriocarpa</i>	20	20	265.33	26
12	<i>Artocarpus integrifolia</i>	10	10	94.99	12
13	<i>Ficus oligodon</i>	10	10	38.47	10
	Total		230	3215.10	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Maesa chisia</i>	50	400	45.22	45
2	<i>Pteracanthus rubescens</i>	80	1400	158.26	119
3	<i>Leea asiatica</i>	30	160	60.79	33
4	<i>Alsophila spinulosa</i>	60	680	104.62	73
5	<i>Chromolaena odoratum</i>	10	160	2.01	10
6	<i>Boehmeria pendulifera</i>	10	40	4.52	6
7	<i>Psychotria griffithii</i>	10	80	25.12	13
	Total		2920	400.54	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Pilea scripta</i>	20	14000	3.96	31
2	<i>Athyrium angustum</i>	30	12000	0.85	25
3	<i>Oplismenus compositus</i>	20	9000	0.28	17
4	<i>Pteris quadriaurita</i>	20	5000	1.92	17
5	<i>Psychotria calocarpa</i>	30	6000	4.71	28
6	<i>Piper attenuatum</i>	10	1000	0.50	6

7	<i>Colocasia esculenta</i>	20	2000	25.12	71
8	<i>Hydrocotyle nepalensis</i>	10	3000	0.09	7
9	<i>Cardamine hispida</i>	20	7000	0.22	15
10	<i>Oxalis corniculata</i>	20	8000	0.20	16
11	<i>Cynoglossum glochidiatum</i>	20	6000	1.70	18
13	<i>Polygonum nepalense</i>	10	4000	0.13	8
14	<i>Mikania macrantha</i>	30	13000	0.92	27
15	<i>Cyrtococcum acrescens</i>	10	4000	0.13	8
16	<i>Ageratum conyzoides</i>	10	2000	0.14	6
	Total		96000	40.87	

Sampling Site: Sm3

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha ⁻¹)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ficus semicordata</i>	60	130	206.65	98
2	<i>Albizia odoratissima</i>	20	40	93.27	35
3	<i>Macaranga denticulata</i>	10	10	7.54	9
4	<i>Saurauia punduana</i>	20	20	14.60	17
5	<i>Castanopsis indica</i>	10	10	7.54	9
6	<i>Alnus nepalensis</i>	20	30	25.65	22
7	<i>Altingia excelsa</i>	10	10	26.41	12
8	<i>Ulmus lanceifolia</i>	10	10	113.04	25
9	<i>Duabanga grandiflora</i>	10	10	105.63	24
10	<i>Terminalia myriocarpa</i>	30	30	32.24	28
11	<i>Maesa robusta</i>	10	10	8.04	9
12	<i>Bischofia javanica</i>	10	20	22.08	14
	Total		330	662.69	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Oxyspora paniculata</i>	50	400	45.22	41

2	<i>Leptodermis suaveolens</i>	10	80	8.31	8
3	<i>Pteracanthus rubescens</i>	50	1520	186.44	106
4	<i>Alsophila spinulosa</i>	60	680	76.87	60
5	<i>Debregeasia longifolia</i>	40	160	60.79	33
6	<i>Boehmeria macrophylla</i>	20	120	13.56	14
7	<i>Actinidia callosa</i>	10	80	20.35	11
8	<i>Boehmeria rugulosa</i>	10	40	24.62	10
9	<i>Maesa chisia</i>	10	40	15.20	8
10	<i>Leea asiatica</i>	10	80	16.08	10
	Total		3200	467.42	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Pilea scripta</i>	40	19000	7.31	37
2	<i>Aconogonum molle</i>	20	6000	4.71	15
3	<i>Agrostis vinealis</i>	10	10000	0.28	14
4	<i>Musa bulbisiana</i>	20	5000	392.50	93
5	<i>Equisetum diffusum</i>	10	10000	0.71	14
6	<i>Athyrium angustum</i>	40	20000	2.51	37
7	<i>Hedychium spicatum</i>	30	6000	18.84	23
8	<i>Begonia nepalensis</i>	10	4000	3.14	9
9	<i>Amomum subulatum</i>	10	10000	61.54	26
10	<i>Pteridium aquilinum</i>	10	4000	2.01	9
11	<i>Oplismenus compositus</i>	10	2000	0.08	6
12	<i>Ageratum conyzoides</i>	20	10000	0.71	18
	Total		106000	494.34	

Hirit Sub Basin

Sampling Site: SY1

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Harpulia arborea</i>	10	20	8.14	14
2	<i>Bauhinia purpurea</i>	30	30	18.24	30
3	<i>Terminalia myriocarpa</i>	30	30	79.30	42
4	<i>Pterospermum acerifolium</i>	10	10	5.54	10
5	<i>Toona microcarpa</i>	10	20	17.31	16
6	<i>Holagrana longifolia</i>	10	20	6.04	14
7	<i>Michelia glabra</i>	20	20	1.82	18
8	<i>Bombax ceiba</i>	10	10	96.16	27
9	<i>Chukrasia tabularis</i>	10	10	101.74	28
10	<i>Ostodes paniculata</i>	10	40	11.30	22
11	<i>Duabanga grandiflora</i>	10	20	147.97	40
12	<i>Carallia brachiata</i>	10	20	7.69	14
13	<i>Artocarpus chaplasha</i>	10	10	9.50	11
14	<i>Kydia calycina</i>	10	10	25.43	14
	Total		270	536.17	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Leea asiatica</i>	10	200	1.76	19
2	<i>Boehmeria glomerulifera</i>	60	920	25.93	140
3	<i>Korthalsia flagellaris</i>	10	40	1.81	13
4	<i>Chromolaena odoratum</i>	10	400	3.14	31

5	<i>Calamus tenuis</i>	30	240	5.90	44
6	<i>Psychotria calocarpa</i>	20	240	2.71	30
7	<i>Boehmeria macrophylla</i>	10	240	2.20	22
	Total		2280	43.46	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Oplismenus compositus</i>	10	32000	9.42	43
2	<i>Oxalis corniculata</i>	10	18000	0.22	19
3	<i>Digitaria ciliaris</i>	10	18000	0.5	24
4	<i>Bidens bipinnatus</i>	10	49000	0.78	60
5	<i>Cyperus rotundus</i>	10	8000	0.75	14
6	<i>Mikania micrantha</i>	20	14000	1.92	29
7	<i>Ageratum conyzoides</i>	10	18000	0.53	39
8	<i>Bidens pilosa</i>	10	3000	0.44	11
9	<i>Achyranthes aspera</i>	10	14000	9.42	23
10	<i>Pilea umbrosa</i>	30	8000	0.22	13
11	<i>Gerardinia diversifolia</i>	30	5000	0.55	19
12	<i>Urena lobata</i>	30	1000	0.78	6
	Total		188000	25.53	

Sampling Site: SY2

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Harpulia arborea</i>	10	20	8.14	14
2	<i>Bauhinia purpurea</i>	30	30	18.24	30
3	<i>Terminalia myriocarpa</i>	30	30	79.30	42
4	<i>Pterospermum acerifolium</i>	10	10	5.54	10
5	<i>Toona microcarpa</i>	10	20	17.31	16

6	<i>Holagrana longifolia</i>	10	20	6.04	14
7	<i>Michelia glabra</i>	20	20	1.82	18
8	<i>Bombax ceiba</i>	10	10	96.16	27
9	<i>Chukrasia tabularis</i>	10	10	101.74	28
10	<i>Ostodes paniculata</i>	10	40	11.30	22
11	<i>Duabanga grandiflora</i>	10	20	147.97	40
12	<i>Carallia brachiata</i>	10	20	7.69	14
13	<i>Artocarpus chaplasha</i>	10	10	9.50	11
14	<i>Kydia calycina</i>	10	10	25.43	14
	Total		270	536.17	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Leea asiatica</i>	10	200	1.76	19
2	<i>Boehmeria glomerulifera</i>	60	920	25.93	140
3	<i>Korthalsia flagellaris</i>	10	40	1.81	13
4	<i>Chromolaena odoratum</i>	10	400	3.14	31
5	<i>Calamus tenuis</i>	30	240	5.90	44
6	<i>Psychotria calocarpa</i>	20	240	2.71	30
7	<i>Boehmeria macrophylla</i>	10	240	2.20	22
	Total		2280	43.46	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Achyranthes aspera</i>	10	32000	9.42	43
2	<i>Ageratum conyzoides</i>	10	28000	0.22	19
3	<i>Bidens bipinnatus</i>	10	38000	0.50	24
4	<i>Bidens pilosa</i>	10	49000	0.78	60
5	<i>Cyperus rotundus</i>	10	8000	0.75	14
6	<i>Digitaria ciliaris</i>	10	14000	1.92	29

7	<i>Gerardinia diversifolia</i>	20	18000	0.53	39
8	<i>Mikania micrantha</i>	10	3000	0.44	11
9	<i>Oplismenus compositus</i>	10	14000	9.42	23
10	<i>Oxalis corniculata</i>	10	8000	0.22	13
11	<i>Pilea umbrosa</i>	10	5000	0.50	19
12	<i>Urena lobata</i>	10	1000	0.78	6
	Total		188000	25.48	

Sampling Site: SY3

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Pongamia pinnata</i>	20	30	58.88	26
2	<i>Engelhardtia spicata</i>	40	60	678.24	99
3	<i>Podocarpus neriifolia</i>	20	30	45.59	25
4	<i>Pandanus nepalensis</i>	10	10	13.85	10
5	<i>Artocarpus integrifolia</i>	10	10	86.55	16
6	<i>Lannea coromandelica</i>	10	10	10.17	9
7	<i>Castanopsis indica</i>	10	10	63.59	14
8	<i>Glochidion velutinum</i>	10	10	7.54	9
9	<i>Canarium strictum</i>	10	10	7.30	9
10	<i>Callicarpa arborea</i>	10	10	8.55	9
11	<i>Albizia lucida</i>	20	20	72.60	23
12	<i>Dysoxylum grande</i>	10	10	13.85	10
13	<i>Annona reticulata</i>	10	10	7.45	9
14	<i>Altingia excelsa</i>	10	10	40.69	12
15	<i>Terminalia myriocarpa</i>	10	10	50.24	13
16	<i>Macaranga denticulata</i>	10	10	8.04	9
	Total		260	1173.12	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Melocalamus comapctiflorus</i>	10	320	1.97	30
2	<i>Alsophylla spinulosa</i>	20	80	36.17	45
3	<i>Trevesia palmata</i>	10	40	4.52	15
4	<i>Oxyspora paniculata</i>	30	440	40.29	78
5	<i>Bambusa tulda</i>	20	800	90.43	118
6	<i>Maesa chisia</i>	10	40	3.46	14
	Total		1720	176.85	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Thysanolaena latifolia</i>	20	12000	9.42	23
2	<i>Selaginella indica</i>	30	7000	0.22	18
3	<i>Pteris subindivisa</i>	20	16000	0.50	22
4	<i>Athyrium angustum</i>	30	11000	0.78	22
5	<i>Ageratum conyzoides</i>	20	6000	0.75	13
6	<i>Sida rhombifolia</i>	20	5000	1.92	13
7	<i>Oplismenus compositus</i>	30	14000	0.53	24
8	<i>Imperata cylindrica</i>	10	14000	0.44	16
9	<i>Ammomum sublatum</i>	10	4000	7.07	11
10	<i>Musa bulbisiana</i>	10	3000	150.72	89
11	<i>Saccharum longifolium</i>	20	7000	7.91	18
12	<i>Carex longisetosum</i>	10	2000	1.27	6
13	<i>Drymaria mollis</i>	10	4000	0.07	7
14	<i>Arthraxon hispidus</i>	10	6000	0.15	9
15	<i>Bidens pilosa</i>	10	4000	0.79	8
	Total		115000	182.55	

Siyom Sub Basin-I

Sampling Site: SY4

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ailanthus grandis</i>	30	50	75.7	46
2	<i>Albizia lucida</i>	20	30	47.9	29
3	<i>Alnus nepalensis</i>	40	70	21.4	40
4	<i>Terminalia myriocarpa</i>	30	50	76	46
5	<i>Canarium strictum</i>	20	20	16.9	18
6	<i>Lithocarpus listeri</i>	10	10	9.2	9
7	<i>Cinnamomum pauciflorum</i>	30	40	26.2	30
8	<i>Duabanga grandiflora</i>	10	20	16.6	14
9	<i>Ficus semicordata</i>	30	40	64.2	40
10	<i>Macaranga denticulata</i>	10	20	9.4	12
11	<i>Saurauria nepalensis</i>	20	30	3.7	17
Total			380	367.2	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Calamus floribundus</i>	15	180	10.0	11
2	<i>Dendrocalamus hamiltonii</i>	25	260	15.1	18
3	<i>Embelia ribes</i>	25	260	10.15	18
4	<i>Ficus oligodon</i>	35	180	0.25	20
5	<i>Musa acuminata</i>	35	480	24.1	114
6	<i>Oxyspora paniculata</i>	20	280	0	16
7	<i>Piper peepuloides</i>	75	580	20.75	51
8	<i>Rubus ellipticus</i>	30	300	10.15	21

9	<i>Solanum torvum</i>	35	300	10.0	22
10	<i>Trevesia palmata</i>	15	140	0.05	10
	Total		2960	100.55	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Arisaema erubescens</i>	73	5660	1.1	18.95
2	<i>Bistorta amplexicaulis</i>	87	3053	0.7	15.44
3	<i>Cerastium nigrescens</i>	33	3887	2.8	20.51
4	<i>Chirata pumila</i>	40	4553	1	13.85
5	<i>Colocasia affinis</i>	87	3887	0.09	13.67
6	<i>Commelina bengalensis</i>	53	5440	0.5	13.97
7	<i>Cyperus rotundus</i>	40	4947	0.56	12.33
8	<i>Elatostema sessile</i>	80	6207	0.85	19.13
9	<i>Galium triflorum</i>	40	5460	1.05	15.13
10	<i>Hedychium spicatum</i>	60	4747	2.9	24.65
11	<i>Impatiens arguta</i>	27	6207	1.37	16.10
12	<i>Persicaria pubescens</i>	73	5460	0.93	17.95
13	<i>Polygonum capitatum</i>	87	6080	3.05	29.57
14	<i>Rubia cordifolia</i>	33	5660	2.9	23.03
15	<i>Scutellaria plectranthoides</i>	40	4280	1.37	15.20
16	<i>Stellaria decumbens</i>	87	4053	0.93	17.65
17	<i>Wulfenia amherstiana</i>	53	6080	0.09	12.87
	Total		85660	22.19	

Sampling Site: SY5

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Tetrameles nudiflora</i>	10	10	200.96	26
2	<i>Milletia pulchra</i>	30	30	37.68	34

3	<i>Schefflera bengalensis</i>	20	20	14.60	22
4	<i>Terminalia myriocarpa</i>	30	40	443.16	69
5	<i>Ficus semicordata</i>	30	60	366.82	73
6	<i>Syzygium assamicum</i>	10	10	10.17	11
7	<i>Castanopsis indica</i>	10	20	127.17	25
8	<i>Glochidion velutinum</i>	10	10	12.56	11
9	<i>Engelhardtia spicata</i>	10	10	94.99	18
10	<i>Macaranga denticulata</i>	10	10	10.17	11
	Total		220	1318.29	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alangium chinense</i>	20	160	4.9	13.6
2	<i>Alsophila spinulosa</i>	10	160	2.46	9.3
3	<i>Boehmeria macrophylla</i>	20	320	29.3	28.2
4	<i>Debregeasia longifolia</i>	30	200	14.13	21.8
5	<i>Dendrocalamus hamiltonii</i>	10	400	23.14	16.9
6	<i>Leea asiatica</i>	20	200	3.08	14.1
7	<i>Luculia pinceana</i>	10	160	84.9	42.1
8	<i>Maesa chisia</i>	30	200	24.53	25.9
9	<i>Melocalamus compactiflorus</i>	10	80	1.57	6.4
10	<i>Neilia thyrsoflora</i>	10	40	3.46	5.9
11	<i>Oxyspora paniculata</i>	10	80	6.92	8.6
12	<i>Piper pedicellatum</i>	40	360	8.26	35.7
13	<i>Psychotria aborensis</i>	10	120	10.18	11.1
14	<i>Randia wallichii</i>	10	80	7.32	8.7
15	<i>Rubus ellipticus</i>	10	40	3.73	6.1
16	<i>Sarcochlamys pulcherrima</i>	30	440	4.03	25.2
17	<i>Trema amboinensis</i>	10	40	1.26	5.1
18	<i>Vernonia volakameriaefolia</i>	10	160	18.08	15.5
			3240	251.28	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Oplismenus compositus</i>	20	20000	0.98	23
2	<i>Equisetum ramossimum</i>	10	12000	0.96	13
3	<i>Ammomum subulatum</i>	20	18000	1413.00	120
4	<i>Colocasia esculenta</i>	10	2000	1.00	6
5	<i>Pilea scripta</i>	20	9000	2.54	16
6	<i>Cappillipedium assimile</i>	30	47000	1.48	45
7	<i>Majus surculosus</i>	10	1000	0.03	6
8	<i>Murdannia divergens</i>	10	6000	0.29	9
9	<i>Drymaria mollis</i>	10	8000	0.14	10
10	<i>Persicaria nepalensis</i>	10	2000	0.14	6
11	<i>Curcuma aromatica</i>	10	2000	1.27	6
12	<i>Thysanolaena latifolia</i>	10	12000	8.50	13
13	<i>Pteris subindivisa</i>	20	18000	0.57	21
14	<i>Persicaria capitata</i>	10	2000	0.08	6
	Total		159000	1430.99	

Sampling Site: SY6

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ailanthus grandis</i>	30	50	75.70	46
2	<i>Albizia lucida</i>	20	30	47.90	29
3	<i>Alnus nepalensis</i>	40	70	21.40	40
4	<i>Terminalia myriocarpa</i>	30	50	76.00	46
5	<i>Canarium strictum</i>	20	20	16.90	18
6	<i>Lithocarpus listeri</i>	10	10	9.20	9
7	<i>Cinnamomum pauciflorum</i>	30	40	26.20	30
8	<i>Duabanga grandiflora</i>	10	20	16.60	14

9	<i>Ficus semicordata</i>	30	40	64.20	40
10	<i>Macaranga denticulata</i>	10	20	9.40	12
11	<i>Saurauia nepalensis</i>	20	30	3.70	17
	Total		380	367.2	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Calamus floribundus</i>	15	180	1.00	11
2	<i>Dendrocalamus hamiltonii</i>	25	260	2.02	18
3	<i>Embelia ribes</i>	25	260	2.03	18
4	<i>Ficus oligodon</i>	35	180	1.05	20
5	<i>Musa acuminata</i>	35	480	3.82	114
6	<i>Oxyspora paniculata</i>	20	280	2.00	16
7	<i>Piper peepuloides</i>	75	580	6.15	51
8	<i>Rubus ellipticus</i>	30	300	4.03	21
9	<i>Solanum torvum</i>	35	300	3.00	22
10	<i>Trevesia palmata</i>	15	140	1.01	10
	Total	310	2960	26.11	300

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aconogonum molle</i>	31	8750	2.03	12
2	<i>Arisaema tortuosum</i>	38	10625	0.96	15
3	<i>Cerastium nigrescens</i>	25	7500	0.86	10
4	<i>Chirata pumila</i>	25	5000	2.058	9
5	<i>Colocasia affinis</i>	44	14375	3.65	19
6	<i>Commelina bengalensis</i>	13	13125	1.045	11
7	<i>Cyperus rotundus</i>	19	5625	11.02	8
8	<i>Elatostema sessile</i>	38	21250	7.06	22

9	<i>Galium triflorum</i>	31	8125	0.056	12
10	<i>Hedychium spicatum</i>	25	3750	21.09	8
11	<i>Impatiens angustiflora</i>	31	14375	0.68	16
12	<i>Persicaria pubescens</i>	25	11250	0.46	13
13	<i>Polygonum capitatum</i>	25	8125	2.36	11
14	<i>Rubia cordifolia</i>	25	9375	13.36	11
15	<i>Scutellaria plectranthoides</i>	13	5000	5.02	6
16	<i>Stellaria decumbens</i>	25	8125	19.35	11
17	<i>Wulfenia amherstiana</i>	19	6875	7.04	8
	Total		161250	98.09	

Sampling Site: SY7

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aralia armata</i>	30	60	113.00	54
2	<i>Ailanthus grandis</i>	30	70	81.00	51
3	<i>Alnus nepalensis</i>	20	40	37.00	29
4	<i>Duabanga grandiflora</i>	20	40	25.00	26
5	<i>Ficus semicordata</i>	10	30	37.00	21
6	<i>Macropanax dispersum</i>	20	30	35.00	26
7	<i>Saurauia nepalensis</i>	40	50	135.00	61
8	<i>Terminalia myriocarpa</i>	20	40	59.00	33
	Total		360	522.00	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Bambusa pallida</i>	40	480	27.00	34
2	<i>Boehmeria longifolia</i>	10	300	3.20	11
3	<i>Boehmeria nivea</i>	20	140	3.60	11

4	<i>Buddleja asiatica</i>	25	480	14.60	27
5	<i>Calamus flagellum</i>	10	60	0.60	4
6	<i>Calamus floribundus</i>	20	240	8.40	16
7	<i>Clerodendrum colebrookianum</i>	10	480	0.40	5
8	<i>Dendrocalamus strictus</i>	15	240	33.40	31
9	<i>Embelia ribes</i>	35	340	1.40	12
10	<i>Musa acuminata</i>	35	440	9.60	25
11	<i>Oreocnide integrifolia</i>	30	260	6.20	17
12	<i>Oxyspora paniculata</i>	45	340	14.40	28
13	<i>Piper peepuloides</i>	40	800	23.00	43
14	<i>Rubus ellipticus</i>	35	420	2.60	20
15	<i>Saccharum narenga</i>	20	200	2.20	11
16	<i>Solanum torvum</i>	15	60	0.20	5
	Total		5280	150.80	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Arisaema tortuosum</i>	38	17500	10.16	49
2	<i>Colocasia affinis</i>	19	7500	0.04	17
3	<i>Cyperus rotundus</i>	6	2500	0.01	5
4	<i>Elatostema sessile</i>	25	18125	30.25	57
5	<i>Galium aparine</i>	31	8750	0.04	23
6	<i>Hedychium spicatum</i>	25	6875	0.02	17
7	<i>Impatiens angustiflora</i>	19	8750	0.03	17
8	<i>Persicaria pubescens</i>	31	10625	20.05	26
9	<i>Piper sylvaticum</i>	25	7500	0.02	17
10	<i>Polygonum amplexicaule</i>	13	2500	0.01	8
11	<i>Rubia cordifolia</i>	25	10625	20.04	23
12	<i>Stellaria decumbens</i>	25	10000	10.07	26
13	<i>Wulfenia amherstiana</i>	19	5625	0.03	15
	Total		116875	90.77	

Siyom Sub Basin-II

Sampling Site: SY8

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ailanthus grandis</i>	30	40	15.71	33
2	<i>Alangium begonifolium</i>	20	40	13.41	25
3	<i>Albizia lucida</i>	30	50	11.34	45
4	<i>Alnus nepalensis</i>	20	30	15.71	26
5	<i>Ficus semicordata</i>	20	30	29.41	22
6	<i>Ficus racemosa</i>	40	70	26.35	47
7	<i>Macropanax dispermus</i>	40	70	81.24	53
8	<i>Saurauia nepalensis</i>	10	30	8.19	28
9	<i>Terminalia myriocarpa</i>	10	40	11.46	21
	Total		400	212.81	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Bambusa pallida</i>	15	160	0.40	7
2	<i>Boehmeria longifolia</i>	35	220	3.10	19
3	<i>Boehmeria nivea</i>	35	240	0.20	12
4	<i>Calamus flagellum</i>	20	120	1.20	9
5	<i>Calamus floribundus</i>	60	340	3.10	26
6	<i>Clerodendrum colebrookiana</i>	40	300	0.10	15
7	<i>Debregeasia longifolia</i>	25	200	1.80	14
8	<i>Dendrocalamus strictus</i>	65	480	9.50	45
9	<i>Musa acuminata</i>	30	280	10.80	37

10	<i>Piper pedicellatum</i>	75	460	0.20	25
11	<i>Rosa brunonii</i>	65	480	1.20	26
12	<i>Rubus ellipticus</i>	40	280	3.50	22
13	<i>Saccharum narenga</i>	20	140	7.70	25
14	<i>Solanum torvum</i>	20	140	0.20	7
15	<i>Trevesia palmata</i>	30	160	0.10	10
	Total		4000	43.0	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aconogonum molle</i>	25	9375	0.02	20
2	<i>Arisaema erubescens</i>	38	14375	5.12	35
3	<i>Chirata pumila</i>	19	8750	5.19	18
4	<i>Colocasia esculenta</i>	19	7500	0.01	15
5	<i>Cyperus rotundus</i>	25	6875	0.01	16
6	<i>Elatostema glabra</i>	31	16250	10.01	39
7	<i>Galium triflorum</i>	38	13125	0.05	37
8	<i>Hedychium spicatum</i>	25	9375	0.38	22
9	<i>Impatiens chinensis</i>	19	11250	0.33	23
10	<i>Persicaria pubescens</i>	13	5000	1.51	10
11	<i>Polygonum capitatum</i>	19	5625	0.02	15
12	<i>Rubia cordifolia</i>	38	8125	1.52	22
13	<i>Stellaria decumbens</i>	13	4375	1.01	9
14	<i>Wulfenia amherstiana</i>	25	8750	0.12	20
	Total		128750	25.27	

Sampling Site: SY9

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Terminalia myriocarpa</i>	20	20	9.07	24
2	<i>Ficus virens</i>	10	10	2.37	10
3	<i>Brassiopsis griffithii</i>	30	50	21.49	48
4	<i>Macaranga denticulata</i>	10	10	9.50	15
5	<i>Ficus semicordata</i>	20	20	17.97	29
6	<i>Oroxylum indicum</i>	20	20	6.84	22
7	<i>Alnus nepalensis</i>	10	30	3.15	19
8	<i>Xylosma longifolium</i>	10	10	1.13	10
9	<i>Lepisanthes tetraphylla</i>	10	10	2.83	11
10	<i>Rhus chinensis</i>	20	30	21.70	36
11	<i>Actinodaphne angustifolia</i>	10	10	7.54	14
12	<i>Albizia odoratissima</i>	10	10	20.10	22
13	<i>Macropanax oreophilum</i>	10	10	1.26	10
14	<i>Garuga pinnata</i>	10	10	34.62	31
	Total		250	159.57	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Sarcochlamys pulcherrima</i>	30	440	4.03	45
2	<i>Alangium chinense</i>	20	200	4.90	30
3	<i>Debregeasia longifolia</i>	30	200	14.13	61
4	<i>Melocalamus compactiflora</i>	10	160	0.15	13
5	<i>Leea asiatica</i>	20	200	3.08	28
6	<i>Dendrocalamus hamiltonii</i>	10	400	3.14	29
7	<i>Pinanga gracilis</i>	10	120	1.36	14
8	<i>Elatostema sesquifolius</i>	10	800	6.28	52

9	<i>Alsophila spinulosa</i>	30	440	2.46	18
10	<i>Trema amboinensis</i>	10	400	1.26	11
	Total		3360	40.79	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ageratum conyzoides</i>	85	62000	2.38	52
2	<i>Artemisia nilagirica</i>	11	2000	0.60	5
3	<i>Arthraxon hipidus</i>	10	20000	1.43	13
4	<i>Bidens bipinnata</i>	90	76000	4.32	105
5	<i>Cyperus iria</i>	12	6000	2.06	10
6	<i>Cyrtococcum accrescens</i>	7	40000	2.70	23
7	<i>Hedyotis corymbosa</i>	18	2000	1.52	9
8	<i>Oplismenus compositus</i>	5	22000	2.41	15
9	<i>Paspalum paspaloides</i>	19	20000	0.30	14
10	<i>Persicaria capitata</i>	13	4000	0.81	7
11	<i>Pilea umbrosa</i>	5	1500	4.73	12
12	<i>Prenanthes scandens</i>	60	5000	1.97	23
13	<i>Setaria palmifolia</i>	6	4000	1.72	7
14	<i>Xanthium strumarium</i>	12	2000	0.98	6
	Total		266500	27.92	

Sampling Site: SY10

TREES

S.No.	Name of the Species	Frequency (F %)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ficus semicordata</i>	10	20	17.10	14
2	<i>Palaquium polyanthum</i>	10	20	81.39	22
3	<i>Altingia excelsa</i>	10	10	254.34	38
4	<i>Cinnamomum glaucescens</i>	10	10	42.99	13

5	<i>Macaranga denticulata</i>	40	50	165.83	57
6	<i>Clausena heptaphylla</i>	10	10	19.63	11
7	<i>Oreocnide rubescens</i>	10	10	9.07	10
8	<i>Schefflera bengalensis</i>	30	30	37.68	30
9	<i>Spondias pinnata</i>	10	20	138.73	28
10	<i>Brassaiopsis mitis</i>	10	10	16.61	10
11	<i>Alnus nepalensis</i>	30	50	62.80	40
12	<i>Saurauia punduana</i>	10	10	7.30	9
13	<i>Albizia odoratissima</i>	10	10	7.54	9
14	<i>Lannea coromandelica</i>	10	10	7.35	9
	Total		270	868.36	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Oxyspora paniculata</i>	60	600	67.82	63
2	<i>Maesa chisia</i>	40	320	29.30	35
3	<i>Melocalamus compactiflorus</i>	60	880	11.05	52
4	<i>Elatostema sessile</i>	30	1360	106.76	83
5	<i>Boehmeria macrophylla</i>	30	400	34.62	34
6	<i>Arenga saccharifera</i>	10	80	56.52	24
7	<i>Boehmeria platyphylla</i>	10	80	9.04	9
	Total		3720	315.12	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Mischanthus nepalensis</i>	30	38000	59.66	68
2	<i>Pteris semipinnata</i>	20	8000	0.29	14
3	<i>Selaginella indica</i>	10	2000	0.07	6
4	<i>Pilea scripta</i>	10	4000	0.25	7
5	<i>Adiantum lunulatum</i>	10	4000	0.07	7

6	<i>Hedychium spicatum</i>	40	10000	26.54	36
7	<i>Pteris stenophylla</i>	10	2000	0.03	6
8	<i>Urtica ardens</i>	10	1000	0.38	5
9	<i>Oplismenus compositus</i>	10	2000	0.05	6
10	<i>Musa bulbisiana</i>	10	3000	129.82	66
11	<i>Isachne longiflora</i>	20	37000	0.77	36
12	<i>Athyrium angustum</i>	10	2000	0.07	6
13	<i>Equisetum ramossum</i>	20	16000	0.40	20
14	<i>Molineria capitulata</i>	20	2000	0.76	10
15	<i>Carex cruciata</i>	10	4000	0.25	7
	Total		135000	219.38	

Siyom Sub Basin-III

Sampling Site: SY11

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Rhus chinensis</i>	30	50	11.66	28
2	<i>Brassiopsis griffithii</i>	30	50	11.61	28
3	<i>Oroxylum indicum</i>	20	40	4.53	19
4	<i>Albizia odoratissima</i>	20	20	98.13	44
5	<i>Ficus semicordata</i>	10	10	9.85	9
6	<i>Engelhardtia spicata</i>	30	30	46.49	33
7	<i>Terminalia bellirica</i>	20	20	8.14	15
8	<i>Celtis tetrandra</i>	10	10	3.42	7
9	<i>Mallotus philippensis</i>	10	20	7.69	11
10	<i>Cinnamomum glaucescens</i>	10	10	1.81	7
11	<i>Kydia calycina</i>	10	10	25.43	14
12	<i>Saurauia roxburghii</i>	10	20	7.69	11
13	<i>Macaranga denticulata</i>	10	10	28.34	15
14	<i>Altingia excelsa</i>	30	50	9.46	27
15	<i>Castanopsis indica</i>	20	20	38.21	25
16	<i>Xylosma longifolium</i>	10	10	0.80	6
	Total		380	313.26	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria pendulifera</i>	60	720	19.77	91
2	<i>Ficus auriculata</i>	20	80	2.70	20
3	<i>Rubus ellipticus</i>	10	80	2.94	13

4	<i>Leucocephalum canum</i>	10	80	6.81	16
5	<i>Debregeasia longifolia</i>	20	440	59.70	84
6	<i>Brassiopsis mitis</i>	10	80	5.43	15
7	<i>Bambusa tulda</i>	10	800	21.96	61
	Total		2280	119.31	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Arisaema tortuosum</i>	15	2000	1.37	18
2	<i>Setaria sphacelata</i>	11	4000	2.74	11
3	<i>Thysanolaena latifolia</i>	40	26000	17.81	53
4	<i>Oplismenus compositus</i>	10	8000	5.48	19
5	<i>Impatiens tripetala</i>	12	9000	7.16	17
6	<i>Commelina benghalensis</i>	7	2000	1.37	11
7	<i>Elatostema sessile</i>	18	28000	19.18	36
8	<i>Cautleya gracilis</i>	5	7000	4.79	16
9	<i>Urtica parviflora</i>	30	20000	15.70	38
10	<i>Carex myosurus</i>	13	12000	8.22	18
11	<i>Hedychium spicatum</i>	5	4000	2.74	23
12	<i>Pilea umbrosa</i>	30	24000	16.44	39
	Total		146000	103.00	

Sampling Site: S12

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Kydia calycina</i>	20	20	18.31	36
2	<i>Saurauia roxburghii</i>	10	10	1.81	12
3	<i>Elaeocarpus varuna</i>	10	10	3.63	14
4	<i>Schefflera impressa</i>	10	10	0.91	12

5	<i>Macaranga denticulata</i>	10	10	3.63	14
6	<i>Albizia odoratissima</i>	20	30	18.44	41
7	<i>Ficus semicordata</i>	20	30	9.05	34
8	<i>Ficus benjamina</i>	10	10	3.63	14
9	<i>Lannea coromandelica</i>	20	20	1.81	23
10	<i>Brassiopsis aculeate</i>	10	20	3.04	18
11	<i>Castanopsis indica</i>	10	10	61.54	57
12	<i>Cinnamomum glaucescens</i>	10	10	1.26	12
13	<i>Pinus kesiya</i>	10	10	5.54	15
	Total		200	132.60	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Maesa chisia</i>	30	320	5.54	42
2	<i>Boehmeria macrophylla</i>	20	240	4.90	32
3	<i>Hydrangea obovata</i>	20	80	7.24	29
4	<i>Debregeasia longifolia</i>	10	40	1.60	10
5	<i>Boehmeria polystachya</i>	20	320	5.86	37
6	<i>Aconogonum molle</i>	20	240	4.16	30
7	<i>Bambusa tulda</i>	20	160	4.92	28
8	<i>Luculia pinceana</i>	20	240	5.42	33
9	<i>Sarcochalamus pulcherrima</i>	10	240	4.16	25
10	<i>Viburnum cylindricum</i>	10	40	0.76	9
11	<i>Rhododendron dalhousiae</i> var. <i>rhabdotum</i>	10	200	5.72	26
	Total		2120	50.28	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Pilea scripta</i>	65	52100	0.57	63
2	<i>Lecanthus peduncularis</i>	30	12000	5.65	31
3	<i>Equisetum diffusum</i>	40	14000	20.41	65
4	<i>Viola betonicifolia</i>	20	17000	1.00	22
5	<i>Dichrocephala chrysanthemoides</i>	12	8000	0.64	11
6	<i>Microstegium vagans</i>	7	4000	8.83	22
7	<i>Hedychium spicatum</i>	10	2200	7.07	19
8	<i>Oplismenus compositus</i>	15	9500	5.09	22
9	<i>Pteris stenophylla</i>	10	7000	0.49	10
10	<i>Impatiens angustiflora</i>	30	11000	0.57	21
11	<i>Hydrocotyle nepalensis</i>	5	4300	0.86	7
12	<i>Oenanthe javanica</i>	10	3500	1.00	8
	Total		144600	52.17	

Sampling Site: SY13

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia odoratissima</i>	50	70	549.50	68
2	<i>Albizia lucida</i>	30	30	79.22	20
3	<i>Saurauia napaulensis</i>	30	30	49.83	17
4	<i>Ficus semicordata</i>	30	50	98.13	25
5	<i>Cinnamomum glaucescens</i>	30	30	37.68	16
6	<i>Schima wallichii</i>	30	40	47.76	19
7	<i>Tetradium fraxinifolium</i>	10	20	56.52	11
8	<i>Macaranga denticulata</i>	10	10	19.63	6
9	<i>Viburnum colebrookianum</i>	10	10	7.30	5

10	<i>Quercus thomsonii</i>	20	40	114.93	22
11	<i>Bischofia javanica</i>	10	10	36.30	7
12	<i>Schefflera bengalensis</i>	10	10	19.63	6
13	<i>Mallotus philippensis</i>	20	20	14.60	10
14	<i>Engelhardtia spicata</i>	10	10	7.54	5
15	<i>Lannea coromandelica</i>	30	30	38.63	16
16	<i>Brassiopsis mitis</i>	20	30	59.82	16
17	<i>Alangium chinense</i>	10	30	37.68	11
18	<i>Croton oblongifolius</i>	20	30	39.59	14
19	<i>Alnus nepalensis</i>	10	10	8.04	5
	Total		510	1322.32	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Melocalamus compactiflorus</i>	50	2560	200.96	103
2	<i>Senecio scandens</i>	20	160	3.14	11
3	<i>Piper pedicellatum</i>	10	80	6.28	6
4	<i>Rubus lineata</i>	50	520	45.00	35
5	<i>Luculia pinceana</i>	40	520	163.28	51
6	<i>Hydrangea robusta</i>	10	80	33.22	11
7	<i>Debregeasia longifolia</i>	20	120	73.85	21
8	<i>Indigofera heterantha</i>	20	120	20.63	13
9	<i>Rubus ellipticus</i>	20	160	18.09	13
10	<i>Boehmeria macrophylla</i>	30	280	24.70	20
11	<i>Randia wallichii</i>	10	120	13.56	8
12	<i>Leucocephalum canum</i>	10	120	10.19	8
	Total		4840	612.91	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Mischanthus nepalensis</i>	20	34000	17.08	52
2	<i>Setaria paniculifera</i>	20	7000	1.98	14
3	<i>Hedychium spicatum</i>	20	3000	14.72	31
4	<i>Pteris wallichiana</i>	40	13000	5.00	28
5	<i>Athyrium angustum</i>	40	20000	8.14	37
6	<i>Carex longipes</i>	30	22000	8.46	35
7	<i>Capillipedium assimile</i>	30	40000	1.38	35
8	<i>Pilea umbrosa</i>	20	8000	0.57	12
9	<i>Rubia sikkimensis</i>	40	15000	2.94	26
10	<i>Majus surculosus</i>	10	1000	0.03	4
11	<i>Isachne albens</i>	10	2000	0.14	5
12	<i>Dubyaea hispida</i>	10	8000	5.09	16
13	<i>Cyathula tomentosa</i>	10	1000	0.69	5
	Total		174000	66.23	

Yargyap Chu Sub Basin

Sampling Site: YG1

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Altingia excelsa</i>	10	20	15.70	25
2	<i>Ficus subulata</i>	40	40	14.10	41
3	<i>Saurauia punduana</i>	20	30	8.48	25
4	<i>Macaranga denticulata</i>	60	110	19.66	75
5	<i>Rhus chinensis</i>	10	10	0.78	8
6	<i>Millettia pulchra</i>	10	10	1.26	8
7	<i>Albizia odoratissima</i>	30	30	15.07	35
8	<i>Alnus nepalensis</i>	40	90	20.09	61
9	<i>Ficus semicordata</i>	10	10	0.79	8
10	<i>Castanopsis indica</i>	10	10	6.94	14
	Total		360	102.87	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria macrophylla</i>	80	1200	13.57	114
2	<i>Elatostema lineolatum</i>	40	840	7.27	67
3	<i>Oxyspora paniculata</i>	20	80	0.73	14
4	<i>Hydrangea robusta</i>	30	240	6.10	38
5	<i>Debregeasia longifolia</i>	10	80	5.28	21
6	<i>Melastoma malabathricum</i>	10	40	0.31	7
7	<i>Leea asiatica</i>	20	160	4.07	26
8	<i>Melocalamus compactiflorus</i>	10	240	0.12	13
	Total		2880	37.45	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Amomum subulatum</i>	47	8000	7.60	54
2	<i>Begonia nepalensis</i>	20	1000	5.10	26
3	<i>Begonia palmata</i>	40	1000	6.22	32
4	<i>Bulbophyllum affine</i>	33	4000	1.60	23
5	<i>Carex longipes</i>	67	11000	8.20	66
6	<i>Equisetum ramosissimum</i>	7	4000	0.83	13
7	<i>Gerbera piloselloides</i>	7	4000	0.07	11
8	<i>Hedychium spicatum</i>	13	3000	1.09	13
9	<i>Molineria capitulata</i>	27	6000	1.49	26
10	<i>Musa bulbisiana</i>	7	2000	0.57	11
11	<i>Selaginella indica</i>	20	4000	0.86	17
12	<i>Setaria palmifolia</i>	7	2000	0.10	7
	Total		50000	33.73	

Sampling Site: YG2

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Casearia vareca</i>	20	30	8.52	18
2	<i>Tetradium rutaecarpa</i>	10	10	3.63	7
3	<i>Ficus semicordata</i>	30	40	24.32	30
4	<i>Engelhardtia spicata</i>	20	20	3.18	13
5	<i>Acer thomsonii</i>	10	10	0.78	6
6	<i>Macaranga denticulata</i>	10	10	5.54	8
7	<i>Saurauia punduana</i>	10	10	5.02	8
8	<i>Schefflera wallichiana</i>	40	40	9.50	27
9	<i>Cinnamomum glaucescens</i>	10	20	2.51	9

10	<i>Erythrina stricta</i>	10	10	3.63	7
11	<i>Castanopsis indica</i>	20	20	4.75	14
12	<i>Ficus oligodon</i>	10	10	0.86	6
13	<i>Lyonia ovalifolia</i>	20	40	12.27	22
14	<i>Gambelia ciliata</i>	10	10	0.78	6
15	<i>Eurya acuminata</i>	20	20	1.57	12
16	<i>Garcinia anomala</i>	10	10	8.01	9
17	<i>Altingia excelsa</i>	20	20	132.04	67
18	<i>Euonymus hamiltonianus</i>	20	30	6.37	17
19	<i>Eriobotrya dubia</i>	20	20	3.18	13
	Total		380	236.44	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Oxyspora paniculata</i>	30	240	2.20	26
2	<i>Melocalamus compactiflorus</i>	50	880	0.54	47
3	<i>Hydrangea robusta</i>	10	80	4.58	18
4	<i>Boehmeria macrophylla</i>	10	80	0.90	9
5	<i>Boehmeria pendulifera</i>	10	80	0.98	9
6	<i>Trevesia palmata</i>	10	80	1.41	10
10	<i>Strobilanthes extensa</i>	60	2800	25.17	155
11	<i>Arenga saccharifera</i>	10	40	3.02	13
12	<i>Luculia pinceana</i>	10	40	2.83	13
	Total		4320	41.62	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Amomum subulatum</i>	20	8000	2.80	19.184
2	<i>Begonia nepalensis</i>	10	1000	0.11	5.26

3	<i>Elatine ambigua</i>	10	1000	1.02	6.16
4	<i>Hedychium spicatum</i>	10	1000	1.32	7.88
5	<i>Hydrocotyle nepalensis</i>	30	4000	2.20	18.85
6	<i>Impatiens cathcartii</i>	10	12000	0.83	12.85
7	<i>Molineria capitulata</i>	80	64000	19.07	116.21
8	<i>Muhlebergia viminium</i>	40	15000	11.00	47.52
9	<i>Musa bulbisiana</i>	50	22000	16.00	66.08
	Total		128000	54.35	

Sampling Site: YG3

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Altingia excelsa</i>	10	20	15.70	25
2	<i>Ficus subulata</i>	40	40	14.10	41
3	<i>Saurauia punduana</i>	20	30	8.48	25
4	<i>Macaranga denticulata</i>	60	110	19.66	75
5	<i>Rhus chinensis</i>	10	10	0.78	8
6	<i>Millettia pulchra</i>	10	10	1.26	8
7	<i>Albizia odoratissima</i>	30	30	15.07	35
8	<i>Alnus nepalensis</i>	40	90	20.09	61
9	<i>Ficus semicordata</i>	10	10	0.79	8
10	<i>Castanopsis indica</i>	10	10	6.94	14
	Total		360	102.87	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./h)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria macrophylla</i>	80	1200	13.57	114
2	<i>Elatostema lineolatum</i>	40	840	7.27	67

3	<i>Oxyspora paniculata</i>	20	80	0.73	14
4	<i>Hydrangea robusta</i>	30	240	6.10	38
5	<i>Debregeasia longifolia</i>	10	80	5.28	21
6	<i>Melastoma malabathricum</i>	10	40	0.31	7
7	<i>Leea asiatica</i>	20	160	4.07	26
8	<i>Melocalamus compactiflorus</i>	10	240	0.12	13
	Total		2880	37.45	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Amomum aromaticum</i>	20	6000	21.00	43
2	<i>Artemisia nilagirica</i>	50	12000	14.11	58
3	<i>Capillipedium assimile</i>	70	20000	12.02	78
4	<i>Carex longipes</i>	20	5000	2.88	18
5	<i>Majus pumilus</i>	10	2000	1.20	7
6	<i>Miscanthus nudipes</i>	10	4000	0.83	12
7	<i>Molineria capitulata</i>	20	7000	19.07	42
8	<i>Musa sikkimensis</i>	30	1000	14.00	31
9	<i>Persicaria capitata</i>	10	2000	3.22	11
	Total		59000	88.33	

Sampling Site: YG4

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia odoratissima</i>	10	20	13.29	30
2	<i>Macaranga denticulata</i>	40	60	24.08	75
3	<i>Juglans regia</i>	30	30	10.26	41
4	<i>Schefflera bengalensis</i>	10	20	1.66	15
5	<i>Macropanax dispermus</i>	10	10	1.66	11
6	<i>Cinnamomum glauscescens</i>	10	10	5.02	16
7	<i>Rhus chinensis</i>	10	30	2.72	20
8	<i>Alangium chinense</i>	10	30	2.64	20
9	<i>Altingia excelsa</i>	30	50	11.79	50
10	<i>Tetradium rutaecarpa</i>	10	10	1.39	11
11	<i>Engelhardtia spicata</i>	10	10	1.26	11
	Total		280	75.76	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Debregeasia longifolia</i>	20	160	3.63	34
2	<i>Maesa chisia</i>	20	120	4.56	38
3	<i>Leucoscepttrum canum</i>	30	120	2.41	32
4	<i>Aconogonum molle</i>	20	120	1.10	20
5	<i>Rubus burkillii</i>	40	480	4.15	56
6	<i>Boehmeria macrophylla</i>	20	80	0.90	18
7	<i>Melocalamus compactiflorus</i>	30	3040	2.01	101
	Total		4120	18.77	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Oplismenus compositus</i>	40	23000	21.00	56
2	<i>Carex cruciata</i>	70	25000	14.11	58
3	<i>Lecanthus peduncularis</i>	50	20000	12.02	47
4	<i>Solanum nigrum</i>	10	3000	2.88	8
5	<i>Urtica parviflora</i>	10	5000	1.20	9
6	<i>Gerardinia diversifolia</i>	10	2000	0.83	5
7	<i>Elatostema platyphyllum</i>	40	10000	8.90	30
8	<i>Pteris wallichiana</i>	30	2000	0.23	10
9	<i>Molineria capitulata</i>	10	1000	3.22	7
10	<i>Carex filicina</i>	10	5000	8.00	15
11	<i>Persicaria capitata</i>	30	10000	3.88	21
12	<i>Pollia hasskarlii</i>	25	4000	4.70	16
13	<i>Urtica dioica</i>	20	3000	2.88	11
14	<i>Commelina benghalensis</i>	10	2000	1.20	6
	Total		115000	85.05	

Sampling Site: YG5

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	30	40	3.42	31
2	<i>Albizia odoratissima</i>	30	30	33.91	58
3	<i>Saurauia punduana</i>	60	100	9.84	73
4	<i>Engelhardtia spicata</i>	10	10	0.96	9
5	<i>Cinnamomum glaucescens</i>	10	20	4.08	16
6	<i>Lithocarpus elegans</i>	10	10	3.22	11

7	<i>Ficus semicordata</i>	20	30	28.50	48
8	<i>Maesa robusta</i>	10	10	5.02	13
9	<i>Ficus oligodon</i>	10	20	11.08	23
10	<i>Schefflera bengalensis</i>	10	10	0.80	9
11	<i>Macaranga denticulata</i>	10	10	0.78	9
	Total		290	101.62	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Debregeasia longifolia</i>	20	120	1.54	19
2	<i>Hydrangea robusta</i>	30	160	4.53	35
3	<i>Rubus burkillii</i>	20	160	1.47	20
4	<i>Strobilanthes extensa</i>	20	360	3.24	34
5	<i>Melocalamus compactiflorus</i>	40	1040	0.64	60
6	<i>Boehmeria macrophylla</i>	20	320	3.62	33
7	<i>Maesa chisia</i>	30	240	7.92	49
8	<i>Luculia pinceana</i>	20	80	4.58	27
9	<i>Rubus ellipticus</i>	10	80	1.82	14
10	<i>Leea asiatica</i>	10	40	1.26	10
	Total		2600	30.60	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Carex cruciata</i>	50	23000	19.20	56
2	<i>Carex filicina</i>	83	25000	23.40	70
3	<i>Impatiens chinensis</i>	58	20000	18.00	52
4	<i>Impatiens violae flora</i>	8	3000	2.00	7
5	<i>Crassocephalum crepidioides</i>	17	5000	2.50	11
6	<i>Dicentra scandens</i>	8	2000	0.83	5

7	<i>Elatostema platyphyllum</i>	33	10000	7.10	25
8	<i>Gerardinia diversifolia</i>	2	2000	0.75	7
9	<i>Lecanthus peduncularis</i>	2	1000	0.22	5
10	<i>Molineria capitulata</i>	33	5000	3.50	16
11	<i>Oplismenus compositus</i>	42	10000	6.40	26
12	<i>Persicaria chinensis</i>	25	4000	3.10	13
13	<i>Pilea umbrosa</i>	2	3000	2.40	9
	Total		113000	89.40	

Sampling Site: YG6

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Brassiopsis aculeata</i>	30	40	13.89	48
2	<i>Celtis tetrandra</i>	30	40	3.42	33
3	<i>Engelhardtia spicata</i>	60	110	24.86	101
4	<i>Alnus nepalensis</i>	10	10	0.79	9
5	<i>Albizia odoratissima</i>	10	10	0.80	9
6	<i>Ficus semicordata</i>	10	20	19.69	39
7	<i>Rhus chinensis</i>	10	20	2.04	14
8	<i>Xylosma longifolium</i>	20	20	2.27	20
9	<i>Viburnum cylindricum</i>	10	20	1.66	14
10	<i>Pinus wallichiana</i>	10	10	2.83	12
	Total		300	72.25	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Pentapanax leschenaultii</i>	10	160	4.30	21
2	<i>Rubus burkillii</i>	10	80	0.83	11
3	<i>Leucoscepttrum canum</i>	30	280	13.74	54
4	<i>Ardisia khasiana</i>	40	360	3.24	45
5	<i>Arenga saccharifera</i>	10	120	9.29	28
6	<i>Maesa chisia</i>	50	560	19.94	90
7	<i>Zanthoxylum acanthopodium</i>	10	40	0.80	9
8	<i>Debregeasia longifolia</i>	10	80	0.98	11
9	<i>Oxyspora paniculata</i>	10	160	1.81	17
10	<i>Rubus ellipticus</i>	10	80	2.51	14
	Total		1920	57.44	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Drymaria diandra</i>	50	10000	3.89	24
2	<i>Oplismenus compositus</i>	31	4000	1.70	11
3	<i>Persicaria capitata</i>	8	2000	0.65	4
4	<i>Girardinia diversifolia</i>	8	1000	0.38	10
5	<i>Carex longipes</i>	15	5000	1.25	9
6	<i>Achyranthes aspera</i>	23	4000	0.42	7
7	<i>Lecanthus peduncularis</i>	23	6000	1.33	11
8	<i>Molineria capitulata</i>	8	3000	0.38	4
9	<i>Isachne albens</i>	62	20000	0.11	24
10	<i>Artemisia nilagirica</i>	77	34000	16.25	74
11	<i>Capillipedium assimile</i>	69	28000	2.20	35
12	<i>Elsholtzia strobilifera</i>	54	4000	1.05	13
13	<i>Senecio scandens</i>	46	3000	0.70	12
14	<i>Imperata cylindrica</i>	85	35000	11.25	63
	Total		159000	41.54	

Sampling Site: YG7

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia odoratissima</i>	40	60	5.58	42
2	<i>Oroxylum indicum</i>	10	20	1.18	23
3	<i>Rhus chinensis</i>	30	40	11.49	32
4	<i>Brassiopsis griffithii</i>	30	30	6.58	27
5	<i>Ficus virens</i>	20	20	6.84	20
6	<i>Saurauia roxburghi</i>	20	30	8.15	26
7	<i>Macaranga denticulata</i>	20	30	4.89	26
8	<i>Xylosma longifolium</i>	10	40	3.89	13
9	<i>Lepisanthes tetraphylla</i>	30	40	3.98	32
10	<i>Kydia calycina</i>	20	40	3.76	32
11	<i>Michelia glabra</i>	30	30	2.98	27
	Total		380	59.32	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria macrophylla</i>	50	480	1.30	86
2	<i>Brassiopsis mitis</i>	20	100	0.75	29
3	<i>Melocalamus compactiflora</i>	20	180	2.50	44
4	<i>Leea asiatica</i>	30	180	0.83	43
5	<i>Schefflera venulosa</i>	20	170	2.65	42
6	<i>Oxyspora panfculata</i>	20	140	0.75	37
7	<i>Rhamnus nepalensis</i>	10	50	1.30	20
	Total		1300	10.08	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ageratum conyzoides</i>	30	15000	0.83	33
2	<i>Artemisia nilagirica</i>	20	9000	2.65	23
3	<i>Anaphalis busua</i>	40	16000	0.75	35
4	<i>Bidens bipinnata</i>	30	18000	0.22	37
5	<i>Cardamine hirsuta</i>	20	8000	0.83	22
6	<i>Rumex nepalensis</i>	20	5000	2.65	16
7	<i>Impatiens angustiflora</i>	20	8000	0.75	22
8	<i>Carex longipes</i>	10	2000	2.50	9
9	<i>Drymaria diandra</i>	10	4000	0.83	15
10	<i>Saccharum longisetosum</i>	40	18000	2.65	38
11	<i>Themeda arundinacea</i>	30	12000	0.75	28
12	<i>Viola pilosa</i>	20	8000	1.30	22
	Total		123000	16.71	

Sampling Site: YG8

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	50	70	6.12	42
2	<i>Actinodaphne angustifolia</i>	10	10	1.13	11
3	<i>Brassiopsis griffithii</i>	20	30	10.49	22
4	<i>Macaranga denticulata</i>	30	30	6.58	23
5	<i>Oroxylum indicum</i>	20	20	6.84	17
6	<i>Rhus chinensis</i>	30	40	9.78	27
7	<i>Engelhardtia spicata</i>	10	20	3.16	19
8	<i>Pinus kesiya</i>	10	10	3.89	11
9	<i>Castanopsis indica</i>	20	30	2.75	22

10	<i>Kydia calycina</i>	20	30	3.16	22
11	<i>Phoebe attenuata</i>	30	40	4.55	27
12	<i>Prunus ruffa</i>	20	30	2.98	22
13	<i>Ficus oligodon</i>	20	20	2.08	17
14	<i>Gynocardia odorata</i>	10	20	1.98	19
	Total		400	65.49	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria macrophylla</i>	50	580	0.04	91
2	<i>Debregeasia longifolia</i>	20	120	0.44	31
3	<i>Eurya acuminate</i>	20	240	0.40	51
4	<i>Leea aequata</i>	30	160	0.16	39
5	<i>Measa chisia</i>	20	150	0.28	36
6	<i>Oxyspora paniculata</i>	20	120	17.44	31
7	<i>Saurauia nepalensis</i>	10	60	0.16	21
	Total		1430	18.92	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ageratum conyzoides</i>	30	12000	0.01	28
2	<i>Aster mollisculus</i>	20	8000	0.11	21
3	<i>Anaphalis busua</i>	40	18000	0.10	37
4	<i>Biden bipinnata</i>	30	15000	0.04	32
5	<i>Cardamine hirsuta</i>	20	6000	0.07	18
6	<i>Crassocephalum rubens</i>	10	5500	4.36	18
7	<i>Impatiens angustiflora</i>	20	9000	0.04	23
8	<i>Persicaria capitata</i>	10	6000	0.18	20
9	<i>Setaria glauca</i>	10	3000	0.12	12

10	<i>Saccharum longisetosum</i>	40	18000	0.04	37
11	<i>Themeda arundinacea</i>	30	12000	0.04	28
12	<i>Viola pilosa</i>	20	10000	0.06	25
	Total		122500	5.17	

Sampling Site: YG9

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Quercus serrata</i>	30	30	22.89	31
2	<i>Rhododendron arboreum</i>	20	20	5.90	23
3	<i>Albizia odoratissima</i>	20	20	12.58	23
4	<i>Acer acuminatum</i>	10	10	11.68	15
5	<i>Castanopsis itdica</i>	10	10	7.53	15
6	<i>Alnus nepalensis</i>	40	60	19.68	51
7	<i>Prunus ruja</i>	20	20	8.12	23
8	<i>Rhus chinensis</i>	10	10	5.78	15
9	<i>Pinus kesiya</i>	10	10	2.68	15
10	<i>Macaranga denticulata</i>	30	30	3.52	31
11	<i>Oroxylum indicum</i>	10	10	1.28	15
12	<i>Brassiopsis grifithii</i>	20	20	2.53	23
13	<i>Engelhardtia spicata</i>	10	10	1.78	15
	Total		230	105.95	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Artemisia indica</i>	25	320	0.01	18
2	<i>Sinarundinaria falcata</i>	10	80	0.021	6
3	<i>Bambusa pallida</i>	20	360	0.107	17

4	<i>Boehmeria longifolia</i>	15	140	0.203	9
5	<i>Buddleja paniculata</i>	20	60	0.301	9
6	<i>Calamus floribundus</i>	15	180	6.141	12
7	<i>Dendrocalamus hamiltonii</i>	20	240	27.000	15
8	<i>Embelia ribes</i>	20	200	0.004	13
9	<i>Ficus oligodon</i>	20	240	0.077	14
10	<i>Musa acuminata</i>	15	240	0.436	93
11	<i>Oxyspora paniculata</i>	15	240	0.234	12
12	<i>Piper nigrum</i>	20	460	0.018	22
13	<i>Rhus alatus</i>	15	200	0.012	13
14	<i>Rubus ellipticus</i>	10	220	6.004	10
15	<i>Solanum erietinum</i>	15	240	0.004	12
16	<i>Solanum nigrum</i>	20	280	0.966	15
17	<i>Solanum torvum</i>	10	180	1.002	8
18	<i>Trevesia palmata</i>	10	40	0.01	3
	Total		3920	42.54	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aconogonum molle</i>	20	6000	0.10	11
2	<i>Ageratum conizoides</i>	15	4000	0.10	8
3	<i>Arisaema concinnum</i>	35	9500	0.10	19
4	<i>Ageratum conyzoides</i>	15	3500	0.10	8
5	<i>Begonia nepalensis</i>	30	8500	1.00	21
6	<i>Bidens pilosa</i>	20	6000	0.10	12
7	<i>Cerastium nigrescens</i>	15	4000	0.10	8
8	<i>Chirata pumila</i>	10	2000	0.10	5
9	<i>Crassocephalum crepidioides</i>	15	3500	0.10	8
10	<i>Cyperus rotundus</i>	10	5500	1.00	12
11	<i>Elatostema glabra</i>	30	14500	3.00	40

12	<i>Hedychium spicatum</i>	30	6500	1.00	22
13	<i>Impatiens bicornuta</i>	25	8000	0.10	15
14	<i>Persicaria pubescens</i>	15	4000	0.10	9
15	<i>Pilea scripta</i>	10	2000	0.10	4
16	<i>Piper sylvaticum</i>	30	5000	0.10	14
17	<i>Pouzolzia zeylanica</i>	20	6500	1.00	14
18	<i>Rubia cordifolia</i>	25	6000	0.10	13
19	<i>Saccharum spontaneum</i>	10	4500	0.10	8
20	<i>Scutellaria plectranthoides</i>	15	5000	0.10	9
21	<i>Stellaria decumbens</i>	10	4000	0.10	8
22	<i>Urtica dioica</i>	20	6000	1.00	20
23	<i>Wulfenia amherstiana</i>	20	5000	1.00	16
	Total		129500	10.60	

Sampling Site: YG10

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Quercus serrata</i>	30	30	2.89	23
2	<i>Rhododendron arboreum</i>	20	15	1.90	14
3	<i>Albizia odoratissima</i>	20	16	2.58	16
4	<i>Acer acuminatum</i>	10	10	1.68	10
5	<i>Castanopsis indica</i>	20	27	0.41	13
6	<i>Alnus nepalensis</i>	40	54	9.68	50
7	<i>Prunus ruja</i>	20	20	2.12	16
8	<i>Rhus chinensis</i>	10	10	1.78	10
9	<i>Pinus kesiya</i>	10	10	2.68	12
10	<i>Macaranga denticulata</i>	30	26	3.52	24
11	<i>Oroxylum indicum</i>	10	10	1.28	9
12	<i>Brassiopsis grifithii</i>	20	20	2.53	17

13	<i>Engelhardtia spicata</i>	10	8	1.00	7
14	<i>Ailanthus grandis</i>	40	25	1.13	20
15	<i>Aesculus indica</i>	30	56	0.81	24
16	<i>Saurauia nepaulensis</i>	30	32	0.71	18
17	<i>Terminalia myriocarpa</i>	30	28	0.35	16
	Total		397	37.04	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Agapetes variegata</i>	15	140	0.04	13
2	<i>Bambusa pallida</i>	15	160	0.36	34
3	<i>Boehmeria nivea</i>	10	120	0.24	10
4	<i>Clerodendrum bracteatum</i>	20	240	0.37	20
5	<i>Dendrocalamus hamiltonii</i>	35	240	1.19	33
6	<i>Embelia ribes</i>	20	240	1.14	25
7	<i>Oxyspora paniculata</i>	25	300	0.34	41
8	<i>Rubus ellipticus</i>	25	260	30.16	29
9	<i>Saccharum spontaneum</i>	15	180	0.14	15
10	<i>Solanum nigrum</i>	65	520	1.15	52
11	<i>Solanum torvum</i>	15	200	0.63	15
12	<i>Solanum kurzii</i>	15	160	9.04	14
	Total		2760	44.80	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ageratum conizoides</i>	25	7500	0.21	21
2	<i>Arisaema concinnum</i>	30	6500	0.36	22
3	<i>Agapetes variegata</i>	20	8000	0.23	22
4	<i>Begonia nepalensis</i>	15	4000	0.36	14
5	<i>Bidens pilosa</i>	15	4500	0.50	14

6	<i>Cerastium nigrescens</i>	25	5000	0.32	15
7	<i>Crassocephalum crepidioides</i>	20	6500	0.03	15
8	<i>Elatostema sessile</i>	30	9000	0.14	31
9	<i>Hedychium spicatum</i>	10	2000	0.03	8
10	<i>Impatiens angustiflora</i>	20	7500	0.11	24
11	<i>Persicaria pubescens</i>	25	6500	0.08	22
12	<i>Pilea scripta</i>	10	2000	0.02	5
13	<i>Rubia cordifolia</i>	30	8500	0.06	24
14	<i>Scutellaria plectranthoides</i>	15	4000	0.06	14
15	<i>Urtica dioica</i>	30	11000	3.18	38
16	<i>Wulfenia amherstiana</i>	10	4000	1.55	11
	Total		96500	7.20	

Sampling Site: YG11

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Acer acuminatum</i>	10	10	14.12	22
2	<i>Lyonia ovalifolia</i>	10	10	11.78	22
3	<i>Rhododendron arboreum</i>	20	20	11.98	35
4	<i>Salix wallichiana</i>	20	20	13.16	35
5	<i>Tetradium fraxinifolium</i>	10	20	12.42	38
6	<i>Quercus serrata</i>	20	30	32.88	45
7	<i>Prunus cerasoides</i>	20	30	12.88	45
8	<i>Pinus wallichiana</i>	30	40	29.68	57
	Total		180	138.90	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Berberis wallichiana</i>	30	240	2.75	66

2	<i>Cotoneaster microphyllus</i>	20	160	12.50	49
3	<i>Eurya acuminata</i>	30	120	4.83	45
4	<i>Indigofera dosua</i>	10	80	2.65	33
5	<i>Rosa macrophylla</i>	20	180	7.75	54
6	<i>Rubus ellipticus</i>	10	80	5.30	33
7	<i>Viburnum cotinifolium</i>	10	40	3.20	20
	Total		900	38.98	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Anaphalis busua</i>	60	9000	0.12	56
2	<i>Anemone vitifolia</i>	20	2000	1.78	19
3	<i>Artemisia nilagirica</i>	30	6000	2.88	40
4	<i>Arundinella nepalensis</i>	50	7000	3.16	46
5	<i>Cirsium wallichii</i>	20	3000	0.57	25
6	<i>Digitaria ciliaris</i>	20	4000	1.00	31
7	<i>Pilea scripta</i>	1	2000	0.64	22
8	<i>Rumex nepalensis</i>	20	4000	0.86	31
9	<i>Potentilla microphylla</i>	20	4000	0.57	31
	Total		41000	11.57	

Sampling Site: YG12

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia lucida</i>	15	40	18.09	44
2	<i>Castanopsis hystrix</i>	25	30	2.88	28
3	<i>Quercus serrata</i>	25	20	13.20	25
4	<i>Eurya acuminata</i>	35	20	2.42	26

5	<i>Ficus semicordata</i>	35	10	12.12	21
6	<i>Lepisanthes tetraphylla</i>	20	10	11.78	15
7	<i>Pinus kesiya</i>	75	30	32.88	43
8	<i>Schefflera impressa</i>	30	20	13.16	26
9	<i>Macaranga denticulata</i>	35	20	10.22	19
10	<i>Toona ciliata</i>	15	34	12.50	25
11	<i>Xylosma longifolium</i>	15	28	14.40	28
	Total		262	143.65	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Acacia pennata</i>	20	560	0.18	24
2	<i>Berberis asiatica</i>	20	250	1.76	21
3	<i>Rhododendron arboreum</i>	25	300	0.40	19
4	<i>Bauhinia vahlii</i>	35	180	0.84	20
5	<i>Brassiopsis aculeata</i>	30	480	0.24	25
6	<i>Boehmeria macrophylla</i>	20	280	3.56	30
7	<i>Indigofera dosua</i>	75	580	5.76	66
8	<i>Rhododendron ponticum</i>	30	300	6.32	45
9	<i>Strobilanthes thomsonii</i>	35	230	0.44	20
10	<i>Vaccinium retusum</i>	15	140	5.00	30
	Total		3300	24.50	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alpinia allughas</i>	10	2000	0.57	8
2	<i>Paris polyphylla</i>	10	20000	5.65	31
3	<i>Bambusa pallida</i>	20	26000	20.41	70
4	<i>Rubia cordifolia</i>	40	32000	1.00	47
5	<i>Fragaria vesca</i>	20	9000	0.64	18

6	<i>Piper nigrum</i>	10	5000	8.83	26
7	<i>Inula cappa</i>	10	4000	7.07	22
8	<i>Musa acuminata</i>	10	8000	5.09	21
9	<i>Persicaria hydropiper</i>	10	7500	0.49	12
10	<i>Phrynium imbricatum</i>	30	8000	0.57	23
11	<i>Arenaria orbiculata</i>	20	14000	0.86	23
	Total		135500	51.17	

Sampling Site: YG13

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Acer caudatum</i>	15	20	23.20	25
2	<i>Macaranga denticulata</i>	25	20	12.42	25
3	<i>Quercus serrata</i>	25	10	26.12	20
4	<i>Eurya acuminata</i>	35	10	11.78	21
5	<i>Ficus auriculata</i>	35	30	12.88	34
6	<i>Exbucklandia populnea</i>	20	20	13.16	27
7	<i>Pinus kesiya</i>	75	50	11.49	47
8	<i>Schefflera impressa</i>	30	30	21.25	26
9	<i>Castanopsis hystrix</i>	35	30	18.40	28
10	<i>Toona ciliata</i>	35	15	24.90	28
11	<i>Xylosma longifolium</i>	20	20	11.40	19
	Total		255	187.00	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Acacia pennata</i>	20	40	0.51	11
2	<i>Boehmeria rugulosa</i>	40	120	2.56	23
3	<i>Berberis asiatica</i>	20	160	0.26	15

4	<i>Bauhinia vahlii</i>	30	200	8.09	22
5	<i>Boehmeria macrophylla</i>	10	1160	2.02	76
6	<i>Indigofera dosua</i>	10	200	0.37	13
7	<i>Brassiopsis aculeata</i>	10	600	1.39	40
8	<i>Maesa chisia</i>	10	200	3.36	15
9	<i>Oxyspora paniculata</i>	50	440	2.75	44
10	<i>Rubus hoeffmeisterianus</i>	30	600	5.37	41
	Total		3720	26.67	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Rubia cordifolia</i>	10	3000	1.00	11
2	<i>Fragaria vesca</i>	20	7500	0.70	20
3	<i>Piper nigrum</i>	40	5000	8.80	51
4	<i>Inula cappa</i>	20	4000	7.07	35
5	<i>Musa balbisiana</i>	10	8000	5.09	30
6	<i>Persicaria hydropiper</i>	10	7500	0.49	15
7	<i>Phrynium imbricatum</i>	10	8000	0.57	16
8	<i>Arenaria orbiculata</i>	10	12500	0.86	22
9	<i>Pteris subindivisa</i>	30	2000	1.00	19
10	<i>Angiopteris assamica</i>	20	9000	0.90	22
11	<i>Digitaria stricta</i>	10	10000	1.37	20
12	<i>Pilea scripta</i>	20	5000	3.93	27
13	<i>Persicaria capitata</i>	10	4000	0.79	12
	Total		85500	32.56	

Sampling Site: YG14

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Altingia excelsa</i>	15	20	13.20	20
2	<i>Amoora wallichii</i>	25	20	22.42	21
3	<i>Quercus serrata</i>	25	10	32.12	16
4	<i>Eurya acuminata</i>	35	10	12.28	19
5	<i>Brassiopsis griffithii</i>	35	30	13.50	30
6	<i>Exbucklandia populnea</i>	20	20	3.16	21
7	<i>Pinus kesiya</i>	75	50	21.49	68
8	<i>Gynocardia odorata</i>	30	30	11.25	23
9	<i>Castanopsis hystrix</i>	35	30	23.90	31
10	<i>Kydia calycina</i>	35	15	12.90	23
11	<i>Elaeocarpus robustus</i>	20	20	11.40	17
12	<i>Xylosma longifolium</i>	15	8	9.40	13
	Total		263	187.02	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Acacia pennata</i>	30	40	1.00	20
2	<i>Berberis asiatica</i>	20	120	0.70	17
3	<i>Bauhinia vahlii</i>	40	160	8.80	58
4	<i>Boehmeria macrophylla</i>	20	200	7.07	43
5	<i>Daphne papyracea</i>	20	200	5.09	36
6	<i>Prunus prostata</i>	10	200	0.49	14
7	<i>Rosa chinensis</i>	10	440	0.57	23
8	<i>Rubus ellipticus</i>	10	600	0.86	30
9	<i>Strobilanthes echinata</i>	30	600	1.00	41
10	<i>Vaccinium retusum</i>	20	110	1.20	18
	Total		2670	26.78	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Acorus calamus</i>	20	5000	2.10	23
2	<i>Alpinia allughas</i>	14	4000	0.70	13
3	<i>Arenaria orbiculata</i>	13	8000	8.80	50
4	<i>Arisaema nepalensis</i>	11	7500	1.00	17
5	<i>Artemisia parviflora</i>	20	8000	0.09	18
6	<i>Bambusa pallida</i>	10	9350	0.50	16
7	<i>Bulbophyllum affine</i>	10	10300	0.56	17
8	<i>Fragaria vesca</i>	10	11250	0.85	19
9	<i>Hedera nepalensis</i>	30	12200	3.05	39
10	<i>Inula cappa</i>	20	5000	2.90	26
11	<i>Musa balbisiana</i>	14	4000	1.37	16
12	<i>Phrynium imbricatum</i>	13	5000	0.93	15
13	<i>Persicaria capitata</i>	11	4000	0.79	13
14	<i>Angiopteris assamica</i>	10	4000	0.45	11
15	<i>Viola betonicifolia</i>	9	3800	0.22	9
	Total		101400	24.31	

Outside the Siang Basin

Sampling Site: B2 Jiya Dhol

TREES

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Trewia nudiflora</i>	60	120	25.31	130.47
2	<i>Citrus limetta</i>	10	20	1.81	18.92
3	<i>Mangifera indica</i>	10	20	8.60	26.90
4	<i>Ficus religiosa</i>	10	10	25.43	42.16
5	<i>Averrhoa carambola</i>	10	10	1.26	13.72
6	<i>Bridelia retusa</i>	10	20	19.00	39.13
7	<i>Lagerstroemia lanceolata</i>	10	10	2.83	15.56
8	<i>Alangium chinense</i>	10	10	0.78	13.15
	Total		220	85.01	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Urena lobata</i>	40	160	9.11	46.1
2	<i>Cassia tora</i>	10	200	8.83	21.13
3	<i>Chromolaena odoratum</i>	70	400	7.13	111.82
4	<i>Ipomoea carnea</i>	20	240	2.2	28.69
5	<i>Caryopteris odorata</i>	10	40	5.35	7.52
6	<i>Lantana camara</i>	20	80	29.39	18.56
7	<i>Urtica dioica</i>	30	160	22.46	26.07
8	<i>Ziziphus mauritiana</i>	40	240	13.69	40.12
	Total		1520	98.16	

Sampling Site: B1 Brahmaputra River (Dibrugarh)

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Cassia tora</i>	20	660	18.09	46.93
2	<i>Ziziphus mauritiana</i>	20	1200	18.09	61.84
3	<i>Caryopteris odorata</i>	30	440	198.95	116.68
4	<i>Lantana camara</i>	10	1120	13.56	46.90
5	<i>Solanum torvum</i>	10	200	30.77	27.65
	Total		3620	279.46	

II. Summer Season

Siang Sub Basin-I

Sampling Site: S1

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aesculus assamica</i>	20	30	33.91	42
2	<i>Ailanthus integrifolia</i>	10	10	71.12	41
3	<i>Bischofia javanica</i>	10	10	5.28	18
4	<i>Castanopsis indica</i>	20	20	2.64	24
6	<i>Cinnamomum pauciflorum</i>	20	20	45.91	41
7	<i>Duabanga grandiflora</i>	10	10	1.52	13
8	<i>Euonymus attenuatus</i>	10	10	4.78	13
9	<i>Leea indica</i>	10	10	6.36	16
10	<i>Lithocarpus elegans</i>	10	20	7.91	18
11	<i>Mallotus philippensis</i>	10	10	2.83	12
12	<i>Milusa globosa</i>	10	10	0.91	11
13	<i>Millettia pulchra</i>	10	10	0.80	11
14	<i>Oroxylum indicum</i>	10	20	2.58	12
15	<i>Picrasma javanica</i>	10	10	25.43	27
	Total		200	211.98	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria glomerulifera</i>	20	480	5.426	54
2	<i>Elatostema sesquifolium</i>	30	840	6.594	80
3	<i>Abroma angustifolia</i>	10	80	4.578	28
4	<i>Brassiopsis mitis</i>	20	80	0.904	21
5	<i>Melocalamus compactiflorus</i>	20	680	5.998	65
6	<i>Solanum verbascifolium</i>	10	40	0.452	10
7	<i>Chromolaena odoratum</i>	10	80	0.628	13
8	<i>Boehmeria macrophylla</i>	20	200	1.731	29
Total			2480	26.311	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Athyrium drepanopterum</i>	30	26000	0.082	13
2	<i>Ageratum conyzoides</i>	30	11000	0.699	17
3	<i>Begonia megaptera</i>	30	7000	0.528	14
4	<i>Bidens bipinnata</i>	40	13000	0.367	15
5	<i>Bidens pilosa</i>	60	25000	0.201	19
6	<i>Blumea hieracifolia</i>	40	9000	0.346	13
7	<i>Capillipedium assimile</i>	30	19000	0.06	11
8	<i>Cardamine hirsuta</i>	10	4000	0.015	3
9	<i>Colocasia esculenta</i>	10	1000	0.057	2
10	<i>Commelina benghalensis</i>	30	18000	0.326	14
11	<i>Cynoglossum glochidiatum</i>	30	9000	0.177	9
12	<i>Carex cruciata</i>	30	9000	0.177	9

13	<i>Cyrtococcum accrescens</i>	10	1000	0.113	3
14	<i>Conyza stricta</i>	10	4000	0.015	3
15	<i>Desmodium heterocarpon</i>	40	13000	0.367	15
16	<i>Dichrocephala chrysanthemifolia</i>	30	14000	0.396	14
17	<i>Drymaria mollis</i>	10	2000	0.006	2
18	<i>Elatostema longicaudatum</i>	10	2000	0.025	2
19	<i>Gnaphalium affine</i>	20	12000	0.191	9
20	<i>Hedychium spicatum</i>	20	9000	1.59	28
21	<i>Hedyotis vestita</i>	30	18000	0.326	14
22	<i>Impatiens violaeiflora</i>	10	8000	0.03	4
23	<i>Isachne albens</i>	10	2000	0.077	3
24	<i>Kyllinga brevifolia</i>	10	2000	0.025	2
25	<i>Perilla frutescens</i>	30	23000	0.087	13
26	<i>Persicaria barbata</i>	60	25000	0.201	19
27	<i>Pilea umbrosa</i>	40	9000	0.346	13
28	<i>Piper pedicellatum</i>	10	4000	0.015	3
29	<i>Tectaria polymorpha</i>	30	14000	0.396	14
	Total		313000	7.241	

Sampling Site: S2

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Anthocephalus cadamba</i>	10	10	5.02	12
2	<i>Canarium strictum</i>	50	50	25.75	65
3	<i>Castanopsis indica</i>	10	10	7.54	16
4	<i>Cinnamomum pauciflorum</i>	10	20	3.04	15

5	<i>Dipterocarpus retusus</i>	10	10	9.50	15
6	<i>Kydia calycina</i>	10	10	66.02	57
7	<i>Mallotus philippensis</i>	10	10	0.91	10
8	<i>Magnolia hodgsonii</i>	10	10	1.96	12
9	<i>Michelia glabra</i>	10	10	1.81	10
11	<i>Pandanus nepalensis</i>	50	50	10.29	51
12	<i>Pterospermum acerifolium</i>	30	30	13.07	36
	Total		220	144.91	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Leea asiatica</i>	10	200	1.764	19
2	<i>Boehmeria glomerulifera</i>	60	920	25.934	140
3	<i>Korthalsia flagellaris</i>	10	40	1.809	13
4	<i>Chromolaena odoratum</i>	10	400	3.14	31
5	<i>Calamus tenuis</i>	30	240	5.902	44
6	<i>Psychotria calocarpa</i>	20	240	2.713	30
7	<i>Boehmeria macrophylla</i>	10	240	2.197	22
			2280	43.46	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ageratum conyzoides</i>	60	77000	0.74	40
2	<i>Athyrium drepanopterum</i>	30	11000	0.699	17
3	<i>Begonia megaptera</i>	30	7000	0.528	14
4	<i>Bidens bipinnata</i>	20	12000	0.191	9
5	<i>Carex cruciata</i>	60	17000	0.854	26

6	<i>Commelina benghalensis</i>	10	10000	0.126	6
7	<i>Cynoglossum glochidiatum</i>	30	9000	0.177	9
8	<i>Cyrtococcum accrescens</i>	10	2000	0.006	2
9	<i>Desmodium heterocarpon</i>	40	13000	0.367	15
10	<i>Dichrocephala chrysanthemifolia</i>	30	14000	0.396	14
11	<i>Gnaphalium affine</i>	10	2000	0.025	2
12	<i>Hedychium spicatum</i>	20	9000	1.59	28
13	<i>Impatiens violaeiflora</i>	30	18000	0.326	14
14	<i>Kyllinga brevifolia</i>	30	19000	0.06	10
15	<i>Nepeta lamiopsis</i>	30	26000	0.082	13
16	<i>Oplismenus compositus</i>	50	88000	0.276	34
17	<i>Perilla frutescens</i>	10	1000	0.057	3
18	<i>Persicaria barbata</i>	10	8000	0.03	4
19	<i>Persicaria capitata</i>	20	8000	0.03	6
20	<i>Pilea umbrosa</i>	60	25000	0.201	19
21	<i>Piper pedicellatum</i>	40	9000	0.346	13
22	<i>Tectaria polymorpha</i>	10	4000	0.015	3
	Total		389000	7.12	

Sampling Site: S3

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Duabanga grandiflora</i>	80	140	291.48	126
2	<i>Ficus racemosa</i>	10	10	8.04	8
3	<i>Ficus semicordata</i>	20	20	37.70	24
4	<i>Lannea coromandelica</i>	10	10	7.54	9
5	<i>Macaranga denticulata</i>	50	60	46.73	52
6	<i>Magnolia hodgsonii</i>	10	10	1.96	13

7	<i>Michelia glabra</i>	10	10	1.81	10
8	<i>Saurauia punduana</i>	30	30	24.12	25
9	<i>Terminalia myriocarpa</i>	30	30	38.63	33
	Total		320	458.01	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Chromolaena odoratum</i>	50	1840	15.93	63.79
2	<i>Calamus tenuis</i>	10	80	0.73	5.21
3	<i>Elatostema lineolatum</i>	30	960	8.15	34.23
4	<i>Boehmeria macrophylla</i>	70	1520	14.97	64.15
5	<i>Melocalamus compactiflorus</i>	20	240	0.04	9.30
6	<i>Piper pedicellatum</i>	50	1960	15.39	64.55
7	<i>Solanum torvum</i>	10	40	0.38	4.14
8	<i>Capparis roxburghii</i>	20	280	2.47	13.53
9	<i>Leea asiatica</i>	10	120	2.41	8.30
10	<i>Psychotria calocarpa</i>	20	280	2.42	13.46
11	<i>Capparis tenera</i>	30	200	2.04	14.85
12	<i>Debregeasia longifolia</i>	10	40	0.62	4.50
	Total		7560	65.544	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Carex cruciata</i>	60	17000	0.854	19
2	<i>Oplismenus compositus</i>	50	88000	0.276	25
3	<i>Ageratum conyzoides</i>	60	77000	0.74	29
4	<i>Hedychium spicatum</i>	20	9000	1.59	20
5	<i>Persicaria capitata</i>	20	8000	0.03	4

6	<i>Nepeta lamiopsis</i>	30	26000	0.082	9
7	<i>Athyrium drepanopterum</i>	30	11000	0.699	13
8	<i>Begonia megaptera</i>	30	7000	0.528	10
9	<i>Desmodium heterocarpon</i>	40	13000	0.367	11
10	<i>Pilea umbrosa</i>	60	25000	0.201	14
11	<i>Piper pedicellatum</i>	40	9000	0.346	10
12	<i>Kyllinga brevifolia</i>	30	19000	0.06	8
13	<i>Tectaria polymorpha</i>	10	4000	0.015	2
14	<i>Perilla frutescens</i>	10	1000	0.057	2
15	<i>Impatiens violaeiflora</i>	30	18000	0.326	10
16	<i>Commelina benghalensis</i>	10	10000	0.126	4
17	<i>Dichrocephala chrysanthemifolia</i>	30	14000	0.396	10
18	<i>Gnaphalium affine</i>	10	2000	0.025	2
19	<i>Persicaria barbata</i>	10	8000	0.03	3
20	<i>Cynoglossum glochidiatum</i>	30	9000	0.177	7
21	<i>Cyrtococcum accrescens</i>	10	2000	0.006	2
22	<i>Bidens bipinnata</i>	20	12000	0.191	7
23	<i>Isachne albens</i>	30	23000	0.087	9
24	<i>Colocasia esculenta</i>	10	1000	0.113	2
25	<i>Hydrocotyle nepalensis</i>	10	4000	0.015	2
26	<i>Blumea hieracifolia</i>	10	5000	0.565	8
27	<i>Conyza stricta</i>	10	2000	0.077	2
28	<i>Bidens pilosa</i>	30	16000	0.254	9
29	<i>Capillipedium assimile</i>	10	5000	0.016	2
30	<i>Plantago erosa</i>	10	10000	0.126	4
31	<i>Nephrolepis biauriculate</i>	20	34000	0.107	10
32	<i>Cucumis melo</i>	10	1000	0.007	1
33	<i>Lecanthus peduncularis</i>	10	2000	0.014	2

34	<i>Athyrium drepanopterum</i>	20	6000	0.365	7
35	<i>Pilea glaberrima</i>	10	10000	0.08	4
36	<i>Rubus nepalensis</i>	20	2000	0.1	4
37	<i>Cardamine hirsuta</i>	10	4000	0.013	2
38	<i>Scutellaria scandens</i>	10	4000	0.707	9
39	<i>Crawfurdia speciosa</i>	10	2000	0.01	2
	Total		520000	9.778	

Siang Sub Basin-II

Sampling Site: S4

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ficus semicordata</i>	20	50	45.64	29
2	<i>Albizia odoratissima</i>	10	10	7.54	8
3	<i>Macaranga denticulata</i>	20	50	86.70	55
4	<i>Saurauia punduana</i>	20	50	38.95	39
5	<i>Magnolia hodgsonii</i>	10	10	1.96	29
6	<i>Castanopsis indica</i>	20	20	85.97	40
7	<i>Alnus nepalensis</i>	10	30	21.91	16
8	<i>Altingia excelsa</i>	10	10	19.63	10
9	<i>Ulmus lanceifolia</i>	10	10	21.23	10
10	<i>Duabanga grandiflora</i>	10	10	50.24	15
11	<i>Terminalia myriocarpa</i>	20	20	70.48	25
12	<i>Maesa robusta</i>	10	10	44.16	14
13	<i>Bischofia javanica</i>	10	10	9.62	9
	Total		290	504.02	

SHRUBS

S.No	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Debregeasia longifolia</i>	20	80	3.62	18
2	<i>Maesa chisia</i>	50	400	6.15	42
3	<i>Boehmeria rugulosa</i>	20	200	6.28	28
4	<i>Solanum surattense</i>	10	40	0.35	5
5	<i>Strobilanthes echinata</i>	40	640	5.86	43

6	<i>Boehmeria macrophylla</i>	30	200	2.26	20
7	<i>Rubus ellipticus</i>	10	80	0.90	7
8	<i>Chromolaena odoratum</i>	70	1600	3.80	70
9	<i>Caryopteris odorata</i>	10	80	0.90	7
10	<i>Elatostema sessile</i>	10	400	3.14	21
11	<i>Oxyspora paniculata</i>	10	40	0.37	5
12	<i>Urena lobata</i>	20	360	3.18	23
13	<i>Actinidia callosa</i>	10	160	1.46	11
	Total		4280	38.27	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Crassocephalum crepidioides</i>	30	6000	0.425	12
2	<i>Oplismenus compositus</i>	50	7000	0.122	11
3	<i>Bidens bipinnata</i>	20	4000	0.152	6
4	<i>Capillipedium assimile</i>	20	32000	0.157	15
5	<i>Mikania micrantha</i>	80	5000	0.434	19
6	<i>Urena lobata</i>	40	22000	0.73	23
7	<i>Oxalis corniculata</i>	20	14000	0.044	8
8	<i>Desmodium heterocarpon</i>	20	14000	0.464	14
9	<i>Conyza stricta</i>	30	18000	0.353	15
10	<i>Nephrolepis auriculata</i>	30	9000	0.122	9
11	<i>Bulbophyllum affine</i>	10	4000	0.028	3
12	<i>Equisetum diffusum</i>	30	4000	0.311	10
13	<i>Kyllinga brevifolia</i>	10	10000	0.031	5
14	<i>Cyrtococcum accrescens</i>	50	5000	0.255	12
15	<i>Bidens pilosa</i>	20	18000	0.127	10

16	<i>Pteracanthus cusia</i>	30	4000	0.227	9
17	<i>Drymaria mollis</i>	20	34000	0.107	15
18	<i>Perilla frutescens</i>	20	4000	0.095	5
19	<i>Nepeta lamioipsis</i>	10	4000	0.01	3
20	<i>Chrysopogon aciculate</i>	20	4000	0.018	4
21	<i>Commelina bengalensis</i>	10	6000	0.075	4
22	<i>Persicaria capitata</i>	10	4000	0.015	3
23	<i>Ageratum conyzoides</i>	40	38000	0.477	25
24	<i>Hedychium spicatum</i>	10	2000	0.981	16
25	<i>Colocasia esculenta</i>	20	3000	0.151	6
26	<i>Elatostema longicaudatum</i>	10	10000	0.283	9
27	<i>Lecanthus peduncularis</i>	20	2000	0.352	9
28	<i>Selaginella decipiens</i>	10	20000	0.098	9
29	<i>Cardamine hirsuta</i>	10	5000	0.016	3
30	<i>Imperata cylindrica</i>	10	5000	0.157	5
	Total		317000	6.817	

Sampling Site: S5

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia odoratissima</i>	10	10	7.54	15
2	<i>Alnus nepalensis</i>	10	30	21.91	24
3	<i>Bischofia javanica</i>	10	10	9.62	11
4	<i>Castanopsis indica</i>	20	20	85.97	36
5	<i>Duabanga grandiflora</i>	10	10	50.24	20
6	<i>Ficus semicordata</i>	10	10	44.16	18
7	<i>Macaranga denticulata</i>	20	50	86.70	48

8	<i>Maesa robusta</i>	20	50	45.64	43
9	<i>Saurauia punduana</i>	20	50	38.95	47
10	<i>Terminalia myriocarpa</i>	20	20	70.48	37
	Total		260	461.20	

SHRUBS

S.No	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	100	1240	35.88	138
2	<i>Chromolaena odoratum</i>	70	3800	7.46	113
3	<i>Melastoma normale</i>	10	80	0.69	7
4	<i>Caryopteris odorata</i>	20	80	0.90	12
5	<i>Urena lobata</i>	10	320	2.82	16
6	<i>Maesa chisia</i>	10	80	0.69	7
7	<i>Rubus ellipticus</i>	10	80	0.73	7
	Total	230	5680	49.18	

HERBS

S.No	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Conyza japonica</i>	30	37000	0.726	32
2	<i>Paspalum scrobiculatum</i>	10	10000	0.071	7
3	<i>Bidens bipinnata</i>	20	18000	0.127	13
4	<i>Kyllinga brevifolia</i>	10	8000	0.025	6
5	<i>Ageratum conyzoides</i>	20	20000	0.318	17
6	<i>Pteris nervosa</i>	70	39000	1.5	59
7	<i>Persicaria capitata</i>	10	8000	0.039	6
8	<i>Imperata cylindrica</i>	10	16000	0.05	8
9	<i>Selaginella indicum</i>	10	10000	0.045	7

10	<i>Capillipedium assimile</i>	70	150000	0.471	70
11	<i>Desmodium heterocarpon</i>	20	9000	0.113	11
12	<i>Oplismenus compositus</i>	10	8000	0.025	6
13	<i>Saccharum narenga</i>	20	32000	2.035	51
14	<i>Hydrocotyle nepalensis</i>	10	4000	0.013	4
15	<i>Spiranthes sinensis</i>	10	1000	0.028	4
	Total		370000	5.587	

Sampling Site: S6

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Duabanga grandiflora</i>	80	110	280.00	146
2	<i>Ficus racemosa</i>	10	10	8.00	9
3	<i>Ficus semicordata</i>	30	25	35.00	32
4	<i>Lannea coromandelica</i>	10	10	8.00	9
5	<i>Macaranga denticulata</i>	20	25	35.00	24
6	<i>Saurauia punduana</i>	30	30	25.00	28
7	<i>Terminalia myriocarpa</i>	50	65	45.00	52
	Total		275	436.00	

SHRUBS

S.No	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Colquhounia vestita</i>	20	480	4.15	38
2	<i>Melocalamus compactiflora</i>	10	1600	1.13	50
3	<i>Brassiopsis mitis</i>	10	40	1.81	13
4	<i>Aconogonum molle</i>	30	1040	8.66	73
5	<i>Debregeasia longifolia</i>	20	320	7.26	44

6	<i>Boehmeria macrophylla</i>	10	160	1.46	15
7	<i>Schefflera venulosa</i>	10	120	2.41	17
8	<i>Sarcochlamys pulcherrima</i>	10	80	0.72	11
9	<i>Rhamnus nepalensis</i>	10	80	0.71	11
10	<i>Hydrangea robusta</i>	10	40	0.62	10
11	<i>Leea asiatica</i>	10	80	3.04	18
	Total		4040	31.97	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aconogonum molle</i>	20	7000	4.45	42
2	<i>Ageratum conyzoides</i>	20	18000	0.88	16
3	<i>Agrostis vinealis</i>	10	2000	0.08	3
4	<i>Amomum subulatum</i>	20	3000	0.21	7
5	<i>Athyrium angustum</i>	20	9000	0.34	9
6	<i>Bidens bipinnata</i>	20	40000	0.152	15
7	<i>Mikania micrantha</i>	80	54000	0.434	34
8	<i>Urena lobata</i>	40	22000	0.73	20
9	<i>Desmodium heterocarpon</i>	20	14000	0.464	11
10	<i>Conyza stricta</i>	30	18000	0.353	14
11	<i>Equisetum diffusum</i>	30	44000	0.311	20
12	<i>Bidens pilosa</i>	20	18000	0.127	10
13	<i>Selaginella indicum</i>	10	20000	0.098	8
14	<i>Cardamine hirsuta</i>	10	5000	0.016	3
15	<i>Imperata cylindrica</i>	10	50000	0.157	16
16	<i>Pteris nervosa</i>	70	39000	1.5	37
17	<i>Oplismenus compositus</i>	10	8000	0.025	4
18	<i>Saccharum narenga</i>	20	32000	2.035	29
19	<i>Hydrocotyle nepalensis</i>	10	4000	0.013	3
			407000	12.375	

Siang Sub Basin-III

Sampling Site: S7

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	30	30	38.63	17
2	<i>Bischofia javanica</i>	30	30	24.12	14
3	<i>Castanopsis indica</i>	80	140	291.48	71
4	<i>Duabanga grandiflora</i>	50	60	46.73	26
5	<i>Ficus semicordata</i>	10	10	8.04	7
6	<i>Grewia polygama</i>	60	100	212.26	54
7	<i>Helicia erratica</i>	30	40	254.34	39
8	<i>Lannea coromandelica</i>	10	50	75.99	18
9	<i>Macaranga denticulata</i>	60	90	72.35	35
10	<i>Saurauia punduana</i>	30	40	66.44	19
	Total		590	1090.38	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Leea compactiflora</i>	20	240	2.71	9.38
2	<i>Pinanga gracilis</i>	20	560	8.62	15.96
3	<i>Piper pedicellatum</i>	40	600	5.09	20.75
4	<i>Ixora acuminata</i>	30	160	2.12	10.28
5	<i>Boehmeria macrophylla</i>	50	680	13.16	26.01
6	<i>Brassiopsis mitis</i>	20	120	5.65	7.87
7	<i>Melocalamus compactiflora</i>	10	160	0.08	5.14
8	<i>Alsophila spinulosa</i>	60	600	136.12	50.03

9	<i>Boehmeria rugulosa</i>	40	920	4.51	26.12
10	<i>Debregeasia longifolia</i>	30	440	198.95	51.90
11	<i>Ficus heterophylla</i>	10	120	13.56	6.97
12	<i>Maesa chisia</i>	50	1000	113.04	50.18
13	<i>Oxyspora paniculata</i>	30	200	18.31	13.99
14	<i>Sinarundinaria falcata</i>	10	40	12.56	5.42
			5840	534.49	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Desmodium heterocarpon</i>	60	38000	0.854	26
2	<i>Pteris subindivisa</i>	80	62000	2.056	45
3	<i>Bides bipinnata</i>	20	14000	0.176	8
4	<i>Ageratum conyzoides</i>	70	27000	1.344	28
5	<i>Oplismenus compositus</i>	60	36000	0.251	21
6	<i>Carex nivea</i>	20	10000	0.502	10
7	<i>Imperata cylindrica</i>	50	22000	0.339	17
8	<i>Kyllinga brevifolia</i>	30	21000	0.094	11
9	<i>Nepeta lamiopsis</i>	20	18000	0.057	9
10	<i>Conyza stricta</i>	10	4000	0.05	3
11	<i>Cyperus cyperinus</i>	10	4000	0.028	3
12	<i>Nephrolepis auriculata</i>	40	35000	0.442	19
13	<i>Cyrtococcum accrescens</i>	30	20000	0.123	11
14	<i>Hedyotis vestita</i>	20	4000	0.038	5
15	<i>Capillipedium assimile</i>	20	12000	0.27	8
16	<i>Amomum subulatum</i>	10	4000	6.359	48
17	<i>Paspalum scrobiculatum</i>	10	8000	0.1	5

18	<i>Cynodon dactylon</i>	10	15000	0.051	6
19	<i>Molineria capitulata</i>	10	1000	0.02	2
20	<i>Equisetum diffusum</i>	10	10000	0.071	5
21	<i>Artemisia nilagirica</i>	10	10000	0.785	10
	Total		375000	14.01	

Sampling Site: S8

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Altingia excelsa</i>	50	50	25.75	60
2	<i>Actinidia callosa</i>	10	10	0.91	15
3	<i>Ailanthus integrifolia</i>	50	50	10.29	51
4	<i>Bischofia javanica</i>	30	30	13.07	38
6	<i>Castanopsis indica</i>	10	10	66.02	59
7	<i>Dipterocarpus retusus</i>	10	10	5.02	13
8	<i>Duabanga grandiflora</i>	10	10	9.50	15
9	<i>Elatostema sessile</i>	10	10	7.54	16
11	<i>Lannea coromandelica</i>	10	20	3.04	13
12	<i>Macaranga denticulata</i>	10	10	1.81	10
13	<i>Terminalia myriocarpa</i>	10	10	15.20	10
	Total		220	158.15	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	20	160	18.09	15.78
2	<i>Alangium chinense</i>	20	160	18.09	15.78

3	<i>Alsophila spinulosa</i>	30	440	198.95	69.08
4	<i>Debregeasia longifolia</i>	50	1000	113.04	71.86
5	<i>Elatostema sesquifolium</i>	30	200	18.31	20.52
6	<i>Ficus heterophylla</i>	10	40	12.56	7.60
7	<i>Leea asiatica</i>	20	160	4.90	12.72
8	<i>Oxyspora paniculata</i>	20	200	3.08	13.41
9	<i>Rubus ellipticus</i>	10	800	6.28	27.25
10	<i>Solanum surattense</i>	30	200	14.13	19.55
11	<i>Trema amboinensis</i>	10	80	9.04	7.89
12	<i>Urena lobata</i>	30	160	14.65	18.56
			3600	431.119	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Persicaria capitata</i>	20	14000	0.099	11
2	<i>Bidens bipinnata</i>	10	8000	0.057	6
3	<i>Carex nivea</i>	30	14000	0.275	15
4	<i>Athyrium drepanopterum</i>	60	30000	1.908	35
5	<i>Piper pedicellatum</i>	20	4000	0.154	8
6	<i>Imperata cylindrica</i>	10	30000	0.114	15
7	<i>Saccharum narenga</i>	10	8000	0.402	7
8	<i>Pilea umbrosa</i>	10	2000	0.014	4
9	<i>Equisetum ramosissimum</i>	20	36000	0.707	22
10	<i>Conyza stricta</i>	10	8000	0.308	7
11	<i>Pilea scripta</i>	10	10000	0.442	8
12	<i>Capillipedium assimile</i>	10	10000	0.038	7
13	<i>Nephrolepis auriculata</i>	10	10000	0.031	7

14	<i>Elatostema sessile</i>	10	5000	0.141	5
15	<i>Hedychium spicatum</i>	20	5000	1.57	13
16	<i>Amomum subulatum</i>	10	2000	0.76	6
17	<i>Saccharum elephantus</i>	30	45000	22.078	101
18	<i>Oplismenus compositus</i>	30	16000	0.072	15
19	<i>Ageratum conyzoides</i>	10	2000	0.025	4
20	<i>Desmodium heterocarpon</i>	10	2000	0.039	4
	Total		261000	29.233	

Sampling Site: S9

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	60	110	212.26	71
2	<i>Lannea coromandelica</i>	10	10	15.20	9
3	<i>Castanopsis indica</i>	30	40	254.34	67
4	<i>Ficus semicordata</i>	60	100	72.35	32
5	<i>Grewia polygama</i>	10	10	24.62	10
6	<i>Helicia erratica</i>	10	40	75.99	25
7	<i>Bischofia javanica</i>	10	10	7.54	8
8	<i>Michelia glabra</i>	10	40	4.15	9
9	<i>Saurauia punduana</i>	60	90	102.58	38
12	<i>Terminalia myriocarpa</i>	30	30	66.44	24
14	<i>Tetradium fraxinifolium</i>	10	10	8.04	7
	Total		490	879.22	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	40	280	5.98	32.97
2	<i>Chromolaena odoratum</i>	20	880	6.91	37.86
3	<i>Maesa chisia</i>	20	880	29.03	70.79
4	<i>Debregeasia longifolia</i>	10	40	0.37	5.93
5	<i>Oxyspora paniculata</i>	40	640	5.54	39.87
6	<i>Vernonia volkemerifolia</i>	20	200	2.41	16.89
7	<i>Alsophila spinulosa</i>	30	880	8.36	44.56
8	<i>Boehmeria platyphylla</i>	10	80	0.69	7.26
9	<i>Strobilanthes echinata</i>	20	800	7.19	36.60
10	<i>Rubus ellipticus</i>	10	80	0.71	7.28
	Total	220	4760	67.19	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alpinia allughas</i>	10	5000	8.83	23
2	<i>Athyrium angustum</i>	30	8000	0.57	16
3	<i>Begonia nepalensis</i>	10	2000	1	7
4	<i>Bidens bipinnata</i>	10	8000	0.06	8
5	<i>Capillipedium assimile</i>	10	10000	0.04	9
6	<i>Carex nivea</i>	30	14000	0.27	18
7	<i>Conyza japonica</i>	10	2000	0.57	6
8	<i>Hedychium spicatum</i>	10	4000	7.07	19
9	<i>Helictotrichon virescens</i>	10	28000	1.37	20
10	<i>Miscanthus nepalensis</i>	10	8000	5.09	17
11	<i>Nephrolepis auriculata</i>	10	10000	0.03	9

12	<i>Ophiorrhiza heterostyla</i>	10	4000	0.79	7
13	<i>Persicaria capitata</i>	20	14000	0.86	16
14	<i>Persicaria barbata</i>	20	14000	0.1	14
15	<i>Polystichum aleuticum</i>	20	26000	20.41	58
16	<i>Pteris subindivisa</i>	40	32000	1	32
17	<i>Saccharum spontaneum</i>	10	20000	5.65	24
			209000	53.7	

Sampling Site: S10

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	60	90	212.26	81
2	<i>Bischofia javanica</i>	10	10	15.00	9
3	<i>Casearia vareca</i>	10	10	9.00	8
4	<i>Castanopsis indica</i>	10	10	8.04	8
5	<i>Ficus semicordata</i>	60	90	68.00	56
6	<i>Lannea coromandelica</i>	10	10	7.54	8
7	<i>Michelia glabra</i>	10	40	4.15	9
8	<i>Millettia pulchra</i>	10	10	19.63	10
9	<i>Saurauia punduana</i>	60	110	101.00	71
10	<i>Terminalia myriocarpa</i>	30	40	66.00	34
11	<i>Tetradium fraxinifolium</i>	10	10	8.04	8
	Total		430	518.66	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Oxyspora paniculata</i>	80	960	36.47	94.83

2	<i>Pentapanax leschenaultiana</i>	40	240	3.69	23.33
3	<i>Ficus heterophylla</i>	60	600	13.61	51.17
4	<i>Sinarundinaria falcata</i>	40	920	0.45	37.26
5	<i>Actinidia callosa</i>	20	160	1.81	12.67
6	<i>Maesa chisia</i>	30	440	19.90	45.27
7	<i>Cudrania javanensis</i>	10	120	1.36	7.94
8	<i>Alsophila spinulosa</i>	10	200	3.08	12.15
9	<i>Debregeasia longifolia</i>	30	160	1.46	15.38
	Total		3800	81.83	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Athyrium angustum</i>	60	36000	0.25	24
2	<i>Begonia nepalensis</i>	20	10000	0.5	8
3	<i>Colocasia affinis</i>	50	22000	0.34	18
4	<i>Conyza japonica</i>	30	21000	0.09	13
5	<i>Conyza stricta</i>	20	18000	0.06	10
6	<i>Crawfurdia speciosa</i>	40	35000	0.44	20
7	<i>Cyrtococcum accrescens</i>	30	20000	0.12	13
8	<i>Didymocarpus oblonga</i>	20	4000	0.04	6
9	<i>Hedychium spicatum</i>	20	12000	0.27	8
10	<i>Hedyotis vestita</i>	10	30000	0.11	11
11	<i>Helictotrichon virescens</i>	10	8000	0.4	5
12	<i>Kyllinga brevifolia</i>	10	2000	0.01	3
13	<i>Miscanthus nepalensis</i>	20	36000	0.71	17
14	<i>Nepeta lamiopsis</i>	10	10000	0.04	5
15	<i>Nephrolepis auriculata</i>	30	14000	0.27	11
16	<i>Ophiorrhiza heterostyla</i>	10	2000	0.57	4
17	<i>Persicaria capitata</i>	10	4000	7.07	20

18	<i>Polystichum aleuticum</i>	10	8000	5.09	17
19	<i>Pteris subindivisa</i>	30	10000	0.31	10
20	<i>Selaginella indica</i>	10	40000	25.43	74
21	<i>Thysanolaena latifolia</i>	10	1000	0.03	3
	Total		343000	42.16	

Siang Sub Basin-IV

Sampling Site: S11

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	50	50	7.57	54
2	<i>Casearia vareca</i>	70	40	2.14	44
3	<i>Castanopsis indica</i>	50	30	7.60	45
4	<i>Ficus semicordata</i>	20	25	1.69	21
5	<i>Lannea coromandelica</i>	10	10	0.92	9
6	<i>Millettia pulchra</i>	40	30	2.62	31
7	<i>Saurauia punduana</i>	20	15	1.66	16
8	<i>Terminalia myriocarpa</i>	40	30	6.42	39
9	<i>Bischofia javanica</i>	10	10	15.00	40
	Total		240	45.60	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Rubus lucens</i>	20	160	1.38	9.83
2	<i>Arundo donax</i>	20	1440	13.18	33.81
3	<i>Alsophila spinulosa</i>	80	2880	32.56	85.51
4	<i>Urena lobata</i>	30	240	2.24	14.86
5	<i>Debregeasia longifolia</i>	40	240	11.31	24.31
6	<i>Maesa chisia</i>	20	80	3.93	10.51
7	<i>Rubus ellipticus</i>	10	80	0.90	5.06

8	<i>Actinidia callosa</i>	20	160	4.07	11.61
9	<i>Hydrangea robusta</i>	40	640	21.11	35.86
10	<i>Bambusa pallida</i>	10	2000	60.31	68.64
	Total		7920	151.00	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aconogonum molle</i>	20	6000	0.163	8
2	<i>Ageratum conyzoides</i>	80	104000	0.139	46
3	<i>Agrostis vinealis</i>	10	10000	0.836	13
4	<i>Alpinia allughas</i>	10	5000	0.486	8
5	<i>Athyrium angustum</i>	30	8000	3.333	42
6	<i>Begonia megaptera</i>	10	2000	0.018	3
7	<i>Bidens bipinnata</i>	10	4000	0.017	3
8	<i>Cassia tora</i>	10	2000	0.02	3
9	<i>Conyza japonica</i>	10	2000	1.819	21
10	<i>Conyza stricta</i>	90	94000	0.003	45
11	<i>Digitaria ciliaris</i>	20	34000	0.149	15
12	<i>Drymaria mollis</i>	10	10000	0.025	5
13	<i>Equisetum diffusum</i>	10	22000	1.306	21
14	<i>Hedychium spicatum</i>	10	6000	0.107	5
15	<i>Imperata cylindrica</i>	10	28000	0.063	10
16	<i>Mazus japonica</i>	10	4000	1.181	15
17	<i>Musa balbisiana</i>	20	5000	0.025	6
18	<i>Ophiorrhiza heterostyla</i>	10	4000	0.111	4
19	<i>Oplismenus compositus</i>	20	6000	0.028	6
20	<i>Perilla frutescens</i>	30	12000	0.173	12

21	<i>Persicaria capitata</i>	20	14000	0.057	9
	Total		382000	10.059	

Sampling Site: S12

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia odoratissima</i>	20	40	90.00	35
2	<i>Alnus nepalensis</i>	20	20	25.65	22
3	<i>Altingia excelsa</i>	10	10	26.41	12
4	<i>Bischofia javanica</i>	10	10	22.08	14
5	<i>Castanopsis indica</i>	10	10	6.00	9
6	<i>Duabanga grandiflora</i>	10	10	108.00	21
7	<i>Ficus oligodon</i>	20	10	0.94	12
8	<i>Ficus semicordata</i>	60	120	206.65	93
9	<i>Macaranga denticulata</i>	10	10	7.54	9
10	<i>Maesa robusta</i>	10	10	8.04	9
11	<i>Saurauia punduana</i>	20	20	14.60	17
12	<i>Terminalia myriocarpa</i>	30	30	32.24	23
13	<i>Ulmus lanceifolia</i>	10	10	111.00	25
	Total		310	662.69	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	10	600	2.51	41
2	<i>Ardisia thyrsoiflora</i>	20	120	2.03	8
3	<i>Ficus heterophylla</i>	20	480	1.41	106

4	<i>Leucosceptrum canum</i>	10	400	1.81	60
5	<i>Maesa chisia</i>	80	960	0.90	33
6	<i>Oxyspora paniculata</i>	10	160	0.69	14
7	<i>Pinanga gracilis</i>	90	1320	0.45	11
8	<i>Rubus ellipticus</i>	20	200	11.31	10
9	<i>Rubus lineatus</i>	30	480	3.93	8
10	<i>Solanum surattense</i>	10	80	0.90	10
	Total		4800	25.96	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Adiantum philippensis</i>	10	2500	0.018	4
2	<i>Arisaema speciosum</i>	10	1500	0.017	4
3	<i>Begonia griffithiana</i>	15	2000	0.025	5
4	<i>Begonia nepalensis</i>	20	7500	0.02	10
5	<i>Begonia roxburghii</i>	15	5000	0.003	7
6	<i>Bidens pilosa</i>	20	12500	1.819	34
7	<i>Cynodon dactylon</i>	20	6500	0.057	10
8	<i>Elatostema sessile</i>	30	16000	0.025	18
9	<i>Equisetum diffusum</i>	10	4000	0.111	6
10	<i>Eupatorium odoratum</i>	10	2500	0.283	7
11	<i>Fagopyrum dibotrys</i>	60	12000	0.173	24
12	<i>Fragaria indica</i>	10	11000	0.003	10
13	<i>Hedychium spicatum</i>	10	5000	0.149	8
14	<i>Impatiens brachycentra</i>	10	4000	1.819	26
15	<i>Impatiens bicornuta</i>	20	5000	1.819	29

16	<i>Majus balbisiana</i>	10	5000	0.003	6
17	<i>Oxalis corniculata</i>	70	6000	0.149	22
18	<i>Plantago erosa</i>	10	6500	0.025	7
19	<i>Polygonum capitatum</i>	20	12000	1.306	28
20	<i>Pteridium aquilinum</i>	20	8000	0.676	18
21	<i>Pteris quadriaurita</i>	30	4000	0.173	12
22	<i>Selaginella indica</i>	10	2000	0.057	4
	Total		140500	8.73	

Sampling Site: S13

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Terminalia myriocarpa</i>	20	50	118.73	36
2	<i>Ostodes paniculata</i>	30	40	36.30	28
3	<i>Cinnamomum glaucescens</i>	30	50	38.95	31
4	<i>Castanopsis indica</i>	30	40	254.34	55
5	<i>Helicia erratica</i>	30	50	75.99	35
6	<i>Grewia polygama</i>	10	10	24.62	10
7	<i>Gynocardia odorata</i>	10	10	63.59	15
8	<i>Brassiopsis aculeata</i>	10	20	16.08	11
9	<i>Baccaurea ramiflora</i>	20	50	69.24	30
10	<i>Trema amboinensis</i>	10	10	12.56	8
11	<i>Macaranga denticulata</i>	10	10	67.89	15
12	<i>Carpinus viminea</i>	10	10	7.30	8
13	<i>Alnus nepalensis</i>	20	30	11.40	18
	Total		380	796.98	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Maesa chisia</i>	70	640	24.32	61.79
2	<i>Alsophila spinulosa</i>	50	1000	11.30	47.72
3	<i>Oxyspora paniculata</i>	30	200	1.83	14.13
4	<i>Leea compactiflora</i>	20	240	2.71	13.50
5	<i>Pinanga gracilis</i>	20	560	8.62	27.55
6	<i>Piper pedicellatum</i>	40	600	5.09	29.06
7	<i>Ixora acuminata</i>	30	160	2.12	13.67
8	<i>Boehmeria macrophylla</i>	50	680	13.16	43.44
9	<i>Brassiopsis mitis</i>	20	120	5.65	14.72
10	<i>Melocalamus compactiflora</i>	10	160	0.08	5.97
11	<i>Leucosceptrum canum</i>	30	400	3.80	20.74
12	<i>Actinidia callosa</i>	10	40	0.42	3.91
13	<i>Melastoma normale</i>	10	40	0.31	3.79
	Total		4840	79.41	

HERBS

S.No	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Equisetum diffusum</i>	10	8000	0.155	6
2	<i>Paspalum scrobiculatum</i>	60	36000	0.837	29
3	<i>Cynoglossum glochidiatus</i>	70	19000	0.731	24
4	<i>Ageratum conyzoides</i>	80	14000	1.306	31
5	<i>Imperata cylindrica</i>	10	34000	0.107	13
6	<i>Capillipedium assimile</i>	10	20000	0.063	8
7	<i>Conyza stricta</i>	90	17000	1.181	32
8	<i>Drymaria mollis</i>	10	10000	0.025	5
9	<i>Athyrium drepanopterum</i>	20	5000	2.035	28

10	<i>Commelina benghalensis</i>	10	1000	0.02	2
11	<i>Persicaria capitata</i>	70	26000	0.321	22
12	<i>Curcuma aromatica</i>	10	1000	0.064	3
13	<i>Murdannia japonica</i>	30	22000	0.135	12
14	<i>Viola betonicifolia</i>	20	7000	0.046	6
15	<i>Gomphrena globosa</i>	20	5000	0.025	5
16	<i>Digitaria ciliaris</i>	20	14000	0.24	10
17	<i>Kyllinga brevifolia</i>	30	27000	0.085	13
18	<i>Mazus japonica</i>	10	4000	0.013	3
19	<i>Perilla frutescens</i>	10	16000	0.155	8
20	<i>Bidens bipinnata</i>	10	4000	0.05	3
21	<i>Hedyotis vistita</i>	10	8000	0.111	5
22	<i>Persicaria barbata</i>	10	4000	0.028	3
23	<i>Oplismenus compositus</i>	30	18000	0.173	12
24	<i>Cassia tora</i>	10	2000	0.057	3
25	<i>Saccharum spontaneum</i>	10	17000	0.55	13
26	<i>Cheilanthes albomarginata</i>	10	5000	0.079	4
	Total	680	344000	8.591	

Yamne Sub Basin

Sampling Site: Y1

TREES

S. No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Tetradium fraxinifolium</i>	20	20	64.31	23
2	<i>Altingia excelsa</i>	10	20	34.68	14
3	<i>Saurauia punduana</i>	40	40	37.63	30
4	<i>Lannea coromandelica</i>	30	70	57.36	38
5	<i>Ficus racemosa</i>	20	30	51.27	23
6	<i>Terminalia myriocarpa</i>	30	30	71.24	30
7	<i>Albizia lucida</i>	10	10	28.26	11
8	<i>Brassiopsis aculeata</i>	10	10	9.07	8
9	<i>Carpinus viminea</i>	20	30	21.91	18
10	<i>Macaranga denticulata</i>	30	50	38.95	30
11	<i>Aglaia spectabilis</i>	10	10	30.18	11
12	<i>Garuga pinnata</i>	10	10	47.76	14
13	<i>Phoebe hainesiana</i>	10	10	38.47	12
14	<i>Castanopsis indica</i>	20	20	20.35	15
15	<i>Magnolia hodgsonii</i>	10	10	8.55	7
16	<i>Artocarpus lakoocha</i>	10	10	50.24	14
	Total		380	610.22	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Abroma angustifolia</i>	20	480	5.43	28.92
2	<i>Actinidia callosa</i>	60	720	13.06	60.92

3	<i>Alsophila spinulosa</i>	10	80	2.69	9.83
4	<i>Boehmeria macrophylla</i>	10	80	1.23	7.49
5	<i>Boehmeria penduliflora</i>	20	120	1.36	12.07
6	<i>Brassiopsis mitis</i>	20	80	1.90	11.79
7	<i>Chromolaena odoratum</i>	20	680	6.00	35.58
8	<i>Debregeasia longifolia</i>	10	80	2.27	9.15
9	<i>Elatostema aquifolium</i>	10	40	1.45	6.70
10	<i>Maesa chisia</i>	30	240	4.64	24.00
11	<i>Melastoma normale</i>	40	440	4.57	32.85
12	<i>Oxyspora paniculata</i>	10	80	1.41	7.78
13	<i>Rhamnus nepalensis</i>	10	40	2.12	7.77
14	<i>Solanum surattense</i>	10	40	5.36	12.94
15	<i>Strobilanthes echinata</i>	20	240	3.71	19.28
16	<i>Vernonia volkemerifolia</i>	10	40	5.35	12.92
	Total		3480	62.55	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Desmodium microphyllum</i>	40	18000	0.057	9
2	<i>Artemisia nilagirica</i>	90	12000	4.77	57
3	<i>Conyza stricta</i>	20	6000	0.118	5
4	<i>Nephrolepis auriculata</i>	90	15000	0.399	16
5	<i>Origanum vulgare</i>	10	8000	0.036	4
6	<i>Oxalis corniculata</i>	50	2000	0.066	6
7	<i>Paspalum scrobiculatum</i>	20	30000	0.212	12
8	<i>Ageratum conyzoides</i>	70	2000	0.789	15
9	<i>Bidens bipinnata</i>	80	61000	0.572	30
10	<i>Oplismenus compositus</i>	30	11000	0.042	6
11	<i>Viola betonicifolia</i>	20	4000	0.028	3

12	<i>Sida rhombifolia</i>	20	3000	0.151	4
13	<i>Ophiorrhiza rugosa</i>	10	2000	0.025	2
14	<i>Cynoglossum glochidiatum</i>	10	2000	0.019	2
15	<i>Pteris nervosa</i>	10	4000	0.079	3
16	<i>Pogonatherum paniceum</i>	40	2000	0.136	6
17	<i>Athyrium attenuatum</i>	50	3000	0.54	11
18	<i>Rungia pectinata</i>	10	2000	0.031	2
19	<i>Hedyotis vistita</i>	20	6000	0.042	4
20	<i>Selaginella indica</i>	10	7000	0.063	4
21	<i>Arthraxon hispidus</i>	30	3000	0.094	5
22	<i>Anisomeles indica</i>	30	4000	0.075	5
23	<i>Urena lobata</i>	20	4000	0.028	3
24	<i>Lecanthus peduncularis</i>	50	52000	0.653	26
25	<i>Carex longipes</i>	30	9000	0.141	7
26	<i>Strobilanthes echinata</i>	40	5000	0.763	12
27	<i>Persicaria capitata</i>	20	7000	0.034	4
28	<i>Perilla frutescens</i>	10	1000	0.064	2
29	<i>Bidens pilosa</i>	20	5000	0.106	4
30	<i>Duchesnea indica</i>	10	2000	0.014	2
31	<i>Plantago erosa</i>	10	6000	0.059	3
32	<i>Mazus japonica</i>	20	14000	0.044	6
33	<i>Persicaria barbata</i>	20	8000	0.03	4
34	<i>Kyllinga brevifolia</i>	20	14000	0.075	7
35	<i>Paspalum scrobiculatum</i>	10	4000	0.05	3
36	<i>Sida rhombifolia</i>	10	2000	0.1	2
37	<i>Commelina benghalensis</i>	10	5000	0.063	3
38	<i>Hydrocotyle nepalensis</i>	10	8000	0.031	3
	Total		353000	10.601	

Sampling Site: Y2

TREES

Trees	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Castanopsis indica</i>	50	100	141.79	71
2	<i>Macaranga denticulata</i>	20	50	45.64	29
3	<i>Cinnamomum glaucescens</i>	10	10	7.54	8
4	<i>Lannea coromandelica</i>	20	50	86.70	36
5	<i>Pandanus nepalensis</i>	20	50	38.95	28
6	<i>Daphne obovata</i>	20	20	85.97	28
7	<i>Glochidion assamicum</i>	10	30	21.91	16
8	<i>Macropanax dispermus</i>	10	10	19.63	10
9	<i>Ficus glaberrima</i>	10	10	21.23	10
10	<i>Beilschmiedia roxburghiana</i>	10	10	50.24	15
11	<i>Bridelia retusa</i>	20	20	70.48	25
12	<i>Altingia excelsa</i>	10	10	44.16	14
13	<i>Ficus semicordata</i>	10	10	9.62	9
	Total		380	643.85	

SHRUBS

S.No	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	10	120	1.38	10.63
2	<i>Bambusa tulda</i>	10	160	34.59	52.23
3	<i>Calamus tenuis</i>	20	360	3.30	26.52
4	<i>Chromolaena odoratum</i>	10	40	18.31	27.98
5	<i>Debregeasia longifolia</i>	10	120	0.72	9.83
6	<i>Grewia tenax</i>	10	80	4.92	13.36
7	<i>Indigofera dosua</i>	10	40	1.36	7.52

8	<i>Maesa chisia</i>	10	40	1.02	7.12
9	<i>Murraya exotica</i>	20	120	1.06	14.59
10	<i>Randia tetrasperma</i>	10	40	1.52	7.72
11	<i>Rhamnus nepalensis</i>	20	200	2.07	18.88
12	<i>Rubus ellipticus</i>	10	160	0.37	10.94
13	<i>Oxyspora paniculata</i>	60	920	7.96	71.08
14	<i>Strobilanthes echinata</i>	10	120	1.81	11.15
15	<i>Vernonia volkemerifolia</i>	10	80	2.51	10.46
	Total		2600	82.90	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Oxalis corniculata</i>	80	9000	0.201	15
2	<i>Bidens pilosa</i>	10	5000	0.353	7
3	<i>Bidens bipinnata</i>	50	3000	0.377	12
4	<i>Ageratum conyzoides</i>	50	12000	0.582	17
5	<i>Mikania micrantha</i>	80	4000	0.354	16
6	<i>Kyllinga brevifolia</i>	30	40000	0.256	18
7	<i>Conyza stricta</i>	40	16000	0.201	12
8	<i>Plantago erosa</i>	20	11000	0.138	7
9	<i>Murdannia divergens</i>	40	30000	0.185	16
10	<i>Perilla frutescens</i>	20	6000	0.113	6
11	<i>Mazus delavayi</i>	20	10000	0.314	9
12	<i>Gnaphalium affine</i>	20	10000	0.071	6
13	<i>Paspalum scrobiculatum</i>	20	7000	0.115	6
14	<i>Cynodon dactylon</i>	10	40000	0.804	22
15	<i>Verbascum thapsus</i>	10	1000	0.363	6
16	<i>Heminodictyon vistica</i>	10	10000	0.707	13

17	<i>Nepeta lamiopsis</i>	20	16000	0.502	13
18	<i>Viola betonicifolia</i>	10	2000	0.152	4
19	<i>Persicaria capitata</i>	50	34000	0.167	18
20	<i>Athyrium drepanopterum</i>	20	8000	0.127	6
21	<i>Hydrocotyle nepalensis</i>	30	36000	0.163	16
22	<i>Equisetum diffusum</i>	30	18000	0.558	16
23	<i>Imperata cylindrica</i>	20	4000	0.152	6
24	<i>Artemisia nilagirica</i>	30	8000	0.454	12
25	<i>Nephrolepis auriculata</i>	20	24000	0.218	12
26	<i>Crassocephalum crepidioides</i>	10	1000	0.177	4
27	<i>Sida rhombifolia</i>	10	2000	0.393	7
	Total	760	367000	8.194	

Sampling Site: Y3

TREES

Trees	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Terminalia myriocarpa</i>	20	20	76.93	21
2	<i>Macaranga denticulata</i>	20	20	21.49	15
3	<i>Altingia excelsa</i>	30	30	197.60	41
4	<i>Duabanga grandiflora</i>	20	30	190.76	37
5	<i>Persea robusta</i>	10	10	12.56	8
6	<i>Bischofia javanica</i>	10	10	50.24	12
7	<i>Ficus semicordata</i>	20	20	34.68	17
8	<i>Ostodes paniculata</i>	50	70	104.46	50
9	<i>Engelhardtia spicata</i>	10	10	38.47	11
10	<i>Garcinia acuminata</i>	10	10	15.90	8
12	<i>Bauhinia variegata</i>	10	10	11.34	8

13	<i>Canarium strictum</i>	10	10	15.20	8
14	<i>Lannea coromandelica</i>	30	50	62.80	32
15	<i>Beilschmiedia roxburghiana</i>	10	10	22.89	9
16	<i>Castanopsis indica</i>	10	10	9.07	7
17	<i>Magnolia hodgsonii</i>	10	10	15.20	8
18	<i>Ficus ovata</i>	10	10	12.56	8
	Total		340	892.13	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ha ⁻¹)	TBC(m ² ha ⁻¹)	IVI
1	<i>Ardisia thyrsoiflora</i>	20	360	3.46	17.4
2	<i>Chromolaena odoratum</i>	40	640	8.60	34.7
3	<i>Rhamnus nepalensis</i>	30	200	6.61	19.1
4	<i>Alsophila spinulosa</i>	10	80	9.04	14.2
5	<i>Oxyspora paniculata</i>	70	400	7.99	34.8
6	<i>Bambusa tulda</i>	10	80	9.04	14.2
7	<i>Boehmeria macrophylla</i>	10	400	3.40	16.1
8	<i>Trevesia palmata</i>	20	360	3.75	17.7
9	<i>Boehmeria macrophylla</i>	40	360	11.34	30.6
10	<i>Caryopteris odorata</i>	40	160	3.85	17.3
11	<i>Maesa chisia</i>	40	160	8.09	22.0
12	<i>Solanum surattense</i>	80	480	7.68	38.7
13	<i>Grewia tenax</i>	10	160	3.85	10.5
14	<i>Randia wallichii</i>	20	120	4.58	12.6
	Total		3960	91.3	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Kyllinga brevifolia</i>	30	25000	0.079	11
2	<i>Chrysopogon acicularis</i>	30	12000	0.283	9
3	<i>Carex nivea</i>	10	4000	0.013	2
4	<i>Nephrolepis auriculata</i>	30	20000	0.063	10
5	<i>Mikania micrantha</i>	40	11000	0.078	8
6	<i>Artemisia nilagirica</i>	30	9000	0.572	12
7	<i>Oplismenus compositus</i>	50	34000	0.129	16
8	<i>Tectaria polymorpha</i>	10	4000	0.013	2
9	<i>Mazus delavayi</i>	80	76000	0.344	33
10	<i>Hydrocotyle nepalensis</i>	40	28000	0.106	13
11	<i>Viola pilosa</i>	20	6000	0.042	4
12	<i>Conyza stricta</i>	20	7000	0.067	5
13	<i>Ageratum conyzoides</i>	50	12000	0.350	12
14	<i>Oxalis corniculata</i>	80	8000	0.276	14
15	<i>Paspalum scrobiculatum</i>	20	4000	0.086	4
16	<i>Imperata cylindrica</i>	60	4000	0.307	11
17	<i>Gnaphalium affine</i>	20	5000	0.045	4
18	<i>Ajuga bracteosa</i>	20	6000	0.042	4
19	<i>Bidens pilosa</i>	30	8000	0.057	6
20	<i>Hymenodictyon vista</i>	40	6000	0.452	11
21	<i>Arthraxon hispidus</i>	30	6000	0.019	5
22	<i>Blepharis maderaspatensis</i>	20	16000	0.055	7
23	<i>Perilla frutescens</i>	50	7000	0.443	12
24	<i>Colocasia esculenta</i>	10	12000	1.846	23

25	<i>Pteris quadriaurita</i>	10	14000	3.561	40
26	<i>Desmodium heterocarpon</i>	20	7000	0.056	5
27	<i>Athyrium drepanopterum</i>	10	4000	0.028	3
28	<i>Persicaria capitata</i>	10	6000	0.042	3
29	<i>Arundo donax</i>	10	4000	0.707	9
	Total		365000	10.162	

Sampling Site: Y4

TREES

Trees	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ficus auriculata</i>	200	60	97.51	72
2	<i>Duabanga grandiflora</i>	40	60	820.67	72
3	<i>Ficus semicordata</i>	40	40	113.04	28
4	<i>Altingia excelsa</i>	10	10	18.09	6
5	<i>Albizia procera</i>	50	60	346.33	49
6	<i>Bridelia retusa</i>	10	10	8.04	6
7	<i>Lannea coromandelica</i>	40	70	261.62	44
8	<i>Albizia odoratissima</i>	10	10	153.86	14
9	<i>Claoxylon indicum</i>	10	20	34.68	10
	Total		340	1853.83	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Abroma angustifolia</i>	20	480	5.426	23.8
2	<i>Ardisia thyrsoiflora</i>	60	720	8.09	45.3
3	<i>Bambusa tulda</i>	10	80	59.82	57.0
4	<i>Elatostema aquifolium</i>	30	240	3.452	19.0

5	<i>Indigofera dosua</i>	40	440	7.39	30.9
6	<i>Maesa chisia</i>	10	80	6.58	11.0
7	<i>Melocalamus compactiflorus</i>	20	360	2.628	18.2
8	<i>Murraya exotica</i>	20	120	5.20	14.1
9	<i>Rhamnus nepalensis</i>	10	40	3.56	7.4
10	<i>Rubus ellipticus</i>	20	200	4.77	15.8
11	<i>Solanum verbascifolium</i>	60	920	1.731	45.1
12	<i>Vernonia volkemerifolia</i>	10	120	7.24	12.6
	Total		3800	115.89	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Persicaria barbata</i>	10	4000	0.020	4
2	<i>Bidens bipinnata</i>	30	23000	0.289	19
3	<i>Chrysopogon acicularis</i>	20	28000	0.106	17
4	<i>Oplismenus compositus</i>	2	24000	0.075	11
5	<i>Nephrolepis auriculata</i>	20	14000	0.044	11
6	<i>Hydrocotyle nepalensis</i>	10	4000	0.013	4
7	<i>Piper pedicellatum</i>	20	6000	0.231	10
8	<i>Colocasia esculenta</i>	10	2000	0.226	6
9	<i>Amomum subulatum</i>	20	12000	3.768	50
10	<i>Rubia sikkimensis</i>	30	17000	0.105	15
11	<i>Kyllinga brevifolia</i>	20	10000	0.031	9
12	<i>Athyrium attenuatum</i>	10	4000	0.707	12
13	<i>Pteris vittata</i>	10	7000	0.445	10
14	<i>Mikania micrantha</i>	30	10000	0.071	12
15	<i>Paspalum scrobiculatum</i>	10	4000	0.028	4
16	<i>Urtica ardens</i>	20	7000	1.236	21

17	<i>Cyrtococcum accrescens</i>	20	8000	0.036	8
18	<i>Artemisia nilagirica</i>	20	12000	0.850	19
19	<i>Miscanthus nepalensis</i>	20	10000	0.385	13
20	<i>Ageratum conyzoides</i>	30	18000	0.226	17
21	<i>Conyza stricta</i>	40	15000	0.424	20
22	<i>Imperata cylindrica</i>	10	18000	0.057	10
	Total		257000	9.372	

Simang Sub Basin

Sampling Site: Sm1

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Terminalia myriocarpa</i>	70	70	353.44	88
2	<i>Bridelia retusa</i>	10	10	12.56	8
3	<i>Claoxylon indicum</i>	30	30	45.59	27
4	<i>Cinnamomum glaucescens</i>	30	30	22.63	25
5	<i>Altingia excelsa</i>	40	40	114.93	41
6	<i>Albizia procera</i>	10	20	153.88	28
7	<i>Macaranga denticulata</i>	10	10	7.30	9
8	<i>Kydia calycina</i>	10	10	105.63	19
9	<i>Ostodes paniculata</i>	20	30	30.52	22
10	<i>Endospermum chinense</i>	10	10	16.61	10
11	<i>Syzygium assamicum</i>	10	10	21.23	12
12	<i>Beilschmiedia roxburghiana</i>	10	10	32.15	11
	Total		280	916.48	

SHRUBS

S.No	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Boehmeria penduliflora</i>	50	400	61.54	45.54
2	<i>Buddleja asiatica</i>	20	200	62.80	29.53
3	<i>Chromolaena odorata</i>	10	40	3.46	5.46
4	<i>Cinnamomum tamala</i>	40	640	58.60	49.55
5	<i>Eupatorium odoratum</i>	30	200	22.61	22.25

6	<i>Ficus auriculata</i>	10	80	9.04	8.26
7	<i>Leea asiatica</i>	70	400	37.99	45.84
8	<i>Melastoma malabathricum</i>	10	80	9.04	8.26
9	<i>Oxyspora paniculata</i>	10	400	31.40	24.76
10	<i>Sida acuta</i>	10	40	3.66	5.52
11	<i>Solanum erianthum</i>	20	360	31.75	26.75
12	<i>Urena lobata</i>	10	160	14.65	12.39
	Total		3000	382.73	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Persicaria capitata</i>	20	12000	0.074	14
2	<i>Selaginella decipiens</i>	20	6000	0.023	8
3	<i>Pteris biaurita</i>	20	6000	0.075	11
4	<i>Hydrocotyle nepalensis</i>	20	9000	0.028	10
5	<i>Bidens pilosa</i>	30	10000	0.031	13
6	<i>Persicaria barbata</i>	20	3000	0.021	7
7	<i>Oxalis corniculata</i>	20	10000	0.025	10
8	<i>Mikania micrantha</i>	30	14000	0.099	18
9	<i>Duchesnea indica</i>	20	6000	0.023	8
10	<i>Pilea scripta</i>	20	6000	0.037	9
11	<i>Arthraxon hispidus</i>	10	8000	0.025	7
12	<i>Drymaria mollis</i>	30	17000	0.053	17
13	<i>Equisetum ramosissimum</i>	20	10000	0.071	13
14	<i>Kyllinga brevifolia</i>	30	14000	0.036	15
15	<i>Hedyotis vestita</i>	20	4000	0.028	8
16	<i>Alpinia allughas</i>	10	4000	0.254	19
17	<i>Setaria palmifolia</i>	20	5000	0.063	10

18	<i>Commelina bengalensis</i>	10	2000	0.012	4
19	<i>Conyza japonica</i>	20	6000	0.027	8
20	<i>Oplismenus compositus</i>	20	12000	0.038	12
21	<i>Dichrocephala chrysanthemifolia</i>	10	2000	0.025	4
22	<i>Desmodium tenuifolium</i>	10	2000	0.016	4
23	<i>Ageratum conyzoides</i>	20	8000	0.073	12
25	<i>Pteridium aquilinum</i>	10	5000	0.393	28
26	<i>Nephrolepis auriculata</i>	10	10000	0.031	9
26	<i>Imperata cylindrica</i>	20	18000	0.062	16
27	<i>Paspalum scrobiculatum</i>	10	5000	0.025	6
	Total	500	214000	1.669	

Sampling Site: Sm2

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Anthocephalus cadamba</i>	10	10	226.87	54
2	<i>Helicia robusta</i>	20	20	88.31	21
3	<i>Pterospermum acerifolium</i>	10	20	76.93	16
4	<i>Cinnamomum glaucescens</i>	10	10	30.18	10
5	<i>Duabanga grandiflora</i>	60	55	279.64	88
6	<i>Albizia procera</i>	10	10	28.26	10
7	<i>Bischofia javanica</i>	20	20	45.78	20
8	<i>Ailanthus integrifolia</i>	10	10	12.56	10
9	<i>Ficus auriculata</i>	10	10	10.17	9
10	<i>Glochidion assamicum</i>	10	20	17.62	14
11	<i>Terminalia myriocarpa</i>	20	20	265.33	26

12	<i>Artocarpus integrifolia</i>	10	10	94.99	12
13	<i>Ficus oligodon</i>	10	10	38.47	10
	Total		225	1215.10	

SHRUBS

S.No	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Boehmeria macrophylla</i>	10	240	20	16.75
2	<i>Cinnamomum obtusifolium</i>	40	640	120	65.30
3	<i>Debregeasia longifolia</i>	30	400	40	36.30
4	<i>Ficus auriculata</i>	10	280	80	30.23
5	<i>Gonostegia hirta</i>	70	400	40	57.35
6	<i>Melastoma normale</i>	10	640	70	39.30
7	<i>Piper pedicellatum</i>	10	400	80	33.94
8	<i>Pteracanthus rubescens</i>	10	240	40	20.83
	Total		3240	490	

HERBS

S.No	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Colocasia esculenta</i>	10	2000	0.981	25
2	<i>Pteris wallichiana</i>	10	2000	0.127	6
3	<i>Impatiens laevigata</i>	40	32000	0.402	30
4	<i>Mikania micrantha</i>	70	37000	0.297	37
5	<i>Oplismenus compositus</i>	40	38000	0.144	27
6	<i>Urtica parviflora</i>	20	3000	0.53	18
7	<i>Commelina bengalensis</i>	40	13000	0.207	19
8	<i>Ophiorrhiza rugosa</i>	10	4000	0.018	4
9	<i>Setaria palmifolia</i>	20	7000	0.137	10
10	<i>Cyrtococcum accrescens</i>	10	8000	0.1	8

11	<i>Bidens pilosa</i>	30	32000	0.308	26
12	<i>Nephrolepis auriculata</i>	10	4000	0.013	4
13	<i>Microsorium pteropus</i>	10	5000	0.063	6
14	<i>Kyllinga brevifolia</i>	30	12000	0.059	13
15	<i>Polygonum plebeium</i>	20	16000	0.113	13
16	<i>Perilla frutescens</i>	20	22000	0.276	19
17	<i>Bidens bipinnata</i>	20	26000	0.735	30
18	<i>Cheilanthes tenuifolia</i>	10	10000	0.031	7
	Total		273000	4.542	

Sampling Site: Sm3

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ailanthus integrifolia</i>	60	60	35.25	30
2	<i>Albizia procera</i>	50	50	10.80	21
3	<i>Artocarpus heterophyllus</i>	40	60	68.30	33
4	<i>Bischofia javanica</i>	30	60	57.15	29
5	<i>Bombax ceiba</i>	40	40	60.75	28
6	<i>Chukrasia tabularis</i>	60	30	26.08	22
7	<i>Dillenia indica</i>	60	40	24.25	24
8	<i>Ficus semicordata</i>	50	40	26.08	22
9	<i>Kydia calycina</i>	40	30	35.25	20
10	<i>Ostodes paniculata</i>	30	40	10.80	15
11	<i>Syzygium assamicum</i>	40	30	68.30	27
12	<i>Terminalia myriocarpa</i>	60	30	57.15	28
	Total		510	480.15	

SHRUBS

S.No	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	20	80	36.17	18.534
2	<i>Boehmeria macrophylla</i>	50	400	61.54	45.367
3	<i>Buddleja asiatica</i>	20	200	62.80	29.439
4	<i>Chromolaena odorata</i>	10	40	3.46	5.446
5	<i>Cinnamomum pauciflorum</i>	40	640	58.60	49.267
6	<i>Citrus limetta</i>	30	200	22.61	22.163
7	<i>Debregeasia longifolia</i>	10	80	9.04	8.220
8	<i>Eupatorium odoratum</i>	70	600	37.99	52.245
9	<i>Ixora acuminata</i>	10	80	9.04	8.220
10	<i>Leea asiatica</i>	10	160	31.40	16.693
12	<i>Maesa chisia</i>	10	40	3.66	5.499
13	<i>Melastoma malabathricum</i>	20	360	31.75	26.590
14	<i>Pteracanthus rubescens</i>	10	160	14.65	12.317
			3040	382.73	

HERBS

S.No	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Panicum psilopodium</i>	10	4000	0.02	3
2	<i>Apium graveolens</i>	30	12000	0.122	11
3	<i>Cynoglossum glochidiatum</i>	40	10000	0.636	24
4	<i>Ageratum conyzoides</i>	60	66000	1.295	58
5	<i>Cheilanthes tenuifolia</i>	20	6000	0.075	6
6	<i>Fimbristylis dichotoma</i>	20	15000	0.038	8
7	<i>Centella asiatica</i>	30	12000	0.05	9
8	<i>Mazus japonica</i>	10	5000	0.016	3
9	<i>Oxalis latifolia</i>	10	4000	0.02	3

10	<i>Bidens pilosa</i>	50	26000	0.327	22
11	<i>Colocasia esculenta</i>	10	2000	0.127	5
12	<i>Kyllinga brevifolia</i>	50	40000	0.126	21
13	<i>Pilea umbrosa</i>	10	2000	0.008	2
14	<i>Oxalis corniculata</i>	30	27000	0.085	13
15	<i>Oplismenus compositus</i>	50	34000	0.107	19
16	<i>Triflorum ripens</i>	10	20000	0.076	8
17	<i>Hedyotis vestita</i>	20	9000	0.064	7
18	<i>Conyza japonica</i>	40	11000	0.311	17
19	<i>Mikania micrantha</i>	40	14000	0.113	12
20	<i>Dichrocephala chrysanthemifolia</i>	10	2000	0.025	3
21	<i>Eclipta alba</i>	10	2000	0.01	2
22	<i>Cynodon dactylon</i>	10	28000	0.088	11
23	<i>Paspalum scrobiculatum</i>	20	8000	0.064	7
24	<i>Cardamine hirsuta</i>	20	4000	0.013	4
25	<i>Commelina benghalensis</i>	20	8000	0.1	8
26	<i>Duchesnea indica</i>	10	5000	0.023	3
27	<i>Eleocharis congesta</i>	10	18000	0.041	7
28	<i>Desmodium heterocarpon</i>	10	4000	0.026	3
	Total		398000	4.003	

Hirit Sub Basin

Sampling Site: SY1

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Harpullia arborea</i>	10	20	8.14	14
2	<i>Bauhinia purpurea</i>	30	30	18.24	30
3	<i>Terminalia myriocarpa</i>	30	30	79.30	42
4	<i>Pterospermum acerifolium</i>	10	10	5.54	10
5	<i>Toona microcarpa</i>	10	20	17.31	16
6	<i>Holigarna longifolia</i>	10	20	6.04	14
7	<i>Michelia glabra</i>	20	20	1.82	18
8	<i>Bombax ceiba</i>	10	10	96.16	27
9	<i>Chukrasia tabularis</i>	10	10	101.74	28
10	<i>Ostodes paniculata</i>	10	40	11.30	22
11	<i>Duabanga grandiflora</i>	10	20	147.97	40
12	<i>Carallia brachiata</i>	10	20	7.69	14
13	<i>Artocarpus chaplasha</i>	10	10	9.50	11
14	<i>Kydia calycina</i>	10	10	25.43	14
	Total		270	536.17	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aconogonum molle</i>	10	320	0.20	23.78
2	<i>Alsophila spinulosa</i>	20	80	3.62	27.69
3	<i>Boehmeria macrophylla</i>	10	40	0.45	73.44

4	<i>Calamus floribundus</i>	30	440	4.03	51.04
5	<i>Maesa chisia</i>	20	240	2.12	25.62
6	<i>Melocalamus compactiflorus</i>	20	360	3.30	58.44
7	<i>Pinanga gracilis</i>	60	920	7.96	30.83
8	<i>Psychotria calocarpa</i>	10	40	0.45	9.17
	Total		2440	22.12	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aconogonum molle</i>	10	10	7.54	4
2	<i>Ageratum conyzoides</i>	10	10000	2.83	9
3	<i>Agrostis vinealis</i>	20	50	86.7	24
4	<i>Amomum subulatum</i>	10	10	50.24	13
5	<i>Angiopteris assamica</i>	20	9000	0.64	10
6	<i>Athyrium angustum</i>	10	30	21.91	7
7	<i>Begonia nepalensis</i>	10	10	21.23	7
8	<i>Bidens bipinnata</i>	10	2000	0.1	4
9	<i>Bidens pilosa</i>	40	12000	1.15	17
10	<i>Capillipedium assimile</i>	10	20000	0.51	15
11	<i>Polia hasskarlii</i>	10	2000	1.27	4
12	<i>Conyza japonica</i>	20	7000	0.88	9
13	<i>Digitaria stricta</i>	10	10000	0.49	9
14	<i>Equisetum diffusum</i>	20	20	85.97	24
15	<i>Molineria capitulata</i>	10	2000	0.25	4
16	<i>Hedychium spicatum</i>	10	10	19.63	7
17	<i>Colocasia esculenta</i>	40	11000	27.98	23

18	<i>Mikania micrantha</i>	60	19000	1.17	26
19	<i>Musa balbisiana</i>	20	50	38.95	13
20	<i>Ophiorrhiza heterostyla</i>	10	4000	0.28	5
21	<i>Pilea scripta</i>	20	5000	0.98	8
22	<i>Pteridium aquilinum</i>	20	20	70.48	20
23	<i>Saccharum narenga</i>	10	28000	10.77	22
24	<i>Sporobolus diander</i>	10	20000	1.41	15
			161210	453.35	

Sampling Site: SY2

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Harpullia arborea</i>	10	20	8.14	14
2	<i>Bauhinia purpurea</i>	30	30	18.24	30
3	<i>Terminalia myriocarpa</i>	30	30	79.30	42
4	<i>Pterospermum acerifolium</i>	10	10	5.54	10
5	<i>Toona microcarpa</i>	10	20	17.31	16
6	<i>Holigarna longifolia</i>	10	20	6.04	14
7	<i>Michelia glabra</i>	20	20	1.82	18
8	<i>Bombax ceiba</i>	10	10	96.16	27
9	<i>Chukrasia tabularis</i>	10	10	101.74	28
10	<i>Ostodes paniculata</i>	10	40	11.30	22
11	<i>Duabanga grandiflora</i>	10	20	147.97	40
12	<i>Carallia brachiata</i>	10	20	7.69	14
13	<i>Artocarpus chaplasha</i>	10	10	9.50	11

14	<i>Kydia calycina</i>	10	10	25.43	14
	Total		270	536.17	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Boehmeria macrophylla</i>	20	360	3.67	51.15
2	<i>Vernonia volkemerifolia</i>	20	120	1.47	26.84
3	<i>Melocalamus compactiflorus</i>	40	760	1.37	68.96
4	<i>Oxyspora paniculata</i>	20	200	1.76	32.34
5	<i>Pinanga gracilis</i>	20	440	4.03	57.02
6	<i>Luculia pinceana</i>	10	40	2.83	24.81
7	<i>Psychotria calocarpa</i>	10	40	0.35	10.18
8	<i>Calamus inermis</i>	10	80	0.72	14.27
9	<i>Alsophila spinulosa</i>	10	80	0.75	14.43
	Total	160	2120	16.95	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Ageratum conyzoides</i>	70	107000	1.344	60
2	<i>Amomum subulatum</i>	10	4000	6.359	36
3	<i>Artemisia nilagirica</i>	10	10000	0.785	10
4	<i>Begonia nepalensis</i>	10	4000	3.74	23
5	<i>Capillipedium assimile</i>	20	55000	0.27	24
6	<i>Carex nivea</i>	20	10000	0.502	12
7	<i>Colocasia affinis</i>	10	8000	1.07	11
8	<i>Colocasia esculenta</i>	10	2000	1.127	9
9	<i>Cynodon dactylon</i>	10	20000	0.051	9
10	<i>Equisetum diffusum</i>	10	10000	0.071	6

11	<i>Imperata cylindrica</i>	10	30000	0.114	12
12	<i>Molineria capitulata</i>	10	1000	0.02	4
13	<i>Oplismenus compositus</i>	60	66000	0.251	39
14	<i>Paspalum scrobiculatum</i>	10	8000	0.1	6
15	<i>Pilea umbrosa</i>	10	2000	0.014	4
16	<i>Piper pedicellatum</i>	20	4000	0.154	8
17	<i>Saccharum narenga</i>	10	8000	0.402	7
	Total		349003	20.37	

Sampling Site: SY3

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Pongamia pinnata</i>	20	30	58.88	26
2	<i>Engelhardtia spicata</i>	40	60	678.24	99
3	<i>Podocarpus neriifolia</i>	20	30	45.59	25
4	<i>Pandanus nepalensis</i>	10	10	13.85	10
5	<i>Artocarpus integrifolia</i>	10	10	86.55	16
6	<i>Lannea coromandelica</i>	10	10	10.17	9
7	<i>Castanopsis indica</i>	10	10	63.59	14
8	<i>Glochidion velutina</i>	10	10	7.54	9
9	<i>Canarium strictum</i>	10	10	7.30	9
10	<i>Callicarpa arborea</i>	10	10	8.55	8
11	<i>Albizia lucida</i>	20	20	72.60	23
12	<i>Dysoxylum grande</i>	10	10	13.85	10
13	<i>Annona reticulata</i>	10	10	7.45	9

14	<i>Altingia excelsa</i>	10	10	40.69	12
15	<i>Terminalia myriocarpa</i>	10	10	50.22	13
16	<i>Macaranga denticulata</i>	10	10	8.04	9
	Total		260	1173.10	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Elatostema sessile</i>	10	320	2.77	23.78
2	<i>Ficus heterophylla</i>	20	160	4.28	27.69
3	<i>Bambusa tulda</i>	10	640	24.32	73.44
4	<i>Oxyspora paniculata</i>	30	560	5.13	51.04
5	<i>Calamus floribundus</i>	20	200	2.26	25.62
6	<i>Maesa chisia</i>	20	480	15.07	58.44
7	<i>Rubus calycinus</i>	20	320	2.72	30.83
8	<i>Neillia thyrsoiflora</i>	10	40	0.31	9.17
	Total		2720	56.85	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Ageratum conyzoides</i>	20	10000	0.434	26
2	<i>Alpinia allughas</i>	10	5000	0.73	28
3	<i>Amomum subulatum</i>	10	10000	0.044	11
4	<i>Athyrium angustum</i>	30	8000	0.464	29
5	<i>Begonia nepalensis</i>	10	4000	0.353	16
6	<i>Colocasia affinis</i>	10	8000	0.122	12
7	<i>Colocasia esculenta</i>	10	2000	0.028	6
8	<i>Conyza japonica</i>	10	4000	0.311	15

9	<i>Didymocarpus oblonga</i>	10	1000	0.031	5
10	<i>Elatostema glabra</i>	40	50000	0.255	54
11	<i>Hedychium spicatum</i>	10	6000	0.127	11
12	<i>Hedychium spicatum</i>	10	3000	0.227	12
13	<i>Mikania micrantha</i>	20	12000	0.107	18
14	<i>Oplismenus compositus</i>	10	2000	0.095	8
15	<i>Perilla frutescens</i>	30	12000	0.01	19
16	<i>Persicaria capitata</i>	20	14000	0.018	17
17	<i>Polia hasskarlii</i>	10	1000	0.075	6
18	<i>Pteridium aquilinum</i>	10	4000	0.015	7
			156000	3.45	

Siyom Sub Basin-I

Sampling Site: SY4

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ailanthus grandis</i>	30	50	7.57	46
2	<i>Albizia lucida</i>	20	30	4.79	29
3	<i>Alnus nepalensis</i>	40	70	2.14	40
4	<i>Terminalia myriocarpa</i>	30	50	7.60	46
5	<i>Canarium strictum</i>	20	20	1.69	18
6	<i>Lithocarpus listeri</i>	10	10	0.92	9
7	<i>Cinnamomum pauciflorum</i>	30	40	2.62	30
8	<i>Duabanga grandiflora</i>	10	20	1.66	14
9	<i>Ficus semicordata</i>	30	40	6.42	40
10	<i>Macaranga denticulata</i>	10	20	0.94	12
11	<i>Saurauia napaulensis</i>	20	30	0.37	17
	Total		380	36.71	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Melocalamus compactiflorus</i>	10	320	0.20	29.72
2	<i>Alsophila spinulosa</i>	20	80	3.62	45.11
3	<i>Trevesia palmata</i>	10	40	0.45	14.88
4	<i>Oxyspora paniculata</i>	30	440	4.03	78.36
5	<i>Bambusa tulda</i>	20	800	9.04	117.65
6	<i>Maesa chisia</i>	10	40	0.35	14.28
	Total	100	1720	17.68	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Arisaema erubescens</i>	20	10625	1.1	19
2	<i>Bistorta amplexicaulis</i>	14	8750	0.7	14
3	<i>Cerastium nigrescens</i>	13	7500	2.8	22
4	<i>Chirata pumila</i>	11	5000	1	12
5	<i>Colocasia affinis</i>	20	14375	0.09	17
6	<i>Commelina bengalensis</i>	10	3125	0.5	8
7	<i>Cyperus rotundus</i>	10	5625	0.56	10
8	<i>Elatostema sessile</i>	10	21250	0.85	22
9	<i>Galium triflorum</i>	30	8125	1.05	21
10	<i>Hedychium spicatum</i>	20	3750	2.9	23
11	<i>Impatiens arguta</i>	14	14375	1.37	21
12	<i>Persicaria pubescens</i>	13	11250	0.93	16
13	<i>Polygonum capitatum</i>	10	8125	3.05	23
14	<i>Rubia cordifolia</i>	30	9375	2.9	30
15	<i>Scutellaria plectranthoides</i>	20	5000	1.37	17
16	<i>Stellaria decumbens</i>	10	8125	0.93	13
17	<i>Wulfenia amherstiana</i>	15	6875	0.09	11
			151250	22.19	

Sampling Site: SY5

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Tetrameles nudiflora</i>	10	10	200.96	26
2	<i>Millettia pulchra</i>	30	30	37.68	34

3	<i>Schefflera bengalensis</i>	20	20	14.60	22
4	<i>Terminalia myriocarpa</i>	30	40	443.16	69
5	<i>Ficus semicordata</i>	30	60	366.82	73
6	<i>Syzygium assamicum</i>	10	10	10.17	11
7	<i>Castanopsis indica</i>	10	20	127.17	25
8	<i>Glochidion velutina</i>	10	10	12.56	11
9	<i>Engelhardtia spicata</i>	10	10	94.99	18
10	<i>Macaranga denticulata</i>	10	10	10.17	11
	Total		220	1318.29	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alsophila spinulosa</i>	10	80	0.69	5.9
2	<i>Boehmeria macrophylla</i>	40	640	58.60	46.3
3	<i>Luculia pinceana</i>	30	200	22.61	21.5
4	<i>Trevesia palmata</i>	10	80	9.04	7.9
5	<i>Bambusa tulda</i>	70	400	37.99	44.8
6	<i>Maesa chisia</i>	10	280	80	30.9
7	<i>Oxyspora paniculata</i>	70	400	40	45.3
8	<i>Piper pedicellatum</i>	10	640	70	38.7
9	<i>Psychotria aborensis</i>	10	400	80	34.4
10	<i>Randia tetrasperma</i>	10	160	8.49	10.1
11	<i>Rubus ellipticus</i>	10	160	1.81	8.4
12	<i>Vernonia volkemerifolia</i>	10	80	0.16	5.8
	Total	290	3520	409.39	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ha ⁻¹)	TBC (m ² ha ⁻¹)	IVI
1	<i>Oplismenus compositus</i>	20	20000	0.98	31
2	<i>Equisetum ramossimum</i>	10	12000	0.96	19
3	<i>Ammomum subulatum</i>	20	18000	4.13	44
4	<i>Colocasia esculenta</i>	10	2000	1.00	12
5	<i>Pilea scripta</i>	20	9000	2.54	30
6	<i>Capillipedium assimile</i>	30	47000	1.48	58
7	<i>Majus surculosus</i>	10	1000	0.03	7
8	<i>Murdannia japonica</i>	10	6000	0.29	12
9	<i>Drymaria mollis</i>	10	8000	0.14	12
10	<i>Persicaria nepalensis</i>	10	2000	0.14	8
11	<i>Curcuma aromatica</i>	10	2000	1.27	13
12	<i>Thysanolaena latifolia</i>	10	12000	8.50	54
			139000	21.48	

Sampling Site: SY6

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ailanthus grandis</i>	30	50	7.57	46
2	<i>Albizia lucida</i>	20	30	4.79	29
3	<i>Alnus nepalensis</i>	40	70	2.14	40
4	<i>Terminalia myriocarpa</i>	30	50	7.60	46
5	<i>Canarium strictum</i>	20	20	1.69	18
6	<i>Lithocarpus listeri</i>	10	10	0.92	9
7	<i>Cinnamomum pauciflorum</i>	30	40	2.62	30

8	<i>Duabanga grandiflora</i>	10	20	1.66	14
9	<i>Ficus semicordata</i>	30	40	6.42	40
10	<i>Macaranga denticulata</i>	10	20	0.94	12
11	<i>Saurauia nepalensis</i>	20	30	0.37	17
	Total		380	36.71	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Calamus floribundus</i>	15	180	6.024	27.4
2	<i>Dendrocalamus hamiltonii</i>	25	260	0.123	11.9
3	<i>Embelia ribes</i>	25	260	0.082	11.7
4	<i>Ficus oligodon</i>	35	180	4.046	25.6
5	<i>Musa acuminata</i>	35	480	1.819	24.6
6	<i>Oxyspora paniculata</i>	20	280	0.003	10.7
7	<i>Piper peploides</i>	75	580	0.149	30.6
8	<i>Rubus ellipticus</i>	30	300	0.025	13.6
9	<i>Solanum torvum</i>	35	300	2.004	21.3
10	<i>Trevesia palmata</i>	15	140	0.009	6.6
11	<i>Musa acuminata</i>	30	200	11.180	48.5
12	<i>Oxyspora paniculata</i>	10	80	2.003	10.7
13	<i>Piper pedicellatum</i>	50	960	1.443	37.2
14	<i>Rubus ellipticus</i>	25	460	1.163	19.6
	Total	425	4660	30.07	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ageratum conyzoides</i>	60	77000	0.74	29
2	<i>Athyrium drepanopterum</i>	30	11000	0.699	13

3	<i>Athyrium drepanopterum</i>	20	6000	0.365	7
4	<i>Begonia megaptera</i>	30	7000	0.528	10
5	<i>Bidens bipinnata</i>	20	12000	0.191	7
6	<i>Bidens pilosa</i>	30	16000	0.254	9
7	<i>Blumea hieracifolia</i>	10	5000	0.565	8
8	<i>Capillipedium assimile</i>	10	5000	0.016	2
9	<i>Cardamine hirsuta</i>	10	4000	0.013	2
10	<i>Carex nivea</i>	60	17000	0.854	19
11	<i>Colocasia esculenta</i>	10	1000	0.113	2
12	<i>Commelina benghalensis</i>	10	10000	0.126	4
13	<i>Conyza stricta</i>	10	2000	0.077	2
14	<i>Crawfurdia speciosa</i>	10	2000	0.01	2
15	<i>Cucumis melo</i>	10	1000	0.007	1
16	<i>Cynoglossum glochidiatum</i>	30	9000	0.177	7
17	<i>Cyrtococcum accrescens</i>	10	2000	0.006	2
18	<i>Desmodium heterocarpon</i>	40	13000	0.367	11
19	<i>Dichrocephala chrysanthemifolia</i>	30	14000	0.396	10
20	<i>Gnaphalium affine</i>	10	2000	0.025	2
21	<i>Hedychium spicatum</i>	20	9000	1.59	20
22	<i>Hydrocotyle nepalensis</i>	10	4000	0.015	2
23	<i>Impatiens violaeiflora</i>	30	18000	0.326	10
24	<i>Isachne albens</i>	30	23000	0.087	9
25	<i>Kyllinga brevifolia</i>	30	19000	0.06	8
26	<i>Lecanthus peduncularis</i>	10	2000	0.014	2
27	<i>Nepeta lamiopsis</i>	30	26000	0.082	9
28	<i>Nephrolepis biauriculata</i>	20	34000	0.107	10
29	<i>Oplismenus compositus</i>	50	88000	0.276	25

30	<i>Perilla frutescens</i>	10	1000	0.057	2
31	<i>Persicaria barbata</i>	10	8000	0.03	3
32	<i>Persicaria capitata</i>	20	8000	0.03	4
33	<i>Pilea glaberrima</i>	10	10000	0.08	4
34	<i>Pilea umbrosa</i>	60	25000	0.201	14
35	<i>Piper pedicellatum</i>	40	9000	0.346	10
36	<i>Plantago erosa</i>	10	10000	0.126	4
37	<i>Rubus nepalensis</i>	20	2000	0.1	4
38	<i>Scutellaria scandens</i>	10	4000	0.707	9
39	<i>Tectaria polymorpha</i>	10	4000	0.015	2
	Total		520000	9.778	

Sampling Site: SY7

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aralia chinensis</i>	30	60	1.13	54
2	<i>Ailanthus grandis</i>	30	70	0.81	51
3	<i>Alnus nepalensis</i>	20	40	0.37	29
4	<i>Duabanga grandiflora</i>	20	40	0.25	26
5	<i>Ficus semicordata</i>	10	30	0.37	21
6	<i>Macropanax dispersum</i>	20	30	0.35	26
7	<i>Saurauia nepalensis</i>	40	50	1.35	61
8	<i>Terminalia myriocarpa</i>	20	40	0.59	33
	Total		360	5.22	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria longifolia</i>	35	360	0.032	22.7
2	<i>Calamus floribundus</i>	30	240	0.018	17.1
3	<i>Dendrocalamus hamiltonii</i>	30	340	0.023	20.1
4	<i>Embelia ribes</i>	25	360	0.032	19.4
5	<i>Ficus oligodon</i>	15	160	0.038	11.1
6	<i>Musa acuminata</i>	30	200	1.180	72.6
7	<i>Oxyspora paniculata</i>	10	80	0.003	5.6
8	<i>Piper peploides</i>	50	960	0.443	63.9
9	<i>Rubus ellipticus</i>	25	460	0.163	28.6
10	<i>Calamus flagellum</i>	15	160	0.006	9.5
11	<i>Solanum torvum</i>	15	100	0.003	7.7
12	<i>Trevesia palmata</i>	30	240	0.115	21.8
	Total	310	3660	2.06	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Arisaema erubescens</i>	20	8625	0.08	17
2	<i>Bistorta amplexicaulis</i>	14	9750	0.11	15
3	<i>Cyperus rotundus</i>	13	17500	1.05	30
4	<i>Chirita pumila</i>	11	9000	0.06	13
5	<i>Colocasia affinis</i>	20	14375	3.05	52
6	<i>Commelina bengalensis</i>	10	3125	0.03	8
7	<i>Cyperus rotundus</i>	10	8625	2.90	41
8	<i>Elatostema sessile</i>	10	8250	0.20	13
9	<i>Galium aparine</i>	30	18125	0.35	32

10	<i>Hedychium spicatum</i>	20	3750	0.13	14
11	<i>Impatiens arguta</i>	14	14375	0.01	17
12	<i>Persicaria pubescens</i>	13	8250	0.37	16
13	<i>Polygonum amplexicaule</i>	10	18125	1.37	32
			141875	9.69	

Siyom Sub Basin-II

Sampling Site: SY8

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ailanthus grandis</i>	30	40	0.71	33
2	<i>Alangium begonifolium</i>	20	40	0.41	25
3	<i>Albizia lucida</i>	30	50	1.34	45
4	<i>Alnus nepalensis</i>	20	30	0.71	26
5	<i>Ficus semicordata</i>	20	30	0.41	22
6	<i>Ficus auriculata</i>	40	70	0.79	47
7	<i>Macropanax dispermus</i>	40	70	1.24	53
8	<i>Saurauia nepalensis</i>	10	30	1.19	28
9	<i>Terminalia myriocarpa</i>	10	40	0.46	21
	Total		400	7.25	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Leea compactiflora</i>	20	240	2.71	27.3
2	<i>Pinanga gracilis</i>	20	560	8.62	55.76
3	<i>Piper pedicellatum</i>	40	600	5.09	58.47
4	<i>Ixora acuminata</i>	30	160	2.12	27.81
5	<i>Boehmeria macrophylla</i>	50	680	13.16	88.54
6	<i>Brassiopsis mitis</i>	20	120	5.65	30.3
7	<i>Melocalamus compactiflora</i>	10	160	0.08	11.82
	Total		2520	37.44	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Aconogonum molle</i>	73	7500	0.044	13
2	<i>Arisaema erubescens</i>	20	5000	0.464	10
3	<i>Begonia nepalensis</i>	40	8750	0.353	14
4	<i>Cerastium nigrescens</i>	33	10000	0.122	11
5	<i>Chirita pumila</i>	40	5625	0.028	8
6	<i>Colocasia esculenta</i>	47	4375	0.311	11
7	<i>Commelina bengalensis</i>	53	8750	0.031	12
8	<i>Costus speciosus</i>	60	3750	0.255	11
9	<i>Crassocephalum crepidioides</i>	67	2500	0.127	10
10	<i>Cyperus rotundus</i>	73	7500	0.227	15
11	<i>Galium triflorum</i>	80	9375	0.107	16
12	<i>Hedychium spicatum</i>	20	8125	0.095	8
13	<i>Impatiens chinensis</i>	33	10625	0.01	11
14	<i>Pilea scripta</i>	40	10000	0.018	11
15	<i>Polygonum capitatum</i>	53	8750	1.05	22
16	<i>Pouzolzia zeylanica</i>	67	10000	0.06	14
17	<i>Rubia cordifolia</i>	40	8750	3.05	42
18	<i>Scutellaria plectranthoides</i>	20	5000	0.03	6
19	<i>Stellaria decumbens</i>	40	10000	2.90	41
20	<i>Wulfenia amherstiana</i>	53	8125	0.20	13
			152500	9.48	

Sampling Site: SY9

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Terminalia myriocarpa</i>	20	20	9.07	24
2	<i>Ficus virens</i>	10	10	2.37	10
3	<i>Brassiopsis griffithii</i>	30	50	21.49	48
4	<i>Macaranga denticulata</i>	10	10	9.50	15
5	<i>Ficus semicordata</i>	20	20	17.97	29
6	<i>Oroxylum indicum</i>	20	20	6.84	22
7	<i>Alnus nepalensis</i>	10	30	3.15	19
8	<i>Xylosma longifolium</i>	10	10	1.13	10
9	<i>Lepisanthes tetraphylla</i>	10	10	2.83	11
10	<i>Rhus chinensis</i>	20	30	21.70	36
11	<i>Actinodaphne angustifolia</i>	10	10	7.54	14
12	<i>Albizia odoratissima</i>	10	10	20.10	22
13	<i>Macropanax oreophilus</i>	10	10	1.26	10
14	<i>Garuga pinnata</i>	10	10	34.62	31
	Total		250	159.57	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Colquhounia vestita</i>	20	480	4.15	38.31
2	<i>Melocalamus compactiflora</i>	10	1600	1.13	49.81
3	<i>Brassiopsis mitis</i>	10	40	1.81	13.31
4	<i>Aconogonum molle</i>	30	1040	8.66	72.83
5	<i>Debregeasia longifolia</i>	20	320	7.26	43.9

6	<i>Boehmeria macrophylla</i>	10	160	1.46	15.21
7	<i>Schefflera venulosa</i>	10	120	2.41	17.18
8	<i>Sarcochlamys pulcherrima</i>	10	80	0.72	10.9
9	<i>Rhamnus nepalensis</i>	10	80	0.71	10.82
10	<i>Hydrangea robusta</i>	10	40	0.62	9.58
11	<i>Leea asiatica</i>	10	80	3.04	18.15
	Total		4040	31.97	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aconogonum molle</i>	47	14375	3.28	14
2	<i>Arisaema erubescens</i>	53	11250	1.91	12
3	<i>Begonia nepalensis</i>	60	11125	0.15	11
4	<i>Cerastium nigrescens</i>	67	19375	0.11	15
5	<i>Chirita pumila</i>	73	25000	0.40	18
6	<i>Colocasia esculenta</i>	80	11125	3.01	16
7	<i>Commelina bengalensis</i>	20	23125	7.07	19
8	<i>Costus speciosus</i>	73	19625	1.37	17
9	<i>Crassocephalum crepidioides</i>	27	11250	5.09	13
10	<i>Galium triflorum</i>	40	18125	5.03	17
11	<i>Hedychium spicatum</i>	33	5250	2.79	9
12	<i>Impatiens chinensis</i>	40	9375	4.86	13
13	<i>Persicaria capitata</i>	67	8375	0.32	11
14	<i>Pilea scripta</i>	73	17500	12.14	28
15	<i>Polygonum capitatum</i>	60	17800	9.04	23
16	<i>Pouzolzia zeylanica</i>	33	17375	8.02	19
17	<i>Stellaria decumbens</i>	40	11500	12.04	22
18	<i>Wulfenia amherstiana</i>	53.3	15420	10.20	23
			266970	86.83	

Sampling Site: SY10

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ficus semicordata</i>	10	20	17.10	14
2	<i>Palaquium polyanthum</i>	10	20	81.39	22
3	<i>Altingia excelsa</i>	10	10	254.34	38
4	<i>Cinnamomum glaucescens</i>	10	10	42.99	13
5	<i>Macaranga denticulata</i>	40	50	165.83	57
6	<i>Clausena heptaphylla</i>	10	10	19.63	11
7	<i>Oreocnide rubescens</i>	10	10	9.07	10
8	<i>Schefflera bengalensis</i>	30	30	37.68	30
9	<i>Spondias pinnata</i>	10	20	138.73	28
10	<i>Brassiopsis mitis</i>	10	10	16.61	10
11	<i>Alnus nepalensis</i>	30	50	62.80	40
12	<i>Saurauia punduana</i>	10	10	7.30	9
13	<i>Albizia odoratissima</i>	10	10	7.54	9
14	<i>Lannea coromandelica</i>	10	10	7.35	9
	Total		270	868.36	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Arenga saccharifera</i>	10	80	56.52	20
2	<i>Boehmeria macrophylla</i>	30	400	34.62	24
3	<i>Boehmeria macrophylla</i>	50	680	13.16	28
4	<i>Boehmeria platyphylla</i>	10	80	9.04	6
5	<i>Elatostema sessile</i>	30	1360	106.76	61
6	<i>Ixora acuminata</i>	30	160	2.12	11

7	<i>Leea compactiflora</i>	20	240	2.71	10
8	<i>Maesa chisia</i>	40	320	29.3	24
9	<i>Melocalamus compactiflorus</i>	60	880	11.05	33
10	<i>Oxyspora paniculata</i>	60	600	67.824	45
11	<i>Pinanga gracilis</i>	20	560	8.62	17
12	<i>Piper pedicellatum</i>	40	600	5.09	22
		400	5960	346.82	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Adiantum lunulatum</i>	40	8750	6.36	19
2	<i>Arisaema erubescens</i>	67	10625	10.79	30
3	<i>Carex cruciata</i>	73	7500	3.74	19
4	<i>Equisetum ramosissimum</i>	60	5000	0.27	11
5	<i>Hedychium spicatum</i>	33	14375	13.50	32
6	<i>Commelina bengalensis</i>	40	3125	1.07	8
7	<i>Cyperus rotundus</i>	80	5625	1.13	15
8	<i>Miscanthus nepalensis</i>	13	21250	0.05	16
9	<i>Molineria capitulata</i>	73	8125	0.07	14
10	<i>Musa balbisiana</i>	53	3750	0.11	9
11	<i>Pilea scripta</i>	60	14375	9.02	29
12	<i>Pteris semipinnata</i>	20	11250	3.68	15
13	<i>Pteris stenophylla</i>	73	8125	0.60	15
14	<i>Selaginella indica</i>	20	9375	13.23	27
15	<i>Urtica ardens</i>	40	5000	1.05	10
16	<i>Stellaria decumbens</i>	33	8125	7.03	19
17	<i>Wulfenia amherstiana</i>	40	6875	2.36	13
			151250	74.06	

Siyom Sub Basin-III

Sampling Site: SY11

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Rhus chinensis</i>	30	50	11.66	28
2	<i>Brassiopsis griffithii</i>	30	50	11.61	28
3	<i>Oroxylum indicum</i>	20	40	4.53	19
4	<i>Albizia odoratissima</i>	20	20	98.13	44
5	<i>Ficus semicordata</i>	10	10	9.85	9
6	<i>Engelhardtia spicata</i>	30	30	46.49	33
7	<i>Terminalia bellerica</i>	20	20	8.14	15
8	<i>Celtis tetrandra</i>	10	10	3.42	7
9	<i>Mallotus philippensis</i>	10	20	7.69	11
10	<i>Cinnamomum glaucescens</i>	10	10	1.81	7
11	<i>Kydia calycina</i>	10	10	25.43	14
12	<i>Saurauia roxburghii</i>	10	20	7.69	11
13	<i>Macaranga denticulata</i>	10	10	28.34	15
14	<i>Altingia excelsa</i>	30	50	9.46	27
15	<i>Castanopsis indica</i>	20	20	38.21	25
16	<i>Xylosma longifolium</i>	10	10	0.80	6
	Total		380	313.26	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aconogonum molle</i>	10	240	45.22	21.7
2	<i>Alangium chinense</i>	10	80	8.31	8.6

3	<i>Arenga saccharifera</i>	20	440	86.44	41.3
4	<i>Bambusa tulda</i>	10	80	36.87	14.7
5	<i>Boehmeria macrophylla</i>	20	80	60.79	24.1
6	<i>Boehmeria penduliflora</i>	10	160	13.56	12.3
7	<i>Calamus floribundus</i>	20	320	12.56	21.4
8	<i>Debregeasia longifolia</i>	20	240	47.82	26.4
9	<i>Embelia ribes</i>	20	160	10.58	15.8
10	<i>Ficus auriculata</i>	10	240	6.92	13.5
11	<i>Maesa chisia</i>	50	520	37.68	45.9
12	<i>Rubus ellipticus</i>	40	520	96.46	54.4
	Total		3080	463.21	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Achyranthes aspera</i>	20	2000	3.179	2.78
2	<i>Ageratum conyzoides</i>	27	11000	0.318	6.25
3	<i>Arisaema tortuosum</i>	60	4000	0.137	7.74
4	<i>Begonia megaptera</i>	67	10000	0.038	10.30
5	<i>Carex nivea</i>	73	1000	0.127	8.28
6	<i>Colocasia esculenta</i>	20	1000	1.766	2.48
7	<i>Commelina benghalensis</i>	27	1000	0.038	3.20
8	<i>Crassocephalum crepidioides</i>	33	1000	0.088	3.93
9	<i>Didymocarpus oblongus</i>	40	4000	0.192	5.57
10	<i>Drymaria mollis</i>	13	30000	0.198	10.60
11	<i>Dryopteris juxtaoposita</i>	20	13000	0.092	6.14
12	<i>Equisetum ramosissimum</i>	27	5000	0.216	4.42
13	<i>Geranium pratense</i>	73	10000	0.113	11.02
14	<i>Hedychium spicatum</i>	20	2000	0.537	2.78

15	<i>Kyllinga brevifolia</i>	27	21000	0.013	9.30
16	<i>Molineria capitulata</i>	33	5000	0.509	5.15
17	<i>Ophiorrhiza heterostyla</i>	53	4000	0.038	7.02
18	<i>Oplismenus compositus</i>	13	51000	0.113	17.00
19	<i>Oxalis corniculata</i>	27	22000	2.035	9.61
20	<i>Paris polyphylla</i>	20	1000	1.288	2.48
21	<i>Pilea scripta</i>	40	7000	0.035	6.48
22	<i>Polypodioides microrhizon</i>	27	3000	0.160	3.81
23	<i>Pteridium aquilinum</i>	33	19000	0.066	9.42
24	<i>Pteris subindivisa</i>	40	5000	0.061	5.87
25	<i>Rubia sikkimensis</i>	67	77000	0.071	30.72
26	<i>Tectaria polymorpha</i>	20	18000	0.013	7.66
	Total		328000	11.44	

Sampling Site: SY12

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Kydia calycina</i>	20	20	18.31	36
2	<i>Saurauia roxburghii</i>	10	10	1.81	12
3	<i>Elaeocarpus varuna</i>	10	10	3.63	14
4	<i>Schefflera impressa</i>	10	10	0.91	12
5	<i>Macaranga denticulata</i>	10	10	3.63	14
6	<i>Albizia odoratissima</i>	20	30	18.44	41
7	<i>Ficus semicordata</i>	20	30	9.05	34
8	<i>Ficus benamina</i>	10	10	3.63	14
9	<i>Lannea coromandelica</i>	20	20	1.81	23

10	<i>Brassiopsis aculeata</i>	10	20	3.04	18
11	<i>Castanopsis indica</i>	10	10	61.54	57
12	<i>Cinnamomum glaucescens</i>	10	10	1.26	12
13	<i>Pinus kesiya</i>	10	10	5.54	15
	Total		200	132.60	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Oxyspora paniculata</i>	60	600	6.78	62.65
2	<i>Maesa chisia</i>	40	320	2.93	34.57
3	<i>Melocalamus compactiflorus</i>	60	880	1.11	52.16
4	<i>Elatostema sessile</i>	30	1360	10.68	82.94
5	<i>Boehmeria macrophylla</i>	30	400	3.46	34.24
6	<i>Arenga saccharifera</i>	10	80	5.65	24.25
7	<i>Boehmeria platyphylla</i>	10	80	0.90	9.19
	Total		3720	31.51	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Elatostema sessile</i>	13	37000	2.905	16.46
2	<i>Stephania elegans</i>	20	2000	0.014	2.31
3	<i>Hedychium spicatum</i>	27	2000	3.179	2.80
4	<i>Molineria capitulata</i>	60	5000	0.318	6.50
5	<i>Pilea scripta</i>	67	7000	0.137	7.83
6	<i>Polypodioides microrhizon</i>	73	3000	0.038	6.65
7	<i>Ophiorrhiza heterostyla</i>	20	4000	0.020	3.14
8	<i>Pauia belladonna</i>	27	1000	0.038	2.38
9	<i>Begonia palmata</i>	33	4000	0.201	4.12

10	<i>Selaginella inaequalifolia</i>	40	18000	0.127	10.47
11	<i>Begonia megaptera</i>	33	10000	1.766	6.64
12	<i>Didymocarpus oblongus</i>	40	4000	0.038	4.61
13	<i>Tectaria polymorpha</i>	47	18000	0.088	10.96
14	<i>Pteris subindivisa</i>	40	5000	0.192	5.03
15	<i>Viola betonicifolia</i>	47	2000	0.008	4.27
16	<i>Vernonia silhetensis</i>	53	4000	0.302	5.60
17	<i>Lecanthus peduncularis</i>	67	5000	0.035	6.99
18	<i>Adiantum lunulatum</i>	73	8000	0.039	8.74
19	<i>Impatiens cathcartii</i>	67	7000	0.198	7.83
20	<i>Pteris cretica</i>	47	13000	0.092	8.87
21	<i>Ageratum conyzoides</i>	13	11000	0.216	5.58
22	<i>Colocasia esculenta</i>	20	1000	0.113	1.89
23	<i>Pteridium aquilinum</i>	27	19000	0.537	9.91
24	<i>Carex nivea</i>	73	1000	0.013	5.81
25	<i>Dryopteris stenolepis</i>	20	8000	0.509	4.82
26	<i>Myristica wallichii</i>	27	1000	0.038	2.38
27	<i>Paris polyphylla</i>	33	1000	0.071	2.87
28	<i>Crassocephalum crepidioides</i>	53	1000	0.154	4.34
29	<i>Achyranthes aspera</i>	60	2000	0.077	5.25
30	<i>Equisetum ramosissimum</i>	67	5000	0.063	6.99
31	<i>Cyrtococcum accrescens</i>	73	30000	0.094	17.94
Total			239000	11.620	

Sampling Site: SY13

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia odoratissima</i>	50	70	549.50	68
2	<i>Albizia lucida</i>	30	30	79.22	20

3	<i>Saurauia napaulensis</i>	30	30	49.83	17
4	<i>Ficus semicordata</i>	30	50	98.13	25
5	<i>Cinnamomum glaucescens</i>	30	30	37.68	16
6	<i>Schima wallichii</i>	30	40	47.76	19
7	<i>Tetradium fraxinifolium</i>	10	20	56.52	11
8	<i>Macaranga denticulata</i>	10	10	19.63	6
9	<i>Viburnum erubescens</i>	10	10	7.30	5
10	<i>Quercus thomsonii</i>	20	40	114.93	22
11	<i>Bischofia javanica</i>	10	10	36.30	7
12	<i>Schefflera bengalensis</i>	10	10	19.63	6
13	<i>Mallotus philippensis</i>	20	20	14.60	10
14	<i>Engelhardtia spicata</i>	10	10	7.54	5
15	<i>Lannea coromandelica</i>	30	30	38.63	16
16	<i>Brassiopsis mitis</i>	20	30	59.82	16
17	<i>Alangium chinense</i>	10	30	37.68	11
18	<i>Croton oblongifolius</i>	20	30	39.59	14
19	<i>Alnus nepalensis</i>	10	10	8.04	5
	Total		510	1322.32	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Boehmeria macrophylla</i>	30	280	2.47	18.81
2	<i>Debregeasia longifolia</i>	20	120	7.39	19.85
3	<i>Hydrangea robusta</i>	10	180	3.32	12.55
4	<i>Indigofera heterantha</i>	20	120	2.06	11.42
5	<i>Leucosceptrum canum</i>	10	120	1.02	7.29
6	<i>Luculia pinceana</i>	40	520	16.33	49.66
7	<i>Melocalamus compactiflorus</i>	50	260	20.10	51.16

8	<i>Musa acuminata</i>	30	200	1.180	14.63
9	<i>Oxyspora paniculata</i>	10	80	0.003	4.61
10	<i>Piper pedicellatum</i>	10	180	0.63	8.28
11	<i>Piper peploides</i>	50	460	0.443	25.35
12	<i>Randia tetrasperma</i>	10	120	1.36	7.83
13	<i>Rubus ellipticus</i>	20	160	1.81	12.08
14	<i>Rubus burkillii</i>	25	460	0.163	18.73
15	<i>Rubus lineata</i>	50	320	4.50	28.04
16	<i>Senecio scandens</i>	20	160	0.31	9.71
		405	3740	63.08	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Ranunculus sceleratus</i>	33	18000	0.127	7.49
2	<i>Crassocephalum crepidioides</i>	40	7000	0.550	4.79
3	<i>Cynoglossum glochidiatum</i>	47	4000	0.113	4.39
4	<i>Artemisia nilagirica</i>	13	13000	2.035	4.66
5	<i>Perilla frutescens</i>	20	8000	1.288	3.69
6	<i>Persicaria barbata</i>	27	5000	0.035	3.29
7	<i>Oplismenus compositus</i>	60	5000	0.160	5.60
8	<i>Kyllinga brevifolia</i>	67	21000	0.066	10.66
9	<i>Drymaria mollis</i>	73	65000	0.076	23.77
10	<i>Oxalis corniculata</i>	20	18000	0.069	6.56
11	<i>Rubia sikkimensis</i>	27	7000	0.544	3.86
12	<i>Arisaema tortuosum</i>	33	4000	0.201	3.46
13	<i>Duchesnea indica</i>	40	6000	0.061	4.50
14	<i>Geranium pratense</i>	47	6000	0.071	4.96
15	<i>Commelina benghalensis</i>	53	1000	0.013	3.99
16	<i>Dryopteris juxtaposita</i>	60	65000	0.500	22.84

17	<i>Equisetum ramosissimum</i>	67	3000	0.261	5.49
18	<i>Hydrocotyle nepalensis</i>	73	9000	0.093	7.68
19	<i>Conyza japonica</i>	80	12000	0.126	9.00
20	<i>Scirpus teratanus</i>	13	6000	0.325	2.65
21	<i>Bidens bipinnata</i>	20	8000	0.123	3.69
22	<i>Carex cruciata</i>	27	4000	0.014	3.00
23	<i>Urena lobata</i>	40	9000	0.572	5.36
24	<i>Pteris nervosa</i>	47	6000	0.452	4.96
25	<i>Gnaphalium affine</i>	53	13000	0.038	7.44
26	<i>Mazus japonica</i>	67	4000	0.013	5.78
27	<i>Fimbristylis dichotoma</i>	73	6000	0.012	6.82
28	<i>Lecanthus peduncularis</i>	67	3000	0.021	5.49
29	<i>Desmodium gangeticum</i>	73	1000	0.020	5.38
30	<i>Corydalis stricta</i>	20	5000	0.154	2.83
31	<i>Xanthium strumarium</i>	27	4000	0.314	3.00
32	<i>Youngia gracilis</i>	33	2000	0.025	2.89
	Total		348000	8.471	

Yargyap Chu Sub Basin

Sampling Site: YG1

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Altingia excelsa</i>	10	20	15.70	25
2	<i>Ficus subulata</i>	40	40	14.10	41
3	<i>Saurauia punduana</i>	20	30	8.48	25
4	<i>Macaranga denticulata</i>	60	110	19.66	75
5	<i>Rhus chinensis</i>	10	10	0.78	8
6	<i>Millettia pulchra</i>	10	10	1.26	8
7	<i>Albizia odoratissima</i>	30	30	15.07	35
8	<i>Alnus nepalensis</i>	40	90	20.09	61
9	<i>Ficus semicordata</i>	10	10	0.79	8
10	<i>Castanopsis indica</i>	10	10	6.94	14
	Total		360	102.87	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ha ⁻¹)	TBC (m ² ha ⁻¹)	IVI
1	<i>Thamnocalamus aristatus</i>	20	920	0.45	27.60
2	<i>Viburnum cylindricum</i>	10	40	2.83	10.63
3	<i>Rubus niveus</i>	50	680	7.69	49.61
4	<i>Rhus lucens</i>	30	200	1.73	19.62
5	<i>Aconogonum molle</i>	40	1440	13.68	73.42
6	<i>Debregeasia longifolia</i>	10	40	3.12	11.23
7	<i>Boehmeria macrophylla</i>	20	200	2.08	16.31
8	<i>Rubus ellipticus</i>	30	400	6.60	33.72

9	<i>Strobilanthes echinata</i>	30	960	9.97	52.02
10	<i>Sageretia hamosa</i>	10	40	0.45	5.84
	Total		4920	48.59	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ageratum conyzoides</i>	60	7360	18	37
2	<i>Artemisia nilagirica</i>	73	11053	2	15
3	<i>Begonia nepalensis</i>	53	13067	4	17
4	<i>Bidens bipinnata</i>	40	11980	1	11
5	<i>Bulbophyllum affine</i>	53	11180	4	16
6	<i>Equisetum ramosissimum</i>	47	11193	18	38
7	<i>Girardinia diversifolia</i>	60	10500	9	24
8	<i>Gerbera piloselloides</i>	53	12087	4	16
9	<i>Pilea scripta</i>	33	12273	2	12
10	<i>Piper nigrum</i>	80	13100	2	16
11	<i>Artemisia indica</i>	87	6940	0	11
12	<i>Begonia megaptera</i>	73	13047	0	13
13	<i>Bidens pilosa</i>	53	13027	0	11
14	<i>Bulbophyllum apodum</i>	60	12967	1	14
15	<i>Rumex nepalensis</i>	80	12987	0	14
16	<i>Saccharum longisetosus</i>	87	12187	0	14
17	<i>Senecio scandens</i>	47	11320	1	12
18	<i>Urtica dioica</i>	53	10027	0	10
	Total		206293	66	

Sampling Site: YG2

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Casearia vareca</i>	20	30	8.52	18
2	<i>Tetradium rutaecarpa</i>	10	10	3.63	7
3	<i>Ficus semicordata</i>	30	40	24.32	30
4	<i>Engelhardtia spicata</i>	20	20	3.18	13
5	<i>Acer thomsonii</i>	10	10	0.78	6
6	<i>Macaranga denticulata</i>	10	10	5.54	8
7	<i>Saurauia punduana</i>	10	10	5.02	8
8	<i>Schefflera wallichiana</i>	40	40	9.50	27
9	<i>Cinnamomum glaucescens</i>	10	20	2.51	9
10	<i>Erythrina stricta</i>	10	10	3.63	7
11	<i>Castanopsis indica</i>	20	20	4.75	14
12	<i>Ficus oligodon</i>	10	10	0.86	6
13	<i>Lyonia ovalifolia</i>	20	40	12.27	22
14	<i>Gamblea ciliata</i>	10	10	0.78	6
15	<i>Eurya acuminata</i>	20	20	1.57	12
16	<i>Garcinia anomala</i>	10	10	8.01	9
17	<i>Altingia excelsa</i>	20	20	132.04	67
18	<i>Euonymus hamiltonianus</i>	20	30	6.37	17
19	<i>Eriobotrya dubia</i>	20	20	3.18	13
	Total		380	236.44	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ha ⁻¹)	TBC(m ² ha ⁻¹)	IVI
1	<i>Debregeasia longifolia</i>	20	120	1.54	18.75

2	<i>Hydrangea robusta</i>	30	160	4.53	34.61
3	<i>Rubus burkillii</i>	20	160	1.47	20.03
4	<i>Strobilanthes extensa</i>	20	360	3.24	33.51
5	<i>Melocalamus compactiflorus</i>	40	1040	0.64	60.27
6	<i>Boehmeria macrophylla</i>	20	320	3.62	33.22
7	<i>Maesa chisia</i>	30	240	7.92	48.74
8	<i>Luculia pinceana</i>	20	80	4.58	27.13
9	<i>Rubus ellipticus</i>	10	80	1.82	13.55
10	<i>Leea asiatica</i>	10	40	1.26	10.19
	Total		2600	30.60	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Ageratum conyzoides</i>	87	12747	11.90	31
2	<i>Arisaema nepalensis</i>	33	11987	7.01	19
3	<i>Artemisia nilagirica</i>	87	10720	9.18	26
4	<i>Begonia nepalensis</i>	53	9813	0.32	11
5	<i>Begonia palmata</i>	40	12327	6.14	18
6	<i>Conyza japonica</i>	80	11980	8.04	25
7	<i>Drymaria diandra</i>	40	11687	5.02	17
8	<i>Equisetum ramosissimum</i>	87	9313	4.01	19
9	<i>Fragaria vesca</i>	73	12127	2.16	16
10	<i>Fragaria nubicola</i>	33	10553	1.07	10
11	<i>Impatiens angustiflora</i>	53	12107	1.29	13
12	<i>Musa balbisiana</i>	40	11413	2.04	13
13	<i>Piper nigrum</i>	80	12873	5.45	22
14	<i>Rumex nepalensis</i>	40	12127	6.13	18
15	<i>Saccharum longisetosus</i>	73	10180	3.54	17

16	<i>Senecio scandens</i>	40	10553	1.32	11
17	<i>Urtica dioica</i>	53	11220	2.57	14
	Total		193727	77.20	

Sampling Site: YG3

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Altingia excelsa</i>	10	20	15.70	25
2	<i>Ficus subulata</i>	40	40	14.10	41
3	<i>Saurauia punduana</i>	20	30	8.48	25
4	<i>Macaranga denticulata</i>	60	110	19.66	75
5	<i>Rhus chinensis</i>	10	10	0.78	8
6	<i>Millettia pulchra</i>	10	10	1.26	8
7	<i>Albizia odoratissima</i>	30	30	15.07	35
8	<i>Alnus nepalensis</i>	40	90	20.09	61
9	<i>Ficus semicordata</i>	10	10	0.79	8
10	<i>Castanopsis indica</i>	10	10	6.94	14
	Total		360	102.87	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Elatostema sessile</i>	30	1200	10.39	83.16
2	<i>Boehmeria macrophylla</i>	40	680	7.69	63.66
3	<i>Melocalamus compactiflorus</i>	20	800	0.39	33.40
4	<i>Aconogonum molle</i>	10	40	0.36	6.91

5	<i>Alsophila spinulosa</i>	10	40	2.92	15.55
6	<i>Oxyspora paniculata</i>	20	80	1.61	16.81
7	<i>Maesa chisia</i>	40	160	1.81	28.88
8	<i>Strobilanthes extensa</i>	40	400	3.80	42.50
9	<i>Neillia thyrsiflora</i>	10	80	0.68	9.13
	Total		3480	29.64	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ha ⁻¹)	TBC(m ² ha ⁻¹)	IVI
1	<i>Amomum aromaticum</i>	40	11213	0.7	13
2	<i>Artemisia nilagirica</i>	60	11407	2.8	24
3	<i>Begonia nepalensis</i>	53	13067	1.6	19
4	<i>Bidens bipinnata</i>	53	11180	0.09	12
5	<i>Bulbophyllum affine</i>	47	11193	0.5	13
6	<i>Capillipedium assimile</i>	40	11213	0.56	12
7	<i>Carex longipes</i>	40	11020	0.85	13
8	<i>Conyza japonica</i>	33	9813	1.05	13
9	<i>Drymaria diandra</i>	40	11213	2.9	22
10	<i>Equisetum ramosissimum</i>	40	11107	1.37	16
11	<i>Girardinia diversifolia</i>	53	13067	0.93	16
12	<i>Gerbera piloselloides</i>	53	12347	3.05	24
13	<i>Pilea scripta</i>	53	10347	2.9	23
14	<i>Piper nigrum</i>	60	11027	1.37	18
15	<i>Pteris nervosa</i>	73	8167	0.93	16
16	<i>Rumex nepalensis</i>	27	8340	0.09	8
17	<i>Urena lobata</i>	40	10947	2.36	19
18	<i>Youngia gracilis</i>	87	10720	1.056	19
	Total	893	197387	25.13	

Sampling Site: YG4

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia odoratissima</i>	10	20	13.29	30
2	<i>Macaranga denticulata</i>	40	60	24.08	75
3	<i>Juglans regia</i>	30	30	10.26	41
4	<i>Schefflera bengalensis</i>	10	20	1.66	15
5	<i>Macropanax dispermus</i>	10	10	1.66	11
6	<i>Cinnamomum glaucescens</i>	10	10	5.02	16
7	<i>Rhus chinensis</i>	10	30	2.72	20
8	<i>Alangium chinense</i>	10	30	2.64	20
9	<i>Altingia excelsa</i>	30	50	11.79	50
10	<i>Tetradium rutaecarpa</i>	10	10	1.39	11
11	<i>Engelhardtia spicata</i>	10	10	1.26	11
	Total		280	75.76	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Leea asiatica</i>	30	120	10.386	40.43
2	<i>Oxyspora paniculata</i>	20	800	0.393	36.41
3	<i>Aconogonum molle</i>	10	40	0.359	6.09
4	<i>Boehmeria macrophylla</i>	20	80	0.90	12.62
5	<i>Brassiopsis mitis</i>	40	380	7.687	46.88
6	<i>Luculia pinceana</i>	20	80	4.58	21.37
7	<i>Maesa chisia</i>	30	240	7.92	38.72
8	<i>Melocalamus compactiflorus</i>	30	340	2.01	28.12
9	<i>Rhamnus nepalensis</i>	20	320	3.62	27.41

10	<i>Rubus burkillii</i>	40	480	4.15	41.94
	Total		2880	42.003	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Amomum subulatum</i>	60	11313	0.03	14
2	<i>Begonia nepalensis</i>	40	16553	2.46	29
3	<i>Bulbophyllum affine</i>	53	11220	0.46	16
4	<i>Carex longipes</i>	73	12387	0.35	19
5	<i>Elatostema platyphyllum</i>	87	12107	0.12	19
6	<i>Equisetum ramosissimum</i>	33	12080	1.38	19
7	<i>Impatiens chinensis</i>	87	15540	0.03	20
8	<i>Majus pumilus</i>	53	12127	0.31	16
9	<i>Pteris scabristipes</i>	40	12747	1.35	20
10	<i>Rumex nepalensis</i>	33	11987	2.28	24
11	<i>Saccharum longisetosus</i>	40	17613	0.26	17
12	<i>Solanum nigrum</i>	87	19020	1.81	33
13	<i>Urtica dioica</i>	53	18480	6.35	54
		739	183173	17.20	

Sampling Site: YG5

TREES

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	30	40	3.42	31
2	<i>Albizia odoratissima</i>	30	30	33.91	58
3	<i>Saurauia punduana</i>	60	100	9.84	73

4	<i>Engelhardtia spicata</i>	10	10	0.96	9
5	<i>Cinnamomum glaucescens</i>	10	20	4.08	16
6	<i>Lithocarpus elegans</i>	10	10	3.22	11
7	<i>Ficus semicordata</i>	20	30	28.50	48
8	<i>Maesa robusta</i>	10	10	5.02	13
9	<i>Ficus oligodon</i>	10	20	11.08	23
10	<i>Schefflera bengalensis</i>	10	10	0.80	9
11	<i>Macaranga denticulata</i>	10	10	0.78	9
	Total		290	101.62	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Pentapanax leschenaultii</i>	20	180	3.24	17.0
2	<i>Rubus burkillii</i>	30	280	9.29	31.3
3	<i>Leucosceptrum canum</i>	40	360	19.94	50.7
4	<i>Ardisia khasiana</i>	50	560	13.74	53.1
5	<i>Arenga saccharifera</i>	30	160	3.24	19.9
6	<i>Maesa chisia</i>	20	150	9.29	23.5
7	<i>Zanthoxylum acanthopodium</i>	20	200	1.004	14.9
8	<i>Debregeasia longifolia</i>	50	680	4.007	45.1
9	<i>Oxyspora paniculata</i>	10	240	8.436	21.8
10	<i>Rubus ellipticus</i>	10	240	9.004	22.5
	Total		3050	81.18	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ageratum conyzoides</i>	27	10180	0.57	9
2	<i>Arisaema nepalensis</i>	73	12327	1.00	15

3	<i>Artemisia nilagirica</i>	87	9313	0.57	15
4	<i>Begonia nepalensis</i>	33	10553	7.07	20
5	<i>Bulbophyllum affine</i>	40	11227	6.93	21
6	<i>Carex longipes</i>	87	10327	1.37	16
7	<i>Conyza japonica</i>	53	10787	5.09	19
8	<i>Drymaria diandra</i>	40	8300	0.79	10
9	<i>Drymaria mollis</i>	80	12873	0.86	16
10	<i>Equisetum ramosissimum</i>	40	11020	20.41	42
11	<i>Fragaria vesca</i>	87	9707	1.00	16
12	<i>Gnaphalium affine</i>	33	12347	5.65	19
13	<i>Impatiens angustiflora</i>	40	11020	4.01	16
14	<i>Impatiens chinensis</i>	53	10553	1.07	13
15	<i>Imperata cylindrica</i>	47	11353	5.45	19
16	<i>Majus pumilus</i>	60	10500	0.09	12
17	<i>Musa balbisiana</i>	53	11260	0.56	12
18	<i>Pilea scripta</i>	40	11213	1.05	12
	Total		194860	63.53	

Sampling Site: YG6

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	30	40	4.42	31
2	<i>Albizia odoratissima</i>	30	30	33.91	58
3	<i>Lithocarpus elegans</i>	10	20	3.22	73
4	<i>Ficus semicordata</i>	20	30	28.50	9
5	<i>Maesa robusta</i>	10	10	5.02	16

6	<i>Saurauia punduana</i>	60	100	9.84	11
7	<i>Engelhardtia spicata</i>	10	10	0.96	48
8	<i>Cinnamomum glaucescens</i>	10	20	4.08	13
9	<i>Ficus oligodon</i>	10	20	11.08	23
10	<i>Schefflera bengalensis</i>	10	10	0.80	9
11	<i>Macaranga denticulata</i>	10	20	0.76	9
	Total		310	102.60	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	
1	<i>Pentapanax leschenaultii</i>	10	160	4.30	19.7
2	<i>Ardisia khasiana</i>	10	280	0.83	15.2
3	<i>Arenga saccharifera</i>	30	280	13.738	54.6
4	<i>Leea asiatica</i>	30	160	2.46	23.6
5	<i>Psychotria calocarpa</i>	20	240	2.08	21.1
6	<i>Parthenocissus semicordata</i>	10	140	1.81	13.0
7	<i>Pinanga gracilis</i>	10	240	2.2	17.2
8	<i>Boehmeria macrophylla</i>	50	840	7.27	65.4
9	<i>Pteris wallichiana</i>	20	160	1.38	16.8
10	<i>Boehmeria glomulifera</i>	30	240	2.04	25.2
11	<i>Debregeasia longifolia</i>	10	240	2.28	17.4
12	<i>Bambusa tulda</i>	10	120	1.14	10.8
	Total		3100	41.528	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Achyranthes aspera</i>	60	10280	2.12	17

2	<i>Arisaema nepalensis</i>	40	10927	1.00	12
3	<i>Begonia nepalensis</i>	53	12620	3.08	19
4	<i>Bidens bipinnata</i>	47	13247	0.06	13
5	<i>Carex longipes</i>	40	9720	0.05	10
6	<i>Drymaria diandra</i>	60	13240	2.51	19
7	<i>Equisetum ramosissimum</i>	27	11707	6.28	22
8	<i>Fragaria vesca</i>	73	12127	7.07	29
9	<i>Impatiens angustiflora</i>	87	10640	1.37	19
10	<i>Musa balbisiana</i>	33	11987	5.09	20
11	<i>Pilea scripta</i>	40	10953	0.31	11
12	<i>Piper nigrum</i>	87	11487	5.43	27
13	<i>Rumex nepalensis</i>	53	13247	1.03	15
14	<i>Saccharum longisetosus</i>	40	12000	6.26	24
15	<i>Senecio scandens</i>	80	11980	3.05	22
16	<i>Urtica dioica</i>	40	11687	5.23	21
	Total		187847	49.95	

Sampling Site: YG7

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia odoratissima</i>	40	60	11.16	42
2	<i>Oroxylum indicum</i>	10	20	2.36	23
3	<i>Rhus chinensis</i>	30	40	22.98	32
4	<i>Brassiopsis griffithii</i>	30	30	13.16	27
5	<i>Ficus virens</i>	20	20	13.68	20
6	<i>Saurauia roxburghii</i>	20	30	16.3	26

7	<i>Macaranga denticulata</i>	20	30	9.78	26
8	<i>Xylosma longifolium</i>	10	40	7.78	13
9	<i>Lepisanthes tetraphylla</i>	30	40	7.96	32
10	<i>Kydia calycina</i>	20	40	7.52	32
11	<i>Michelia glabra</i>	30	30	5.96	27
	Total		380	118.64	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Acacia pennata</i>	20	560	13.01	37
2	<i>Berberis asiatica</i>	20	250	5.00	20
3	<i>Boehmeria macrophylla</i>	50	480	11.83	45
4	<i>Brassiopsis mitis</i>	20	100	13.74	25
5	<i>Daphne papyracea</i>	20	200	5.09	19
6	<i>Maesa chisia</i>	10	200	10.77	21
7	<i>Melocalamus compactiflora</i>	20	180	3.24	16
8	<i>Oxyspora paniculata</i>	50	440	12.80	45
9	<i>Prunus prostrata</i>	10	200	0.49	10
10	<i>Rosa chinensis</i>	10	440	0.57	16
11	<i>Rubus hoffmeisteriannus</i>	30	600	17.82	47
	Total		3650	94.35	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ageratum conyzoides</i>	73	10180	1.37	14
2	<i>Achyranthes aspera</i>	53	12327	5.09	18
3	<i>Anaphalis contorta</i>	40	9313	0.79	10
4	<i>Artemisia nilagirica</i>	53	10553	0.86	12

5	<i>Begonia nepalensis</i>	47	11353	2.41	13
6	<i>Bulbophyllum affine</i>	73	11053	1.00	14
7	<i>Capillipedium assimile</i>	53	9067	5.65	17
8	<i>Carex longipes</i>	47	9907	2.12	12
9	<i>Conyza japonica</i>	40	11213	1.00	11
10	<i>Girardinia diversifolia</i>	40	8353	8.08	18
11	<i>Gerbera piloselloides</i>	60	10673	0.06	11
12	<i>Hedychium spicatum</i>	33	9147	21.05	34
13	<i>Impatiens chinensis</i>	40	10553	2.51	12
14	<i>Imperata cylindrica</i>	53	10353	6.28	18
15	<i>Kyllinga brevifolia</i>	40	9707	7.07	18
16	<i>Musa balbisiana</i>	33	10920	10.09	21
17	<i>Pteris nervosa</i>	53	10253	0.56	11
18	<i>Rumex nepalensis</i>	60	11027	1.05	13
19	<i>Urena lobata</i>	73	8167	2.35	14
20	<i>Youngia gracilis</i>	27	11687	0.545	9
	Total	993	205807	79.94	

Sampling Site: YG8

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	50	70	12.24	42
2	<i>Actinodaphne angustifolia</i>	10	10	2.26	11
3	<i>Brassiopsis griffithii</i>	20	30	20.98	22
4	<i>Macaranga denticulata</i>	30	30	13.16	23
5	<i>Oroxylum indicum</i>	20	20	13.68	17

6	<i>Rhus chinensis</i>	30	40	19.56	27
7	<i>Engelhardtia spicata</i>	10	20	6.32	19
8	<i>Pinus kesiya</i>	10	10	7.78	11
9	<i>Castanopsis indica</i>	20	30	5.5	22
10	<i>Kydia calycina</i>	20	30	6.32	22
11	<i>Phoebe attenuata</i>	30	40	9.1	27
12	<i>Prunus rufa</i>	20	30	5.96	22
13	<i>Ficus oligodon</i>	20	20	4.16	17
14	<i>Gynocardia odorata</i>	10	20	3.96	19
	Total		400	130.98	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Melocalamus compactiflora</i>	10	1600	1.13	56.70
2	<i>Brassiopsis mitis</i>	10	40	1.81	15.32
3	<i>Aconogonum molle</i>	30	1040	8.66	83.42
4	<i>Debregeasia longifolia</i>	20	320	7.26	50.47
5	<i>Boehmeria macrophylla</i>	10	160	1.46	17.43
6	<i>Schefflera venulosa</i>	10	120	2.41	19.73
7	<i>Sarcochlamys pulcherrima</i>	10	80	0.72	12.53
8	<i>Rhamnus nepalensis</i>	10	80	0.71	12.49
9	<i>Hydrangea robusta</i>	10	40	0.62	11.04
10	<i>Leea asiatica</i>	10	80	3.04	20.87
	Total		3560	27.82	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Achyranthes aspera</i>	40	10553	3.28	14

2	<i>Ageratum conyzoides</i>	53.3	12353	1.91	15
3	<i>Arisaema tortuosum</i>	40	9707	0.15	9
4	<i>Begonia nepalensis</i>	33.3	10920	0.11	9
5	<i>Bulbophyllum affine</i>	53.3	12347	0.40	12
6	<i>Capillipedium assimile</i>	60	11027	3.01	16
7	<i>Carex longipes</i>	73.3	8833	7.07	23
8	<i>Conyza japonica</i>	26.7	11673	1.37	10
9	<i>Equisetum ramosissimum</i>	40	7480	5.09	16
10	<i>Gnaphalium affine</i>	33.3	10427	5.03	16
11	<i>Imperata cylindrica</i>	46.7	9760	2.79	14
12	<i>Kyllinga brevifolia</i>	60	11320	4.86	19
13	<i>Majus pumilus</i>	40	9060	0.32	9
14	<i>Mazus japonica</i>	33.3	9247	12.14	27
15	<i>Musa balbisiana</i>	60	9707	1.07	13
16	<i>Oxalis corniculata</i>	26.7	8567	1.13	9
17	<i>Pteris scabristipes</i>	20	12433	0.05	8
18	<i>Rumex nepalensis</i>	40	11060	0.07	10
19	<i>Solanum nigrum</i>	60	9567	0.11	11
20	<i>Urtica dioica</i>	46.7	11487	9.02	25
21	<i>Youngia gracilis</i>	33.3	10427	3.68	14
	Total		217953	62.67	

Sampling Site: YG9

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Quercus serrata</i>	30	30	8.67	31
2	<i>Rhododendron arboreum</i>	20	20	5.7	23
3	<i>Albizia odoratissima</i>	20	20	7.74	23
4	<i>Acer acuminatum</i>	10	10	5.04	15
5	<i>Castanopsis indica</i>	10	10	4.59	15
6	<i>Alnus nepalensis</i>	40	60	29.04	51
7	<i>Prunus rufa</i>	20	20	6.36	23
8	<i>Rhus chinensis</i>	10	10	5.34	15
9	<i>Pinus kesiya</i>	10	10	8.04	15
10	<i>Macaranga denticulata</i>	30	30	10.56	31
11	<i>Oroxylum indicum</i>	10	10	3.84	15
12	<i>Brassiopsis griffithi</i>	20	20	7.59	23
13	<i>Engelhardtia spicata</i>	10	10	5.34	15
	Total		230	107.85	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Aconogonum molle</i>	20	240	2.197	17
2	<i>Ardisia khasiana</i>	10	880	0.542	26
3	<i>Arenga saccharifera</i>	20	80	4.578	17
4	<i>Boehmeria longifolia</i>	10	80	0.904	7
5	<i>Boehmeria macrophylla</i>	20	80	0.981	12
6	<i>Calamus floribundus</i>	15	180	8.011	22
7	<i>Embelia ribes</i>	20	200	1.004	14

8	<i>Ficus oligodon</i>	20	240	4.007	20
9	<i>Musa acuminata</i>	10	240	8.436	22
10	<i>Oxyspora paniculata</i>	15	240	9.004	25
11	<i>Boehmeria penduliflora</i>	20	460	7.018	29
12	<i>Rhus alatus</i>	15	200	8.012	22
13	<i>Hydrangea robusta</i>	10	220	3.004	14
14	<i>Solanum arietinum</i>	10	240	3.006	14
15	<i>Solanum nigrum</i>	20	280	9.006	28
16	<i>Trevesia palmata</i>	10	240	0.001	10
	Total		4100	69.711	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Achyranthes aspera</i>	33.3	13233	0.12	11
2	<i>Ageratum conyzoides</i>	20	12187	1.38	11
3	<i>Anaphalis contorta</i>	33.3	11320	0.03	10
4	<i>Begonia nepalensis</i>	46.7	10027	0.31	12
5	<i>Bidens bipinnata</i>	40	11213	1.35	13
6	<i>Carex longipes</i>	40	11107	2.28	15
7	<i>Equisetum ramosissimum</i>	60	11767	0.26	14
8	<i>Girardinia diversifolia</i>	73.3	11053	0.57	16
9	<i>Gerbera piloselloides</i>	53.3	13067	7.07	26
10	<i>Hedychium spicatum</i>	46.7	9907	6.93	23
11	<i>Impatiens chinensis</i>	40	11213	1.37	13
12	<i>Imperata cylindrica</i>	40	11020	5.09	20
13	<i>Majus pumilus</i>	60	10987	0.79	15
14	<i>Musa balbisiana</i>	33.3	9813	0.86	11
15	<i>Pteris scabristipes</i>	53.3	12327	20.41	49

16	<i>Solanum nigrum</i>	40	11980	2.41	16
17	<i>Urtica dioica</i>	53.3	10553	5.65	22
			192773	56.87	

Sampling Site: YG10

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Quercus serrata</i>	30	30	2.89	23
2	<i>Rhododendron arboreum</i>	20	15	1.90	14
3	<i>Albizia odoratissima</i>	20	16	2.58	16
4	<i>Acer acuminatum</i>	10	10	1.68	10
5	<i>Castanopsis indica</i>	20	27	0.41	13
6	<i>Alnus nepalensis</i>	40	54	9.68	50
7	<i>Prunus rufa</i>	20	20	2.12	16
8	<i>Rhus chinensis</i>	10	10	1.78	10
9	<i>Pinus kesiya</i>	10	10	2.68	12
10	<i>Macaranga denticulata</i>	30	26	3.52	24
11	<i>Oroxylum indicum</i>	10	10	1.28	9
12	<i>Brassiopsis griffithii</i>	20	20	2.53	17
13	<i>Engelhardtia spicata</i>	10	8	1.00	7
14	<i>Ailanthus grandis</i>	40	25	1.13	20
15	<i>Aesculus indica</i>	30	56	0.81	24
16	<i>Saurauia napaulensis</i>	30	32	0.71	18
17	<i>Terminalia myriocarpa</i>	30	28	0.35	16
	Total	380	397	37.04	300

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Cerastium nigrescens</i>	30	40	1.00	13
2	<i>Boehmeria macrophylla</i>	20	120	0.70	11
3	<i>Crassocephalum crepidioides</i>	40	160	8.80	35
4	<i>Daphne papyracea</i>	20	200	7.07	26
5	<i>Elatostema sessile</i>	20	200	5.09	22
6	<i>Hedychium spicatum</i>	10	200	0.49	10
7	<i>Impatiens angustiflora</i>	10	440	0.57	16
8	<i>Prunus prostrata</i>	10	600	0.86	21
9	<i>Rosa chinensis</i>	30	600	1.05	28
10	<i>Rubia cordifolia</i>	20	150	9.29	29
11	<i>Rubus ellipticus</i>	50	680	4.007	43
12	<i>Urtica dioica</i>	10	240	9.004	28
13	<i>Wulfenia amherstiana</i>	30	160	2.46	19
	Total		3790	50	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ageratum conyzoides</i>	46.7	10453	1.81	15
2	<i>Arisaema nepalensis</i>	33.3	9813	3.63	16
3	<i>Artemisia nilagirica</i>	20	10727	3.63	15
4	<i>Begonia nepalensis</i>	33.3	9960	9.05	28
5	<i>Bulbophyllum affine</i>	46.7	8147	1.81	13
6	<i>Carex longipes</i>	40	11213	0.15	11
7	<i>Conyza japonica</i>	40	11107	1.31	13
8	<i>Drymaria diandra</i>	60	11407	1.18	15
9	<i>Equisetum ramosissimum</i>	33.3	11420	7.01	24

10	<i>Gerbera piloselloides</i>	60	12227	8.04	30
11	<i>Hedychium spicatum</i>	33.3	11220	4.01	18
12	<i>Impatiens chinensis</i>	60	10660	1.29	15
13	<i>Musa balbisiana</i>	46.7	12920	2.04	16
14	<i>Piper nigrum</i>	53.3	12213	1.32	15
15	<i>Rumex nepalensis</i>	46.7	9927	0.09	11
16	<i>Saccharum longisetosus</i>	53.3	8987	0.5	12
17	<i>Senecio scandens</i>	46.7	9780	0.93	12
18	<i>Urena lobata</i>	26.7	9767	0.09	8
19	<i>Youngia gracilis</i>	33.3	10740	0.57	11
			202687	48.45	

Sampling Site: YG11

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Pinus wallichiana</i>	30	40	38.72	57
2	<i>Quercus serrata</i>	20	30	11.52	45
3	<i>Rhododendron arboreum</i>	20	20	7.92	35
4	<i>Tetradium fraxinifolium</i>	10	20	9.68	38
5	<i>Acer acuminatum</i>	10	10	8.48	22
6	<i>Lyonia ovalifolia</i>	10	10	7.12	22
7	<i>Prunus cerasoides</i>	20	30	11.52	45
8	<i>Salix wallichiana</i>	20	20	12.64	35
	Total		180	107.60	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Berberis asiatica</i>	20	250	5.00	30
2	<i>Berberis wallichiana</i>	30	240	29.02	65
3	<i>Brassiopsis mitis</i>	20	100	13.74	33
4	<i>Cotoneaster microphyllus</i>	20	160	2.00	22
5	<i>Eurya acuminata</i>	30	120	0.001	22
6	<i>Indigofera dosua</i>	10	80	7.01	18
7	<i>Prunus prostrata</i>	10	200	0.49	16
8	<i>Rosa chinensis</i>	10	440	0.57	29
9	<i>Rosa macrophylla</i>	20	180	4.01	25
10	<i>Rubus ellipticus</i>	10	80	8.44	20
11	<i>Viburnum cotinifolium</i>	10	40	9.00	19
	Total		1890	79.27	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ageratum conyzoides</i>	87	9707	6.5	28
2	<i>Artemisia nilagirica</i>	53	11180	5.56	23
3	<i>Begonia nepalensis</i>	47	11193	0.85	14
4	<i>Bidens bipinnata</i>	33	8820	1.05	11
5	<i>Bulbophyllum affine</i>	40	10947	2.9	16
6	<i>Equisetum ramosissimum</i>	53	10553	11.37	33
7	<i>Girardinia diversifolia</i>	47	7353	13.254	34
8	<i>Gerbera piloselloides</i>	60	10500	0.565	15
9	<i>Pilea scripta</i>	53	11260	0.016	13
10	<i>Piper nigrum</i>	40	11213	0.013	12
11	<i>Artemisia indica</i>	53	11180	0.854	15

12	<i>Begonia roxburghii</i>	47	8487	0.113	11
13	<i>Rumex nepalensis</i>	53	9813	0.01	12
14	<i>Saccharum longisetosus</i>	40	12327	7.07	25
15	<i>Senecio scandens</i>	80	11980	0.177	17
16	<i>Urtica dioica</i>	40	11687	6.05	23
	Total		168200	56.352	

Sampling Site: YG12

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia lucida</i>	15	40	18.09	44
2	<i>Castanopsis hystrix</i>	25	30	2.88	28
3	<i>Quercus serrata</i>	25	20	13.20	25
4	<i>Eurya acuminata</i>	35	20	2.42	26
5	<i>Ficus semicordata</i>	35	10	12.12	21
6	<i>Lepisanthes tetraphylla</i>	20	10	11.78	15
7	<i>Pinus kesiya</i>	75	30	32.88	43
8	<i>Schefflera impressa</i>	30	20	13.16	26
9	<i>Macaranga denticulata</i>	35	20	10.22	19
10	<i>Toona ciliata</i>	15	34	12.50	25
11	<i>Xylosma longifolium</i>	15	28	14.40	28
	Total		262	143.65	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Berberis wallichiana</i>	30	240	2.75	30

2	<i>Cotoneaster microphyllus</i>	20	160	12.50	54
3	<i>Eurya acuminata</i>	30	120	4.83	32
4	<i>Indigofera dosua</i>	10	180	2.65	19
5	<i>Digitaria ciliaris</i>	20	400	1.00	27
6	<i>Pilea scripta</i>	10	220	0.64	15
7	<i>Rumex nepalensis</i>	20	430	0.86	27
8	<i>Potentilla microphylla</i>	20	220	0.57	18
9	<i>Rhododendron ponticum</i>	30	300	3.16	34
10	<i>Strobilanthes thomsonii</i>	35	230	0.22	24
11	<i>Vaccinium retusum</i>	15	140	2.50	19
	Total		2640	31.6785	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ha ⁻¹)	TBC(m ² ha ⁻¹)	IVI
1	<i>Ageratum conyzoides</i>	40	5440	3.05	15
2	<i>Achyranthes aspera</i>	60	10453	2.90	21
3	<i>Anaphalis contorta</i>	87	9960	1.37	20
4	<i>Begonia nepalensis</i>	60	11107	0.93	17
5	<i>Bidens pilosa</i>	53	11420	1.05	17
6	<i>Crassocephalum crepidioides</i>	53	11220	3.05	21
7	<i>Galeola lindleyana</i>	87	12920	0.35	20
8	<i>Galium asperuloides</i>	33	12213	1.37	16
9	<i>Isachne longiflora</i>	40	8987	0.02	11
10	<i>Nepeta ciliaris</i>	53	9767	0.01	13
11	<i>Persicaria pubescens</i>	73	2167	2.85	16
12	<i>Pilea umbrosa</i>	40	813	5.11	15
13	<i>Pilea scripta</i>	60	5560	8.13	27
14	<i>Rubia cordifolia</i>	47	6253	6.08	22

15	<i>Schoenoplectus mucronatus</i>	53	5547	3.05	16
16	<i>Urtica dioica</i>	53	6217	10.01	31
	Total		130044	49.32	

Sampling Site: YG13

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Acer caudatum</i>	15	20	23.20	25
2	<i>Macaranga denticulata</i>	25	20	12.42	25
3	<i>Quercus serrata</i>	25	10	26.12	20
4	<i>Eurya acuminata</i>	35	10	11.78	21
5	<i>Ficus auriculata</i>	35	30	12.88	34
6	<i>Exbucklandia populnea</i>	20	20	13.16	27
7	<i>Pinus kesiya</i>	75	50	11.49	47
8	<i>Schefflera impressa</i>	30	30	21.25	26
9	<i>Castanopsis hystrix</i>	35	30	18.40	28
10	<i>Toona ciliata</i>	35	15	24.90	28
11	<i>Xylosma longifolium</i>	20	20	11.40	19
	Total	350	255	187.00	300

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Daphne papyracea</i>	20	40	4.51	12
2	<i>Elatostema sessile</i>	40	120	12.56	26
3	<i>Hedychium spicatum</i>	20	160	13.56	18
4	<i>Impatiens angustiflora</i>	30	200	18.09	25
5	<i>Prunus prostrata</i>	10	1160	233.10	88
6	<i>Rosa chinensis</i>	10	200	18.31	15
7	<i>Berberis wallichiana</i>	10	600	113.04	47
8	<i>Brassiopsis mitis</i>	10	200	30.77	17
9	<i>Cotoneaster microphyllus</i>	50	440	62.80	51
	Total		3120	506.75	300

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Agrostis gigantea</i>	10	16000	0.60	16
2	<i>Anaphalis busua</i>	20	15000	3.68	25
3	<i>Carex nivea</i>	20	4000	3.74	18
4	<i>Digitaria cruciata</i>	20	16000	1.05	21
5	<i>Dryopteris serrato-dentata</i>	20	12000	13.23	41
6	<i>Eragrostis nigra</i>	20	7000	0.05	13
7	<i>Gerbera piloselloides</i>	10	10000	0.11	11
8	<i>Isachne albens</i>	50	8000	1.13	28
9	<i>Lycopodium</i>	10	9000	1.07	12
10	<i>Nepeta ciliaris</i>	10	6000	13.50	33
11	<i>Pteris scabristipes</i>	10	12000	7.03	25
12	<i>Saccharum longisetosus</i>	20	15000	9.02	35
13	<i>Scirpus ternatanus</i>	10	16000	0.07	15

14	<i>Youngia japonica</i>	10	3300	0.27	7
	Total		149300	54.56	

Sampling Site: YG14

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Altingia excelsa</i>	15	20	13.20	20
2	<i>Amoora wallichii</i>	25	20	22.42	21
3	<i>Quercus serrata</i>	25	10	32.12	16
4	<i>Eurya acuminata</i>	35	10	12.28	19
5	<i>Brassiopsis griffithii</i>	35	30	13.50	30
6	<i>Exbucklandia populnea</i>	20	20	3.16	21
7	<i>Pinus kesiya</i>	75	50	21.49	68
8	<i>Gynocardia odorata</i>	30	30	11.25	23
9	<i>Castanopsis hystrix</i>	35	30	23.90	31
10	<i>Kydia calycina</i>	35	15	12.90	23
11	<i>Elaeocarpus robustus</i>	20	20	11.40	17
12	<i>Xylosma longifolium</i>	15	8	9.40	13
	Total	365	263	187.02	300

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Thamnocalamus aristatus</i>	90	6480	3.18	144.04
2	<i>Gaultheria trichophylla</i>	40	360	11.30	73.74
3	<i>Lonicera angustifolia</i>	70	760	8.59	82.22
4	Total	200	7600	23.07	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Achyranthes aspera</i>	53	6400	2.83	16
2	<i>Anaphalis contorta</i>	87	16207	0.64	24
3	<i>Carduus edelbergii</i>	33	13760	0.24	15
4	<i>Carex filicina</i>	60	7360	9.32	28
5	<i>Cissampelopsis buimalia</i>	47	11687	1.15	17
6	<i>Elsholtzia strobilifera</i>	53	5660	1.03	13
7	<i>Galeola lindleyana</i>	47	15053	1.27	19
8	<i>Galium asperuloides</i>	53	15600	1.88	21
9	<i>Hydrocotyle nepalensis</i>	40	5313	27.98	55
10	<i>Isachne longiflora</i>	40	6080	1.34	12
11	<i>Muhlenbergia huegelii</i>	60	13833	6.36	28
12	<i>Nepeta ciliaris</i>	73	5720	3.74	20
13	<i>Pilea umbrosa</i>	87	8687	1.13	19
14	<i>Schoenoplectus mucronatus</i>	40	5220	2.30	13
	Total		136580	61.21	

Outside the Siang Basin

Sampling Site: B2 Jiya Dhol

TREES

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Trewia nudiflora</i>	60	120	25.31	130.47
2	<i>Citrus limetta</i>	10	20	1.81	18.92
3	<i>Mangifera indica</i>	10	20	8.60	26.90
4	<i>Ficus religiosa</i>	10	10	25.43	42.16
5	<i>Averrhoa carambola</i>	10	10	1.26	13.72
6	<i>Bridelia retusa</i>	10	20	19.00	39.13
7	<i>Lagerstroemia lanceolata</i>	10	10	2.83	15.56
8	<i>Alangium chinense</i>	10	10	0.78	13.15
	Total		220	85.01	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ricinus communis</i>	60	1200	18.46	123.38
2	<i>Solanum surattense</i>	20	80	0.71	14.68
3	<i>Urena lobata</i>	20	80	0.71	14.68
4	<i>Cassia tora</i>	40	320	2.77	38.55
5	<i>Chromolaena odoratum</i>	40	1160	9.11	84.50
6	<i>Phyllostachys assamica</i>	10	200	1.83	16.89
7	<i>Ziziphus mauritiana</i>	10	40	0.35	7.32
	Total		3080	33.93	

Sampling Site: B1 Brahmaputra River (Dibrugarh)

SHRUBS

S.No	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Ricinus communis</i>	20	200	18.46	49.11
2	<i>Urena lobata</i>	20	180	20.71	50.63
3	<i>Cassia tora</i>	40	320	22.77	78.22
4	<i>Ziziphus mauritiana</i>	20	140	20.35	48.21
5	<i>Lantana camara</i>	10	1140	6.35	73.83
	Total	110	1980	88.63	

III. Monsoon Season

Siang Sub Basin-I

Sampling Site: S1

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aesculus assamica</i>	20	30	33.91	42
2	<i>Ailanthus integrifolia</i>	10	10	71.12	41
3	<i>Bischofia javanica</i>	10	10	5.28	18
4	<i>Castanopsis indica</i>	20	20	2.64	24
6	<i>Cinnamomum pauciflorum</i>	20	20	45.91	41
7	<i>Duabanga grandiflora</i>	10	10	1.52	13
8	<i>Euonymus attenuatus</i>	10	10	4.78	13
9	<i>Leea indica</i>	10	10	6.36	16
10	<i>Lithocarpus elegans</i>	10	20	7.91	18
11	<i>Mallotus philippensis</i>	10	10	2.83	12
12	<i>Milium globosa</i>	10	10	0.91	11
13	<i>Millettia pulchra</i>	10	10	0.80	11
14	<i>Oroxylum indicum</i>	10	20	2.58	12
15	<i>Picrasma javanica</i>	10	10	25.43	27
	Total		200	211.98	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria macrophylla</i>	70	520	54.97	64
2	<i>Calamus tenuis</i>	10	180	0.73	5
3	<i>Capparis roxburghii</i>	20	280	12.47	34
4	<i>Capparis tenera</i>	30	200	9.04	64
5	<i>Chromolaena odoratum</i>	50	840	65.93	9
6	<i>Debregeasia longifolia</i>	20	240	10.62	65
7	<i>Elatostema lineolatum</i>	30	960	28.15	4
8	<i>Leea asiatica</i>	10	120	2.41	14
9	<i>Melocalamus compactiflorus</i>	20	240	17.04	8
10	<i>Piper pedicellatum</i>	50	960	69.39	13
11	<i>Psychotria calocarpa</i>	20	280	11.42	15
12	<i>Solanum torvum</i>	10	40	3.38	4
	Total		4860	285.54	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Achyranthes aspera</i>	40	8467	8.07
2	<i>Ageratum conyzoides</i>	53	11667	10.95
3	<i>Amomum subulatum</i>	47	10533	9.74
4	<i>Arisaema erubescens</i>	73	11133	12.65
5	<i>Arthraxon hispidus</i>	27	10400	7.71
6	<i>Bidens bipinnata</i>	60	11733	11.64
7	<i>Bidens pilosa</i>	47	11933	10.43
8	<i>Capillipedium assimile</i>	33	10600	8.47
9	<i>Colocasia affinis</i>	33	6400	6.41

10	<i>Commelina benghalensis</i>	60	9667	10.62
11	<i>Digitaria ciliaris</i>	53	9467	9.87
12	<i>Elatostema sessile</i>	40	8800	8.24
13	<i>Equisetum diffusum</i>	73	12600	13.37
14	<i>Gerardinia diversifolia</i>	80	10400	12.94
15	<i>Hedychium spicatum</i>	47	8933	8.96
16	<i>Majus surculosus</i>	40	8400	8.04
17	<i>Mikania micrantha</i>	40	10533	9.09
18	<i>Pilea scripta</i>	60	9200	10.39
19	<i>Saccharum narenga</i>	60	12333	11.93
20	<i>Urtica dioica</i>	53	10733	10.49
	Total		203933	

Sampling Site: S2

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Anthocephalus cadamba</i>	10	10	5.02	12
2	<i>Canarium strictum</i>	50	50	25.75	65
3	<i>Castanopsis indica</i>	10	10	7.54	16
4	<i>Cinnamomum pauciflorum</i>	10	20	3.04	15
5	<i>Dipterocarpus retusus</i>	10	10	9.50	15
6	<i>Kydia calycina</i>	10	10	66.02	57
7	<i>Mallotus philippensis</i>	10	10	0.91	10
8	<i>Magnolia hodgsonii</i>	10	10	1.96	12
9	<i>Michelia glabra</i>	10	10	1.81	10

11	<i>Pandanus nepalensis</i>	50	50	10.29	51
12	<i>Pterospermum acerifolium</i>	30	30	13.07	36
	Total		220	144.91	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria glomerulifera</i>	20	480	35.43	41
2	<i>Elatostema sesquifolium</i>	30	840	56.59	67
3	<i>Abroma angustifolia</i>	10	80	4.58	10
4	<i>Brassiopsis mitis</i>	20	80	0.90	13
5	<i>Melocalamus compactiflorus</i>	20	680	46.00	52
6	<i>Solanum verbascifolium</i>	10	40	0.45	7
7	<i>Chromolaena odoratum</i>	10	80	0.63	8
8	<i>Boehmeria macrophylla</i>	20	200	21.73	26
9	<i>Rubus ellipticus</i>	10	200	30.77	25
10	<i>Elatostema sessile</i>	20	160	18.09	23
11	<i>Oxyspora paniculata</i>	30	200	18.31	29
	Total		3040	233.48	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Ageratum conyzoides</i>	47	10867	10
2	<i>Amomum subulatum</i>	40	9667	8
3	<i>Arthraxon hispidus</i>	47	11400	10
4	<i>Bidens bipinnata</i>	33	10200	8
5	<i>Bistorta amplexicaulis</i>	40	11000	9
6	<i>Chirita pumila</i>	47	11267	10

7	<i>Colocasia esculenta</i>	40	9200	8
8	<i>Commelina benghalensis</i>	53	11467	11
9	<i>Conyza japonica</i>	47	11267	10
10	<i>Drymaria mollis</i>	53	11733	11
11	<i>Elatostema sessile</i>	60	10800	11
12	<i>Hedychium spicatum</i>	73	12867	13
13	<i>Persicaria capitata</i>	80	12400	14
14	<i>Pilea scripta</i>	53	10400	10
15	<i>Rubia cordifolia</i>	60	12400	12
16	<i>Saccharum narenga</i>	53	12800	11
17	<i>Thysanolaena latifolia</i>	60	10800	11
18	<i>Urena lobata</i>	53	9133	9
19	<i>Urtica dioica</i>	87	14133	15
	Total		213800	

Sampling Site: S3

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Duabanga grandiflora</i>	80	140	291.48	126
2	<i>Ficus racemosa</i>	10	10	8.04	8
3	<i>Ficus semicordata</i>	20	20	37.70	24
4	<i>Lannea coromandelica</i>	10	10	7.54	9
5	<i>Macaranga denticulata</i>	50	60	46.73	52
6	<i>Magnolia hodgsonii</i>	10	10	1.96	13
7	<i>Michelia glabra</i>	10	10	1.81	10
8	<i>Saurauia punduana</i>	30	30	24.12	25

9	<i>Terminalia myriocarpa</i>	30	30	38.63	33
	Total		320	458.01	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m2ha-1)	IVI
1	<i>Actinidia callosa</i>	10	160	14.65	18
2	<i>Boehmeria macrophylla</i>	30	200	22.61	42
3	<i>Boehmeria rugulosa</i>	20	200	62.80	28
4	<i>Caryopteris odorata</i>	10	80	9.04	5
5	<i>Chromolaena odoratum</i>	70	1600	37.99	43
6	<i>Debregeasia longifolia</i>	20	80	36.17	20
7	<i>Elatostema sessile</i>	10	400	31.40	7
8	<i>Maesa chisia</i>	50	400	61.54	70
9	<i>Oxyspora paniculata</i>	10	40	3.66	7
10	<i>Pteracanthus rubescens</i>	40	640	58.60	21
11	<i>Rubus ellipticus</i>	10	80	9.04	5
12	<i>Solanum surattense</i>	10	40	3.46	23
13	<i>Urena lobata</i>	20	360	31.75	11
	Total		4280	382.73	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Achyranthes aspera</i>	40	11000	10
2	<i>Ageratum conyzoides</i>	47	11867	11
3	<i>Arisaema erubescens</i>	33	10400	9
4	<i>Bidens pilosa</i>	40	10600	10
5	<i>Colocasia esculenta</i>	53	11533	12
6	<i>Digitaria ciliaris</i>	47	11200	11

7	<i>Drymaria mollis</i>	60	11267	12
8	<i>Equisetum ramosissimum</i>	73	14133	15
9	<i>Hedychium spicatum</i>	87	14200	17
10	<i>Majus surculosus</i>	53	12400	12
11	<i>Mikania micrantha</i>	60	12133	13
12	<i>Persicaria capitata</i>	47	11933	11
13	<i>Pilea scripta</i>	53	11733	12
14	<i>Rumex nepalensis</i>	40	11800	10
15	<i>Saccharum narenga</i>	47	12600	11
16	<i>Thysanolaena latifolia</i>	40	11733	10
17	<i>Urtica dioica</i>	60	13067	13
			203600	

Siang Sub Basin-II

Sampling Site: S4

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ficus semicordata</i>	20	50	45.64	29
2	<i>Albizia odoratissima</i>	10	10	7.54	8
3	<i>Macaranga denticulata</i>	20	50	86.70	55
4	<i>Saurauia punduana</i>	20	50	38.95	39
5	<i>Magnolia hodgsonii</i>	10	10	1.96	29
6	<i>Castanopsis indica</i>	20	20	85.97	40
7	<i>Alnus nepalensis</i>	10	30	21.91	16
8	<i>Altingia excelsa</i>	10	10	19.63	10
9	<i>Ulmus lanceifolia</i>	10	10	21.23	10
10	<i>Duabanga grandiflora</i>	10	10	50.24	15
11	<i>Terminalia myriocarpa</i>	20	20	70.48	25
12	<i>Maesa robusta</i>	10	10	44.16	14
13	<i>Bischofia javanica</i>	10	10	9.62	9
	Total		290	504.02	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	20	120	10.99	19
2	<i>Alsophila spinulosa</i>	20	120	13.56	20
3	<i>Boehmeria macrophylla</i>	10	40	21.23	14
4	<i>Boehmeria rugulosa</i>	10	80	14.13	14
5	<i>Debregeasia longifolia</i>	40	440	45.68	57

6	<i>Leea asiatica</i>	60	720	130.58	109
7	<i>Leptodermis suaveolens</i>	10	80	22.67	16
8	<i>Maesa chisia</i>	10	40	3.46	8
9	<i>Oxyspora paniculata</i>	20	240	27.13	31
10	<i>Pteracanthus rubescens</i>	10	80	12.31	13
	Total	210	1960	301.74	300

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Aconogonum molle</i>	47	9467	9
2	<i>Ageratum conyzoides</i>	40	9200	8
3	<i>Athyrium angustum</i>	87	12400	15
4	<i>Bidens bipinnata</i>	33	9800	8
5	<i>Capillipedium assimile</i>	40	10400	9
6	<i>Colocasia esculenta</i>	60	12133	12
7	<i>Conyza japonica</i>	33	9067	8
8	<i>Conyza stricta</i>	40	9667	9
9	<i>Desmodium heterocarpon</i>	53	10200	10
10	<i>Equisetum diffusum</i>	73	10733	13
11	<i>Hedychium spicatum</i>	60	11733	12
12	<i>Mikania micrantha</i>	20	8733	6
13	<i>Nephrolepis auriculata</i>	53	10800	11
14	<i>Oxalis corniculata</i>	40	11200	9
15	<i>Persicaria capitata</i>	73	11667	13
16	<i>Pteris biaurita</i>	80	10800	13
17	<i>Saccharum narenga</i>	67	12533	13
18	<i>Selaginella inaequalifolia</i>	60	10133	11
19	<i>Urena lobata</i>	60	10867	11
			201533	

Sampling Site: S5

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia odoratissima</i>	10	10	7.54	15
2	<i>Alnus nepalensis</i>	10	30	21.91	24
3	<i>Bischofia javanica</i>	10	10	9.62	11
4	<i>Castanopsis indica</i>	20	20	85.97	36
5	<i>Duabanga grandiflora</i>	10	10	50.24	20
6	<i>Ficus semicordata</i>	10	10	44.16	18
7	<i>Macaranga denticulata</i>	20	50	86.70	48
8	<i>Maesa robusta</i>	20	50	45.64	43
9	<i>Saurauia punduana</i>	20	50	38.95	47
10	<i>Terminalia myriocarpa</i>	20	20	70.48	37
	Total		260	461.20	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Leea asiatica</i>	10	80	50.38	32
2	<i>Actinidia callosa</i>	10	40	40.20	25
3	<i>Alsophila spinulosa</i>	10	240	20.13	28
4	<i>Boehmeria macrophylla</i>	30	80	33.01	38
5	<i>Boehmeria rugulosa</i>	10	440	22.54	39
6	<i>Debregeasia longifolia</i>	30	720	14.42	64
7	<i>Leptodermis suaveolens</i>	20	120	41.37	37
8	<i>Maesa chisia</i>	10	40	10.25	13
9	<i>Oxyspora paniculata</i>	10	80	5.64	13
10	<i>Pteracanthus rubescens</i>	10	80	2.13	12
	Total	150	1920	240.08	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Ageratum conyzoides</i>	47	12400	11.02
2	<i>Athyrium angustum</i>	73	14000	14.67
3	<i>Bidens bipinnata</i>	60	11867	12.20
4	<i>Capillipedium assimile</i>	33	12400	9.58
5	<i>Colocasia esculenta</i>	40	12600	10.40
6	<i>Conyza stricta</i>	60	13067	12.78
7	<i>Desmodium heterocarpon</i>	33	12867	9.80
8	<i>Equisetum diffusum</i>	87	14733	16.46
9	<i>Hedychium spicatum</i>	67	15200	14.53
10	<i>Imperata cylindrica</i>	60	12533	12.52
11	<i>Mikania micrantha</i>	67	13200	13.56
12	<i>Nephrolepis auriculata</i>	87	14400	16.30
13	<i>Oxalis corniculata</i>	60	13133	12.81
14	<i>Perilla frutescens</i>	53	12600	11.83
15	<i>Pteracanthus cusia</i>	47	9667	9.70
16	<i>Urena lobata</i>	53	12600	11.83
			207267	

Sampling Site: S6

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Duabanga grandiflora</i>	80	110	280.00	146
2	<i>Ficus racemosa</i>	10	10	8.00	9
3	<i>Ficus semicordata</i>	30	25	35.00	32
4	<i>Lannea coromandelica</i>	10	10	8.00	9

5	<i>Macaranga denticulata</i>	20	25	35.00	24
6	<i>Saurauia punduana</i>	30	30	25.00	28
7	<i>Terminalia myriocarpa</i>	50	65	45.00	52
	Total		275	436.00	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m2ha-1)	IVI
1	<i>Debregeasia longifolia</i>	20	80	36.17	18
2	<i>Maesa chisia</i>	50	400	61.54	42
3	<i>Boehmeria rugulosa</i>	20	200	62.80	28
4	<i>Solanum surattense</i>	10	40	3.46	5
5	<i>Pteracanthus rubescens</i>	40	640	58.60	43
6	<i>Boehmeria macrophylla</i>	30	200	22.61	20
7	<i>Rubus ellipticus</i>	10	80	9.04	7
8	<i>Chromolaena odoratum</i>	70	1600	37.99	70
9	<i>Caryopteris odorata</i>	10	80	9.04	7
10	<i>Elatostema sessile</i>	10	400	31.40	21
12	<i>Oxyspora paniculata</i>	10	40	3.66	5
13	<i>Urena lobata</i>	20	360	31.75	23
14	<i>Actinidia callosa</i>	10	160	14.65	11
	Total	310	4280	382.73	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Ageratum conyzoides</i>	40	7733	8
2	<i>Agrostis vinealis</i>	27	7467	6
3	<i>Athyrium angustum</i>	47	13200	11
4	<i>Bidens pilosa</i>	33	6867	7

5	<i>Capillipedium assimile</i>	33	7333	7
6	<i>Chrysopogon aciculate</i>	40	8200	8
7	<i>Colocasia esculenta</i>	33	12333	9
8	<i>Conyza japonica</i>	53	17400	14
9	<i>Desmodium heterocarpon</i>	47	14000	11
10	<i>Drymaria mollis</i>	27	8467	7
11	<i>Elatostema longicaudatum</i>	27	7333	6
12	<i>Equisetum diffusum</i>	67	16533	15
13	<i>Gerardinia diversifolia</i>	80	17067	16
14	<i>Hydrocotyle nepalensis</i>	33	8200	7
15	<i>Imperata cylindrica</i>	33	9867	8
16	<i>Mikania micrantha</i>	40	6533	7
17	<i>Nephrolepis auriculata</i>	80	21067	18
18	<i>Oxalis corniculata</i>	73	4267	10
19	<i>Perilla frutescens</i>	27	3733	5
20	<i>Pteracanthus cusia</i>	40	10400	9
21	<i>Spiranthes sinensis</i>	60	6533	9
			214533	

Siang Sub Basin-III

Sampling Site: S7

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	30	30	38.63	17
2	<i>Bischofia javanica</i>	30	30	24.12	14
3	<i>Castanopsis indica</i>	80	140	291.48	71
4	<i>Duabanga grandiflora</i>	50	60	46.73	26
5	<i>Ficus semicordata</i>	10	10	8.04	7
6	<i>Grewia polygama</i>	60	100	212.26	54
7	<i>Helicia erratica</i>	30	40	254.34	39
8	<i>Lannea coromandelica</i>	10	50	75.99	18
9	<i>Macaranga denticulata</i>	60	90	72.35	35
10	<i>Saurauia punduana</i>	30	40	66.44	19
	Total		590	1090.38	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Leea compactiflora</i>	20	240	2.71	9.38
2	<i>Pinanga gracilis</i>	20	560	8.62	15.96
3	<i>Piper pedicellatum</i>	40	600	5.09	20.75
4	<i>Ixora acuminata</i>	30	160	2.12	10.28
5	<i>Boehmeria macrophylla</i>	50	680	13.16	26.01
6	<i>Brassiopsis mitis</i>	20	120	5.65	7.87
7	<i>Melocalamus compactiflora</i>	10	160	0.08	5.14

8	<i>Alsophila spinulosa</i>	60	600	136.12	50.03
9	<i>Boehmeria rugulosa</i>	40	920	4.51	26.12
10	<i>Debregeasia longifolia</i>	30	440	198.95	51.90
11	<i>Ficus heterophylla</i>	10	120	13.56	6.97
12	<i>Maesa chisia</i>	50	1000	113.04	50.18
13	<i>Oxyspora paniculata</i>	30	200	18.31	13.99
14	<i>Sinarundinaria falcata</i>	10	40	12.56	5.42
		420	5840	534.49	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Ageratum conyzoides</i>	50	8167	9
2	<i>Amomum subulatum</i>	58	6500	9
3	<i>Artemisia nilagirica</i>	50	7250	8
4	<i>Athyrium angustum</i>	67	16417	14
5	<i>Begonia nepalensis</i>	33	6583	6
6	<i>Carex nivea</i>	58	6833	9
7	<i>Colocasia affinis</i>	50	6000	8
8	<i>Desmodium heterocarpon</i>	42	14000	11
9	<i>Elatostema sessile</i>	42	8167	8
10	<i>Equisetum diffusum</i>	67	13000	13
11	<i>Gerardinia diversifolia</i>	58	13167	12
12	<i>Hedychium spicatum</i>	50	14917	12
13	<i>Imperata cylindrica</i>	75	11583	13
14	<i>Nephrolepis auriculata</i>	67	15500	14
15	<i>Ophiorrhiza heterostyla</i>	58	7333	9

16	<i>Pilea scripta</i>	50	10250	10
17	<i>Pteris subindivisa</i>	50	9417	9
18	<i>Saccharum spontaneum</i>	67	15500	14
19	<i>Urtica dioica</i>	58	15417	13
			206000	

Sampling Site: S8

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Altingia excelsa</i>	50	50	25.75	60
2	<i>Actinidia callosa</i>	10	10	0.91	15
3	<i>Ailanthus integrifolia</i>	50	50	10.29	51
4	<i>Bischofia javanica</i>	30	30	13.07	38
6	<i>Castanopsis indica</i>	10	10	66.02	59
7	<i>Dipterocarpus retusus</i>	10	10	5.02	13
8	<i>Duabanga grandiflora</i>	10	10	9.50	15
9	<i>Elatostema sessile</i>	10	10	7.54	16
11	<i>Lannea coromandelica</i>	10	20	3.04	13
12	<i>Macaranga denticulata</i>	10	10	1.81	10
13	<i>Terminalia myriocarpa</i>	10	10	15.20	10
	Total		220	158.15	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	20	200	62.80	19
2	<i>Alsophila spinulosa</i>	60	600	136.12	50
3	<i>Boehmeria rugulosa</i>	40	920	4.51	32

4	<i>Caryopteris odorata</i>	20	160	18.09	12
5	<i>Conocephalus suaveolens</i>	20	160	18.09	12
6	<i>Debregeasia longifolia</i>	30	440	198.95	46
7	<i>Ficus heterophylla</i>	10	120	13.56	7
8	<i>Rubus ellipticus</i>	10	200	30.77	12
9	<i>Maesa chisia</i>	50	1000	113.04	52
10	<i>Oxyspora paniculata</i>	30	200	18.31	16
11	<i>Sinarundinaria falcata</i>	10	40	12.56	6
12	<i>Solanum surattense</i>	30	600	67.82	31
13	<i>Urena lobata</i>	10	120	10.58	7
	Total		4760	705.21	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Alpinia allughas</i>	42	13250	9
2	<i>Angiopteris assamica</i>	50	10000	9
3	<i>Athyrium angustum</i>	67	20500	15
4	<i>Begonia nepalensis</i>	42	11667	9
5	<i>Bidens bipinnata</i>	50	11333	9
6	<i>Conyza japonica</i>	58	19833	14
7	<i>Digitaria stricta</i>	50	10000	9
8	<i>Equisetum diffusum</i>	67	8167	10
9	<i>Gerardinia diversifolia</i>	58	17500	13
10	<i>Hedychium spicatum</i>	67	5667	9
11	<i>Imperata cylindrica</i>	75	11250	12
12	<i>Miscanthus nepalensis</i>	42	13000	9
13	<i>Nephrolepis auriculata</i>	75	15583	14
14	<i>Ophiorrhiza heterostyla</i>	33	16333	10

15	<i>Pilea scripta</i>	50	19000	13
16	<i>Pteris subindivisa</i>	67	23167	16
17	<i>Thysanolaena latifolia</i>	58	10000	10
18	<i>Urtica dioica</i>	67	12333	12
			248583	

Sampling Site: S9

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	60	110	212.26	71
2	<i>Lannea coromandelica</i>	10	10	15.20	9
3	<i>Castanopsis indica</i>	30	40	254.34	67
4	<i>Ficus semicordata</i>	60	100	72.35	32
5	<i>Grewia polygama</i>	10	10	24.62	10
6	<i>Helicia erratica</i>	10	40	75.99	25
7	<i>Bischofia javanica</i>	10	10	7.54	8
8	<i>Michelia glabra</i>	10	40	4.15	9
9	<i>Saurauia punduana</i>	60	90	102.58	38
12	<i>Terminalia myriocarpa</i>	30	30	66.44	24
14	<i>Tetradium fraxinifolium</i>	10	10	8.04	7
	Total	330	490	879.22	300

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	10	160	14.65	7
2	<i>Caryopteris odorata</i>	10	80	9.04	5

3	<i>Elatostema sessile</i>	10	400	31.40	13
4	<i>Oxyspora paniculata</i>	80	960	364.74	74
5	<i>Pentapanax leschenaultiana</i>	40	240	36.93	18
6	<i>Maesa chisia</i>	50	400	61.54	26
7	<i>Boehmeria rugulosa</i>	20	200	62.80	15
8	<i>Ficus heterophylla</i>	60	600	136.12	39
9	<i>Sinarundinaria falcata</i>	40	920	4.51	28
10	<i>Actinidia callosa</i>	20	160	18.09	10
11	<i>Maesa chisia</i>	30	440	198.95	35
12	<i>Conocephalus suaveolens</i>	10	120	13.56	6
13	<i>Alsophila spinulosa</i>	10	200	30.77	9
14	<i>Debregeasia longifolia</i>	30	160	14.65	12
15	<i>Rubus ellipticus</i>	10	80	9.04	5
	Total	430	5120	1006.81	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Ageratum conyzoides</i>	50	15500	12
2	<i>Amomum subulatum</i>	58	6917	9
3	<i>Athyrium angustum</i>	42	17917	12
4	<i>Begonia nepalensis</i>	50	8167	8
5	<i>Bidens bipinnata</i>	58	14833	12
6	<i>Conyza japonica</i>	58	6250	8
7	<i>Cynodon dactylon</i>	67	9583	11
8	<i>Cyperus cyperinus</i>	75	9667	12
9	<i>Desmodium heterocarpon</i>	92	10333	13
10	<i>Digitaria stricta</i>	67	20667	15

11	<i>Gerardinia diversifolia</i>	75	20083	16
12	<i>Hedychium spicatum</i>	58	18000	13
13	<i>Miscanthus nepalensis</i>	67	21500	16
14	<i>Nephrolepis auriculata</i>	50	20750	14
15	<i>Piper pedicellatum</i>	42	8167	8
16	<i>Pteris subindivisa</i>	42	18000	12
17	<i>Thysanolaena latifolia</i>	58	8167	9
			234500	

Sampling Site: S10

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	60	90	212.26	81
2	<i>Bischofia javanica</i>	10	10	15.00	9
3	<i>Casearia vareca</i>	10	10	9.00	8
4	<i>Castanopsis indica</i>	10	10	8.04	8
5	<i>Ficus semicordata</i>	60	90	68.00	56
6	<i>Lannea coromandelica</i>	10	10	7.54	8
7	<i>Michelia glabra</i>	10	40	4.15	9
8	<i>Millettia pulchra</i>	10	10	19.63	10
9	<i>Saurauia punduana</i>	60	110	101.00	71
10	<i>Terminalia myriocarpa</i>	30	40	66.00	34
11	<i>Tetradium fraxinifolium</i>	10	10	8.04	8
	Total		430	518.66	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	80	960	36.47	92.76
2	<i>Alsophila spinulosa</i>	40	240	3.69	22.81
3	<i>Cudrania javanensis</i>	60	600	13.61	49.88
4	<i>Debregeasia longifolia</i>	40	920	0.45	35.27
5	<i>Ficus heterophylla</i>	20	200	1.81	13.29
6	<i>Maesa chisia</i>	30	440	19.90	44.31
7	<i>Oxyspora paniculata</i>	10	420	1.36	14.93
8	<i>Pentapanax leschenaultiana</i>	10	200	3.08	11.72
9	<i>Sinarundinaria falcata</i>	30	160	1.46	15.03
	Total		4140	81.83	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Alpinia allughas</i>	20	8083	10
2	<i>Athyrium angustum</i>	10	35583	17
3	<i>Begonia nepalensis</i>	10	7167	6
4	<i>Bidens bipinnata</i>	10	10667	8
5	<i>Colocasia affinis</i>	10	7167	6
6	<i>Conyza stricta</i>	10	6500	6
7	<i>Digitaria stricta</i>	10	8167	7
8	<i>Elatostema glabra</i>	20	7250	10
9	<i>Equisetum diffusum</i>	10	10667	8
10	<i>Gerardinia diversifolia</i>	10	15417	9
11	<i>Hedychium spicatum</i>	10	5750	6
12	<i>Helictotrichon virescens</i>	10	10750	8
13	<i>Miscanthus nepalensis</i>	30	9167	15
14	<i>Molinieria capitulata</i>	30	10083	15

15	<i>Pilea umbrosa</i>	10	40500	19
16	<i>Pteris subindivisa</i>	10	11833	8
17	<i>Saccharum spontaneum</i>	10	18000	10
18	<i>Selaginella indica</i>	10	7417	6
19	<i>Thysanolaena latifolia</i>	10	8000	7
20	<i>Urtica dioica</i>	20	29000	18
			267167	

Siang Sub Basin-IV

Sampling Site: S11

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	50	50	7.57	54
2	<i>Casearia vareca</i>	70	40	2.14	44
3	<i>Castanopsis indica</i>	50	30	7.60	45
4	<i>Ficus semicordata</i>	20	25	1.69	21
5	<i>Lannea coromandelica</i>	10	10	0.92	9
6	<i>Millettia pulchra</i>	40	30	2.62	31
7	<i>Saurauia punduana</i>	20	15	1.66	16
8	<i>Terminalia myriocarpa</i>	40	30	6.42	39
9	<i>Bischofia javanica</i>	10	10	15.00	40
	Total		240	45.60	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	10	180	10.30	13
2	<i>Alsophila spinulosa</i>	20	260	12.02	19
3	<i>Conocephalus suaveolens</i>	30	260	10.03	22
4	<i>Debregeasia longifolia</i>	30	180	20.05	22
5	<i>Ficus heterophylla</i>	40	480	111.82	64
6	<i>Maesa chisia</i>	20	280	70.00	38
7	<i>Pentapanax leschenaultiana</i>	70	580	60.15	62
8	<i>Sinarundinaria falcata</i>	30	300	0.03	20
9	<i>Solanum torvum</i>	30	300	19.00	26
10	<i>Trevesia palmata</i>	20	140	10.01	14
	Total		2960	323.41	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Aconogonum molle</i>	33	7167	7
2	<i>Ageratum conyzoides</i>	33	9333	8
3	<i>Alpinia allughas</i>	75	10250	13
4	<i>Athyrium angustum</i>	58	22000	16
5	<i>Begonia megaptera</i>	42	9667	9
6	<i>Begonia roxburghii</i>	33	8000	7
7	<i>Cassia tora</i>	25	7417	6
8	<i>Colocasia affinis</i>	42	7583	8
9	<i>Elatostema glabra</i>	33	7167	7
10	<i>Hedychium spicatum</i>	58	19833	15
11	<i>Murdannia japonica</i>	50	8917	9
12	<i>Oxalis corniculata</i>	58	13667	13
13	<i>Paspalum scrobiculatum</i>	50	9333	10
14	<i>Pilea scripta</i>	25	7417	6
15	<i>Pteridium aquilinum</i>	58	18000	15
16	<i>Pteris subindivisa</i>	67	18583	16
17	<i>Selaginella indica</i>	75	13417	14
18	<i>Thysanolaena latifolia</i>	67	10667	12
19	<i>Viola betonicifolia</i>	42	10917	9
			219333	

Sampling Site: S12

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia odoratissima</i>	20	40	90.00	35
2	<i>Alnus nepalensis</i>	20	20	25.65	22
3	<i>Altingia excelsa</i>	10	10	26.41	12
4	<i>Bischofia javanica</i>	10	10	22.08	14
5	<i>Castanopsis indica</i>	10	10	6.00	9
6	<i>Duabanga grandiflora</i>	10	10	108.00	21
7	<i>Ficus oligodon</i>	20	10	0.94	12
8	<i>Ficus semicordata</i>	60	120	206.65	93
9	<i>Macaranga denticulata</i>	10	10	7.54	9
10	<i>Maesa robusta</i>	10	10	8.04	9
11	<i>Saurauia punduana</i>	20	20	14.60	17
12	<i>Terminalia myriocarpa</i>	30	30	32.24	23
13	<i>Ulmus lanceifolia</i>	10	10	111.00	25
	Total		310	662.69	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	10	600	2.51	41
2	<i>Ardisia thyrsoiflora</i>	20	120	2.03	8
3	<i>Ficus heterophylla</i>	20	480	1.41	106
4	<i>Leucosceptum canum</i>	10	400	1.81	60
5	<i>Maesa chisia</i>	80	960	0.90	33
6	<i>Oxyspora paniculata</i>	10	160	0.69	14
7	<i>Pinanga gracilis</i>	90	1320	0.45	11
8	<i>Rubus ellipticus</i>	20	200	11.31	10

9	<i>Rubus lineatus</i>	30	480	3.93	8
10	<i>Solanum surattense</i>	10	80	0.90	10
	Total	300	4800	25.96	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Adiantum philippensis</i>	42	7250	7
2	<i>Agrostis vinealis</i>	50	7167	8
3	<i>Amomum subulatum</i>	42	7417	7
4	<i>Athyrium angustum</i>	50	21333	14
5	<i>Begonia megaptera</i>	33	7917	7
6	<i>Bidens bipinnata</i>	58	17083	13
7	<i>Cassia tora</i>	50	9417	9
8	<i>Conyza stricta</i>	58	7083	9
9	<i>Elatostema glabra</i>	50	8667	9
10	<i>Elatostema sessile</i>	42	8000	8
11	<i>Equisetum diffusum</i>	58	16833	13
12	<i>Hedychium spicatum</i>	50	18000	13
13	<i>Impatiens bicornuta</i>	25	7167	6
14	<i>Oxalis corniculata</i>	67	22917	17
15	<i>Persicaria capitata</i>	50	8167	9
16	<i>Polygonum capitatum</i>	58	5417	8
17	<i>Pteridium aquilinum</i>	50	13667	11
18	<i>Pteris quadriaurita</i>	58	17667	14
19	<i>Pteris subindivisa</i>	50	4083	7
20	<i>Thysanolaena latifolia</i>	33	5083	6
21	<i>Viola betonicifolia</i>	25	6917	6
	Total		227250	

Sampling Site: S13

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Terminalia myriocarpa</i>	20	50	118.73	36
2	<i>Ostodes paniculata</i>	30	40	36.30	28
3	<i>Cinnamomum glaucescens</i>	30	50	38.95	31
4	<i>Castanopsis indica</i>	30	40	254.34	55
5	<i>Helicia erratica</i>	30	50	75.99	35
6	<i>Grewia polygama</i>	10	10	24.62	10
7	<i>Gynocardia odorata</i>	10	10	63.59	15
8	<i>Brassiopsis aculeata</i>	10	20	16.08	11
9	<i>Baccaurea ramiflora</i>	20	50	69.24	30
10	<i>Trema amboinensis</i>	10	10	12.56	8
11	<i>Macaranga denticulata</i>	10	10	67.89	15
12	<i>Carpinus viminea</i>	10	10	7.30	8
13	<i>Alnus nepalensis</i>	20	30	11.40	18
	Total		380	796.98	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Maesa chisia</i>	70	640	24.32	61.79
2	<i>Alsophila spinulosa</i>	50	1000	11.30	47.72
3	<i>Oxyspora paniculata</i>	30	200	1.83	14.13
4	<i>Leea compactiflora</i>	20	240	2.71	13.50
5	<i>Pinanga gracilis</i>	20	560	8.62	27.55
6	<i>Piper pedicellatum</i>	40	600	5.09	29.06
7	<i>Ixora acuminata</i>	30	160	2.12	13.67

8	<i>Boehmeria macrophylla</i>	50	680	13.16	43.44
9	<i>Brassiopsis mitis</i>	20	120	5.65	14.72
10	<i>Melocalamus compactiflora</i>	10	160	0.08	5.97
11	<i>Leucosceptrum canum</i>	30	400	3.80	20.74
12	<i>Actinidia callosa</i>	10	40	0.42	3.91
13	<i>Melastoma normale</i>	10	40	0.31	3.79
	Total		4840	79.41	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Ageratum conyzoides</i>	67	13000	10
2	<i>Alpinia allughas</i>	75	4000	7
3	<i>Arisaema speciosum</i>	42	6333	6
4	<i>Athyrium angustum</i>	75	18750	13
5	<i>Begonia megaptera</i>	33	15500	9
6	<i>Bidens bipinnata</i>	50	6167	6
7	<i>Colocasia affinis</i>	50	3000	5
8	<i>Conyza stricta</i>	58	21250	13
9	<i>Digitaria ciliaris</i>	58	6167	7
10	<i>Drymaria mollis</i>	67	4667	7
11	<i>Elatostema glabra</i>	75	5250	8
12	<i>Equisetum diffusum</i>	67	18667	13
13	<i>Hedychium spicatum</i>	58	4583	6
14	<i>Imperata cylindrica</i>	92	14833	13
15	<i>Miscanthus nepalensis</i>	42	8000	6
16	<i>Ophiorrhiza heterostyla</i>	33	7333	5
17	<i>Oxalis corniculata</i>	25	18000	9
18	<i>Perilla frutescens</i>	42	3917	5

19	<i>Persicaria capitata</i>	33	6250	5
20	<i>Pteridium aquilinum</i>	50	3667	5
21	<i>Saccharum spontaneum</i>	33	16500	9
22	<i>Selaginella indica</i>	58	28500	16
23	<i>Thysanolaena latifolia</i>	67	8167	8
24	<i>Viola betonicifolia</i>	75	5250	8
			247750	

Yamne Sub Basin

Sampling Site: Y1

TREES

Trees	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Tetradium fraxinifolium</i>	20	20	64.31	23
2	<i>Altingia excelsa</i>	10	20	34.68	14
3	<i>Saurauia punduana</i>	40	40	37.63	30
4	<i>Lannea coromandelica</i>	30	70	57.36	38
5	<i>Ficus racemosa</i>	20	30	51.27	23
6	<i>Terminalia myriocarpa</i>	30	30	71.24	30
7	<i>Albizia lucida</i>	10	10	28.26	11
8	<i>Brassiopsis aculeata</i>	10	10	9.07	8
9	<i>Carpinus viminea</i>	20	30	21.91	18
10	<i>Macaranga denticulata</i>	30	50	38.95	30
11	<i>Aglaia spectabilis</i>	10	10	30.18	11
12	<i>Garuga pinnata</i>	10	10	47.76	14
13	<i>Phoebe hainesiana</i>	10	10	38.47	12
14	<i>Castanopsis indica</i>	20	20	20.35	15
15	<i>Magnolia hodgsonii</i>	10	10	8.55	7
16	<i>Artocarpus lakoocha</i>	10	10	50.24	14
	Total		380	610.22	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Abroma angustifolia</i>	20	480	5.43	26.75

2	<i>Actinidia callosa</i>	60	720	13.06	56.00
3	<i>Alsophila spinulosa</i>	10	80	2.69	8.90
4	<i>Boehmeria macrophylla</i>	10	80	1.23	6.97
5	<i>Boehmeria penduliflora</i>	20	120	1.36	11.38
6	<i>Brassiopsis mitis</i>	20	80	1.90	10.99
7	<i>Chromolaena odoratum</i>	20	680	6.00	33.06
8	<i>Debregeasia longifolia</i>	10	80	2.27	8.34
9	<i>Elatostema aquifolium</i>	10	40	1.45	6.15
10	<i>Maesa chisia</i>	30	240	4.64	22.18
11	<i>Melastoma normale</i>	40	440	4.57	30.76
12	<i>Oxyspora paniculata</i>	10	80	1.41	7.21
13	<i>Rhamnus nepalensis</i>	10	40	2.12	7.04
14	<i>Solanum surattense</i>	10	40	5.36	11.32
15	<i>Strobilanthes echinata</i>	20	240	3.71	17.82
16	<i>Vernonia volkemerifolia</i>	10	40	5.35	11.30
17	<i>Pteracanthus rubescens</i>	10	120	13.13	23.81
	Total		3600	75.68	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Alpinia allughas</i>	40	6000	6.67
2	<i>Amomum subulatum</i>	60	3000	7.46
3	<i>Arthraxon hispidus</i>	60	3000	7.46
4	<i>Athyrium angustum</i>	30	14000	9.03
5	<i>Begonia nepalensis</i>	50	4000	6.85
6	<i>Capillipedium assimile</i>	40	3000	5.40
7	<i>Colocasia affinis</i>	60	21800	15.43

8	<i>Equisetum diffusum</i>	20	7000	5.03
9	<i>Euphorbia hirta</i>	50	9000	8.97
10	<i>Hydrocotyle nepalensis</i>	50	23600	15.16
11	<i>Mikania micrantha</i>	60	3200	7.54
12	<i>Miscanthus nepalensis</i>	30	21600	12.25
13	<i>Ophiorrhiza heterostyla</i>	40	2400	5.14
14	<i>Oplismenus compositus</i>	50	2200	6.09
15	<i>Pilea scripta</i>	60	36000	21.45
16	<i>Piper nigrum</i>	40	8000	7.52
17	<i>Pteris subindivisa</i>	30	3000	4.37
18	<i>Pteris vittata</i>	40	31000	17.27
19	<i>Rubia sikkimensis</i>	40	12000	9.21
20	<i>Saccharum narenga</i>	50	2000	6.00
21	<i>Selaginella indica</i>	40	14000	10.06
22	<i>Urtica ardens</i>	30	6000	5.64
	Total		235800	

Sampling Site: Y2

TREES

Trees	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Castanopsis indica</i>	50	100	141.79	71
2	<i>Macaranga denticulata</i>	20	50	45.64	29
3	<i>Cinnamomum glaucescens</i>	10	10	7.54	8
4	<i>Lannea coromandelica</i>	20	50	86.70	36
5	<i>Pandanus nepalensis</i>	20	50	38.95	28
6	<i>Daphne obovata</i>	20	20	85.97	28

7	<i>Glochidion assamicum</i>	10	30	21.91	16
8	<i>Macropanax dispermus</i>	10	10	19.63	10
9	<i>Ficus glaberrima</i>	10	10	21.23	10
10	<i>Beilschmiedia roxburghiana</i>	10	10	50.24	15
11	<i>Bridelia retusa</i>	20	20	70.48	25
12	<i>Altingia excelsa</i>	10	10	44.16	14
13	<i>Ficus semicordata</i>	10	10	9.62	9
	Total		380	643.85	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	10	120	1.38	8.83
2	<i>Bambusa tulda</i>	10	160	34.59	39.18
3	<i>Calamus tenuis</i>	20	360	3.30	22.18
4	<i>Chromolaena odoratum</i>	10	40	18.31	20.91
5	<i>Debregeasia longifolia</i>	10	120	0.72	8.25
6	<i>Grewia tenax</i>	10	80	4.92	10.57
7	<i>Indigofera dosua</i>	10	40	1.36	6.11
8	<i>Maesa chisia</i>	10	40	1.02	5.81
9	<i>Murraya exotica</i>	20	120	1.06	12.12
10	<i>Randia wallichii</i>	10	40	1.52	6.25
11	<i>Rhamnus nepalensis</i>	20	200	2.07	15.70
12	<i>Rubus ellipticus</i>	10	160	0.37	9.30
13	<i>Oxyspora paniculata</i>	60	920	7.96	59.46
14	<i>Strobilanthes echinata</i>	10	120	1.81	9.20
15	<i>Vernonia volkemerifolia</i>	10	80	2.51	8.47
16	<i>Pentapanax leschenaultiana</i>	20	80	7.19	16.12
17	<i>Ardisia thyrsoiflora</i>	20	120	10.58	20.44

18	<i>Rubus ellipticus</i>	10	160	13.85	21.07
	Total		2960	114.52	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Amomum subulatum</i>	33	8167	7.87
2	<i>Achyranthes aspera</i>	50	14833	12.95
3	<i>Ageratum conyzoides</i>	50	9333	10.52
4	<i>Alpinia allughas</i>	58	15500	14.31
5	<i>Artemisia nilagirica</i>	33	9667	8.54
6	<i>Begonia nepalensis</i>	25	12667	8.80
7	<i>Capillipedium assimile</i>	25	7667	6.59
8	<i>Colocasia affinis</i>	25	13000	8.95
9	<i>Crassocephalum crepidioides</i>	33	7750	7.69
10	<i>Desmodium scandens</i>	67	13667	14.56
11	<i>Digitaria ciliaris</i>	58	7250	10.66
12	<i>Mikania micrantha</i>	50	13583	12.40
13	<i>Onchium lucidum</i>	33	8167	7.87
14	<i>Pilea scripta</i>	17	3667	3.75
15	<i>Pilea umbrosa</i>	58	18667	15.72
16	<i>Pogonatherum paniceum</i>	17	11833	7.37
17	<i>Pteris subindivisa</i>	33	11417	9.31
18	<i>Rubia sikkimensis</i>	25	6667	6.14
19	<i>Saccharum narenga</i>	50	17583	14.17
20	<i>Urtica ardens</i>	42	14667	11.82
	Total		225750	

Sampling Site: Y3

TREES

Trees	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Terminalia myriocarpa</i>	20	20	76.93	21
2	<i>Macaranga denticulata</i>	20	20	21.49	15
3	<i>Altingia excelsa</i>	30	30	197.60	41
4	<i>Duabanga grandiflora</i>	20	30	190.76	37
5	<i>Persea robusta</i>	10	10	12.56	8
6	<i>Bischofia javanica</i>	10	10	50.24	12
7	<i>Ficus semicordata</i>	20	20	34.68	17
8	<i>Ostodes paniculata</i>	50	70	104.46	50
9	<i>Engelhardtia spicata</i>	10	10	38.47	11
10	<i>Garcinia acuminata</i>	10	10	15.90	8
12	<i>Bauhinia variegata</i>	10	10	11.34	8
13	<i>Canarium strictum</i>	10	10	15.20	8
14	<i>Lannea coromandelica</i>	30	50	62.80	32
15	<i>Beilschmiedia roxburghiana</i>	10	10	22.89	9
16	<i>Castanopsis indica</i>	10	10	9.07	7
17	<i>Magnolia hodgsonii</i>	10	10	15.20	8
18	<i>Ficus ovata</i>	10	10	12.56	8
	Total		340	892.13	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ardisia thyrsoiflora</i>	20	360	3.46	14.48
2	<i>Chromolaena odoratum</i>	40	640	8.60	28.09
3	<i>Rhamnus nepalensis</i>	30	200	6.61	14.28

4	<i>Alsophila spinulosa</i>	10	80	9.04	9.59
5	<i>Oxyspora paniculata</i>	70	400	7.99	26.78
6	<i>Bambusa tulda</i>	10	80	9.04	9.59
7	<i>Boehmeria macrophylla</i>	10	400	3.40	13.76
8	<i>Trevesia palmata</i>	20	360	3.75	14.67
9	<i>Boehmeria macrophylla</i>	40	360	11.34	23.00
10	<i>Caryopteris odorata</i>	40	160	3.85	13.14
11	<i>Maesa chisia</i>	40	160	8.09	15.93
12	<i>Solanum surattense</i>	80	280	7.68	25.29
13	<i>Grewia tenax</i>	10	160	3.85	8.14
14	<i>Randia wallichii</i>	20	120	4.58	9.31
15	<i>Chromolaena odoratum</i>	120	260	57.04	63.97
16	<i>Oxyspora paniculata</i>	40	40	3.53	9.98
	Total		4060	151.86	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Ageratum conyzoides</i>	50	11000	11.27
2	<i>Alpinia allughas</i>	42	8667	9.17
3	<i>Athyrium angustum</i>	25	20667	12.38
4	<i>Bidens pilosa</i>	33	8167	7.88
5	<i>Capillipedium assimile</i>	42	9667	9.62
6	<i>Colocasia esculenta</i>	25	10333	7.78
7	<i>Digitaria ciliaris</i>	33	11000	9.14
8	<i>Hydrocotyle nepalensis</i>	33	9333	8.40
9	<i>Imperata cylindrica</i>	42	10500	9.99
10	<i>Mikania micrantha</i>	58	11833	12.71
11	<i>Miscanthus nepalensis</i>	33	9500	8.48

12	<i>Onchium lucidum</i>	33	11500	9.37
13	<i>Pilea scripta</i>	42	12417	10.84
14	<i>Pilea umbrosa</i>	50	9417	10.57
15	<i>Pogonatherum paniceum</i>	25	5417	5.60
16	<i>Pteris subindivisa</i>	58	20083	16.37
17	<i>Rubia sikkimensis</i>	50	17750	14.27
18	<i>Selaginella indica</i>	50	10333	10.98
19	<i>Urena lobata</i>	17	8083	5.72
20	<i>Urtica parviflora</i>	42	9333	9.47
	Total		225000	

Sampling Site: Y4

TREES

Trees	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ficus auriculata</i>	200	60	97.51	72
2	<i>Duabanga grandiflora</i>	40	60	820.67	72
3	<i>Ficus semicordata</i>	40	40	113.04	28
4	<i>Altingia excelsa</i>	10	10	18.09	6
5	<i>Albizia procera</i>	50	60	346.33	49
6	<i>Bridelia retusa</i>	10	10	8.04	6
7	<i>Lannea coromandelica</i>	40	70	261.62	44
8	<i>Albizia odoratissima</i>	10	10	153.86	14
9	<i>Cladoxylon indicum</i>	10	20	34.68	10
	Total		340	1853.83	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Abroma angustifolia</i>	20	480	5.43	17.23
2	<i>Ardisia thyrsoiflora</i>	60	720	8.09	30.05
3	<i>Bambusa tulda</i>	10	80	59.82	27.39
4	<i>Boehmeria macrophylla</i>	200	240	80.34	66.44
5	<i>Caryopteris odorata</i>	40	40	3.40	8.01
6	<i>Chromolaena odoratum</i>	80	480	37.68	38.59
7	<i>Elatostema aquifolium</i>	30	240	3.45	11.73
8	<i>Indigofera dosua</i>	40	440	7.39	19.81
9	<i>Maesa chisia</i>	10	80	6.58	6.08
10	<i>Melocalamus compactiflorus</i>	20	360	2.63	13.05
11	<i>Murraya exotica</i>	20	120	5.20	7.96
12	<i>Rhamnus nepalensis</i>	10	40	3.56	3.86
13	<i>Rubus ellipticus</i>	20	200	4.77	9.83
14	<i>Solanum surattense</i>	80	160	12.62	20.40
14	<i>Solanum verbascifolium</i>	60	120	1.73	12.20
16	<i>Vernonia volkemerifolia</i>	10	120	7.24	7.36
	Total		3920	249.92	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Achyranthes aspera</i>	40	9600	8.7
2	<i>Ageratum conyzoides</i>	30	6600	6.2
3	<i>Artemisia nilagirica</i>	50	8900	9.4
4	<i>Athyrium angustum</i>	20	2300	3.2
5	<i>Bidens pilosa</i>	70	14600	14.2
6	<i>Colocasia esculenta</i>	30	7500	6.7

7	<i>Desmodium scandens</i>	40	8600	8.2
8	<i>Digitaria ciliaris</i>	40	9400	8.6
9	<i>Hydrocotyle nepalensis</i>	60	11500	11.7
10	<i>Imperata cylindrica</i>	60	13900	12.8
11	<i>Mikania micrantha</i>	30	6500	6.2
12	<i>Onchium lucidum</i>	50	7800	8.9
13	<i>Pilea scripta</i>	60	12900	12.4
14	<i>Pteris subindivisa</i>	80	15900	15.8
15	<i>Pteris vittata</i>	20	3600	3.8
16	<i>Rubia sikkimensis</i>	60	14600	13.2
17	<i>Selaginella indica</i>	70	14500	14.1
18	<i>Urena lobata</i>	50	13600	11.7
19	<i>Urtica ardens</i>	50	11000	10.4
20	<i>Urtica parviflora</i>	60	15900	13.8
	Total		209200	

Simang Sub Basin

Sampling Site: Sm1

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Terminalia myriocarpa</i>	70	70	353.44	88
2	<i>Bridelia retusa</i>	10	10	12.56	8
3	<i>Cladoxylon indicum</i>	30	30	45.59	27
4	<i>Cinnamomum glaucescens</i>	30	30	22.63	25
5	<i>Altingia excelsa</i>	40	40	114.93	41
6	<i>Albizia procera</i>	10	20	153.88	28
7	<i>Macaranga denticulata</i>	10	10	7.30	9
8	<i>Kydia calycina</i>	10	10	105.63	19
9	<i>Ostodes paniculata</i>	20	30	30.52	22
10	<i>Endospermum chinense</i>	10	10	16.61	10
11	<i>Syzygium assamicum</i>	10	10	21.23	12
12	<i>Beilschmiedia roxburghiana</i>	10	10	32.15	11
	Total		280	916.48	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	40	270	4.52	17
2	<i>Boehmeria macrophylla</i>	50	320	15.20	24
3	<i>Boehmeria penduliflora</i>	20	80	6.15	8
4	<i>Buddleja asiatica</i>	40	140	2.01	12
5	<i>Cinnamomum pauciflorum</i>	50	310	47.76	34

6	<i>Debregeasia longifolia</i>	50	250	8.31	19
7	<i>Eupatorium odoratum</i>	40	290	24.62	24
8	<i>Ficus auriculata</i>	50	320	60.79	39
9	<i>Leea asiatica</i>	50	270	16.08	22
10	<i>Maesa indica</i>	30	200	20.35	18
11	<i>Oxyspora paniculata</i>	50	250	25.12	25
12	<i>Randia wallichii</i>	50	140	13.56	18
13	<i>Sida acuta</i>	10	40	3.66	4
14	<i>Solanum erianthum</i>	20	360	31.75	25
15	<i>Urena lobata</i>	10	160	14.65	11
	Total		3400	295	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Ageratum conyzoides</i>	67	15500	13.17
2	<i>Alpinia allughas</i>	33	6917	6.22
3	<i>Amomum subulatum</i>	67	17917	14.22
4	<i>Athyrium angustum</i>	33	8167	6.76
5	<i>Begonia nepalensis</i>	42	14833	10.46
6	<i>Colocasia esculenta</i>	42	6250	6.74
7	<i>Cotula australis</i>	75	9583	11.41
8	<i>Cynoglossum glochidiatum</i>	75	9667	11.45
9	<i>Equisetum diffusum</i>	92	10333	13.35
10	<i>Fragaria nubicola</i>	83	20667	17.02
11	<i>Girardinia diversifolia</i>	42	6833	6.99
12	<i>Imperata cylindrica</i>	33	9500	7.34
13	<i>Mazus pumilus</i>	75	18000	15.06
14	<i>Ophiorrhiza heterostyla</i>	75	21500	16.58

15	<i>Oxalis corniculata</i>	67	20750	15.44
16	<i>Pilea scripta</i>	33	8167	6.76
17	<i>Pteridium aquilinum</i>	67	18000	14.25
18	<i>Urtica ardens</i>	33	8167	6.76
	Total		230750	

Sampling Site: Sm2

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Anthocephalus cadamba</i>	10	10	226.87	54
2	<i>Helicia robusta</i>	20	20	88.31	21
3	<i>Pterospermum acerifolium</i>	10	20	76.93	16
4	<i>Cinnamomum glaucescens</i>	10	10	30.18	10
5	<i>Duabanga grandiflora</i>	60	55	279.64	88
6	<i>Albizia procera</i>	10	10	28.26	10
7	<i>Bischofia javanica</i>	20	20	45.78	20
8	<i>Ailanthus integrifolia</i>	10	10	12.56	10
9	<i>Ficus auriculata</i>	10	10	10.17	9
10	<i>Glochidion assamicum</i>	10	20	17.62	14
11	<i>Terminalia myriocarpa</i>	20	20	265.33	26
12	<i>Artocarpus integrifolia</i>	10	10	94.99	12
13	<i>Ficus oligodon</i>	10	10	38.47	10
	Total		225	1215.10	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	50	290	26.4	24.2
2	<i>Boehmeria macrophylla</i>	30	170	0.9	10.1
3	<i>Buddleja asiatica</i>	40	190	63.6	30.6
4	<i>Chromolaena odorata</i>	40	210	22.1	19.0
5	<i>Cinnamomum obtusifolium</i>	40	340	45.4	29.6
6	<i>Cinnamomum pauciflorum</i>	30	170	67.9	29.7
7	<i>Citrus limetta</i>	50	300	1.7	17.3
8	<i>Debregeasia longifolia</i>	60	330	11.4	22.6
9	<i>Eupatorium odoratum</i>	40	160	14.6	15.4
10	<i>Ficus auriculata</i>	30	170	8.0	12.1
11	<i>Gonostegia hirta</i>	40	160	24.6	18.3
12	<i>Melastoma normale</i>	30	200	0.9	10.9
13	<i>Piper pedicellatum</i>	40	280	36.3	25.2
14	<i>Pteracanthus rubescens</i>	50	350	16.1	22.9
15	<i>Urena lobata</i>	40	170	1.7	11.9
	Total		3490	341.6	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Aconogonum molle</i>	50	6500	9.3
2	<i>Ageratum conyzoides</i>	40	11800	10.7
3	<i>Alocasia macrorrhiza</i>	30	4500	5.9
4	<i>Arisaema concinnum</i>	40	3800	6.7
5	<i>Athyrium angustum</i>	60	13600	14.0
6	<i>Bidens pilosa</i>	50	9200	10.6

7	<i>Colocasia fallax</i>	40	9200	9.4
8	<i>Cotula australis</i>	30	8900	8.0
9	<i>Drymaria mollis</i>	40	9800	9.7
10	<i>Equisetum diffusum</i>	30	14800	10.9
11	<i>Eragrostis tenella</i>	30	11200	9.1
12	<i>Fragaria nubicola</i>	40	10800	10.2
13	<i>Mikania micrantha</i>	40	11700	10.6
14	<i>Nephrolepis cordifolia</i>	50	15400	13.6
15	<i>Ophiorrhiza heterostyla</i>	30	11100	9.1
16	<i>Pilea scripta</i>	30	6800	7.0
17	<i>Pteridium aquilinum</i>	80	18500	18.8
18	<i>Pteris cretica</i>	40	8300	8.9
19	<i>Rauwolfia serpentina</i>	30	8500	7.8
20	<i>Setaria palmifolia</i>	40	9700	9.6
	Total		204100	

Sampling Site: Sm3

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ailanthus integrifolia</i>	60	60	35.25	30
2	<i>Albizia procera</i>	50	50	10.80	21
3	<i>Artocarpus heterophyllus</i>	40	60	68.30	33
4	<i>Bischofia javanica</i>	30	60	57.15	29
5	<i>Bombax ceiba</i>	40	40	60.75	28
6	<i>Chukrasia tabularis</i>	60	30	26.08	22
7	<i>Dillenia indica</i>	60	40	24.25	24

8	<i>Ficus semicordata</i>	50	40	26.08	22
9	<i>Kydia calycina</i>	40	30	35.25	20
10	<i>Ostodes paniculata</i>	30	40	10.80	15
11	<i>Syzygium assamicum</i>	40	30	68.30	27
12	<i>Terminalia myriocarpa</i>	60	30	57.15	28
	Total		510	480.15	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Actinidia callosa</i>	40	70	4.52	10.50
2	<i>Boehmeria penduliflora</i>	20	80	6.15	7.71
3	<i>Boehmeria macrophylla</i>	50	460	35.20	32.70
4	<i>Buddleja asiatica</i>	40	140	2.01	11.70
5	<i>Chromolaena odorata</i>	10	40	3.46	3.98
6	<i>Cinnamomum pauciflorum</i>	50	210	37.76	26.47
7	<i>Debregeasia longifolia</i>	50	320	8.31	20.48
8	<i>Eupatorium odoratum</i>	40	490	44.62	34.66
9	<i>Ficus auriculata</i>	50	320	60.79	36.66
10	<i>Leea asiatica</i>	50	270	16.08	21.47
11	<i>Maesa indica</i>	30	180	20.35	16.69
12	<i>Melastoma malabathricum</i>	20	320	31.75	22.35
13	<i>Oxyspora paniculata</i>	50	380	25.12	27.35
14	<i>Pteracanthus rubescens</i>	10	80	14.65	8.55
15	<i>Randia wallichii</i>	50	200	13.56	18.73
	Total		3560	324.33477	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Ageratum conyzoides</i>	33	9467	9
2	<i>Alocasia macrorrhiza</i>	20	4533	5
3	<i>Athyrium angustum</i>	47	11067	12
4	<i>Bidens pilosa</i>	27	6533	7
5	<i>Chenopodium album</i>	20	7467	6
6	<i>Cotula australis</i>	53	17067	16
7	<i>Digitaria ciliaris</i>	27	15200	11
8	<i>Equisetum diffusum</i>	47	13200	13
9	<i>Eragrostis tenella</i>	40	17533	14
10	<i>Euphorbia hirta</i>	20	7600	6
11	<i>Fragaria nubicola</i>	40	14267	12
12	<i>Imperata cylindrica</i>	27	6867	7
13	<i>Mazus pumilus</i>	33	7800	8
14	<i>Mikania micrantha</i>	47	14267	13
15	<i>Oxalis corniculata</i>	27	5733	7
16	<i>Pilea scripta</i>	13	3733	4
17	<i>Polygonum capitatum</i>	20	4333	5
18	<i>Pteridium aquilinum</i>	60	17200	17
19	<i>Pteris cretica</i>	27	7933	8
20	<i>Rauwolfia serpentina</i>	13	16400	9
21	<i>Setaria paniculifera</i>	20	1533	4
22	<i>Urtica ardens</i>	20	11733	8
	Total		221467	

Hirit Sub Basin

Sampling Site: SY1

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Harpullia arborea</i>	10	20	8.14	14
2	<i>Bauhinia purpurea</i>	30	30	18.24	30
3	<i>Terminalia myriocarpa</i>	30	30	79.30	42
4	<i>Pterospermum acerifolium</i>	10	10	5.54	10
5	<i>Toona microcarpa</i>	10	20	17.31	16
6	<i>Holigarna longifolia</i>	10	20	6.04	14
7	<i>Michelia glabra</i>	20	20	1.82	18
8	<i>Bombax ceiba</i>	10	10	96.16	27
9	<i>Chukrasia tabularis</i>	10	10	101.74	28
10	<i>Ostodes paniculata</i>	10	40	11.30	22
11	<i>Duabanga grandiflora</i>	10	20	147.97	40
12	<i>Carallia brachiata</i>	10	20	7.69	14
13	<i>Artocarpus chaplasha</i>	10	10	9.50	11
14	<i>Kydia calycina</i>	10	10	25.43	14
	Total		270	536.17	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alsophila spinulosa</i>	10	80	11.75	12
2	<i>Bambusa tulda</i>	60	620	65.93	74
3	<i>Boehmeria glomerulifera</i>	20	160	11.67	18
4	<i>Boehmeria macrophylla</i>	20	180	14.26	20

5	<i>Calamus floribundus</i>	30	280	17.90	29
6	<i>Calamus tenuis</i>	10	360	21.77	27
7	<i>Elatostema sessile</i>	10	220	9.76	16
8	<i>Leea asiatica</i>	10	80	8.83	10
9	<i>Maesa chisia</i>	20	160	5.07	15
10	<i>Neillia thyrsiflora</i>	40	240	13.37	28
11	<i>Pinanga gracilis</i>	10	40	0.31	5
12	<i>Psychotria calocarpa</i>	20	160	4.03	14
13	<i>Rubus calycinus</i>	10	40	0.35	5
14	<i>Solanum erianthum</i>	20	120	5.72	14
15	<i>Urena lobata</i>	10	80	14.65	13
	Total		2820	205.38	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Agrostis vinealis</i>	40	3867	6
2	<i>Alpinia allughas</i>	27	14267	10
3	<i>Athyrium angustum</i>	47	21667	16
4	<i>Begonia nepalensis</i>	33	5533	6
5	<i>Bidens pilosa</i>	33	7333	7
6	<i>Carex nivea</i>	40	6200	7
7	<i>Colocasia esculenta</i>	33	5867	6
8	<i>Conyza japonica</i>	53	6400	9
9	<i>Cyperus rotundus</i>	47	4333	7
10	<i>Equisetum diffusum</i>	27	19000	12
11	<i>Gerardinia diversifolia</i>	27	6533	6
12	<i>Hedychium spicatum</i>	67	17867	16
13	<i>Mikania micrantha</i>	80	4600	11

14	<i>Ophiorrhiza heterostyla</i>	33	5200	6
15	<i>Oxalis corniculata</i>	33	7533	7
16	<i>Perilla frutescens</i>	40	2933	6
17	<i>Pilea umbrosa</i>	80	22933	20
18	<i>Piper pedicellatum</i>	73	2333	9
19	<i>Pteridium aquilinum</i>	27	25467	15
20	<i>Pteris subindivisa</i>	40	11267	10
21	<i>Sporobolus diander</i>	60	2533	8
	Total		203667	

Sampling Site: SY2

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Harpullia arborea</i>	10	20	8.14	14
2	<i>Bauhinia purpurea</i>	30	30	18.24	30
3	<i>Terminalia myriocarpa</i>	30	30	79.30	42
4	<i>Pterospermum acerifolium</i>	10	10	5.54	10
5	<i>Toona microcarpa</i>	10	20	17.31	16
6	<i>Holigarna longifolia</i>	10	20	6.04	14
7	<i>Michelia glabra</i>	20	20	1.82	18
8	<i>Bombax ceiba</i>	10	10	96.16	27
9	<i>Chukrasia tabularis</i>	10	10	101.74	28
10	<i>Ostodes paniculata</i>	10	40	11.30	22
11	<i>Duabanga grandiflora</i>	10	20	147.97	40
12	<i>Carallia brachiata</i>	10	20	7.69	14
13	<i>Artocarpus chaplasha</i>	10	10	9.50	11

14	<i>Kydia calycina</i>	10	10	25.43	14
	Total		270	536.17	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria macrophylla</i>	10	240	12.20	15.7
2	<i>Calamus floribundus</i>	20	280	21.26	24.5
3	<i>Calamus tenuis</i>	30	440	25.90	34.2
4	<i>Ficus heterophylla</i>	20	160	4.28	12.7
5	<i>Korthalsia flagellaris</i>	10	40	1.81	5.1
6	<i>Leea asiatica</i>	10	200	17.76	17.4
7	<i>Maesa chisia</i>	20	280	15.07	21.4
8	<i>Melocalamus compactiflorus</i>	40	460	19.37	34.6
9	<i>Oxyspora paniculata</i>	30	560	25.13	37.1
10	<i>Rubus calycinus</i>	20	320	8.72	19.2
11	<i>Vernonia volkemerifolia</i>	20	120	4.47	11.7
12	<i>Piper pedicellatum</i>	40	280	26.30	33.3
13	<i>Pteracanthus rubescens</i>	50	350	16.10	33.1
	Total		3730	198.37	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Achyranthes aspera</i>	73	5667	10.38
2	<i>Ageratum conyzoides</i>	27	6200	5.45
3	<i>Alpinia allughas</i>	33	7400	6.67
4	<i>Athyrium angustum</i>	40	21067	12.92
5	<i>Capillipedium assimile</i>	60	5800	8.96

6	<i>Carex longisetosus</i>	33	9467	7.50
7	<i>Colocasia esculenta</i>	40	20733	12.79
8	<i>Cyperus rotundus</i>	53	5800	8.23
9	<i>Gerardinia diversifolia</i>	73	10600	12.37
10	<i>Hedychium spicatum</i>	60	21133	15.16
11	<i>Imperata cylindrica</i>	20	11733	6.95
12	<i>Mikania micrantha</i>	53	12867	11.08
13	<i>Ophiorrhiza heterostyla</i>	40	12067	9.29
14	<i>Perilla frutescens</i>	73	5867	10.46
15	<i>Pilea umbrosa</i>	33	26400	14.34
16	<i>Pteridium aquilinum</i>	40	15133	10.53
17	<i>Sida rhombifolia</i>	60	25867	17.07
18	<i>Thysanolaena latifolia</i>	33	19533	11.57
19	<i>Urena lobata</i>	60	4200	8.31
	Total		247533	

Sampling Site: SY3

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Pongamia pinnata</i>	20	30	58.88	26
2	<i>Engelhardtia spicata</i>	40	60	678.24	99
3	<i>Podocarpus neriifolia</i>	20	30	45.59	25
4	<i>Pandanus nepalensis</i>	10	10	13.85	10
5	<i>Artocarpus integrifolia</i>	10	10	86.55	16
6	<i>Lannea coromandelica</i>	10	10	10.17	9

7	<i>Castanopsis indica</i>	10	10	63.59	14
8	<i>Glochidion velutina</i>	10	10	7.54	9
9	<i>Canarium strictum</i>	10	10	7.30	9
10	<i>Callicarpa arborea</i>	10	10	8.55	8
11	<i>Albizia lucida</i>	20	20	72.60	23
12	<i>Dysoxylum grande</i>	10	10	13.85	10
13	<i>Annona reticulata</i>	10	10	7.45	9
14	<i>Altingia excelsa</i>	10	10	40.69	12
15	<i>Terminalia myriocarpa</i>	10	10	50.22	13
16	<i>Macaranga denticulata</i>	10	10	8.04	9
	Total		260	1173.10	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alsophila spinulosa</i>	10	80	0.75	6
2	<i>Bambusa tulda</i>	20	440	24.32	31
3	<i>Boehmeria glomerulifera</i>	60	220	45.93	49
4	<i>Calamus inermis</i>	20	280	14.31	22
5	<i>Chromolaena odoratum</i>	10	400	3.14	16
6	<i>Elatostema sessile</i>	10	320	22.77	24
7	<i>Leea asiatica</i>	10	200	11.76	15
8	<i>Luculia pinceana</i>	10	40	2.83	6
9	<i>Maesa chisia</i>	20	280	4.36	16
10	<i>Melocalamus compactiflorus</i>	40	480	21.25	37
11	<i>Oxyspora paniculata</i>	20	200	1.76	13
12	<i>Pinanga gracilis</i>	20	380	4.03	19
13	<i>Psychotria calocarpa</i>	10	40	1.21	5
14	<i>Pteracanthus rubescens</i>	10	80	14.65	13

15	<i>Randia wallichii</i>	50	200	13.56	28
	Total		3640	186.63	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Alpinia allughas</i>	40	7933	9
2	<i>Arthraxon hispidus</i>	53	9467	11
3	<i>Athyrium angustum</i>	47	22933	18
4	<i>Bidens pilosa</i>	73	9800	14
5	<i>Colocasia esculenta</i>	27	11733	9
6	<i>Conyza japonica</i>	60	10400	13
7	<i>Digitaria ciliaris</i>	47	7467	9
8	<i>Drymaria mollis</i>	33	8400	8
9	<i>Equisetum diffusum</i>	33	16533	13
10	<i>Imperata cylindrica</i>	60	5533	10
11	<i>Oxalis corniculata</i>	53	9733	11
12	<i>Persicaria capitata</i>	40	12533	11
13	<i>Pilea umbrosa</i>	73	10533	14
14	<i>Piper pedicellatum</i>	80	11067	15
15	<i>Pteris subindivisa</i>	47	15800	14
16	<i>Selaginella indica</i>	40	13200	12
17	<i>Thysanolaena latifolia</i>	40	5933	8
	Total		189000	

Siyom Sub Basin-I

Sampling Site: SY4

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ailanthus grandis</i>	30	50	7.57	46
2	<i>Albizia lucida</i>	20	30	4.79	29
3	<i>Alnus nepalensis</i>	40	70	2.14	40
4	<i>Terminalia myriocarpa</i>	30	50	7.60	46
5	<i>Canarium strictum</i>	20	20	1.69	18
6	<i>Lithocarpus listeri</i>	10	10	0.92	9
7	<i>Cinnamomum pauciflorum</i>	30	40	2.62	30
8	<i>Duabanga grandiflora</i>	10	20	1.66	14
9	<i>Ficus semicordata</i>	30	40	6.42	40
10	<i>Macaranga denticulata</i>	10	20	0.94	12
11	<i>Saurauia napaulensis</i>	20	30	0.37	17
	Total		380	36.71	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Calamus floribundus</i>	15	180	18.09	11
2	<i>Dendrocalamus hamiltonii</i>	25	260	18.31	18
3	<i>Embelia ribes</i>	25	260	12.56	18
4	<i>Ficus oligodon</i>	35	180	10.58	20
5	<i>Musa acuminata</i>	35	480	9.04	114
6	<i>Oxyspora paniculata</i>	20	280	4.51	16
7	<i>Piper peploides</i>	75	580	18.09	51

8	<i>Rubus ellipticus</i>	30	300	9.04	21
9	<i>Solanum torvum</i>	35	300	4.51	22
10	<i>Trevesia palmata</i>	15	260	2.009	10
	Total		3080	106.75	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Arisaema tortuosum</i>	40	6200	8
2	<i>Carex myosurus</i>	53	7733	11
3	<i>Dichrocephala chrysanthemoides</i>	47	4933	8
4	<i>Elatostema sessile</i>	73	7467	12
5	<i>Girardinia diversifolia</i>	27	11733	10
6	<i>Hedychium spicatum</i>	60	11200	13
7	<i>Impatiens angustiflora</i>	47	7467	10
8	<i>Impatiens tripetala</i>	33	6267	8
9	<i>Miscanthus nepalensis</i>	33	9133	9
10	<i>Oplismenus compositus</i>	60	5533	10
11	<i>Pilea scripta</i>	53	8200	11
12	<i>Pilea umbrosa</i>	40	12533	12
13	<i>Pteris stenophylla</i>	73	7867	13
14	<i>Saccharum longisetosus</i>	80	8067	13
15	<i>Selaginella indica</i>	47	9133	11
16	<i>Setaria palmifolia</i>	40	6533	8
17	<i>Thysanolaena latifolia</i>	40	5933	8
18	<i>Urtica parviflora</i>	60	11200	13
19	<i>Viola betonicifolia</i>	60	7467	11
	Total		154600	

Sampling Site: SY5

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Tetrameles nudiflora</i>	10	10	200.96	26
2	<i>Millettia pulchra</i>	30	30	37.68	34
3	<i>Schefflera bengalensis</i>	20	20	14.60	22
4	<i>Terminalia myriocarpa</i>	30	40	443.16	69
5	<i>Ficus semicordata</i>	30	60	366.82	73
6	<i>Syzygium assamicum</i>	10	10	10.17	11
7	<i>Castanopsis indica</i>	10	20	127.17	25
8	<i>Glochidion velutina</i>	10	10	12.56	11
9	<i>Engelhardtia spicata</i>	10	10	94.99	18
10	<i>Macaranga denticulata</i>	10	10	10.17	11
	Total		220	1318.29	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Oxyspora paniculata</i>	10	80	6.92	11
2	<i>Psychotria aborensis</i>	10	120	10.19	14
3	<i>Neillia thyrsoflora</i>	10	40	3.46	8
4	<i>Rubus ellipticus</i>	10	40	3.73	8
5	<i>Alsophila spinulosa</i>	50	520	58.78	68
6	<i>Maesa chisia</i>	30	200	24.53	32
7	<i>Piper pedicellatum</i>	40	360	28.26	45
8	<i>Boehmeria macrophylla</i>	20	320	29.30	34
9	<i>Randia wallichii</i>	10	80	7.32	11
10	<i>Luculia pinceana</i>	10	160	84.91	43

11	<i>Vernonia volkemerifolia</i>	10	160	18.09	18
12	<i>Melocalamus compactiflorus</i>	10	80	1.57	9
	Total		2160	277.06	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Arisaema tortuosum</i>	42	9167	10
2	<i>Arthraxon hispidus</i>	50	13667	13
3	<i>Bidens bipinnata</i>	42	7417	9
4	<i>Commelina benghalensis</i>	50	15500	14
5	<i>Elatostema sessile</i>	33	9833	9
6	<i>Equisetum diffusum</i>	58	14500	14
7	<i>Girardinia diversifolia</i>	50	12333	12
8	<i>Hedychium spicatum</i>	58	15667	15
9	<i>Miscanthus nepalensis</i>	50	8667	10
10	<i>Oplismenus compositus</i>	42	8000	9
11	<i>Pilea scripta</i>	58	16833	15
12	<i>Pteris stenophylla</i>	50	20500	16
13	<i>Selaginella indica</i>	25	10500	8
14	<i>Setaria palmifolia</i>	67	7917	12
15	<i>Thysanolaena latifolia</i>	50	9667	11
16	<i>Urtica parviflora</i>	58	13750	14
17	<i>Viola betonicifolia</i>	50	7250	10
	Total		201167	

Sampling Site: SY6

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ailanthus grandis</i>	30	50	7.57	46
2	<i>Albizia lucida</i>	20	30	4.79	29
3	<i>Alnus nepalensis</i>	40	70	2.14	40
4	<i>Terminalia myriocarpa</i>	30	50	7.60	46
5	<i>Canarium strictum</i>	20	20	1.69	18
6	<i>Lithocarpus listeri</i>	10	10	0.92	9
7	<i>Cinnamomum pauciflorum</i>	30	40	2.62	30
8	<i>Duabanga grandiflora</i>	10	20	1.66	14
9	<i>Ficus semicordata</i>	30	40	6.42	40
10	<i>Macaranga denticulata</i>	10	20	0.94	12
11	<i>Saurauia nepalensis</i>	20	30	0.37	17
	Total		380	36.71	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria nivea</i>	15	180	22.61	11
2	<i>Calamus floribundus</i>	25	260	9.04	18
3	<i>Debregeasia longifolia</i>	25	260	36.17	18
4	<i>Musa acuminata</i>	35	180	31.40	20
5	<i>Rosa brunonii</i>	35	480	3.66	114
6	<i>Rubus ellipticus</i>	20	280	9.04	16
7	<i>Saccharum narenga</i>	75	580	3.46	51
8	<i>Rubus ellipticus</i>	30	300	5.03	21
9	<i>Solanum torvum</i>	35	300	3.00	22
10	<i>Trevesia palmata</i>	15	140	4.01	10
	Total		2960	127.43	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Arisaema tortuosum</i>	58	9333	11
2	<i>Bidens bipinnata</i>	50	9167	10
3	<i>Commelina benghalensis</i>	67	16417	15
4	<i>Cyperus rotundus</i>	33	7750	7
5	<i>Elatostema sessile</i>	58	7417	10
6	<i>Girardinia diversifolia</i>	50	15583	13
7	<i>Hedychium spicatum</i>	42	14000	11
8	<i>Lecanthus peduncularis</i>	42	9333	9
9	<i>Miscanthus nepalensis</i>	58	12250	12
10	<i>Oplismenus compositus</i>	50	10250	11
11	<i>Persicaria pubescens</i>	50	9417	10
12	<i>Pilea umbrosa</i>	67	15500	15
13	<i>Pteris stenophylla</i>	58	15417	14
14	<i>Rubia cordifolia</i>	50	10000	10
15	<i>Selaginella indica</i>	67	11833	13
16	<i>Setaria sphacelata</i>	33	13000	10
17	<i>Thysanolaena latifolia</i>	42	6500	8
18	<i>Urtica parviflora</i>	42	9167	9
	Total		202333	

Sampling Site: SY7

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aralia chinensis</i>	30	60	1.13	54

2	<i>Ailanthus grandis</i>	30	70	0.81	51
3	<i>Alnus nepalensis</i>	20	40	0.37	29
4	<i>Duabanga grandiflora</i>	20	40	0.25	26
5	<i>Ficus semicordata</i>	10	30	0.37	21
6	<i>Macropanax dispersum</i>	20	30	0.35	26
7	<i>Saurauia nepalensis</i>	40	50	1.35	61
8	<i>Terminalia myriocarpa</i>	20	40	0.59	33
	Total		360	5.22	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ha ⁻¹)	TBC (m ² ha ⁻¹)	IVI
1	<i>Bambusa pallida</i>	40	280	12.31	34
2	<i>Boehmeria longifolia</i>	10	300	20.13	11
3	<i>Boehmeria nivea</i>	20	140	14.42	11
4	<i>Buddleja paniculata</i>	25	480	10.25	27
5	<i>Calamus flagellum</i>	10	60	5.64	4
6	<i>Calamus floribundus</i>	20	240	2.13	16
7	<i>Clerodendrum bracteatum</i>	10	80	3.46	5
8	<i>Dendrocalamus hamiltonii</i>	15	240	22.61	31
9	<i>Embelia ribes</i>	35	120	9.04	12
10	<i>Musa acuminata</i>	35	440	9.04	25
11	<i>Oreocnide integrifolia</i>	30	260	3.66	17
12	<i>Oxyspora paniculata</i>	45	340	3.07	28
13	<i>Piper peploides</i>	40	800	5.12	43
14	<i>Rubus ellipticus</i>	35	420	11.01	20
15	<i>Saccharum narenga</i>	20	200	6.01	11
16	<i>Solanum torvum</i>	15	60	8.00	5
	Total		4460	145.90	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Arisaema tortuosum</i>	33	9333	9
2	<i>Arthraxon hispidus</i>	58	15667	16
3	<i>Carex myosurus</i>	25	9667	8
4	<i>Commelina benghalensis</i>	67	12083	15
5	<i>Cyperus rotundus</i>	33	9667	9
6	<i>Equisetum diffusum</i>	25	8000	7
7	<i>Girardinia diversifolia</i>	33	11833	10
8	<i>Hedychium spicatum</i>	25	13000	10
9	<i>Impatiens tripetala</i>	42	6917	9
10	<i>Miscanthus nepalensis</i>	58	8167	11
11	<i>Persicaria pubescens</i>	67	7250	12
12	<i>Pilea scripta</i>	75	10667	15
13	<i>Pteris stenophylla</i>	83	15417	18
14	<i>Rubia cordifolia</i>	42	15500	13
15	<i>Setaria palmifolia</i>	50	11500	12
16	<i>Thysanolaena latifolia</i>	50	10917	12
17	<i>Urtica parviflora</i>	58	10083	13
	Total		185667	

Siyom Sub Basin-II

Sampling Site: SY8

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ailanthus grandis</i>	30	40	0.71	33
2	<i>Alangium begonifolium</i>	20	40	0.41	25
3	<i>Albizia lucida</i>	30	50	1.34	45
4	<i>Alnus nepalensis</i>	20	30	0.71	26
5	<i>Ficus semicordata</i>	20	30	0.41	22
6	<i>Ficus auriculata</i>	40	70	0.79	47
7	<i>Macropanax dispermus</i>	40	70	1.24	53
8	<i>Saurauia nepalensis</i>	10	30	1.19	28
9	<i>Terminalia myriocarpa</i>	10	40	0.46	21
	Total		400	7.25	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Bambusa pallida</i>	15	260	0.04	7
2	<i>Boehmeria longifolia</i>	35	220	0.31	19
3	<i>Boehmeria nivea</i>	35	240	0.02	12
4	<i>Calamus flagellum</i>	20	120	0.12	9
5	<i>Calamus floribundus</i>	60	340	0.31	26
6	<i>Clerodendrum colebrookianum</i>	40	300	0.01	15
7	<i>Debregeasia longifolia</i>	25	200	0.18	14

8	<i>Dendrocalamus strictus</i>	65	480	0.95	45
9	<i>Musa acuminata</i>	30	280	1.08	37
10	<i>Piper peploides</i>	75	460	0.02	25
11	<i>Rosa brunonii</i>	65	480	0.12	26
12	<i>Rubus ellipticus</i>	40	280	0.35	22
13	<i>Saccharum narenga</i>	20	140	0.77	25
14	<i>Solanum torvum</i>	20	240	0.02	7
15	<i>Trevesia palmata</i>	30	160	0.01	10
	Total		4200	4.30	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Aconogonum molle</i>	40	8200	8.26
2	<i>Arisaema tortuosum</i>	53	6533.3	8.69
3	<i>Begonia nepalensis</i>	47	5733.3	7.61
4	<i>Cerastium nigrescens</i>	73	4466.7	9.56
5	<i>Chirita pumila</i>	27	11200	8.55
6	<i>Colocasia esculenta</i>	60	11200	11.81
7	<i>Commelina benghalensis</i>	47	9866.7	9.80
8	<i>Costus speciosus</i>	33	11667	9.45
9	<i>Crassocephalum crepidioides</i>	33	8533.3	7.79
10	<i>Cyperus rotundus</i>	60	15067	13.86
11	<i>Galium triflorum</i>	53	8933.3	9.96
12	<i>Hedychium spicatum</i>	40	11200	9.85
13	<i>Impatiens angustiflora</i>	73	10933	12.98

14	<i>Pilea scripta</i>	80	10400	13.35
15	<i>Polygonum chinense</i>	47	6400	7.96
16	<i>Pouzolzia zeylanica</i>	40	5933.3	7.06
17	<i>Rubia cordifolia</i>	40	14400	11.55
18	<i>Scutellaria plectranthoides</i>	60	6400	9.27
19	<i>Stellaria decumbens</i>	60	11667	12.06
20	<i>Wulfenia amherstiana</i>	53	10067	10.56
	Total		188800	

Sampling Site: Sy9

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Terminalia myriocarpa</i>	20	20	9.07	24
2	<i>Ficus virens</i>	10	10	2.37	10
3	<i>Brassiopsis griffithii</i>	30	50	21.49	48
4	<i>Macaranga denticulata</i>	10	10	9.50	15
5	<i>Ficus semicordata</i>	20	20	17.97	29
6	<i>Oroxylum indicum</i>	20	20	6.84	22
7	<i>Alnus nepalensis</i>	10	30	3.15	19
8	<i>Xylosma longifolium</i>	10	10	1.13	10
9	<i>Lepisanthes tetraphylla</i>	10	10	2.83	11
10	<i>Rhus chinensis</i>	20	30	21.70	36
11	<i>Actinodaphne angustifolia</i>	10	10	7.54	14
12	<i>Albizia odoratissima</i>	10	10	20.10	22
13	<i>Macropanax oreophilus</i>	10	10	1.26	10

14	<i>Garuga pinnata</i>	10	10	34.62	31
	Total		250	159.57	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Sarcochlamys pulcherrima</i>	30	440	4.03	45
2	<i>Alangium chinense</i>	20	200	4.90	30
3	<i>Debregeasia longifolia</i>	30	200	14.13	61
4	<i>Melocalamus compactiflora</i>	10	160	0.15	13
5	<i>Leea asiatica</i>	20	200	3.08	28
6	<i>Dendrocalamus hamiltonii</i>	10	400	3.14	29
7	<i>Pinanga gracilis</i>	10	120	1.36	14
8	<i>Elatostema sesquifolium</i>	10	800	6.28	52
9	<i>Alsophila spinulosa</i>	30	440	2.46	18
10	<i>Trema amboinensis</i>	10	440	1.26	11
	Total		3400	40.79	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Aconogonum molle</i>	73	7600	11.63
2	<i>Arisaema tortuosum</i>	27	13067	8.26
3	<i>Begonia nepalensis</i>	33	6533	6.49
4	<i>Cerastium nigrescens</i>	40	21067	12.96
5	<i>Chirita pumila</i>	60	12800	12.09
6	<i>Colocasia esculenta</i>	33	9467	7.64
7	<i>Commelina benghalensis</i>	40	19067	12.18
8	<i>Costus speciosus</i>	53	8133	9.48

9	<i>Crassocephalum crepidioides</i>	73	7333	11.53
10	<i>Galium triflorum</i>	60	19267	14.62
11	<i>Hedygium spicatum</i>	20	18400	9.56
12	<i>Impatiens angustiflora</i>	53	10533	10.42
13	<i>Persicaria capitata</i>	40	12867	9.75
14	<i>Pilea scripta</i>	73	11933	13.33
15	<i>Polygonum chinense</i>	33	26400	14.26
16	<i>Pouzolzia zeylanica</i>	40	12600	9.65
17	<i>Stellaria decumbens</i>	60	25867	17.20
18	<i>Wulfenia amherstiana</i>	33	12867	8.97
	Total		255800	

SAMPLING SITE: SY10

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ficus semicordata</i>	10	20	17.10	14
2	<i>Palaquium polyanthum</i>	10	20	81.39	22
3	<i>Altingia excelsa</i>	10	10	254.34	38
4	<i>Cinnamomum glaucescens</i>	10	10	42.99	13
5	<i>Macaranga denticulata</i>	40	50	165.83	57
6	<i>Clausena heptaphylla</i>	10	10	19.63	11
7	<i>Oreocnide rubescens</i>	10	10	9.07	10
8	<i>Schefflera bengalensis</i>	30	30	37.68	30
9	<i>Spondias pinnata</i>	10	20	138.73	28
10	<i>Brassiopsis mitis</i>	10	10	16.61	10

11	<i>Alnus nepalensis</i>	30	50	62.80	40
12	<i>Saurauia punduana</i>	10	10	7.30	9
13	<i>Albizia odoratissima</i>	10	10	7.54	9
14	<i>Lannea coromandelica</i>	10	10	7.35	9
	Total		270	868.36	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Arenga saccharifera</i>	10	200	56.52	63
2	<i>Boehmeria macrophylla</i>	30	400	34.62	35
3	<i>Boehmeria platyphylla</i>	10	180	9.04	52
4	<i>Elatostema sessile</i>	30	1360	106.76	83
5	<i>Maesa chisia</i>	40	320	29.30	34
6	<i>Melocalamus compactiflorus</i>	60	880	11.05	24
7	<i>Oxyspora paniculata</i>	60	600	67.82	9
	Total		3940	315.12	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Aconogonum molle</i>	67	13200	14.01
2	<i>Arisaema tortuosum</i>	87	14400	16.85
3	<i>Cerastium nigrescens</i>	60	13133	13.22
4	<i>Chirita pumila</i>	53	17400	14.57
5	<i>Colocasia esculenta</i>	47	14000	12.14
6	<i>Commelina benghalensis</i>	27	8467	7.17

7	<i>Cyperus rotundus</i>	27	7333	6.61
8	<i>Elatostema sessile</i>	67	16533	15.64
9	<i>Galium triflorum</i>	80	17067	17.41
10	<i>Hedychium spicatum</i>	33	8200	7.79
11	<i>Impatiens angustiflora</i>	33	9867	8.61
12	<i>Persicaria pubescens</i>	40	6533	7.72
13	<i>Polygonum capitatum</i>	80	21067	19.38
14	<i>Rubia cordifolia</i>	73	10933	13.64
15	<i>Scutellaria plectranthoides</i>	27	3733	4.84
16	<i>Stellaria decumbens</i>	40	10400	9.62
17	<i>Wulfenia amherstiana</i>	47	11200	10.77
	Total		203467	

Siyom Sub Basin-III

Sampling Site: SY11

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Rhus chinensis</i>	30	50	11.66	28
2	<i>Brassiopsis griffithii</i>	30	50	11.61	28
3	<i>Oroxylum indicum</i>	20	40	4.53	19
4	<i>Albizia odoratissima</i>	20	20	98.13	44
5	<i>Ficus semicordata</i>	10	10	9.85	9
6	<i>Engelhardtia spicata</i>	30	30	46.49	33
7	<i>Terminalia bellerica</i>	20	20	8.14	15
8	<i>Celtis tetrandra</i>	10	10	3.42	7
9	<i>Mallotus philippensis</i>	10	20	7.69	11
10	<i>Cinnamomum glaucescens</i>	10	10	1.81	7
11	<i>Kydia calycina</i>	10	10	25.43	14
12	<i>Saurauia roxburghii</i>	10	20	7.69	11
13	<i>Macaranga denticulata</i>	10	10	28.34	15
14	<i>Altingia excelsa</i>	30	50	9.46	27
15	<i>Castanopsis indica</i>	20	20	38.21	25
16	<i>Xylosma longifolium</i>	10	10	0.80	6
	Total		380	313.26	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria penduliflora</i>	60	240	20.13	91

2	<i>Ficus auriculata</i>	20	80	33.01	20
3	<i>Rubus ellipticus</i>	10	440	22.54	13
4	<i>Leucosceptrum canum</i>	10	720	14.42	16
5	<i>Debregeasia longifolia</i>	20	120	41.37	84
6	<i>Brassaiopsis mitis</i>	10	80	1.81	15
7	<i>Bambusa tulda</i>	10	800	7.32	61
	Total		2480	140.61	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ha ⁻¹)	IVI
1	<i>Achyranthes aspera</i>	50	4000	5.68
2	<i>Ageratum conyzoides</i>	58	16500	11.17
3	<i>Begonia megaptera</i>	50	3833	5.61
4	<i>Carex nivea</i>	67	14333	11.03
5	<i>Carex myosurus</i>	33	23833	11.92
6	<i>Commelina benghalensis</i>	58	3000	5.98
7	<i>Didymocarpus oblongus</i>	50	20667	12.08
8	<i>Dryopteris juxtaposita</i>	42	3500	4.79
9	<i>Equisetum ramosissimum</i>	42	23167	12.36
10	<i>Hedychium spicatum</i>	67	22167	14.04
11	<i>Impatiens tripetala</i>	58	2250	5.69
12	<i>Kyllinga brevifolia</i>	50	3000	5.29
13	<i>Molineria capitulata</i>	75	4917	8.10
14	<i>Ophiorrhiza heterostyla</i>	67	22750	14.26
15	<i>Oxalis corniculata</i>	58	6417	7.29
16	<i>Pilea umbrosa</i>	50	3583	5.52
17	<i>Polypodioides microrhizon</i>	50	4667	5.93

18	<i>Pteridium aquilinum</i>	67	23833	14.68
19	<i>Rubia sikkimensis</i>	58	23167	13.73
20	<i>Setaria sphacelata</i>	42	3417	4.76
21	<i>Tectaria polymorpha</i>	50	4750	5.96
22	<i>Urtica parviflora</i>	67	22333	14.10
	Total		260083	

Sampling Site: SY12

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Kydia calycina</i>	20	20	18.31	36
2	<i>Saurauia roxburghii</i>	10	10	1.81	12
3	<i>Elaeocarpus varuna</i>	10	10	3.63	14
4	<i>Schefflera impressa</i>	10	10	0.91	12
5	<i>Macaranga denticulata</i>	10	10	3.63	14
6	<i>Albizia odoratissima</i>	20	30	18.44	41
7	<i>Ficus semicordata</i>	20	30	9.05	34
8	<i>Ficus benjamina</i>	10	10	3.63	14
9	<i>Lannea coromandelica</i>	20	20	1.81	23
10	<i>Brassiopsis aculeata</i>	10	20	3.04	18
11	<i>Castanopsis indica</i>	10	10	61.54	57
12	<i>Cinnamomum glaucescens</i>	10	10	1.26	12
13	<i>Pinus kesiya</i>	10	10	5.54	15
	Total		200	132.60	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Maesa chisia</i>	30	320	2.77	42
2	<i>Boehmeria macrophylla</i>	20	240	2.45	32
3	<i>Hydrangea obovata</i>	20	280	3.62	29
4	<i>Debregeasia longifolia</i>	10	140	0.80	10
5	<i>Boehmeria polistachya</i>	20	320	2.93	37
6	<i>Aconogonum molle</i>	20	240	2.08	30
7	<i>Bambusa tulda</i>	20	160	2.46	28
8	<i>Luculia pinceana</i>	20	240	2.71	33
9	<i>Sarcochlamys pulcherrima</i>	10	240	2.08	25
10	<i>Viburnum cylindricum</i>	10	240	0.38	9
11	<i>Rhododendron dalhousiae</i> var. <i>rhabdotum</i>	10	200	2.86	26
	Total		2620	25.14	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Achyranthes aspera</i>	42	11667	8.87
2	<i>Adiantum lunulatum</i>	50	11333	9.56
3	<i>Begonia megaptera</i>	58	20667	14.17
4	<i>Carex nivea</i>	50	10000	9.02
5	<i>Dryopteris stenolepis</i>	67	8167	9.93
6	<i>Elatostema sessile</i>	58	20250	14.01
7	<i>Equisetum ramosissimum</i>	67	5667	8.91
8	<i>Hedychium spicatum</i>	75	11250	12.00
9	<i>Hydrocotyle nepalensis</i>	42	13000	9.41

10	<i>Lecanthus peduncularis</i>	75	15583	13.76
11	<i>Microstegium vagans</i>	33	16333	9.94
12	<i>Ophiorrhiza heterostyla</i>	50	16500	11.66
13	<i>Paris polyphylla</i>	67	20167	14.80
14	<i>Pteridium aquilinum</i>	58	9333	9.57
15	<i>Pteris cretica</i>	67	15500	12.90
16	<i>Pteris subindivisa</i>	50	13667	10.51
17	<i>Stephania elegans</i>	58	9333	9.57
18	<i>Vernonia silhetensis</i>	42	17917	11.41
	Total		246333	

Sampling Site: SY13

TREES

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia odoratissima</i>	50	70	549.50	68
2	<i>Albizia lucida</i>	30	30	79.22	20
3	<i>Saurauia napaulensis</i>	30	30	49.83	17
4	<i>Ficus semicordata</i>	30	50	98.13	25
5	<i>Cinnamomum glaucescens</i>	30	30	37.68	16
6	<i>Schima wallichii</i>	30	40	47.76	19
7	<i>Tetradium fraxinifolium</i>	10	20	56.52	11
8	<i>Macaranga denticulata</i>	10	10	19.63	6
9	<i>Viburnum erubescens</i>	10	10	7.30	5
10	<i>Quercus thomsonii</i>	20	40	114.93	22
11	<i>Bischofia javanica</i>	10	10	36.30	7
12	<i>Schefflera bengalensis</i>	10	10	19.63	6
13	<i>Mallotus philippensis</i>	20	20	14.60	10

14	<i>Engelhardtia spicata</i>	10	10	7.54	5
15	<i>Lannea coromandelica</i>	30	30	38.63	16
16	<i>Brassiopsis mitis</i>	20	30	59.82	16
17	<i>Alangium chinense</i>	10	30	37.68	11
18	<i>Croton oblongifolius</i>	20	30	39.59	14
19	<i>Alnus nepalensis</i>	10	10	8.04	5
	Total		510	1322.32	

SHRUBS

S.No.	Name of the Species	Frequency	Density (ha ⁻¹)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria macrophylla</i>	30	280	24.70	103
2	<i>Debregeasia longifolia</i>	20	120	73.85	11
3	<i>Hydrangea robusta</i>	10	280	33.22	6
4	<i>Indigofera heterantha</i>	20	120	20.63	35
5	<i>Leucosceptrum canum</i>	10	420	10.19	51
6	<i>Luculia pinceana</i>	40	520	13.28	11
7	<i>Melocalamus compactiflorus</i>	50	250	200.96	21
8	<i>Piper pedicellatum</i>	10	280	6.28	13
9	<i>Randia wallichii</i>	10	520	13.56	13
10	<i>Rubus ellipticus</i>	20	160	18.09	20
11	<i>Rubus lineata</i>	50	520	45.00	8
12	<i>Senecio scandens</i>	20	160	3.14	8
	Total	290	3630	462.91	

HERBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Artemisia nilagirica</i>	42	14833	11
2	<i>Athyrium angustum</i>	50	22667	14
3	<i>Bidens bipinnata</i>	67	13667	13
4	<i>Carex cruciata</i>	33	9667	8
5	<i>Commelina benghalensis</i>	33	10333	8
6	<i>Conyza japonica</i>	58	20667	15
7	<i>Cyathula tomentosa</i>	50	20083	14
8	<i>Desmodium gangeticum</i>	58	18000	14
9	<i>Equisetum ramosissimum</i>	67	30667	19
10	<i>Gnaphalium affine</i>	42	23583	14
11	<i>Lecanthus peduncularis</i>	42	18000	12
12	<i>Oplismenus compositus</i>	25	8167	6
13	<i>Oxalis corniculata</i>	33	15750	10
14	<i>Pteris nervosa</i>	25	7167	6
15	<i>Ranunculus sceleratus</i>	33	13250	9
16	<i>Setaria paniculifera</i>	25	8083	6
17	<i>Urena lobata</i>	58	20500	15
18	<i>Youngia gracilis</i>	33	9333	8
	Total		284417	

Yargyap Chu Sub Basin

Sampling Site: YG1

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Altingia excelsa</i>	10	20	15.70	25
2	<i>Ficus subulata</i>	40	40	14.10	41
3	<i>Saurauia punduana</i>	20	30	8.48	25
4	<i>Macaranga denticulata</i>	60	110	19.66	75
5	<i>Rhus chinensis</i>	10	10	0.78	8
6	<i>Millettia pulchra</i>	10	10	1.26	8
7	<i>Albizia odoratissima</i>	30	30	15.07	35
8	<i>Alnus nepalensis</i>	40	90	20.09	61
9	<i>Ficus semicordata</i>	10	10	0.79	8
10	<i>Castanopsis indica</i>	10	10	6.94	14
	Total		360	102.87	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria penduliflora</i>	20	220	1.36	18
2	<i>Brassiopsis mitis</i>	20	280	1.90	20
3	<i>Chromolaena odoratum</i>	20	480	6.00	30
4	<i>Debregeasia longifolia</i>	10	280	12.27	25
5	<i>Elatostema aquifolium</i>	10	240	1.45	14
6	<i>Maesa chisia</i>	30	240	4.64	27
7	<i>Leea asiatica</i>	20	160	4.07	19

8	<i>Melocalamus compactiflorus</i>	20	240	0.12	17
9	<i>Sinarundinaria falcata</i>	20	520	12.56	38
10	<i>Solanum surattense</i>	30	600	62.82	92
	Total		3260	107.19	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Adiantum lunulatum</i>	47	17867	14
2	<i>Artemisia nilagirica</i>	40	5733	7
3	<i>Arthraxon lanceifolia</i>	27	5200	5
4	<i>Bidens bipinnata</i>	40	12533	10
5	<i>Capillipedium assimile</i>	47	14267	12
6	<i>Conyza japonica</i>	40	6533	8
7	<i>Cyperus rotundus</i>	33	9067	8
8	<i>Desmodium caudatum</i>	40	10267	9
9	<i>Digitaria cruciata</i>	53	11800	12
10	<i>Equisetum ramosissimum</i>	73	12400	14
11	<i>Eragrostis nigra</i>	60	11733	12
12	<i>Hydrocotyle nepalensis</i>	20	11067	7
13	<i>Melilotus indica</i>	53	11867	12
14	<i>Oplismenus compositus</i>	40	11200	10
15	<i>Persicaria capitata</i>	53	11667	11
16	<i>Sida rhombifolia</i>	80	10533	14
17	<i>Urena lobata</i>	73	17733	17
18	<i>Valeriana hardwickii</i>	47	10133	10
19	<i>Xanthium indicum</i>	33	9200	8
	Total		210800	

Sampling Site: YG2

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Casearia vareca</i>	20	30	8.52	18
2	<i>Tetradium rutaecarpa</i>	10	10	3.63	7
3	<i>Ficus semicordata</i>	30	40	24.32	30
4	<i>Engelhardtia spicata</i>	20	20	3.18	13
5	<i>Acer thomsonii</i>	10	10	0.78	6
6	<i>Macaranga denticulata</i>	10	10	5.54	8
7	<i>Saurauia punduana</i>	10	10	5.02	8
8	<i>Schefflera wallichiana</i>	40	40	9.50	27
9	<i>Cinnamomum glaucescens</i>	10	20	2.51	9
10	<i>Erythrina stricta</i>	10	10	3.63	7
11	<i>Castanopsis indica</i>	20	20	4.75	14
12	<i>Ficus oligodon</i>	10	10	0.86	6
13	<i>Lyonia ovalifolia</i>	20	40	12.27	22
14	<i>Gamblea ciliata</i>	10	10	0.78	6
15	<i>Eurya acuminata</i>	20	20	1.57	12
16	<i>Garcinia anomala</i>	10	10	8.01	9
17	<i>Altingia excelsa</i>	20	20	132.04	67
18	<i>Euonymus hamiltonianus</i>	20	30	6.37	17
19	<i>Eriobotrya dubia</i>	20	20	3.18	13
	Total		380	236.44	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Oxyspora paniculata</i>	30	240	2.20	26

2	<i>Melocalamus compactiflorus</i>	50	280	0.54	47
3	<i>Hydrangea robusta</i>	10	520	4.58	18
4	<i>Boehmeria macrophylla</i>	10	180	0.90	9
5	<i>Boehmeria penduliflora</i>	10	220	0.98	9
6	<i>Trevesia palmata</i>	10	580	1.41	10
7	<i>Strobilanthes extensa</i>	60	280	25.17	155
8	<i>Arenga saccharifera</i>	10	240	3.02	13
9	<i>Luculia pinceana</i>	10	240	2.83	13
	Total		2780	41.62	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Adiantum lunulatum</i>	75	23833	18.89
2	<i>Artemisia nilagirica</i>	42	9333	8.67
3	<i>Athyrium angustum</i>	75	15250	14.88
4	<i>Bidens bipinnata</i>	25	6167	5.47
5	<i>Capillipedium assimile</i>	25	6583	5.66
6	<i>Carex filicina</i>	25	4667	4.77
7	<i>Conyza japonica</i>	33	6000	6.25
8	<i>Cyperus rotundus</i>	67	2917	8.26
9	<i>Desmodium caudatum</i>	33	8000	7.18
10	<i>Desmodium gangeticum</i>	25	6917	5.82
11	<i>Digitaria cruciata</i>	25	6250	5.50
12	<i>Equisetum ramosissimum</i>	83	20500	18.19
13	<i>Eragrostis nigra</i>	25	7167	5.93
14	<i>Melilotus indica</i>	58	6500	9.07
15	<i>Miscanthus nudipes</i>	58	8167	9.85

16	<i>Nepeta ciliaris</i>	67	24000	18.10
17	<i>Persicaria capitata</i>	25	7250	5.97
18	<i>Selaginella indica</i>	50	9667	9.69
19	<i>Sida rhombifolia</i>	33	4833	5.71
20	<i>Urena lobata</i>	42	12167	9.99
21	<i>Valeriana hardwickii</i>	25	4000	4.45
22	<i>Xanthium indicum</i>	50	14000	11.71
		967	214167	

Sampling Site: YG3

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Altingia excelsa</i>	10	20	15.70	25
2	<i>Ficus subulata</i>	40	40	14.10	41
3	<i>Saurauia punduana</i>	20	30	8.48	25
4	<i>Macaranga denticulata</i>	60	110	19.66	75
5	<i>Rhus chinensis</i>	10	10	0.78	8
6	<i>Millettia pulchra</i>	10	10	1.26	8
7	<i>Albizia odoratissima</i>	30	30	15.07	35
8	<i>Alnus nepalensis</i>	40	90	20.09	61
9	<i>Ficus semicordata</i>	10	10	0.79	8
10	<i>Castanopsis indica</i>	10	10	6.94	14
	Total		360	102.87	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria macrophylla</i>	20	200	13.57	114

2	<i>Elatostema lineolatum</i>	40	840	7.27	67
3	<i>Oxyspora paniculata</i>	80	1280	1.73	14
4	<i>Maesa chisia</i>	30	520	6.10	38
5	<i>Debregeasia longifolia</i>	10	280	5.28	21
6	<i>Melastoma malabathricum</i>	10	240	0.31	7
7	<i>Rubus burkillii</i>	20	160	4.07	26
8	<i>Melocalamus compactiflorus</i>	10	240	2.12	13
	Total		3760	40.45	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Artemisia nilagirica</i>	33	8083	8
2	<i>Athyrium angustum</i>	67	19500	16
3	<i>Carex filicina</i>	25	7250	6
4	<i>Commelina benghalensis</i>	58	8167	11
5	<i>Commelina paludosa</i>	50	9333	10
6	<i>Crassocephalum crepidioides</i>	42	9417	9
7	<i>Dicentra scandens</i>	25	7667	6
8	<i>Elatostema platyphyllum</i>	33	13000	10
9	<i>Equisetum ramosissimum</i>	42	23167	15
10	<i>Gerardinia diversifolia</i>	58	19333	15
11	<i>Lecanthus peduncularis</i>	25	7250	6
12	<i>Molineria capitulata</i>	42	16500	12
13	<i>Oplismenus compositus</i>	25	8167	7
14	<i>Persicaria chinensis</i>	17	3667	4
15	<i>Pilea umbrosa</i>	67	4833	10
16	<i>Pollia subumbellata</i>	42	10250	9
17	<i>Pteris wallichiana</i>	33	20083	13

18	<i>Setaria palmifolia</i>	42	8167	9
19	<i>Solanum nigrum</i>	75	9333	13
20	<i>Urtica parviflora</i>	42	14667	11
			227833	

Sampling Site: YG4

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia odoratissima</i>	10	20	13.29	30
2	<i>Macaranga denticulata</i>	40	60	24.08	75
3	<i>Juglans regia</i>	30	30	10.26	41
4	<i>Schefflera bengalensis</i>	10	20	1.66	15
5	<i>Macropanax dispersum</i>	10	10	1.66	11
6	<i>Cinnamomum glaucescens</i>	10	10	5.02	16
7	<i>Rhus chinensis</i>	10	30	2.72	20
8	<i>Alangium chinense</i>	10	30	2.64	20
9	<i>Altingia excelsa</i>	30	50	11.79	50
10	<i>Tetradium rutaecarpa</i>	10	10	1.39	11
11	<i>Engelhardtia spicata</i>	10	10	1.26	11
	Total		280	75.76	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Aconogonum molle</i>	10	220	0.98	34
2	<i>Boehmeria macrophylla</i>	10	580	1.41	38
3	<i>Debregeasia longifolia</i>	60	280	25.17	32
4	<i>Leucosceptrum canum</i>	80	1280	1.73	20

5	<i>Maesa chisia</i>	30	520	6.10	56
6	<i>Melocalamus</i>	10	280	5.28	18
7	<i>Rubus burkillii</i>	10	240	0.31	101
	Total		3400	40.99	

HERBS

S.No.	Name of the Species	Frequency (%)	Density (ha ⁻¹)	IVI
1	<i>Arenaria neelgherrensis</i>	27	5533	6.39
2	<i>Artemisia nilagirica</i>	53	19067	16.75
3	<i>Arthraxon hispidus</i>	13	3600	3.61
4	<i>Athyrium angustum</i>	73	18533	19.21
5	<i>Bidens bipinnata</i>	20	6467	5.94
6	<i>Carex filicina</i>	40	12267	11.55
7	<i>Commelina benghalensis</i>	33	8600	8.82
8	<i>Desmodium caudatum</i>	13	3867	3.74
9	<i>Digitaria ciliaris</i>	20	7800	6.61
10	<i>Hedychium spicatum</i>	60	19867	18.06
11	<i>Hydrocotyle nepalensis</i>	27	12267	9.74
12	<i>Impatiens chinensis</i>	40	18933	14.87
13	<i>Kyllinga brevifolia</i>	20	3400	4.42
14	<i>Melilotus indica</i>	27	2933	5.09
15	<i>Nepeta ciliaris</i>	60	16533	16.40
16	<i>Persicaria capitata</i>	20	3067	4.25
17	<i>Pilea umbrosa</i>	13	3733	3.67
18	<i>Pimpinella diversifolia</i>	47	8467	10.57
19	<i>Setaria glauca</i>	53	9467	11.98
20	<i>Thysanolaena latifolia</i>	27	4200	5.72
21	<i>Urena lobata</i>	47	12533	12.59
	Total		201133	

Sampling Site: YG5

TREES

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	30	40	3.42	31
2	<i>Albizia odoratissima</i>	30	30	33.91	58
3	<i>Saurauia punduana</i>	60	100	9.84	73
4	<i>Engelhardtia spicata</i>	10	10	0.96	9
5	<i>Cinnamomum glaucescens</i>	10	20	4.08	16
6	<i>Lithocarpus elegans</i>	10	10	3.22	11
7	<i>Ficus semicordata</i>	20	30	28.50	48
8	<i>Maesa robusta</i>	10	10	5.02	13
9	<i>Ficus oligodon</i>	10	20	11.08	23
10	<i>Schefflera bengalensis</i>	10	10	0.80	9
11	<i>Macaranga denticulata</i>	10	10	0.78	9
	Total		290	101.62	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ardisia khasiana</i>	40	360	3.24	34
2	<i>Arenga saccharifera</i>	10	120	9.29	29
3	<i>Debregeasia longifolia</i>	20	120	1.54	15
4	<i>Hydrangea robusta</i>	30	160	4.53	27
5	<i>Rubus burkillii</i>	20	160	1.47	16
6	<i>Strobilanthes extensa</i>	20	360	3.24	27
7	<i>Melocalamus compactiflorus</i>	40	1040	0.64	50
8	<i>Boehmeria macrophylla</i>	20	320	3.62	26

9	<i>Maesa chisia</i>	30	240	7.92	37
10	<i>Luculia pinceana</i>	20	80	4.58	21
11	<i>Rubus ellipticus</i>	10	80	1.82	11
12	<i>Leea asiatica</i>	10	40	1.26	8
	Total		3080	43.12	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Achyranthes aspera</i>	50	15333	13
2	<i>Artemisia nilagirica</i>	42	6500	8
3	<i>Arthraxon lanceifolia</i>	42	7000	8
4	<i>Capillipedium assimile</i>	33	5583	6
5	<i>Carex longipes</i>	50	6167	9
6	<i>Drymaria diandra</i>	58	14000	13
7	<i>Elsholtzia strobilifera</i>	33	8167	8
8	<i>Fimbristylis dichotoma</i>	42	12167	11
9	<i>Girardinia diversifolia</i>	58	16167	14
10	<i>Hydrocotyle nepalensis</i>	58	14917	14
11	<i>Imperata cylindrica</i>	42	7333	8
12	<i>Isachne albens</i>	25	8000	7
13	<i>Lecanthus peduncularis</i>	50	20500	16
14	<i>Mimosa pudica</i>	42	8167	9
15	<i>Molineria capitulata</i>	25	5667	6
16	<i>Oplismenus compositus</i>	17	4667	4
17	<i>Persicaria capitata</i>	50	4917	8
18	<i>Senecio scandens</i>	75	22750	20
19	<i>Setaria glauca</i>	67	8750	12
20	<i>Urena lobata</i>	33	6583	7
	Total		203333	

Sampling Site: YG6

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	30	40	4.42	31
2	<i>Albizia odoratissima</i>	30	30	33.91	58
3	<i>Lithocarpus elegans</i>	10	20	3.22	73
4	<i>Ficus semicordata</i>	20	30	28.50	9
5	<i>Maesa robusta</i>	10	10	5.02	16
6	<i>Saurauia punduana</i>	60	100	9.84	11
7	<i>Engelhardtia spicata</i>	10	10	0.96	48
8	<i>Cinnamomum glaucescens</i>	10	20	4.08	13
9	<i>Ficus oligodon</i>	10	20	11.08	23
10	<i>Schefflera bengalensis</i>	10	10	0.80	9
11	<i>Macaranga denticulata</i>	10	20	0.76	9
	Total		310	102.60	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Pentapanax leschenaultii</i>	20	200	22.80	23
2	<i>Rubus burkillii</i>	60	600	36.12	55
3	<i>Leucosceptrum canum</i>	40	920	4.51	42
4	<i>Ardisia khasiana</i>	20	160	18.09	20
5	<i>Arenga saccharifera</i>	20	160	18.09	20
6	<i>Maesa chisia</i>	30	440	18.95	32
7	<i>Zanthoxylum acanthopodium</i>	10	120	13.56	13
8	<i>Debregeasia longifolia</i>	10	200	30.77	23
9	<i>Oxyspora paniculata</i>	30	200	18.31	25
10	<i>Rubus ellipticus</i>	30	600	37.82	45
	Total		3600	219.03	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Achyranthes aspera</i>	25	4000	4.55
2	<i>Artemisia nilagirica</i>	33	7000	6.76
3	<i>Arthraxon hispidus</i>	25	3833	4.48
4	<i>Bidens bipinnata</i>	33	8083	7.21
5	<i>Capillipedium assimile</i>	67	26167	18.59
6	<i>Carex filicina</i>	17	3000	3.17
7	<i>Carex longipes</i>	75	30500	21.36
8	<i>Commelina benghalensis</i>	17	3500	3.38
9	<i>Desmodium caudatum</i>	67	18333	15.33
10	<i>Digitaria ciliaris</i>	50	31667	18.96
11	<i>Drymaria diandra</i>	17	2250	2.86
12	<i>Girardinia diversifolia</i>	25	3000	4.13
13	<i>Hedychium spicatum</i>	25	4833	4.90
14	<i>Impatiens chinensis</i>	67	18000	15.19
15	<i>Kyllinga brevifolia</i>	17	4667	3.87
16	<i>Lecanthus peduncularis</i>	25	3583	4.38
17	<i>Molinaria capitulata</i>	25	4500	4.76
18	<i>Nepeta ciliaris</i>	75	20083	17.02
19	<i>Oplismenus compositus</i>	67	12167	12.76
20	<i>Persicaria capitata</i>	25	3417	4.31
21	<i>Pilea umbrosa</i>	17	4750	3.90
22	<i>Pimpinella diversifolia</i>	58	18083	14.26
23	<i>Thysanolaena latifolia</i>	17	4667	3.87
	Total		240083	

Sampling Site: YG7

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia odoratissima</i>	40	60	11.16	42
2	<i>Oroxylum indicum</i>	10	20	2.36	23
3	<i>Rhus chinensis</i>	30	40	22.98	32
4	<i>Brassiopsis griffithii</i>	30	30	13.16	27
5	<i>Ficus virens</i>	20	20	13.68	20
6	<i>Saurauia roxburghii</i>	20	30	16.3	26
7	<i>Macaranga denticulata</i>	20	30	9.78	26
8	<i>Xylosma longifolium</i>	10	40	7.78	13
9	<i>Lepisanthes tetraphylla</i>	30	40	7.96	32
10	<i>Kydia calycina</i>	20	40	7.52	32
11	<i>Michelia glabra</i>	30	30	5.96	27
	Total		380	118.64	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Ardisia khasiana</i>	10	160	4.30	21
2	<i>Arenga saccharifera</i>	10	180	0.83	11
3	<i>Debregeasia longifolia</i>	30	280	13.74	54
4	<i>Hydrangea robusta</i>	40	360	3.24	45
5	<i>Pentapanax leschenaultii</i>	10	120	9.29	28
6	<i>Rubus burkillii</i>	50	560	19.94	90
7	<i>Rubus ellipticus</i>	10	140	0.80	9
8	<i>Ardisia khasiana</i>	10	180	0.98	11

9	<i>Debregeasia longifolia</i>	10	160	1.81	17
10	<i>Oxyspora paniculata</i>	10	80	2.51	14
	Total		2220	57.44	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Artemisia nilagirica</i>	40	13200	10.14
2	<i>Bidens bipinnata</i>	53	16600	13.09
3	<i>Dichrocephala chrysanthemoides</i>	33	7333	6.89
4	<i>Digitaria ciliaris</i>	33	8200	7.26
5	<i>Drymaria diandra</i>	40	12333	9.77
6	<i>Equisetum diffusum</i>	53	15000	12.41
7	<i>Girardinia diversifolia</i>	47	16400	12.26
8	<i>Hedychium spicatum</i>	27	8467	6.62
9	<i>Hydrocotyle nepalensis</i>	27	11000	7.70
10	<i>Impatiens angustiflora</i>	47	9867	9.47
11	<i>Lecanthus peduncularis</i>	80	17067	16.30
12	<i>Microstegium vagans</i>	33	8200	7.26
13	<i>Nepeta ciliaris</i>	80	19133	17.18
14	<i>Oenanthë javanica</i>	73	16067	15.12
15	<i>Oplismenus compositus</i>	53	11467	10.90
16	<i>Ophiorrhiza glabra</i>	33	7467	6.94
17	<i>Pilea scripta</i>	40	10933	9.17
18	<i>Pteris stenophylla</i>	40	12600	9.88
19	<i>Viola betonicifolia</i>	53	13200	11.64
	Total		234533	

Sampling Site: YG8

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Alnus nepalensis</i>	50	70	12.24	42
2	<i>Actinodaphne angustifolia</i>	10	10	2.26	11
3	<i>Brassiopsis griffithii</i>	20	30	20.98	22
4	<i>Macaranga denticulata</i>	30	30	13.16	23
5	<i>Oroxylum indicum</i>	20	20	13.68	17
6	<i>Rhus chinensis</i>	30	40	19.56	27
7	<i>Engelhardtia spicata</i>	10	20	6.32	19
8	<i>Pinus kesiya</i>	10	10	7.78	11
9	<i>Castanopsis indica</i>	20	30	5.5	22
10	<i>Kydia calycina</i>	20	30	6.32	22
11	<i>Phoebe attenuata</i>	30	40	9.1	27
12	<i>Prunus rufa</i>	20	30	5.96	22
13	<i>Ficus oligodon</i>	20	20	4.16	17
14	<i>Gynocardia odorata</i>	10	20	3.96	19
	Total		400	130.98	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Boehmeria macrophylla</i>	50	580	4.30	44
2	<i>Debregeasia longifolia</i>	20	460	3.24	27
3	<i>Eurya acuminata</i>	20	240	9.29	29
4	<i>Leea aequata</i>	30	360	2.51	27
5	<i>Maesa chisia</i>	20	360	6.141	28
6	<i>Oxydora paniculata</i>	20	240	6.00	24

7	<i>Saurauia nepalensis</i>	20	200	2.36	18
8	<i>Rubus burkillii</i>	50	560	19.94	66
9	<i>Rubus ellipticus</i>	10	140	4.80	15
10	<i>Ardisia khasiana</i>	10	180	8.98	23
	Total		3320	67.57	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Arisaema tortuosum</i>	58	8083	8.12
2	<i>Arthraxon hispidus</i>	50	27250	14.72
3	<i>Bidens bipinnata</i>	42	7167	6.33
4	<i>Carex myosurus</i>	42	10667	7.67
5	<i>Commelina benghalensis</i>	67	7167	8.49
6	<i>Dichrocephala chrysanthemoides</i>	58	6500	7.52
7	<i>Equisetum diffusum</i>	58	8167	8.15
8	<i>Girardinia diversifolia</i>	67	7250	8.52
9	<i>Hedychium spicatum</i>	75	10667	10.55
10	<i>Impatiens tripetala</i>	92	15417	13.80
11	<i>Miscanthus nepalensis</i>	42	5750	5.79
12	<i>Oplismenus compositus</i>	42	10750	7.70
13	<i>Peperomia glabra</i>	58	9167	8.54
14	<i>Pilea umbrosa</i>	58	10083	8.89
15	<i>Pogonatherum paniceum</i>	50	15500	10.23
16	<i>Saccharum longisetosus</i>	42	40500	19.06
17	<i>Selaginella indica</i>	42	9667	7.29
18	<i>Setaria palmifolia</i>	67	7417	8.59
19	<i>Thysanolaena latifolia</i>	58	8000	8.09
20	<i>Urtica parviflora</i>	58	29000	16.11
21	<i>Viola betonicifolia</i>	33	7733	5.83
	Total		261900	

Sampling Site: YG9

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Quercus serrata</i>	30	30	8.67	31
2	<i>Rhododendron arboreum</i>	20	20	5.7	23
3	<i>Albizia odoratissima</i>	20	20	7.74	23
4	<i>Acer acuminatum</i>	10	10	5.04	15
5	<i>Castanopsis indica</i>	10	10	4.59	15
6	<i>Alnus nepalensis</i>	40	60	29.04	51
7	<i>Prunus rufa</i>	20	20	6.36	23
8	<i>Rhus chinensis</i>	10	10	5.34	15
9	<i>Pinus kesiya</i>	10	10	8.04	15
10	<i>Macaranga denticulata</i>	30	30	10.56	31
11	<i>Oroxylum indicum</i>	10	10	3.84	15
12	<i>Brassiopsis griffithi</i>	20	20	7.59	23
13	<i>Engelhardtia spicata</i>	10	10	5.34	15
	Total		230	107.85	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Artemisia indica</i>	25	320	3.01	17
2	<i>Sinarundinaria falcata</i>	10	80	10.02	6
3	<i>Bambusa pallida</i>	20	360	0.11	17
4	<i>Boehmeria longifolia</i>	15	140	0.20	9
5	<i>Buddleja paniculata</i>	20	60	2.30	9
6	<i>Calamus floribundus</i>	15	180	16.14	12

7	<i>Dendrocalamus hamiltonii</i>	20	240	27.34	15
8	<i>Embelia ribes</i>	20	200	1.02	13
9	<i>Ficus oligodon</i>	20	240	1.08	14
10	<i>Musa acuminata</i>	15	240	20.44	93
11	<i>Oxyspora paniculata</i>	15	240	1.23	12
12	<i>Piper nigrum</i>	20	460	1.02	22
13	<i>Rhus alatus</i>	15	200	3.01	13
14	<i>Rubus ellipticus</i>	10	220	6.00	10
15	<i>Solanum erianthum</i>	15	240	2.36	12
16	<i>Solanum nigrum</i>	20	280	2.97	15
17	<i>Solanum torvum</i>	10	180	1.00	8
18	<i>Trevesia palmata</i>	10	140	0.01	3
	Total		4020	99.266	

HERBS

S. No	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Aconogonum molle</i>	50	10000	10.48
2	<i>Ageratum conyzoides</i>	67	20500	17.46
3	<i>Anemone vitifolia</i>	42	11667	10.35
4	<i>Begonia nepalensis</i>	50	11333	11.12
5	<i>Bidens pilosa</i>	58	19833	16.20
6	<i>Commelina benghalensis</i>	50	10000	10.48
7	<i>Costus speciosus</i>	67	8167	11.45
8	<i>Crassocephalum crepidioides</i>	58	11583	12.18
9	<i>Cyperus rotundus</i>	67	5667	10.24
10	<i>Elatostema sessile</i>	75	11250	13.89
11	<i>Persicaria pubescens</i>	42	13000	11.00
12	<i>Piper sylvaticum</i>	75	15583	16.00

13	<i>Prunella vulgaris</i>	33	16333	11.69
14	<i>Rubia cordifolia</i>	33	7333	7.31
15	<i>Saccharum spontaneum</i>	67	23167	18.75
16	<i>Urtica dioica</i>	58	10000	11.41
	Total		205417	

Sampling Site: YG10

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Quercus serrata</i>	30	30	8.67	23
2	<i>Rhododendron arboreum</i>	20	15	5.7	14
3	<i>Albizia odoratissima</i>	20	16	7.74	16
4	<i>Acer acuminatum</i>	10	10	5.04	10
5	<i>Castanopsis indica</i>	20	27	1.23	13
6	<i>Alnus nepalensis</i>	40	54	29.04	50
7	<i>Prunus rufa</i>	20	20	6.36	16
8	<i>Rhus chinensis</i>	10	10	5.34	10
9	<i>Pinus kesiya</i>	10	10	8.04	12
10	<i>Macaranga denticulata</i>	30	26	10.56	24
11	<i>Oroxylum indicum</i>	10	10	3.84	9
12	<i>Brassiopsis griffithii</i>	20	20	7.59	17
13	<i>Engelhardtia spicata</i>	10	8	3	7
14	<i>Ailanthus grandis</i>	40	25	2.26	20
15	<i>Alnus nepalensis</i>	30	56	1.62	24
16	<i>Saurauia nepalensis</i>	30	32	1.42	18
17	<i>Terminalia myriocarpa</i>	30	28	1.05	16
	Total		397	108.50	

SHRUBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Bambusa pallida</i>	20	460	2.30	23
2	<i>Boehmeria longifolia</i>	20	180	16.14	30
3	<i>Buddleja paniculata</i>	30	40	1.00	14
4	<i>Calamus floribundus</i>	40	160	8.80	29
5	<i>Cerastium nigrescens</i>	20	200	7.07	21
6	<i>Dendrocalamus hamiltonii</i>	20	540	27.34	52
7	<i>Hedychium spicatum</i>	20	200	5.09	19
8	<i>Impatiens angustiflora</i>	10	120	0.49	8
9	<i>Musa acuminata</i>	10	440	0.57	17
10	<i>Rubus ellipticus</i>	20	240	20.44	36
11	<i>Sinarundinaria falcata</i>	10	240	1.23	12
12	<i>Trevesia palmata</i>	20	460	1.02	22
13	<i>Urtica dioica</i>	10	60	0.86	6
14	<i>Wulfenia amherstiana</i>	10	120	3.01	10
	Total		3460	95.36	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Adiantum edgeworthii</i>	42	8167	9.85
2	<i>Adiantum lunulatum</i>	25	5667	6.26
3	<i>Ageratum conyzoides</i>	17	7250	5.73
4	<i>Alsophila spinulosa</i>	50	4917	9.62
5	<i>Centella asiatica</i>	33	4833	7.12
6	<i>Chrysopogon aciculate</i>	25	4000	5.51
7	<i>Colocasia esculenta</i>	33	32000	19.35
8	<i>Cynodon dactylon</i>	25	20250	12.83

9	<i>Dicranopteris linearis</i>	33	3833	6.66
10	<i>Digitaria ciliaris</i>	17	2250	3.48
11	<i>Equisetum ramosissimum</i>	25	23750	14.40
12	<i>Gymnosphaera gigantea</i>	25	4833	5.88
13	<i>Kyllinga brevifolia</i>	42	15417	13.12
14	<i>Lygodium japonicum</i>	17	4667	4.57
15	<i>Mimosa pudica</i>	58	11917	14.01
16	<i>Murdannia divergens</i>	25	4500	5.73
17	<i>Oplismenus compositus</i>	33	18417	13.23
18	<i>Perilla frutescens</i>	25	9417	7.95
19	<i>Phyllanthus virgatus</i>	50	18583	15.78
20	<i>Pilea umbrosa</i>	17	3000	3.82
21	<i>Selaginella indica</i>	58	14333	15.10
	Total		222000	

Sampling Site: YG11

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Acer acuminatum</i>	10	10	14.12	22
2	<i>Lyonia ovalifolia</i>	10	10	11.78	22
3	<i>Rhododendron arboreum</i>	20	20	11.98	35
4	<i>Salix wallichiana</i>	20	20	13.16	35
5	<i>Tetradium fraxinifolium</i>	10	20	12.42	38
6	<i>Quercus serrata</i>	20	30	32.88	45
7	<i>Prunus cerasoides</i>	20	30	12.88	45
8	<i>Pinus wallichiana</i>	30	40	29.68	57
	Total		180	138.90	

SHRUBS

S.No.	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Berberis asiatica</i>	30	240	2.75	34
2	<i>Berberis wallichiana</i>	20	160	12.5	40
3	<i>Brassiopsis mitis</i>	30	120	4.83	31
4	<i>Cotoneaster microphyllus</i>	10	80	2.65	14
5	<i>Eurya acuminata</i>	20	250	5.00	32
6	<i>Indigofera dosua</i>	20	100	13.74	39
7	<i>Prunus prostrata</i>	10	200	0.49	16
8	<i>Rosa chinensis</i>	10	440	0.57	28
9	<i>Rubus ellipticus</i>	10	280	8.44	33
10	<i>Viburnum cotinifolium</i>	10	240	9.00	32
			2110	59.97	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Artemisia nilagirica</i>	33	7250	7.03
2	<i>Bidens bipinnata</i>	25	4833	4.99
3	<i>Carex cruciata</i>	42	18250	13.14
4	<i>Commelina benghalensis</i>	42	17667	12.86
5	<i>Conyza japonica</i>	50	3250	6.94
6	<i>Cynoglossum glochidiatum</i>	50	4917	7.73
7	<i>Desmodium gangeticum</i>	33	3667	5.34
8	<i>Drymaria mollis</i>	25	4000	4.59
9	<i>Dryopteris juxtaposita</i>	25	19667	12.01
10	<i>Equisetum ramosissimum</i>	25	4833	4.99

11	<i>Geranium pratense</i>	17	4667	4.01
12	<i>Gnaphalium affine</i>	25	18583	11.49
13	<i>Hydrocotyle nepalensis</i>	58	5667	8.99
14	<i>Mazus japonica</i>	58	4667	8.51
15	<i>Oplismenus compositus</i>	67	7250	10.64
16	<i>Oxalis corniculata</i>	75	10667	13.15
17	<i>Persicaria barbata</i>	92	28500	23.39
18	<i>Pteris nervosa</i>	25	4000	4.59
19	<i>Ranunculus sceleratus</i>	33	9333	8.02
20	<i>Rubia sikkimensis</i>	50	13167	11.63
21	<i>Urena lobata</i>	33	8083	7.43
22	<i>Xanthium strumarium</i>	25	6250	5.66
23	<i>Youngia gracilis</i>	17	2250	2.87
	Total		211417	

Sampling Site: YG12

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Albizia lucida</i>	15	40	18.09	44
2	<i>Castanopsis hystrix</i>	25	30	2.88	28
3	<i>Quercus serrata</i>	25	20	13.20	25
4	<i>Eurya acuminata</i>	35	20	2.42	26
5	<i>Ficus semicordata</i>	35	10	12.12	21
6	<i>Lepisanthes tetraphylla</i>	20	10	11.78	15
7	<i>Pinus kesiya</i>	75	30	32.88	43
8	<i>Schefflera impressa</i>	30	20	13.16	26

9	<i>Macaranga denticulata</i>	35	20	10.22	19
10	<i>Toona ciliata</i>	15	34	12.50	25
11	<i>Xylosma longifolium</i>	15	28	14.40	28
	Total		262	143.65	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Acacia pennata</i>	20	560	0.09	22
2	<i>Bauhinia vahlii</i>	35	180	0.42	18
3	<i>Berberis wallichiana</i>	30	240	2.75	24
4	<i>Cotoneaster microphyllus</i>	20	160	12.50	46
5	<i>Digitaria ciliaris</i>	20	400	1.00	20
6	<i>Eurya acuminata</i>	30	120	4.83	27
7	<i>Indigofera dosua</i>	10	180	2.65	16
8	<i>Pilea scripta</i>	10	220	0.64	11
9	<i>Potentilla microphylla</i>	20	220	0.57	14
10	<i>Rhododendron ponticum</i>	30	300	3.16	27
11	<i>Rumex nepalensis</i>	20	430	0.86	21
12	<i>Strobilanthes thomsonii</i>	35	230	0.22	18
13	<i>Vaccinium retusum</i>	15	140	2.50	16
14	<i>Wulfenia amherstiana</i>	15	200	3.01	19
	Total		3580	35.20	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Adiantum lunulatum</i>	33	21250	14.04
2	<i>Ageratum conyzoides</i>	75	9333	13.06
3	<i>Begonia megaptera</i>	33	3667	5.57

4	<i>Begonia palmata</i>	42	6833	8.05
5	<i>Crassocephalum crepidioides</i>	33	5333	6.38
6	<i>Cyrtococcum accrescens</i>	17	3000	3.35
7	<i>Didymocarpus oblongus</i>	25	6000	5.75
8	<i>Dryopteris stenolepis</i>	33	7250	7.30
9	<i>Elatostema sessile</i>	75	13167	14.91
10	<i>Equisetum ramosissimum</i>	67	14833	14.76
11	<i>Hedychium spicatum</i>	25	4833	5.18
12	<i>Impatiens cathcartii</i>	42	5167	7.25
13	<i>Lecanthus peduncularis</i>	42	6333	7.81
14	<i>Myristica wallichii</i>	50	3250	7.28
15	<i>Ophiorrhiza heterostyla</i>	75	20500	18.44
16	<i>Pteris subindivisa</i>	33	9333	8.30
17	<i>Stephania elegans</i>	33	18583	12.75
18	<i>Tectaria polymorpha</i>	25	5250	5.38
19	<i>Viola betonicifolia</i>	25	3667	4.62
20	<i>Pteridium aquilinum</i>	67	35333	24.63
21	<i>Pteris cretica</i>	25	4833	5.18
	Total		207750	

Sampling Site: YG13

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Acer caudatum</i>	15	20	23.20	25
2	<i>Macaranga denticulata</i>	25	20	12.42	25
3	<i>Quercus serrata</i>	25	10	26.12	20

4	<i>Eurya acuminata</i>	35	10	11.78	21
5	<i>Ficus auriculata</i>	35	30	12.88	34
6	<i>Exbucklandia populnea</i>	20	20	13.16	27
7	<i>Pinus kesiya</i>	75	50	11.49	47
8	<i>Schefflera impressa</i>	30	30	21.25	26
9	<i>Castanopsis hystrix</i>	35	30	18.40	28
10	<i>Toona ciliata</i>	35	15	24.90	28
11	<i>Xylosma longifolium</i>	20	20	11.40	19
	Total		255	187.00	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Bauhinia vahlii</i>	10	440	13.65	24
2	<i>Berberis asiatica</i>	10	840	22.36	41
3	<i>Berberis wallichiana</i>	40	120	2.56	20
4	<i>Boehmeria macrophylla</i>	10	600	1.39	22
5	<i>Boehmeria rugulosa</i>	10	200	10.77	16
6	<i>Brassiopsis mitis</i>	50	440	62.80	69
7	<i>Cotoneaster microphyllus</i>	20	40	4.51	11
8	<i>Daphne papyracea</i>	40	120	12.56	26
9	<i>Impatiens angustiflora</i>	20	160	13.56	20
10	<i>Maesa chisia</i>	30	200	18.09	28
11	<i>Oxyspora paniculata</i>	10	200	3.37	11
12	<i>Rosa chinensis</i>	10	200	3.36	11
	Total		3560	168.98	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Carex nivea</i>	25	10250	9.24

2	<i>Youngia japonica</i>	42	15500	14.55
3	<i>Nepeta ciliaris</i>	33	8167	9.37
4	<i>Lycopodium pseudosclavatum</i>	50	18917	17.62
5	<i>Isachne albens</i>	42	8000	10.53
6	<i>Eragrostis nigra</i>	33	11833	11.33
7	<i>Scirpus ternatanus</i>	50	13000	14.46
8	<i>Gerbera piloselloides</i>	58	15000	16.78
9	<i>Saccharum longisetosum</i>	50	12333	14.10
10	<i>Anaphalis busua</i>	58	8167	13.12
11	<i>Agrostis gigantea</i>	33	19667	15.53
12	<i>Dryopteris serrato-dentata</i>	67	14583	17.81
13	<i>Digitaria cruciata</i>	58	13750	16.11
14	<i>Pteris scabristipes</i>	67	17667	19.46
	Total		186833	

Sampling Site: YG14

TREES

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Altingia excelsa</i>	15	20	13.20	20
2	<i>Amoora wallichii</i>	25	20	22.42	21
3	<i>Quercus serrata</i>	25	10	32.12	16
4	<i>Eurya acuminata</i>	35	10	12.28	19
5	<i>Brassiopsis griffithii</i>	35	30	13.50	30
6	<i>Exbucklandia populnea</i>	20	20	3.16	21
7	<i>Pinus kesiya</i>	75	50	21.49	68
8	<i>Gynocardia odorata</i>	30	30	11.25	23

9	<i>Castanopsis hystrix</i>	35	30	23.90	31
10	<i>Kydia calycina</i>	35	15	12.90	23
11	<i>Elaeocarpus robustus</i>	20	20	11.40	17
12	<i>Xylosma longifolium</i>	15	8	9.40	13
	Total	365	263	187.02	300

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Acacia pennata</i>	30	40	1.00	10
2	<i>Berberis asiatica</i>	20	220	0.70	9
3	<i>Bauhinia vahlii</i>	40	160	8.80	30
4	<i>Boehmeria macrophylla</i>	20	200	7.07	22
5	<i>Daphne papyracea</i>	20	180	5.09	18
6	<i>Prunus prostrata</i>	10	160	0.49	6
7	<i>Rosa chinensis</i>	10	140	0.57	6
8	<i>Rubus ellipticus</i>	40	400	0.86	17
9	<i>Strobilanthes echinata</i>	60	600	1.00	25
10	<i>Vaccinium retusum</i>	20	110	1.20	9
11	<i>Thamnocalamus aristatus</i>	70	3480	3.18	75
12	<i>Gaultheria trichophylla</i>	30	460	11.30	37
13	<i>Lonicera angustifolia</i>	50	520	8.59	37
	Total		6670	49.85	

HERBS

S.No	Name of the Species	Frequency (%)	Density (ind./ha)	IVI
1	<i>Achyranthes aspera</i>	67	15750	15.82
2	<i>Agrostis gigantea</i>	33	9333	8.64
3	<i>Anaphalis busua</i>	33	4583	6.28

4	<i>Carex filicina</i>	58	23083	18.47
5	<i>Cissampelopsis buimalia</i>	50	4417	8.19
6	<i>Digitaria cruciata</i>	58	4083	9.03
7	<i>Dryopteris serrato-dentata</i>	67	13667	14.79
8	<i>Eragrostis nigra</i>	42	4667	7.32
9	<i>Galium asperuloides</i>	42	11917	10.92
10	<i>Gerbera piloselloides</i>	25	18500	12.19
11	<i>Hydrocotyle nepalensis</i>	33	7417	7.68
12	<i>Isachne longiflora</i>	25	21583	13.72
13	<i>Lycopodium pseudosclavatum</i>	33	20250	14.06
14	<i>Muhlenbergia huegelii</i>	25	4667	5.32
15	<i>Nepeta ciliaris</i>	58	3667	8.82
16	<i>Pilea umbrosa</i>	33	5417	6.69
17	<i>Pteris scabristipes</i>	58	11833	12.88
18	<i>Scirpus ternatanus</i>	42	7167	8.56
19	<i>Youngia japonica</i>	50	9333	10.64
	Total		201333	

Outside the Siang Basin

Sampling Site: B2 Jiya Dhol

TREES

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC(m ² ha ⁻¹)	IVI
1	<i>Trewia nudiflora</i>	60	120	25.31	130.47
2	<i>Citrus limetta</i>	10	20	1.81	18.92
3	<i>Mangifera indica</i>	10	20	8.60	26.90
4	<i>Ficus religiosa</i>	10	10	25.43	42.16
5	<i>Averrhoa carambola</i>	10	10	1.26	13.72
6	<i>Bridelia retusa</i>	10	20	19.00	39.13
7	<i>Lagerstroemia lanceolata</i>	10	10	2.83	15.56
8	<i>Alangium chinense</i>	10	10	0.78	13.15
	Total		220	85.01	

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Capparis tenera</i>	30	200	2.04	19.27
2	<i>Cassia tora</i>	80	2400	65.24	155.78
3	<i>Lantana camara</i>	20	40	0.35	9.87
4	<i>Piper pedicellatum</i>	50	1960	15.386	77.50
5	<i>Psychotria calocarpa</i>	20	280	2.423	16.92
6	<i>Solanum torvum</i>	10	40	0.38	5.56
7	<i>Ziziphus mauritiana</i>	20	200	2.20	15.10
	Total		5120	88.01	

Sampling Site: B1 Brahmaputra River (Dibrugarh)

SHRUBS

S.No.	Name of Species	Frequency (%)	Density (ind./ha)	TBC (m ² ha ⁻¹)	IVI
1	<i>Tamarix dioica</i>	80	4240	65.24	171.51
2	<i>Bombax ceiba</i>	10	40	0.35	6.20
3	<i>Ipomoea carnea</i>	70	2400	27.13	99.80
4	<i>Caryopteris odorata</i>	20	240	2.20	16.28
5	<i>Lantana camara</i>	10	40	0.35	6.20
	Total		6960	95.26	

Annexure-IV

LIST OF AVI-FAUNA PREPARED FROM SECONDARY DATA & FIELD SURVEYS

S.No.	Family	Scientific Name	Common Name	Conservation Status	
				IUCN 3.1	WPA 1972
	Order: Galliformes				
	Phasianidae				
1		<i>Arborophila mandellii</i>	Chestnut-breasted Partridge	VU	Schedule IV
2		<i>Arborophila rufogularis</i>	Rufous-throated Partridge	LC	Schedule IV
3		<i>Arborophila torqueola</i>	Common hill Partridge	LC	Schedule IV
4		<i>Coturnix coturnix</i>	Common Quail	LC	Schedule IV
5		<i>Francolinus gularis</i>	Swamp Partridge	VU	Schedule IV
6		<i>Gallus gallus</i>	Red Jungle fowl	LC	Schedule IV
7		<i>Lerwa lerwa</i>	Snow Partridge	LC	Schedule IV
8		<i>Lophophorus sclateri</i>	Sclater's Monal	VU	Schedule I
9		<i>Lophura leucomelanos</i>	Khaleej Pheasant	LC	Schedule IV
10		<i>Perdica asiatica</i>	Jungle Bush Quail	LC	Schedule IV
11		<i>Polyplectron bicalcaratum</i>	Grey peacock Pheasant	LC	Schedule I
12		<i>Tragopan blythii</i>	Blyth's Tragopan	VU	Schedule I
13		<i>Tragopan temminckii</i>	Temminck's Tragopan	LC	Schedule I
	Order: Anseriformes				
	Anatidae				
14		<i>Anas acuta</i>	Northern Pintail	LC	Schedule IV
15		<i>Anas clypeata</i>	Northern Shoveler	LC	Schedule IV
16		<i>Anas crecca</i>	Common Teal	LC	Schedule IV
17		<i>Anas falcata</i>	Falcated Teal	NT	Schedule IV
18		<i>Anas penelope</i>	Eurasian Wigeon	LC	Schedule IV

19		<i>Anas platyrhynchos</i>	Mallard	LC	Schedule IV
20		<i>Anas poecilorhyncha</i>	Spot billed Duck	LC	Schedule IV
21		<i>Anser erythropus</i>	Lesser White fronted Goose	VU	Schedule IV
22		<i>Anser indicus</i>	Bar-headed Goose	LC	Schedule IV
23		<i>Aythya baeri</i>	Baer's Pochard	EN	Schedule IV
24		<i>Aythya ferina</i>	Common Poachard	LC	Schedule IV
25		<i>Aythya fuligula</i>	Tufted Duck	LC	Schedule IV
26		<i>Aythya nyroca</i>	Ferruginous Duck	NT	Schedule IV
27		<i>Bucephala clangula</i>	Common Goldeneye	LC	Schedule IV
28		<i>Cairina scutulata</i>	White winged Duck	EN	Schedule I
29		<i>Dendrocygna bicolor</i>	Fulvous Whistling-duck	LC	Schedule I
30		<i>Dendrocygna javanica</i>	Lesser Whistling Teal	LC	Schedule IV
31		<i>Mergus merganser</i>	Common Marganser	LC	Schedule IV
32		<i>Netta rufina</i>	Red-crested Pochard	LC	Schedule IV
33		<i>Nettapus coromandelianus</i>	Cotton Pygmy-goose	LC	Schedule IV
34		<i>Tadorna ferruginea</i>	Ruddy Shelduck	LC	Schedule IV
35		<i>Tadorna tadorna</i>	Common Shelduck	LC	Schedule IV
	Order: Turniceformes				
	Turnicidae				
36		<i>Turnix suscitator</i>	Barred Button Quail	LC	Schedule IV
	Order: Piciformes				
	Picidae				
37		<i>Blythipicus pyrrhotis</i>	Bay Woodpecker	LC	Schedule IV

38		<i>Celeus brachyurus</i>	Rufous Woodpecker	LC	Schedule IV
39		<i>Chrysocolaptes festivus</i>	White naped Woodpecker	LC	Schedule IV
40		<i>Chrysocolaptes lucidus</i>	Greater flame back	LC	Schedule IV
41		<i>Dendrocopos canicapillus</i>	Grey-capped Pygmy Woodpecker	LC	Schedule IV
42		<i>Dendrocopos macei</i>	Fulvous breasted Woodpecker	LC	Schedule IV
43		<i>Gecinulus grantia</i>	Pale-headed Woodpecker	LC	Schedule IV
44		<i>Picumnus innominatus</i>	Spackled Piculet	LC	Schedule IV
45		<i>Picus canus</i>	Grey-headed Woodpecker	LC	Schedule IV
46		<i>Picus chlorolophus</i>	Lesser yellow Nape	LC	Schedule IV
47		<i>Picus flavinucha</i>	Greater Yellow nape Woodpecker	LC	Schedule IV
48		<i>Pitta nipalensis</i>	Blue-naped Pitta	LC	Schedule IV
49		<i>Sasia ochracea</i>	White Browed Piculet	LC	Schedule IV
	Megalaimidae				
50		<i>Megalaima asiatica</i>	Blue-throated Barbet	LC	Schedule IV
51		<i>Megalaima australis</i>	Blue-eared Barbet	LC	Schedule IV
52		<i>Megalaima franklinii</i>	Golden throated Barbet	LC	Schedule IV
53		<i>Megalaima haemacephala</i>	Coppersmith Barbet	LC	Schedule IV
54		<i>Megalaima lineata</i>	Lineated Barbet	LC	Schedule IV
55		<i>Megalaima virens</i>	Great Barbet	LC	Schedule IV
56		<i>Megalaima zeylanica</i>	Large green barbet	LC	Schedule IV
	Order: Bucerotiformes				
	Bucerotidae				
57		<i>Anthracoceros albirostris</i>	Oriental Pied Hornbill	LC	Schedule I

58		<i>Buceros bicornis</i>	The Great Indian Hornbill	NT	Schedule I
59		<i>Rhyticeros undulatus</i>	Wreathed Hornbill	LC	Schedule I
	Order: Upupiformes				
	Upupidae				
60		<i>Upupa epops</i>	Common Hoopoe	LC	#
	Order: Trogoniformes				
	Trogonidae				
61		<i>Harpactes erythrocephalus</i>	Red headed Trogon	LC	Schedule IV
	Order: Coraciiformes				
	Alcedinidae				
62		<i>Alcedo atthis</i>	Common Kingfisher	LC	Schedule IV
63		<i>Ceyx erithaca</i>	Oriental Dwarf Kingfisher	LC	Schedule IV
	Cerylidae				
64		<i>Ceryle rudis</i>	Pied Kingfisher	LC	Schedule IV
65		<i>Megaceryle lugubris</i>	Crested Kingfisher	LC	Schedule IV
	Halcyonidae				
66		<i>Halcyon coromanda</i>	Ruddy Kingfisher	LC	Schedule IV
67		<i>Halcyon smyrnensis</i>	White Throated Kingfisher	LC	Schedule IV
	Meropidae				
68		<i>Merops leschenaulti</i>	Chestnut headed Bee eater	LC	#
69		<i>Merops orientalis</i>	Green Bee-eater	LC	#
70		<i>Nyctyornis athertoni</i>	Blue-bearded Bee-eater	LC	#

	Order: Cuculiformes				
	Cuculidae				
71		<i>Centropus bengalensis</i>	Lesser Coucal	LC	Schedule IV
72		<i>Centropus sinensis</i>	Greater coucal / Crow Pheasant	LC	Schedule IV
73		<i>Clamator jacobinus</i>	Pied crested Cuckoo	LC	Schedule IV
74		<i>Cuculus micropterus</i>	Indian Cuckoo	LC	Schedule IV
75		<i>Cuculus varius</i>	Common Hawk Cuckoo	LC	Schedule IV
76		<i>Eudynamys scolopaceus</i>	Asian Koel	LC	Schedule IV
77		<i>Hierococcyx sparveroides</i>	Large Hawk Cuckoo	LC	Schedule IV
78		<i>Phaenicophaeus leschenaultii</i>	Sirkeer Cuckoo	LC	Schedule IV
79		<i>Phaenicophaeus tristis</i>	Small Green billed Malkoha	LC	Schedule IV
	Order: Psittaciformes				
	Psittaculidae				
80		<i>Psittacula alexandri</i>	Red breasted Parakeet	LC	Schedule IV
81		<i>Psittacula eupatria</i>	Alexandrine Parakeet	LC	Schedule IV
82		<i>Psittacula finschii</i>	Grey-headed Parakeet	LC	Schedule IV
83		<i>Psittacula krameri</i>	Rose ringed Parakeet	LC	Schedule IV
84		<i>Psittacula roseata</i>	Blossom-headed Parakeet	LC	Schedule IV
	Order: Apodidae				
	Apodidae				
85		<i>Apus affinis</i>	House Swift	LC	#
86		<i>Apus pacificus</i>	Large white rumped Swift	LC	#

87		<i>Collocalia brevirostris</i>	Himalayan Swiftlet	LC	#
	Order: Strigiformes				
	Tytonidae				
88		<i>Tyto capensis</i>	Grass Owl	LC	Schedule IV
	Strigidae				
89		<i>Athene brama</i>	Spotted Owlet	LC	Schedule IV
90		<i>Bubo virginianus</i>	Great horned Owl	LC	NA
91		<i>Glaucidium brodiei</i>	Collared Owlet	LC	Schedule IV
92		<i>Glaucidium cuculoides</i>	Asian Barred Owlet	LC	Schedule IV
93		<i>Glaucidium radiatum</i>	Jungle Owlet	LC	Schedule IV
94		<i>Otus spilocephalus</i>	Mountain Scops Owl	LC	Schedule IV
95		<i>Strix aluco</i>	Tawny Owl	LC	Schedule IV
	Caprimulgidae				
96		<i>Caprimulgus asiaticus</i>	Indian Nightjar	LC	Schedule IV
97		<i>Caprimulgus macrurus</i>	Long tailed Nightjar	LC	Schedule IV
	Order: Columbiformes				
	Columbidae				
98		<i>Chalcophaps indica</i>	Emerald Dove	LC	Schedule IV
99		<i>Columba hodgsonii</i>	Speckled wood Pigeon	LC	Schedule IV
100		<i>Columba livia</i>	Blue Rock Pigeon	LC	Schedule IV
101		<i>Columba pulchricollis</i>	Ashy wood Pigeon	LC	Schedule IV
102		<i>Ducula aenea</i>	Green imperial Pigeon	LC	Schedule IV
103		<i>Ducula badia</i>	Mountain Imperial Pigeon	LC	Schedule IV

104		<i>Geotrygon caniceps</i>	Grey-fronted Quail-Dove	VU	NA
105		<i>Spilopelia chinensis</i>	Spotted Dove	LC	Schedule IV
106		<i>Streptopelia orientalis</i>	Oriental turtle Dove	LC	Schedule IV
107		<i>Streptopelia risoria</i>	Ring neck Dove	LC	NA
108		<i>Streptopelia tranquebarica</i>	Red turtle Dove	LC	Schedule IV
109		<i>Treron apicauda</i>	Pin tail green Pigeon	LC	Schedule IV
110		<i>Treron bicinctus</i>	Orange-breasted Green Pigeon	LC	Schedule IV
111		<i>Treron olax</i>	Little Green Pigeon	LC	NA
112		<i>Treron pompadora</i>	Pampadour Green Pigeon	LC	Schedule IV
113		<i>Treron sphenurus</i>	Wedge-tailed Green Pigeon	LC	Schedule IV
114		<i>Treron phoenicopterus</i>	Yellow-footed green Pigeon	LC	Schedule IV
	Order: Gruiformes				
	Rallidae				
115		<i>Amaurornis phoenicurus</i>	White breasted water Hen	LC	Schedule IV
116		<i>Fulica atra</i>	Common Coot	LC	Schedule IV
117		<i>Gallinula chloropus</i>	Common Moorhen	LC	Schedule IV
118		<i>Porphyrio porphyrio</i>	Purple Swamp Hen	LC	Schedule IV
	Otididae				
119		<i>Houbaropsis bengalensis</i>	Bengal Florican	CR	Schedule I
	Order: Ciconiiformes				
	Scolopacidae				
120		<i>Actitis hypoleucos</i>	Common Sandpiper	LC	Schedule IV
121		<i>Calidris minuta</i>	Little Stint	LC	Schedule IV

122		<i>Gallinago gallinago</i>	Common Snipe	LC	Schedule IV
123		<i>Gallinago stenura</i>	Pintail Snipe	LC	Schedule IV
124		<i>Numenius arquata</i>	Eurasian Curlew	NT	Schedule IV
125		<i>Tringa nebularia</i>	Green Shank	LC	Schedule IV
126		<i>Tringa ochropus</i>	Green Sandpiper	LC	Schedule IV
127		<i>Tringa stagnatilis</i>	Marsh Sandpiper	LC	Schedule IV
128		<i>Tringa totanus</i>	Red Shank	LC	Schedule IV
	Jacanidae				
129		<i>Hydrophasianus chirurgus</i>	Pheasant tailed Jacana	LC	Schedule IV
130		<i>Metopidius indicus</i>	Bronze winged Jacana	LC	Schedule IV
	Charadriidae				
131		<i>Charadrius dubius</i>	Little ringed Plover	LC	Schedule IV
132		<i>Pluvialis apricaria</i>	European golden Plover	LC	Schedule IV
133		<i>Vanellus cinereus</i>	Grey headed Lapwing	LC	Schedule IV
134		<i>Vanellus duvaucelii</i>	Spur winged lapwing	LC	Schedule IV
135		<i>Vanellus indicus</i>	Red wattled Lapwing	LC	Schedule IV
136		<i>Vanellus vanellus</i>	Northern Lapwing	LC	Schedule IV
137		<i>Charadrius dubius</i>	Little ringed Plover	LC	Schedule IV
	Laridae				
137		<i>Larus brunnicephalus</i>	Brown headed Gull	LC	Schedule IV
138		<i>Larus ichthyaetus</i>	Pallas's Gull	LC	Schedule IV
139		<i>Larus minutus</i>	Little Gull	LC	Schedule IV
140		<i>Larus ridibundus</i>	Black-headed Gull	LC	Schedule IV

	Accipitridae				
141		<i>Accipiter badius</i>	Shikra	LC	Schedule I
142		<i>Accipiter nisus</i>	Eurasian (or Northern) Sparrow Hawk	LC	Schedule I
143		<i>Aquila pomarina</i>	Lesser spotted Eagle	LC	Schedule I
144		<i>Aviceda subcristata</i>	Brown Baza	LC	NA
145		<i>Buteo buteo</i>	Common Buzzard	LC	Schedule I
146		<i>Circus aeruginosus</i>	Eurasian Marsh Harrier	LC	Schedule I
147		<i>Circus aeruginosus</i>	Western Marsh-Harrier	LC	Schedule I
148		<i>Circus macrourus</i>	Pale Harrier	NT	Schedule I
149		<i>Circus melanoleucos</i>	Pied Harrier	LC	Schedule I
150		<i>Elanus caeruleus</i>	Black winged Kite	LC	Schedule I
151		<i>Gyps africanus</i>	White backed Vulture	NT	NA
152		<i>Gyps himalayensis</i>	Himalaya Griffon	LC	Schedule IV
153		<i>Gyps indicus</i>	Indian vulture	CR	
154		<i>Gyps tenuirostris</i>	Slender billed Vulture	CR	Schedule IV
155		<i>Gyps bengalensis</i>	White-rumped Vulture	CR	Schedule IV
156		<i>Haliaeetus leucoryphus</i>	Pallas's Fish Eagle	VU	Schedule I
157		<i>Haliastur indus</i>	Brahmini Kite	LC	Schedule I
158		<i>Ichthyophaga ichthyaetus</i>	Grey headed fish Eagle	NT	Schedule I
159		<i>Ictinaetus malayensis</i>	Black Eagle	LC	Schedule I
160		<i>Milvus migrans</i>	Black Kite	LC	Schedule I
161		<i>Nisaetus cirrhatus</i>	Changeable hawk Eagle	LC	Schedule I
162		<i>Nisaetus nipalensis</i>	Mountain Hawk- Eagle	LC	Schedule I

163		<i>Pernis ptilorhyncus</i>	Oriental Honey Buzzard	LC	Schedule I
164		<i>Spilornis cheela</i>	Crested serpent Eagle	LC	Schedule I
165		<i>Spizaetus cirrhatus</i>	Crested Hawk Eagle	LC	Schedule I
166		<i>Spizaetus nipalensis</i>	Mountain Hawk-Eagle / Hogson hawk eagle	LC	Schedule I
	Anhingidae				
167		<i>Anhinga melanogaster</i>	Darter	NT	Schedule IV
	Phalacrocoracidae				
168		<i>Phalacrocorax carbo</i>	Great Cormorant	LC	Schedule IV
169		<i>Phalacrocorax fuscicollis</i>	Indian Cormorant	LC	Schedule IV
170		<i>Phalacrocorax niger</i>	Little Cormorant	LC	Schedule IV
	Ardeidae				
171		<i>Ardea cinerea</i>	Grey Heron	LC	Schedule IV
172		<i>Ardea purpurea</i>	Purple Heron	LC	Schedule IV
173		<i>Ardeola grayii</i>	Indian Pond-Heron	LC	Schedule IV
174		<i>Bubulcus ibis</i>	Cattle Egret	LC	Schedule IV
175		<i>Butorides striatus</i>	Little Heron	LC	Schedule IV
176		<i>Casmerodius albus</i>	Great Egret	LC	Schedule IV
177		<i>Egretta garzetta</i>	Little Egret	LC	Schedule IV
178		<i>Egretta garzetta</i>	Small white Heron	LC	Schedule IV
179		<i>Ixobrychus minutes</i>	Little Bittern	LC	Schedule IV
180		<i>Mesophoyx intermedia</i>	Intermediate Egret	LC	Schedule IV
181		<i>Nycticorax nycticorax</i>	Night Heron	LC	Schedule IV

	Pelecanidae				
182		<i>Pelecanus philippensis</i>	Spotted billed Pelican	NT	Schedule IV
	Ciconiidae				
183		<i>Anastomus oscitans</i>	Asian Open Bill	LC	Schedule IV
184		<i>Ciconia ciconia</i>	White Stork	LC	Schedule IV
185		<i>Ciconia nigra</i>	Black Stork	LC	Schedule IV
186		<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	NT	Schedule IV
187		<i>Leptoptilos dubius</i>	Greater Adjutant	EN	Schedule IV
188		<i>Leptoptilos javanicus</i>	Lesser Adjutant	VU	Schedule IV
	Order: Passeriformes				
	Pittidae				
189		<i>Pitta nipalensis</i>	Blue-naped Pitta	LC	Schedule IV
	Laniidae				
190		<i>Lanius cristatus</i>	Brown Shrike	LC	#
191		<i>Lanius excubitor</i>	Grey Shrike	lc	#
192		<i>Lanius schach</i>	Long tailed shrike / Rufous-backed Shrike	LC	#
193		<i>Lanius tephronotus</i>	Grey backed Shrike	LC	#
	Corvidae				
194		<i>Cissa chinensis</i>	Common Green Magpie	LC	Schedule IV
195		<i>Coracias benghalensis</i>	Blue Jay / Indian Rollar	LC	Schedule IV
196		<i>Corvus macrorhynchos</i>	Jungle Crow	LC	Schedule IV
197		<i>Corvus splendens</i>	House Crow	LC	Schedule V
198		<i>Dendrocitta formosae</i>	Himalayan Tree Pie / Grey Tree Pie	LC	Schedule IV

199		<i>Dendrocitta vagabunda</i>	Indian tree Pie	LC	Schedule IV
200		<i>Garrulus glandarius</i>	Eurasian Jay	LC	Schedule IV
201		<i>Urocissa erythrorhyncha</i>	Red-billed Blue Magpie	LC	Schedule IV
	Dicruridae				
202		<i>Dicrurus aeneus</i>	Bronzed Drongo	LC	Schedule IV
203		<i>Dicrurus bracteatus</i>	Spangled Drongo	LC	Schedule IV
204		<i>Dicrurus hottentottus</i>	Hair crested Drongo	LC	Schedule IV
205		<i>Dicrurus leucophaeus</i>	Ashy Drongo	LC	Schedule IV
206		<i>Dicrurus macrocercus</i>	Black Drongo	LC	Schedule IV
207		<i>Dicrurus remifer</i>	Lesser Racket-tailed Drongo	LC	Schedule IV
	Campephagidae				
208		<i>Hemipus picatus</i>	Bar-winged Flycatcher-Shrik	LC	Schedule IV
209		<i>Pericrocotus brevirostris</i>	Short-billed Minivet	LC	Schedule IV
210		<i>Pericrocotus cinnamomeus</i>	Small Minivet	LC	Schedule IV
211		<i>Pericrocotus ethologus</i>	Long-tailed Minivet	LC	Schedule IV
212		<i>Pericrocotus flammeus</i>	Scarlet Minivet	LC	Schedule IV
213		<i>Pericrocotus solaris</i>	Grey-chinned Minivet	LC	Schedule IV
	Prionopidae				
214		<i>Tephrodornis gularis</i>	Large Wood Shrike		Schedule IV
	Cinclidae				
215		<i>Cinclus pallasii</i>	Brown Dipper	LC	#
	Muscicapidae				
216		<i>Chaimarrornis leucocephalus</i>	White cape water Redstart	LC	Schedule IV

217		<i>Copsychus malabaricus</i>	White-rumped Shama	LC	Schedule IV
218		<i>Copsychus saularis</i>	Oriental Magpie Robin	LC	Schedule IV
219		<i>Copsychus saularis</i>	Oriental Magpie Robin	LC	Schedule IV
220		<i>Cyornis banyumas</i>	Hill blue Flycatcher	LC	Schedule IV
221		<i>Cyornis rubeculoides</i>	Blue throated Flycatcher	LC	Schedule IV
222		<i>Cyornis unicolor</i>	Pale blue Flycatcher	LC	Schedule IV
223		<i>Enicurus immaculatus</i>	Black-backed Forktail	LC	Schedule IV
224		<i>Enicurus maculatus</i>	Spotted Forktail	LC	Schedule IV
225		<i>Enicurus schistaceus</i>	Slaty backed Forktail	LC	Schedule IV
226		<i>Enicurus scouleri</i>	Little Forktail	LC	Schedule IV
227		<i>Eumyias thalassinus</i>	Verditer Flycatcher	LC	Schedule IV
228		<i>Ficedula hyperythra</i>	Snowy Browed Flycatcher	LC	Schedule IV
229		<i>Ficedula strophinata</i>	Rufous- gorgeted Flycatcher	LC	Schedule IV
230		<i>Ficedula tricolor</i>	Slaty blue Flycatcher	LC	Schedule IV
231		<i>Ficedula westermanni</i>	Little-pied Flycatcher	LC	Schedule IV
232		<i>Luscinia brunnea</i>	Indian Blue Robin	LC	Schedule IV
233		<i>Luscinia pectardens</i>	Fire Throat	NT	Schedule IV
234		<i>Luscinia pectoralis</i>	White tailed ruby Throat	LC	Schedule IV
235		<i>Monticola cinclorhynchus</i>	Blue-Capped Rocked Thrush	LC	Schedule IV
236		<i>Monticola rufiventris</i>	Chestnut-bellied rock Thrush	LC	Schedule IV
237		<i>Monticola solitarius</i>	Blue Rock Thrush	LC	Schedule IV
238		<i>Muscicapa sibirica</i>	Dark-sided Flycatcher	LC	Schedule IV
239		<i>Muscicapella hodgsoni</i>	Pygmy Blue Flycatcher	LC	Schedule IV

240		<i>Niltava grandis</i>	Large Niltava	LC	Schedule IV
241		<i>Niltava macgrigoriae</i>	Small Niltava	LC	Schedule IV
242		<i>Oenanthe isabellina</i>	Isabelline Wheatear	LC	Schedule IV
243		<i>Phoenicurus aureus</i>	Daurian Redstart	LC	Schedule IV
244		<i>Phoenicurus frontalis</i>	Blue-fronted Redstart	LC	Schedule IV
245		<i>Phoenicurus hodgsoni</i>	Hodgson's Redstart	LC	Schedule IV
246		<i>Phoenicurus ochruros</i>	Black Redstart	LC	Schedule IV
247		<i>Rhyacornis fuliginosa</i>	Plumbeous Water Redstart	LC	Schedule IV
248		<i>Saxicola jerdoni</i>	Jerdon's Bushchat	LC	Schedule IV
249		<i>Saxicola torquatus</i>	Common Stonechat	LC	NA
250		<i>Saxicola ferreus</i>	Grey Bushchat	LC	Schedule IV
251		<i>Saxicoloides fulicata</i>	Indian Robin	LC	Schedule IV
252		<i>Tarsiger cyanurus</i>	Orange Flanked Bush Robin	LC	Schedule IV
	Turdidae				
253		<i>Brachypteryx stellata</i>	Gould's Short Wing	LC	Schedule IV
254		<i>Myophonus caeruleus</i>	Blue Whistling Thrush	LC	Schedule IV
255		<i>Turdus albocinctus</i>	White collared Blackbird	LC	Schedule IV
256		<i>Turdus boulboul</i>	Grey winged Blackbird	LC	Schedule IV
257		<i>Turdus dissimilis</i>	Black breasted Thrush	LC	Schedule IV
258		<i>Zoothera citrina</i>	Orange-headed Thrush	LC	Schedule IV
259		<i>Zoothera dixonii</i>	Long-tailed Thrush	LC	Schedule IV
260		<i>Zoothera interpres</i>	Chestnut-crowned Thrush	NT	NA
261		<i>Zoothera monticola</i>	Long-Billed Thrush	LC	Schedule IV

262		<i>Zoothera wardii</i>	Pied Thrush	LC	Schedule IV
	Sturnidae				
263		<i>Acridotheres fuscus</i>	Jungle myna	LC	Schedule IV
264		<i>Acridotheres ginginianus</i>	Bank Myna	LC	Schedule IV
265		<i>Acridotheres grandis</i>	Great Myna	LC	Schedule IV
266		<i>Acridotheres tristis</i>	Common Myna / Indian Myna	LC	Schedule IV
267		<i>Gracula religiosa</i>	Hill Myna	LC	Schedule IV
268		<i>Sturnus contra</i>	Pied Myna	LC	Schedule IV
	Sittidae				
269		<i>Sitta castanea</i>	Chestnut-bellied Nuthatch	LC	#
270		<i>Sitta formosa</i>	Beautiful Nuthatch	VU	#
271		<i>Sitta himalayensis</i>	Himalayan White tailed Nuthatch	LC	#
	Paridae				
272		<i>Melanochloa sultanea</i>	Sultan Tit	LC	Schedule IV
273		<i>Parus dichrous</i>	Grey Crested Tit	LC	NA
274		<i>Parus major</i>	Great Tit	LC	Schedule IV
275		<i>Parus monticolus</i>	Green backed Tit	LC	Schedule IV
276		<i>Parus nuchalis</i>	White napped Tit	VU	Schedule IV
277		<i>Parus spilonotus</i>	Yellow-cheeked Tit	LC	Schedule IV
	Aegithalidae				
278		<i>Aegithalos concinnus</i>	Black-throated Bushtit	LC	Schedule IV
279		<i>Aegithina tiphia</i>	Common lora	LC	Schedule IV
	Hirundinidae				

280		<i>Delichon dasypus</i>	Asian House Martin	LC	#
281		<i>Delichon nipalense</i>	Nepal House Martin	LC	#
282		<i>Hirundo daurica</i>	Red-rumped Swallow	LC	#
283		<i>Hirundo rustica</i>	Barn Swallow	LC	#
284		<i>Hirundo smithii</i>	Wire tailed Swallow	LC	#
285		<i>Hirundo striolata</i>	Striated Swallow	LC	#
286		<i>Riparia diluta</i>	Pale Martin	LC	#
287		<i>Riparia paludicola</i>	Plain Martin	LC	#
288		<i>Riparia riparia</i>	Collared sand Martin	LC	#
289		<i>Riparia riparia</i>	Sand Martin	LC	#
	Pycnonotidae				
290		<i>Alophoixus flaveolus</i>	White-throated Bulbul	LC	Schedule IV
291		<i>Hemixos flava</i>	Ashy Bulbul	LC	Schedule IV
292		<i>Hypsipetes leucocephalus</i>	Black Bulbul	LC	Schedule IV
293		<i>Hypsipetes mcclllandii</i>	Mountain Bulbul	LC	Schedule IV
294		<i>Iole virescens</i>	Olive Bulbul	LC	Schedule IV
295		<i>Pycnonotus cafer</i>	Red vented Bulbul	LC	Schedule IV
296		<i>Pycnonotus jocosus</i>	Red-Whiskered Bulbul	LC	Schedule IV
297		<i>Pycnonotus leucogenys</i>	Himalayan Bulbul	LC	Schedule IV
298		<i>Pycnonotus leucotis</i>	White cheeked Bulbul	LC	Schedule IV
299		<i>Pycnonotus melanicterus</i>	Black-crested Bulbul	LC	Schedule IV
300		<i>Pycnonotus striatus</i>	Striated Bulbul	LC	Schedule IV
301		<i>Rhipidura albicollis</i>	White-throated Fantail Flycatcher	LC	Schedule IV

	Cisticolidae				
302		<i>Orthotomus sutorius</i>	Common Tailorbird	LC	Schedule IV
303		<i>Prinia atrogularis</i>	Hill Prinia	LC	Schedule IV
304		<i>Prinia hodgsonii</i>	Grey-breasted Prinia	LC	Schedule IV
305		<i>Prinia rufescens</i>	Rufescent Prinia	LC	Schedule IV
306		<i>Prinia socialis</i>	Ashy Grey Wren Warbler/Ashy Prinia	LC	Schedule IV
	Zosteropidae				
307		<i>Zosterops palpebrosus</i>	Oriental White-eye Dove	LC	Schedule IV
	Timaliidae				
308		<i>Actinodura egertoni</i>	Rusty-fronted Barwing	LC	Schedule IV
309		<i>Actinodura waldeni</i>	Streak-throated Barwing	LC	Schedule IV
310		<i>Alcippe castaneiceps</i>	Rufous-winged Fulvetta	LC	Schedule IV
311		<i>Alcippe nipalensis</i>	Nepal Fulvetta	LC	Schedule IV
312		<i>Alcippe poiocephala</i>	Brown-cheeked Fulvetta	LC	Schedule IV
313		<i>Cutia nipalensis</i>	Cutia	LC	Schedule IV
314		<i>Garrulax albogularis</i>	Whitethroated Laughing Thrush	LC	Schedule IV
315		<i>Garrulax caerulatus</i>	Grey-sided laughing Thrush	LC	Schedule IV
316		<i>Garrulax leucolophus</i>	White-crested Laughing Thrush	LC	Schedule IV
317		<i>Garrulax monileger</i>	Lesser-necklaced Laughing Thrush	LC	Schedule IV
318		<i>Garrulax pectoralis</i>	Greater Necklaced Laughing Thrush	LC	Schedule IV
319		<i>Garrulax ruficollis</i>	Rufous-necked Laughing Thrush	LC	Schedule IV
320		<i>Garrulax rufogularis</i>	Rufous-chined Laughing Thrush	LC	Schedule IV

321		<i>Garrulax squamatus</i>	Blue-winged Laughing Thrush	LC	Schedule IV
322		<i>Garrulax striatus</i>	Striated Laughing Thrush	LC	Schedule IV
323		<i>Heterophasia picaoides</i>	Long-tailed Sibia	LC	Schedule IV
324		<i>Heterophasia pulchella</i>	Beautiful Sibia	LC	Schedule IV
325		<i>Heterophasia annectens</i>	Rufous backed Sibia	LC	Schedule IV
326		<i>Leiothrix argentauris</i>	Silver-eared Mesia	LC	Schedule IV
327		<i>Leiothrix lutea</i>	Red billed Leiothrix	LC	Schedule IV
328		<i>Liocichla phoenicea</i>	Red-faced Liocichla	LC	Schedule IV
329		<i>Minla ignotincta</i>	Red-tailed Minla	LC	Schedule IV
330		<i>Napothera brevicaudata</i>	Streaked Wren-Babbler	LC	Schedule IV
331		<i>Paradoxornis atrosuperciliaris</i>	Lesser Rufous-headed Parrotbill	LC	Schedule IV
332		<i>Pellorneum ruficeps</i>	Puff-throated Babbler	LC	Schedule IV
333		<i>Pnoepyga albiventer</i>	Scaly-breasted Wren Babbler	LC	Schedule IV
334		<i>Pnoepyga pusilla</i>	Pygmy Wren Babbler	LC	Schedule IV
335		<i>Pomatorhinus ferruginosus</i>	Coral-billed Scimitar Babbler	LC	Schedule IV
336		<i>Pomatorhinus hypoleucos</i>	Large Schimitar Babbler	LC	Schedule IV
337		<i>Pomatorhinus ochraceiceps</i>	Red-billed Scimitar Babbler	LC	Schedule IV
338		<i>Pomatorhinus schisticeps</i>	White-browed Scimitar Babbler	LC	NA
339		<i>Pteruthius melanotis</i>	Black-eared Shrike Babbler	LC	Schedule IV
340		<i>Spelaeornis caudatus</i>	Rufous-throated Wren Babbler	NT	Schedule IV
341		<i>Stachyris chrysaea</i>	Golden Babbler	LC	Schedule IV
342		<i>Stachyris nigriceps</i>	Grey-throated Babbler	LC	Schedule IV

343		<i>Stachyris nigriceps</i>	Grey-throated Babbler	LC	Schedule IV
344		<i>Stachyris ruficeps</i>	Rufous Capped Babbler	LC	Schedule IV
345		<i>Timalia pileata</i>	Chestnut-capped Babbler	LC	Schedule IV
346		<i>Turdoides earlei</i>	Striated Babbler	LC	Schedule IV
347		<i>Turdoides striata</i>	Jungle Babbler	LC	Schedule IV
348		<i>Xiphirhynchus superciliaris</i>	Slender-billed Scimitar-Babbler	LC	Schedule IV
349		<i>Yuhina bakeri</i>	White-napped Yuhina	LC	Schedule IV
350		<i>Yuhina castaniceps</i>	Striated Yuhina	LC	Schedule IV
351		<i>Yuhina flavicollis</i>	Whiskered Yuhina	LC	Schedule IV
352		<i>Yuhina gularis</i>	Striped-throated Yuhina	LC	Schedule IV
353		<i>Yuhina nigrimenta</i>	Black-chinned Yuhina	LC	Schedule IV
354		<i>Yuhina occipitalis</i>	Rufous-vented Yuhina	LC	Schedule IV
	Sylviidae				
355		<i>Chrysomma altirostre</i>	Jerdon's Babbler	VU	Schedule IV
356		<i>Paradoxornis nipalensis</i>	Black-throated Parrotbill	LC	Schedule IV
357		<i>Paradoxornis ruficeps</i>	Grater Rufous-headed Parrotbill	LC	Schedule IV
358		<i>Sylvia conspicillata</i>	Spectacled Warbler	LC	NA
	Phylloscopidae				
359		<i>Phylloscopus affinis</i>	Tickell's Leaf Warbler	LC	Schedule IV
360		<i>Phylloscopus fuligiventer</i>	Willow Warbler	LC	Schedule IV
361		<i>Phylloscopus fuscatus</i>	Dusky Warbler	LC	Schedule IV
362		<i>Phylloscopus maculipennis</i>	Ashy-throated Warbler	LC	Schedule IV
363		<i>Phylloscopus proregulus</i>	Pallas Leaf Warbler	LC	NA

364		<i>Phylloscopus reguloides</i>	Blyth's Leaf Warbler	LC	Schedule IV
365		<i>Phylloscopus trochiloides</i>	Greenish Warbler	LC	Schedule IV
366		<i>Phylloscopus xanthoschistos</i>	Grey-hooded Warbler	LC	Schedule IV
367		<i>Seicercus affinis</i>	White spectacted warbler	LC	Schedule IV
368		<i>Seicercus burkii</i>	Golden-spectacted Warbler	LC	Schedule IV
369		<i>Seicercus castaniceps</i>	Chestnut-crowned Warbler	LC	Schedule IV
370		<i>Seicercus poliogenys</i>	Grey cheeked warbler	LC	Schedule IV
	Locustellidae				
371		<i>Bradypterus luteoventris</i>	Brown Bush Warbler	LC	Schedule IV
372		<i>Bradypterus mandelli</i>	Russet Bush Warbler	LC	Schedule IV
373		<i>Bradypterus thoracicus</i>	Spotted Bush Warbler	LC	Schedule IV
	Cettiidae				
374		<i>Abroscopus albogularis</i>	Rufous-faced Warbler	LC	Schedule IV
375		<i>Abroscopus schisticeps</i>	Black-faced Warbler	LC	Schedule IV
376		<i>Cettia diphone</i>	Japanese Bush Warbler	LC	Schedule IV
377		<i>Cettia fortipes</i>	Brownish Flanked Bush Warbler	LC	Schedule IV
378		<i>Cettia major</i>	Chestnut-crowned Bush Warbler	LC	Schedule IV
379		<i>Orthotomus cuculatus</i>	Mountain Tailorbird	LC	Schedule IV
380		<i>Tesia castaneocoronata</i>	Chestnut-headed Tesia	LC	Schedule IV
381		<i>Tesia cyaniventer</i>	Grey-bellied Tesia	LC	Schedule IV
382		<i>Tesia olivea</i>	Slaty-bellied Tesia	LC	Schedule IV
	Acrocephalidae				
383		<i>Acrocephalus aedon</i>	Thick-billed Warbler	LC	Schedule IV

	Alaudidae				
384		<i>Alauda gulgula</i>	Oriental Skylark	LC	Schedule IV
385		<i>Calandrella raytal</i>	Sand Lark	LC	Schedule IV
	Dicaeidae				
386		<i>Dicaeum concolor</i>	Plain flower pecker	LC	Schedule IV
387		<i>Dicaeum cruentatum</i>	Scarlet-backed Flower pecker	LC	Schedule IV
388		<i>Dicaeum ignipectus</i>	Fire-breasted Flower pecker	LC	Schedule IV
	Nectariniidae				
389		<i>Aethopyga gouldiae</i>	Gould's sunbird	LC	Schedule IV
390		<i>Aethopyga nipalensis</i>	Green-tailed Sunbird	LC	Schedule IV
391		<i>Aethopyga saturata</i>	Black-throated Sunbird	LC	Schedule IV
392		<i>Aethopyga siparaja</i>	Crimson Sunbird	LC	Schedule IV
393		<i>Arachnothera longirostra</i>	Little Spider hunter	LC	Schedule IV
394		<i>Arachnothera magna</i>	Streaked Spider Hunter	LC	Schedule IV
395		<i>Nectarinia asiatica</i>	Purple Sun bird	LC	Schedule IV
	Passeridae				
396		<i>Passer domesticus</i>	House Sparrow	LC	Schedule IV
397		<i>Passer montanus</i>	Eurasian Tree-Sparrow	LC	Schedule IV
398		<i>Passer rutilans</i>	Russet Sparrow	LC	Schedule IV
	Chloropseidae				
399		<i>Chloropsis aurifrons</i>	Golden-fronted Leaf bird	LC	Schedule IV
400		<i>Chloropsis hardwickii</i>	Orange bellied leaf bird	LC	Schedule IV
	Eurylaimidae				

401		<i>Psarisomus dalhousiae</i>	Long-tailed Broadbill	LC	#
402		<i>Serilophus lunatus</i>	Silver-breasted Broadbill	LC	#
	Ploceidae				
403		<i>Ploceus benghalensis</i>	Black throated Weaverbird	LC	Schedule IV
404		<i>Ploceus philippinus</i>	Baya Weaver	LC	Schedule IV
	Prunellidae				
405		<i>Prunella fulvescens</i>	Brown Accentor	LC	#
406		<i>Prunella immaculata</i>	Maroon-backed Accentor	LC	#
	Monarchidae				
407		<i>Terpsiphone paradisi</i>	Asian Paradise Flycatcher	LC	Schedule IV
	Motacillidae				
408		<i>Anthus godlewskii</i>	Blyth's Pipit	LC	Schedule IV
409		<i>Anthus hodgsoni</i>	Olive-backed pipit	LC	Schedule IV
410		<i>Anthus rufulus</i>	Paddy field Pipit	LC	Schedule IV
411		<i>Anthus trivialis</i>	Tree Pipit	LC	Schedule IV
412		<i>Dendronanthus indicus</i>	Forest Wagtail	LC	Schedule IV
413		<i>Motacilla alba</i>	White Wagtail	LC	Schedule IV
414		<i>Motacilla cinerea</i>	Grey Wagtail	LC	Schedule IV
415		<i>Motacilla maderaspatensis</i>	Large Pied Wagtail	LC	Schedule IV
	Estrildidae				
416		<i>Lonchura malacca</i>	Black-headed Munia/ Chestnut Munia	LC	Schedule IV
417		<i>Lonchura punctulata</i>	Scaly-breasted Munia /Spotted Munia	LC	Schedule IV
	Otacillidae				

418		<i>Anthus roseatus</i>	Rosy Pipit	LC	Schedule IV
	Fringillidae				
419		<i>Carduelis spinoides</i>	Yellow-breasted Green finch	LC	Schedule IV
420		<i>Carduelis thibetana</i>	Tibetan Serin	LC	Schedule IV
421		<i>Carpodacus erythrinus</i>	Common Rose finch	LC	Schedule IV
422		<i>Carpodacus nipalensis</i>	Dark-breasted Rose finch	LC	Schedule IV
423		<i>Haematospiza sipahi</i>	Scarlet Finch	LC	Schedule IV
424		<i>Loxia curvirostra</i>	Common Crossbill	LC	Schedule IV
425		<i>Mycerobas melanozanthos</i>	Spot-winged Grosbeak	LC	Schedule IV
	Emberizidae				
426		<i>Emberiza pusilla</i>	Little-Bunting	LC	Schedule IV
427		<i>Emberiza rutila</i>	Chestnut Bunting	LC	Schedule IV
428		<i>Emberiza spodocephala</i>	Black faced Bunting	LC	Schedule IV
429		<i>Melophus lathamii</i>	Crested Bunting	LC	Schedule IV
	Oriolidae				
430		<i>Oriolus traillii</i>	Maroon Oriole	LC	Schedule IV
431		<i>Oriolus xanthornus</i>	Black headed Oriole	LC	Schedule IV
	Tichodromadidae				
432		<i>Tichodroma muraria</i>	Wall Creeper	LC	#
	Stenostiridae				
433		<i>Culicicapa ceylonensis</i>	Grey-headed Canary Flycatcher	LC	Schedule IV
	Rhipiduridae				
434		<i>Rhipidura albicollis</i>	White throated Fantail	LC	Schedule IV

435		<i>Rhipidura hypoxantha</i>	Yellow-Bellied Fantail	LC	Schedule IV
	Irenidae				
436		<i>Irena puella</i>	Asian Fairy Bluebird	LC	Schedule IV
	Order: Falconiformes				
	Falconidae				
437		<i>Falco naumanni</i>	Lesser Kestrel	VU	Schedule IV
438		<i>Falco tinnunculus</i>	Common Kestrel	LC	Schedule IV
439		<i>Microhierax melanoleucos</i>	Pied Falconet	LC	Schedule IV
	Pandionidae				
440		<i>Pandion haliaetus</i>	Ospray	LC	Schedule I
	Order: Podicipediformes				
	Podicipedidae				
441		<i>Podiceps cristatus</i>	Greatcrested Grebe	LC	Schedule IV
	Order: Charadriiformes				
	Sternidae				
442		<i>Chlidonias hybrida</i>	Whiskered Tern	LC	Schedule IV
443		<i>Sterna aurantia</i>	Indian River Tern	LC	Schedule IV
444		<i>Sterna nilotica</i>	Gull billed Tern	LC	Schedule IV
	Glareolidae				
445		<i>Glareola lactea</i>	Small Indian Pratincole	LC	#
	Haematopodidae				
446		<i>Haematopus ostralegus</i>	Oystercatcher	LC	Schedule IV
	Rynchopidae				
447		<i>Rynchops albicollis</i>	Indian skimmer	VU	#

Note: LC = Least Concern, NT = Near Threatened, VU = Vulnerable, EN = Endangered, # Not listed, NA = No Information Available

Annexure-V

AQUATIC ECOLOGY:

January - March

Aquatic Ecology - Sampling sites and their Codes

Sl.No.	Code	Sampling Sites	Nearby Town/Village
Siang Sub Basin			
1	S1	Siang Lower HE project area	Near dam site - Bodak
2	S2	Siang Lower HE project area	D/s of Ranaghat
3	S3	Siang Lower HE project area	Ranaghat
4	S4	D/s of Siang & Siyom Confluence	Kebang
5	S5	Siang (d/s of confluence Simang with Siang)	Boleng
6	S6	Upper Siang-II HEP (dam site)	11km u/s of Hawaii camp
7	S7	Mirak HEP	near dam site
8	S8	Pango/Minnying HEP	near dam site
9	S9	Siang (D/s of Ringong river confluence)	u/s of Nunning
10	S10	Ringong (d/s of dam site)	8 km d/s of Tuting
11	S11	Siang (d/s of Yangsang confluence)	12 km d/s of Tuting
12	S12	U/s of Yangsang & Siang confluence	Tuting
13	S13	Jidu/Yang Sang HEP (dam site)	Jidu village
Yamne Sub Basin			
14	Y1	Lower Yamne Stage-II HEP	Jerring
15	Y2	Lower Yamne Stage-I HEP	U/s of Padu
16	Y3	Yamne Stage-II HEP (Barrage site)	Siyat
17	Y4	Yamne Stage-I HEP (dam site)	Lagru / Damro
Simang Sub Basin			
18	Sm1	Simang-I HEP Barrage site	Boleng
19	Sm2	Simang-I HEP (PH site)	Lileng

20	Sm3	Simang-II HEP (dam site)	Suple
Hirit Sub Basin			
21	SY1	D/s of Hirit & Siyom confluence	
22	SY2	Confluence of Hirit with Siyom	d/s of Kamba
23	SY3	Hirit HEP (near dam site)	u/s of Poma Basti
Siyom Sub Basin			
24	SY4	Siyom Middle HEP (near dam site)	U/s of Reying Basti
25	SY5	Gameng HEP (near confluence)	Gameng river
26	SY6	Naying HEP (near powerhouse)	Pene
27	SY7	Naying HEP (near dam site)	Yapik
28	SY8	Tato-II HEP (PH)	Near PH
29	SY9	Confluence of Yargyap with Siyom	Near Tato-II dam site
30	SY10	Tagurshit HEP (dam site)	Tadogitu
31	SY11	Hirong HEP (PH site)	Before confluence of Yagyap Chu with Siyom river
32	SY12	Hirong HEP (dam site)	Lungte-D/s of Sitin Nala
33	SY13	Jarong HEP (near dam site)	U/s of Karo village
Yargyap Chhu Sub Basin			
34	YG1	Tato-I HEP	Near Tench weir site, Tato
35	YG2	Heo HEP	Near PH
36	YG3	Heo HEP	near dam site
37	YG4	Pauk HEP	Near PH dam site
38	YG5	Pauk HEP	near dam site
39	YG6	Rapum HEP	Near PH

40	YG7	Rapum HEP	near dam site
41	YG8	Rego HEP	Powerhouse
42	YG9	Rego HEP (near intake point)	Intake point
43	YG10	Kantangshiri HEP	Near PH
44	YG11	Kantangshiri HEP	near dam site
45	YG12	Pemashelpu HEP	Near PH
46	YG13	Pemashelpu HEP	near diversion site
47	YG14	U/s of Hanuman Camp	Yarlong
Outside basin			
48	B2	Jiyadhol	Downstream of dam site
49	B1	Dibrugarh, right bank of Brahmaputra	Kareng Ghat (Upstream of Construction bridge)

HEP = Hydro-electric Project; PH= Power House

January 2012

Physico-Chemical Parameters

Sub basin- Siang: I-IV

S.No.	Physical / Chemical Characteristics	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Water Temperature (°C)	9.3	9.4	10.3	10.5	9.6	9.5	9.7	10.2	8.4	9.3	9.5	9.2	9.2
2	Dissolved Oxygen (mg/l)	10.4	10.5	10.25	10.2	10.4	10.3	10.2	10.3	10.9	10.38	10.33	10.4	10.45
3	Turbidity (NTU)	0.02	0.01	0.03	0.09	0.19	0.09	0.1	0.11	0.22	0.02	0.13	0.12	0.07
4	Total Suspended Solids (mg/l)	6	4	8	14	24	14	15	16	29	6	17	16	11
5	pH	8.45	8.54	8.43	8.37	8.21	8.45	8.37	8.51	8.34	8.31	8.09	8.35	8.31
6	Electrical Conductivity (µS/cm)	218	178	201	187	198	245	165	175	167	178	167	189	78
7	Total Dissolved Solids (mg/l)	133.0	108.6	122.6	114.1	120.8	149.5	100.7	106.8	101.9	108.6	101.9	115.3	47.6
8	Biological Oxygen Demand (mg/l)	0.67	0.98	1.43	1.21	1.02	1.21	0.89	1.45	0.78	0.67	1.56	1.67	1.65
9	Chemical Oxygen Demand (mg/l)	1.98	1.67	2.9	2.91	2.89	2.89	1.43	2.98	1.98	2.14	2.34	2.89	2.56
10	Total Coliform (MPN / 100 ml)	1	1	3	A	A	A	3	A	1	1	A	1	A
11	Chloride (mg/l)	10	9	12	10	13	12	10	14	11	9	9	11	9
12	Total alkalinity (mg/l of CaCO ₃)	62	59	67	42	53	65	57	62	66	60	54	52	60
13	Nitrates (NO ₃) (mg/l)	0.07	0.045	0.035	0.021	0.028	0.037	0.038	0.016	0.036	0.025	0.028	0.022	0.016
14	Sulphate (mg/l)	5	4	9	6	7	5	5	4	7	6	4	6	9
15	Phosphate (PO ₄) (mg/l)	0.01	0.009	0.007	0.003	0.001	0.006	0.003	0.005	0.005	0.001	0.003	0.006	0.007
16	Total Hardness (mg/l)	52.09	49.99	63.52	39.20	49.91	55.07	53.29	57.94	59.50	52.29	46.22	48.48	55.17
17	Calcium hardness (mg/l)	42	41.25	52.5	33.5	42.5	45	45.5	49	50	44.5	39	41	47
18	Calcium ions (mg/ l)	16.8	16.5	21	13.4	17	18	18.2	19.6	20	17.8	15.6	16.4	18.8
19	Magnesium Hardness (mg/l)	10.089	8.74	11.02	5.7	7.41	10.07	7.79	8.9376	9.5	7.79	7.22	7.4784	8.17
20	Magnesium ions (mg/l)	4.032	3.96	5.04	3.216	4.08	4.32	4.368	4.704	4.8	4.272	3.744	3.936	4.512
21	Potassium (mg/l)	1.29	1.34	1.02	1.98	2.11	1.78	0.78	1.65	1.48	1.46	1.19	1.45	0.89
22	Sodium (mg/l)	3.31	2.76	2.68	3.78	4.02	3.98	1.98	2.98	2.97	2.65	2.56	2.91	2.34

23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Abbreviation:

BDL= Below Detectable Limit

ND = Not Detectable

A = Absent

(-) = Absent

(+) = Present

Sub basin- Yamne and Simang

S.No.	Physical / Chemical Characteristics	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	Water Temperature (°C)	8.18	8.5	10.6	9.1	10.2	8.72	8.81
2	Dissolved Oxygen (mg/l)	10.87	10.65	10.31	10.28	10.3	10.81	10.89
3	Turbidity (NTU)	0.03	0.01	0.13	0.01	0.02	0.09	0.05
4	Total Suspended Solids (mg/l)	8	3	19	3	5	13	10
5	pH	8.23	8.45	8.21	8.14	8.32	8.21	8.34
6	Electrical Conductivity (µS/cm)	158.8	196.0	213.8	181.4	191.2	123.1	181.4
7	Total Dissolved Solids (mg/l)	96.8	119.6	130.4	110.7	116.6	75.1	110.7
8	Biological Oxygen Demand (mg/l)	1.23	1.09	1.56	0.97	1.24	0.98	1.98
9	Chemical Oxygen Demand (mg/l)	2.87	2.65	2.98	1.65	2.98	1.67	2.09
10	Total Coliform (MPN /100 ml)	1	2	1	1	1	1	A
11	Chloride (mg/l)	10	13	9	9.6	9.6	10	9
12	Total alkalinity (mg/l of CaCO ₃)	60	63	65	56.8	71	63	52
13	Nitrates (NO ₃) (mg/l)	0.016	0.08	0.17	0.18	0.026	0.029	0.015
14	Sulphate (mg/l)	5	3	4	5	9	7	3
15	Phosphate (PO ₄) (mg/l)	0.08	0.01	0.03	0.07	0.05	0.06	0.05
16	Total Hardness (mg/l)	56.09	58.10	55.25	51.36	63.93	58.09	46.79
17	Calcium hardness (mg/l)	47.5	50.75	47.25	44.5	55	49.75	41.75
18	Calcium ions (mg/ l)	19	20.3	18.9	17.8	22	19.9	16.7
19	Magnesium Hardness (mg/l)	8.59	7.35	8.00	6.86	8.93	8.34	5.04
20	Magnesium ions (mg/l)	4.56	4.87	4.54	4.27	5.28	4.78	4.01
21	Potassium (mg/l)	1.9	2.78	1.65	2.56	2.16	1.09	1.67
22	Sodium (mg/l)	1.9	1.67	1.98	1.82	2.45	2.07	1.76
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND

Sub basin- Siyom: I-III and Hirit

S.No.	Physical / Chemical Characteristics	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Water Temperature (°C)	8.5	8.3	8.7	9.4	7.8	7.6	8	7.6	8.1	7.9	7.5	7.2	7.2
2	Dissolved Oxygen (mg/l)	10.67	10.74	10.41	10.17	11.23	11.07	10.98	11.05	10.76	10.88	10.96	11.78	11.88
3	Turbidity (NTU)	0.08	0.1	0.1	0.2	0.11	0.12	0.09	0.09	0.1	0.04	0.01	0.05	0.11
4	Total Suspended Solids (mg/l)	10	15	14	29	15	18	12	11	13	7	3	7	16
5	pH	8.27	8.15	8.54	8.07	8.54	8.54	8.51	8.31	8.54	8.32	8.18	8.18	8.25
6	Electrical Conductivity (µS/cm)	54.4	104	107.2	81.6	97.6	107.2	113.6	107.2	139.2	36.8	89.6	86.4	76.8
7	Total Dissolved Solids (mg/l)	33.18	63.44	65.39	49.78	59.54	65.39	69.30	65.39	84.91	22.45	54.66	52.70	46.85
8	Biological Oxygen Demand (mg/l)	0.56	1.34	1.41	1.87	1.89	1.78	1.56	1.78	1.21	1.34	1.09	1.62	1.09
9	Chemical Oxygen Demand (mg/l)	2.09	3.23	2.87	3.45	3.87	2.73	3.45	3.98	2.56	2.89	1.61	3.28	2.98
10	Total Coliform (MPN /100 ml)	2	A	2	A	A	A	1	A	A	A	A	1	1
11	Chloride (mg/l)	11	9	10	13	15	9	11	13.2	10.5	10	12.89	9	13.4
12	Total alkalinity (mg/l of CaCO ₃)	58	63	69	65	76	58	65	62	63	71.08	79	60	70
13	Nitrates (NO ₃) (mg/l)	0.014	0.017	0.018	0.009	0.015	0.009	0.014	0.017	0.007	0.015	0.019	0.005	0.009
14	Sulphate (mg/l)	4	4.3	5	4.7	6	5	3	5	3	3	4	3	4
15	Phosphate (PO ₄) (mg/l)	0.005	0.004	0.001	0.001	0.004	0.005	0.005	0.006	0.005	0.008	0.009	0.009	0.004
16	Total Hardness (mg/l)	53.09	56.93	63.94	60.37	69.97	53.59	58.31	59.89	58.09	60.08	71.17	53.29	64.27
17	Calcium hardness (mg/l)	44.25	48	54.25	51.25	58	46.75	49	51	49.25	49.25	58.5	44	53.25
18	Calcium ions (mg/ l)	17.7	19.2	21.7	20.5	23.2	18.7	19.6	20.4	19.7	19.7	23.4	17.6	21.3
19	Magnesium Hardness (mg/l)	8.84	8.93	9.69	9.12	11.97	6.84	9.31	8.89	8.84	10.83	12.67	9.29	11.02
20	Magnesium ions (mg/l)	4.25	4.608	5.208	4.92	5.568	4.488	4.704	4.896	4.728	4.728	5.616	4.224	5.112
21	Potassium (mg/l)	1.31	1.09	1.76	1.78	1.31	1.76	1.76	1.56	1.21	1.34	1.65	1.07	1.02
22	Sodium (mg/l)	2.31	2.98	0.145	1.34	1.89	1.88	1.32	1.43	1.32	1.78	1.09	1.14	1.32
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub Basin: Yargyap Chhu

S.No.	Physical / Chemical Characteristics	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Water Temperature (°C)	6.5	6.7	6.8	7	7.2	6.8	7.6	7.2	6.4	5.4	5.9	5.5	5.4	5.4
2	Dissolved Oxygen (mg/l)	11.85	11.76	11.61	10.63	11.52	11.64	11.25	11.16	11.67	11.85	11.43	11.76	11.82	11.92
3	Turbidity (NTU)	0.02	0.01	0.03	0.04	0.01	0.01	0.02	0.04	0.05	0.01	0.01	0.02	0.03	0.03
4	Total Suspended Solids (mg/l)	5	2	6	8	2	3	5	7	9	2	2	4	6	7
5	pH	8.27	8.13	8.41	8.41	8.3	8.23	8.34	8.51	8.41	8.15	8.54	8.34	8.41	8.21
6	Electrical Conductivity (µS/cm)	104	179.2	184	193.6	179.2	184	158.4	121.6	184	214.4	97.6	184	107.2	91.2
7	Total Dissolved Solids (mg/l)	63.4	109.3	112.2	118.1	109.3	112.2	96.6	74.2	112.2	130.8	59.5	112.2	65.4	55.6
8	Biological Oxygen Demand (mg/l)	1.76	1.32	0.89	1.23	1.2	1.98	1.32	1.21	1.21	1.45	1.89	0.78	1.11	1.11
9	Chemical Oxygen Demand (mg/l)	3.32	3.45	2.81	2.61	2.9	2.87	2.45	1.78	2.45	3.98	3.87	1.98	3.78	3.78
10	Total Coliform (MPN / 100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	14.9	11	14.5	9.2	11.9	10.98	13.9	11.8	14	13.09	12.6	13	14.7	12.7
12	Total alkalinity (mg/l of CaCO ₃)	70	58	73	50	62	61	63	57	70	70	68	70	65	70
13	Nitrates (NO ₃) (mg/l)	0.19	0.04	0.07	0.18	0.17	0.17	0.09	0.07	0.05	0.06	0.05	0.07	0.03	0.01
14	Sulphate (mg/l)	5	5	6	3	4	3	5	3	4	5	6	6	5	6
15	Phosphate (PO ₄) (mg/l)	0.008	0.009	0.001	0.005	0.007	0.003	0.003	0.005	0.002	0.008	0.004	0.005	0.009	0.009
16	Total Hardness (mg/l)	66.49	53.59	68.64	47.53	58.77	57.48	59.93	53.78	65.08	66.32	62.40	63.43	63.83	67.71
17	Calcium hardness (mg/l)	55.75	44.75	57.45	40.5	52.5	49.5	51	46.75	54.25	56.25	51.25	54.5	53	56.5
18	Calcium ions (mg/ l)	22.3	17.9	22.98	16.2	21	19.8	20.4	18.7	21.7	22.5	20.5	21.8	21.2	22.6
19	Magnesium Hardness (mg/l)	10.74	8.84	11.19	7.03	6.27	7.98	8.93	7.03	10.83	10.07	11.15	8.93	10.83	11.21
20	Magnesium ions (mg/l)	5.35	4.30	5.52	3.89	5.04	4.75	4.90	4.49	5.21	5.40	4.92	5.23	5.09	5.42
21	Potassium (mg/l)	1.9	1.21	1.09	1.32	1.1	0.87	1.11	1.11	0.98	1.21	1.31	1.98	1.09	1.29
22	Sodium (mg/l)	0.92	1.76	1.32	1.11	1.5	1.23	1.67	1.54	1.21	1.09	1.89	2.67	0.98	0.18

23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Outside basin basin

S.No.	Physical / Chemical Characteristics	B1	B2
1	Water Temperature (°C)	11.3	11.8
2	Dissolved Oxygen (mg/l)	9.94	9.85
3	Turbidity (NTU)	0.022	0.021
4	Total Suspended Solids (mg/l)	25	24
5	pH	8.45	8.34
6	Electrical Conductivity (µS/cm)	199.47	162.87
7	Total Dissolved Solids (mg/l)	133.0	108.6
8	Biological Oxygen Demand (mg/l)	0.67	0.98
9	Chemical Oxygen Demand (mg/l)	1.98	1.67
10	Total Coliform (MPN /100 ml)	1	1
11	Chloride (mg/l)	12	9
12	Total alkalinity (mg/l of CaCO ₃)	62	55
13	Nitrates (NO ₃) (mg/l)	0.07	0.045
14	Sulphate (mg/l)	7	9
15	Phosphate (PO ₄) (mg/l)	0.001	0.009
16	Total Hardness (mg/l)	56.95	51.19
17	Calcium hardness (mg/l)	44.5	40.75
18	Calcium ions (mg/ l)	17.8	16.3
19	Magnesium Hardness (mg/l)	12.45	10.44
20	Magnesium ions (mg/l)	4.272	3.912
21	Potassium (mg/l)	1.29	1.34
22	Sodium (mg/l)	3.31	2.76
23	Iron (mg/l)	<0.01	<0.01
24	Manganese (mg/l)	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND
27	Copper (Cu) (mg/l)	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND
30	Lead (Pb) (mg/l)	ND	ND

Biological Parameters

Phytoplanktons

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1.	<i>Achnantheidium affinis</i>	+	+	+	-	+	+	+	+	-	+	+	+	+
2.	<i>Achnantheidium andicola</i>	+	-	-	+	+	+	+	-	+	-	-	-	+
3.	<i>Achnantheidium austriaca</i>	-	+	+	+	+	-	-	+	+	+	+	+	-
4.	<i>Achnantheidium austriaca</i> var. <i>helvetica</i>	+	-	-	-	-	+	+	+	+	-	+	-	+
5.	<i>Achnantheidium biasoletiana</i>	+	+	+	+	+	-	+	-	+	+	-	+	-
6.	<i>Achnantheidium conspicua</i>	-	+	+	-	+	+	+	+	-	-	-	-	+
7.	<i>Achnantheidium cranulata</i>	-	+	-	+	-	-	+	+	+	+	+	+	-
8.	<i>Achnantheidium dispar</i>	+	+	+	+	+	+	-	-	+	+	-	+	+
9.	<i>Achnantheidium exigua</i>	-	+	-	+	+	+	+	+	-	-	-	+	-
10.	<i>Achnantheidium exilis</i>	-	+	+	+	-	-	+	-	+	+	-	-	-
11.	<i>Achnantheidium fragilarioides</i>	+	+	+	-	+	+	+	+	-	+	+	-	+
12.	<i>Achnantheidium Grimmei</i>	-	+	-	+	+	+	+	+	+	-	-	+	+
13.	<i>Achnantheidium hauckiana</i>	+	+	+	+	+	+	+	-	-	-	+	-	-
14.	<i>Achnantheidium holsti</i>	-	+	+	-	+	-	-	-	-	+	+	+	+
15.	<i>Achnantheidium hungarica</i>	-	+	-	+	-	+	+	+	+	-	-	-	+
16.	<i>Achnantheidium kryophila</i>	-	-	+	-	+	+	+	-	-	-	+	+	-
17.	<i>Achnantheidium lanceolata</i>	-	+	-	+	-	+	-	-	+	+	-	+	-
18.	<i>Achnantheidium lapidosa</i>	+	+	+	+	+	+	+	+	-	-	-	+	+
19.	<i>Achnantheidium lavenderi</i>	-	+	-	+	+	+	-	+	+	+	+	-	-
20.	<i>Achnantheidium lemmermanni</i>	+	-	+	+	-	-	+	-	-	-	-	+	+

21.	<i>Achnanthidium Lilljeborgei</i>	-	+	+	+	+	-	+	+	+	-	+	+	+
22.	<i>Achnanthidium linearis</i>	+	+	+	+	-	+	-	-	+	+	-	-	+
23.	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	-	-	-	-	+	+	+	-	+	+	+	+
24.	<i>Achnanthidium microcephala</i>	+	+	+	+	+	+	+	+	+	-	-	-	+
25.	<i>Achnanthidium minutissima</i>	+	+	+	+	-	+	-	-	+	+	+	+	+
26.	<i>Achnanthidium nodosa</i>	-	+	+	-	-	-	+	-	-	+	-	+	-
27.	<i>Achnanthidium plonensis</i>	+	-	-	+	+	+	-	+	-	+	-	-	-
28.	<i>Achnanthidium saxonica</i>	-	+	+	+	+	-	+	-	-	-	+	+	+
29.	<i>Achnanthidium</i> sp.	+	+	+	+	+	+	-	+	+	+	-	+	-
30.	<i>Achnanthidium suchlandti</i>	+	+	-	-	+	-	+	-	-	-	+	-	+
31.	<i>Achnanthidium taeniata</i>	+	-	+	+	-	-	-	-	+	-	-	-	-
32.	<i>Achnanthidiumb conspicua</i>	+	+	-	-	+	+	+	-	-	+	+	-	-
33.	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	-	+	-	+	+	-	-	-	+	-	+	+
34.	<i>Anomoeneis</i> sp.	-	-	+	+	-	+	+	+	+	-	+	+	+
35.	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	+	+	+	+	-	-	-	-	+	-	-	+
36.	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	+	-	+	-	-	+	+	+	-	-	+	+
37.	<i>Cocconeis placentula</i>	-	-	+	+	+	+	-	-	-	+	-	-	-
38.	<i>Cymbella</i> sp.	-	+	-	-	-	+	+	+	+	-	+	+	+
39.	<i>Cymbella affinis</i>	+	+	+	+	-	-	-	+	-	-	-	-	+
40.	<i>Cymbella delicatula</i>	+	+	-	-	-	+	+	-	+	+	+	+	-
41.	<i>Cymbella laevis</i>	-	-	+	-	+	-	-	+	-	+	-	-	-
42.	<i>Cymbella microcephala</i>	-	+	+	+	-	+	+	-	+	-	-	-	-
43.	<i>Cymbella pusila</i>	-	+	-	-	-	+	-	+	+	-	-	+	+
44.	<i>Cymbella tumida</i>	+	-	+	+	+	+	+	+	+	+	-	+	-
45.	<i>Cymbella turgida</i>	-	+	-	+	-	+	-	+	+	+	+	+	-
46.	<i>Cymbella ventricosa</i>	+	+	+	-	+	-	+	-	-	-	-	-	-
47.	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	+	+	-	+	-	-	-	+	-	+	+

48.	<i>Diatoma anceps</i>	-	+	+	+	-	+	+	-	-	-	+	+	-
49.	<i>Diatoma hiemale</i>	+	-	-	-	+	-	-	+	+	+	+	-	+
50.	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	-	+	+	-	+	+	+	-	-	-	-
51.	<i>Diatoma vulgare</i>	+	+	+	-	-	+	-	-	-	-	-	+	+
52.	<i>Didymosphaenia geminata</i>	-	+	-	+	+	-	+	+	+	+	+	-	+
53.	<i>Eunotia linearis</i>	+	+	+	+	-	-	+	+	-	+	-	-	-
54.	<i>Eunotia</i> sp.	-	-	+	-	-	+	+	-	+	+	+	+	+
55.	<i>Fragilaria capucina</i>	+	+	-	+	-	-	-	+	-	-	-	+	-
56.	<i>Fragilaria construens</i>	-	+	-	+	-	-	+	-	+	+	-	-	-
57.	<i>Fragilaria inflata</i>	-	+	+	+	+	+	-	+	-	-	+	-	-
58.	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	+	+	-	+	+	+	-	-	+	+	+	+	-
59.	<i>Fragilaria rumpens</i>	-	+	-	-	-	-	+	-	-	-	+	-	+
60.	<i>Fragilaria</i> sp.	+	-	+	+	-	+	-	+	-	+	+	+	-
61.	<i>Fragilaria vaucheriae</i>	-	+	+	-	+	-	+	-	-	-	+	-	-
62.	<i>Fragilaria. capucina</i> var. <i>lanceolata</i>	-	+	-	+	-	+	-	+	-	+	+	+	+
63.	<i>Fragilaria. pinnata</i>	-	+	+	-	+	-	+	+	-	-	+	-	+
64.	<i>Gomphonema gracile</i>	+	+	-	+	-	-	-	+	+	-	+	+	-
65.	<i>Gomphonema helveticum</i>	-	-	+	-	+	-	+	+	-	+	+	-	+
66.	<i>Gomphonema intricatum</i>	-	+	-	+	-	+	+	+	+	-	+	+	-
67.	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-	+	+	+	+	+	-	-	+	+	-	-
68.	<i>Gomphonema olivaceoides</i>	-	+	+	+	-	+	-	+	+	+	+	+	+
69.	<i>Gomphonema olivaceum</i>	-	+	-	-	-	+	+	-	-	+	+	+	+
70.	<i>Gomphonema parvulum</i>	+	+	+	+	+	-	-	-	-	-	+	+	-
71.	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	-	+	+	-	+	+	-	+	-	-	+	-
72.	<i>Gomphonema bohemicum</i>	+	-	-	-	-	-	-	+	-	+	+	-	-
73.	<i>Gomphonema gracile</i>	+	+	+	+	-	+	+	+	-	-	-	+	-
74.	<i>Gomphonema helveticum</i>	-	+	-	-	+	-	+	+	+	+	+	-	+

75.	<i>Gomphonema herbidense</i>	+	-	-	-	+	+	+	-	+	+	-	-	-
76.	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	-	+	+	-	+	-	-	-	-	+	+	+
77.	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	+	+	-	-	-	+	+	+	+	-	-	-
78.	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	-	+	+	-	-	-	-	+	+	-	-
79.	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	+	-	+	-	-	-	-	+	+	+	-	-	-
80.	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	+	-	+	+	+	+	+	+	+	-	+	+
81.	<i>Gomphonema olivaceum</i>	-	-	+	+	-	+	+	-	+	-	+	-	-
82.	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	+	+	-	-	-	-	-	-	-	-	+	-
83.	<i>Gomphonema parvulum</i>	-	-	+	+	-	-	-	+	+	+	-	-	-
84.	<i>Gomphonema parvulum</i> var. <i>micropus</i>	+	+	-	-	+	+	-	+	-	-	+	-	-
85.	<i>Gomphonema parvulum</i>	-	-	+	+	+	-	+	-	-	-	+	+	-
86.	<i>Gomphonema intricatum</i>	-	-	-	-	+	-	-	-	+	+	+	+	+
87.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	+	+	-	+	-	+	-	+	-	+	-
88.	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	+	-	-	-	+	-	-	+	-	+
89.	<i>Hannaea arcus</i>	+	+	-	-	-	-	+	+	+	+	-	-	-
90.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	+	+	+	+	-	-	+	+	+	-	-
91.	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-	+	+	-	+	+	-	-	-	+	+	-
92.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	+	-	-	-	-	-	+	+	+	+	-	+
93.	<i>Melosira junergensii</i>	-	+	+	-	-	-	+	+	+	+	-	-	+
94.	<i>Navicula andium</i>	+	-	-	+	-	-	+	-	-	-	-	+	-
95.	<i>Navicula cryptocephala</i>	+	+	+	+	-	+	+	+	-	-	+	+	+
96.	<i>Navicula feverborni</i>	-	-	+	+	-	-	-	-	+	+	+	-	+
97.	<i>Navicula halophila</i>	+	-	+	-	-	+	+	-	-	-	-	+	+
98.	<i>Navicula radiosa</i>	-	+	+	-	+	-	-	-	-	+	-	-	-
99.	<i>Navicula radiosa</i> var. <i>tenella</i>	-	+	-	+	-	-	-	+	-	-	-	-	+
100.	<i>Pinnularia borealis</i>	-	+	-	-	-	-	-	-	-	-	+	+	+
101.	<i>Pinnularia molaris</i>	-	+	+	+	-	-	-	+	-	-	-	-	-

102.	<i>Pinnularia</i> sp.	+	-	+	-	-	-	+	-	-	+	+	+	-
103.	<i>Planothidium lanceolata</i>	-	+	+	-	+	-	-	+	-	-	+	+	-
104.	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	+	+	+	-	-	-	-	+	+	-	-	+
105.	<i>Reimeria sinuata</i>	-	+	-	-	-	-	+	-	-	-	-	+	-
106.	<i>Stauroneis</i> sp.	-	-	+	+	-	-	-	+	+	-	-	-	+
107.	<i>Surirella ovata</i>	-	+	+	-	+	-	+	+	-	-	+	+	-
108.	<i>Surirella</i> sp.	+	-	+	-	-	+	-	-	-	-	-	-	+
109.	<i>Synedra</i> sp.	-	+	-	+	-	-	-	+	+	+	-	+	+
110.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	+	-	-	-	-	+	-	+	+	-
111.	<i>Synedra amphirhynchus</i>	-	+	-	-	+	+	-	+	-	+	-	-	-
112.	<i>Synedra rumpens</i>	-	-	+	+	-	-	+	-	+	-	-	+	+
113.	<i>Synedra ulna</i>	-	-	-	+	-	-	-	-	+	-	-	-	-
114.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-	-	-	+	-	-	-	-	+	-	-	-
115.	<i>Tabellaria flocculosa</i>	-	+	+	-	-	+	+	+	+	-	-	+	+
116.	<i>Tetracyclus</i> sp.	-	+	-	+	-	-	-	-	-	+	+	+	+
	Total	51	76	69	72	50	62	62	59	55	59	57	61	55

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1.	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	+
2.	<i>Achnanthidium andicola</i>	+	-	+	+	-	-	+
3.	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	
4.	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>			+				+
5.	<i>Achnanthidium biasoletiana</i>		+		+	+	+	+
6.	<i>Achnanthidium conspicua</i>	+	-	-	+	+	-	+
7.	<i>Achnanthidium cranulata</i>	-	+	+	-	-	-	+
8.	<i>Achnanthidium dispar</i>	+	+	+	+	+	+	+
9.	<i>Achnanthidium exigua</i>	-	-	-	+	+	-	+
10.	<i>Achnanthidium exilis</i>	+	+	+	-	-	+	+
11.	<i>Achnanthidium fragilarioides</i>	-	+	+	-	-	-	+
12.	<i>Achnanthidium Grimmei</i>	+	+	+	+	+	+	+
13.	<i>Achnanthidium hauckiana</i>	+	-	+	-	+	+	+
14.	<i>Achnanthidium holsti</i>	+	+	+	+	+	-	-
15.	<i>Achnanthidium hungarica</i>	+	-	-	+	+	+	+
16.	<i>Achnanthidium kryophila</i>	-	+	+	-	-	+	-
17.	<i>Achnanthidium lanceolata</i>	+	-	-	+	+	-	+
18.	<i>Achnanthidium lapidosa</i>	-	+	+	-	-	+	-
19.	<i>Achnanthidium lavenderi</i>	+	+	-	+	-	-	+
20.	<i>Achnanthidium lemmermanni</i>	-	+	+	-	+	+	+
21.	<i>Achnanthidium Lilljeborgei</i>	+	+	+	-	+	+	+
22.	<i>Achnanthidium linearis</i>	+	+	+	+	-	-	-
23.	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	+	-	-	+	-	+
24.	<i>Achnanthidium microcephala</i>	+	+	-	+	+	+	+
25.	<i>Achnanthidium minutissima</i>	+	-	+	-	-	+	+
26.	<i>Achnanthidium nodosa</i>	-	+	-	+	+	-	-
27.	<i>Achnanthidium plonensis</i>	+	+	-	+	-	+	+
28.	<i>Achnanthidium saxonica</i>	-	-	+	-	-	-	-
29.	<i>Achnanthidium</i> sp.	+	+	-	+	-	-	-
30.	<i>Achnanthidium suchlandti</i>	+	-	-	-	-	+	-
31.	<i>Achnanthidium taeniata</i>	-	+	+	+	+	-	+
32.	<i>Achnanthidiumb conspicua</i>	+	-	+	+	-	-	-
33.	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	+	-	+	+	-	-
34.	<i>Anomoeneis</i> sp.	+	-	+	-	-	+	-

35.	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	-	-	+	-	+
36.	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	+	+	-	-	+	+
37.	<i>Cocconeis placentula</i>	+	-	-	+	+	+	-
38.	<i>Cymbella</i> sp.	-	+	+	-	-	-	-
39.	<i>Cymbella affinis</i>	+	+	-	+	+	-	+
40.	<i>Cymbella delicatula</i>	-	-	+	+	+	-	-
41.	<i>Cymbella laevis</i>	+	+	+	-	-	-	-
42.	<i>Cymbella microcephala</i>	-	-	-	-	+	+	+
43.	<i>Cymbella pusila</i>	+	+	+	+	-	+	+
44.	<i>Cymbella tumida</i>	-	+	-	-	-	-	-
45.	<i>Cymbella turgida</i>	+	-	-	+	-	+	+
46.	<i>Cymbella ventricosa</i>	-	-	+	-	+	+	-
47.	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	+	+	-	+	-	-
48.	<i>Diatoma anceps</i>	+	-	+	+	-	-	+
49.	<i>Diatoma hiemale</i>	-	+	-	-	+	-	+
50.	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	-	+	-	-	-
51.	<i>Diatoma vulgare</i>	+	+	-	-	+	-	+
52.	<i>Didymosphaenia geminata</i>	-	-	+	+	+	+	-
53.	<i>Eunotia linearis</i>	+	-	-	+	-	-	+
54.	<i>Eunotia</i> sp.	-	-	+	+	-	+	-
55.	<i>Fragilaria capucina</i>	-	+	-	+	+	-	-
56.	<i>Fragilaria construens</i>	+	+	-	-	+	-	-
57.	<i>Fragilaria inflata</i>	-	-	+	+	-	+	+
58.	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	+	+	-	+	-	+
59.	<i>Fragilaria rumpens</i>	+	+	-	+	+	-	+
60.	<i>Fragilaria</i> sp.	-	-	-	-	-	+	-
61.	<i>Fragilaria vaucheriae</i>	-	+	+	+	-	+	-
62.	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	+	+	+	-	-	-	+
63.	<i>Fragilaria pinnata</i>	-	+	-	+	+	+	-
64.	<i>Gomphonema gracile</i>	+	-	+	-	+	-	-
65.	<i>Gomphonema helveticum</i>	-	-	-	+	+	+	+
66.	<i>Gomphonema intricatum</i>	-	+	+	-	+	-	+
67.	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-	-	-	-	-	-
68.	<i>Gomphonema olivaceoides</i>	-	+	+	-	+	+	+
69.	<i>Gomphonema olivaceum</i>	-	+	-	-	+	-	-
70.	<i>Gomphonema parvulum</i>	-	-	-	+	-	+	-
71.	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	+	+	-	-	-
72.	<i>Gomphonema bohemicum</i>	+	-	-	-	+	+	-

73.	<i>Gomphonema gracile</i>	+	+	-	-	-	-	+
74.	<i>Gomphonema helveticum</i>	-	-	-	-	+	-	-
75.	<i>Gomphonema herbidense</i>	-	+	+	+	-	+	-
76.	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	-	-	-	+	-	+
77.	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	+	+	-	+	-	-	-
78.	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	+	-	+	+	-
79.	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	+	-	-	+	-	+
80.	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	+	+
81.	<i>Gomphonema olivaceum</i>	-	+	+	+	+	-	+
82.	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-	+	-	-	-	-
83.	<i>Gomphonema parvulum</i>	-	-	-	-	+	+	+
84.	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	+	+	+	-	-	+
85.	<i>Gomphonema sphaerophorum</i>	-	+	-	-	-	-	-
86.	<i>Gomphonema. intricatum</i>	+	-	-	-	+	-	-
87.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	+	+	-	+	-
88.	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	+	-	-	-	+
89.	<i>Hannaea arcus</i>	-	+	-	+	-	+	+
90.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
91.	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	-	+	+	-	-
92.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	+	-	+	-
93.	<i>Melosira junergensii</i>	+	-	-	-	+	+	-
94.	<i>Navicula cryptocephala</i>	+	-	+	-	+	-	+
95.	<i>Navicula feverborni</i>	-	+	+	-	+	-	+
96.	<i>Navicula halophila</i>	-	+	-	+	-	-	+
97.	<i>Navicula radiosa</i>	+	-	+	-	-	+	-
98.	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	+	+	-	+
99.	<i>Pinnularia borealis</i>	-	+	+	-	-	+	+
100.	<i>Pinnularia molaris</i>	-	+	-	-	+	-	-
101.	<i>Pinnularia</i> sp.	-	+	-	+	-	-	+
102.	<i>Planothidium lanceolata</i>	+	-	-	-	-	-	+
103.	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	+	-	+	+	-
104.	<i>Reimeria sinuata</i>	+	+	+	+	-	-	+
105.	<i>Stauroneis</i> sp.	+	-	-	-	-	+	-
106.	<i>Surirella ovata</i>	-	+	+	-	+	-	+
107.	<i>Surirella</i> sp.	-	+	-	-	-	-	-
108.	<i>Synedra</i> sp.	-	-	+	-	-	+	-
109.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-	-	-	-	-	+
110.	<i>Synedra amphirhynchus</i>	-	+	+	+	+	+	-

111.	<i>Synedra rumpens</i>	-	-	-	-	-	+	+
112.	<i>Synedra ulna</i>	+	-	-	-	-	-	+
113.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	+	-	+	+	-
114.	<i>Tabellaria flocculosa</i>	-	+	-	-	-	-	+
115.	<i>Tetracyclus</i> sp.	-	-	+	+	-	-	-
	Total	50	63	59	53	56	50	61

Sub Basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1.	<i>Achnanthidium affinis</i>	+	+	+	-	+	+	-	+	+	+	+	+	+
2.	<i>Achnanthidium andicola</i>	-	+	+	+	+	+	-	+	-	+	-	-	-
3.	<i>Achnanthidium austriaca</i>	+	+	+	+	-	+	+	+	-	+	+	+	+
4.	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	+	+	+	+	+	-	-	+	+	-	-	-
5.	<i>Achnanthidium biasoletiana</i>	-	+	-	+	+	+	+	-	+	-	+	-	+
6.	<i>Achnanthidium conspicua</i>	-	+	+	-	+	-	-	+	-	+	-	+	-
7.	<i>Achnanthidium cranulata</i>	+	-	+	+	-	+	+	+	+	-	+	+	+
8.	<i>Achnanthidium dispar</i>	-	+	-	+	+	-	+	-	-	+	-	-	+
9.	<i>Achnanthidium exigua</i>	-	+	+	+	+	-	+	-	+	-	+	+	-
10.	<i>Achnanthidium exilis</i>	+	+	+	+	+	+	+	+	+	-	+	-	+
11.	<i>Achnanthidium fragilarioides</i>	-	+	+	+	+	+	+	-	-	+	-	-	-
12.	<i>Achnanthidium Grimmei</i>	+	+	+	+	+	+	-	-	+	-	+	+	+
13.	<i>Achnanthidium hauckiana</i>	-	-	-	+	-	-	-	+	-	+	+	+	+
14.	<i>Achnanthidium holsti</i>	+	+	+	-	+	+	+	-	+	+	+	-	-
15.	<i>Achnanthidium hungarica</i>	-	-	-	-	+	+	-	+	-	+	-	-	-
16.	<i>Achnanthidium kryophila</i>	-	+	+	+	+	-	-	+	-	+	+	+	+
17.	<i>Achnanthidium lanceolata</i>	-	+	+	-	+	-	-	-	+	-	-	+	-
18.	<i>Achnanthidium lapidosa</i>	-	-	-	+	+	+	+	+	+	+	-	-	+
19.	<i>Achnanthidium lavenderi</i>	+	+	+	-	+	+	-	-	-	-	+	+	-
20.	<i>Achnanthidium lemmermanni</i>	-	+	-	-	-	-	+	-	-	+	-	-	-
21.	<i>Achnanthidium Lilljeborgei</i>	+	-	+	+	+	-	+	+	+	+	-	-	+
22.	<i>Achnanthidium linearis</i>	-	-	+	-	+	+	+	+	-	-	+	+	+
23.	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	+	-	+	+	+	-	-	+	+	+	+	+
24.	<i>Achnanthidium microcephala</i>	+	+	-	+	+	-	+	-	+	+	+	-	+
25.	<i>Achnanthidium minutissima</i>	-	-	+	+	-	+	-	+	-	-	+	-	+

26.	<i>Achnantheidium nodosa</i>	-	+	-	-	+	+	-	-	+	+	+	+	+
27.	<i>Achnantheidium plonensis</i>	-	+	-	+	+	-	+	+	-	-	+	-	-
28.	<i>Achnantheidium saxonica</i>	+	-	+	-	-	+	-	-	-	+	+	-	+
29.	<i>Achnantheidium sp.</i>	-	+	+	-	-	-	+	+	+	+	+	+	-
30.	<i>Achnantheidium suchlandti</i>	-	-	-	+	-	-	-	-	-	+	-	-	+
31.	<i>Achnantheidium taeniata</i>	-	+	+	+	+	+	+	+	+	+	+	+	-
32.	<i>Achnantheidiumb conspicua</i>	+	+	-	-	+	+	-	-	+	-	-	+	+
33.	<i>Achnantheidiumlinearis var. pusila</i>	-	+	+	-	+	-	+	+	-	+	-	-	+
34.	<i>Anomoeneis sp.</i>	-	-	-	+	-	+	+	-	+	-	+	-	-
35.	<i>Cocconeis placentula var. euglypta</i>	-	+	+	-	+	-	-	+	-	-	-	-	+
36.	<i>Cocconeis placentula var. lineata</i>	+	-	-	+	+	+	+	-	+	+	+	+	+
37.	<i>Cocconeis placentula</i>	-	+	+	-	-	-	-	+	-	+	-	+	+
38.	<i>Cymbella sp.</i>	-	+	+	-	+	-	+	-	+	+	-	-	-
39.	<i>Cymbella affinis</i>	-	-	-	+	-	-	+	+	-	-	+	+	-
40.	<i>Cymbella delicatula</i>	+	+	+	-	+	-	+	-	-	-	-	-	+
41.	<i>Cymbella laevis</i>	+	+	-	+	+	-	-	-	-	-	+	+	+
42.	<i>Cymbella microcephala</i>	-	-	+	+	+	+	+	+	-	+	-	+	-
43.	<i>Cymbella pusila</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
44.	<i>Cymbella tumida</i>	-	+	+	+	+	+	-	+	+	+	-	-	+
45.	<i>Cymbella turgida</i>	-	-	-	-	-	-	+	-	+	+	+	+	-
46.	<i>Cymbella ventricosa</i>	-	+	+	+	-	+	+	-	-	-	-	-	+
47.	<i>Diatoma hiemale var. mesodon</i>	+	-	-	-	+	-	-	-	+	-	-	+	+
48.	<i>Diatoma anceps</i>	-	-	-	+	-	-	-	+	-	-	+	+	+
49.	<i>Diatoma hiemale</i>	-	+	+	-	+	+	-	+	-	-	-	-	-
50.	<i>Diatoma hiemale var. mesodon</i>	-	+	-	-	-	-	-	-	-	+	-	-	+
51.	<i>Diatoma vulgare</i>	-	-	-	-	-	-	+	+	-	+	-	-	-
52.	<i>Didymosphaenia geminata</i>	+	+	+	+	+	-	-	-	+	-	+	+	-
53.	<i>Eunotia linearis</i>	-	-	-	-	+	+	+	+	-	+	-	-	+
54.	<i>Eunotia sp.</i>	+	-	-	+	-	-	-	+	+	-	-	+	-

55.	<i>Fragilaria capucina</i>	-	+	+	-	+	+	+	-	-	-	+	-	-
56.	<i>Fragilaria construens</i>	-	+	-	-	-	-	+	+	-	-	-	-	+
57.	<i>Fragilaria inflata</i>	+	-	+	+	-	-	-	+	+	+	+	-	+
58.	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	+	+	-	+	+	+	-	-	-	-	+	+	+
59.	<i>Fragilaria rumpens</i>	-	-	+	-	+	-	-	+	-	+	-	-	-
60.	<i>Fragilaria</i> sp.	-	+	+	-	-	-	-	+	-	-	-	-	-
61.	<i>Fragilaria vaucheriae</i>	+	-	-	+	+	+	+	-	+	+	+	+	-
62.	<i>Fragilaria. capucina</i> var. <i>lanceolata</i>	+	+	-	+	+	-	-	+	-	-	+	+	-
63.	<i>Fragilaria. pinnata</i>	-	+	+	-	-	-	+	-	-	-	-	-	+
64.	<i>Gomphonema gracile</i>	+	+	-	+	-	-	-	+	-	+	-	+	-
65.	<i>Gomphonema helveticum</i>	+	-	+	+	+	-	+	-	+	+	+	-	-
66.	<i>Gomphonema intricatum</i>	-	+	-	+	-	+	-	+	+	-	-	-	-
67.	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-	+	+	+	-	+	+	-	+	+	+	+
68.	<i>Gomphonema olivaceoides</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
69.	<i>Gomphonema olivaceum</i>	-	+	+	-	+	+	-	-	+	+	-	-	-
70.	<i>Gomphonema parvulum</i>	-	-	-	+	+	+	+	+	-	+	+	-	+
71.	<i>Gomphonema parvulum</i> var.	+	+	+	+	-	-	-	-	-	-	+	-	-
72.	<i>Gomphonema bohemicum</i>	-	-	-	+	+	-	+	+	+	+	-	-	+
73.	<i>Gomphonema gracile</i>	-	+	+	+	-	+	-	+	+	-	+	+	-
74.	<i>Gomphonema helveticum</i>	+	-	+	-	-	+	-	-	-	+	-	-	-
75.	<i>Gomphonema herbidense</i>	+	-	-	+	+	-	+	+	-	-	+	+	-
76.	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	-	+	-	-	-	+	-	+	+	-	+	+
77.	<i>Gomphonema intricatum</i> var.	-	-	-	-	+	+	+	-	-	-	-	+	-
78.	<i>Gomphonema intricatum</i> var. <i>pusila</i>	+	+	-	+	+	-	-	-	+	+	+	-	+
79.	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	+	-	+	+	+	-	-	+	-	-
80.	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	+	-	-	-	+	-	-	+	-	+	-
81.	<i>Gomphonema olivaceum</i>	+	-	-	+	+	-	+	+	+	+	-	-	-
82.	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+	+	+	+	-	-	+	-	+	+	+	-
83.	<i>Gomphonema parvulum</i>	-	-	-	+	-	+	-	-	-	-	+	-	-

84.	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	+	-	+	-	+	-	+	+	-	+	+
85.	<i>Gomphonema sphaerophorum</i>	+	-	-	-	-	-	-	-	-	-	+	+	+
86.	<i>Gomphonema. intricatum</i>	+	+	+	+	-	+	+	+	+	+	+	-	-
87.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	-	-	+	-	-	-	-	-	+	-	-
88.	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-	-	-	+	+	+	-	-	+	-	-	-
89.	<i>Hannaea arcus</i>	-	-	+	-	-	-	+	-	+	-	-	+	+
90.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	+	+	-	-	-	+	-	-	+	-	+
91.	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-	+	+	+	+	+	-	-	-	+	+	-
92.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	+	+	-	-	-	-	-	+	+	-	-	-
93.	<i>Melosira junergensii</i>	+	-	-	+	+	+	-	-	-	-	-	+	-
94.	<i>Navicula andium</i>	-	-	+	-	+	-	-	+	+	-	+	-	+
95.	<i>Navicula cryptocephala</i>	+	-	+	-	-	+	-	+	+	-	+	+	-
96.	<i>Navicula feverborni</i>	+	+	+	+	+	-	+	+	-	-	-	+	-
97.	<i>Navicula halophila</i>	-	-	-	-	-	-	+	+	-	-	-	-	+
98.	<i>Navicula radiosa</i>	+	+	+	-	+	-	-	+	+	+	+	-	+
99.	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	+	+	+	-	+	+	+	-	-	+	-
100.	<i>Pinnularia borealis</i>	-	-	+	+	-	+	-	-	-	-	-	-	+
101.	<i>Pinnularia molaris</i>	+	-	-	-	+	-	+	+	-	-	-	-	-
102.	<i>Pinnularia</i> sp.	-	+	+	-	-	-	-	-	+	+	+	-	-
103.	<i>Planothidium lanceolata</i>	+	+	+	-	+	-	-	+	-	-	+	-	-
104.	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	+	-	-	+	+	+	-	+	+	+	+	-	-
105.	<i>Reimeria sinuata</i>	-	-	+	+	-	-	+	+	-	-	+	-	+
106.	<i>Stauroneis</i> sp.	-	+	-	-	+	-	-	-	+	-	-	+	-
107.	<i>Surirella ovata</i>	+	+	+	+	-	-	-	+	+	+	-	-	+
108.	<i>Surirella</i> sp.	+	-	+	-	+	-	+	-	+	-	+	-	-
109.	<i>Synedra</i> sp.	-	+	-	+	-	-	+	+	-	+	+	+	-
110.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-	-	-	+	+	-	+	+	-	-	+	-
111.	<i>Synedra amphirhynchus</i>	+	+	+	-	+	+	+	+	+	+	+	-	+
112.	<i>Synedra rumpens</i>	+	-	-	+	-	-	+	-	+	-	-	-	-

113.	<i>Synedra ulna</i>	-	-	+	+	+	+	-	-	-	-	+	-	+
114.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+	-	-	-	-	+	+	+	-	-	-	-
115.	<i>Tabellaria flocculosa</i>	+	-	+	+	-	-	-	+	-	+	-	-	-
116.	<i>Tetracyclus</i> sp.	+	-	+	-	-	-	-	+	-	+	+	-	-
	Total	51	62	65	62	68	48	56	61	52	58	59	48	52

Sub basin: Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1.	<i>Achnanthidium affinis</i>	+	+	+	-	+	+	+	+	+	+	+	+	+	+
2.	<i>Achnanthidium andicola</i>	-	+	-	+	+	+	-	+	-	+	+	-	-	+
3.	<i>Achnanthidium austriaca</i>	+	+	+	+	+	-	+	+	+	-	-	+	+	-
4.	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	+	-	+	+	-	+	-	+	-	-	+	-	+
5.	<i>Achnanthidium biasoletiana</i>	+	+	+	-	+	+	+	+	+	-	+	-	+	+
6.	<i>Achnanthidium conspicua</i>	-	+	-	-	-	+	+	-	-	+	+	+	-	+
7.	<i>Achnanthidium cranulata</i>	+	-	+	-	+	-	+	+	+	-	-	+	+	-
8.	<i>Achnanthidium dispar</i>	+	+	-	+	+	-	+	+	+	-	+	+	-	+
9.	<i>Achnanthidium exigua</i>	-	+	-	-	-	+	+	+	+	+	+	-	-	-
10.	<i>Achnanthidium exilis</i>	+	+	+	+	+	+	-	+	-	+	+	-	+	+
11.	<i>Achnanthidium fragilarioides</i>	+	-	+	+	+	-	-	-	+	-	+	+	+	+
12.	<i>Achnanthidium Grimmei</i>	-	+	+	+	-	+	+	-	+	+	+	-	-	+
13.	<i>Achnanthidium hauckiana</i>	+	+	+	-	+	-	-	+	+	+	-	-	+	+
14.	<i>Achnanthidium holsti</i>	+	+	+	+	-	+	+	-	-	-	+	+	-	-
15.	<i>Achnanthidium hungarica</i>	+	-	-	-	+	-	+	-	+	-	-	+	+	-
16.	<i>Achnanthidium kryophila</i>	-	+	+	+	+	-	+	+	+	+	+	+	-	+
17.	<i>Achnanthidium lanceolata</i>	+	-	-	-	-	+	+	+	-	-	-	-	+	-
18.	<i>Achnanthidium lapidosa</i>	-	+	-	-	+	+	-	-	-	-	+	-	+	+
19.	<i>Achnanthidium lavenderi</i>	+	+	+	-	+	-	+	-	+	+	+	+	-	-
20.	<i>Achnanthidium lemmermanni</i>	+	+	-	+	+	-	-	+	+	-	-	+	-	+
21.	<i>Achnanthidium Lillijeborgei</i>	-	+	-	+	+	+	+	+	+	+	+	-	+	-
22.	<i>Achnanthidium linearis</i>	+	+	+	-	+	+	+	+	+	-	-	+	-	+
23.	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	+	+	+	-	-	+	+	+	+	+	+	-	+
24.	<i>Achnanthidium microcephala</i>	+	+	-	-	+	+	+	+	-	-	+	-	+	-

25.	<i>Achnanthidium minutissima</i>	+	-	+	-	+	-	-	+	+	+	-	-	+	-
26.	<i>Achnanthidium nodosa</i>	-	+	-	-	-	+	-	-	-	-	-	-	-	-
27.	<i>Achnanthidium plonensis</i>	-	-	+	+	-	-	-	+	-	-	+	+	-	+
28.	<i>Achnanthidium saxonica</i>	+	-	-	-	+	+	+	-	+	-	+	+	-	+
29.	<i>Achnanthidium</i> sp.	-	-	-	-	-	-	+	-	+	-	-	-	+	+
30.	<i>Achnanthidium suchlandti</i>	-	+	+	+	+	+	-	-	-	+	+	-	-	-
31.	<i>Achnanthidium taeniata</i>	-	-	+	+	-	-	+	-	+	+	-	+	-	-
32.	<i>Achnanthidiumb conspicua</i>	+	+	-	-	+	-	+	+	-	-	+	-	-	+
33.	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	+	+	+	+	-	+	-	-	+	+	-	+	-	+
34.	<i>Anomoeneis</i> sp.	-	-	-	-	+	-	+	-	+	-	+	-	+	-
35.	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	+	+	-	+	+	+	-	+	-	+	+	+
36.	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	+	-	+	+	+	-	+	-	-	-	-	-	-
37.	<i>Cocconeis placentula</i>	+	+	+	+	+	+	+	-	+	+	+	+	-	+
38.	<i>Cymbella</i> sp.	-	-	+	-	+	-	+	-	-	+	-	+	+	-
39.	<i>Cymbella affinis</i>	-	+	-	-	-	-	+	-	+	+	-	+	-	-
40.	<i>Cymbella delicatula</i>	+	-	+	-	+	+	-	+	+	+	-	+	-	+
41.	<i>Cymbella laevis</i>	+	+	-	-	-	-	+	+	-	+	+	-	+	+
42.	<i>Cymbella microcephala</i>	-	-	+	-	-	+	-	-	-	-	-	+	-	+
43.	<i>Cymbella pusila</i>	+	+	+	+	-	+	+	+	+	-	+	-	-	+
44.	<i>Cymbella tumida</i>	-	+	-	-	+	+	-	-	-	-	+	+	-	-
45.	<i>Cymbella turgida</i>	+	-	+	+	-	-	+	-	+	+	-	+	-	+
46.	<i>Cymbella ventricosa</i>	+	+	+	+	-	+	-	+	-	-	+	+	-	+
47.	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	+	-	+	-	-	-	-	-
48.	<i>Diatoma anceps</i>	-	+	-	-	+	+	-	+	-	+	-	+	-	-
49.	<i>Diatoma hiemale</i>	+	-	+	+	-	+	+	+	+	-	-	+	+	+
50.	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	+	+	+	+	+	+	+	-	-	-	+
51.	<i>Diatoma vulgare</i>	-	+	-	-	+	-	+	-	+	+	+	-	-	-

52.	<i>Didymosphaenia geminata</i>	-	-	+	+	-	-	-	+	-	-	+	+	-	+
53.	<i>Eunotia linearis</i>	+	+	-	-	+	+	+	+	+	+	+	-	+	+
54.	<i>Eunotia</i> sp.	-	+	-	-	-	-	-	-	-	-	-	-	+	+
55.	<i>Fragilaria capucina</i>	-	-	+	-	+	-	+	-	-	+	-	-	-	-
56.	<i>Fragilaria construens</i>	+	-	-	+	+	+	+	-	+	-	+	+	-	-
57.	<i>Fragilaria inflata</i>	+	-	-	-	+	-	-	-	-	-	+	+	-	+
58.	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	+	-	+	-	-	+	-	+	-	-	-	-	-
59.	<i>Fragilaria rumpens</i>	+	-	+	-	-	-	+	-	+	+	+	+	+	-
60.	<i>Fragilaria</i> sp.	+	+	-	+	-	+	-	-	-	-	-	+	+	+
61.	<i>Fragilaria vaucheriae</i>	-	-	+	-	+	-	-	+	+	+	-	-	-	+
62.	<i>Fragilaria. capucina</i> var. <i>lanceolata</i>	+	+	-	-	-	-	+	+	-	-	-	-	+	-
63.	<i>Fragilaria. pinnata</i>	+	-	-	+	-	-	+	-	+	-	+	+	-	-
64.	<i>Gomphonema gracile</i>	+	-	+	-	+	+	-	-	+	+	-	+	-	+
65.	<i>Gomphonema helveticum</i>	-	-	-	+	+	-	+	+	+	-	+	-	+	-
66.	<i>Gomphonema intricatum</i>	-	-	+	+	-	-	+	-	+	-	-	+	-	+
67.	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	+	+	+	+	-	+	+	-	+	+	-	+	-
68.	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	+	-	-	+	+	-	-	-	+
69.	<i>Gomphonema olivaceum</i>	+	-	-	+	+	-	-	+	-	-	-	+	+	-
70.	<i>Gomphonema parvulum</i>	+	+	+	+	-	+	-	-	-	+	-	-	+	+
71.	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	-	-	+	-	+	-	+	-	+	+	+	+
72.	<i>Gomphonema bohemicum</i>	+	-	+	-	-	+	-	-	+	+	-	+	+	-
73.	<i>Gomphonema gracile</i>	-	-	-	+	-	+	+	+	-	+	+	+	-	+
74.	<i>Gomphonema helveticum</i>	-	+	-	+	-	-	+	-	-	+	-	-	-	-
75.	<i>Gomphonema herbidense</i>	+	-	-	-	+	+	-	+	+	+	-	-	+	-
76.	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	+	-	-	+	-	+	-	+	-	-	+	+	+
77.	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	+	+	+	+	-	-	-	+	+	+	+	+	-	-

78.	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	-	-	+	+	+	-	+	-	-	-	-	-
79.	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	+	+	-	-	+	-	-	-	-	+	-	-	+	-
80.	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	+	+	+	+	+	+
81.	<i>Gomphonema olivaceum</i>	+	+	+	-	-	-	-	-	+	+	+	+	-	-
82.	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-	+	-	+	-	-	-	+	-	-	-	-	+
83.	<i>Gomphonema parvulum</i>	-	+	-	-	+	+	+	+	-	+	+	+	+	-
84.	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-	-	-	+	-	-	+	-
85.	<i>Gomphonema sphaerophorum</i>	+	-	-	+	-	-	+	+	+	-	-	-	-	-
86.	<i>Gomphonema. intricatum</i>	-	+	-	-	+	+	+	+	-	+	+	+	+	+
87.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	-	+	-	-	-	-	-	-	+	-	+
88.	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	+	+	-	+	-	+	+	+	-	+	-	-
89.	<i>Hannaea arcus</i>	-	+	-	+	+	-	-	+	-	-	+	+	-	+
90.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	+	-	-	+	+	-	+	-	-	-	+	-
91.	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	+	+	-	+	-	-	-	+	-	+	-
92.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	+	-	-	+	-	+	-	+	+	-	-	-
93.	<i>Melosira junergensii</i>	-	-	+	-	+	-	+	+	+	+	+	+	+	-
94.	<i>Navicula andium</i>	-	-	-	+	+	-	-	-	+	-	-	-	-	+
95.	<i>Navicula cryptocephala</i>	+	+	+	-	+	+	+	+	-	-	-	+	+	-
96.	<i>Navicula feverborni</i>	+	-	-	+	+	-	-	-	+	+	+	-	-	+
97.	<i>Navicula halophila</i>	-	+	+	-	-	-	+	+	-	-	-	+	-	-
98.	<i>Navicula radiosa</i>	-	+	+	+	+	-	+	-	+	+	-	-	-	+
99.	<i>Navicula radiosa</i> var. <i>tenella</i>	+	+	-	-	+	-	-	-	+	-	-	-	+	-
100.	<i>Pinnularia borealis</i>	+	-	-	-	+	+	+	-	+	-	-	+	-	-
101.	<i>Pinnularia molaris</i>	-	+	+	-	-	-	+	+	+	-	-	-	+	+
102.	<i>Pinnularia</i> sp.	+	+	-	-	-	-	-	-	+	-	-	+	-	-
103.	<i>Planothidium lanceolata</i>	-	+	+	+	+	+	-	-	+	+	-	-	-	+
104.	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	+	-	+	-	+	-	-	-	+	+	-	-

105.	<i>Reimeria sinuata</i>	+	+	-	+	+	-	+	+	+	+	-	-	+	+
106.	<i>Stauroneis</i> sp.	-	+	+	-	+	+	-	+	+	-	-	+	+	-
107.	<i>Surirella ovata</i>	-	-	-	-	-	-	+	-	+	+	+	-	-	+
108.	<i>Surirella</i> sp.	+	+	-	+	+	-	-	-	-	+	-	-	+	-
109.	<i>Synedra</i> sp.	-	+	-	-	+	+	+	+	-	-	-	+	-	-
110.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+	+	+	-	-	-	-	-	+	+	-	-	+
111.	<i>Synedra amphirhynchus</i>	-	-	-	-	+	-	+	+	+	-	-	-	-	-
112.	<i>Synedra rumpens</i>	+	+	+	+	-	+	+	-	-	+	-	-	+	+
113.	<i>Synedra ulna</i>	-	-	-	-	+	-	-	-	+	-	-	+	-	+
114.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+	+	-	+	-	-	-	-	-	-	+	+	-
115.	<i>Tabellaria flocculosa</i>	-	-	-	-	-	+	-	+	+	+	-	-	-	-
116.	<i>Tetracyclus</i> sp.	+	+	-	+	+	-	-	-	-	-	-	+	-	+
	Total	56	66	54	51	68	50	66	53	69	56	50	61	48	59

Outside basin basin

S.No.	Name of species	B1	B2
1.	<i>Achnanthidium affinis</i>	+	+
2.	<i>Achnanthidium andicola</i>	+	-
3.	<i>Achnanthidium austriaca</i>	+	+
4.	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-
5.	<i>Achnanthidium biasoletiana</i>	+	+
6.	<i>Achnanthidium conspicua</i>	-	-
7.	<i>Achnanthidium cranulata</i>	+	+
8.	<i>Achnanthidium dispar</i>	+	-
9.	<i>Achnanthidium exigua</i>	+	+
10.	<i>Achnanthidium exilis</i>	+	-
11.	<i>Achnanthidium fragilarioides</i>	-	+
12.	<i>Achnanthidium Grimmei</i>	-	+
13.	<i>Achnanthidium hauckiana</i>	+	+
14.	<i>Achnanthidium holsti</i>	-	-
15.	<i>Achnanthidium hungarica</i>	-	-
16.	<i>Achnanthidium kryophila</i>	+	+
17.	<i>Achnanthidium lanceolata</i>	+	-
18.	<i>Achnanthidium lapidosa</i>	-	-
19.	<i>Achnanthidium lavenderi</i>	-	+
20.	<i>Achnanthidium lemmermanni</i>	+	+
21.	<i>Achnanthidium Lilljeborgei</i>	+	-
22.	<i>Achnanthidium linearis</i>	+	+
23.	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	+
24.	<i>Achnanthidium microcephala</i>	+	-
25.	<i>Achnanthidium minutissima</i>	+	+
26.	<i>Achnanthidium nodosa</i>	-	-
27.	<i>Achnanthidium plonensis</i>	+	-
28.	<i>Achnanthidium saxonica</i>	-	+
29.	<i>Achnanthidium</i> sp.	-	+
30.	<i>Achnanthidium suchlandti</i>	-	-
31.	<i>Achnanthidium taeniata</i>	-	+
32.	<i>Achnanthidiumb conspicua</i>	+	-
33.	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	+
34.	<i>Anomoeneis</i> sp.	-	+

35.	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	-
36.	<i>Cocconeis placentula</i> var. <i>lineata</i>	+	-
37.	<i>Cocconeis placentula</i>	-	+
38.	<i>Cymbella</i> sp.	-	-
39.	<i>Cymbella affinis</i>	-	+
40.	<i>Cymbella delicatula</i>	+	+
41.	<i>Cymbella laevis</i>	+	-
42.	<i>Cymbella microcephala</i>	-	-
43.	<i>Cymbella pusila</i>	+	+
44.	<i>Cymbella tumida</i>	-	-
45.	<i>Cymbella turgida</i>	-	+
46.	<i>Cymbella ventricosa</i>	+	-
47.	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+
48.	<i>Diatoma anceps</i>	+	-
49.	<i>Diatoma hiemale</i>	+	+
50.	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	+
51.	<i>Diatoma vulgare</i>	-	+
52.	<i>Didymosphaenia geminata</i>	+	-
53.	<i>Eunotia linearis</i>	+	+
54.	<i>Eunotia</i> sp.	-	-
55.	<i>Fragilaria capucina</i>	-	-
56.	<i>Fragilaria construens</i>	-	+
57.	<i>Fragilaria inflata</i>	-	-
58.	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	+
59.	<i>Fragilaria rumpens</i>	-	+
60.	<i>Fragilaria</i> sp.	-	-
61.	<i>Fragilaria vaucheriae</i>	+	+
62.	<i>Fragilaria. capucina</i> var. <i>lanceolata</i>	+	-
63.	<i>Fragilaria. pinnata</i>	-	+
64.	<i>Gomphonema gracile</i>	-	+
65.	<i>Gomphonema helveticum</i>	+	+
66.	<i>Gomphonema intricatum</i>	-	+
67.	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-
68.	<i>Gomphonema olivaceoides</i>	-	+
69.	<i>Gomphonema olivaceum</i>	+	-
70.	<i>Gomphonema parvulum</i>	+	-
71.	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+
72.	<i>Gomphonema bohemicum</i>	+	+

73.	<i>Gomphonema gracile</i>	+	-
74.	<i>Gomphonema helveticum</i>	-	-
75.	<i>Gomphonema herbidense</i>	+	+
76.	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-
77.	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	+	+
78.	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	+
79.	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-
80.	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-
81.	<i>Gomphonema olivaceum</i>	-	+
82.	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-
83.	<i>Gomphonema parvulum</i>	+	-
84.	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-
85.	<i>Gomphonema sphaerophorum</i>	+	+
86.	<i>Gomphonema. intricatum</i>	+	-
87.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
88.	<i>Hannaea arcus</i> var. <i>linearis</i>	+	+
89.	<i>Hannaea arcus</i>	+	-
90.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+
91.	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
92.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-
93.	<i>Melosira junergensii</i>	+	+
94.	<i>Navicula andium</i>	-	+
95.	<i>Navicula cryptocephala</i>	+	-
96.	<i>Navicula feverborni</i>	-	+
97.	<i>Navicula halophila</i>	+	-
98.	<i>Navicula radiosa</i>	-	+
99.	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-
100.	<i>Pinnularia borealis</i>	+	+
101.	<i>Pinnularia molaris</i>	+	+
102.	<i>Pinnularia</i> sp.	-	+
103.	<i>Planothidium lanceolata</i>	-	+
104.	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-
105.	<i>Reimeria sinuata</i>	+	-
106.	<i>Stauroneis</i> sp.	+	+
107.	<i>Surirella ovata</i>	-	+
108.	<i>Surirella</i> sp.	-	-
109.	<i>Synedra</i> sp.	-	-
110.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-

111.	<i>Synedra amphirhynchus</i>	-	+
112.	<i>Synedra rumpens</i>	-	-
113.	<i>Synedra ulna</i>	-	-
114.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-
115.	<i>Tabellaria flocculosa</i>	+	+
116.	<i>Tetracyclus</i> sp.	-	-
	Total	55	59

DENSITY AND DIVERSITY OF PHYTOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/lit.)	435	1076	789	876	278	453	672	875	543	490	377	783	540	
Shannon Weiner Diversity	2.98	3.41	3.26	3.38	2.93	3.09	3.19	3.16	3.06	3.11	3.05	3.23	3.12	
Evenness Index	0.76	0.79	0.77	0.79	0.75	0.76	0.77	0.77	0.76	0.76	0.75	0.79	0.78	
No. of species	51	76	69	72	50	58	62	59	55	59	57	61	55	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/lit.)	716	541	890	501	871	655	918							
Shannon Weiner Diversity	2.76	3.31	3.12	3.02	3.1	2.98	3.15							
Evenness Index	0.71	0.80	0.77	0.76	0.77	0.75	0.77							
No. of species	50	63	59	53	56	50	61							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/lit.)	812	1026	345	345	457	876	1234	567	871	766	453	1100	432	
Shannon Weiner Diversity	2.9	3.22	3.31	3.23	3.35	2.86	3.02	3.29	3.04	3.1	3.09	2.81	2.98	
Evenness Index	0.74	0.78	0.79	0.78	0.79	0.74	0.75	0.78	0.77	0.76	0.76	0.75	0.75	
No. of species	51	62	65	62	68	48	56	61	52	58	59	42	52	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/lit.)	453	678	1198	895	765	1376	2109	1765	1178	1567	2345	567	2344	1567
Shannon Weiner Diversity	3.11	3.29	2.99	2.89	3.31	2.96	3.23	2.92	3.37	3.09	3.05	3.23	2.77	3.13
Evenness Index	0.77	0.79	0.75	0.74	0.78	0.76	0.77	0.74	0.80	0.77	0.78	0.79	0.72	0.77
No. of species	56	66	54	51	68	50	66	53	69	56	50	61	48	59
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/lit.)	440		750											
Shannon Weiner Diversity	2.95		3.03											
Evenness Index	0.79		0.75											
No. of species	41		58											

Phytobenthos

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1.	<i>Achnantheridium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2.	<i>Achnantheridium austriaca</i> var. <i>helvetica</i>	+		+	+	+	+	+	+	+	+	+	+	
3.	<i>Achnantheridium boyei</i>	+	+	+		+	+	+		-	+	+	+	+
4.	<i>Achnantheridium conspicua</i>	+	+	+	+	+	+	-	+	+	+	+	+	+
5.	<i>Achnantheridium cranulata</i>	+	+	+	-	+	+	+	+	+	-	-	+	+
6.	<i>Achnantheridium exigua</i>	-	-	+	+	-	+	+	+	-	+	+	+	-
7.	<i>Achnantheridium Grimmei</i>	+	-	+	-	+	+	-	-	+	-	-	-	+
8.	<i>Achnantheridium holsti</i>	-	+	-	+	-	+	+	+	+	+	+	+	+
9.	<i>Achnantheridium hungarica</i>	+	-	+	+	+	+	-	-	-	+	-	+	-
10.	<i>Achnantheridium lapidosa</i> var. <i>lanceolata</i>	+	+	-	-	+	-	+	+	+	+	+	-	-
11.	<i>Achnantheridium linearis</i>	-	+	+	+	-	+	+	+	-	+	+	+	+
12.	<i>Achnantheridium linearis</i> var. <i>pusila</i>	+	-	+	-	+	+	+	-	-	-	+	+	+
13.	<i>Achnantheridium microcephala</i>	-	+	-	-	+	+	+	-	+	-	+	-	+
14.	<i>Achnantheridium minutissima</i>	+	+	+	+	-	-	-	-	+	+	-	+	-
15.	<i>Achnantheridium nodosa</i>	-	+	+	+	+	+	+	+	+	+	+	+	+
16.	<i>Achnantheridium plonensis</i>	+	-	+	-	+	+	+	-	-	-	+	+	-
17.	<i>Achnantheridium saxonica</i>	+	+	+	+	-	-	+	-	+	+	-	+	+
18.	<i>Achnantheridium suchlandti</i>	-	+	+	-	+	+	+	+	-	-	-	+	+
19.	<i>Achnantheridium affinis</i>	-	+	-	-	-	+	+	+	+	-	+	+	-
20.	<i>Achnantheridium exilis</i>	+	+	+	+	+	+	+	+	-	+	-	-	-
21.	<i>Achnantheridium lapidosa</i>	+	-	+	-	-	+	-	+	+	+	-	+	+
22.	<i>Cocconeis placentula</i>	-	+	-	+	+	-	+	+	+	-	+	+	-
23.	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	-	+	-	+	+	-	-	-	+	-	+	-
24.	<i>Cyclotella</i> sp.	-	-	+	-	-	-	-	+	-	+	-	-	+
25.	<i>Cymbella amphicephala</i>	+	+	+	+	+	+	+	+	+	-	+	+	-
26.	<i>Cymbella laevis</i>	+	-	-	+	+	+	+	-	-	+	-	-	+
27.	<i>Cymbella perpusila</i>	-	-	+	-	+	+	-	+	-	-	+	+	-
28.	<i>Cymbella tumidula</i>	+	+	-	+	-	-	-	+	+	-	+	+	-
29.	<i>Cymbella turgidula</i>	-	-	+	-	+	+	+	-	-	+	-	-	+

30.	<i>Cymbella ventricosa</i>	-	-	-	-	+	-	-	-	+	+	+	+	-
31.	<i>Cymbella affinis</i>	+	+	+	+	-	-	+	+	+	+	+	-	+
32.	<i>Diatoma hiemale</i>	-	-	-	-	+	+	-	+	+	-	-	+	-
33.	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	+	-	+	+	+	+	+	-	+	+	+
34.	<i>Didymosphenia geminata</i>	+	-	+	+	+	-	+	+	-	-	-	+	+
35.	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	+	+	-	-	-	-	-	+	+	-	-	+
36.	<i>Eunotia arcus</i>	+	-	-	+	+	+	+	+	-	-	+	+	-
37.	<i>Fragilaria capucina</i>	-	-	+	-	+	+	-	+	-	-	-	+	+
38.	<i>Fragilaria construens</i>	+	+	+	+	+	+	+	-	+	+	+	+	+
39.	<i>Fragilaria leptostauron</i>	-	-	+	+	-	+	+	-	-	-	-	-	+
40.	<i>Fragilaria olivaceoides</i>	+	-	-	-	+	+	-	-	+	-	-	+	-
41.	<i>Fragilaria pinnata</i>	-	+	+	+	+	+	-	-	-	+	+	+	-
42.	<i>Fragilaria. rumpens</i>	+	-	-	-	+	+	+	+	+	-	+	-	+
43.	<i>Fragilaria brevistriata</i>	+	-	+	+	+	+	-	+	-	+	-	+	+
44.	<i>Fragilaria</i> sp.	-	-	+	-	-	+	-	-	-	-	+	-	-
45.	<i>Fragilaria vaucheriae</i>	+	+	-	-	+	+	+	+	+	-	+	+	-
46.	<i>Gomphonema bohemicum</i>	+	+	+	+	+	+	-	+	-	+	-	-	+
47.	<i>Gomphonema gracile</i>	-	+	+	+	-	-	-	+	+	-	+	+	-
48.	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	+	+	+	+	+	+	-	+	-	+	+	-	-
49.	<i>Gomphonema lanceolatum</i>	+	+	+	-	-	+	+	+	+	-	-	+	-
50.	<i>Gomphonema nagpurenses</i>	-	+	+	-	+	-	+	+	-	-	+	+	+
51.	<i>Gomphonema olivaceoides</i>	+	+	-	+	-	-	-	-	-	-	+	-	+
52.	<i>Gomphonema olivaceum</i>	+	-	+	-	+	+	+	-	-	+	-	-	-
53.	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+	+	-	+	+	+	+	+	+	-	+	+
54.	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	+	+	+	+	+	-	+	-	+	+	+	-
55.	<i>Gomphonema parvulum</i>	+	-	-	-	-	-	-	-	-	-	-	-	+
56.	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	-	+	-	+	+	+	+	-	-	+	-
57.	<i>Gomphonema sphaerophorum</i>	+	+	-	-	+	-	+	-	-	+	+	-	+
58.	<i>Gomphonema. intricatum</i>	+	-	+	+	-	-	-	+	+	-	-	+	+
59.	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	+	-	-	-	-	+	+	+	+	-	+	-	-
60.	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	+	+	+	+	+	-	-	-	+	+	-	+	-
61.	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	+	-	+	-	-	-	-	-	-	-	-	-	+
62.	<i>H. arcus</i> var. <i>linearis</i>	+	-	-	+	-	+	+	+	+	-	-	+	-
63.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	+	+	-	+	+	-	-	+	-	-	+	+
64.	<i>Navicula microcephala</i>	+	-	+	+	-	+	+	+	-	-	+	-	-

65.	<i>Navicula radiosa</i>	+	+	+	-	-	-	-	+	+	+	-	+	+
66.	<i>Navicula radiosa</i> var. <i>tenella</i>	+	+	+	+	-	+	+	-	-	-	-	+	-
67.	<i>Navicula rostellata</i>	+	+	-	+	+	-	+	+	+	+	+	-	+
68.	<i>Navicula cari</i>	-	+	+	-	-	+	+	+	-	-	-	+	+
69.	<i>Navicula minima</i> var. <i>atomoides</i>	+	-	-	-	-	-	-	-	-	+	-	+	-
70.	<i>Navicula radiosa</i> var. <i>minutissima</i>	+	+	+	+	-	+	+	+	-	-	+	+	+
71.	<i>Planothidium lanceolata</i>	-	-	+	-	+	+	+	+	-	-	-	+	-
72.	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	+	+	+	-	+	+	-	-	-	+	+	+	-
73.	<i>Reimeria sinuata</i>	+	-	+	+	-	-	+	+	+	-	+	-	+
74.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-	-	+	+	+	-	+	-	+	-	+	-
75.	<i>Synedra ulna</i>	-	+	+	-	-	-	-	-	-	-	-	-	+
76.	<i>Synedra ulna</i> var. <i>amphioxys</i>	+	-	+	+	-	-	+	+	-	-	+	+	-
77.	<i>Tabellaria flocculus</i>	-	-	+	-	+	+	-	+	+	+	-	+	-
78.	<i>Tabellaria</i> sp.	+	+	-	-	-	+	-	+	-	-	+	+	+
79.	<i>Tetracyclus lacustris</i>	+	-	+	+	+	+	+	+	-	-	-	+	-
	Total	51	43	56	39	47	55	48	50	38	37	40	55	43

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1.	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+
2.	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	+	+	+	+	+	+
3.	<i>Achnanthidium boyei</i>	-	-	+	+	+	+	-
4.	<i>Achnanthidium conspicua</i>	+	+	+	+	+	+	+
5.	<i>Achnanthidium cranulata</i>	+	+	+	+	+	+	+
6.	<i>Achnanthidium exigua</i>	+	-	-	+	-	+	+
7.	<i>Achnanthidium Grimmei</i>	-	-	+	+	+	-	-
8.	<i>Achnanthidium holsti</i>	+	+	+	+	-	+	+
9.	<i>Achnanthidium hungarica</i>	-	-	-	-	+	+	-
10.	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	+	+	+	+	+	+	+
11.	<i>Achnanthidium linearis</i>	+	+	+	+	-	-	+
12.	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	+	-	-	+	+	+
13.	<i>Achnanthidium microcephala</i>	+	+	+	+	-	+	-
14.	<i>Achnanthidium minutissima</i>	+	-	-	-	-	+	+
15.	<i>Achnanthidium nodosa</i>	-	+	+	+	+	+	+
16.	<i>Achnanthidium plonensis</i>	+	-	+	+	-	-	-
17.	<i>Achnanthidium saxonica</i>	+	+	-	+	+	+	+
18.	<i>Achnanthidium suchlandti</i>	+	+	+	+	-	+	+
19.	<i>Achnanthidium affinis</i>	-	-	+	+	+	+	-
20.	<i>Achnanthidium exilis</i>	+	+	+	+	-	+	+
21.	<i>Achnanthidium lapidosa</i>	+	-	-	-	-	+	-
22.	<i>Cocconeis placentula</i>	-	+	+	+	+	+	+
23.	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	+	-	+	+	+	+
24.	<i>Cyclotella</i> sp.	+	-	+	+	-	+	+
25.	<i>Cymbella amphicephala</i>	+	+	+	+	+	-	-
26.	<i>Cymbella laevis</i>	-	-	+	+	-	+	+
27.	<i>Cymbella perpusila</i>	+	+	+	-	-	-	-
28.	<i>Cymbella tumidula</i>	+	+	+	+	+	+	-
29.	<i>Cymbella turgidula</i>	+	-	-	+	-	+	+
30.	<i>Cymbella ventricosa</i>	-	-	+	+	-	-	-
31.	<i>Cymbella affinis</i>	+	+	+	-	+	-	+
32.	<i>Diatoma hiemale</i>	-	-	-	+	-	+	-
33.	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	+	-	+	-	-
34.	<i>Didymosphenia geminata</i>	+	+	+	+	-	+	+
35.	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	-	-	+	-	-	-
36.	<i>Eunotia arcus</i>	-	+	+	+	+	+	-
37.	<i>Fragilaria capucina</i>	+	-	-	-	-	-	+
38.	<i>Fragilaria construens</i>	+	-	+	-	-	+	-
39.	<i>Fragilaria leptostauron</i>	+	-	-	+	+	-	+
40.	<i>Fragilaria olivaceoides</i>	+	+	+	+	-	+	+

41.	<i>Fragilaria pinnata</i>	+	-	-	-	+	+	-
42.	<i>Fragilaria . rumpens</i>	-	-	+	+	-	-	+
43.	<i>Fragilaria brevistriata</i>	+	+	-	-	+	+	+
44.	<i>Fragilaria</i> sp.	-	-	+	+	+	+	-
45.	<i>Fragilaria vaucheriae</i>	+	+	+	-	-	-	+
46.	<i>Gomphonema bohemicum</i>	-	-	-	+	+	+	+
47.	<i>Gomphonema gracile</i>	+	+	+	-	-	+	+
48.	<i>Gomphonema intricatum</i> var.	+	+	+	+	+	+	-
49.	<i>Gomphonema lanceolatum</i>	+	-	-	-	-	+	+
50.	<i>Gomphonema nagpurenses</i>	+	+	+	+	+	-	-
51.	<i>Gomphonema olivaceoides</i>	-	-	+	-	+	+	-
52.	<i>Gomphonema olivaceum</i>	-	+	-	+	-	-	+
53.	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	+	+	-	+	+	-
54.	<i>Gomphonema olivaceum</i> var.	+	+	+	-	-	-	+
55.	<i>Gomphonema parvulum</i>	+	-	-	+	-	+	-
56.	<i>Gomphonema parvulum</i> var.	-	+	+	+	-	-	+
57.	<i>Gomphonema sphaerophorum</i>	+	-	-	+	-	+	-
58.	<i>Gomphonema intricatum</i>	+	+	-	-	+	-	+
59.	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	+	-
60.	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	+	-	+	-	+	-	+
61.	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	+	+	+	+	-	+	-
62.	<i>H. arcus</i> var. <i>linearis</i>	+	-	-	-	-	-	+
63.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	+	+	+	-	+
64.	<i>Navicula microcephala</i>	+	+	-	+	-	-	-
65.	<i>Navicula radiosa</i>	-	-	-	+	-	+	+
66.	<i>Navicula radiosa</i> var. <i>tenella</i>	-	+	+	+	+	-	+
67.	<i>Navicula rostellata</i>	+	+	-	-	-	-	-
68.	<i>Navicula cari</i>	-	+	-	+	-	-	+
69.	<i>Navicula minima</i> var. <i>atomoides</i>	+	+	+	+	+	-	-
70.	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	+	-	-	-	+	+
71.	<i>Planothidium lanceolata</i>	+	-	+	+	+	-	-
72.	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	+	+	+	-	-	+
73.	<i>Reimeria sinuata</i>	+	-	-	-	+	+	-
74.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+	+	+	-	+	+
75.	<i>Synedra ulna</i>	-	-	+	+	+	-	-
76.	<i>Synedra ulna</i> var. <i>amphioxys</i>	+	-	-	+	+	+	+
77.	<i>Tabellaria flocculus</i>	-	+	+	-	-	-	-
78.	<i>Tabellaria</i> sp.	-	-	-	+	+	+	+
79.	<i>Tetracyclus lacustris</i>	+	-	+	+	-	+	+
	Total	54	42	49	54	38	49	46

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1.	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2.	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	+	+	+	+	+	+	+	-	+	-	-	+
3.	<i>Achnanthidium boyei</i>	-	+	+	-	+	+	+	+	+	+	+	+	-
4.	<i>Achnanthidium conspicua</i>	+	+	+	+	+	+	-	+	-	+	-	+	+
5.	<i>Achnanthidium cranulata</i>	-	-	+	-	+	-	+	+	+	-	+	+	-
6.	<i>Achnanthidium exigua</i>	+	+	+	+	-	+	+	-	-	+	-	+	+
7.	<i>Achnanthidium Grimmei</i>	+	+	-	-	-	-	-	+	-	+	+	+	-
8.	<i>Achnanthidium holsti</i>	+	-	+	+	+	+	+	+	+	+	-	+	+
9.	<i>Achnanthidium hungarica</i>	-	+	+	-	+	-	-	+	+	-	-	+	-
10.	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	+	-	-	+	-	-	+	-	-	+	+	-	-
11.	<i>Achnanthidium linearis</i>	+	+	+	-	+	+	+	+	+	-	-	+	+
12.	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	+	-	+	+
13.	<i>Achnanthidium microcephala</i>	+	-	+	+	+	+	+	+	-	-	+	-	-
14.	<i>Achnanthidium minutissima</i>	+	+	+	-	+	-	-	+	+	+	-	+	-
15.	<i>Achnanthidium nodosa</i>	+	-	+	+	-	+	+	-	-	-	+	-	+
16.	<i>Achnanthidium plonensis</i>	+	-	-	-	+	-	-	+	-	+	+	+	+
17.	<i>Achnanthidium saxonica</i>	-	+	+	+	+	-	-	+	-	-	-	-	-
18.	<i>Achnanthidium suchlandti</i>	+	-	-	-	+	+	+	+	+	+	+	+	+
19.	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	-	+	-	+	+	-	-
20.	<i>Achnanthidium exilis</i>	-	-	-	+	+	-	+	+	-	+	-	+	-
21.	<i>Achnanthidium lapidosa</i>	+	+	+	-	-	+	-	+	+	+	+	-	-
22.	<i>Cocconeis placentula</i>	+	-	-	-	+	-	-	-	+	-	-	+	+
23.	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	+	+	+	+	-	+	+	-	-	+	+	-
24.	<i>Cyclotella</i> sp.	-	+	+	+	+	+	-	+	-	+	+	+	+
25.	<i>Cymbella amphicephala</i>	+	-	+	-	+	-	+	-	-	+	-	-	+
26.	<i>Cymbella laevis</i>	-	-	+	-	+	-	-	-	+	-	+	+	-
27.	<i>Cymbella perpusila</i>	+	+	-	+	+	+	+	+	-	-	+	-	-
28.	<i>Cymbella tumidula</i>	-	-	+	-	-	-	+	+	+	+	-	+	+

29.	<i>Cymbella turgidula</i>	+	+	+	+	+	+	+	-	-	-	-	+	+	-
30.	<i>Cymbella ventricosa</i>	+	-	-	-	-	+	+	+	+	-	+	-	-	-
31.	<i>Cymbella affinis</i>	-	+	+	-	+	+	-	-	-	+	+	+	+	+
32.	<i>Diatoma hiemale</i>	-	-	+	+	-	-	+	+	+	-	-	+	-	-
33.	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	+	-	-	+	+	+	+	-	-	+	-	+	+
34.	<i>Didymosphenia geminata</i>	-	-	+	-	+	-	-	+	-	+	+	+	+	-
35.	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	+	+	-	+	+	+	-	-	-	-	-
36.	<i>Eunotia arcus</i>	+	+	+	-	+	+	-	+	-	+	+	+	+	+
37.	<i>Fragilaria capucina</i>	-	-	+	+	-	-	-	-	+	+	+	+	+	-
38.	<i>Fragilaria construens</i>	+	-	-	-	+	-	+	-	-	-	+	+	+	-
39.	<i>Fragilaria leptostauron</i>	-	+	+	-	-	+	-	+	+	+	-	+	+	-
40.	<i>Fragilaria olivaceoides</i>	+	-	-	+	+	-	+	-	-	-	+	+	+	+
41.	<i>Fragilaria pinnata</i>	+	+	+	-	-	+	-	-	-	+	-	-	-	-
42.	<i>Fragilaria. rumpens</i>	-	-	+	-	-	-	-	-	-	-	+	+	+	+
43.	<i>Fragilaria brevistriata</i>	+	+	+	+	+	+	+	-	-	+	-	-	-	-
44.	<i>Fragilaria</i> sp.	+	+	-	-	-	-	-	+	+	+	+	+	+	+
45.	<i>Fragilaria vaucheriae</i>	+	-	+	-	+	-	+	+	+	-	+	-	-	-
46.	<i>Gomphonema bohemicum</i>	-	+	-	+	-	+	-	-	-	-	-	-	-	-
47.	<i>Gomphonema gracile</i>	+	-	+	-	-	-	+	+	+	+	-	+	+	+
48.	<i>Gomphonema intricatum</i> var.	+	-	-	-	+	-	+	+	-	+	+	-	-	-
49.	<i>Gomphonema lanceolatum</i>	+	+	+	+	-	+	-	-	+	-	-	-	-	-
50.	<i>Gomphonema nagpurenses</i>	+	+	-	-	+	-	-	+	+	+	+	+	+	+
51.	<i>Gomphonema olivaceoides</i>	-	-	-	+	-	-	+	-	+	-	-	-	-	-
52.	<i>Gomphonema olivaceum</i>	+	+	+	-	+	+	-	+	+	+	-	+	-	-
53.	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	+
54.	<i>Gomphonema olivaceum</i> var.	+	+	+	+	+	-	+	+	+	-	-	+	-	-
55.	<i>Gomphonema parvulum</i>	-	+	-	-	-	+	+	-	+	+	+	-	+	+
56.	<i>Gomphonema parvulum</i> var.	-	-	+	-	+	-	+	-	-	-	-	-	-	-
57.	<i>Gomphonema sphaerophorum</i>	-	-	+	+	-	-	-	-	-	-	-	-	+	+
58.	<i>Gomphonema. intricatum</i>	+	+	-	-	+	+	-	+	+	+	+	+	-	-
59.	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	-	-	+	-	+	+	-	-	-	-	-	+	+
60.	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	-	+	-	+	-	-	+	-	+	-	+	-	-

61.	<i>Gomphonemalogiceps</i> var. <i>subclavata</i> ¹	-	+	-	-	+	+	+	-	-	+	-	-	-
62.	<i>H. arcus</i> var. <i>linearis</i>	+	-	+	+	-	-	-	-	+	-	+	+	-
63.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	+	-	-	+	+	-	+	-	-	+
64.	<i>Navicula microcephala</i>	-	+	+	+	+	+	-	-	+	-	+	-	-
65.	<i>Navicula radiosa</i>	+	-	-	-	-	-	-	-	-	+	-	-	-
66.	<i>Navicula radiosa</i> var. <i>tenella</i>	+	+	+	-	+	+	-	+	+	+	-	+	+
67.	<i>Navicula rostellata</i>	+	-	-	+	+	+	+	+	-	-	+	-	-
68.	<i>Navicula cari</i>	-	-	-	-	-	-	-	+	+	-	-	-	-
69.	<i>Navicula minima</i> var. <i>atomoides</i>	+	+	+	-	-	-	+	+	-	+	+	-	+
70.	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	+	+	+	-	+	+	-	-	+	-
71.	<i>Planothidium lanceolata</i>	+	+	+	-	+	+	-	+	-	+	-	+	+
72.	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	+	-	-	+	-	-	-	+	+	-	-	+	-
73.	<i>Reimeria sinuata</i>	-	-	+	-	-	+	+	-	-	+	+	+	-
74.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+	+	+	+	-	-	+	+	-	-	-	+
75.	<i>Synedra ulna</i>	+	-	-	-	-	+	+	+	-	-	-	+	-
76.	<i>Synedra ulna</i> var. <i>amphioxys</i>	+	+	+	+	-	-	-	+	+	+	+	+	-
77.	<i>Tabellaria flocculus</i>	-	+	-	-	-	+	-	+	-	+	-	-	+
78.	<i>Tabellaria</i> sp.	+	-	+	-	+	-	+	+	-	+	-	+	-
79.	<i>Tetracyclus lacustris</i>	+	+	-	+	+	+	-	+	+	-	+	-	+
	Total	48	39	47	35	47	38	39	51	36	43	38	45	33

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1.	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	-	+	+	+	+	+	+	+
2.	<i>Achnanthidium austriaca</i> var.	+	-	+	-	+	+	+	+	+	+	+	+	+	+
3.	<i>Achnanthidium boyei</i>	+	-	+	+	+	+	+	-	-	+	+	+	+	-
4.	<i>Achnanthidium conspicua</i>	-	+	+	+	+	-	-	+	+	-	-	+	+	+
5.	<i>Achnanthidium cranulata</i>	+	-	+	-	-	+	+	-	+	+	+	-	+	-
6.	<i>Achnanthidium exigua</i>	-	+	+	+	+	+	-	+	+	-	-	+	-	+
7.	<i>Achnanthidium Grimmei</i>	-	-	-	-	+	-	-	-	-	+	+	+	+	-
8.	<i>Achnanthidium holsti</i>	+	+	+	+	-	+	+	+	+	-	-	+	-	-
9.	<i>Achnanthidium hungarica</i>	+	+	+	-	+	-	-	-	+	+	+	+	+	+
10.	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	+	+	+	-	+	-	+	-	+	-	+	+	-
11.	<i>Achnanthidium linearis</i>	+	-	+	+	+	-	+	+	+	-	+	-	-	-
12.	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	+	+	-	-	+	-	+	-	+	+	+	+	+
13.	<i>Achnanthidium microcephala</i>	-	+	-	+	+	-	+	-	+	-	+	-	+	-
14.	<i>Achnanthidium minutissima</i>	+	+	+	-	+	+	+	-	+	+	-	+	-	-
15.	<i>Achnanthidium nodosa</i>	-	-	+	+	+	+	+	-	-	-	+	-	+	-
16.	<i>Achnanthidium plonensis</i>	+	+	+	+	-	-	-	+	+	+	-	+	-	+
17.	<i>Achnanthidium saxonica</i>	+	-	-	-	+	+	-	-	-	+	+	+	+	-
18.	<i>Achnanthidium suchlandti</i>	-	-	+	-	-	+	+	-	+	-	-	-	+	-
19.	<i>Achnanthidium affinis</i>	-	+	-	+	+	-	-	+	-	+	+	+	+	+
20.	<i>Achnanthidium exilis</i>	+	-	+	-	+	+	+	-	-	-	-	+	+	-
21.	<i>Achnanthidium lapidosa</i>	+	-	+	+	+	+	-	-	+	+	-	+	-	+
22.	<i>Cocconeis placentula</i>	-	+	+	+	-	-	+	+	-	-	+	+	+	-
23.	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	+	-	+	+	-	-	+	+	-	-	+	+
24.	<i>Cyclotella</i> sp.	-	-	-	+	+	-	-	-	+	+	+	+	-	-
25.	<i>Cymbella amphicephala</i>	-	+	+	+	-	+	-	+	-	-	-	-	+	-

26.	<i>Cymbella laevis</i>	-	-	+	+	+	+	+	+	-	+	+	+	-	+
27.	<i>Cymbella perpusila</i>	+	+	-	-	+	-	+	-	+	-	+	-	-	+
28.	<i>Cymbella tumidula</i>	-	+	+	+	-	+	-	+	+	+	-	+	+	+
29.	<i>Cymbella turgidula</i>	-	-	-	-	+	+	+	-	-	-	+	-	-	-
30.	<i>Cymbella ventricosa</i>	-	-	+	+	+	+	+	-	+	+	+	+	+	-
31.	<i>Cymbella affinis</i>	-	-	+	+	+	-	-	+	-	-	-	-	-	+
32.	<i>Diatoma hiemale</i>	+	+	-	-	+	+	-	-	+	-	+	+	+	-
33.	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	+	-	+	+	+	-	-	+
34.	<i>Didymosphenia geminata</i>	-	+	+	+	+	+	-	+	-	-	-	-	+	-
35.	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	+	-	+	-	+	-	-	-	+	+	-	+
36.	<i>Eunotia arcus</i>	+	+	-	-	-	+	-	-	+	+	+	-	+	-
37.	<i>Fragilaria capucina</i>	-	-	+	+	+	+	-	+	-	-	-	+	-	+
38.	<i>Fragilaria construens</i>	-	+	-	+	+	+	-	-	-	+	+	-	+	-
39.	<i>Fragilaria leptostauron</i>	+	-	+	+	-	-	+	-	+	-	-	+	+	+
40.	<i>Fragilaria olivaceoides</i>	-	+	+	+	+	-	+	-	-	-	-	+	-	-
41.	<i>Fragilaria pinnata</i>	-	-	-	-	+	-	+	-	+	+	+	-	+	-
42.	<i>Fragilaria . rumpens</i>	-	+	+	+	-	+	+	-	-	-	-	-	-	+
43.	<i>Fragilaria brevistriata</i>	-	-	-	+	+	-	-	-	-	+	+	-	+	-
44.	<i>Fragilaria</i> sp.	+	-	+	-	+	+	-	+	+	-	-	+	-	-
45.	<i>Fragilaria vaucheriae</i>	+	+	-	+	-	-	+	-	-	+	+	-	-	+
46.	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-	+	-	-	-	-	+	-
47.	<i>Gomphonema gracile</i>	+	+	+	-	+	-	-	+	+	+	+	+	-	+
48.	<i>Gomphonema intricatum</i> var.	-	-	-	+	+	+	-	-	-	-	-	-	-	+
49.	<i>Gomphonema lanceolatum</i>	-	-	-	-	-	-	-	-	+	-	+	-	+	-
50.	<i>Gomphonema nagpurenses</i>	+	+	+	-	-	-	+	-	+	-	-	+	-	+
51.	<i>Gomphonema olivaceoides</i>	-	-	-	+	+	-	+	+	-	+	+	-	-	+
52.	<i>Gomphonema olivaceum</i>	+	-	-	-	-	+	+	-	-	-	-	-	+	-
53.	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+	+	+	+	-	-	-	+	+	-	-	-	+
54.	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	+	-	-	+	+	+	+	+	+	-	-	+	-	-
55.	<i>Gomphonema paruvium</i>	-	+	-	+	+	-	+	-	-	+	+	+	+	+

56.	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	+	+	+	-	+	+	+	-	-	-	-	-
57.	<i>Gomphonema sphaerophorum</i>	-	-	-	-	+	+	+	-	-	+	-	+	+	-
58.	<i>Gomphonema. intricatum</i>	+	+	-	+	-	+	-	-	-	+	+	+	-	+
59.	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	-	+	-	-	-	-	+	+	+	-	-	-	-
60.	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	+	-	+	+	+	-	-	-	-	+	-	-	+	+
61.	<i>Gomphonemalogiceps</i> var. <i>subclavata</i> 1	-	-	-	-	-	+	+	-	-	+	-	+	-	-
62.	<i>H. arcus</i> var. <i>linearis</i>	-	+	-	+	-	+	-	+	+	-	-	+	-	+
63.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	+	-	-	-	-	-	-	+	-	-	+	-
64.	<i>Navicula microcephala</i>	-	+	-	-	+	+	+	+	-	-	-	-	-	+
65.	<i>Navicula radiosa</i>	-	+	+	-	-	-	-	-	+	+	+	+	+	-
66.	<i>Navicula radiosa</i> var. <i>tenella</i>	+	-	-	+	+	-	+	+	-	+	-	-	+	+
67.	<i>Navicula rostellata</i>	-	+	-	-	-	+	-	-	+	+	+	-	+	-
68.	<i>Navicula cari</i>	-	-	+	+	-	+	-	+	-	-	-	+	+	+
69.	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	+	+	-	+	-	-	+	+	-	+	+
70.	<i>Navicula radiosa</i> var. <i>minutissima</i>	+	-	-	+	-	+	-	-	+	+	-	+	-	+
71.	<i>Planothidium lanceolata</i>	+	+	+	+	-	+	+	-	-	+	-	+	+	-
72.	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	+	-	-	-	-	+	-	+	-	+	+	+	+	+
73.	<i>Reimeria sinuata</i>	-	-	-	+	+	-	-	-	+	+	-	-	+	+
74.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+	+	+	+	+	+	-	-	+	-	+	+	+
75.	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	+	+	-	-	-
76.	<i>Synedra ulna</i> var. <i>amphioxys</i>	+	-	+	+	+	-	+	+	+	+	-	+	+	+
77.	<i>Tabellaria flocculus</i>	-	-	-	-	-	+	-	-	-	+	-	-	+	-
78.	<i>Tabellaria</i> sp.	+	+	+	+	+	+	+	+	+	+	+	+	-	+
79.	<i>Tetracyclus lacustris</i>	-	-	+	-	+	+	-	-	-	+	-	-	+	-
	Total	32	35	46	39	53	44	38	31	38	48	37	43	46	39

Outside basin

S.No.	Name of species	B1	B2
1.	<i>Achnanthidium austriaca</i>	+	+
2.	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	+
3.	<i>Achnanthidium boyei</i>	+	-
4.	<i>Achnanthidium conspicua</i>	-	+
5.	<i>Achnanthidium cranulata</i>	+	+
6.	<i>Achnanthidium exigua</i>	-	+
7.	<i>Achnanthidium Grimmei</i>	-	-
8.	<i>Achnanthidium holsti</i>	+	+
9.	<i>Achnanthidium hungarica</i>	+	-
10.	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	+
11.	<i>Achnanthidium linearis</i>	+	+
12.	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-
13.	<i>Achnanthidium microcephala</i>	-	-
14.	<i>Achnanthidium minutissima</i>	+	-
15.	<i>Achnanthidium nodosa</i>	-	+
16.	<i>Achnanthidium plonensis</i>	+	-
17.	<i>Achnanthidium saxonica</i>	+	-
18.	<i>Achnanthidium suchlandti</i>	-	+
19.	<i>Achnanthidium affinis</i>	-	+
20.	<i>Achnanthidium exilis</i>	+	+
21.	<i>Achnanthidium lapidosa</i>	+	+
22.	<i>Cocconeis placentula</i>	-	+
23.	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-
24.	<i>Cyclotella</i> sp.	+	+
25.	<i>Cymbella amphicephala</i>	-	-
26.	<i>Cymbella laevis</i>	-	-
27.	<i>Cymbella perpusila</i>	+	+
28.	<i>Cymbella tumidula</i>	-	+
29.	<i>Cymbella turgidula</i>	-	-
30.	<i>Cymbella ventricosa</i>	-	-
31.	<i>Cymbella affinis</i>	-	+
32.	<i>Diatoma hiemale</i>	+	+
33.	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+
34.	<i>Didymosphenia geminata</i>	+	-

35.	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	-
36.	<i>Eunotia arcus</i>	+	-
37.	<i>Fragilaria capucina</i>	-	+
38.	<i>Fragilaria construens</i>	-	-
39.	<i>Fragilaria leptostauron</i>	+	-
40.	<i>Fragilaria olivaceoides</i>	-	-
41.	<i>Fragilaria pinnata</i>	-	-
42.	<i>Fragilaria . rumpens</i>	-	+
43.	<i>Fragilaria brevistriata</i>	-	+
44.	<i>Fragilaria</i> sp.	+	-
45.	<i>Fragilaria vaucheriae</i>	+	+
46.	<i>Gomphonema bohemicum</i>	-	+
47.	<i>Gomphonema gracile</i>	+	-
48.	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	+
49.	<i>Gomphonema lanceolatum</i>	-	+
50.	<i>Gomphonema nagpurenses</i>	+	+
51.	<i>Gomphonema olivaceoides</i>	-	-
52.	<i>Gomphonema olivaceum</i>	+	-
53.	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+
54.	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	+	-
55.	<i>Gomphonema parvulum</i>	-	-
56.	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+
57.	<i>Gomphonema sphaerophorum</i>	-	-
58.	<i>Gomphonema. intricatum</i>	+	+
59.	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	+
60.	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	+	-
61.	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	-
62.	<i>H. arcus</i> var. <i>linearis</i>	-	+
63.	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-
64.	<i>Navicula microcephala</i>	-	-
65.	<i>Navicula radiosa</i>	-	+
66.	<i>Navicula radiosa</i> var. <i>tenella</i>	+	-
67.	<i>Navicula rostellata</i>	-	-
68.	<i>Navicula cari</i>	-	+
69.	<i>Navicula minima</i> var. <i>atomoides</i>	-	-
70.	<i>Navicula radiosa</i> var. <i>minutissima</i>	+	-
71.	<i>Planothidium lanceolata</i>	+	+

72.	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	+	-
73.	<i>Reimeria sinuata</i>	-	+
74.	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+
75.	<i>Synedra ulna</i>	-	-
76.	<i>Synedra ulna</i> var. <i>amphioxys</i>	+	-
77.	<i>Tabellaria flocculus</i>	+	+
78.	<i>Tabellaria</i> sp.	-	-
79.	<i>Tetracyclus lacustris</i>	+	+
	Total	36	40

DENSITY AND DIVERSITY OF PHYTOBENTHOS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/cm ²)	1289	1453	1876	1066	1786	2098	569	2786	2654	1120	987	6754	1562	
Shannon Weiner Diversity	3.46	3.34	3.58	3.12	3.24	3.52	3.28	3.43	3.10	3.04	3.26	3.55	3.31	
Evenness Index	0.88	0.89	0.89	0.85	0.84	0.88	0.85	0.88	0.85	0.84	0.88	0.89	0.88	
No. of species	51	43	56	39	47	55	48	50	38	37	40	55	43	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/cm ²)	2098	1328	1190	3079	20871	25789	22980							
Shannon Weiner Diversity	3.5	3.27	3.37	3.52	3.12	3.43	3.36							
Evenness Index	0.88	0.87	0.87	0.88	0.86	0.88	0.88							
No. of species	54	42	49	54	38	49	46							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/cm ²)	40854	33980	25673	1234	1890	1156	1789	2033	1567	1892	2098	2234	18976	
Shannon Weiner Diversity	3.4	3.19	3.35	3.06	3.38	3.16	3.2	3.44	3.04	3.27	3.14	3.31	3.1	
Evenness Index	0.88	0.87	0.87	0.86	0.88	0.87	0.87	0.87	0.85	0.87	0.86	0.87	0.89	
No. of species	48	39	47	35	47	38	39	51	36	43	38	45	33	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/cm ²)	1568	2998	2890	4594	5633	3956	5674	6788	6754	10987	8732	6598	7654	11908
Shannon Weiner Diversity	3.02	3.1	3.36	3.18	3.54	3.27	3.16	2.99	3.47	3.35	3.17	3.38	3.29	3.18
Evenness Index	0.87	0.87	0.88	0.87	0.89	0.86	0.87	0.87	0.85	0.87	0.88	0.90	0.86	0.87
No. of species	32	35	46	39	53	44	38	31	58	48	37	43	46	39
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/cm ²)	850		1230											
Shannon Weiner Diversity	3.19		3.25											
Evenness Index	0.85		0.88											
No. of species	42		41											

Macro-Invertibrates

Sub basin- Siang: I-IV

S.No.	Family	Genus	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	-	+
2		<i>Stenonema</i>	+	+	+	-	+	-	-	+	-	-	-	+	-
3		<i>Heptagenia</i>	+	-	+	+	+	-	+	+	+	+	+	-	-
4		<i>Epeorus</i>	+	+	-	-	-	+	-	-	+	+	+	-	+
5	Baetidae	<i>Baetis</i>	+	+	+	+	+	-	+	-	-	-	-	+	-
6	Ephemerellidae	<i>Ephemerella</i>	+	-	+	-	-	+	-	+	+	-	+	-	+
7		<i>Ephemerella excrucians</i>	+	+	-	+	+	+	+	-	-	+	-	+	-
8	Caenidae	<i>Caenis</i>	-	-	+	-	-	-	-	-	+	-	+	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	+	-	-	+	+	-	+	+	-	+	-	-	+
10		<i>Chroterpes</i>	-	+	-	-	+	-	-	-	+	-	-	+	-
11		<i>Leptophlebia</i>	+	-	+	+	+	-	-	+	-	-	-	-	-
12	Neophemeridae	<i>Neophemeridae 1</i>	-	+	+	-	+	+	+	-	+	+	-	-	-
13		<i>Neophemeridae 2</i>	+	+	-	-	-	-	-	-	-	-	+	+	+
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	+	-	+	+	-	+	+	-	-
15	Perlodidae	<i>Isoperla</i>	+	+	+	+	-	-	-	-	-	-	-	-	+
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	-	-	+	+	+	-	-	-
17	Psephenidae	<i>Psephenus</i>	+	+	-	-	+	-	+	-	-	-	+	+	+
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	+	+	-	-	-	-	-	+	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	+	-	-	+	-	-	+	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	+	+	+	-	+	+	-	+	+	-	+	-
21		<i>Hydroptila</i>	+	-	-	-	-	-	-	-	-	-	+	-	+

22		<i>Leucotrichia</i>	-	-	+	-	+	-	-	+	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	+	+	-	+	-	-	+	-	+	+	+	+	+
24	Helicopsychidae	<i>Helichopsyche</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	+	-	+	+	-	-	+	-	+	-	+	+
26	Leptoceridae	<i>Leptocerus</i>	+	-	+	-	-	-	+	-	+	-	-	-	-
27	Molannidae	<i>Molanna</i>	-	-	-	+	-	-	-	-	-	+	-	+	-
28	Chironomidae	<i>Chironomus</i>	+	+	+	-	+	-	-	+	-	-	-	-	+
29		<i>Ablabesmyia</i>	-	-	-	+	-	-	-	-	+	-	-	-	-
30	Ephydriidae	Un identified genus / species	-	-	-	-	+	-	+	-	+	+	+	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	+	+	-	-	-	-	+	-	-	-	+	-
32	Simulidae	<i>Simulium pictipes</i>	-	-	-	-	+	-	-	-	-	+	+	-	+
33	Psychodidae	<i>Psychoda</i>	+	-	-	-	-	-	-	-	-	-	-	+	-
34		<i>Maruina</i>	-	-	-	-	-	-	+	-	+	-	-	-	+
35	Ceratopogonidae	<i>Culicoides variipennis</i>	+	+	+	-	-	+	-	+	-	+	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	+	-	-	-	-	-	-	+	+	-
37		<i>Horaia</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	+	-	-	-	-	-	-	+
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	19	16	16	14	17	8	13	14	15	16	14	14	15

Sub basin- Yamne and Simang

S.No.	Family	Genus	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+
2		<i>Stenonema</i>	-	-	-	-	-	+	-
3		<i>Heptagenia</i>	-	+	+	+	+	-	+
4		<i>Epeorus</i>	-	-	-	-	-	+	-
5	Baetidae	<i>Baetis</i>	+	+	+	+	-	-	+
6	Ephemerellidae	<i>Ephemerella</i>	+	-	-	-	+	+	+
7		<i>Ephemerella excrucians</i>	-	+	-	-	-	-	+
8	Caenidae	<i>Caenis</i>	-	-	+	-	-	+	+
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	+	-	-	+	-	-
10		<i>Chroterpes</i>	-	-	-	-	-	+	+
11		<i>Leptophlebia</i>	-	+	+	-	-	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	+	+	-	-
13		<i>Neoephemeridae 2</i>	-	-	-	-	-	-	+
14	Perlidae	<i>Acroneuria</i>	-	+	+	+	-	+	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	-	-	+
16	Elmidae	<i>Heterlimnius</i>	+	+	+	-	-	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	+	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	+	-	+	+	-	+
19	Corydalidae	<i>Corydalus</i>	-	-	+	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	+	+	-	+	-	-	-
21		<i>Hydroptila</i>	-	-	+	-	+	-	+
22		<i>Leucotrichia</i>	-	-	+	+	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	+	+	-	-	+	-	+
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	+	-	-	+	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	+	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	+	-	-	-	+	+
27	Molannidae	<i>Molanna</i>	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	-	-	-
29		<i>Ablabesmyia</i>	+	+	+	+	-	-	+
30	Ephydriidae	Un identified genus/ species	-	-	-	-	+	+	-
31	Tipulidae	<i>Antocha saxicola</i>	+	+	-	+	-	+	+
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	+	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	+	+	-	+	-
34		<i>Maruina</i>	+	-	-	-	+	-	+

35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	+	-	-	-	-	-	+
37		<i>Horia</i>	-	+	-	+	-	+	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	+	+	-	+	-	-
40	Culicidae	<i>Culex</i>	-	-	+	+	-	-	+
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-
		Total	10	16	15	14	12	14	18

Sub basin- Siyom: I-III and Hirit

S.No.	Family	Genus	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	-	-	+	+	-	+	+	+
2		<i>Stenonema</i>	-	-	-	-	-	+	-	-	-	+	-	-	-
3		<i>Heptagenia</i>	-	+	+	+	+	-	-	-	+	-	+	+	+
4		<i>Epeorus</i>	+	-	-	-	+	-	-	-	-	-	-	-	-
5	Baetidae	<i>Baetis</i>	-	+	-	-	-	+	+	+	-	-	-	+	+
6	Ephemerellidae	<i>Ephemerella</i>	+	-	-	-	+	-	-	+	+	+	-	-	-
7		<i>Ephemerella excrucians</i>	-	-	+	+	-	-	-	-	+	-	+	-	-
8	Caenidae	<i>Caenis</i>	+	+	-	-	+	-	-	-	-	+	-	+	+
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	+	-	-	-	-	-	-	-	+	-	-
10		<i>Chroterpes</i>	-	+	-	+	-	+	+	-	-	-	-	-	-
11		<i>Leptophlebia</i>	-	-	-	-	+	-	-	-	-	+	-	+	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	+	-	-	-	-	-	-	-	-	+	-	-
13		<i>Neoephemeridae 2</i>	-	-	+	+	+	-	+	-	-	-	-	+	+
14	Perlidae	<i>Acroneuria</i>	+	-	-	-	-	+	-	+	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	+	-	-	-	-	-	-	-	+	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	+	-	-	-	+	-	+	+	-
17	Psephenidae	<i>Psephenus</i>	-	-	+	-	-	-	+	-	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	+	+	-	+	-	-	-	-	-	-	-	-	+
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	+	-	-	-	+	-	+	-
20	Hydroptilidae	<i>Ochrotrichia</i>	+	-	-	-	-	-	-	-	-	-	+	-	-
21		<i>Hydroptila</i>	-	+	-	+	+	-	-	+	+	-	-	-	+
22		<i>Leucotrichia</i>	-	-	+	-	-	-	-	-	-	+	-	+	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	-	-	-	+	-	-	-	-	-

24	Helicopsychidae	<i>Helichopsyche</i>	+	+	-	-	+	-	-	+	-	-	+	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	+	-	-	-	-	+	+	-	+	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Molannidae	<i>Molanna</i>	-	+	+	-	-	-	-	-	-	-	+	+	-
28	Chironomidae	<i>Chironomus</i>	+	-	-	+	+	+	+	-	+	+	-	-	+
29		<i>Ablabesmyia</i>	+	+	-	-	-	-	-	+	-	-	-	-	-
30	Ephydriidae	Un identified genus/ species	-	-	-	-	-	-	-	+	-	-	-	+	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	+	-	-	-	-	-	+	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	+	+	-	-	-	-	+	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
34		<i>Maruina</i>	-	-	-	-	+	-	+	-	+	-	-	-	+
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	+	-	+	-	-	-	-	-	-	-	+	-
36	Blepharoceridae	<i>Blepharocera</i>	+	-	+	-	-	-	-	-	-	-	+	-	+
37		<i>Horaia</i>	-	-	-	-	+	-	-	-	-	+	-	+	-
38	Tabanidae	<i>Tabanus</i>	-	+	-	+	-	-	+	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	+	-	-	-	-	-	+	+	-	+	+
40	Culicidae	<i>Culex</i>	+	-	-	-	+	-	-	+	-	-	+	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	12	15	11	12	14	6	7	11	10	12	12	15	11

Sub basin- Yargyap Chhu

S.No.	Family	Genus	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>	-	-	+	-	+	+	+	-	-	-	-	-	-	-
3		<i>Heptagenia</i>	+	+	-	-	-	-	+	+	+	-	+	+	+	+
4		<i>Epeorus</i>	-	-	-	-	+	+	-	+	-	-	-	-	+	-
5	Baetidae	<i>Baetis</i>	+	+	+	+	-	-	-	-	-	-	-	+	-	+
6	Ephemerellidae	<i>Ephemerella</i>	-	-	-	-	-	-	+	-	-	-	+	-	-	-
7		<i>Ephemerella excrucians</i>	-	+	-	-	-	+	-	-	+	-	-	-	+	+
8	Caenidae	<i>Caenis</i>	+	-	-	-	-	-	-	-	-	-	-	+	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
10		<i>Chroterpes</i>	-	+	-	-	+	-	-	-	-	-	-	-	-	+
11		<i>Leptophlebia</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	+	-	+	-	-	-	-	-	-	-	+	-	+	-
13		<i>Neoephemeridae 2</i>	-	-	-	+	-	-	-	+	-	-	-	+	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	+	-	-	-	+	+	+	-	-	-	-	-	-	+
16	Elmidae	<i>Heterlimnius</i>	-	+	+	-	-	-	-	-	-	-	-	-	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	-	-	+	-	-	-	-	+	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	+	+	-	-	+	+	+	-	-
19	Corydalidae	<i>Corydalus</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	+	-	-	-	-	-	+	-	-	-	+	-
21		<i>Hydroptila</i>	-	-	-	+	-	-	-	-	-	-	-	+	-	+
22		<i>Leucotrichia</i>	+	-	+	-	-	+	+	+	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-

25	Glossosomatidae	<i>Glossosoma</i>	+	-	+	-	-	-	-	-	-	-	-	-	-	+
26	Leptoceridae	<i>Leptocerus</i>	-	+	+	-	-	+	+	+	-	-	-	-	-	-
27	Molannidae	<i>Molanna</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	-	-	-	-	-	-	-	+	+	+
29		<i>Ablabesmyia</i>	+	-	-	+	+	-	-	-	+	+	+	-	-	-
30	Ephydriidae	Un identified genus/ species	-	-	-	-	-	+	+	+	-	-	-	-	+	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
32	Simulidae	<i>Simulium pictipes</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	+	-	-	-	+	-	-	-	-	+	+	+	-	-
34		<i>Maruina</i>	-	-	-	-	-	+	+	+	+	-	-	-	-	+
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37		<i>Horaia</i>	+	-	-	-	+	-	-	-	-	-	-	+	-	-
38	Tabanidae	<i>Tabanus</i>	-	-	+	+	-	-	-	-	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	+	-	-	-	-	-	+	+	+	+	-	-	+
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	11	9	11	6	9	10	11	11	8	5	9	10	10	12

Outside basin

S.No.	Family	Genus	B1	B2
1	Heptageniidae	<i>Cinygmula</i>	+	+
2		<i>Stenonema</i>	-	-
3		<i>Heptagenia</i>	+	-
4		<i>Epeorus</i>	-	-
5	Baetidae	<i>Baetis</i>	-	+
6	Ephemerellidae	<i>Ephemerella</i>	-	+
7		<i>Ephemerella excrucians</i>	+	-
8	Caenidae	<i>Caenis</i>	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	+	-
10		<i>Chroterpes</i>	-	-
11		<i>Leptophlebia</i>	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-
13		<i>Neoephemeridae 2</i>	+	-
14	Perlidae	<i>Acroneuria</i>	-	-
15	Perlodidae	<i>Isoperla</i>	-	-
16	Elmidae	<i>Heterlimnius</i>	-	+
17	Psephenidae	<i>Psephenus</i>	+	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-
19	Corydalidae	<i>Corydalus</i>	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	+
21		<i>Hydroptila</i>	-	-
22		<i>Leucotrichia</i>	+	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-
27	Molannidae	<i>Molanna</i>	+	-
28	Chironomidae	<i>Chironomus</i>	-	-
29		<i>Ablabesmyia</i>	-	-
30	Ephydriidae	Un identified genus/ species	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-
32	Simuliidae	<i>Simulium pictipes</i>	+	+
33	Psychodidae	<i>Psychoda</i>	-	+

34		<i>Maruina</i>	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	+
36	Blepharoceridae	<i>Blepharocera</i>	+	-
37		<i>Horia</i>	-	-
38	Tabanidae	<i>Tabanus</i>	-	-
39	Rhagionidae	<i>Atherix variegata</i>	+	-
40	Culicidae	<i>Culex</i>	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-
	Total		11	8

DENSITY AND DIVERSITY OF MACRO-INVERTEBRATES

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (Indiv./m ²)	769	781	922	893	1013	190	544	568	1377	1147	436	500	1185	
Shannon Weiner Diversity	2.37	2.29	2.25	2.18	2.31	1.56	2.13	2.17	1.76	2.26	2.19	2.2	2.29	
Evenness Index	0.80	0.83	0.81	0.83	0.82	0.75	0.83	0.82	0.80	0.82	0.83	0.83	0.81	
No. of species	19	16	16	14	17	8	13	14	9	16	14	14	17	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (Indiv./m ²)	1355	1219	1365	1912	1154	1334	1746							
Shannon Weiner Diversity	1.78	2.27	2.21	2.17	2.14	2.15	2.35							
Evenness Index	0.77	0.82	0.82	0.82	0.86	0.79	0.81							
No. of species	10	16	15	14	12	15	18							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (Indiv./m ²)	904	1120	402	599	490	133	113	677	342	355	500	1346	928	
Shannon Weiner Diversity	2.12	2.24	1.87	2.15	2.19	1.14	1.37	2.07	2	2.13	2.14	2.26	1.88	
Evenness Index	0.85	0.83	0.78	0.87	0.83	0.64	0.70	0.86	0.87	0.86	0.86	0.83	0.78	
No. of species	12	15	11	12	14	6	7	11	10	12	12	15	11	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (Indiv./m ²)	588	215	305	333	234	134	234	232	223	144	336	227	123	1831
Shannon Weiner Diversity	2.08	1.68	2.11	1.29	1.52	1.88	1.87	1.73	1.59	1.32	1.74	1.89	1.82	1.99
Evenness Index	0.87	0.76	0.88	0.80	0.69	0.82	0.78	0.72	0.76	0.82	0.79	0.82	0.79	0.80
No. of species	11	9	11	5	9	10	11	11	8	5	9	10	10	12
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (Indiv./m ²)	306		285											
Shannon Weiner Diversity	2.32		1.99											
Evenness Index	1.06		0.96											
No. of species	9		8											

Zooplanktons

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
	Protozoans													
1	<i>Actinophrys</i> sp.	+	+	-	+	+	+	+	+	+	+	+	+	+
2	<i>Arcella</i> sp.	+	+	+	-	+	+	+	-	+	-	-	-	+
3	<i>Ceratium</i> spp.	-	-	-	+	-	-	+	+	-	-	+	-	-
	Rotifers													
4	<i>Brachious</i>	-	-	-	+	+	+	+	+	+	-	-	+	+
5	<i>Keratella</i> sp.	+	+	-	+	+	-	-	-	-	-	+	-	-
6	<i>Epiphanes</i>	+	-	-	-	-	+	+	+	+	+	-	+	-
7	<i>Asplanchna</i> sp.	+	-	+	-	-	+	+	-	-	-	-	-	+
8	<i>Philodena</i> sp.	-	+	-	+	+	-	+	-	-	+	+	-	+
	Cladoceran													
9	<i>Bosmina</i> sp.	+	+	+	+	+	-	-	-	+	+	-	+	-
10	<i>Daphnia</i> sp.	+	-	+	+	+	-	-	+	-	+	+	-	-
	Copepods													
11	<i>Cyclops</i> sp.	+	+	+	-	+	+	+	-	-	-	-	+	-
12	<i>Diaptomus</i> sp.	-	+	-	+	+	-	-	+	-	-	+	+	+
	Total	8	7	5	8	9	6	8	6	5	5	6	6	6

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
	Protozoans							
1	<i>Actinophrys</i> sp.	-	+	-	-	+	-	+
2	<i>Arcella</i> sp.	+	+	-	+	-	+	-
3	<i>Ceratium</i> spp.	-	-	+	+	+	+	+
	Rotifers							
4	<i>Brachious</i>	+	-	+	-	+	-	+
5	<i>Keratella</i> sp.	-	+	-	-	-	+	-
6	<i>Epiphanes</i>	+	-	+	+	+	+	-
7	<i>Asplanchna</i> sp.	-	-	+	-	-	-	+
8	<i>Philodena</i> sp.	+	+	-	+	+	+	-
	Cladoceran							
9	<i>Bosmina</i> sp.	-	-	+	+	-	-	-
10	<i>Daphnia</i> sp.	+	+	-	+	-	-	-
	Copepods							
11	<i>Cyclops</i> sp.	+	+	-	-	-	+	-
12	<i>Diaptomus</i> sp.	+	-	-	-	+	-	-
	Total	7	6	5	6	6	6	4

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
	Protozoans													
1	<i>Actinophrys</i> sp.	-	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Arcella</i> sp.	+	-	-	-	+	-	-	+	-	-	+	-	-
3	<i>Ceratium</i> spp.	+	+	-	+	-	+	+	-	+	+	-	-	-
	Rotifers													
4	<i>Brachious</i>	-	+	+	-	-	+	+	-	-	-	+	-	-
5	<i>Keratella</i> sp.	-	-	+	+	+	-	-	+	+	+	-	+	+
6	<i>Epiphanes</i>	+	-	-	+	-	-	-	-	-	-	+	+	-
7	<i>Asplanchna</i> sp.	-	+	+	-	+	+	+	+	-	-	-	+	+
8	<i>Philodena</i> sp.	+	-	-	-	-	+	+	-	+	+	+	-	+
	Cladoceran													
9	<i>Bosmina</i> sp.	-	+	+	+	+	-	-	-	+	-	-	+	+
10	<i>Daphnia</i> sp.	+	+	+	+	-	+	+	+	-	+	+	-	-
-	Copepods													
11	<i>Cyclops</i> sp.	+	+	+	+	-	+	+	+	-	-	-	-	+
12	<i>Diaptomus</i> sp.	-	-	-	-	+	-	-	-	+	+	+	+	-
	Total	6	7	8	7	6	7	7	6	6	6	7	6	6

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
	Protozoans														
1	<i>Actinophrys</i> sp.	+	+	-	+	-	+	-	-	-	+	-	+	+	-
2	<i>Arcella</i> sp.	-	-	+	+	+	-	+	+	-	-	+	-	-	-
3	<i>Ceratium</i> spp.	+	-	-	-	-	-	-	+	-	+	-	-	-	+
	Rotifers														
4	<i>Brachious</i>	-	+	-	+	-	+	+	+	+	-	+	-	+	-
5	<i>Keratella</i> sp.	+	-	+	-	+	-	-	-	-	+	-	+	-	+
6	<i>Epiphanes</i>	+	-	-	-	-	+	-	-	+	+	+	+	+	-
7	<i>Asplanchna</i> sp.	-	+	+	+	+	+	-	+	+	-	-	-	-	+
8	<i>Philodena</i> sp.	-	+	+	-	+	-	+	-	-	-	+	-	+	-
	Cladoceran														
9	<i>Bosmina</i> sp.	-	+	-	+	-	-	+	+	+	+	-	-	-	-
10	<i>Daphnia</i> sp.	+	-	+	+	+	+	-	-	+	-	+	-	+	+
	Copepods														
11	<i>Cyclops</i> sp.	+	+	-	+	-	-	+	-	-	-	+	+	-	+
12	<i>Diaptomus</i> sp.	-	-	+	-	+	-	-	+	+	+	-	-	+	-
	Total	6	6	6	7	6	5	5	6	6	6	6	5	6	5

Outside basin

S.No.	Name of species	B1	B2
	Protozoans	-	-
1	<i>Actinophrys</i> sp.	+	+
2	<i>Arcella</i> sp.	+	-
3	<i>Ceratium</i> spp.	-	+
	Rotifers	-	-
4	<i>Brachious</i>	-	+
5	<i>Keratella</i> sp.	+	-
6	<i>Epiphanes</i>	-	+
7	<i>Asplanchna</i> sp.	-	-
8	<i>Philodena</i> sp.	+	+
	Cladoceran	-	-
9	<i>Bosmina</i> sp.	-	-
10	<i>Daphnia</i> sp.	+	-
	Copepods	-	-
11	<i>Cyclops</i> sp.	+	-
12	<i>Diaptomus</i> sp.	-	+
	Total	6	6

DENSITY AND DIVERSITY OF ZOOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (indiv/lit.)	88	76	55	69	189	149	177	155	132	102	166	151	167	
Shannon Weiner Diversity	1.61	1.55	1.25	1.58	1.73	1.46	1.62	1.43	1.24	1.31	1.38	1.39	1.45	
Evenness Index	0.77	0.80	0.78	0.76	0.79	0.81	0.78	0.80	0.77	0.81	0.77	0.78	0.81	
No. of species	8	7	5	8	9	6	8	6	5	5	6	6	6	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (indiv/lit.)	1.69	155	122	154	145	169	103							
Shannon Weiner Diversity	1.56	1.45	1.31	1.4	1.42	1.39	1.05							
Evenness Index	0.80	0.81	0.81	0.78	0.79	0.78	0.76							
No. of species	7	6	5	6	6	6	4							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (indiv/lit.)	145	179	185	178	153	155	168	143	165	149	188	164	151	
Shannon Weiner Diversity	1.36	1.49	1.66	1.53	1.44	1.58	1.51	1.46	1.41	1.38	1.53	1.44	1.49	
Evenness Index	0.76	0.77	0.80	0.79	0.80	0.81	0.78	0.81	0.79	0.77	0.79	0.80	0.83	
No. of species	6	7	8	7	6	7	7	6	6	6	7	6	6	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (indiv/lit.)	156	167	149	172	161	156	130	143	146	162	179	135	169	137
Shannon Weiner Diversity	1.38	1.41	1.45	1.51	1.39	1.23	1.21	1.33	1.39	1.35	1.32	1.28	1.34	1.27
Evenness Index	0.77	0.79	0.81	0.78	0.78	0.76	0.75	0.74	0.78	0.75	0.74	0.80	0.75	0.79
No. of species	6	6	6	7	6	5	5	6	6	6	6	5	6	5
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (indiv/lit.)	66		34											
Shannon Weiner Diversity	1.45		1.32											
Evenness Index	0.81		0.74											
No. of species	6.00		6.00											

Month of sample: February 2012

Physico-Chemical Parameters

Sub basin- Siang: I-IV

S.No.	Physical / Chemical Characteristics	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Water Temperature (°C)	10.2	9.6	10.3	10.3	10.6	8.9	9	9.4	9.4	9.6	8.7	8.7	9
2	Dissolved Oxygen (mg/l)	10.4	10.5	10.25	10.2	10.4	10.85	10.8	10.65	10.6	10.5	10.88	10.85	10.45
3	Turbidity (NTU)	0.04	0.07	0.04	0.02	0.21	0.16	0.12	0.17	0.34	0.04	0.09	0.18	0.18
4	Total Suspended Solids (mg/l)	7	11	7	6	28	22	16	23	28	7	13	23	23
5	pH	8.43	8.47	8.51	8.26	8.19	8.29	8.23	8.31	8.41	8.52	8.15	8.48	8.35
6	Electrical Conductivity (µS/cm)	209	194	198	167	245	304	176	167	178	198	198	159	92
7	Total Dissolved Solids (mg/l)	127.5	118.3	120.8	101.9	149.5	185.4	107.4	101.9	108.6	120.8	120.8	97.0	56.1
8	Biological Oxygen Demand (mg/l)	1.21	1.21	1.21	0.98	1.16	0.89	0.67	1.07	0.74	0.9	1.21	1.34	1.12
9	Chemical Oxygen Demand (mg/l)	2.31	2.19	2.65	1.45	2.78	1.56	1.78	2.89	0.17	2.16	2.98	2.98	1.87
10	Total Coliform (MPN / 100 ml)	1	1	A	A	A	2	2	A	1	1	A	1	A
11	Chloride (mg/l)	9	11	10	9	11	10	9	12	10	8	8	11	10
12	Total alkalinity (mg/l of CaCO ₃)	60	62	61	59	62	61	59	61	63	60	57	59	61
13	Nitrates (NO ₃) (mg/l)	0.065	0.042	0.033	0.020	0.026	0.035	0.035	0.015	0.034	0.023	0.026	0.021	0.015
14	Sulphate (mg/l)	4.64	3.71	8.34	5.56	6.49	4.64	4.64	3.71	6.47	5.54	3.70	5.54	8.32
15	Phosphate (PO ₄) (mg/l)	0.009	0.008	0.006	0.003	0.001	0.006	0.003	0.005	0.005	0.001	0.003	0.005	0.006

16	Total Hardness (mg/l)	48.29	46.34	58.88	36.34	46.27	51.05	49.40	52.78	54.20	47.64	42.11	44.16	50.26
17	Calcium hardness (mg/l)	38.93	38.24	48.67	31.05	39.40	41.72	42.18	44.64	45.55	40.54	35.53	37.35	42.82
18	Calcium ions (mg/ l)	15.57	15.30	19.47	12.42	15.76	16.69	16.87	17.86	18.22	16.22	14.21	14.94	17.13
19	Magnesium Hardness (mg/l)	9.35	8.10	10.22	5.28	6.87	9.33	7.22	8.14	8.65	7.10	6.58	6.81	7.44
20	Magnesium ions (mg/l)	3.74	3.67	4.67	2.98	3.78	4.00	4.05	4.29	4.37	3.89	3.41	3.59	4.11
21	Potassium (mg/l)	1.78	1.02	1.32	1.76	1.10	1.19	1.56	0.87	0.98	1.16	1.62	1.27	1.45
22	Sodium (mg/l)	3.21	1.54	1.87	2.98	1.45	2.14	2.17	1.56	2.65	1.90	2.97	2.67	2.19
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub basin- Yamne and Simang

S.No.	Physical / Chemical Characteristics	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	Water Temperature (°C)	9.18	8.56	10.2	9.1	10.2	9.7	9.81
2	Dissolved Oxygen (mg/l)	10.37	10.9	10.35	10.4	10.35	10.45	10.4
3	Turbidity (NTU)	0.01	0.23	0.19	0.03	0.14	0.06	0.09
4	Total Suspended Solids (mg/l)	4	29	23	6	17	10	13
5	pH	8.21	8.3	8.09	8.24	8.41	8.16	8.52
6	Electrical Conductivity (µS/cm)	301	3.67	287	287	367	287	309
7	Total Dissolved Solids (mg/l)	183.6	2.2	175.1	175.1	223.9	175.1	188.5
8	Biological Oxygen Demand (mg/l)	0.98	1.67	1.89	0.78	1.34	0.67	1.45
9	Chemical Oxygen Demand (mg/l)	2.09	2.98	3.09	1.98	2.56	1.24	2.98
10	Total Coliform (MPN /100 ml)	1	1	1	1	1	1	A
11	Chloride (mg/l)	9	12	9	10	9	9	8
12	Total alkalinity (mg/l of CaCO ₃)	60	62	57	58	63	60	57
13	Nitrates (NO ₃) (mg/l)	0.015	0.075	0.159	0.168	0.024	0.027	0.014
14	Sulphate (mg/l)	4.62	2.77	3.70	4.62	8.32	6.47	2.77
15	Phosphate (PO ₄) (mg/l)	0.074	0.009	0.028	0.065	0.046	0.055	0.046
16	Total Hardness (mg/l)	51.83	53.69	51.05	47.46	59.07	53.68	43.23
17	Calcium hardness (mg/l)	43.89	46.89	43.66	41.12	50.82	45.97	38.58
18	Calcium ions (mg/ l)	17.56	18.76	17.46	16.45	20.33	18.39	15.43
19	Magnesium Hardness (mg/l)	7.94	6.79	7.39	6.34	8.25	7.71	4.65
20	Magnesium ions (mg/l)	4.21	4.50	4.19	3.95	4.88	4.41	3.70
21	Potassium (mg/l)	1.09	0.98	1.12	0.98	0.88	1.07	1.11
22	Sodium (mg/l)	1.89	2.19	1.65	1.56	1.69	1.73	1.6
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND

Sub basin- Siyom: I-III and Hirit

S.No.	Physical / Chemical Characteristics	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Water Temperature (°C)	8.5	8.3	8.7	9.4	7.8	7.6	8	7.6	8.1	7.9	7.5	7.2	7.2
2	Dissolved Oxygen (mg/l)	10.9	10.95	10.81	10.5	11.2	11.25	10.98	11.05	10.76	10.88	10.96	11.38	11.34
3	Turbidity (NTU)	0.13	0.1	0.1	0.31	0.17	0.17	0.12	0.05	0.11	0.01	0.01	0.02	0.12
4	Total Suspended Solids (mg/l)	16	15	15	27	22	22	16	10	16	2	2	3	15
5	pH	7.99	7.87	7.87	7.23	7.87	7.34	7.65	7.41	7.76	7.54	7.98	7.67	7.87
6	Electrical Conductivity (µS/cm)	89	105	115	156	167	123	176	98.8	145	45	111	76	81
7	Total Dissolved Solids (mg/l)	54.3	64.1	70.2	95.2	101.9	75.0	107.4	60.3	88.5	27.5	67.7	46.4	49.4
8	Biological Oxygen Demand (mg/l)	0.45	1.09	1.89	1.67	1.45	1.87	1.76	1.09	1.09	1.56	1.21	1.56	1.67
9	Chemical Oxygen Demand (mg/l)	3.9	3.09	3.42	3.21	3.67	3.76	2.87	3.8	2.98	3.98	1.89	3.89	2.87
10	Total Coliform (MPN / 100 ml)	1	A	3	A	A	A	1	A	A	A	A	1	A
11	Chloride (mg/l)	10	9.5	11	12	14	10	11	12	11	9	12	9	13
12	Total alkalinity (mg/l of CaCO ₃)	54	61	62	64	67	61	64	65	64	59	68	60	68
13	Nitrates (NO ₃) (mg/l)	0.013	0.016	0.017	0.008	0.014	0.008	0.013	0.016	0.007	0.014	0.018	0.005	0.008
14	Sulphate (mg/l)	3.70	3.97	4.62	4.34	5.54	4.62	2.82	4.71	2.82	2.82	3.76	2.82	3.76
15	Phosphate (PO ₄) (mg/l)	0.005	0.004	0.001	0.001	0.004	0.005	0.005	0.006	0.005	0.007	0.008	0.008	0.004
16	Total Hardness (mg/l)	49.05	52.60	59.08	55.78	64.65	49.52	54.87	56.36	54.14	55.99	66.55	49.83	60.09
17	Calcium hardness (mg/l)	40.89	44.35	50.13	47.36	53.59	43.20	46.11	47.99	45.90	45.90	54.70	41.14	49.79
18	Calcium ions (mg/ l)	16.35	17.74	20.05	18.94	21.44	17.28	18.44	19.20	18.36	18.36	21.88	16.46	19.92
19	Magnesium Hardness (mg/l)	8.16	8.25	8.95	8.43	11.06	6.32	8.76	8.37	8.23	10.09	11.85	8.69	10.30
20	Magnesium ions (mg/l)	3.93	4.26	4.81	4.55	5.14	4.15	4.43	4.61	4.41	4.41	5.25	3.95	4.78
21	Potassium (mg/l)	0.85	1.32	1.34	0.91	0.89	1.31	1.23	1.01	1.22	0.51	0.45	0.54	1.09
22	Sodium (mg/l)	1.56	3.09	2.28	1.21	1.76	2.51	2.54	1.98	2.15	1.21	1.15	1.34	1.78
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub Basin- Yargyap Chhu

S.No.	Physical / Chemical Characteristics	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Water Temperature (°C)	10.3	8.1	10.45	8.57	7.9	8.19	8.8	8.6	8.29	7.3	7.8	6	7.3	6.3
2	Dissolved Oxygen (mg/l)	10.4	11	10.4	10.76	10.8	10.8	10.85	10.98	10	11.27	11.34	11.76	11.52	11.92
3	Turbidity (NTU)	0.05	0.12	0.04	0.05	0.1	0.04	0	0.1	0.06	0.04	0.1	0.34	0.01	0.01
4	Total Suspended Solids (mg/l)	9	17	6	9	15	7	1	12	10	6	14	29	2	2
5	pH	7.43	7.43	7.61	7.62	7.6	7.45	7.5	7.7	7.51	7.54	7.54	7.41	7.51	7.41
6	Electrical Conductivity (µS/cm)	111	98	192	93	104	167	118	123	165	112	118	178	67	61
7	Total Dissolved Solids (mg/l)	67.7	59.8	117.1	56.7	63.4	101.9	72.0	75.0	100.7	68.3	72.0	108.6	40.9	37.2
8	Biological Oxygen Demand (mg/l)	1.43	0.98	1.32	0.81	0.9	0.98	1.5	1.3	1.32	1.05	1.21	0.74	1.21	1.21
9	Chemical Oxygen Demand (mg/l)	3.98	1.78	2.76	2.98	3.1	3.23	2.9	3	3.15	2.45	2.56	0.17	3.45	3.45
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	13	10	13	9	11	10	12	11	13	11	10	11	12	11
12	Total alkalinity (mg/l of CaCO ₃)	71	54	72	47	59	56	61	59	67	68	63	67	63	69
13	Nitrates (NO ₃) (mg/l)	0.177	0.037	0.065	0.168	0.159	0.159	0.084	0.065	0.047	0.056	0.047	0.065	0.028	0.009
14	Sulphate (mg/l)	4.71	4.71	5.65	2.82	3.76	2.82	4.71	2.82	3.76	4.71	5.65	5.65	4.71	5.65
15	Phosphate (PO ₄) (mg/l)	0.007	0.008	0.001	0.005	0.007	0.003	0.003	0.005	0.002	0.007	0.004	0.005	0.008	0.008
16	Total Hardness (mg/l)	62.16	49.94	63.97	44.30	54.77	53.57	55.85	50.12	60.65	61.81	58.16	59.69	60.06	63.72
17	Calcium hardness (mg/l)	52.13	41.71	53.54	37.75	48.93	46.13	47.53	43.57	50.56	52.43	47.77	51.28	49.87	53.17
18	Calcium ions (mg/ l)	20.85	16.68	21.42	15.10	19.57	18.45	19.01	17.43	20.22	20.97	19.11	20.51	19.95	21.27
19	Magnesium Hardness (mg/l)	10.04	8.23	10.43	6.55	5.84	7.44	8.32	6.55	10.09	9.39	10.39	8.40	10.19	10.55
20	Magnesium ions (mg/l)	5.00	4.00	5.14	3.62	4.70	4.43	4.56	4.18	4.85	5.03	4.59	4.92	4.79	5.10
21	Potassium (mg/l)	1.01	0.98	1.45	1.21	1.3	0.92	1.3	1.3	0.65	1.76	1.21	1.45	0.78	0.78

22	Sodium (mg/l)	1.67	1.44	2.61	2.09	2.2	1.56	2.1	2.1	1.42	2.34	2.32	2.65	1.81	1.56
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Outside basin

S.No.	Physical / Chemical Characteristics	B1	B2
1	Water Temperature (°C)	12	12.3
2	Dissolved Oxygen (mg/l)	9.74	9.7
3	Turbidity (NTU)	0.24	0.27
4	Total Suspended Solids (mg/l)	28	31
5	pH	8.42	8.45
6	Electrical Conductivity (µS/cm)	191.2	177.5
7	Total Dissolved Solids (mg/l)	127.5	118.3
8	Biological Oxygen Demand (mg/l)	1.21	1.21
9	Chemical Oxygen Demand (mg/l)	2.31	2.19
10	Total Coliform (MPN / 100 ml)	1	1
11	Chloride (mg/l)	12.5	10
12	Total alkalinity (mg/l of CaCO ₃)	59	54
13	Nitrates (NO ₃) (mg/l)	0.065	0.042
14	Sulphate (mg/l)	6.64	8.71
15	Phosphate (PO ₄) (mg/l)	0.009	0.008
16	Total Hardness (mg/l)	52.79	48.59
17	Calcium hardness (mg/l)	41.43	39.49
18	Calcium ions (mg/ l)	16.57	15.80
19	Magnesium Hardness (mg/l)	11.35	9.10
20	Magnesium ions (mg/l)	3.98	3.79
21	Potassium (mg/l)	1.78	1.02
22	Sodium (mg/l)	3.21	1.54
23	Iron (mg/l)	<0.01	<0.01
24	Manganese (mg/l)	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND
27	Copper (Cu) (mg/l)	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND
30	Lead (Pb) (mg/l)	ND	ND

Biological Parameters

Phytoplankton

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnantheidium affinis</i>	+	+	+	+	+	+	+	+	-	+	+	+	+
2	<i>Achnantheidium andicola</i>	-	+	-	+	+	+	-	+	-	+	-	-	+
3	<i>Achnantheidium austriaca</i>	+	+	+	-	-	-	+	+	+	-	+	+	-
4	<i>Achnantheidium austriaca</i> var. <i>helvetica</i>	+	-	-	+	+	+	-	-	-	+	-	-	+
5	<i>Achnantheidium biasoletiana</i>	-	+	+	+	+	+	+	+	+	+	+	+	-
6	<i>Achnantheidium conspicua</i>	-	-	+	+	+	+	-	+	-	+	-	-	+
7	<i>Achnantheidium cranulata</i>	+	+	+	+	-	-	+	-	+	-	+	-	-
8	<i>Achnantheidium dispar</i>	+	+	+	-	-	+	-	+	+	+	-	+	+
9	<i>Achnantheidium exigua</i>	+	+	+	+	-	-	+	+	-	+	+	-	-
10	<i>Achnantheidium exilis</i>	-	+	-	+	+	+	+	-	-	-	-	+	-
11	<i>Achnantheidium fragilarioides</i>	+	-	-	+	+	+	-	-	+	-	-	+	+
12	<i>Achnantheidium Grimmei</i>	-	+	+	+	+	+	+	+	-	-	-	+	+
13	<i>Achnantheidium hauckiana</i>	+	+	-	+	+	-	+	-	-	+	+	-	-
14	<i>Achnantheidium holsti</i>	+	-	+	-	-	+	+	+	+	+	-	+	+
15	<i>Achnantheidium hungarica</i>	-	+	-	+	-	-	-	+	-	-	-	-	+
16	<i>Achnantheidium kryophila</i>	+	-	+	+	+	+	+	-	-	+	+	+	-
17	<i>Achnantheidium lanceolata</i>	-	+	+	-	-	-	-	+	-	-	-	-	-
18	<i>Achnantheidium lapidosa</i>	-	+	-	+	-	+	-	-	+	+	-	-	+
19	<i>Achnantheidium lavenderi</i>	+	+	+	-	-	+	+	+	-	-	-	+	-
20	<i>Achnantheidium lemmermanni</i>	-	+	-	+	+	-	-	-	-	+	-	+	+

21	<i>Achnanthidium Lilljeborgei</i>	+	+	-	+	-	+	-	-	+	+	-	-	+
22	<i>Achnanthidium linearis</i>	-	+	-	-	+	+	+	+	+	+	+	+	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	-	+	+	+	-	+	-	-	-	+	+	+
24	<i>Achnanthidium microcephala</i>	-	+	+	+	-	+	+	+	+	+	-	+	+
25	<i>Achnanthidium minutissima</i>	+	+	-	-	-	-	+	-	-	-	+	-	+
26	<i>Achnanthidium nodosa</i>	-	-	-	+	-	+	+	+	-	+	-	+	-
27	<i>Achnanthidium plonensis</i>	-	+	-	-	+	+	+	+	+	-	-	+	-
28	<i>Achnanthidium saxonica</i>	+	+	+	+	+	-	+	-	-	-	+	-	+
29	<i>Achnanthidium</i> sp.	-	+	+	-	+	-	+	+	+	-	-	+	-
30	<i>Achnanthidium suchlandti</i>	+	-	-	+	-	-	-	-	-	+	-	-	+
31	<i>Achnanthidium taeniata</i>	-	+	+	-	-	+	+	+	+	-	+	-	-
32	<i>Achnanthidiumb conspicua</i>	+	-	-	+	+	-	-	+	-	-	-	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	-	-	-	+	+	-	+	+	-	+	+	+
34	<i>Anomoeneis</i> sp.	+	+	+	+	-	-	+	-	+	-	+	-	+
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	+	-	+	+	-	-	-	-	-	+	+
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	+	-	+	-	+	+	-	+	+	-	+	+
37	<i>Cocconeis placentula</i>	-	+	+	-	+	-	-	+	-	+	+	-	-
38	<i>Cymbella</i> sp.	+	-	-	+	-	+	-	-	+	-	-	+	+
39	<i>Cymbella affinis</i>	-	+	-	-	-	-	+	+	-	+	+	+	+
40	<i>Cymbella delicatula</i>	+	-	-	+	+	+	-	+	-	-	+	-	-
41	<i>Cymbella laevis</i>	-	-	+	-	+	+	+	-	-	-	-	+	-
42	<i>Cymbella microcephala</i>	+	+	-	+	-	+	-	-	+	-	-	-	-
43	<i>Cymbella pusila</i>	+	-	+	-	-	-	-	+	-	-	+	+	+
44	<i>Cymbella tumida</i>	-	+	-	+	-	+	-	-	+	+	-	+	-
45	<i>Cymbella turgida</i>	+	+	+	-	+	-	+	+	-	-	-	-	-
46	<i>Cymbella ventricosa</i>	-	-	-	+	+	-	-	-	+	+	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	+	-	-	+	-	-	-	-	-	+	+
48	<i>Diatoma anceps</i>	+	+	-	+	-	-	+	+	-	+	-	-	-
49	<i>Diatoma hiemale</i>	+	-	+	-	+	+	-	-	-	-	+	+	+
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	+	+	+	-	-	+	-	-	+	-	-

51	<i>Diatoma vulgare</i>	-	-	+	-	-	-	-	-	+	+	-	+	+
52	<i>Didymosphaenia geminata</i>	+	+	-	+	-	+	+	+	-	-	-	-	+
53	<i>Eunotia linearis</i>	-	+	+	+	-	+	-	+	+	+	+	-	-
54	<i>Eunotia</i> sp.	+	-	-	+	-	-	-	+	-	+	-	-	+
55	<i>Fragilaria capucina</i>	-	+	+	-	-	+	+	+	-	-	-	+	-
56	<i>Fragilaria construens</i>	-	+	+	+	-	-	-	-	+	-	-	+	-
57	<i>Fragilaria inflata</i>	+	+	-	-	+	-	+	+	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	+	+	+	-	-	+	+	-	-	+	+	+	-
59	<i>Fragilaria rumpens</i>	+	-	+	+	-	+	-	+	-	-	-	+	+
60	<i>Fragilaria</i> sp.	+	+	-	-	+	-	-	-	-	+	-	-	-
61	<i>Fragilaria vaucheriae</i>	+	-	-	+	+	+	+	+	+	-	+	+	-
62	<i>Fragilaria. capucina</i> var. <i>lanceolata</i>	+	+	+	-	-	+	+	-	-	+	-	+	+
63	<i>Fragilaria. pinnata</i>	+	-	+	+	-	-	-	+	-	-	+	+	+
64	<i>Gomphonema gracile</i>	+	+	-	-	+	-	-	-	-	-	+	-	-
65	<i>Gomphonema helveticum</i>	+	-	+	+	-	+	+	+	+	-	+	-	+
66	<i>Gomphonema intricatum</i>	+	+	+	+	+	-	-	-	-	-	-	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	+	+	+	-	+	+	-	+	+	-	-	-
68	<i>Gomphonema olivaceoides</i>	+	+	-	-	+	-	-	-	-	-	+	+	+
69	<i>Gomphonema olivaceum</i>	+	-	-	+	-	+	-	-	-	-	-	+	+
70	<i>Gomphonema parvulum</i>	+	+	-	-	+	+	+	+	-	+	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	+	+	+	-	+	+	-	+	+	-	-
72	<i>Gomphonema bohemicum</i>	+	-	-	-	-	+	-	-	+	-	-	-	-
73	<i>Gomphonema gracile</i>	-	+	+	+	+	-	+	-	-	-	-	+	-
74	<i>Gomphonema helveticum</i>	+	-	+	+	-	-	-	-	-	+	-	-	+
75	<i>Gomphonema herbidense</i>	-	-	-	+	-	+	+	+	+	-	+	+	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	+	+	-	+	-	-	-	+	+	-	-	+
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	+	-	+	-	+	+	+	+	+	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	+	+	+	-	-	+	+	-	-	-	+	-	-

79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	+	-	-	-	-	-	+	-	+	+	-	+	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	+	-	+	+	-	-	-	+	-	-	-	+
81	<i>Gomphonema olivaceum</i>	+	+	-	+	-	+	-	+	-	+	+	+	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	+	+	+	-	-	-	+	-	-
83	<i>Gomphonema parvulum</i>	+	+	+	-	-	-	+	-	-	+	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	+	-	-	-	-	+	-	+	+	-	-	+	-
85	<i>Gomphonema sphaerophorum</i>	+	+	+	+	-	-	+	-	-	-	-	+	-
86	<i>Gomphonema. intricatum</i>	+	-	+	-	+	-	+	-	+	+	-	-	+
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	-	+	+	+	+	+	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	+	+	-	-	-	+	-	-	-	+	+	-	+
89	<i>Hannaea arcus</i>	-	-	-	+	+	-	-	+	+	+	-	+	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	+	+	-	-	-	+	-	-	+	+	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	+	+	+	+	-	+	+	+	+	-	-	+	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	-	-	-	-	-	+	-	-	-	-	+
93	<i>Melosira junergensii</i>	-	-	+	+	-	+	-	-	-	-	+	-	+
94	<i>Navicula andium</i>	-	+	-	+	+	+	+	-	-	-	+	-	-
95	<i>Navicula cryptocephala</i>	+	+	+	+	-	-	+	-	-	+	-	+	+
96	<i>Navicula feverborni</i>	+	+	-	-	+	+	-	+	+	-	+	+	+
97	<i>Navicula halophila</i>	+	-	-	+	-	-	-	-	+	-	-	-	+
98	<i>Navicula radiosa</i>	+	-	+	+	+	+	+	+	-	+	+	-	+
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	+	-	+	-	+	-	-	+	+	-	+	+
100	<i>Pinnularia borealis</i>	+	-	+	+	-	-	-	-	-	-	+	+	+
101	<i>Pinnularia molaris</i>	-	+	-	-	+	+	-	+	+	+	+	+	-
102	<i>Pinnularia</i> sp.	+	-	-	+	-	-	+	-	-	-	-	-	+
103	<i>Planothidium lanceolata</i>	+	-	-	+	+	+	+	-	-	+	+	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	+	+	-	-	-	+	+	-	-	-	+	+
105	<i>Reimeria sinuata</i>	-	-	-	+	+	-	+	-	+	+	-	-	-
106	<i>Stauroneis</i> sp.	-	+	-	-	-	+	-	-	-	-	+	+	+
107	<i>Surirella ovata</i>	+	-	+	+	+	-	-	-	-	-	+	+	-
108	<i>Surirella</i> sp.	-	-	-	-	-	-	+	-	+	+	-	-	+

109	<i>Synedra</i> sp.	-	+	-	-	-	-	+	-	-	-	-	-	+
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+	-	+	+	+	-	+	-	+	-	+	-
111	<i>Synedra amphirhynchus</i>	-	-	+	-	-	-	+	-	+	-	+	-	-
112	<i>Synedra rumpens</i>	+	+	-	+	+	-	-	-	-	+	-	-	+
113	<i>Synedra ulna</i>	+	+	-	-	+	+	+	-	-	-	-	-	+
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-	+	-	+	-	-	-	-	-	-	+	-
115	<i>Tabellaria flocculosa</i>	+	-	-	+	-	+	-	+	-	-	+	-	+
116	<i>Tetracyclus</i> sp.	+	+	-	-	+	-	-	-	-	+	-	-	+
	Total	69	72	54	68	53	61	57	53	43	52	46	59	58

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	+	-	+	+	+	+	+
3	<i>Achnanthidium austriaca</i>	-	+	+	-	-	+	+
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	+	+	+	-	+
5	<i>Achnanthidium biasoletiana</i>	+	+	-	-	+	+	-
6	<i>Achnanthidium conspicua</i>	+	+	+	-	+	+	+
7	<i>Achnanthidium cranulata</i>	-	-	-	+	-	+	+
8	<i>Achnanthidium dispar</i>	+	+	+	-	-	-	-
9	<i>Achnanthidium exigua</i>	+	+	+	+	-	+	+
10	<i>Achnanthidium exilis</i>	+	-	-	-	+	+	-
11	<i>Achnanthidium fragilarioides</i>	+	-	+	+	+	-	+
12	<i>Achnanthidium Grimmei</i>	+	+	+	+	+	-	+
13	<i>Achnanthidium hauckiana</i>	-	+	+	-	+	+	-
14	<i>Achnanthidium holsti</i>	+	+	-	-	-	-	-
15	<i>Achnanthidium hungarica</i>	-	+	+	-	-	+	-
16	<i>Achnanthidium kryophila</i>	+	-	+	+	+	+	+
17	<i>Achnanthidium lanceolata</i>	-	+	+	-	-	-	-
18	<i>Achnanthidium lapidosa</i>	+	-	+	-	-	+	-
19	<i>Achnanthidium lavenderi</i>	+	-	+	+	-	-	+
20	<i>Achnanthidium lemmermanni</i>	-	+	-	-	+	+	-
21	<i>Achnanthidium Lillijeborgei</i>	+	+	-	-	-	+	-
22	<i>Achnanthidium linearis</i>	-	-	+	+	+	+	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	+	+	-	+	+	-
24	<i>Achnanthidium microcephala</i>	+	+	+	-	-	-	-
25	<i>Achnanthidium minutissima</i>	-	-	+	+	-	+	+
26	<i>Achnanthidium nodosa</i>	-	+	-	-	-	-	-
27	<i>Achnanthidium plonensis</i>	+	-	+	-	+	+	-
28	<i>Achnanthidium saxonica</i>	+	-	+	+	+	-	+
29	<i>Achnanthidium</i> sp.	-	-	+	+	+	+	+
30	<i>Achnanthidium suchlandti</i>	+	-	-	-	-	+	-
31	<i>Achnanthidium taeniata</i>	-	+	-	+	-	+	+
32	<i>Achnanthidiumb conspicua</i>	+	-	+	-	+	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	+	+	+	+	+	+
34	<i>Anomoeneis</i> sp.	+	-	+	-	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	-	+	+	+	+
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	-	+	-
37	<i>Cocconeis placentula</i>	+	+	+	+	+	+	+

38	<i>Cymbella</i> sp.	-	-	+	+	-	-	+
39	<i>Cymbella affinis</i>	-	+	-	-	-	+	-
40	<i>Cymbella delicatula</i>	-	+	+	+	+	-	+
41	<i>Cymbella laevis</i>	+	-	-	-	+	-	-
42	<i>Cymbella microcephala</i>	-	+	+	+	-	+	+
43	<i>Cymbella pusila</i>	+	-	+	-	-	-	-
44	<i>Cymbella tumida</i>	+	-	+	+	-	+	+
45	<i>Cymbella turgida</i>	-	-	+	-	+	-	-
46	<i>Cymbella ventricosa</i>	+	+	-	+	+	-	+
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	+	-	-	-	-
48	<i>Diatoma anceps</i>	-	-	+	-	-	+	-
49	<i>Diatoma hiemale</i>	-	+	-	+	+	+	+
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	+	-	-
51	<i>Diatoma vulgare</i>	+	+	+	-	-	+	-
52	<i>Didymosphaenia geminata</i>	+	+	+	+	-	-	+
53	<i>Eunotia linearis</i>	+	-	+	-	-	+	-
54	<i>Eunotia</i> sp.	-	-	+	-	-	+	-
55	<i>Fragilaria capucina</i>	-	+	-	+	-	-	+
56	<i>Fragilaria construens</i>	+	+	-	-	-	+	-
57	<i>Fragilaria inflata</i>	+	-	+	+	+	+	+
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	+	+	-	-	-	-
59	<i>Fragilaria rumpens</i>	+	+	-	+	-	+	+
60	<i>Fragilaria</i> sp.	-	-	+	+	+	+	+
61	<i>Fragilaria vaucheriae</i>	-	-	-	-	+	-	-
62	<i>Fragilaria. capucina</i> var. <i>lanceolata</i>	-	-	+	-	-	+	-
63	<i>Fragilaria. pinnata</i>	+	+	-	+	-	-	+
64	<i>Gomphonema gracile</i>	-	+	-	-	+	+	-
65	<i>Gomphonema helveticum</i>	+	+	-	+	-	-	+
66	<i>Gomphonema intricatum</i>	-	+	+	-	+	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-	+	+	-	+	+
68	<i>Gomphonema olivaceoides</i>	-	+	+	-	+	-	-
69	<i>Gomphonema olivaceum</i>	-	+	+	+	-	-	+
70	<i>Gomphonema parvulum</i>	-	-	-	-	+	+	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	-	+	+	+	-	+
72	<i>Gomphonema bohemicum</i>	-	+	-	-	-	+	-
73	<i>Gomphonema gracile</i>	+	-	+	+	+	+	+
74	<i>Gomphonema helveticum</i>	-	+	-	+	-	-	+
75	<i>Gomphonema herbidense</i>	-	-	+	-	-	+	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	+	+	+	+	-	+
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	+	-	-	-	-	-	-

78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	+	-	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	+	-	-	-	+	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-	+	+	+	-	+
81	<i>Gomphonema olivaceum</i>	+	+	+	-	-	+	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	+	+	+	+
83	<i>Gomphonema parvulum</i>	+	+	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	+	+	-	-	+
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-
86	<i>Gomphonema. intricatum</i>	+	+	-	+	+	+	+
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	-	+	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-
89	<i>Hannaea arcus</i>	+	-	-	+	+	-	+
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	+	-	+	+
91	<i>Hannaea arcus</i> var. <i>linearis</i>	+	+	+	+	-	-	+
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	-	+	-	-	+
93	<i>Melosira junergensii</i>	+	+	-	-	-	-	-
94	<i>Navicula andium</i>	-	+	-	+	+	+	+
95	<i>Navicula cryptocephala</i>	+	+	+	-	-	+	-
96	<i>Navicula feverborni</i>	+	-	-	+	+	-	+
97	<i>Navicula halophila</i>	-	-	+	-	-	+	-
98	<i>Navicula radiosa</i>	-	+	-	-	+	+	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	+	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	+	+	-	+	-	-	+
101	<i>Pinnularia molaris</i>	-	-	-	-	+	+	-
102	<i>Pinnularia</i> sp.	-	-	-	+	-	-	+
103	<i>Planothidium lanceolata</i>	+	+	-	-	+	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	+	-	-	-	-	+	-
105	<i>Reimeria sinuata</i>	-	-	-	+	+	+	+
106	<i>Stauroneis</i> sp.	-	+	-	-	-	-	-
107	<i>Surirella ovata</i>	+	+	-	+	+	+	+
108	<i>Surirella</i> sp.	-	+	+	+	-	-	+
109	<i>Synedra</i> sp.	+	-	-	-	-	+	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+	-	-	+	+	-
111	<i>Synedra amphirhynchus</i>	-	-	+	+	-	+	+
112	<i>Synedra rumpens</i>	-	-	-	-	+	-	-
113	<i>Synedra ulna</i>	+	+	-	-	+	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	+	-	+	-	-
115	<i>Tabellaria flocculosa</i>	-	-	+	+	-	+	+
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-
	Total	56	58	62	53	52	62	55

Sub Basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	-	+	+	-	+	+	+	-	-	-	+	-	-
3	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	-	+	+	+	+	+	+
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-	-	+	-	-	+	-	-	+	+	-	-
5	<i>Achnanthidium biasoletiana</i>	-	-	+	+	+	-	+	+	+	-	-	+	+
6	<i>Achnanthidium conspicua</i>	-	+	+	-	+	+	+	-	-	-	+	-	-
7	<i>Achnanthidium cranulata</i>	+	+	-	+	-	-	-	-	-	+	-	+	-
8	<i>Achnanthidium dispar</i>	+	-	+	+	+	-	-	+	+	+	+	-	+
9	<i>Achnanthidium exigua</i>	+	-	+	-	+	+	-	-	-	+	+	-	-
10	<i>Achnanthidium exilis</i>	-	+	-	+	-	+	+	+	+	-	-	+	+
11	<i>Achnanthidium fragilarioides</i>	+	-	-	+	+	-	+	+	-	+	+	+	-
12	<i>Achnanthidium Grimmei</i>	-	-	+	-	+	-	+	+	+	-	+	+	+
13	<i>Achnanthidium hauckiana</i>	+	+	-	+	+	-	+	-	+	+	+	+	+
14	<i>Achnanthidium holsti</i>	+	-	+	+	+	+	-	+	-	+	-	+	-
15	<i>Achnanthidium hungarica</i>	-	+	+	+	-	-	-	-	+	-	+	-	+
16	<i>Achnanthidium kryophila</i>	+	+	-	+	+	+	+	+	+	+	+	+	+
17	<i>Achnanthidium lanceolata</i>	-	-	+	+	-	-	-	-	-	-	+	-	-
18	<i>Achnanthidium lapidosa</i>	-	+	-	-	+	-	-	-	+	-	+	-	+
19	<i>Achnanthidium lavenderi</i>	+	-	+	+	+	+	-	+	-	+	+	+	-
20	<i>Achnanthidium lemmermanni</i>	-	-	-	+	-	+	+	+	+	-	-	-	+
21	<i>Achnanthidium Lillijeborgei</i>	+	+	-	-	+	-	-	-	+	+	-	-	+
22	<i>Achnanthidium linearis</i>	-	+	+	+	+	-	+	+	-	-	+	+	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	-	-	+	-	+	+	+	-	+	+	+	-
24	<i>Achnanthidium microcephala</i>	-	-	+	+	+	+	-	+	+	-	+	-	+
25	<i>Achnanthidium minutissima</i>	+	+	-	+	-	-	-	-	+	+	+	-	+
26	<i>Achnanthidium nodosa</i>	-	-	+	-	-	+	-	+	-	-	-	-	-
27	<i>Achnanthidium plonensis</i>	-	+	+	+	+	+	+	+	+	-	+	+	+
28	<i>Achnanthidium saxonica</i>	+	-	-	+	+	-	+	-	-	+	+	-	-

29	<i>Achnanthidium</i> sp.	-	+	+	-	+	+	+	+	+	-	+	-	+
30	<i>Achnanthidium suchlandti</i>	+	-	-	+	+	-	-	-	+	+	-	-	+
31	<i>Achnanthidium taeniata</i>	-	+	+	-	-	+	-	-	-	-	-	+	-
32	<i>Achnanthidiumb conspicua</i>	+	-	+	+	+	-	+	-	+	+	+	-	+
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	+	+	+	+	-	+	+	-	-	+	-	-
34	<i>Anomoeneis</i> sp.	+	-	-	-	-	-	-	-	+	+	+	-	+
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	-	-	+	+	+	+	-	-	-	+	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	-	-	-	+	+	-	-	-	+
37	<i>Cocconeis placentula</i>	-	+	+	+	+	-	+	-	+	-	+	+	+
38	<i>Cymbella</i> sp.	+	-	-	-	+	+	-	+	-	+	+	+	-
39	<i>Cymbella affinis</i>	-	+	+	-	-	-	-	+	-	-	-	-	-
40	<i>Cymbella delicatula</i>	+	-	+	+	+	-	+	-	-	+	+	+	-
41	<i>Cymbella laevis</i>	-	-	-	+	+	+	+	+	-	-	-	-	-
42	<i>Cymbella microcephala</i>	+	+	-	-	-	-	-	-	+	+	+	+	+
43	<i>Cymbella pusila</i>	+	-	+	+	-	+	-	+	+	+	+	-	+
44	<i>Cymbella tumida</i>	-	+	-	-	+	+	-	+	-	-	+	-	-
45	<i>Cymbella turgida</i>	+	-	+	+	-	-	+	-	+	+	+	+	+
46	<i>Cymbella ventricosa</i>	-	-	-	+	+	+	+	-	+	-	-	+	+
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	+	-	-	+	-	-
48	<i>Diatoma anceps</i>	+	+	+	-	-	-	-	-	-	+	+	-	-
49	<i>Diatoma hiemale</i>	+	+	-	+	+	+	+	+	+	+	-	+	+
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	+	-	+	+	+	-	+	-	-	-	+
51	<i>Diatoma vulgare</i>	-	+	-	-	-	-	-	+	-	-	+	-	-
52	<i>Didymosphaenia geminata</i>	+	-	+	-	+	+	-	-	+	+	+	+	+
53	<i>Eunotia linearis</i>	-	+	+	+	-	-	-	-	-	-	+	-	-
54	<i>Eunotia</i> sp.	+	+	+	-	+	-	-	-	+	+	+	-	+
55	<i>Fragilaria capucina</i>	-	-	+	-	-	+	-	+	-	-	-	+	-
56	<i>Fragilaria construens</i>	-	+	-	+	-	+	-	+	-	-	-	-	-
57	<i>Fragilaria inflata</i>	+	+	+	+	+	-	+	-	+	+	+	-	+
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	+	-	-	-	+	-	-	+	-	+	+	-	-

59	<i>Fragilaria rumpens</i>	+	+	+	+	-	-	-	+	-	+	-	+	-
60	<i>Fragilaria</i> sp.	+	+	-	+	-	+	+	-	+	+	+	-	+
61	<i>Fragilaria vaucheriae</i>	+	-	+	-	+	-	+	+	+	+	-	+	+
62	<i>Fragilaria. capucina</i> var. <i>lanceolata</i>	+	+	-	+	-	-	-	+	-	+	+	-	-
63	<i>Fragilaria. pinnata</i>	+	-	+	+	+	+	-	+	+	+	-	-	+
64	<i>Gomphonema gracile</i>	+	+	-	+	-	+	+	-	-	+	-	+	-
65	<i>Gomphonema helveticum</i>	+	-	+	-	+	-	-	-	+	+	-	-	+
66	<i>Gomphonema intricatum</i>	+	+	-	-	-	+	+	+	-	+	+	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	+	-	+	+	-	-	-	-	+	+	+	-
68	<i>Gomphonema olivaceoides</i>	+	-	-	-	-	+	+	+	+	+	+	-	+
69	<i>Gomphonema olivaceum</i>	+	-	-	+	-	+	-	+	-	+	+	-	-
70	<i>Gomphonema parvulum</i>	+	+	+	+	+	-	+	-	+	+	-	+	+
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	+	-	-	+	+	-	-	-	+	-	-
72	<i>Gomphonema bohemicum</i>	+	+	-	+	-	-	-	-	+	+	-	+	+
73	<i>Gomphonema gracile</i>	-	+	-	-	-	+	+	+	-	-	+	-	-
74	<i>Gomphonema helveticum</i>	+	-	-	-	+	-	-	-	-	+	-	-	-
75	<i>Gomphonema herbidense</i>	-	+	+	+	+	-	-	+	+	-	+	-	+
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	-	-	+	-	-	+	-	-	+	+	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	+	+	-	-	-	+	-	-	-	+	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	+	-	-	-	+	+	-	-	+	+	-	-	+
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	+	+	-	+	-	-	-	+	-	+	-	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	+	-	+	-	+	-	+	-	+
81	<i>Gomphonema olivaceum</i>	+	+	+	+	-	-	-	+	-	+	+	+	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+	-	+	-	+	+	-	-	-	-	+	-
83	<i>Gomphonema parvulum</i>	+	-	-	-	-	-	-	-	+	+	-	-	+
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	+	-	+	-	+	-	-	+	-	+	+	-	-
85	<i>Gomphonema sphaerophorum</i>	+	-	-	+	+	-	-	+	-	+	-	-	-
86	<i>Gomphonema. intricatum</i>	+	+	-	-	+	+	+	-	-	+	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	-	-	+	+	-	+	-	+	+	+
88	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-	-	+	-	-	-	-	-	+	-	+	-

89	<i>Hannaea arcus</i>	-	-	+	-	-	-	+	+	+	-	-	-	+
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	+	-	-	+	+	-	-	-	+	+	+	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-	+	-	-	-	-	+	-	+	+	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	+	+	-	+	-	-	+	+	-	+	+
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-	-	+	-	-	+	+
94	<i>Navicula andium</i>	-	+	-	+	-	-	+	-	-	-	-	-	-
95	<i>Navicula cryptocephala</i>	+	+	-	+	-	-	-	+	-	+	+	+	-
96	<i>Navicula feverborni</i>	+	-	+	+	-	+	+	+	-	+	-	-	-
97	<i>Navicula halophila</i>	+	+	-	-	-	-	-	-	+	+	+	+	+
98	<i>Navicula radiosa</i>	+	+	+	-	+	+	+	-	-	+	-	+	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	+	-	-	-	+	+	-	-	-	+
100	<i>Pinnularia borealis</i>	+	-	-	+	-	-	-	+	-	+	-	-	-
101	<i>Pinnularia molaris</i>	-	+	+	-	-	-	+	+	-	-	-	+	-
102	<i>Pinnularia</i> sp.	+	-	-	+	-	+	-	-	-	+	-	-	-
103	<i>Planothidium lanceolata</i>	+	-	-	-	+	+	+	-	+	+	-	+	+
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	+	+	-	+	-	-	+	-	-	-	+	-
105	<i>Reimeria sinuata</i>	-	+	-	+	+	-	+	-	+	-	-	-	+
106	<i>Stauroneis</i> sp.	-	-	-	+	-	+	-	+	-	-	-	+	-
107	<i>Surirella ovata</i>	+	+	-	-	+	+	+	+	-	+	-	-	-
108	<i>Surirella</i> sp.	-	-	-	+	+	-	-	-	+	-	+	-	+
109	<i>Synedra</i> sp.	-	+	-	-	+	+	-	-	-	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+	+	-	-	-	+	+	+	+	-	+	+
111	<i>Synedra amphirhynchus</i>	-	+	-	-	+	+	-	-	+	-	+	-	+
112	<i>Synedra rumpens</i>	+	-	-	+	-	-	+	-	-	+	-	+	-
113	<i>Synedra ulna</i>	+	-	-	+	-	-	+	-	-	+	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-	-	+	+	+	+	+	+	+	+	+	+
115	<i>Tabellaria flocculosa</i>	+	+	+	-	+	+	-	-	+	+	+	-	+
116	<i>Tetracyclus</i> sp.	+	+	-	+	-	-	+	-	-	+	-	+	-
	Total	69	56	53	65	59	51	53	59	55	69	62	50	55

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	+	-	-	+	+	+	-	+	-	+	-	-	+	+
3	<i>Achnanthidium austriaca</i>	-	+	+	-	+	-	+	+	+	+	+	+	+	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-	-	+	-	+	-	+	-	+	-	-	-	+
5	<i>Achnanthidium biasoletiana</i>	+	+	+	-	+	+	+	-	+	-	+	+	+	+
6	<i>Achnanthidium conspicua</i>	+	-	+	-	+	+	-	+	+	+	-	-	+	+
7	<i>Achnanthidium cranulata</i>	-	-	+	+	-	-	+	-	+	-	-	-	-	-
8	<i>Achnanthidium dispar</i>	-	+	+	-	+	-	+	+	+	+	+	+	+	+
9	<i>Achnanthidium exigua</i>	-	-	+	+	+	-	-	+	+	-	-	-	+	-
10	<i>Achnanthidium exilis</i>	+	+	+	-	-	+	+	-	-	+	+	+	-	+
11	<i>Achnanthidium fragilarioides</i>	+	+	-	+	+	+	+	+	-	-	-	+	-	+
12	<i>Achnanthidium Grimmei</i>	+	+	+	+	+	+	-	+	+	+	+	+	+	+
13	<i>Achnanthidium hauckiana</i>	+	-	+	-	+	+	-	+	-	+	+	-	-	-
14	<i>Achnanthidium holsti</i>	-	+	+	-	+	-	+	-	+	+	-	+	+	+
15	<i>Achnanthidium hungarica</i>	-	-	-	-	-	-	-	+	-	+	+	-	+	-
16	<i>Achnanthidium kryophila</i>	+	+	+	+	+	+	-	+	+	+	+	+	-	+
17	<i>Achnanthidium lanceolata</i>	-	-	+	-	-	-	+	+	+	+	-	-	+	-
18	<i>Achnanthidium lapidosa</i>	-	-	-	-	+	-	-	+	-	-	+	-	-	+
19	<i>Achnanthidium lavenderi</i>	-	+	+	+	+	-	+	+	+	+	-	+	+	+
20	<i>Achnanthidium lemmermanni</i>	+	+	-	-	-	+	-	-	-	-	+	+	-	-
21	<i>Achnanthidium Lillijeborgei</i>	-	-	+	-	+	-	-	-	-	+	+	-	-	+
22	<i>Achnanthidium linearis</i>	+	+	+	+	+	+	+	+	-	+	-	+	+	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	+	+	-	-	+	+	+	+	-	-	+	-	-
24	<i>Achnanthidium microcephala</i>	-	+	+	-	+	-	-	+	+	+	+	+	+	+

25	<i>Achnanthidium minutissima</i>	-	-	-	+	-	-	+	+	-	+	+	-	-	-
26	<i>Achnanthidium nodosa</i>	-	+	-	-	-	-	+	-	-	-	-	+	+	+
27	<i>Achnanthidium plonensis</i>	+	+	-	-	+	+	+	+	-	+	+	+	+	+
28	<i>Achnanthidium saxonica</i>	+	-	+	+	+	+	-	+	+	-	-	-	-	-
29	<i>Achnanthidium</i> sp.	+	+	+	+	+	+	+	+	+	+	+	+	+	-
30	<i>Achnanthidium suchlandti</i>	-	-	-	-	+	-	-	-	-	+	+	-	-	-
31	<i>Achnanthidium taeniata</i>	-	-	+	+	-	-	-	-	+	-	-	-	+	+
32	<i>Achnanthidiumb conspicua</i>	+	-	+	-	+	+	+	+	-	+	+	-	+	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	+	+	-	+	+	+	+	+	-	-	-	+	+	+
34	<i>Anomoeneis</i> sp.	-	-	+	-	-	-	-	+	+	+	+	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	+	+	+	+	+	+	-	+	-	-	+	-	+
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	+	-	-	-	-	-	-	-	-	+	+	-	+
37	<i>Cocconeis placentula</i>	+	-	+	+	+	+	+	+	+	+	+	-	+	-
38	<i>Cymbella</i> sp.	-	+	-	+	+	-	-	+	-	-	-	+	-	+
39	<i>Cymbella affinis</i>	-	+	+	-	-	-	-	-	-	+	-	+	+	-
40	<i>Cymbella delicatula</i>	+	-	-	+	+	+	+	+	-	+	-	-	+	+
41	<i>Cymbella laevis</i>	+	+	+	-	+	+	+	-	+	+	-	+	-	+
42	<i>Cymbella microcephala</i>	-	-	-	+	-	-	-	+	-	-	+	-	-	+
43	<i>Cymbella pusila</i>	-	+	+	-	-	-	-	+	+	+	+	+	+	-
44	<i>Cymbella tumida</i>	-	+	+	+	+	-	+	+	-	-	-	+	-	+
45	<i>Cymbella turgida</i>	+	-	+	-	-	+	+	+	+	+	+	-	+	-
46	<i>Cymbella ventricosa</i>	+	-	+	+	+	+	-	-	-	-	+	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	+	-	-	-	+	+	+	+	-	+	-	+
48	<i>Diatoma anceps</i>	-	-	-	-	-	-	-	+	-	+	-	-	+	-
49	<i>Diatoma hiemale</i>	+	+	+	+	+	+	+	-	+	-	+	+	-	+
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	+	-	+	+	-	-	+	-	+	-	+	-
51	<i>Diatoma vulgare</i>	-	+	+	-	-	-	-	+	+	+	-	+	-	-
52	<i>Didymosphaenia geminata</i>	-	-	-	+	+	-	+	+	-	-	+	-	+	+
53	<i>Eunotia linearis</i>	-	-	+	-	-	-	+	+	+	+	-	-	+	+

54	<i>Eunotia</i> sp.	-	-	-	-	+	-	+	+	-	+	+	-	+	-
55	<i>Fragilaria capucina</i>	-	+	+	+	-	-	-	-	+	+	-	+	+	+
56	<i>Fragilaria construens</i>	-	+	+	-	-	-	+	-	+	+	-	+	-	-
57	<i>Fragilaria inflata</i>	+	-	-	+	+	+	-	+	-	-	+	-	+	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	+	+	-	+	-	+	+	+	-	-	+	-	+
59	<i>Fragilaria rumpens</i>	-	+	+	+	-	-	-	-	+	+	-	+	+	+
60	<i>Fragilaria</i> sp.	+	-	+	+	-	+	+	+	-	-	+	-	-	-
61	<i>Fragilaria vaucheriae</i>	+	+	-	-	+	+	-	-	-	-	+	+	+	+
62	<i>Fragilaria. capucina</i> var. <i>lanceolata</i>	-	+	+	-	-	-	+	+	+	+	-	+	-	+
63	<i>Fragilaria. pinnata</i>	-	+	+	+	+	-	-	-	+	-	+	+	+	-
64	<i>Gomphonema gracile</i>	+	-	-	-	-	+	-	-	-	+	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	+	+	+	-	+	-	+	-	+	-	+	+
66	<i>Gomphonema intricatum</i>	+	+	+	-	-	+	-	+	+	+	-	+	-	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	+	+	+	-	+	+	+	+	-	-	-	+
68	<i>Gomphonema olivaceoides</i>	+	+	+	-	-	+	+	+	-	-	+	+	-	-
69	<i>Gomphonema olivaceum</i>	-	+	-	+	-	-	+	+	-	-	-	+	-	+
70	<i>Gomphonema parvulum</i>	+	-	+	-	+	+	-	-	-	-	+	-	+	+
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	-	+	+	-	+	-	+	+	-	-	-	+	-
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	+	-	-	+	+	-	-	+
73	<i>Gomphonema gracile</i>	+	+	+	+	-	+	-	+	+	+	-	+	-	-
74	<i>Gomphonema helveticum</i>	-	-	+	+	+	-	+	-	+	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	-	+	-	-	+	-	+	+	-	-	+	+	+	+
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	-	+	+	-	+	-	+	+	+	-	-	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	+	-	-	-	-	+	-	-	+	-	+	+	+
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	+	-	+	-	+	-	+	-	+	-	-	+
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	+	-	-	-	-	+	-	-	-	-	+	-	-

80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-	-	+	+	+	+	+	-	+	+	-	-	-
81	<i>Gomphonema olivaceum</i>	-	+	+	-	-	-	-	+	-	-	-	+	+	+
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-	-	+	-	+	-	-	-	+	-	-	-	+
83	<i>Gomphonema parvulum</i>	-	-	+	-	-	-	+	-	+	-	+	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	+	-	+	+	-	-	+	-	-	-	+	+	+
85	<i>Gomphonema sphaerophorum</i>	-	+	+	-	+	-	-	-	+	-	-	+	-	-
86	<i>Gomphonema. intricatum</i>	+	-	+	+	+	+	+	-	+	+	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	-	-	-	+	+	+	-	+	+	-	+	+
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
89	<i>Hannaea arcus</i>	+	+	-	+	-	+	+	-	-	-	+	+	+	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	+	+	-	+	+	+	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	+	+	-	-	-	+	+	-	-	+	+	+
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	+	-	-	+	-	-	-	+	-	+	-
93	<i>Melosira junergensii</i>	-	-	+	-	-	-	+	-	+	+	+	-	-	+
94	<i>Navicula andium</i>	+	-	-	+	-	+	-	-	-	+	-	-	-	+
95	<i>Navicula cryptocephala</i>	-	+	+	-	-	-	+	+	+	-	-	+	-	-
96	<i>Navicula feverborni</i>	+	+	-	+	-	+	+	-	-	+	-	+	+	+
97	<i>Navicula halophila</i>	-	-	-	-	-	-	-	+	-	+	+	-	-	-
98	<i>Navicula radiosa</i>	+	-	+	-	+	+	+	-	+	-	-	-	+	+
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	+	-	-	-	-	+	-	-	+	+	+	-	+
100	<i>Pinnularia borealis</i>	-	+	+	+	-	-	-	-	+	-	-	+	-	-
101	<i>Pinnularia molaris</i>	+	+	-	-	-	+	-	-	-	-	-	+	+	+
102	<i>Pinnularia</i> sp.	-	-	-	+	-	-	+	-	-	+	-	-	-	-
103	<i>Planothidium lanceolata</i>	+	-	-	-	+	+	-	-	-	-	+	-	-	+
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	+	+	-	+	-	+	-	+	+	-	+	+	-
105	<i>Reimeria sinuata</i>	+	-	-	+	+	+	-	-	-	+	+	-	-	-
106	<i>Stauroneis</i> sp.	-	+	-	-	-	-	-	-	-	-	-	+	-	+
107	<i>Surirella ovata</i>	+	+	+	+	+	+	-	-	+	+	-	+	-	-

108	<i>Surirella</i> sp.	-	-	-	+	+	-	-	+	-	-	+	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	+	-	+	-	-	+	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+	-	-	-	+	-	-	-	-	+	+	+	+
111	<i>Synedra amphirhynchus</i>	-	-	+	+	+	-	+	+	+	-	+	-	-	-
112	<i>Synedra rumpens</i>	+	-	-	-	-	+	+	-	-	+	-	-	-	-
113	<i>Synedra ulna</i>	+	-	-	-	-	+	-	-	-	-	-	-	-	+
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+	+	-	+	+	+	+	+	+	+	+	-	-
115	<i>Tabellaria flocculosa</i>	-	-	-	+	+	-	-	+	-	-	+	-	+	+
116	<i>Tetracyclus</i> sp.	+	-	-	-	-	-	+	-	-	-	-	-	-	-
-	Total	53	59	67	53	59	52	62	62	54	61	55	59	53	61

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnanthidium affinis</i>	+	+
2	<i>Achnanthidium andicola</i>	+	+
3	<i>Achnanthidium austriaca</i>	+	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-
5	<i>Achnanthidium biasoletiana</i>	-	-
6	<i>Achnanthidium conspicua</i>	+	+
7	<i>Achnanthidium cranulata</i>	-	-
8	<i>Achnanthidium dispar</i>	+	-
9	<i>Achnanthidium exigua</i>	-	+
10	<i>Achnanthidium exilis</i>	+	+
11	<i>Achnanthidium fragilarioides</i>	-	-
12	<i>Achnanthidium Grimmei</i>	+	+
13	<i>Achnanthidium hauckiana</i>	+	+
14	<i>Achnanthidium holsti</i>	+	-
15	<i>Achnanthidium hungarica</i>	+	-
16	<i>Achnanthidium kryophila</i>	+	+
17	<i>Achnanthidium lanceolata</i>	+	-
18	<i>Achnanthidium lapidosa</i>	-	-
19	<i>Achnanthidium lavenderi</i>	+	+
20	<i>Achnanthidium lemmermanni</i>	-	-
21	<i>Achnanthidium Lillijeborgei</i>	+	+
22	<i>Achnanthidium linearis</i>	+	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	+
24	<i>Achnanthidium microcephala</i>	+	-
25	<i>Achnanthidium minutissima</i>	+	+
26	<i>Achnanthidium nodosa</i>	-	-
27	<i>Achnanthidium plonensis</i>	+	-
28	<i>Achnanthidium saxonica</i>	-	-
29	<i>Achnanthidium</i> sp.	+	-
30	<i>Achnanthidium suchlandti</i>	+	+
31	<i>Achnanthidium taeniata</i>	-	+
32	<i>Achnanthidiumb conspicua</i>	+	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	+
34	<i>Anomoeneis</i> sp.	+	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+

36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-
37	<i>Cocconeis placentula</i>	+	+
38	<i>Cymbella</i> sp.	-	+
39	<i>Cymbella affinis</i>	+	+
40	<i>Cymbella delicatula</i>	+	+
41	<i>Cymbella laevis</i>	+	+
42	<i>Cymbella microcephala</i>	-	-
43	<i>Cymbella pusila</i>	+	-
44	<i>Cymbella tumida</i>	-	-
45	<i>Cymbella turgida</i>	+	+
46	<i>Cymbella ventricosa</i>	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-
48	<i>Diatoma anceps</i>	+	+
49	<i>Diatoma hiemale</i>	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+
51	<i>Diatoma vulgare</i>	+	+
52	<i>Didymosphaenia geminata</i>	-	-
53	<i>Eunotia linearis</i>	+	+
54	<i>Eunotia</i> sp.	+	-
55	<i>Fragilaria capucina</i>	+	+
56	<i>Fragilaria construens</i>	+	-
57	<i>Fragilaria inflata</i>	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-
59	<i>Fragilaria rumpens</i>	+	+
60	<i>Fragilaria</i> sp.	-	-
61	<i>Fragilaria vaucheriae</i>	-	+
62	<i>Fragilaria. capucina</i> var. <i>lanceolata</i>	+	-
63	<i>Fragilaria. pinnata</i>	-	-
64	<i>Gomphonema gracile</i>	+	+
65	<i>Gomphonema helveticum</i>	-	-
66	<i>Gomphonema intricatum</i>	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	+
68	<i>Gomphonema olivaceoides</i>	-	-
69	<i>Gomphonema olivaceum</i>	-	-
70	<i>Gomphonema parvulum</i>	-	+
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-
72	<i>Gomphonema bohemicum</i>	+	+
73	<i>Gomphonema gracile</i>	+	+

74	<i>Gomphonema helveticum</i>	-	+
75	<i>Gomphonema herbidense</i>	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	+	+
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-
81	<i>Gomphonema olivaceum</i>	-	+
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-
83	<i>Gomphonema parvulum</i>	-	+
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	+
85	<i>Gomphonema sphaerophorum</i>	-	-
86	<i>Gomphonema. intricatum</i>	+	+
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+
89	<i>Hannaea arcus</i>	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+
93	<i>Melosira junergensii</i>	+	+
94	<i>Navicula andium</i>	+	-
95	<i>Navicula cryptocephala</i>	-	-
96	<i>Navicula feyerborni</i>	+	+
97	<i>Navicula halophila</i>	+	-
98	<i>Navicula radiosa</i>	-	+
99	<i>Navicula radiosa</i> var. <i>tenella</i>	+	-
100	<i>Pinnularia borealis</i>	-	-
101	<i>Pinnularia molaris</i>	-	-
102	<i>Pinnularia</i> sp.	+	-
103	<i>Planothidium lanceolata</i>	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	+	-
105	<i>Reimeria sinuata</i>	+	+
106	<i>Stauroneis</i> sp.	-	-
107	<i>Surirella ovata</i>	+	+
108	<i>Surirella</i> sp.	-	+
109	<i>Synedra</i> sp.	+	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
111	<i>Synedra amphirhynchus</i>	-	-

112	<i>Synedra rumpens</i>	+	+
113	<i>Synedra ulna</i>	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-
115	<i>Tabellaria flocculosa</i>	-	+
116	<i>Tetracyclus</i> sp.	+	-
-	Total	62	50

DENSITY AND DIVERSITY OF PHYTOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/lit.)	435	1076	789	876	278	453	672	875	543	490	377	783	540	
Shannon Weiner Diversity	2.98	3.41	3.26	3.38	2.93	3.09	3.19	3.16	3.06	3.11	3.05	3.23	3.12	
Evenness Index	0.76	0.79	0.77	0.79	0.75	0.76	0.77	0.77	0.76	0.76	0.75	0.79	0.78	
No. of species	51	76	69	72	50	58	62	59	55	59	57	61	55	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/lit.)	716	541	890	501	871	655	918							
Shannon Weiner Diversity	2.76	3.31	3.12	3.02	3.1	2.98	3.15							
Evenness Index	0.71	0.80	0.77	0.76	0.77	0.75	0.77							
No. of species	50	63	59	53	56	50	61							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/lit.)	812	1026	345	345	457	876	1234	567	871	766	453	1100	432	
Shannon Weiner Diversity	2.9	3.22	3.31	3.23	3.35	2.86	3.02	3.29	3.04	3.1	3.09	2.81	2.98	
Evenness Index	0.74	0.78	0.79	0.78	0.79	0.74	0.75	0.78	0.77	0.76	0.76	0.75	0.75	
No. of species	51	62	65	62	68	48	56	61	52	58	59	42	52	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/lit.)	453	678	1198	895	765	1376	2109	1765	1178	1567	2345	567	2344	1567
Shannon Weiner Diversity	3.11	3.29	2.99	2.89	3.31	2.96	3.23	2.92	3.37	3.09	3.05	3.23	2.77	3.13
Evenness Index	0.77	0.79	0.75	0.74	0.78	0.76	0.77	0.74	0.80	0.77	0.78	0.79	0.72	0.77
No. of species	56	66	54	51	68	50	66	53	69	56	50	61	48	59
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/lit.)	440		750											
Shannon Weiner Diversity	2.95		3.03											
Evenness Index	0.79		0.75											
No. of species	41		58											

Phytobenthos

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	+	+	+	+	+	+	-	+	+	-	-	+
3	<i>Achnanthidium boyei</i>	+	+	+	+	+	+	+	-	-	-	+	+	-
4	<i>Achnanthidium conspicua</i>	-	-	-	-	-	-	-	+	+	+	+	-	+
5	<i>Achnanthidium cranulata</i>	+	+	-	+	+	+	+	-	-	-	+	+	+
6	<i>Achnanthidium exigua</i>	-	-	+	-	-	-	+	+	+	+	-	-	-
7	<i>Achnanthidium Grimmei</i>	-	+	-	+	+	-	-	-	+	-	+	+	+
8	<i>Achnanthidium holsti</i>	+	+	+	-	-	+	+	+	+	+	+	-	+
9	<i>Achnanthidium hungarica</i>	+	-	-	-	-	-	-	+	-	-	-	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	+	+	+	+	-	+	+	+	-	+	+	+
11	<i>Achnanthidium linearis</i>	+	+	-	-	-	+	+	-	-	+	+	-	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	+	+	+	+	-	-	+	+	-	+	-	-
13	<i>Achnanthidium microcephala</i>	-	+	-	+	-	+	+	+	-	-	+	+	+
14	<i>Achnanthidium minutissima</i>	+	-	+	-	+	+	-	+	+	+	+	-	+
15	<i>Achnanthidium nodosa</i>	-	+	+	+	-	+	+	-	-	+	+	+	+
16	<i>Achnanthidium plonensis</i>	+	-	-	-	-	-	-	+	+	+	-	+	-
17	<i>Achnanthidium saxonica</i>	+	+	-	-	+	-	-	-	-	-	+	-	+
18	<i>Achnanthidium suchlandti</i>	-	+	-	+	-	+	+	-	+	+	+	+	-
19	<i>Achnanthidium affinis</i>	-	-	-	+	-	-	-	+	-	+	+	+	+
20	<i>Achnanthidium exilis</i>	+	-	+	+	+	+	+	-	+	-	+	-	-
21	<i>Achnanthidium lapidosa</i>	+	+	+	-	-	-	-	-	+	+	-	+	+
22	<i>Cocconeis placentula</i>	-	-	-	-	-	+	-	+	-	-	+	-	+
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	+	+	+	-	+	+	+	+	-	+	-
24	<i>Cyclotella</i> sp.	+	+	-	-	-	-	-	-	+	-	-	+	-
25	<i>Cymbella amphicephala</i>	-	-	-	+	+	-	+	+	+	+	+	-	+
26	<i>Cymbella laevis</i>	-	+	+	-	+	+	-	-	-	-	-	+	-
27	<i>Cymbella perpusila</i>	+	-	-	-	-	+	+	+	-	+	+	+	-
28	<i>Cymbella tumidula</i>	-	-	+	+	+	-	+	+	+	-	+	-	+
29	<i>Cymbella turgidula</i>	-	+	-	-	-	+	-	-	+	+	-	+	-
30	<i>Cymbella ventricosa</i>	-	-	+	+	-	+	+	-	-	+	-	+	+

31	<i>Cymbella affinis</i>	-	+	-	-	+	-	-	-	+	-	+	+	+
32	<i>Diatoma hiemale</i>	+	-	+	-	-	-	+	+	-	-	-	-	+
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	-	-	-	+	+	-	+	+	+	+	+
34	<i>Didymosphenia geminata</i>	+	+	-	+	+	-	-	+	+	-	-	+	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	+	-	-	-	+	+	-	-	-	+	-	+
36	<i>Eunotia arcus</i>	+	-	+	+	+	-	-	+	-	+	+	+	-
37	<i>Fragilaria capucina</i>	-	+	-	-	-	-	-	-	+	-	-	+	-
38	<i>Fragilaria construens</i>	-	+	+	-	+	-	+	+	-	+	+	+	+
39	<i>Fragilaria leptostauron</i>	+	+	-	+	-	+	-	-	+	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	+	+	+	+	-	-	-	+	+
41	<i>Fragilaria pinnata</i>	-	-	-	+	-	+	-	-	+	+	+	-	-
42	<i>Fragilaria. rumpens</i>	-	+	+	-	+	+	-	+	-	-	-	+	+
43	<i>Fragilaria brevistriata</i>	-	+	-	+	+	-	+	-	+	+	+	-	-
44	<i>Fragilaria</i> sp.	+	-	+	-	-	-	-	-	+	+	-	+	-
45	<i>Fragilaria vaucheriae</i>	+	-	-	-	+	+	+	+	-	+	+	+	+
46	<i>Gomphonema bohemicum</i>	-	+	-	+	+	-	-	-	-	-	+	-	-
47	<i>Gomphonema gracile</i>	+	-	-	-	-	-	+	+	+	+	+	-	+
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	+	-	+	-	+	-	+	-	+	+	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	+	+	-	-	-	-	+	+	-	+
50	<i>Gomphonema nagpurenses</i>	+	+	-	-	-	+	-	+	+	+	+	+	-
51	<i>Gomphonema olivaceoides</i>	-	+	-	-	+	+	+	-	-	-	+	-	-
52	<i>Gomphonema olivaceum</i>	+	-	+	+	+	+	-	-	+	+	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+	-	-	-	-	-	+	-	-	+	-	+
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	+	-	+	-	-	+	+	-	-	+	+	-	-
55	<i>Gomphonema parvulum</i>	-	+	-	+	+	+	+	+	+	-	-	+	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	+	+	-	-	-	+	-	+
57	<i>Gomphonema sphaerophorum</i>	-	+	+	+	+	+	-	-	+	-	+	-	-
58	<i>Gomphonema. intricatum</i>	+	+	+	-	+	-	-	+	+	+	-	+	+
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	-	-	-	+	-	+	-	-	-	-	-	+
60	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	+	-	-	+	+	-	-	-	+	-	+	-	+
61	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	+	+	-	+	+	+	-	-	-	-	-	-
62	<i>H. arcus</i> var. <i>linearis</i>	-	-	+	-	+	-	-	+	+	+	-	+	+
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	+	-	+	+	-	+	-	+	-	+	-	+
64	<i>Navicula microcephala</i>	-	-	+	-	-	-	-	+	-	-	-	+	-

65	<i>Navicula radiosa</i>	-	+	-	+	+	-	-	+	+	+	+	-	+
66	<i>Navicula radiosa</i> var. <i>tenella</i>	+	-	-	-	+	+	-	-	+	+	+	-	-
67	<i>Navicula rostellata</i>	-	+	+	+	+	-	+	+	-	+	+	+	+
68	<i>Navicula cari</i>	-	+	+	-	-	-	-	-	-	-	+	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	+	+	+	+	-	+	+	-	+	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	+	+	+	-	-	-	-	-	-	-	+	-	+
71	<i>Planothidium lanceolata</i>	+	-	+	+	-	-	-	+	-	-	-	-	+
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	+	-	+	+	+	-	-	-	-	+	+	-	-
73	<i>Reimeria sinuata</i>	-	+	-	-	-	-	+	-	+	-	-	+	+
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+	+	+	+	+	-	+	-	+	+	-	-
75	<i>Synedra ulna</i>	-	+	-	-	-	-	+	-	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	+	-	-	+	+	+	-	-	-	+	-	+	-
77	<i>Tabellaria flocculus</i>	+	-	+	-	-	-	-	-	-	-	-	-	+
78	<i>Tabellaria</i> sp.	-	+	+	-	+	+	+	+	+	+	+	-	-
79	<i>Tetracyclus lacustris</i>	+	-	+	+	-	-	-	-	-	-	-	+	-
	Total	36	45	37	36	43	37	39	35	41	39	48	38	39

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	+	+	-	-	+	+
3	<i>Achnanthidium boyei</i>	+	+	-	+	+	+	-
4	<i>Achnanthidium conspicua</i>	-	-	-	-	+	-	+
5	<i>Achnanthidium cranulata</i>	+	+	+	+	+	-	-
6	<i>Achnanthidium exigua</i>	-	-	-	-	-	+	+
7	<i>Achnanthidium Grimmei</i>	-	+	-	+	+	-	-
8	<i>Achnanthidium holsti</i>	+	-	+	-	+	+	-
9	<i>Achnanthidium hungarica</i>	-	-	-	-	-	-	+
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	+	+	-	+	+	-	-
11	<i>Achnanthidium linearis</i>	-	-	+	-	+	-	+
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	+	-	-	+	+	-
13	<i>Achnanthidium microcephala</i>	+	-	-	+	+	-	-
14	<i>Achnanthidium minutissima</i>	-	+	+	-	+	+	+
15	<i>Achnanthidium nodosa</i>	-	-	-	+	+	+	-
16	<i>Achnanthidium plonensis</i>	+	-	+	+	-	-	-
17	<i>Achnanthidium saxonica</i>	+	+	-	-	+	-	-
18	<i>Achnanthidium suchlandti</i>	+	-	+	+	+	-	+
19	<i>Achnanthidium affinis</i>	+	-	+	+	+	-	-
20	<i>Achnanthidium exilis</i>	+	+	-	-	+	+	-
21	<i>Achnanthidium lapidosa</i>	-	-	-	+	-	-	+
22	<i>Cocconeis placentula</i>	+	-	+	-	+	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	+	+	-	+	-
24	<i>Cyclotella</i> sp.	-	-	+	+	-	-	+
25	<i>Cymbella amphicephala</i>	+	+	-	-	+	-	-
26	<i>Cymbella laevis</i>	+	+	+	+	-	+	-
27	<i>Cymbella perpusila</i>	-	-	+	+	+	-	+
28	<i>Cymbella tumidula</i>	-	+	-	-	+	-	+
29	<i>Cymbella turgidula</i>	+	-	+	+	-	-	-
30	<i>Cymbella ventricosa</i>	-	-	-	+	-	+	+
31	<i>Cymbella affinis</i>	-	+	+	+	+	-	-
32	<i>Diatoma hiemale</i>	-	-	-	-	-	+	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	+	+	+	-	+
34	<i>Didymosphenia geminata</i>	+	+	-	+	-	-	-

35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	-	+	-	-
36	<i>Eunotia arcus</i>	+	+	+	+	+	+	+
37	<i>Fragilaria capucina</i>	-	-	-	+	-	-	-
38	<i>Fragilaria construens</i>	-	+	+	+	+	+	-
39	<i>Fragilaria leptostauron</i>	+	-	-	-	-	-	+
40	<i>Fragilaria olivaceoides</i>	-	+	+	+	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	-	-	+	-	+
42	<i>Fragilaria. rumpens</i>	+	+	-	+	-	+	-
43	<i>Fragilaria brevistriata</i>	-	+	+	-	+	-	-
44	<i>Fragilaria</i> sp.	-	-	-	+	-	+	+
45	<i>Fragilaria vaucheriae</i>	+	+	+	+	+	-	-
46	<i>Gomphonema bohemicum</i>	-	+	-	-	+	-	-
47	<i>Gomphonema gracile</i>	-	-	-	-	+	-	+
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	+	+	+	+	+	-
49	<i>Gomphonema lanceolatum</i>	+	+	-	-	+	-	+
50	<i>Gomphonema nagpurenses</i>	+	-	+	+	+	-	+
51	<i>Gomphonema olivaceoides</i>	-	+	-	-	+	-	-
52	<i>Gomphonema olivaceum</i>	+	+	-	-	-	+	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-	-	-	+	-	+
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	+	+	+
55	<i>Gomphonema parvulum</i>	-	+	-	+	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	-	+	-	+	-	+
57	<i>Gomphonema sphaerophorum</i>	+	+	-	-	+	+	-
58	<i>Gomphonema. intricatum</i>	-	+	+	+	-	+	-
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	+	+	-	-	-	-	+
60	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	+	-	-	+	-	-
61	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	+	+	-	-	+	-
62	<i>H. arcus</i> var. <i>linearis</i>	+	+	-	+	-	+	+
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	-	-	+	-	-
64	<i>Navicula microcephala</i>	+	-	+	+	-	+	-
65	<i>Navicula radiosa</i>	-	+	-	-	+	-	+
66	<i>Navicula radiosa</i> var. <i>tenella</i>	+	+	+	-	+	-	-
67	<i>Navicula rostellata</i>	+	+	+	+	+	+	+
68	<i>Navicula cari</i>	+	-	-	-	+	+	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	+	-	+	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	+	-	+	-	+	+	+
71	<i>Planothidium lanceolata</i>	+	-	+	-	-	+	-

72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	+	-	-	+	+	-
73	<i>Reimeria sinuata</i>	+	-	-	+	-	-	+
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+	+	-	+	+	-
75	<i>Synedra ulna</i>	-	-	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	+	+	-	+	-	-	+
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	+	-
78	<i>Tabellaria</i> sp.	-	+	+	-	+	+	+
79	<i>Tetracyclus lacustris</i>	+	-	+	+	-	+	-
-	Total	42	43	35	38	48	34	32

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-	+	-	+	-	-	+	+	+	+	-	+
3	<i>Achnanthidium boyei</i>	-	+	+	+	-	+	+	-	-	+	+	+	-
4	<i>Achnanthidium conspicua</i>	+	-	-	-	+	-	-	+	+	-	+	+	+
5	<i>Achnanthidium cranulata</i>	+	+	+	+	-	+	+	-	+	+	+	-	+
6	<i>Achnanthidium exigua</i>	-	-	-	-	+	-	+	+	+	-	-	+	-
7	<i>Achnanthidium Grimmei</i>	+	-	-	+	-	+	-	-	-	-	+	+	+
8	<i>Achnanthidium holsti</i>	+	+	+	-	-	-	+	+	+	+	-	+	+
9	<i>Achnanthidium hungarica</i>	-	+	+	-	+	-	+	-	-	+	+	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	+	-	-	+	+	+	-	+	+	-	+	+	+
11	<i>Achnanthidium linearis</i>	-	+	+	-	-	-	-	+	+	+	-	+	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	+	+	-	+	+	-	-	+	-	-
13	<i>Achnanthidium microcephala</i>	+	-	-	-	-	+	-	-	-	-	-	+	+
14	<i>Achnanthidium minutissima</i>	+	+	+	+	+	-	+	-	-	+	-	-	+
15	<i>Achnanthidium nodosa</i>	+	-	-	-	+	+	+	-	+	-	+	+	+
16	<i>Achnanthidium plonensis</i>	-	-	+	-	-	+	-	+	-	+	-	+	-
17	<i>Achnanthidium saxonica</i>	+	-	+	+	+	-	+	-	-	+	+	-	+
18	<i>Achnanthidium suchlandti</i>	-	+	-	-	+	+	-	-	+	-	-	+	-
19	<i>Achnanthidium affinis</i>	+	-	-	+	+	+	+	+	+	-	+	+	+
20	<i>Achnanthidium exilis</i>	-	-	+	-	-	-	-	-	+	+	-	-	-
21	<i>Achnanthidium lapidosa</i>	+	+	+	+	+	+	+	-	+	+	-	+	+
22	<i>Cocconeis placentula</i>	+	+	-	-	+	-	+	+	+	-	+	+	+
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	+	+	+	-	-	-	+	-	-

24	<i>Cyclotella</i> sp.	-	-	-	+	+	+	-	-	+	-	-	+	-
25	<i>Cymbella amphicephala</i>	+	-	-	-	-	-	+	+	-	-	+	+	+
26	<i>Cymbella laevis</i>	-	+	-	+	+	+	-	+	-	-	-	+	-
27	<i>Cymbella perpusila</i>	-	-	+	-	-	+	+	-	+	+	-	+	-
28	<i>Cymbella tumidula</i>	+	+	-	+	+	-	-	+	+	-	+	+	+
29	<i>Cymbella turgidula</i>	-	-	-	-	+	+	-	-	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	+	+	-	+	-	+	+	-	-	-	-	+	+
31	<i>Cymbella affinis</i>	+	-	-	-	-	+	-	+	+	-	+	+	+
32	<i>Diatoma hiemale</i>	+	+	+	-	+	-	-	-	+	+	-	-	+
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	-	+	-	+	+	-	+	-	+	+	+
34	<i>Didymosphenia geminata</i>	-	-	-	-	+	+	+	+	-	-	-	+	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	+	-	-	-	-	-	-	-	-	-	-	+
36	<i>Eunotia arcus</i>	-	-	+	+	-	+	-	-	-	+	+	+	-
37	<i>Fragilaria capucina</i>	-	+	-	-	-	+	-	+	+	-	-	+	-
38	<i>Fragilaria construens</i>	+	-	-	+	+	+	+	-	-	-	-	-	+
39	<i>Fragilaria leptostauron</i>	-	+	+	-	-	-	-	-	-	+	+	+	-
40	<i>Fragilaria olivaceoides</i>	+	-	-	-	-	+	+	-	-	-	-	+	+
41	<i>Fragilaria pinnata</i>	-	-	-	+	+	-	-	-	-	-	+	-	-
42	<i>Fragilaria. rumpens</i>	+	-	-	-	-	+	-	-	+	-	-	+	+
43	<i>Fragilaria brevistriata</i>	-	-	-	+	-	-	+	-	+	-	+	-	-
44	<i>Fragilaria</i> sp.	-	+	+	-	+	+	-	+	-	+	+	-	-
45	<i>Fragilaria vaucheriae</i>	+	+	+	+	-	+	+	-	+	+	-	+	+
46	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-	+	+	-	+	-	-
47	<i>Gomphonema gracile</i>	+	+	+	+	+	-	+	+	-	+	-	+	+
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	-	-	+	+	-	-	+	-	+	+	-
49	<i>Gomphonema lanceolatum</i>	+	+	-	-	+	-	+	-	+	-	-	-	+
50	<i>Gomphonema nagpurenses</i>	-	+	+	-	-	+	+	-	+	+	+	-	-

51	<i>Gomphonema olivaceoides</i>	-	+	-	+	+	-	-	+	-	-	+	+	-
52	<i>Gomphonema olivaceum</i>	-	+	+	-	-	-	-	-	-	+	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-	-	+	+	-	+	-	+	-	+	+	+
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	+	+	-	-	-	+	+	-	+	-	+	-
55	<i>Gomphonema parvulum</i>	-	+	-	+	+	+	-	-	-	-	-	+	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	-	-	-	-	-	+	+	+	-	-	-	+
57	<i>Gomphonema sphaerophorum</i>	-	-	-	+	+	-	-	-	-	-	-	+	-
58	<i>Gomphonema. intricatum</i>	+	+	+	-	-	+	+	-	+	+	+	+	+
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	+	-	-	-	-	-	-	+	+	-	-	-	+
60	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	+	-	+	+	-	-	+	-	-	+	+	-	+
61	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
62	<i>H. arcus</i> var. <i>linearis</i>	+	+	-	-	-	+	+	+	+	-	-	+	+
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	+	+	-	-	+	-	-	+	+	-	+
64	<i>Navicula microcephala</i>	-	+	-	-	-	+	-	+	-	-	-	+	-
65	<i>Navicula radiosa</i>	+	-	-	-	+	-	-	-	+	-	-	-	+
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	+	+	-	-	+	+	-	+	+	+	-
67	<i>Navicula rostellata</i>	+	-	-	-	-	+	-	-	-	-	-	-	+
68	<i>Navicula cari</i>	-	+	-	-	-	-	+	+	+	-	-	+	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	+	-	+	-	-	-	-	+	+	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	+	-	+	-	+	-	+	-	-	+	-	-	+
71	<i>Planothidium lanceolata</i>	+	-	+	+	-	-	+	-	+	+	+	+	+
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	+	+	-	-	-	-	+	-	+	-	-	-
73	<i>Reimeria sinuata</i>	+	-	-	+	+	+	-	-	+	-	+	+	+
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	+	+	+	-	+	-	+	+	-	-	-
75	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	+	+	+	+	+	+	+	+	-	+	+	-

77	<i>Tabellaria flocculus</i>	+	-	-	+	-	-	-	-	+	-	-	-	+
78	<i>Tabellaria</i> sp.	-	-	+	-	+	-	+	+	-	+	+	+	-
79	<i>Tetracyclus lacustris</i>	-	+	-	+	+	+	-	-	+	-	-	-	-
-	Total	39	33	32	36	39	38	40	31	40	32	38	42	39

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	+	+	+	+	+	-	+	+	+	+	+	+
3	<i>Achnanthidium boyei</i>	+	+	-	+	+	-	-	+	+	+	+	-	-	-
4	<i>Achnanthidium conspicua</i>	-	-	+	-	-	+	+	-	-	-	-	-	+	+
5	<i>Achnanthidium cranulata</i>	+	+	-	-	+	-	-	+	+	-	+	+	-	-
6	<i>Achnanthidium exigua</i>	-	-	+	+	-	+	+	-	-	+	-	-	+	+
7	<i>Achnanthidium Grimmei</i>	+	+	-	-	+	-	-	+	+	-	+	-	-	-
8	<i>Achnanthidium holsti</i>	-	+	+	+	-	+	+	-	-	+	-	+	+	-
9	<i>Achnanthidium hungarica</i>	-	-	-	-	-	-	-	-	+	-	+	-	-	+
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	+	+	+	-	+	+	+	+	-	-	-	-	+	-
11	<i>Achnanthidium linearis</i>	-	-	+	-	-	-	-	-	+	-	+	+	-	+
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	+	+	+	+	+	+	-	+	+	+	-	+	-
13	<i>Achnanthidium microcephala</i>	-	+	-	-	+	-	-	+	+	-	+	-	-	-
14	<i>Achnanthidium minutissima</i>	+	-	-	+	-	+	+	-	-	+	-	+	-	+
15	<i>Achnanthidium nodosa</i>	-	+	-	+	+	-	-	+	+	+	+	-	-	-
16	<i>Achnanthidium plonensis</i>	-	+	+	-	-	+	+	+	-	-	-	+	-	-
17	<i>Achnanthidium saxonica</i>	+	-	-	-	-	-	-	-	+	-	+	-	+	-
18	<i>Achnanthidium suchlandti</i>	-	+	-	-	+	-	-	+	-	-	-	+	-	+
19	<i>Achnanthidium affinis</i>	+	+	+	-	+	-	-	+	+	-	+	+	-	-
20	<i>Achnanthidium exilis</i>	-	-	-	+	+	+	+	-	-	+	-	-	-	-
21	<i>Achnanthidium lapidosa</i>	+	+	-	-	-	+	+	+	-	-	-	-	-	+
22	<i>Cocconeis placentula</i>	-	-	+	-	-	-	-	-	+	-	+	+	+	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	-	+	+	-	-	+	-	+	-	+	-	-
24	<i>Cyclotella</i> sp.	+	+	-	-	-	-	-	+	-	-	-	+	-	+
25	<i>Cymbella amphicephala</i>	-	+	+	-	+	+	+	-	-	-	-	-	-	-

26	<i>Cymbella laevis</i>	+	+	+	+	-	-	-	+	+	+	+	+	+	-
27	<i>Cymbella perpusila</i>	-	+	-	-	-	-	-	+	+	-	+	+	-	+
28	<i>Cymbella tumidula</i>	+	-	+	-	+	+	+	-	-	-	-	-	-	+
29	<i>Cymbella turgidula</i>	-	+	-	-	-	-	-	+	-	-	-	+	-	-
30	<i>Cymbella ventricosa</i>	+	+	-	+	+	-	-	+	+	+	+	-	+	+
31	<i>Cymbella affinis</i>	-	+	+	-	-	+	+	+	-	-	-	+	-	-
32	<i>Diatoma hiemale</i>	-	-	-	+	-	-	-	-	+	+	+	-	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	+	-	-	-	-	-	+	+	-	+	+	-	+
34	<i>Didymosphenia geminata</i>	-	+	+	-	+	+	+	+	-	-	-	-	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
36	<i>Eunotia arcus</i>	+	+	-	+	+	-	-	+	+	+	+	+	-	+
37	<i>Fragilaria capucina</i>	-	+	+	-	-	-	-	+	-	-	-	-	-	-
38	<i>Fragilaria construens</i>	+	+	-	+	-	-	-	+	+	+	+	+	-	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	+	+	+	-	-	-	-	-	-	+
40	<i>Fragilaria olivaceoides</i>	-	+	-	-	-	-	-	+	-	-	-	+	+	-
41	<i>Fragilaria pinnata</i>	+	-	-	-	+	+	+	-	+	-	+	-	-	+
42	<i>Fragilaria. rumpens</i>	-	+	-	+	-	-	-	+	-	+	-	-	-	-
43	<i>Fragilaria brevistriata</i>	+	-	-	-	+	+	+	-	+	-	+	+	-	-
44	<i>Fragilaria</i> sp.	-	+	+	+	-	+	+	+	-	+	-	-	+	+
45	<i>Fragilaria vaucheriae</i>	+	+	-	-	-	-	-	+	+	-	+	+	-	-
46	<i>Gomphonema bohemicum</i>	-	-	+	-	+	-	-	-	-	-	-	-	-	-
47	<i>Gomphonema gracile</i>	+	+	+	-	-	+	+	-	-	-	-	-	+	+
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	+	-	+	-	+	+	+	-	+	-	+	+	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	+	-	-	-	+	-	+	-	-	+
50	<i>Gomphonema nagpurenses</i>	-	+	-	-	-	+	+	+	-	-	-	+	-	+
51	<i>Gomphonema olivaceoides</i>	+	-	+	-	-	-	-	-	+	-	+	-	-	-
52	<i>Gomphonema olivaceum</i>	-	-	-	+	+	+	+	-	-	+	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	+	-	-	-	-	-	-	-	-	-	-	+	+
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	+	+	-	-	-	-	-	+	-	-	+	+

55	<i>Gomphonema paruvulum</i>	+	+	-	-	+	+	+	+	+	-	+	-	+	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	+	-	-	-	-	-	-	-	-	+	+	+
57	<i>Gomphonema sphaerophorum</i>	+	-	-	+	+	-	-	-	-	+	-	-	-	-
58	<i>Gomphonema. intricatum</i>	-	+	-	+	-	+	+	+	+	+	+	+	-	-
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	+
60	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	+	-	-	-	+	+	+	-	-	-	-	-	+	-
61	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	+	-	+	-	-	-	-	-	+	-	+	-	-
62	<i>H. arcus</i> var. <i>linearis</i>	-	+	+	+	-	-	-	+	-	+	-	-	+	+
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	-	-	+	+	+	-	-	-	-	-	-	-
64	<i>Navicula microcephala</i>	-	+	+	+	-	-	-	+	-	+	-	+	+	-
65	<i>Navicula radiosa</i>	-	+	-	-	+	-	-	-	+	-	+	-	+	+
66	<i>Navicula radiosa</i> var. <i>tenella</i>	+	-	+	-	-	+	+	-	-	-	-	+	-	-
67	<i>Navicula rostellata</i>	-	+	-	+	+	-	-	+	+	+	+	+	+	+
68	<i>Navicula cari</i>	-	-	+	+	-	-	-	-	-	+	-	-	+	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	+	+	-	-	+	+	+	+	+	-	+	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	+	-	-	-	-	-	+	-	+	-	+
71	<i>Planothidium lanceolata</i>	+	+	-	+	+	-	-	-	-	+	-	+	+	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	+	+	+	-	-	-	+	+	+	-	-	-
73	<i>Reimeria sinuata</i>	+	+	-	-	-	+	+	+	-	-	-	-	-	+
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-	-	+	+	-	-	-	-	+	-	+	+	-
75	<i>Synedra ulna</i>	-	+	-	-	-	-	-	-	+	-	+	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	+	+	+	-	+	-	-	+	-	-	-	-	+	+
77	<i>Tabellaria flocculus</i>	+	-	-	+	-	-	-	-	-	+	-	-	-	-
78	<i>Tabellaria</i> sp.	-	-	+	+	-	+	+	-	+	+	+	+	+	+
79	<i>Tetracyclus lacustris</i>	+	+	-	+	+	-	-	+	-	+	-	+	-	-
-	Total	36	48	31	34	36	31	31	38	33	34	33	35	30	32

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnanthidium austriaca</i>	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	+
3	<i>Achnanthidium boyei</i>	-	+
4	<i>Achnanthidium conspicua</i>	+	-
5	<i>Achnanthidium cranulata</i>	+	+
6	<i>Achnanthidium exigua</i>	-	-
7	<i>Achnanthidium Grimmei</i>	-	+
8	<i>Achnanthidium holsti</i>	+	-
9	<i>Achnanthidium hungarica</i>	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	+	+
11	<i>Achnanthidium linearis</i>	+	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	+
13	<i>Achnanthidium microcephala</i>	+	-
14	<i>Achnanthidium minutissima</i>	-	+
15	<i>Achnanthidium nodosa</i>	+	-
16	<i>Achnanthidium plonensis</i>	-	-
17	<i>Achnanthidium saxonica</i>	+	+
18	<i>Achnanthidium suchlandti</i>	+	-
19	<i>Achnanthidium affinis</i>	-	-
20	<i>Achnanthidium exilis</i>	+	+
21	<i>Achnanthidium lapidosa</i>	-	-
22	<i>Cocconeis placentula</i>	+	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	+
24	<i>Cyclotella</i> sp.	-	-
25	<i>Cymbella amphicephala</i>	+	+
26	<i>Cymbella laevis</i>	-	+
27	<i>Cymbella perpusila</i>	+	-
28	<i>Cymbella tumidula</i>	+	+
29	<i>Cymbella turgidula</i>	-	-
30	<i>Cymbella ventricosa</i>	-	-
31	<i>Cymbella affinis</i>	+	+
32	<i>Diatoma hiemale</i>	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-
34	<i>Didymosphenia geminata</i>	+	+
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-
36	<i>Eunotia arcus</i>	+	+
37	<i>Fragilaria capucina</i>	+	-
38	<i>Fragilaria construens</i>	-	+
39	<i>Fragilaria leptostauron</i>	-	-

40	<i>Fragilaria olivaceoides</i>	+	+
41	<i>Fragilaria pinnata</i>	-	-
42	<i>Fragilaria. rumpens</i>	-	+
43	<i>Fragilaria brevistriata</i>	+	+
44	<i>Fragilaria sp.</i>	-	-
45	<i>Fragilaria vaucheriae</i>	+	+
46	<i>Gomphonema bohemicum</i>	-	+
47	<i>Gomphonema gracile</i>	+	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	+	+
49	<i>Gomphonema lanceolatum</i>	-	+
50	<i>Gomphonema nagpurenses</i>	+	-
51	<i>Gomphonema olivaceoides</i>	-	+
52	<i>Gomphonema olivaceum</i>	+	+
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	+	-
55	<i>Gomphonema parvulum</i>	+	+
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	-
57	<i>Gomphonema sphaerophorum</i>	-	+
58	<i>Gomphonema. intricatum</i>	+	+
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	+
60	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	+
61	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	+	+
62	<i>H. arcus</i> var. <i>linearis</i>	-	+
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+
64	<i>Navicula microcephala</i>	+	-
65	<i>Navicula radiosa</i>	-	+
66	<i>Navicula radiosa</i> var. <i>tenella</i>	+	+
67	<i>Navicula rostellata</i>	+	+
68	<i>Navicula cari</i>	+	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	+	+
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	+	-
71	<i>Planothidium lanceolata</i>	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	+	+
73	<i>Reimeria sinuata</i>	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+
75	<i>Synedra ulna</i>	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	+
77	<i>Tabellaria flocculus</i>	+	-
78	<i>Tabellaria sp.</i>	+	+
79	<i>Tetracyclus lacustris</i>	-	-
-	Total	45	43

DENSITY & DIVERSITY OF PHYTOBENTHOS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/cm ²)	1678	1890	2367	2098	4543	3892	1287	3498	3299	1672	1983	7659	3452	
Shannon Weiner Diversity	3.19	3.34	3.2	3.14	3.27	3.23	3.28	3.14	3.03	3.24	3.36	3.25	3.3	
Evenness Index	0.89	0.88	0.89	0.88	0.87	0.89	0.90	0.88	0.82	0.88	0.87	0.89	0.90	
No. of species	36	45	37	36	43	37	39	35	41	39	48	38	39	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/cm ²)	3476	2358	2376	4876	26785	29874	30983							
Shannon Weiner Diversity	3.23	3.27	3.15	3.19	3.42	3.13	3.06							
Evenness Index	0.86	0.87	0.89	0.88	0.88	0.89	0.88							
No. of species	42	43	35	38	48	34	32							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/cm ²)	49898	43872	36548	1789	3332	1784	1987	3093	2896	3786	4598	3452	19876	
Shannon Weiner Diversity	3.23	3.09	3.01	3.16	3.23	3.21	3.31	3.04	3.34	3.07	3.24	3.31	3.19	
Evenness Index	0.88	0.88	0.87	0.88	0.88	0.88	0.90	0.89	0.91	0.89	0.89	0.89	0.87	
No. of species	39	33	32	36	39	38	40	31	40	32	38	42	39	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/cm ²)	1987	4509	3462	6777	8976	4387	7321	9832	17827	10987	8722	9827	11342	17563
Shannon Weiner Diversity	3.12	3.45	3.06	3.08	3.11	3.01	3.02	2.23	3.17	3.19	3.18	3.23	3.01	3.03
Evenness Index	0.87	0.89	0.89	0.87	0.87	0.88	0.88	0.61	0.91	0.90	0.91	0.91	0.88	0.87
No. of species	36	48	31	34	36	31	31	38	33	34	33	35	30	32
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/cm ²)	880		1254											
Shannon Weiner Diversity	3.02		2.99											
Evenness Index	0.83		0.83											
No. of species	38		37											

Macro -Invertebrates

Sub basin- Siang I-IV

S.No.	Family	Genus	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	-	+
2		<i>Stenonema</i>	+	+	+	-	-	-	-	+	-	-	-	+	-
3		<i>Heptagenia</i>	+	+	-	+	+	+	+	-	+	-	+	-	+
4		<i>Epeorus</i>	+	+	+	+	+	-	-	-	-	+	-	+	-
5	Baetidae	<i>Baetis</i>	+	+	-	-	-	+	+	+	-	+	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	+	+	+	+	+	-	-	-	+	-	+	-	+
7		<i>Ephemerella excrucians</i>	-	-	+	-	-	-	+	+	-	-	-	-	-
8	Caenidae	<i>Caenis</i>	-	+	+	+	+	+	-	-	-	+	+	+	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	+	-	-	-	-	-	+	+	+	-	-	-	+
10		<i>Chroterpes</i>	+	+	+	+	+	-	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	+	-	-	-	-	-	+	+	+	+	-	+	-
12	Neophemeridae	<i>Neophemeridae 1</i>	-	+	+	-	+	+	-	-	+	-	-	-	-
13		<i>Neophemeridae 2</i>	-	-	-	-	-	-	-	-	-	-	+	-	+
14	Perlidae	<i>Acroneuria</i>	-	-	-	+	-	+	-	+	+	-	-	+	-
15	Perlodidae	<i>Isoperla</i>	+	+	+	-	+	-	+	-	-	+	-	-	+
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
17	Psephenidae	<i>Psephenus</i>	+	+	+	-	+	+	-	+	-	-	+	+	+
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	+	-	-	+	-	+	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	+	-	-	+	-	+	+	-	+
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	+	+	-	-	-	-	-	-	-	+	-
21		<i>Hydroptila</i>	-	+	-	-	-	+	+	+	+	-	+	-	-
22		<i>Leucotrichia</i>	-	-	+	-	+	-	-	-	-	-	-	+	+
23	Hydropsychidae	<i>Hydropsyche</i>	+	+	-	-	-	-	-	+	-	-	+	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	+	+	-	+	+	-	-	-

25	Glossosomatidae	<i>Glossosoma</i>	+	-	+	-	+	-	-	-	-	-	+	+	-
26	Leptoceridae	<i>Leptocerus</i>	+	+	+	+	-	-	-	-	-	-	-	-	+
27	Molannidae	<i>Molanna</i>	-	-	-	-	+	-	-	+	+	-	-	+	-
28	Chironomidae	<i>Chironomus</i>	+	+	+	+	-	+	-	-	-	-	-	-	+
29		<i>Ablabesmyia</i>	-	+	+	+	-	-	+	-	+	-	+	-	-
30	Ephydriidae	Un identified genus / species	-	+	-	-	+	-	-	+	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	+	-	-	-	-	-	-	-	+	+	-
32	Simulidae	<i>Simulium pictipes</i>	-	-	-	+	+	-	+	-	+	-	+	-	+
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	-	-	-	-	+	+	+	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	+	+	-	+	-	-	-	-	+	-	-	-	+
36	Blepharoceridae	<i>Blepharocera</i>	-	-	+	-	-	-	+	+	-	-	-	+	-
37		<i>Horaia</i>	-	-	-	-	-	+	-	-	-	+	-	-	+
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-	+	+	-	-	-	+
40	Culicidae	<i>Culex</i>	-	+	-	-	+	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
		Total	16	19	18	15	16	11	13	15	15	10	14	14	15

Sub basin- Yamne and Simang

S.No.	Family	Genus	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+
2		<i>Stenonema</i>	-	-	-	-	+	-	+
3		<i>Heptagenia</i>	+	+	+	+	-	+	-
4		<i>Epeorus</i>	-	-	-	-	+	+	+
5	Baetidae	<i>Baetis</i>	+	-	+	+	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	-	+	-	-	+	-	+
7		<i>Ephemerella excrucians</i>	+	-	-	+	-	+	-
8	Caenidae	<i>Caenis</i>	-	+	+	-	+	+	+
9	Leptophlebiidae	<i>Paraleptophlebia</i>	+	-	-	-	-	+	-
10		<i>Chroterpes</i>	-	-	-	-	+	+	+
11		<i>Leptophlebia</i>	-	+	+	+	-	-	+
12	Neoephemeridae	<i>Neoephemeridae 1</i>	+	-	-	-	+	+	-
13		<i>Neoephemeridae 2</i>	-	+	+	+	-	-	+
14	Perlidae	<i>Acroneuria</i>	-	-	-	+	-	-	+
15	Perlodidae	<i>Isoperla</i>	+	+	-	-	-	-	+
16	Elmidae	<i>Heterlimnius</i>	-	-	+	+	+	-	-
17	Psephenidae	<i>Psephenus</i>	+	+	-	-	-	+	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	+	-	+
19	Corydalidae	<i>Corydalus</i>	-	-	+	+	+	+	-
20	Hydroptilidae	<i>Ochrotrichia</i>	+	+	-	-	-	-	-
21		<i>Hydroptila</i>	-	-	+	-	-	-	+
22		<i>Leucotrichia</i>	-	+	-	+	+	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	+	-	-	-	+	+	+
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	-	-

25	Glossosomatidae	<i>Glossosoma</i>	-	+	-	+	-	+	-
26	Leptoceridae	<i>Leptocerus</i>	+	-	-	-	+	+	+
27	Molannidae	<i>Molanna</i>	-	+	+	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	+	-	-	+	+
29		<i>Ablabesmyia</i>	+	+	-	+	+	-	-
30	Ephydriidae	Un identified genus / species	-	-	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	+	+	+	+	+	+	+
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	+	-	+	-
34		<i>Maruina</i>	+	-	-	-	+	-	+
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	+	+	+	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	+	-	+
37		<i>Horaia</i>	+	-	-	-	-	-	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	+
39	Rhagionidae	<i>Atherix variegata</i>	-	+	-	+	+	+	-
40	Culicidae	<i>Culex</i>	-	-	+	+	-	-	+
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-
		Total	15	16	14	17	18	17	20

Sub basin- Siyom: I-III and Hirit

S.No.	Family	Genus	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
3		<i>Heptagenia</i>	-	+	-	+	+	+	+	-	+	-	+	-	-
4		<i>Epeorus</i>	-	-	-	-	-	-	-	+	-	+	+	+	+
5	Baetidae	<i>Baetis</i>	+	-	+	-	+	-	-	-	+	-	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	+	+	+	-	-	+	-	-	-	+	+	+	-
7		<i>Ephemerella excrucians</i>	-	+	-	+	+	-	-	+	-	-	+	-	+
8	Caenidae	<i>Caenis</i>	-	+	-	-	-	+	+	-	+	-	-	+	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	+	-	-	-	-	+	-	-
10		<i>Chroterpes</i>	-	-	-	+	+	-	-	-	-	-	-	-	+
11		<i>Leptophlebia</i>	-	-	-	-	-	-	+	-	+	+	-	+	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	+	-	-	-	-	-	-	+	-	+
13		<i>Neoephemeridae 2</i>	-	+	-	-	-	+	-	+	-	-	+	-	+
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	-	-	+	+	-	+	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	+	+	-	-	-	-	-	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	+	-	-	-	-	+	-	-	+	+	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	+	+	-	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
19	Corydalidae	<i>Corydalus</i>	-	+	-	+	-	-	+	+	+	-	+	+	-
20	Hydroptilidae	<i>Ochrotrichia</i>	+	-	+	-	+	-	-	-	-	+	-	-	-
21		<i>Hydroptila</i>	-	+	-	-	-	+	-	+	+	-	-	+	-
22		<i>Leucotrichia</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	-	-	-	-	-	+	+	-	+

24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	-	+	+	-	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	+	-	-	+	-	+	-	-	+	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	+	-	+	+	+	-	-	-	-	+
27	Molannidae	<i>Molanna</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
28	Chironomidae	<i>Chironomus</i>	+	-	-	-	+	-	-	-	-	-	-	-	-
29		<i>Ablabesmyia</i>	+	+	-	-	-	-	-	-	+	-	+	+	+
30	Ephydriidae	Un identified genus / species	-	-	-	+	-	-	-	-	-	+	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	+	+	-	+	-	-	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	+	+	-	-	-	+	-	+	-	+	+	-
33	Psychodidae	<i>Psychoda</i>	-	-	+	-	-	-	-	-	-	+	-	-	-
34		<i>Maruina</i>	-	-	-	+	+	-	-	-	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	+	-	-	-	-	+	-	-	-	+	-
36	Blepharoceridae	<i>Blepharocera</i>	-	+	-	-	-	+	+	-	+	-	-	-	-
37		<i>Horaia</i>	-	-	-	-	+	-	-	-	-	-	-	+	+
38	Tabanidae	<i>Tabanus</i>	-	-	-	+	-	-	-	-	-	-	+	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	+	-	-	-	+	-	-	-	+	-	-	+
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	+	+	-	+	-	-
41	Limnocharidae	<i>Limnochares</i>	+	-	-	-	-	-	-	-	-	-	-	+	+
		Total	7	14	8	12	12	12	11	12	12	11	16	14	13

Sub basin: Yargyap Chhu

S.No.	Family	Genus	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>	+	-	-	-	-	-	-	+	-	-	+	-	-	-
3		<i>Heptagenia</i>	-	-	-	+	-	-	-	-	+	-	-	+	+	+
4		<i>Epeorus</i>	-	+	+	-	+	-	+	-	-	+	+	-	-	+
5	Baetidae	<i>Baetis</i>	+	-	-	-	-	+	-	-	+	-	-	+	-	-
6	Ephemerellidae	<i>Ephemerella</i>	+	-	-	-	-	-	-	-	-	+	+	-	+	+
7		<i>Ephemerella excrucians</i>	-	-	-	+	+	-	-	-	-	-	-	-	-	-
8	Caenidae	<i>Caenis</i>	-	+	-	-	-	-	-	+	+	-	+	-	-	+
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	-	+	-	-	+	-	-	-	-
10		<i>Chroterpes</i>	-	-	-	+	-	-	-	+	-	-	-	+	+	-
11		<i>Leptophlebia</i>	-	-	+	-	-	+	+	-	-	+	-	-	-	+
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	+	-	-	+	-	-	-	-	-	+	-	-	-
13		<i>Neoephemeridae 2</i>	+	-	-	+	-	-	-	+	+	-	-	-	-	+
14	Perlidae	<i>Acroneuria</i>	+	-	-	-	+	+	-	-	-	+	-	-	+	-
15	Perlodidae	<i>Isoperla</i>	-	+	+	-	-	-	-	+	-	-	-	+	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	+	-	-	-	-	-	+	-	-	+
17	Psephenidae	<i>Psephenus</i>	-	-	-	+	-	-	+	-	-	-	-	+	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	+	-	-	+	+	-	+	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	+	-	+	+	-	+	-	+	+	-
21		<i>Hydroptila</i>	+	+	-	-	+	-	-	-	+	-	-	-	-	+
22		<i>Leucotrichia</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	+	-	-	-	-	-	-	-	+	-	-	-	+	-

24	Helicopsychidae	<i>Helichopsyche</i>	-	+	+	-	+	-	+	-	-	-	+	-	-	+
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-	-	+	+	+	-	-	-
27	Molannidae	<i>Molanna</i>	-	-	-	-	+	+	+	-	-	-	+	+	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
29		<i>Ablabesmyia</i>	+	+	+	+	-	+	-	+	-	-	-	-	-	-
30	Ephydriidae	Un identified genus / species	-	-	-	-	-	-	+	-	-	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	+	-	-	-	-	-	-	-	-	+	+	-	+	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	+	-	+	-	-	+	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
34		<i>Maruina</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	+
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	+	-	+	-	+	+	-	-	-	+	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	+	-	-	+	-	+	-	-	-
37		<i>Horaia</i>	-	-	-	+	-	-	-	-	-	+	-	+	+	-
38	Tabanidae	<i>Tabanus</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	+
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
		Total	10	10	10	8	13	9	10	13	12	10	13	10	9	12

Outside basin

S.No.	Family	Genus	B1	B2
1	Heptageniidae	<i>Cinygmula</i>	+	+
2		<i>Stenonema</i>	-	-
3		<i>Heptagenia</i>	+	-
4		<i>Epeorus</i>	-	-
5	Baetidae	<i>Baetis</i>	+	+
6	Ephemerellidae	<i>Ephemerella</i>	-	-
7		<i>Ephemerella excrucians</i>	+	+
8	Caenidae	<i>Caenis</i>	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-
10		<i>Chroterpes</i>	+	-
11		<i>Leptophlebia</i>	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-
13		<i>Neoephemeridae 2</i>	-	-
14	Perlidae	<i>Acroneuria</i>	-	+
15	Perlodidae	<i>Isoperla</i>	+	-
16	Elmidae	<i>Heterlimnius</i>	-	-
17	Psephenidae	<i>Psephenus</i>	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-
19	Corydalidae	<i>Corydalus</i>	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	+	+
21		<i>Hydroptila</i>	-	-
22		<i>Leucotrichia</i>	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-
25	Glossosomatidae	<i>Glossosoma</i>	+	-
26	Leptoceridae	<i>Leptocerus</i>	-	-
27	Molannidae	<i>Molanna</i>	-	-
28	Chironomidae	<i>Chironomus</i>	+	+
29		<i>Ablabesmyia</i>	-	+
30	Ephydriidae	Un identified genus / species	-	-
31	Tipulidae	<i>Antocha saxicola</i>	+	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-
33	Psychodidae	<i>Psychoda</i>	-	+
34		<i>Maruina</i>	+	-

35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-
37		<i>Horaia</i>	+	-
38	Tabanidae	<i>Tabanus</i>	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-
40	Culicidae	<i>Culex</i>	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-
	Total		12	8

DENSITY & DIVERSITY OF MACRO-INVERTEBRATES

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (Indiv./m ²)	794	629	852	916	1250	291	703	504	1515	897	707	396	1118	
Shannon Weiner Diversity	2.27	2.39	2.33	2.23	2.28	2.03	2.26	2.35	2.24	2.46	2.29	2.15	2.25	
Evenness Index	0.82	0.81	0.81	0.82	0.82	0.85	0.83	0.81	0.83	0.84	0.83	0.81	0.83	
No. of species	16	19	18	15	16	11	15	18	15	19	16	14	15	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (Indiv./m ²)	1521	1520	1782	2540	1079	1625	2594							
Shannon Weiner Diversity	2.29	2.35	2.21	2.31	2.33	2.3	2.27							
Evenness Index	0.85	0.85	0.84	0.82	0.81	0.81	0.82							
No. of species	15	16	14	17	18	17	16							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (Indiv./m ²)	2686	1240	1128	1050	1076	230	370	811	781	429	774	1379	1221	
Shannon Weiner Diversity	2.33	2.13	2.49	2.46	2.51	2.05	2.11	2.29	2.38	2.13	2.28	2.16	2.11	
Evenness Index	0.82	0.83	0.86	0.85	0.85	0.85	0.85	0.85	0.82	0.83	0.82	0.82	0.85	
No. of species	17	13	18	18	19	11	12	15	18	13	16	14	12	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (Indiv./m ²)	1366	657	936	759	831	1213	1330	247	332	164	424	827	1471	2506
Shannon Weiner Diversity	2.52	2.47	2.31	2.44	2.49	2.54	2.61	2.5	2.15	1.99	2.1	2.48	2.54	2.32
Evenness Index	0.86	0.85	0.83	0.84	0.88	0.85	0.86	0.85	0.87	0.86	0.82	0.86	0.86	0.84
No. of species	19	18	16	18	17	20	21	19	12	10	13	18	19	16
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (Indiv./m ²)	315		295											
Shannon Weiner Diversity	1.85		1.8											
Evenness Index	0.77		0.78											
No. of species	11		10											

Zooplanktons

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
	Protozoans													
1	<i>Actinophrys</i> sp.	+	-	-	+	+	-	+	+	+	+	+	+	+
2	<i>Arcella</i> sp.	-	+	+	-	-	+	-	+	-	+	-	-	-
3	<i>Ceratium</i> spp.	-	-	-	-	+	+	+	-	+	-	+	+	-
	Rotifers													
4	<i>Brachious</i>	+	+	+	-	-	+	+	+	+	-	+	+	-
5	<i>Keratella</i> sp.	-	-	+	+	+	-	+	+	+	-	-	-	-
6	<i>Epiphanes</i>	+	-	+	-	-	-	-	-	-	+	+	+	+
7	<i>Asplanchna</i> sp.	-	+	-	+	+	-	+	+	-	-	-	-	+
8	<i>Philodena</i> sp.	-	+	+	-	-	+	-	-	+	+	+	+	-
	Cladoceran													
9	<i>Bosmina</i> sp.	+	-	-	+	+	-	+	+	+	+	-	+	-
10	<i>Daphnia</i> sp.	+	-	-	+	+	+	+	+	-	+	+	+	+
	Copepods													
11	<i>Cyclops</i> sp.	-	+	+	-	+	-	-	+	-	-	-	+	+
12	<i>Diaptomus</i> sp.	+	+	+	-	+	+	+	+	+	-	+	-	-
	Total	6	6	7	5	8	6	8	9	7	6	7	8	5

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
	Protozoans							
1	<i>Actinophrys</i> sp.	+	+	-	+	+	-	+
2	<i>Arcella</i> sp.	+	+	-	-	-	+	-
3	<i>Ceratium</i> spp.	+	-	+	+	+	-	+
	Rotifers							
4	<i>Brachious</i>	+	-	+	+	+	+	-
5	<i>Keratella</i> sp.	-	+	-	-	-	-	+
6	<i>Epiphanes</i>	+	-	+	+	+	+	-
7	<i>Asplanchna</i> sp.	-	+	-	-	-	-	+
8	<i>Philodena</i> sp.	-	+	+	-	+	+	-
	Cladoceran							
9	<i>Bosmina</i> sp.	+	-	-	+	-	+	+
10	<i>Daphnia</i> sp.	-	-	+	+	+	-	-
	Copepods							
11	<i>Cyclops</i> sp.	+	-	+	-	+	-	+
12	<i>Diaptomus</i> sp.	-	+	-	+	-	+	+
	Total	7	6	6	7	7	6	7

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
	Protozoans													
1	<i>Actinophrys</i> sp.	+	+	+	-	+	-	+	+	+	+	+	+	-
2	<i>Arcella</i> sp.	+	+	-	+	+	+	+	+	-	-	-	-	+
3	<i>Ceratium</i> spp.	-	+	+	-	-	-	-	-	-	-	+	+	-
	Rotifers													
4	<i>Brachious</i>	+	-	+	+	-	+	+	-	+	+	+	+	+
5	<i>Keratella</i> sp.	-	+	+	-	-	+	+	-	-	-	+	-	+
6	<i>Epiphanes</i>	+	-	-	+	+	-	-	+	+	+	-	+	-
7	<i>Asplanchna</i> sp.	+	-	+	+	+	-	+	-	-	-	-	+	+
8	<i>Philodena</i> sp.	-	+	+	+	-	+	-	-	+	+	+	+	+
	Cladoceran													
9	<i>Bosmina</i> sp.	+	-	+	+	+	+	-	+	-	+	-	-	-
10	<i>Daphnia</i> sp.	+	+	-	-	+	+	+	+	+	-	+	+	+
	Copepods													
11	<i>Cyclops</i> sp.	-	+	-	+	+	-	+	-	-	+	+	-	-
12	<i>Diaptomus</i> sp.	+	+	+	-	-	+	-	-	+	-	-	+	+
	Total	8	8	8	7	7	7	7	5	6	6	7	8	7

Sub basin: Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
	Protozoans														
1	<i>Actinophrys</i> sp.	+		+		+	+	+		+	+		+		+
2	<i>Arcella</i> sp.	+	+		+		+		+	+				+	+
3	<i>Ceratium</i> spp.		+	+		+		+			+	+	+		
	Rotifers														
4	<i>Brachious</i>	+					+		+		+				
5	<i>Keratella</i> sp.		+	+	+	+		+		+		+		+	+
6	<i>Epiphanes</i>	+		+		+	+	+				+			+
7	<i>Asplanchna</i> sp.	+			+				+	+	+		+	+	
8	<i>Philodena</i> sp.			+	+	+	+	+		+				+	
	Cladoceran														
9	<i>Bosmina</i> sp.		+	+		+			+	+		+		+	
10	<i>Daphnia</i> sp.	+			+		+	+		+	+	+			+
	Copepods														
11	<i>Cyclops</i> sp.	+		+			+		+			+		+	+
12	<i>Diaptomus</i> sp.	+		+		+		+			+		+		
	Total	8	4	8	5	7	7	7	5	7	6	6	4	6	6

Outside basin

S.No.	Name of species	B1	B2
	Protozoans		
1	<i>Actinophrys</i> sp.	-	+
2	<i>Arcella</i> sp.	+	-
3	<i>Ceratium</i> spp.	-	+
	Rotifers		
4	<i>Brachious</i>	-	+
5	<i>Keratella</i> sp.	+	-
6	<i>Epiphanes</i>	+	-
7	<i>Asplanchna</i> sp.	-	+
8	<i>Philodena</i> sp.	+	+
	Cladoceran		
9	<i>Bosmina</i> sp.	-	-
10	<i>Daphnia</i> sp.	+	+
	Copepods		
11	<i>Cyclops</i> sp.	-	+
12	<i>Diaptomus</i> sp.	+	-
	Total	6	6

DENSITY AND DIVERSITY OF ZOOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (indiv/lit.)	123	111	135	99	146	101	133	165	128	103	125	1.25	89	
Shannon Weiner Diversity	1.44	1.48	1.54	1.32	1.69	1.42	1.59	1.69	1.55	1.43	1.51	1.61	1.29	
Evenness Index	0.80	0.83	0.79	0.82	0.81	0.79	0.76	0.77	0.80	0.80	0.78	0.77	0.80	
No. of species	6	6	7	5	8	6	8	9	7	6	7	8	5	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (indiv/lit.)	119	105	98	114	120	97	109							
Shannon Weiner Diversity	1.52	1.46	1.41	1.49	1.53	1.45	1.57							
Evenness Index	0.78	0.81	0.79	0.77	0.79	0.81	0.81							
No. of species	7	6	6	7	7	6	7							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (indiv/lit.)	145	132	149	123	110	89	116	79	108	122	137	144	130	
Shannon Weiner Diversity	1.62	1.54	1.68	1.55	1.46	1.51	1.56	1.29	1.38	1.41	1.53	1.59	1.61	
Evenness Index	0.78	0.74	0.81	0.80	0.75	0.78	0.80	0.80	0.77	0.79	0.79	0.76	0.83	
No. of species	8	8	8	7	7	7	7	5	6	6	7	8	7	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (indiv/lit.)	156	54	163	78	111	128	133	77	67	83	81	39	77	89
Shannon Weiner Diversity	1.61	1.08	1.55	1.27	1.48	1.51	1.56	1.31	1.44	1.38	1.39	1.09	1.31	1.38
Evenness Index	0.77	0.78	0.75	0.79	0.76	0.78	0.80	0.81	0.74	0.77	0.78	0.79	0.73	0.77
No. of species	8	4	8	5	7	7	7	5	7	6	6	4	6	6
	Jiya Dhol & Karena Ghat													
Code	B1		B2											
Density (indiv/lit.)	98		127											
Shannon Weiner Diversity	1.38		1.46											
Evenness Index	0.77		0.75											
No. of species	6		7											

Month of sample: March 2012

Physico-chemical parameteres

Sub Basin- Siang: I-IV

S.No.	Physical / Chemical Characteristics	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Water Temperature (°C)	9.5	15.2	10	8.5	9.8	10.5	9.6	11.2	10.5	11.2	11	10	10
2	Dissolved Oxygen (mg/l)	10.4	8.85	10.25	10.96	10.4	10.3	10.45	9.9	10.35	9.95	10	10.5	10.45
3	Turbidity (NTU)	0.09	0.12	0.14	0.21	0.35	0.35	0.15	0.23	0.46	0.08	0.18	0.37	0.51
4	Total Suspended Solids (mg/l)	13	16	20	28	31	30	21	28	35	7	24	30	39
5	pH	8.51	8.43	8.56	8.19	8.27	8.22	8.32	8.12	8.48	8.41	8.17	8.25	8.29
6	Electrical Conductivity (µS/cm)	198	167	187	152	293.7	332	154.7	138.09	144.73	165.58	154	154.3	36.67
7	Total Dissolved Solids (mg/l)	120.8	101.9	114.1	92.7	179.2	202.5	94.4	84.2	88.3	101.0	93.9	94.1	22.4
8	Biological Oxygen Demand (mg/l)	1.13	0.87	1.23	1.41	1.65	0.96	1.25	1.05	0.89	0.98	1.54	1.76	1.36
9	Chemical Oxygen Demand (mg/l)	2.12	1.14	1.54	2.54	2.14	1.54	1.14	1.23	1.54	2.13	1.25	1.54	1.36
10	Total Coliform (MPN /100 ml)	1	2	A	3	A	1	1	A	1	A	A	2	2
11	Chloride (mg/l)	9.1	8.2	10.9	9.1	11.8	10.9	9.3	12.8	10.0	8.2	8.2	10.0	8.2
12	Total alkalinity (mg/l of CaCO ₃)	56.5	53.7	61.8	38.7	48.9	59.2	52.8	56.5	60.1	54.7	49.2	47.4	54.7
13	Nitrates (NO ₃) (mg/l)	0.064	0.041	0.032	0.019	0.026	0.034	0.035	0.015	0.033	0.023	0.026	0.020	0.015
14	Sulphate (mg/l)	4.56	3.64	8.30	5.53	6.45	4.56	4.64	3.64	6.38	5.47	3.64	5.47	8.20
15	Phosphate (PO ₄) (mg/l)	0.009	0.008	0.006	0.003	0.001	0.005	0.003	0.005	0.005	0.001	0.003	0.005	0.006
16	Total Hardness (mg/l)	48.65	46.69	59.33	36.61	46.62	51.44	49.40	52.78	54.68	48.05	42.48	44.55	50.70
17	Calcium hardness (mg/l)	39.23	38.53	49.04	31.29	39.70	42.03	42.18	44.64	45.95	40.90	35.84	37.68	43.19
18	Calcium ions (mg/ l)	15.69	15.41	19.61	12.52	15.88	16.81	16.87	17.86	18.38	16.36	14.34	15.07	17.28
19	Magnesium Hardness (mg/l)	9.42	8.16	10.29	5.32	6.92	9.41	7.22	8.14	8.73	7.16	6.64	6.87	7.51

20	Magnesium ions (mg/l)	3.77	3.70	4.71	3.00	3.81	4.03	4.05	4.29	4.41	3.93	3.44	3.62	4.15
21	Potassium (mg/l)	1.98	1.23	1.23	1.46	1.21	1.34	1.32	1.24	0.95	1.35	1.77	1.22	1.11
22	Sodium (mg/l)	3.52	1.65	2.71	2.14	1.98	2.45	2.06	1.54	2.39	2.43	2.51	2.35	2.01
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub basin- Yamne and Simang

S.No.	Physical / Chemical Characteristics	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	Water Temperature (° C)	9.8	10.5	9.5	11	10.2	9	10.6
2	Dissolved Oxygen (mg/l)	10.65	10.25	10.8	10.1	9.99	10.5	10.3
3	Turbidity (NTU)	0.06	0.46	0.33	0.08	0.35	0.29	0.21
4	Total Suspended Solids (mg/l)	9	36	33	12	31	27	23
5	pH	8.46	8.33	8.06	8.17	8.27	8.11	8.43
6	Electrical Conductivity (µS/cm)	244.3	248.7	241	251	293.7	223	226.3
7	Total Dissolved Solids (mg/l)	149.0	151.7	147.0	153.1	179.2	136.0	138.0
8	Biological Oxygen Demand (mg/l)	1.21	1.45	1.38	0.58	1.58	1.36	1.74
9	Chemical Oxygen Demand (mg/l)	2.25	2.14	2.36	1.25	2.36	1.54	1.58
10	Total Coliform (MPN /100 ml)	2	1	A	1	1	A	A
11	Chloride (mg/l)	9.2	11.96	8.28	8.832	8.832	9.29	8.361
12	Total alkalinity (mg/l of CaCO ₃)	55.2	57.96	59.8	52.256	65.32	58.527	48.308
13	Nitrates (NO ₃) (mg/l)	0.015	0.074	0.157	0.167	0.024	0.027	0.014
14	Sulphate (mg/l)	4.63	2.78	3.70	4.63	8.28	6.46	2.77
15	Phosphate (PO ₄) (mg/l)	0.073	0.009	0.028	0.065	0.046	0.056	0.046
16	Total Hardness (mg/l)	51.54	53.40	50.77	47.20	59.39	53.97	43.18
17	Calcium hardness (mg/l)	43.65	46.64	43.42	40.90	51.10	46.22	38.54
18	Calcium ions (mg/ l)	17.46	18.66	17.37	16.36	20.44	18.49	15.41
19	Magnesium Hardness (mg/l)	7.89	6.76	7.35	6.30	8.30	7.75	4.65
20	Magnesium ions (mg/l)	4.19	4.48	4.17	3.93	4.91	4.44	3.70
21	Potassium (mg/l)	0.84	1.75	0.98	1.19	1.41	1.19	1.28
22	Sodium (mg/l)	1.22	2.24	1.54	1.84	2.06	1.76	2.54
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND

Sub basin- Siyom: I-III and Hirit

S.No.	Physical / Chemical Characteristics	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Water Temperature (°C)	9.3	9.2	10.5	10.6	9.56	10	10.5	9.5	7.19	10.2	9.9	7.7	7.1
2	Dissolved Oxygen (mg/l)	10.2	10.2	10.5	10.35	10.6	10.8	10.65	10.6	11.45	10.65	10.1	11.2	11.56
3	Turbidity (NTU)	0.21	0.1	0.17	0.81	0.47	0.21	0.17	0.12	0.16	0.4	0.01	0.06	0.16
4	Total Suspended Solids (mg/l)	22	14	21	45	34	27	21	15	19	32	4	10	16
5	pH	7.96	7.55	7.64	7.36	7.93	7.23	7.41	7.32	7.73	7.21	7.76	7.65	7.98
6	Electrical Conductivity (µS/cm)	44.7	76.3	78.3	114.7	126.3	76.0	80.0	74.6	85.3	18.0	49.0	46.0	46.3
7	Total Dissolved Solids (mg/l)	27.2	46.6	47.8	70.0	77.1	46.4	48.8	45.5	52.0	11.0	29.9	28.1	28.2
8	Biological Oxygen Demand (mg/l)	0.73	1.21	1.54	1.21	1.47	1.65	1.23	1.58	1.71	0.86	1.52	1.48	1.76
9	Chemical Oxygen Demand (mg/l)	2.31	2.51	2.12	2.25	2.31	1.58	1.39	1.46	2.58	3.01	1.85	2.15	2.13
10	Total Coliform (MPN / 100 ml)	2	A	1	A	A	A	1	A	2	A	A	1	2
11	Chloride (mg/l)	10.2	8.4	9.3	12.0	13.9	8.3	10.4	12.4	9.8	9.5	12.2	8.5	12.7
12	Total alkalinity (mg/l of CaCO ₃)	53.9	58.5	64.1	60.1	70.2	53.6	61.2	58.3	58.7	10.4	74.7	56.7	66.2
13	Nitrates (NO ₃) (mg/l)	0.013	0.016	0.017	0.008	0.014	0.008	0.013	0.016	0.007	0.014	0.018	0.005	0.009
14	Sulphate (mg/l)	3.69	3.97	4.62	4.34	5.54	4.62	2.82	4.71	2.80	2.84	3.78	2.84	3.78
15	Phosphate (PO ₄) (mg/l)	0.005	0.004	0.001	0.001	0.004	0.005	0.005	0.006	0.005	0.008	0.009	0.009	0.004
16	Total Hardness (mg/l)	49.00	52.55	59.02	55.78	64.65	49.52	54.87	56.36	54.14	56.78	67.26	50.36	60.41
17	Calcium hardness (mg/l)	40.84	44.30	50.07	47.36	53.59	43.20	46.11	47.99	45.90	46.54	55.28	41.58	50.06
18	Calcium ions (mg/l)	16.34	17.72	20.03	18.94	21.44	17.28	18.44	19.20	18.36	18.62	22.11	16.63	20.02
19	Magnesium Hardness (mg/l)	8.15	8.24	8.94	8.43	11.06	6.32	8.76	8.37	8.23	10.23	11.98	8.78	10.36
20	Magnesium ions (mg/l)	3.92	4.25	4.81	4.55	5.14	4.15	4.43	4.61	4.41	4.47	5.31	3.99	4.81
21	Potassium (mg/l)	1.09	1.2	1.11	1.22	1.03	1.21	1.05	1.12	1.01	1.19	1.34	1.29	0.87
22	Sodium (mg/l)	1.51	2.1	1.62	2.04	1.98	2.65	1.89	2.23	2.09	2.09	2.14	2.15	1.85
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub Basin- Yargyap Chhu

S.No.	Physical / Chemical Characteristics	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Water Temperature (°C)	9.5	9.9	9.6	8.12	8.4	8.15	8.5	7.22	8.28	7.14	6.41	6.81	6.54	6.03
2	Dissolved Oxygen (mg/l)	10.6	10.51	10.44	11.1	10.9	11.1	11.36	11.44	11.65	11.54	11.62	11.52	11.44	11.92
3	Turbidity (NTU)	0.09	0.14	0.12	0.13	0.14	0.03	0.6	0.14	0.12	0.05	0.06	0.06	0.04	0.23
4	Total Suspended Solids (mg/l)	14	15	11	15	15	7	45	18	16	9	10	11	5	27
5	pH	7.45	7.32	7.51	7.41	7.64	7.61	7.54	7.44	7.33	7.41	7.24	7.23	7.31	7.68
6	Electrical Conductivity (µS/cm)	71.3	75.3	79.2	59.7	71.0	80.0	73.0	68.2	72.2	63.1	69.1	35.1	44.2	70.2
7	Total Dissolved Solids (mg/l)	43.5	45.9	48.3	36.4	43.3	48.8	44.5	41.6	44.0	38.5	42.2	21.4	27.0	42.8
8	Biological Oxygen Demand (mg/l)	1.23	1.82	1.71	0.87	0.98	1.05	1.11	1.54	1.85	1.52	1.52	0.54	1.5	1.56
9	Chemical Oxygen Demand (mg/l)	3.25	1.36	2.54	2.36	1.45	1.54	2.87	2.98	3.12	3.14	2.58	1.89	1.69	1.34
10	Total Coliform (MPN /100 ml)	2	A	1	A	A	1	1	1	A	A	1	A	1	A
11	Chloride (mg/l)	14.08	10.40	13.70	8.69	11.16	10.30	13.04	11.07	13.13	12.28	11.74	12.23	13.83	11.95
12	Total alkalinity (mg/l of CaCO ₃)	66.2	54.8	69.0	47.3	58.2	57.2	59.1	53.5	65.7	65.7	63.4	65.9	61.2	65.9
13	Nitrates (NO ₃) (mg/l)	0.180	0.038	0.066	0.169	0.160	0.160	0.085	0.066	0.047	0.056	0.047	0.066	0.028	0.009
14	Sulphate (mg/l)	4.73	4.73	5.65	2.82	3.76	2.82	4.71	2.82	3.76	4.69	5.59	5.65	4.71	5.61
15	Phosphate (PO ₄) (mg/l)	0.008	0.009	0.001	0.005	0.007	0.003	0.003	0.005	0.002	0.008	0.004	0.005	0.008	0.008
16	Total Hardness (mg/l)	62.50	50.37	64.52	44.68	55.24	54.09	56.39	50.61	60.65	61.81	58.16	59.12	59.49	63.11
17	Calcium hardness (mg/l)	52.41	42.07	54.00	38.07	49.35	46.58	47.99	43.99	50.56	52.43	47.77	50.79	49.40	52.66
18	Calcium ions (mg/ l)	20.96	16.83	21.60	15.23	19.74	18.63	19.20	17.60	20.22	20.97	19.11	20.32	19.76	21.06
19	Magnesium Hardness (mg/l)	10.09	8.30	10.52	6.61	5.89	7.51	8.40	6.62	10.09	9.39	10.39	8.32	10.09	10.45
20	Magnesium ions (mg/l)	5.03	4.04	5.18	3.65	4.74	4.47	4.61	4.22	4.85	5.03	4.59	4.88	4.74	5.06

21	Potassium (mg/l)	1.09	1.15	1.12	1.13	1.14	1.03	1.06	1.02	1.05	1.14	1.15	1.02	1.23	1.25
22	Sodium (mg/l)	1.51	2.01	1.15	2.01	2.13	2.12	2.24	2.04	2.06	2.12	2.02	2.14	2.13	2.08
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Outside basin

S.No.	Physical / Chemical Characteristics	B1	B2
1	Water Temperature (° C)	12.5	13
2	Dissolved Oxygen (mg/l)	9.7	9.65
3	Turbidity (NTU)	0.29	0.31
4	Total Suspended Solids (mg/l)	32	35
5	pH	8.50	8.43
6	Electrical Conductivity (µS/cm)	181.17	152.805
7	Total Dissolved Solids (mg/l)	120.8	101.9
8	Biological Oxygen Demand (mg/l)	1.13	0.87
9	Chemical Oxygen Demand (mg/l)	2.12	1.14
10	Total Coliform (MPN /100 ml)	1	2
11	Chloride (mg/l)	11.1	9.4
12	Total alkalinity (mg/l of CaCO ₃)	63	59
13	Nitrates (NO ₃) (mg/l)	0.064	0.041
14	Sulphate (mg/l)	6.56	7.64
15	Phosphate (PO ₄) (mg/l)	0.009	0.008
16	Total Hardness (mg/l)	56.00	53.00
17	Calcium hardness (mg/l)	39.23	36.03
18	Calcium ions (mg/ l)	15.69	14.41
19	Magnesium Hardness (mg/l)	16.77	16.97
20	Magnesium ions (mg/l)	3.765888	3.45864
21	Potassium (mg/l)	1.98	1.23
22	Sodium (mg/l)	3.52	1.65
23	Iron (mg/l)	<0.01	<0.01
24	Manganese (mg/l)	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND
27	Copper (Cu) (mg/l)	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND
30	Lead (Pb) (mg/l)	ND	ND

Biological Parameters

Phytoplanktons

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnanthyidium affinis</i>	+	+		+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthyidium andicola</i>	-	-	+	+	-	+	+	+	+	-	+	+	-
3	<i>Achnanthyidium austriaca</i>	+	+	-	-	+	+	+	+	+	+	+	+	+
4	<i>Achnanthyidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	+	+	-	+	-	-	-	-
5	<i>Achnanthyidium biasoletiana</i>	+	+	+	-	+	-	-	-	+	+	+	-	+
6	<i>Achnanthyidium conspicua</i>	-	-	+	+	-	+	+	-	-	-	-	+	-
7	<i>Achnanthyidium cranulata</i>	+	-	-	-	+	-	-	+	+	+	+	-	+
8	<i>Achnanthyidium dispar</i>	-	+	-	-	-	+	+	+	-	+	-	+	-
9	<i>Achnanthyidium exigua</i>	-	+	+	+	-	+	-	-	-	-	-	-	+
10	<i>Achnanthyidium exilis</i>	+	-	-	-	-	-	-	+	+	+	+	+	-
11	<i>Achnanthyidium fragilarioides</i>	+	+	-	+	+	+	+	+	+	+	-	-	-
12	<i>Achnanthyidium Grimmei</i>	-	-	+	-	-	-	-	-	+	-	-	+	+
13	<i>Achnanthyidium hauckiana</i>	-	-	-	-	+	+	+	-	-	+	+	+	-
14	<i>Achnanthyidium holsti</i>	+	-	+	-	-	-	-	+	+	-	-	-	+
15	<i>Achnanthyidium hungarica</i>	-	+	-	+	+	+	-	-	+	+	-	-	-
16	<i>Achnanthyidium kryophila</i>	-	-	-	-	-	+	+	+	-	-	+	-	+
17	<i>Achnanthyidium lanceolata</i>	+	+	+	+	+	-	-	-	-	+	+	+	+
18	<i>Achnanthyidium lapidosa</i>	-	-	-	-	+	+	+	+	+	-	-	-	+
19	<i>Achnanthyidium lavenderi</i>	+	+	-	+	-	-	-	-	+	+	-	+	-
20	<i>Achnanthyidium lemmermanni</i>	-	-	-	-	-	-	+	+	-	-	+	-	-
21	<i>Achnanthyidium Lilljeborgei</i>	-	-	-	-	+	+	-	-	-	-	-	-	-
22	<i>Achnanthyidium linearis</i>	+	+	+	+	-	-	-	-	+	+	+	+	-
23	<i>Achnanthyidium linearis</i> var. <i>pusila</i>	+	-	-	+	-	+	+	-	+	+	+	-	+
24	<i>Achnanthyidium microcephala</i>	-	+	+	+	+	+	+	-	-	+	+	+	-
25	<i>Achnanthyidium minutissima</i>	-	+	-	-	+	+	-	+	+	+	+	-	+
26	<i>Achnanthyidium nodosa</i>	+	+	+	-	-	-	+	-	+	-	-	-	+
27	<i>Achnanthyidium plonensis</i>	+	-	-	+	+	+	-	-	-	-	+	+	-
28	<i>Achnanthyidium saxonica</i>	-	+	+	+	-	-	+	+	+	+	-	-	+
29	<i>Achnanthyidium sp.</i>	+	+	-	-	+	-	+	-	-	-	-	-	+

30	<i>Achnanthidium suchlandti</i>	-	+	-	-	-	+	-	-	-	-	-	+	-
31	<i>Achnanthidium taeniata</i>	-	-	-	-	-	+	+	+	-	-	-	-	-
32	<i>Achnanthidiumb conspicua</i>	+	+	-	+	-	-	-	-	+	+	+	+	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	+	-	+	-	-	-	+	-	-	+	-	-	+
34	<i>Anomoeneis</i> sp.	-	-	-	+	+	+	-	+	+	-	-	+	+
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	+	+	-	+	-	-	-	-	-	+	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	+	-	-	-	-	+	+	+	-	+	-	+
37	<i>Cocconeis placentula</i>	+	-	+	+	-	-	+	-	-	+	-	+	-
38	<i>Cymbella</i> sp.	-	+	-	+	+	-	+	+	-	-	-	-	+
39	<i>Cymbella affinis</i>	-	-	-	-	-	+	-	-	-	-	-	+	-
40	<i>Cymbella delicatula</i>	-	+	+	+	-	-	-	-	+	-	-	-	+
41	<i>Cymbella laevis</i>	+	-	-	-	+	-	-	-	-	-	-	-	-
42	<i>Cymbella microcephala</i>	-	+	+	+	-	+	+	-	+	-	-	-	-
43	<i>Cymbella pusila</i>	-	-	-	-	-	-	-	+	-	+	+	+	+
44	<i>Cymbella tumida</i>	+	-	-	-	+	-	-	-	-	-	-	-	-
45	<i>Cymbella turgida</i>	+	+	-	+	-	-	+	-	-	+	-	+	-
46	<i>Cymbella ventricosa</i>	-	-	+	-	-	+	-	+	+	-	+	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	-	+	-	-	-	+	-	-	-	+	+
48	<i>Diatoma anceps</i>	-	-	+	-	-	+	-	+	-	-	+	+	+
49	<i>Diatoma hiemale</i>	+	-	+	-	+	-	-	-	+	+	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	+	-	-	-	+	-	-	-	-	-	-
51	<i>Diatoma vulgare</i>	-	+	-	+	-	-	-	-	-	-	-	+	+
52	<i>Didymosphaenia geminata</i>	+	-	-	-	-	+	-	+	-	-	+	-	-
53	<i>Eunotia linearis</i>	-	+	+	-	+	-	+	-	+	+	+	+	-
54	<i>Eunotia</i> sp.	+	-	-	+	+	+	-	+	-	-	-	-	+
55	<i>Fragilaria capucina</i>	-	+	-	-	-	-	-	-	+	-	-	-	-
56	<i>Fragilaria construens</i>	+	-	+	-	-	-	-	-	-	+	-	+	-
57	<i>Fragilaria inflata</i>	-	-	-	+	-	+	+	+	-	+	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	+	+	+	+	-	+	-	+	+	-	-	-	+
59	<i>Fragilaria rumpens</i>	-	+	-	-	+	-	+	-	-	-	-	+	-
60	<i>Fragilaria</i> sp.	+	-	+	+	+	-	-	-	-	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	+	+	-	-	-	+	+	-	-	+	-	-
62	<i>Fragilaria. capucina</i> var. <i>lanceolata</i>	+	-	-	+	+	-	-	+	-	+	+	+	+
63	<i>Fragilaria. pinnata</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
64	<i>Gomphonema gracile</i>	-	+	+	-	-	+	-	+	-	-	-	+	+
65	<i>Gomphonema helveticum</i>	+	-	-	-	+	+	+	-	-	-	+	-	-
66	<i>Gomphonema intricatum</i>	-	+	+	+	-	-	-	+	+	-	-	-	+

67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-	-	+	+	-	+	-	-	+	+	+	-
68	<i>Gomphonema olivaceoides</i>	-	+	+	+	-	-	-	+	-	-	-	-	+
69	<i>Gomphonema olivaceum</i>	-	+	-	+	+	-	+	-	+	+	+	-	-
70	<i>Gomphonema parvulum</i>	-	+	+	-	-	+	+	-	+	+	+	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	+	-	-	-	+	-	-	-	-	+
72	<i>Gomphonema bohemicum</i>	+	-	+	-	+	-	-	-	-	+	+	+	-
73	<i>Gomphonema gracile</i>	-	+	+	+	-	+	-	-	+	-	+	-	+
74	<i>Gomphonema helveticum</i>	+	-	-	-	-	-	+	-	+	-	-	-	-
75	<i>Gomphonema herbidense</i>	+	-	+	+	+	+	-	+	-	+	+	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	+	+	-	+	-	-	+	-	+	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	+	+	-	-	-	-	-	-	+	+	+	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	+	-	+	-	-	+	+	+	-	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	+	-	-	-	+	-	-	-	-	+	-	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	+	-	+	+	-	+	-	-	-	-	+	+
81	<i>Gomphonema olivaceum</i>	-	-	-	+	-	-	+	+	-	-	-	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+	-	+	-	-	+	+	-	+	-	+	+
83	<i>Gomphonema parvulum</i>	+	-	+	-	+	+	-	-	+	-	+	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	+	-	+	+	-	+	+	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	+	-	-	+
86	<i>Gomphonema. intricatum</i>	+	-	+	-	+	+	-	-	+	-	+	+	+
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	+	-	-	-	+	-	-	-	+	+
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	+	-	-	-	-	+	+	-	+	-	-
89	<i>Hannaea arcus</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	+	+	+	+	+	-	-	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	+	+	+	-	-	+	-	-	-	+
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	+	+	-	-	-	+	+	-	+	+	-	-
93	<i>Melosira junergensii</i>	+	+	-	+	+	+	-	-	+	-	+	+	-
94	<i>Navicula andium</i>	-	-	-	-	-	-	-	+	-	-	-	+	-
95	<i>Navicula cryptocephala</i>	+	+	-	+	-	-	+	+	-	+	+	-	-
96	<i>Navicula feverborni</i>	+	-	-	-	-	+	-	-	-	-	-	+	-
97	<i>Navicula halophila</i>	-	-	+	+	-	-	-	+	+	-	+	+	+
98	<i>Navicula radiosa</i>	-	+	-	-	-	-	+	-	-	-	-	-	-

99	<i>Navicula radiosa</i> var. <i>tenella</i>	+	-	-	-	+	+	-	+	-	+	-	+	-
100	<i>Pinnularia borealis</i>	-	-	+	-	-	+	+	-	+	-	+	-	+
101	<i>Pinnularia molaris</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	-	-	-	-	-	-	-	-	-	+	-	+	+
103	<i>Planothidium lanceolata</i>	-	+	+	-	-	-	-	+	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	+	-	-	+	-	+	+	-	-	-	-	+	-
105	<i>Reimeria sinuata</i>	-	-	-	-	+	+	-	-	-	+	+	+	+
106	<i>Stauroneis</i> sp.	-	-	+	-	-	-	-	+	+	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	+	-	-	-	-	+	-
108	<i>Surirella</i> sp.	+	-	-	+	+	-	-	-	-	+	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	+	+	-	-	-	+	+	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	+	-	-	-	-	+	+	-	-	-	-
111	<i>Synedra amphirhynchus</i>	+	-	-	+	+	-	-	-	+	-	+	-	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	+	-	-	-	+	-	+	+
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-	-	+	+	-	-	-	-	-	+	+	-
115	<i>Tabellaria flocculosa</i>	-	-	+	+	-	-	+	+	-	-	+	-	-
116	<i>Tetracyclus</i> sp.	+	-	-	-	-	-	-	-	-	+	-	-	-
-	Total	51	46	44	50	45	46	47	48	46	44	47	47	43

Sub basin: Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	-	+
2	<i>Achnanthidium andicola</i>	+	+	+	+	-	-	-
3	<i>Achnanthidium austriaca</i>	-	+	+	+	+	+	+
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	-
5	<i>Achnanthidium biasoletiana</i>	-	+	+	-	+	+	-
6	<i>Achnanthidium conspicua</i>	+	+	+	+	-	-	+
7	<i>Achnanthidium cranulata</i>	-	-	-	-	+	+	-
8	<i>Achnanthidium dispar</i>	-	+	+	-	-	+	-
9	<i>Achnanthidium exigua</i>	+	+	+	+	-	+	-
10	<i>Achnanthidium exilis</i>	+	-	-	+	+	+	+
11	<i>Achnanthidium fragilarioides</i>	-	-	+	-	+	+	-
12	<i>Achnanthidium Grimmei</i>	+	+	+	-	-	-	-
13	<i>Achnanthidium hauckiana</i>	+	-	+	-	+	-	-
14	<i>Achnanthidium holsti</i>	-	+	+	+	-	+	+
15	<i>Achnanthidium hungarica</i>	-	+	-	-	+	-	-
16	<i>Achnanthidium kryophila</i>	+	-	+	+	-	-	+
17	<i>Achnanthidium lanceolata</i>	-	+	-	-	+	-	-
18	<i>Achnanthidium lapidosa</i>	-	-	+	-	+	+	-
19	<i>Achnanthidium lavenderi</i>	+	+	+	+	+	-	-
20	<i>Achnanthidium lemmermanni</i>	-	-	-	+	+	+	+
21	<i>Achnanthidium Lillijeborgei</i>	+	-	+	-	+	+	-
22	<i>Achnanthidium linearis</i>	-	+	+	-	-	+	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	+	-	-	+
24	<i>Achnanthidium microcephala</i>	-	+	+	+	+	+	+
25	<i>Achnanthidium minutissima</i>	+	-	-	-	+	-	-
26	<i>Achnanthidium nodosa</i>	-	-	-	-	-	-	+
27	<i>Achnanthidium plonensis</i>	-	+	+	-	+	+	+
28	<i>Achnanthidium saxonica</i>	-	-	+	-	-	-	-
29	<i>Achnanthidium</i> sp.	-	+	-	+	+	+	+
30	<i>Achnanthidium suchlandti</i>	+	-	+	-	-	-	-
31	<i>Achnanthidium taeniata</i>	-	+	-	+	-	+	+
32	<i>Achnanthidiumb conspicua</i>	-	+	+	-	-	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	+	+	-	-	-	+	-
34	<i>Anomoeneis</i> sp.	-	-	-	-	+	+	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	-	+	+	+	-	+
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	-	+	-
37	<i>Cocconeis placentula</i>	+	+	-	-	-	-	-

38	<i>Cymbella</i> sp.	+	-	-	+	+	+	+
39	<i>Cymbella affinis</i>	-	+	-	-	-	-	-
40	<i>Cymbella delicatula</i>	-	+	+	-	-	-	-
41	<i>Cymbella laevis</i>	+	-	-	+	+	-	+
42	<i>Cymbella microcephala</i>	-	-	-	-	-	+	-
43	<i>Cymbella pusila</i>	-	+	-	+	-	-	-
44	<i>Cymbella tumida</i>	-	-	+	+	+	+	+
45	<i>Cymbella turgida</i>	+	+	-	-	-	+	-
46	<i>Cymbella ventricosa</i>	-	-	+	+	-	+	+
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-
48	<i>Diatoma anceps</i>	-	+	-	-	-	-	-
49	<i>Diatoma hiemale</i>	-	-	+	+	+	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	+	-	-	-	-	-
51	<i>Diatoma vulgare</i>	-	-	-	-	-	+	-
52	<i>Didymosphaenia geminata</i>	-	+	+	+	-	-	+
53	<i>Eunotia linearis</i>	+	-	-	-	-	+	-
54	<i>Eunotia</i> sp.	-	+	+	-	-	-	-
55	<i>Fragilaria capucina</i>	+	+	-	+	-	+	+
56	<i>Fragilaria construens</i>	-	-	-	-	-	+	+
57	<i>Fragilaria inflata</i>	-	+	+	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	+	-	-	-	-
59	<i>Fragilaria rumpens</i>	+	+	-	-	+	-	-
60	<i>Fragilaria</i> sp.	-	-	-	+	-	-	+
61	<i>Fragilaria vaucheriae</i>	+	+	+	-	-	+	-
62	<i>Fragilaria. capucina</i> var. <i>lanceolata</i>	-	-	-	-	+	-	-
63	<i>Fragilaria. pinnata</i>	-	+	+	+	-	+	+
64	<i>Gomphonema gracile</i>	+	-	-	+	-	-	+
65	<i>Gomphonema helveticum</i>	-	+	+	-	+	+	-
66	<i>Gomphonema intricatum</i>	-	-	-	+	-	-	+
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-	+	-	+	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	+	-	-	+
69	<i>Gomphonema olivaceum</i>	-	-	-	+	+	-	+
70	<i>Gomphonema parvulum</i>	+	+	+	-	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	-	+	-	-	+
72	<i>Gomphonema bohemicum</i>	-	-	-	-	+	+	-
73	<i>Gomphonema gracile</i>	-	-	-	+	-	-	+
74	<i>Gomphonema helveticum</i>	+	-	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	-	+	+	-	+	+	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	+	+	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	+	+	-	-	-	+	-

78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	+	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	-	+	+	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	+	-	-
81	<i>Gomphonema olivaceum</i>	+	+	-	-	-	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	+	-	-	+
83	<i>Gomphonema parvulum</i>	+	-	-	-	+	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	+	+	+	-	+	+	-
85	<i>Gomphonema sphaerophorum</i>	-	-	+	-	-	-	-
86	<i>Gomphonema. intricatum</i>	-	-	+	+	-	+	+
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	+	-	-	+
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	+	-
89	<i>Hannaea arcus</i>	-	-	-	-	-	+	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	+	+	-	+
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	-	-	+	+	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	+	-	+	-	-	+
93	<i>Melosira junergensii</i>	+	-	-	-	+	-	-
94	<i>Navicula andium</i>	-	-	-	-	-	-	-
95	<i>Navicula cryptocephala</i>	-	-	-	-	+	-	-
96	<i>Navicula feverborni</i>	+	+	-	+	+	+	+
97	<i>Navicula halophila</i>	-	-	-	-	-	+	-
98	<i>Navicula radiosa</i>	+	+	+	+	-	-	+
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	+	+	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	+	-	-	+	+	-
102	<i>Pinnularia</i> sp.	-	-	-	+	+	-	-
103	<i>Planothidium lanceolata</i>	+	-	+	-	-	-	+
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	+	-	-	-	-	-
105	<i>Reimeria sinuata</i>	+	-	-	-	+	+	-
106	<i>Stauroneis</i> sp.	-	-	-	+	+	-	-
107	<i>Surirella ovata</i>	+	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	-	+	-	-
109	<i>Synedra</i> sp.	-	-	-	+	-	+	+
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	+	+	+	-	+
112	<i>Synedra rumpens</i>	+	-	-	-	-	-	-
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	+	-
115	<i>Tabellaria flocculosa</i>	-	-	+	+	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-
	Total	40	47	45	43	47	48	39

Sub Basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium affinis</i>	+	-	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	-	-	+	-	+	+	-	+	+	-	+	+	-
3	<i>Achnanthidium austriaca</i>	+	+	-	+	-	-	+	-	+	+	+	-	+
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	+	+	-	+	+	-	-	+	-
5	<i>Achnanthidium biasoletiana</i>	+	+	-	+	-	-	+	-	-	+	+	+	+
6	<i>Achnanthidium conspicua</i>	-	-	+	-	-	+	-	+	+	-	+	+	+
7	<i>Achnanthidium cranulata</i>	-	+	-	+	+	-	+	-	-	+	-	-	-
8	<i>Achnanthidium dispar</i>	+	+	-	+	-	+	-	-	+	+	+	+	+
9	<i>Achnanthidium exigua</i>	-	+	+	-	+	-	-	-	-	-	+	+	+
10	<i>Achnanthidium exilis</i>	+	+	-	+	-	+	+	+	+	+	-	-	-
11	<i>Achnanthidium fragilarioides</i>	+	+	+	+	-	+	+	-	-	+	+	-	-
12	<i>Achnanthidium Grimmei</i>	-	-	-	-	-	-	-	+	-	-	-	-	+
13	<i>Achnanthidium hauckiana</i>	-	-	+	-	+	-	+	-	+	-	+	+	+
14	<i>Achnanthidium holsti</i>	+	+	-	+	-	-	-	-	-	+	+	+	+
15	<i>Achnanthidium hungarica</i>	-	-	+	-	+	+	+	-	-	-	-	-	+
16	<i>Achnanthidium kryophila</i>	-	-	-	-	-	-	-	-	+	-	+	+	-
17	<i>Achnanthidium lanceolata</i>	+	-	-	+	-	-	+	+	-	+	-	-	+
18	<i>Achnanthidium lapidosa</i>	-	+	+	-	+	-	+	-	-	-	+	+	-
19	<i>Achnanthidium lavenderi</i>	+	-	-	+	-	+	+	+	-	-	+	-	-
20	<i>Achnanthidium lemmermanni</i>	-	+	-	-	-	+	+	-	-	-	-	+	+
21	<i>Achnanthidium Lillijeborgei</i>	-	+	-	-	+	+	+	-	-	-	+	+	+
22	<i>Achnanthidium linearis</i>	+	+	+	+	-	-	-	+	+	+	+	+	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	-	+	+	+	-	-	-	+	+	-	-	+
24	<i>Achnanthidium microcephala</i>	-	+	-	-	-	+	+	+	-	-	+	+	+
25	<i>Achnanthidium minutissima</i>	+	-	+	+	-	-	+	-	-	+	-	-	-

26	<i>Achnanthidium nodosa</i>	-	-	-	+	-	-	-	-	-	+	-	+	+
27	<i>Achnanthidium plonensis</i>	-	+	+	+	-	+	+	-	+	+	+	-	-
28	<i>Achnanthidium saxonica</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
29	<i>Achnanthidium</i> sp.	+	+	+	+	-	-	+	-	+	+	-	-	-
30	<i>Achnanthidium suchlandti</i>	-	-	-	-	-	-	-	+	-	-	+	+	-
31	<i>Achnanthidium taeniata</i>	-	+	-	-	-	+	-	-	-	-	-	-	+
32	<i>Achnanthidiumb conspicua</i>	+	-	+	+	+	-	-	+	+	+	+	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	+	+	+	+	-	-	-	-	-	-	+	-	+
34	<i>Anomoeneis</i> sp.	-	+	+	-	-	-	+	+	-	-	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	-	-	+	-	+	+	-	+	+	+	-	+
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	+	-	-	+	+	-	-	-	-	-	+	-
37	<i>Cocconeis placentula</i>	+	-	+	+	-	-	-	+	+	+	+	+	+
38	<i>Cymbella</i> sp.	-	+	+	-	+	-	+	-	-	-	-	-	-
39	<i>Cymbella affinis</i>	-	+	-	-	-	+	-	+	-	-	-	+	+
40	<i>Cymbella delicatula</i>	+	-	+	+	+	-	-	+	+	+	+	-	+
41	<i>Cymbella laevis</i>	-	-	-	+	-	-	-	+	-	-	+	-	-
42	<i>Cymbella microcephala</i>	-	+	-	-	+	+	-	-	-	-	-	-	+
43	<i>Cymbella pusila</i>	-	-	-	-	-	+	-	+	-	-	-	-	-
44	<i>Cymbella tumida</i>	+	-	-	-	+	-	+	-	-	-	+	+	-
45	<i>Cymbella turgida</i>	-	+	-	-	-	+	-	+	+	+	-	-	-
46	<i>Cymbella ventricosa</i>	-	+	-	-	-	-	-	-	-	-	+	+	+
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	+	+	-	-	-	-	-	+	-	-	+
48	<i>Diatoma anceps</i>	-	-	+	-	-	+	-	+	-	-	-	+	-
49	<i>Diatoma hiemale</i>	+	-	-	+	-	+	+	-	+	+	+	-	+
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	+	-	-	-	+	-	-	-	-
51	<i>Diatoma vulgare</i>	-	+	+	-	-	+	-	+	-	-	-	+	+
52	<i>Didymosphaenia geminata</i>	+	-	-	+	-	-	-	-	-	+	-	-	+
53	<i>Eunotia linearis</i>	-	+	-	-	+	+	+	-	-	-	-	+	-
54	<i>Eunotia</i> sp.	-	-	+	+	-	-	+	+	-	-	+	+	-

55	<i>Fragilaria capucina</i>	-	+	-	-	-	-	-	-	-	-	-	-	+
56	<i>Fragilaria construens</i>	+	-	-	+	+	-	-	+	-	+	-	-	+
57	<i>Fragilaria inflata</i>	-	-	+	-	-	+	-	-	+	-	+	-	-
58	<i>Fragilaria pinnata f. subrotunda</i>	+	-	-	+	-	-	-	-	-	+	+	+	+
59	<i>Fragilaria rumpens</i>	-	-	-	-	+	+	+	+	-	-	-	-	+
60	<i>Fragilaria sp.</i>	+	-	+	+	-	-	-	-	+	+	-	+	-
61	<i>Fragilaria vaucheriae</i>	-	+	-	-	+	-	-	-	-	-	+	-	-
62	<i>Fragilaria. capucina var. lanceolata</i>	-	-	+	+	-	+	+	+	-	+	-	+	-
63	<i>Fragilaria. pinnata</i>	-	+	-	-	-	-	-	-	-	-	+	-	+
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	+	+	-	-	-	-
65	<i>Gomphonema helveticum</i>	+	-	-	+	+	-	+	-	-	+	+	-	-
66	<i>Gomphonema intricatum</i>	-	-	+	-	-	+	-	+	+	-	-	-	+
67	<i>Gomphonema longiceps var. subclavata</i>	+	+	-	+	-	-	+	+	-	+	+	+	-
68	<i>Gomphonema olivaceoides</i>	+	-	-	-	-	+	-	-	+	+	-	-	+
69	<i>Gomphonema olivaceum</i>	+	-	+	-	+	-	+	-	-	+	-	-	-
70	<i>Gomphonema parvulum</i>	-	+	-	-	-	-	-	-	-	-	+	+	-
71	<i>Gomphonema parvulum var. exilissimum</i>	-	-	+	-	+	-	-	-	-	-	-	+	-
72	<i>Gomphonema bohemicum</i>	+	+	-	+	-	-	+	+	-	+	-	-	+
73	<i>Gomphonema gracile</i>	-	-	+	-	+	+	-	+	+	-	-	-	-
74	<i>Gomphonema helveticum</i>	+	-	-	-	-	-	-	-	-	+	+	+	+
75	<i>Gomphonema herbidense</i>	-	+	+	+	+	-	+	-	-	-	-	-	-
76	<i>Gomphonema intricatum var. pumila</i>	-	+	+	-	-	+	+	+	+	-	-	+	+
77	<i>Gomphonema intricatum var. subclavata</i>	+	+	-	+	+	-	-	+	-	+	-	+	-
78	<i>Gomphonema intricatum var. pusila</i>	+	-	-	+	-	-	-	-	-	-	-	-	+
79	<i>Gomphonema lanceolatum var. affine</i>	-	+	-	-	-	+	+	-	-	-	-	+	-
80	<i>Gomphonema longiceps var. subclavata</i>	-	-	+	-	+	+	+	+	+	+	+	-	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	+	+	-	-	-	-	-	+	-
82	<i>Gomphonema olivaceum var. calcarea</i>	-	-	-	-	-	-	-	+	+	-	-	-	-

83	<i>Gomphonema parvulum</i>	+	-	-	+	-	+	+	-	-	+	-	+	+
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	+	+	-	-	+	+	-	-	-	+	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	+	-	-	-	-	-	+	-	-
86	<i>Gomphonema. intricatum</i>	+	-	-	+	-	-	-	+	+	+	+	+	+
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	+	-	+	-	-	+	+	+	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	-	-	-	+	-	-	-	-	-	+	-
89	<i>Hannaea arcus</i>	-	+	-	-	+	+	-	-	+	+	-	+	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	+	+	-	-	+	-	-	+	+	+	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	+	-	+	-	+	-	-	-	-	-	+
92	<i>Hannaeaarcus</i> var. <i>amphioxys</i>	+	-	-	+	-	-	-	-	-	+	-	-	-
93	<i>Melosira junergensii</i>	+	-	-	+	+	-	+	+	-	+	-	-	-
94	<i>Navicula andium</i>	-	-	-	-	+	+	-	+	+	-	-	-	+
95	<i>Navicula cryptocephala</i>	+	-	+	+	+	-	+	-	-	+	-	+	-
96	<i>Navicula feverborni</i>	+	+	-	-	-	+	+	+	+	-	-	-	-
97	<i>Navicula halophila</i>	-	-	-	-	+	-	-	+	-	-	-	-	-
98	<i>Navicula radiosa</i>	+	-	-	+	+	-	-	-	+	-	+	+	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	+	+	-	-	+	-	+	+	-	-	-	+	-
100	<i>Pinnularia borealis</i>	-	-	-	-	+	-	-	-	-	-	-	-	+
101	<i>Pinnularia molaris</i>	-	+	-	-	-	-	+	-	+	-	-	+	-
102	<i>Pinnularia</i> sp.	+	-	-	-	+	+	-	+	-	+	-	-	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	+	-	-	-	+	-	+	+	+
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	+	-	-	+	-	+	-	+	-	+	-	-	-
105	<i>Reimeria sinuata</i>	-	+	-	-	+	-	+	+	+	-	-	+	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	+
107	<i>Surirella ovata</i>	-	-	-	-	+	-	-	+	+	-	+	-	-
108	<i>Surirella</i> sp.	-	+	+	-	-	-	+	-	-	-	-	+	-
109	<i>Synedra</i> sp.	+	-	-	-	-	+	-	+	-	+	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	+	-	-	-	+	-	-	-	+
111	<i>Synedra amphirhynchus</i>	+	+	+	+	-	+	+	-	-	-	+	-	-

112	<i>Synedra rumpens</i>	-	-	-	-	+	-	-	+	+	-	-	+	-
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	+	-	-	-	+
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+	+	+	-	-	+	+	+	-	+	-	-
115	<i>Tabellaria flocculosa</i>	-	-	+	-	+	-	-	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	+	-	-	+	-	-	-	-	-	+	-	+	-
	Total	49	47	42	47	48	44	47	48	43	47	46	51	48

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	-	+	+	+	+	-	-	+	+	+	-	-	-	-
3	<i>Achnanthidium austriaca</i>	+	-	-	+	-	+	+	-	-	+	+	+	+	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	+	+	+	-	+	-	+	-	-	-	+
5	<i>Achnanthidium biasoletiana</i>	+	-	+	-	-	+	+	+	+	-	+	+	-	+
6	<i>Achnanthidium conspicua</i>	-	+	+	+	-	-	-	+	-	+	-	-	+	-
7	<i>Achnanthidium cranulata</i>	+	-	-	-	+	+	+	-	-	-	-	-	-	-
8	<i>Achnanthidium dispar</i>	-	+	-	-	-	-	+	-	-	+	+	+	+	+
9	<i>Achnanthidium exigua</i>	+	+	+	+	+	+	-	-	+	-	-	-	+	-
10	<i>Achnanthidium exilis</i>	+	+	+	+	-	+	+	+	+	+	+	+	-	+
11	<i>Achnanthidium fragilarioides</i>	+	+	-	-	-	-	-	+	-	-	-	-	-	+
12	<i>Achnanthidium Grimmei</i>	-	+	+	-	-	+	+	+	+	+	+	+	-	-
13	<i>Achnanthidium hauckiana</i>	+	-	+	-	+	-	-	+	-	-	+	-	-	-
14	<i>Achnanthidium holsti</i>	-	+	+	+	-	+	+	-	-	-	-	+	+	+
15	<i>Achnanthidium hungarica</i>	+	-	-	-	+	-	+	-	-	+	+	-	+	-
16	<i>Achnanthidium kryophila</i>	-	+	-	+	-	+	-	+	-	-	+	+	-	+
17	<i>Achnanthidium lanceolata</i>	+	-	+	-	-	+	-	-	+	+	-	-	+	-
18	<i>Achnanthidium lapidosa</i>	+	-	+	-	+	+	-	-	+	-	+	-	-	+
19	<i>Achnanthidium lavenderi</i>	+	-	-	+	-	-	+	-	-	+	-	+	+	-
20	<i>Achnanthidium lemmermanni</i>	+	-	-	+	+	-	-	+	-	-	+	+	-	-
21	<i>Achnanthidium Lillijeborgei</i>	+	+	+	-	-	+	+	-	+	+	+	-	-	+
22	<i>Achnanthidium linearis</i>	-	-	+	-	-	-	-	+	+	-	-	+	+	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	+	-	+	+	+	+	+	-	-	-	+	-	-
24	<i>Achnanthidium microcephala</i>	+	+	+	+	+	+	+	-	-	+	+	+	+	+

25	<i>Achnantheidium minutissima</i>	+	-	-	-	-	-	+	-	-	+	+	-	-	-
26	<i>Achnantheidium nodosa</i>	-	-	+	+	-	+	+	-	+	-	-	+	-	+
27	<i>Achnantheidium plonensis</i>	+	+	-	+	-	+	-	+	-	+	-	-	+	+
28	<i>Achnantheidium saxonica</i>	-	+	+	-	+	-	+	+	-	-	-	-	-	-
29	<i>Achnantheidium sp.</i>	+	-	-	+	-	+	-	+	-	+	+	+	+	-
30	<i>Achnantheidium suchlandti</i>	-	+	+	-	+	-	-	-	+	-	+	-	-	-
31	<i>Achnantheidium taeniata</i>	-	-	-	+	-	+	-	-	-	-	-	-	-	-
32	<i>Achnantheidiumb conspicua</i>	-	+	-	-	+	+	+	+	-	+	+	-	+	-
33	<i>Achnantheidiumlinearis</i> var. <i>pusila</i>	-	-	+	-	-	-	+	+	+	-	-	+	+	+
34	<i>Anomoeneis sp.</i>	+	+	-	-	-	+	-	-	-	+	+	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	-	+	+	-	-	-	+	+	-	-	+	-	+
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	+	+	+	-	+	-	+	+	-	+
37	<i>Cocconeis placentula</i>	-	+	+	-	-	-	-	+	+	+	+	-	+	-
38	<i>Cymbella sp.</i>	+	-	-	+	-	+	+	-	-	-	-	+	-	+
39	<i>Cymbella affinis</i>	-	-	-	-	-	+	-	-	-	-	-	+	+	-
40	<i>Cymbella delicatula</i>	-	-	+	-	+	+	+	+	+	+	-	-	+	-
41	<i>Cymbella laevis</i>	+	+	-	+	-	-	+	+	-	+	-	+	-	-
42	<i>Cymbella microcephala</i>	-	-	+	-	+	-	-	-	+	-	+	-	-	+
43	<i>Cymbella pusila</i>	-	+	-	+	-	-	+	-	-	+	+	+	+	-
44	<i>Cymbella tumida</i>	+	-	+	+	+	+	+	-	+	-	-	-	-	+
45	<i>Cymbella turgida</i>	-	-	-	-	-	+	-	+	-	+	+	-	+	-
46	<i>Cymbella ventricosa</i>	-	+	+	+	+	-	-	+	+	-	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	+	+	-	-	+	-	+	-	+
48	<i>Diatoma anceps</i>	-	-	+	-	-	-	-	-	+	+	-	-	+	-
49	<i>Diatoma hiemale</i>	+	-	+	+	-	-	-	+	-	-	+	+	-	+
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	+	+	+	-	-	+	+	-	-	-	+	-
51	<i>Diatoma vulgare</i>	-	-	-	-	-	-	-	-	-	+	-	+	-	-
52	<i>Didymosphaenia geminata</i>	-	-	-	+	-	+	+	-	-	-	+	-	+	+

53	<i>Eunotia linearis</i>	+	+	+	-	+	-	-	-	+	+	-	-	-	-
54	<i>Eunotia</i> sp.	+	-	-	-	-	+	+	-	-	-	+	-	-	-
55	<i>Fragilaria capucina</i>	-	-	-	+	-	+	-	-	-	-	-	+	+	+
56	<i>Fragilaria construens</i>	-	+	+	+	+	-	+	-	+	+	-	+	-	-
57	<i>Fragilaria inflata</i>	-	+	-	-	-	+	-	+	-	-	+	-	+	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	-	-	+	-	+	-	-	-	-	+
59	<i>Fragilaria rumpens</i>	+	+	-	-	+	-	-	-	-	+	-	+	+	+
60	<i>Fragilaria</i> sp.	+	-	+	+	-	-	-	+	-	-	+	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	-	+	-	+	+	+	+	+	-	+	+	+	+
62	<i>Fragilaria. capucina</i> var. <i>lanceolata</i>	+	-	-	-	-	-	+	-	-	+	-	+	-	-
63	<i>Fragilaria. pinnata</i>	-	+	-	+	+	-	-	-	-	-	+	+	+	-
64	<i>Gomphonema gracile</i>	-	-	+	-	-	-	+	+	+	+	-	-	-	-
65	<i>Gomphonema helveticum</i>	+	-	-	-	+	+	+	-	-	-	-	-	+	+
66	<i>Gomphonema intricatum</i>	-	-	+	+	-	+	-	+	+	+	-	+	-	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	+	-	-	+	-	+	-	-	+	-	-	-	+
68	<i>Gomphonema olivaceoides</i>	-	-	-	+	-	-	-	+	+	-	+	+	-	-
69	<i>Gomphonema olivaceum</i>	+	-	-	-	+	+	-	-	-	-	-	-	-	+
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	+	+	-	-	-	+	+
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	-	-	+	+	-	+	+	-	-	-	-	-	-
72	<i>Gomphonema bohemicum</i>	+	-	+	-	-	+	-	-	+	+	+	-	-	+
73	<i>Gomphonema gracile</i>	-	+	-	+	+	-	-	+	-	+	-	+	+	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	+	-	+	-	-	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	+	-	+	-	+	-	-	-	+	-	+	+	+	+
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	+	+	+	-	-	-	-	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	+	-	-	+	-	-	-	-	+	-	+	+	+
78	<i>Gomphonema intricatum</i> var.	-	-	+	+	-	+	+	-	+	-	+	-	-	-

	<i>pusila</i>														
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	+	-	-	-	-	-	-	-	-	-	-	+	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	+	+	-	-	-	-	+	+	+	+	-	-	-
81	<i>Gomphonema olivaceum</i>	-	+	-	-	+	+	-	-	-	-	-	+	+	+
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	+	-	-	-	+	-	+	-	-	-	-
83	<i>Gomphonema parvulum</i>	+	+	+	-	-	-	-	-	+	-	+	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	+	-	-	-	-	-	+	+	+
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	+	-	+	-	-	-	-	+	-	-
86	<i>Gomphonema. intricatum</i>	+	+	-	+	-	-	-	+	+	+	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	+	-	-	+	-	-	+	-	+	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	+	-	-	-	+	-	+	-	-	-	-	+
89	<i>Hannaea arcus</i>	-	+	-	-	+	+	-	+	-	-	+	-	+	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	-	+	-	-	-	-	+	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	-	-	+	-	+	-	-	-	-	+	-	+
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	+	-	+	-	-	+	-	-	-	+	-
93	<i>Melosira junergensii</i>	+	-	-	-	+	-	-	-	-	+	+	-	-	+
94	<i>Navicula andium</i>	-	-	-	-	-	+	-	+	-	-	-	-	-	-
95	<i>Navicula cryptocephala</i>	-	-	+	-	+	-	+	-	+	-	-	+	-	-
96	<i>Navicula feverborni</i>	+	+	-	+	-	-	-	+	-	+	-	+	+	-
97	<i>Navicula halophila</i>	-	-	-	-	+	-	-	-	-	+	+	-	-	-
98	<i>Navicula radiosa</i>	-	-	-	+	-	+	+	-	-	-	-	-	+	+
99	<i>Navicula radiosa</i> var. <i>tenella</i>	+	+	-	-	-	-	-	-	-	+	-	+	-	-
100	<i>Pinnularia borealis</i>	-	-	+	-	-	-	-	-	+	-	-	+	-	-
101	<i>Pinnularia molaris</i>	+	-	-	-	-	-	+	+	-	-	-	-	+	+
102	<i>Pinnularia</i> sp.	-	-	-	+	+	+	-	-	-	+	-	-	-	-
103	<i>Planothidium lanceolata</i>	-	+	+	+	-	-	-	-	+	-	+	-	-	+
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	-	-	-	+	-	-	-	-	-	-	+	-

105	<i>Reimeria sinuata</i>	+	-	-	-	+	-	-	+	-	-	+	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	+	-	-	-	-	+	-	-	+	-	+
107	<i>Surirella ovata</i>	-	-	-	-	+	-	+	+	-	+	-	-	+	-
108	<i>Surirella</i> sp.	+	-	+	-	-	+	-	-	+	-	+	-	-	-
109	<i>Synedra</i> sp.	-	+	-	+	-	-	-	-	-	-	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	+	+	+	+	-	-	+	+	+	+
111	<i>Synedra amphirhynchus</i>	+	-	-	+	-	-	-	-	-	-	+	-	-	-
112	<i>Synedra rumpens</i>	-	-	+	-	+	-	-	+	+	+	-	-	-	-
113	<i>Synedra ulna</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	+
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-	-	+	-	+	-	-	-	-	-	+	+	-
115	<i>Tabellaria flocculosa</i>	-	-	+	-	+	-	+	-	+	-	+	-	+	+
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-	+	-	-	-	-	-	-
-	Total	49	41	45	47	47	50	47	49	46	42	47	48	46	46

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnanthidium affinis</i>	+	+
2	<i>Achnanthidium andicola</i>	-	+
3	<i>Achnanthidium austriaca</i>	+	+
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-
5	<i>Achnanthidium biasoletiana</i>	+	-
6	<i>Achnanthidium conspicua</i>	+	+
7	<i>Achnanthidium cranulata</i>	-	-
8	<i>Achnanthidium dispar</i>	+	-
9	<i>Achnanthidium exigua</i>	-	+
10	<i>Achnanthidium exilis</i>	+	+
11	<i>Achnanthidium fragilarioides</i>	+	-
12	<i>Achnanthidium Grimmei</i>	-	-
13	<i>Achnanthidium hauckiana</i>	+	-
14	<i>Achnanthidium holsti</i>	+	+
15	<i>Achnanthidium hungarica</i>	-	-
16	<i>Achnanthidium kryophila</i>	+	+
17	<i>Achnanthidium lanceolata</i>	-	-
18	<i>Achnanthidium lapidosa</i>	+	-
19	<i>Achnanthidium lavenderi</i>	-	+
20	<i>Achnanthidium lemmermanni</i>	+	+
21	<i>Achnanthidium Lilljeborgei</i>	+	-
22	<i>Achnanthidium linearis</i>	+	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	+
24	<i>Achnanthidium microcephala</i>	+	+
25	<i>Achnanthidium minutissima</i>	+	-
26	<i>Achnanthidium nodosa</i>	+	+
27	<i>Achnanthidium plonensis</i>	-	+
28	<i>Achnanthidium saxonica</i>	+	-
29	<i>Achnanthidium</i> sp.	+	+
30	<i>Achnanthidium suchlandti</i>	-	-
31	<i>Achnanthidium taeniata</i>	+	+
32	<i>Achnanthidiumb conspicua</i>	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	+	-
34	<i>Anomoeneis</i> sp.	+	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	+
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-
37	<i>Cocconeis placentula</i>	+	-

38	<i>Cymbella</i> sp.	-	+
39	<i>Cymbella affinis</i>	+	-
40	<i>Cymbella delicatula</i>	-	-
41	<i>Cymbella laevis</i>	+	+
42	<i>Cymbella microcephala</i>	+	-
43	<i>Cymbella pusila</i>	-	+
44	<i>Cymbella tumida</i>	+	+
45	<i>Cymbella turgida</i>	-	-
46	<i>Cymbella ventricosa</i>	+	+
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-
48	<i>Diatoma anceps</i>	+	-
49	<i>Diatoma hiemale</i>	-	+
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+
51	<i>Diatoma vulgare</i>	+	-
52	<i>Didymosphaenia geminata</i>	-	+
53	<i>Eunotia linearis</i>	+	-
54	<i>Eunotia</i> sp.	+	-
55	<i>Fragilaria capucina</i>	-	+
56	<i>Fragilaria construens</i>	-	+
57	<i>Fragilaria inflata</i>	+	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-
59	<i>Fragilaria rumpens</i>	-	-
60	<i>Fragilaria</i> sp.	+	+
61	<i>Fragilaria vaucheriae</i>	+	-
62	<i>Fragilaria. capucina</i> var. <i>lanceolata</i>	-	-
63	<i>Fragilaria. pinnata</i>	+	+
64	<i>Gomphonema gracile</i>	-	+
65	<i>Gomphonema helveticum</i>	+	-
66	<i>Gomphonema intricatum</i>	-	+
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-
68	<i>Gomphonema olivaceoides</i>	+	+
69	<i>Gomphonema olivaceum</i>	-	+
70	<i>Gomphonema parvulum</i>	+	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	+
72	<i>Gomphonema bohemicum</i>	-	-
73	<i>Gomphonema gracile</i>	+	+
74	<i>Gomphonema helveticum</i>	-	-
75	<i>Gomphonema herbidense</i>	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	+	-

78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	+
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	+	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-
81	<i>Gomphonema olivaceum</i>	+	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	+
83	<i>Gomphonema parvulum</i>	+	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-
85	<i>Gomphonema sphaerophorum</i>	+	-
86	<i>Gomphonema. intricatum</i>	-	+
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	+
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
89	<i>Hannaea arcus</i>	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	+
91	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+
93	<i>Melosira junergensii</i>	+	-
94	<i>Navicula andium</i>	-	-
95	<i>Navicula cryptocephala</i>	+	-
96	<i>Navicula feverborni</i>	+	+
97	<i>Navicula halophila</i>	+	-
98	<i>Navicula radiosa</i>	+	+
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-
100	<i>Pinnularia borealis</i>	-	-
101	<i>Pinnularia molaris</i>	+	-
102	<i>Pinnularia</i> sp.	+	+
103	<i>Planothidium lanceolata</i>	+	+
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	+	-
105	<i>Reimeria sinuata</i>	-	-
106	<i>Stauroneis</i> sp.	+	+
107	<i>Surirella ovata</i>	+	+
108	<i>Surirella</i> sp.	+	-
109	<i>Synedra</i> sp.	-	+
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
111	<i>Synedra amphirhynchus</i>	-	+
112	<i>Synedra rumpens</i>	+	-
113	<i>Synedra ulna</i>	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+
115	<i>Tabellaria flocculosa</i>	+	+
116	<i>Tetracyclus</i> sp.	-	-
-	Total	69	51

DENSITY & DIVERISITY OF PHYTOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/lit.)	105	725	123	504	110	122	385	534	431	226	155	1568	7280	
Shannon Weiner Diversity	3.02	2.91	2.82	3.01	2.89	2.95	3.19	3.23	3.01	2.67	2.82	2.83	2.69	
Evenness Index	0.77	0.76	0.75	0.77	0.76	0.77	0.83	0.83	0.79	0.71	0.73	0.74	0.72	
No. of species	51	46	44	50	45	46	47	48	46	44	47	47	43	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/lit.)	654	925	689	1150	1144	147	350							
Shannon Weiner Diversity	2.58	2.78	2.65	2.53	2.88	2.93	2.44							
Evenness Index	0.70	0.72	0.70	0.67	0.75	0.76	0.67							
No. of species	40	47	45	43	47	48	39							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/lit.)	1022	1344	215	380	344	988	1022	924	1025	994	308	1230	538	
Shannon Weiner Diversity	2.86	2.81	2.66	2.78	2.93	2.78	2.81	2.92	2.67	2.77	2.71	2.97	2.84	
Evenness Index	0.73	0.73	0.71	0.72	0.76	0.73	0.73	0.75	0.71	0.72	0.71	0.76	0.73	
No. of species	49	47	42	47	48	44	47	48	43	47	46	51	48	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/lit.)	308	1230	1565	1346	1322	2201	2538	2345	3080	3241	4098	1221	4308	4439
Shannon Weiner Diversity	2.87	2.44	2.52	2.79	2.78	2.92	2.75	2.96	2.76	2.65	2.72	2.89	2.64	2.65
Evenness Index	0.74	0.66	0.66	0.72	0.72	0.75	0.71	0.76	0.72	0.71	0.71	0.75	0.69	0.69
No. of species	49	41	45	47	47	50	47	49	46	42	47	48	46	46
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/lit.)	444		820											
Shannon Weiner Diversity	2.11		2.76											
Evenness Index	0.56		0.71											
No. of species	44		48											

Phytobenthos

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	+	+	+	+	+	+	+	-	+	+	-	+
3	<i>Achnanthidium boyei</i>	-	+	+	-	-	-	+	+	+	-	+	-	+
4	<i>Achnanthidium conspicua</i>	+	+	-	+	+	+	-	+	-	+	+	+	+
5	<i>Achnanthidium cranulata</i>	+	-	+	-	-	+	+	+	+	-	+	+	-
6	<i>Achnanthidium exigua</i>	-	-	-	+	+	+	-	+	-	+	+	+	+
7	<i>Achnanthidium Grimmei</i>	-	+	-	-	-	-	-	-	+	-	+	+	-
8	<i>Achnanthidium holsti</i>	+	+	+	-	+	+	+	+	-	+	-	+	+
9	<i>Achnanthidium hungarica</i>	-	-	-	+	-	-	+	-	-	-	+	+	+
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	+	+	-	-	-	+	-	+	+	+	-	-	+
11	<i>Achnanthidium linearis</i>	+	+	+	-	+	+	+	+	-	+	-	+	+
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	-	-	+	-	-	-	+	-	+	+	+	-
13	<i>Achnanthidium</i> <i>microcephala</i>	+	+	+	-	-	+	-	-	+	-	-	-	-
14	<i>Achnanthidium minutissima</i>	-	-	+	-	+	+	+	+	-	-	+	-	+
15	<i>Achnanthidium nodosa</i>	+	+	+	-	+	-	-	-	+	+	+	-	+
16	<i>Achnanthidium plonensis</i>	-	+	-	+	+	+	+	+	+	-	-	+	-
17	<i>Achnanthidium saxonica</i>	+	+	-	-	-	-	+	-	-	+	+	-	+
18	<i>Achnanthidium suchlandti</i>	+	+	+	-	+	+	-	+	+	+	+	+	-
19	<i>Achnanthidium affinis</i>	-	+	-	+	+	-	-	-	+	-	-	-	-
20	<i>Achnanthidium exilis</i>	+	-	+	-	-	+	+	+	-	+	-	-	+
21	<i>Achnanthidium lapidosa</i>	-	-	-	+	+	-	+	-	+	-	+	-	+
22	<i>Cocconeis placentula</i>	+	+	+	-	-	-	-	-	-	+	-	+	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	-	-	+	+	-	-	+	+	-	+	+	+
24	<i>Cyclotella</i> sp.	-	+	-	-	-	+	+	-	+	+	-	+	+
25	<i>Cymbella amphicephala</i>	+	+	-	-	+	+	-	-	-	-	+	-	+
26	<i>Cymbella laevis</i>	-	-	+	+	-	-	-	+	+	+	-	+	+
27	<i>Cymbella perpusila</i>	+	-	+	+	+	-	+	-	+	-	+	-	-
28	<i>Cymbella tumidula</i>	+	+	-	+	-	+	-	-	-	-	-	+	-
29	<i>Cymbella turgidula</i>	-	-	+	-	+	+	-	-	+	+	+	-	+
30	<i>Cymbella ventricosa</i>	-	-	+	-	+	-	-	+	+	-	-	-	+
31	<i>Cymbella affinis</i>	+	-	-	+	-	+	-	+	+	+	+	+	+

32	<i>Diatoma hiemale</i>	-	+	-	-	-	-	+	-	-	-	-	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	+	+	+	+	-	-	+	-	-	-	-
34	<i>Didymosphenia geminata</i>	+	-	-	-	-	+	+	+	+	+	+	+	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	+	+	+	-	-	+	-	-	-	+	-	+
36	<i>Eunotia arcus</i>	+	+	-	-	+	-	+	-	+	-	-	+	-
37	<i>Fragilaria capucina</i>	+	-	-	+	-	-	-	+	+	-	+	+	-
38	<i>Fragilaria construens</i>	-	-	-	-	+	+	-	-	+	-	-	+	+
39	<i>Fragilaria leptostauron</i>	-	+	+	+	-	+	+	-	-	+	+	-	+
40	<i>Fragilaria olivaceoides</i>	+	+	+	-	-	+	-	+	+	+	-	+	-
41	<i>Fragilaria pinnata</i>	-	-	+	-	+	-	-	-	-	-	+	-	+
42	<i>Fragilaria. rumpens</i>	-	-	+	+	-	-	-	+	+	-	-	+	-
43	<i>Fragilaria brevistriata</i>	+	-	-	-	+	+	-	-	-	+	-	-	+
44	<i>Fragilaria</i> sp.	-	+	-	-	+	-	+	+	+	-	+	+	+
45	<i>Fragilaria vaucheriae</i>	+	-	+	+	+	+	+	-	+	+	-	-	-
46	<i>Gomphonema bohemicum</i>	-	+	-	-	-	-	-	-	-	-	+	-	+
47	<i>Gomphonema gracile</i>	+	-	-	+	+	+	+	+	-	-	-	+	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	+	+	-	-	-	+	-	-	+	-	+	-	+
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	+	-	-	-	-	+	+	-	-
50	<i>Gomphonema nagpurenses</i>	+	+	+	+	+	+	+	+	+	-	+	+	-
51	<i>Gomphonema olivaceoides</i>	-	-	+	+	-	-	-	-	-	-	-	-	-
52	<i>Gomphonema olivaceum</i>	+	+	+	-	+	-	+	-	-	+	+	+	+
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-	-	+	-	+	-	+	-	-	-	-	+
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	+	-	+	-	+	-	+	-	-	+	+	+	+
55	<i>Gomphonema parvulum</i>	+	+	+	+	-	+	-	-	+	-	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	+	+	-	-	-	-	+	-	+	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	+	+	-	-	+	-	-	-	-	-	-	+
58	<i>Gomphonema. intricatum</i>	+	-	-	+	+	+	+	-	+	+	+	+	-
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
60	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	-	-	+	-	+	+	+	-	+	+	+	+
61	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	+	+	+	-	-	-	-	-	-	-	+	-	+
62	<i>H. arcus</i> var. <i>linearis</i>	-	-	-	+	+	+	-	-	+	-	-	+	-
63	<i>Hannaia arcus</i> var. <i>amphioxys</i>	-	+	-	-	-	+	+	+	-	+	+	-	-
64	<i>Navicula microcephala</i>	+	-	+	+	-	+	-	-	+	-	+	-	-
65	<i>Navicula radiosa</i>	-	+	-	-	+	-	-	+	-	+	+	-	+
66	<i>Navicula radiosa</i> var.	+	-	+	+	+	-	+	-	-	-	+	+	+

	<i>tenella</i>													
67	<i>Navicula rostellata</i>	+	-	-	-	+	+	-	-	+	-	-	-	+
68	<i>Navicula cari</i>	+	+	-	-	-	-	-	+	-	+	+	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	+	+	+	+	+	+	-	-	+	-	-	-	+
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	+	-	-	-	-	-	+	-	-	+	-	+	-
71	<i>Planothidium lanceolata</i>	-	+	-	-	-	+	+	+	-	-	-	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	+	-	-	+	+	-	+	-	-	+	+	+	+
73	<i>Reimeria sinuata</i>	-	-	-	+	-	+	-	-	+	-	+	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+	+	+	+	+	+	+	-	+	-	-	+
75	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	-	+	+	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	+	+	-	+	+	+	+	+	+	-	-	-
77	<i>Tabellaria flocculus</i>	+	-	-	-	-	-	+	-	-	-	+	-	+
78	<i>Tabellaria</i> sp.	+	+	+	+	+	-	-	-	-	+	-	+	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	+	-	+	-	+	-	-
	Total	45	40	37	35	39	41	36	36	38	36	44	36	42

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-	+	-	+	+	-
3	<i>Achnanthidium boyei</i>	+	+	+	-	+	+	+
4	<i>Achnanthidium conspicua</i>	+	-	+	+	+	-	-
5	<i>Achnanthidium cranulata</i>	+	+	-	+	+	+	+
6	<i>Achnanthidium exigua</i>	-	+	+	+	+	-	-
7	<i>Achnanthidium Grimmei</i>	+	-	-	+	+	-	+
8	<i>Achnanthidium holsti</i>	-	+	+	+	-	+	-
9	<i>Achnanthidium hungarica</i>	+	+	-	+	+	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	+	-	-	-	-	-	+
11	<i>Achnanthidium linearis</i>	-	-	+	+	-	+	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	+	-	+	+	-	+
13	<i>Achnanthidium microcephala</i>	-	-	+	-	-	+	-
14	<i>Achnanthidium minutissima</i>	-	+	-	-	+	+	+
15	<i>Achnanthidium nodosa</i>	+	+	+	-	+	+	-
16	<i>Achnanthidium plonensis</i>	-	-	-	+	-	-	-
17	<i>Achnanthidium saxonica</i>	+	+	-	-	+	-	+
18	<i>Achnanthidium suchlandti</i>	-	-	+	+	+	+	-
19	<i>Achnanthidium affinis</i>	+	+	+	-	-	-	+
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	+	-
21	<i>Achnanthidium lapidosa</i>	-	+	+	-	+	-	+
22	<i>Cocconeis placentula</i>	+	+	-	+	-	+	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	+	-	+	+	-	-
24	<i>Cyclotella</i> sp.	-	-	+	+	-	-	+
25	<i>Cymbella amphicephala</i>	+	+	-	-	+	-	-
26	<i>Cymbella laevis</i>	-	-	-	+	-	+	+
27	<i>Cymbella perpusila</i>	-	+	+	-	+	+	-
28	<i>Cymbella tumidula</i>	+	-	-	+	-	-	+
29	<i>Cymbella turgidula</i>	-	-	+	-	+	+	-
30	<i>Cymbella ventricosa</i>	-	+	+	-	-	+	+
31	<i>Cymbella affinis</i>	+	-	+	+	+	-	-
32	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	+	+	-	-	+	+
34	<i>Didymosphenia geminata</i>	-	+	-	+	+	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	-	+	+	-
36	<i>Eunotia arcus</i>	+	-	+	+	-	-	+

37	<i>Fragilaria capucina</i>	-	-	-	+	+	-	-
38	<i>Fragilaria construens</i>	-	+	-	+	-	-	+
39	<i>Fragilaria leptostaurum</i>	+	-	+	-	+	+	-
40	<i>Fragilaria olivaceoides</i>	-	+	-	+	-	+	-
41	<i>Fragilaria pinnata</i>	+	-	+	-	+	+	+
42	<i>Fragilaria. rumpens</i>	-	-	-	+	-	+	-
43	<i>Fragilaria brevistriata</i>	+	+	+	-	-	-	+
44	<i>Fragilaria sp.</i>	+	-	-	+	+	-	-
45	<i>Fragilaria vaucheriae</i>	-	+	-	-	-	+	+
46	<i>Gomphonema bohemicum</i>	+	-	+	-	+	-	-
47	<i>Gomphonema gracile</i>	-	+	-	+	-	-	+
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	+	-	-	-	+	-	-
49	<i>Gomphonema lanceolatum</i>	-	+	+	-	+	-	-
50	<i>Gomphonema nagpurenses</i>	+	+	-	+	+	+	-
51	<i>Gomphonema olivaceoides</i>	+	-	-	-	-	+	+
52	<i>Gomphonema olivaceum</i>	-	-	+	+	+	+	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	+	-	-	-	-	+
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	+	-	+	+	+	-
55	<i>Gomphonema parvulum</i>	-	-	+	-	-	+	+
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	-	-	-	+	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	+	+
58	<i>Gomphonema. intricatum</i>	+	+	+	+	+	-	-
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	-	+	-	-	-	-
60	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	+	+	-	+	+	-	+
61	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	-	+	-	+	+	-
62	<i>H. arcus</i> var. <i>linearis</i>	-	+	-	+	-	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	+	-	-	+	-	+
64	<i>Navicula microcephala</i>	-	-	+	-	+	+	-
65	<i>Navicula radiosa</i>	-	-	-	-	+	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	+	+	+	+	+	+	+
67	<i>Navicula rostellata</i>	-	-	+	-	-	-	-
68	<i>Navicula cari</i>	-	+	-	-	+	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	+	-	-	-	-	+	+
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	+	+	+	-	-	-
71	<i>Planothidium lanceolata</i>	+	+	+	-	-	-	+
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	+	+	-	-
73	<i>Reimeria sinuata</i>	+	-	+	-	+	-	+
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+	-	-	-	+	+
75	<i>Synedra ulna</i>	+	-	+	+	+	-	-

76	<i>Synedra ulna</i> var. <i>amphioxys</i>	+	+	-	-	-	+	+
77	<i>Tabellaria flocculus</i>	-	-	+	-	+	-	+
78	<i>Tabellaria</i> sp.	+	+	-	+	-	+	-
79	<i>Tetracyclus lacustris</i>	-	-	+	-	+	-	+
	Total	38	40	38	36	44	37	36

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	+	-	+	+	-	-	+	+	-	+	-	+
3	<i>Achnanthidium boyei</i>	+	-	-	+	-	-	-	-	-	-	-	-	+
4	<i>Achnanthidium conspicua</i>	-	+	+	-	+	+	-	+	+	+	+	+	-
5	<i>Achnanthidium cranulata</i>	+	-	-	+	-	-	+	-	+	-	-	-	-
6	<i>Achnanthidium exigua</i>	-	+	+	-	+	+	-	+	-	+	+	-	+
7	<i>Achnanthidium Grimmei</i>	+	-	-	+	-	+	+	-	+	-	-	+	-
8	<i>Achnanthidium holsti</i>	-	+	+	-	+	-	+	-	+	+	-	-	+
9	<i>Achnanthidium hungarica</i>	-	-	+	+	-	+	-	+	-	+	+	+	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	+	+	+	-	+	-	-	-	+	+	+	-	-
11	<i>Achnanthidium linearis</i>	-	-	-	+	+	+	+	+	-	-	-	+	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	+	+	+	+	-	+	-	-	+	+	-	+
13	<i>Achnanthidium microcephala</i>	+	-	+	+	-	-	+	-	+	+	-	+	-
14	<i>Achnanthidium minutissima</i>	-	+	+	-	-	+	-	+	+	+	+	-	+
15	<i>Achnanthidium nodosa</i>	+	-	-	+	+	-	+	-	+	-	+	+	+
16	<i>Achnanthidium plonensis</i>	+	+	+	-	-	-	-	-	-	+	-	-	-
17	<i>Achnanthidium saxonica</i>	-	-	-	+	+	+	+	-	+	-	+	+	-
18	<i>Achnanthidium suchlandti</i>	+	-	-	-	+	-	+	+	-	-	+	-	-
19	<i>Achnanthidium affinis</i>	+	-	+	+	-	+	-	-	+	+	+	-	-
20	<i>Achnanthidium exilis</i>	-	+	-	-	+	-	-	-	-	-	-	-	+
21	<i>Achnanthidium lapidosa</i>	+	+	-	-	-	+	+	+	+	-	+	+	-
22	<i>Cocconeis placentula</i>	-	-	+	+	+	-	-	-	+	+	+	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	-	+	-	-	+	-	-	-	+	+	-	+
24	<i>Cyclotella</i> sp.	+	-	-	-	+	+	+	+	-	-	+	+	-
25	<i>Cymbella amphicephala</i>	-	+	+	-	-	-	-	-	+	+	-	-	-
26	<i>Cymbella laevis</i>	+	-	-	+	+	-	+	-	-	-	+	+	+

27	<i>Cymbella perpusila</i>	+	-	+	+	-	+	-	+	-	+	-	-	-
28	<i>Cymbella tumidula</i>	-	+	+	-	-	-	-	+	+	+	+	-	-
29	<i>Cymbella turgidula</i>	+	-	-	-	+	+	+	-	-	-	+	-	-
30	<i>Cymbella ventricosa</i>	+	-	-	+	-	-	-	+	+	-	-	+	+
31	<i>Cymbella affinis</i>	+	+	-	-	+	+	+	-	+	-	-	-	-
32	<i>Diatoma hiemale</i>	-	-	+	+	-	-	-	-	+	+	+	-	+
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	-	+	-	+	+	+	+	-	-	-	-
34	<i>Didymosphenia geminata</i>	+	+	+	-	+	-	+	-	-	+	+	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	-	-	-	+	-	+	-	-	+	-
36	<i>Eunotia arcus</i>	+	-	+	+	-	+	-	+	-	+	-	-	+
37	<i>Fragilaria capucina</i>	+	-	-	-	-	-	+	-	-	-	-	+	-
38	<i>Fragilaria construens</i>	+	-	+	+	-	-	+	-	+	+	+	+	+
39	<i>Fragilaria leptostauron</i>	-	+	-	-	+	+	+	+	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	+	-	+	-	+	-	-	-	+	+	-	-	-
41	<i>Fragilaria pinnata</i>	-	+	-	+	-	+	-	+	-	-	+	+	-
42	<i>Fragilaria. rumpens</i>	+	-	+	-	-	-	+	-	+	+	-	-	+
43	<i>Fragilaria brevistriata</i>	-	+	-	+	+	+	+	-	-	-	-	+	-
44	<i>Fragilaria</i> sp.	+	+	-	-	-	+	-	+	-	-	+	-	+
45	<i>Fragilaria vaucheriae</i>	+	-	+	+	+	-	-	-	+	+	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	-	-	+	+	-	-	-	-	-	-
47	<i>Gomphonema gracile</i>	-	+	+	-	-	-	-	+	+	+	+	+	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	+	+	-	-	-	-	-	-	-	-	+	-	+
49	<i>Gomphonema lanceolatum</i>	-	-	-	+	+	+	-	+	+	-	+	-	-
50	<i>Gomphonema nagpurenses</i>	+	+	+	-	-	+	+	+	-	+	-	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	+	-	-	+	-	-	-	+	+	-
52	<i>Gomphonema olivaceum</i>	-	+	-	-	+	+	-	-	-	-	-	-	+
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	+	-	-	-	+	+	+	+	+	+	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	+	-	-	+	-	-	-	-	+
55	<i>Gomphonema parvulum</i>	+	+	+	+	-	+	+	-	-	+	+	+	-

56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	+	-	-	+	+	-	-	+	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	+	-	-	-	+	+	+
58	<i>Gomphonema. intricatum</i>	+	+	+	+	+	+	+	-	+	+	-	-	+
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	+	+	-	-	-	-
60	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	+	-	-	+	-	-	-	+	-	-	+	-
61	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	-	-	-	-	+	+	-	-	-	+	-	+
62	<i>H. arcus</i> var. <i>linearis</i>	+	-	+	-	-	-	-	+	+	+	-	-	+
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	-	-	+	-	+	-	+	-	-	-	-
64	<i>Navicula microcephala</i>	+	-	+	-	-	+	-	-	-	+	-	+	+
65	<i>Navicula radiosa</i>	-	-	+	+	+	-	+	+	+	+	+	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	+	-	-	-	+	-	-	-	-	-	+	-
67	<i>Navicula rostellata</i>	+	-	+	+	-	-	+	+	+	+	-	-	+
68	<i>Navicula cari</i>	-	-	-	-	+	-	+	-	-	-	-	-	+
69	<i>Navicula minima</i> var. <i>atomoides</i>	+	+	-	+	-	+	-	-	-	-	-	+	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	+	-	+	+	+	-	+	-	+
71	<i>Planothidium lanceolata</i>	-	-	+	-	-	+	-	-	+	+	-	-	+
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	+	+	-	-	-	-	-	-	-	+
73	<i>Reimeria sinuata</i>	+	+	-	-	-	-	+	+	+	-	+	+	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	+	-	+	+	+	-	-	+	+	+	+
75	<i>Synedra ulna</i>	-	-	-	+	-	-	+	-	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	+	-	-	-	+	+	-	+	-	-	+	+	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-	-	+	-	-	-	+
78	<i>Tabellaria</i> sp.	-	+	+	+	+	-	+	+	-	+	+	+	+
79	<i>Tetracyclus lacustris</i>	+	-	-	-	-	+	-	-	-	-	+	+	+
-	Total	38	31	35	33	36	35	42	32	39	35	39	37	34

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-	+	+	+	-	+	-	+	+	-	+	+	-
3	<i>Achnanthidium boyei</i>	+	-	-	+	-	+	+	-	-	-	-	+	+	+
4	<i>Achnanthidium conspicua</i>	-	+	+	-	+	-	-	+	-	+	+	+	-	-
5	<i>Achnanthidium cranulata</i>	+	+	-	+	-	+	+	+	+	-	-	-	+	+
6	<i>Achnanthidium exigua</i>	-	+	+	-	+	-	-	+	-	+	+	+	-	-
7	<i>Achnanthidium Grimmei</i>	+	+	-	-	-	+	-	+	-	-	-	-	+	-
8	<i>Achnanthidium holsti</i>	-	+	-	+	-	-	+	+	+	+	+	+	-	+
9	<i>Achnanthidium hungarica</i>	+	+	+	-	+	-	+	+	-	-	+	-	-	+
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-	-	-	-	+	-	-	-	+	+	-	+	-
11	<i>Achnanthidium linearis</i>	+	+	+	+	-	-	+	+	+	-	-	+	-	+
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	+	-	-	+	-	-	+	-	+	+	-	+	-
13	<i>Achnanthidium</i> <i>microcephala</i>	+	-	-	+	-	+	-	-	-	-	+	+	+	-
14	<i>Achnanthidium</i> <i>minutissima</i>	-	-	+	+	-	-	+	-	+	+	+	-	-	+
15	<i>Achnanthidium nodosa</i>	+	-	-	+	-	+	-	-	-	-	-	+	+	-
16	<i>Achnanthidium plonensis</i>	-	+	-	-	+	+	+	+	+	+	+	-	-	-
17	<i>Achnanthidium saxonica</i>	+	-	-	-	-	-	+	-	-	-	-	-	-	-
18	<i>Achnanthidium suchlandti</i>	-	+	+	+	-	+	-	+	+	-	-	+	+	+
19	<i>Achnanthidium affinis</i>	+	-	-	-	+	+	-	-	+	-	+	+	+	-
20	<i>Achnanthidium exilis</i>	-	-	-	+	-	-	+	-	-	+	-	-	+	-
21	<i>Achnanthidium lapidosa</i>	-	-	+	-	+	+	+	-	-	+	-	+	-	+
22	<i>Cocconeis placentula</i>	+	+	-	+	-	-	-	+	+	-	+	-	-	+
23	<i>Cocconeis placentula</i> var.	-	+	-	-	+	+	-	+	+	-	+	-	+	-

	<i>euglypta</i>														
24	<i>Cyclotella</i> sp.	-	+	+	-	-	+	-	+	+	-	-	+	-	-
25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	-	-	-	+	+	-	+	-
26	<i>Cymbella laevis</i>	+	+	-	+	+	+	-	+	+	-	-	-	-	+
27	<i>Cymbella perpusila</i>	+	-	+	+	+	+	+	-	+	-	+	+	-	-
28	<i>Cymbella tumidula</i>	-	+	+	-	+	-	-	+	-	+	+	-	+	+
29	<i>Cymbella turgidula</i>	-	-	-	+	-	+	-	-	+	-	-	+	-	-
30	<i>Cymbella ventricosa</i>	+	-	+	+	-	+	-	-	-	-	-	+	+	+
31	<i>Cymbella affinis</i>	-	+	-	-	+	+	-	+	+	+	-	+	-	-
32	<i>Diatoma hiemale</i>	+	-	-	-	-	-	+	-	-	-	+	-	-	+
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	+	+	+	+	-	-	+	-	-	+	-	-
34	<i>Didymosphenia geminata</i>	-	+	-	-	-	+	-	+	-	+	+	-	+	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	+	+	-	-	-	-	-	-	-	-	+
36	<i>Eunotia arcus</i>	+	+	+	-	-	+	+	+	+	-	+	+	+	-
37	<i>Fragilaria capucina</i>	-	+	-	-	+	+	-	+	-	-	-	-	-	+
38	<i>Fragilaria construens</i>	+	+	-	-	-	+	-	+	+	-	+	-	-	-
39	<i>Fragilaria leptostauron</i>	-	-	+	+	+	-	+	-	-	+	-	+	+	+
40	<i>Fragilaria olivaceoides</i>	-	+	-	+	-	+	-	+	+	-	+	-	-	-
41	<i>Fragilaria pinnata</i>	+	-	+	+	-	-	-	-	-	+	-	+	+	-
42	<i>Fragilaria. rumpens</i>	-	+	-	+	+	+	-	+	-	-	+	-	-	-
43	<i>Fragilaria brevistriata</i>	+	-	-	-	-	-	-	-	+	+	-	+	+	-
44	<i>Fragilaria</i> sp.	-	+	+	-	-	+	+	+	-	+	-	-	-	+
45	<i>Fragilaria vaucheriae</i>	+	-	-	+	+	+	+	-	+	-	+	-	-	+
46	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-	-	-	-	-	+	+	-
47	<i>Gomphonema gracile</i>	-	+	+	-	+	-	+	+	-	+	+	-	-	+
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	-	-	-	+	-	-	+	+	-	-	-	-
49	<i>Gomphonema lanceolatum</i>	+	-	+	-	-	-	-	-	-	-	-	+	+	+
50	<i>Gomphonema nagpurenses</i>	-	+	+	+	+	+	+	+	+	+	+	-	-	+
51	<i>Gomphonema olivaceoides</i>	+	-	-	+	+	-	-	-	-	-	-	-	-	+

52	<i>Gomphonema olivaceum</i>	-	+	-	+	-	-	+	+	-	+	-	+	+	+
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	+	-	+	-	-	-	-	-	+	-	-	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	+	+	+	-	-	+	+	-	-	-	-	-	+
55	<i>Gomphonema parvulum</i>	+	-	-	+	+	+	-	-	-	+	+	+	+	+
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	+	+	-	-	-	-	+	-	-	-	-	-
57	<i>Gomphonema</i> <i>sphaerophorum</i>	-	-	-	+	-	-	-	-	-	-	-	-	+	-
58	<i>Gomphonema. intricatum</i>	+	+	-	-	+	+	+	+	+	+	+	+	-	+
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	-	+	-	-	-	-	-	-	-	-	+	-	-
60	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	+	-	-	+	-	+	+	-	+	-	-	+	-
61	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	-	-	+	-	-	-	-	+	-	-	+	-	-
62	<i>H. arcus</i> var. <i>linearis</i>	-	+	+	-	+	+	-	+	-	-	+	-	-	+
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	+	-	-	+	-	-	+	-
64	<i>Navicula microcephala</i>	-	-	-	+	+	+	-	-	+	-	+	+	-	+
65	<i>Navicula radiosa</i>	+	-	+	-	-	-	-	-	-	-	+	-	+	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	+	-	+	+	-	+	+	+	+	-	+	-	-
67	<i>Navicula rostellata</i>	+	-	+	-	-	+	-	-	+	-	+	+	+	-
68	<i>Navicula cari</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
69	<i>Navicula minima</i> var. <i>atomoides</i>	+	-	-	+	+	+	-	-	-	+	-	-	+	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	+	+	-	-	-	+	+	+	-	-	+	-	-
71	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	+	-	+	-	+	+	+	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	+	+	-	-	+	-	+	+	-	-	-	-	+	+
73	<i>Reimeria sinuata</i>	-	-	+	-	+	+	-	-	-	+	-	+	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	+	+	-	+	-	+	-	+	-	+	-

75	<i>Synedra ulna</i>	+	+	-	-	-	-	-	+	-	-	-	+	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	+	+	-	+	+	-	-	-	-	-	+	+
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
78	<i>Tabellaria</i> sp.	+	+	+	+	+	-	+	+	+	+	+	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	+	-	-	+	-	-	+	+	+
	Total	33	36	32	37	35	38	32	36	35	31	35	38	36	33

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnantheidium austriaca</i>	+	+
2	<i>Achnantheidium austriaca</i> var. <i>helvetica</i>	-	+
3	<i>Achnantheidium boyei</i>	+	+
4	<i>Achnantheidium conspicua</i>	+	+
5	<i>Achnantheidium cranulata</i>	+	-
6	<i>Achnantheidium exigua</i>	-	-
7	<i>Achnantheidium Grimmei</i>	+	+
8	<i>Achnantheidium holsti</i>	+	+
9	<i>Achnantheidium hungarica</i>	-	-
10	<i>Achnantheidium lapidosa</i> var. <i>lanceolata</i>	+	+
11	<i>Achnantheidium linearis</i>	+	+
12	<i>Achnantheidium linearis</i> var. <i>pusila</i>	+	-
13	<i>Achnantheidium microcephala</i>	+	+
14	<i>Achnantheidium minutissima</i>	+	-
15	<i>Achnantheidium nodosa</i>	+	+
16	<i>Achnantheidium plonensis</i>	-	+
17	<i>Achnantheidium saxonica</i>	+	+
18	<i>Achnantheidium suchlandti</i>	+	+
19	<i>Achnantheidium affinis</i>	+	+
20	<i>Achnantheidium exilis</i>	+	-
21	<i>Achnantheidium lapidosa</i>	-	-
22	<i>Cocconeis placentula</i>	+	+
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-
24	<i>Cyclotella</i> sp.	-	+
25	<i>Cymbella amphicephala</i>	+	+
26	<i>Cymbella laevis</i>	-	-
27	<i>Cymbella perpusila</i>	+	-
28	<i>Cymbella tumidula</i>	+	+
29	<i>Cymbella turgidula</i>	-	-
30	<i>Cymbella ventricosa</i>	-	-
31	<i>Cymbella affinis</i>	+	-
32	<i>Diatoma hiemale</i>	-	+
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-
34	<i>Didymosphenia geminata</i>	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	+
36	<i>Eunotia arcus</i>	+	+
37	<i>Fragilaria capucina</i>	-	-
38	<i>Fragilaria construens</i>	+	-
39	<i>Fragilaria leptostauron</i>	-	+
40	<i>Fragilaria olivaceoides</i>	-	+

41	<i>Fragilaria pinnata</i>	+	-
42	<i>Fragilaria. rumpens</i>	-	-
43	<i>Fragilaria brevistriata</i>	+	-
44	<i>Fragilaria sp.</i>	-	+
45	<i>Fragilaria vaucheriae</i>	+	-
46	<i>Gomphonema bohemicum</i>	+	+
47	<i>Gomphonema gracile</i>	+	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	+	+
49	<i>Gomphonema lanceolatum</i>	+	-
50	<i>Gomphonema nagpurenses</i>	+	+
51	<i>Gomphonema olivaceoides</i>	+	-
52	<i>Gomphonema olivaceum</i>	-	+
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	+	-
55	<i>Gomphonema parvulum</i>	-	+
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	+
57	<i>Gomphonema sphaerophorum</i>	+	+
58	<i>Gomphonema. intricatum</i>	-	-
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	-
60	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	+	-
61	<i>Gomphonemalogiceps</i> var. <i>subclavata</i>	-	+
62	<i>H. arcus</i> var. <i>linearis</i>	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	+
64	<i>Navicula microcephala</i>	-	-
65	<i>Navicula radiosa</i>	+	+
66	<i>Navicula radiosa</i> var. <i>tenella</i>	+	-
67	<i>Navicula rostellata</i>	+	-
68	<i>Navicula cari</i>	+	+
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	+
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	+	-
71	<i>Planothidium lanceolata</i>	-	+
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	+	-
73	<i>Reimeria sinuata</i>	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+
75	<i>Synedra ulna</i>	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	+
77	<i>Tabellaria flocculus</i>	-	-
78	<i>Tabellaria sp.</i>	+	+
79	<i>Tetracyclus lacustris</i>	-	-
	Total	48	40

DENSITY & DIVERSITY OF PHYTOBENTHOS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/cm ²)	1456	2096	2564	2247	3657	3578	1456	3897	3920	1987	2096	8765	4598	
Shannon Weiner Diversity	3.19	3.34	3.20	3.14	3.27	3.23	3.18	3.16	3.20	3.19	3.36	3.21	3.33	
Evenness Index	0.84	0.91	0.89	0.88	0.89	0.87	0.89	0.88	0.88	0.89	0.89	0.90	0.89	
No. of species	45	40	37	35	39	41	36	36	38	36	44	36	42	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/cm ²)	3567	2675	2897	5439	23498	21987	34569							
Shannon Weiner Diversity	3.17	3.23	3.15	3.13	3.38	3.21	3.16							
Evenness Index	0.87	0.88	0.87	0.87	0.89	0.89	0.88							
No. of species	38	40	38	36	44	37	36							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/cm ²)	50986	45382	44329	2097	3096	1342	1549	3295	2934	3299	4897	3762	20986	
Shannon Weiner Diversity	3.20	3.09	3.11	3.06	3.13	3.12	3.33	3.04	3.19	3.17	3.21	3.16	3.12	
Evenness Index	0.88	0.90	0.87	0.88	0.87	0.88	0.89	0.88	0.87	0.89	0.88	0.88	0.88	
No. of species	38	31	35	33	36	35	42	32	39	35	39	37	34	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/cm ²)	1654	4109	3178	5432	3456	5490	8932	10652	17892	11983	6754	6521	13562	19087
Shannon Weiner Diversity	3.02	3.15	3.06	3.18	3.13	3.21	3.08	3.19	3.16	3.02	3.16	3.23	3.15	3.03
Evenness Index	0.86	0.88	0.88	0.88	0.88	0.88	0.89	0.89	0.89	0.88	0.89	0.89	0.88	0.87
No. of species	33	36	32	37	35	38	32	36	35	31	35	38	36	33
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/cm ²)	899		1285											
Shannon Weiner Diversity	2.98		2.78											
Evenness Index	0.81		0.76											
No. of species	40		39											

Macro-Invertebrates

Sub basin- Siang: I-IV

S.No.	Family	Genus	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>	+	+	+	-	-	-	-	+	-	-	-	-	-
3		<i>Heptagenia</i>	+	-	-	-	+	-	-	+	-	-	-	-	-
4		<i>Epeorus</i>	+	+	+	-	-	-	-	+	-	-	-	-	-
5	Baetidae	<i>Baetis</i>	+	+	-	+	+	-	+	-	+	+	+	-	+
6	Ephemerellidae	<i>Ephemerella</i>	+	+	+	-	+	-	-	+	-	-	-	-	-
7		<i>Ephemerella excrucians</i>	-	-	-	+	-	-	+	-	-	-	-	-	-
8	Caenidae	<i>Caenis</i>	-	+	+	-	-	+	-	+	-	-	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
10		<i>Chroterpes</i>	+	-	-	-	+	-	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	+	+	+	-	-	-	-	+	-	-	-	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	-	-	-	+	-	-	-	+	-	-
13		<i>Neoephemeridae 2</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	+	+	-	-	+	-	+	-	-	-	-	+
15	Perlodidae	<i>Isoperla</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	+	+	-	-	-	-	-	-	-	-
17	Psephenidae	<i>Psephenus</i>	+	+	+	-	-	-	-	+	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	+	+	-	+	-	-	+	+	+	+
21		<i>Hydroptila</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
22		<i>Leucotrichia</i>	-	-	-	-	-	+	-	-	-	-	-	-	-

23	Hydropsychidae	<i>Hydropsyche</i>	+	+	+	-	+	+	+	+	+	+	+	+	+
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	+	-	-	+	+	-	+
26	Leptoceridae	<i>Leptocerus</i>	+	+	+	-	-	-	-	+	-	-	-	-	-
27	Molannidae	<i>Molanna</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	+	+	+	+	+	-	+	+	+	-	-	+	-
29		<i>Ablabesmyia</i>	-	-	-	+	+	+	+	-	+	+	+	+	+
30	Ephydriidae	Un identified genus/ species	-	-	-	-	-	-	-	-	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	+	+	+	-	-	-	+	-	+	+	-	-
32	Simulidae	<i>Simulium pictipes</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
34		<i>Maruina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	+	+	-	-	-	-	+	-	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
37		<i>Horaia</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	+	+	-	-	-	-	+	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
		Total	13	15	14	8	14	8	11	15	6	7	9	6	7

Sub basin- Yamne and Simang

S.No.	Family	Genus	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+
2		<i>Stenonema</i>	-	-	-	-	-	-	-
3		<i>Heptagenia</i>	+	-	-	-	-	+	+
4		<i>Epeorus</i>	+	-	-	-	-	-	-
5	Baetidae	<i>Baetis</i>	+	+	+	+	+	+	+
6	Ephemerellidae	<i>Ephemerella</i>	-	+	-	+	-	+	+
7		<i>Ephemerella excrucians</i>	+	-	-	-	-	+	+
8	Caenidae	<i>Caenis</i>	-	+	-	+	-	+	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	+	-	-	-	-	+	-
10		<i>Chroterpes</i>	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	+	-	-	-	-	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	-	-	-	-
13		<i>Neoephemeridae 2</i>	+	-	-	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	+	+	-	-	-
15	Perlodidae	<i>Isoperla</i>	+	-	-	+	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	+	-	+	-
17	Psephenidae	<i>Psephenus</i>	-	+	+	+	-	-	+
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	-	+
20	Hydroptilidae	<i>Ochrotrichia</i>	+	+	+	+	+	+	+
21		<i>Hydroptila</i>	-	+	-	-	-	-	+
22		<i>Leucotrichia</i>	-	-	-	-	-	-	+
23	Hydropsychidae	<i>Hydropsyche</i>	+	+	-	+	+	+	+
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	+	-	-	-	-	-	+
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-
27	Molannidae	<i>Molanna</i>	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	+	+	+	-	+	-	+
29		<i>Ablabesmyia</i>	-	+	+	+	+	+	+
30	Ephydriidae	Un identified genus/ species	-	-	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	+	+	+	-	+	+
32	Simuliidae	<i>Simulium pictipes</i>	+	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-

36	Blepharoceridae	<i>Blepharocera</i>	+	-	-	-	-	-	-
37		<i>Horaia</i>	-	-	-	-	-	-	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	+	+	+	-	-	-
40	Culicidae	<i>Culex</i>	-	+	-	+	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	+	-	-	-	+	-
		Total	15	14	9	14	6	13	15

Sub basin- Siyom: I-III and Hirit

S.No.	Family	Genus	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	-	+	+	+	+
2		<i>Stenonema</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
3		<i>Heptagenia</i>	+	+	+	-	-	-	-	-	-	-	-	+	-
4		<i>Epeorus</i>	-	-	-	-	-	+	+	+	+	-	-	+	-
5	Baetidae	<i>Baetis</i>	+	+	+	+	+	-	-	-	-	+	+	+	+
6	Ephemerellidae	<i>Ephemerella</i>	-	+	-	-	-	-	-	-	-	-	+	+	+
7		<i>Ephemerella excrucians</i>	-	+	-	-	+	-	+	+	+	+	+	-	+
8	Caenidae	<i>Caenis</i>	+	+	+	-	-	+	-	-	-	-	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	+	-	-	-	+	+	+	+	-	-	+	-
10		<i>Chroterpes</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	-	-	-	-	-	-	-	-	+	-	-	+	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	-	-	+	-	+	-	-	-	-	-
13		<i>Neoephemeridae 2</i>	+	+	+	-	-	-	-	-	+	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	+	-	-	-	-	-	+	-	+
15	Perlodidae	<i>Isoperla</i>	+	-	-	-	-	+	+	+	+	-	-	-	-
16	Elmidae	<i>Heterlimnius</i>	+	+	+	-	-	-	-	-	-	-	-	+	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	-	-	+	+	-	-	+	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	+	+	+	+	+	-	+	-	+	+	+	+	+
21		<i>Hydroptila</i>	-	-	-	-	-	-	-	+	-	-	+	-	+
22		<i>Leucotrichia</i>	-	-	-	-	-	+	-	-	+	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	+	-	+	+	-	-	+	-	-	+	+	-	+
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	-	-	+	-	-	-	-	-

25	Glossosomatidae	<i>Glossosoma</i>	-	+	-	-	-	-	-	-	-	-	-	+	+
26	Leptoceridae	<i>Leptocerus</i>	-	-	+	-	-	+	+	-	-	-	-	-	-
27	Molannidae	<i>Molanna</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	+	-	+	+	-	-	-	+	+	+	+	+
29		<i>Ablabesmyia</i>	-	-	+	+	+	+	-	+	-	+	+	-	+
30	Ephydriidae	Un identified genus/ species	+	-	-	-	-	-	+	-	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	+	-	-	-	-	-	-	+	+	+	+	-
32	Simulidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	+	-	+	+	-	+	-	-	-	-	-
34		<i>Maruina</i>	+	-	-	-	-	-	+	-	+	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
37		<i>Horaia</i>	-	-	+	-	-	+	-	+	+	-	+	-	-
38	Tabanidae	<i>Tabanus</i>	-	+	-	+	-	-	-	-	-	-	-	+	-
39	Rhagionidae	<i>Atherix variegata</i>	+	-	-	-	-	-	+	-	-	-	+	-	+
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	+	-	-	+	-	+	-	-	+	-	-
		Total	13	14	13	7	8	13	12	13	14	8	15	15	12

Sub basin: Yargyap Chhu

S.No.	Family	Genus	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Heptageniidae	<i>Cinygmula</i>	+	+	-	+	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>	-	-	+	-	-	-	-	-	-	+	-	-	-	+
3		<i>Heptagenia</i>	+	-	-	-	-	-	+	-	+	-	+	+	-	-
4		<i>Epeorus</i>	-	-	+	+	+	-	-	+	-	-	-	+	+	+
5	Baetidae	<i>Baetis</i>	-	+	-	-	-	-	-	-	-	+	+	+	-	+
6	Ephemerellidae	<i>Ephemerella</i>	+	-	+	-	-	-	+	+	+	-	-	+	-	-
7		<i>Ephemerella excrucians</i>	-	-	-	-	+	-	-	-	-	-	-	-	+	-
8	Caenidae	<i>Caenis</i>	-	-	-	-	-	+	+	-	+	+	+	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	+	-	+	+	-	-	-	+	-	-	-	+	+	+
10		<i>Chroterpes</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
11		<i>Leptophlebia</i>	-	-	-	-	-	-	+	-	+	-	+	+	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	-	+	+	-	+	-	+	-	-	-	-
13		<i>Neoephemeridae 2</i>	+	+	+	-	-	-	-	-	-	-	+	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	+	-	-	+	+	-	-	-	+	+
16	Elmidae	<i>Heterlimnius</i>	+	-	-	+	-	-	-	-	-	+	+	+	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	+	-	+	-	-	-	-	+	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	-	-	+	+	+	+	+	+	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	+	-	-	+	-	-	-	-	-	-	+
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	+	-	+	+	-	+	-	-	-	+	+	-
21		<i>Hydroptila</i>	-	+	-	-	-	-	+	-	+	+	-	-	-	-
22		<i>Leucotrichia</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	+	-	+	-	-	+	-	+	+	-	-	+

24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	+	-	+	-	-	+	-	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	+	-	-	-	-	-	+	+	-	-
26	Leptoceridae	<i>Leptocerus</i>	+	-	-	+	-	-	-	-	-	+	-	-	+	-
27	Molannidae	<i>Molanna</i>	-	-	+	-	-	-	+	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	-	-	-	+	-	-	+	-	-	+
29		<i>Ablabesmyia</i>	+	+	-	+	-	-	+	-	+	+	-	-	-	+
30	Ephydriidae	Un identified genus/ species	-	-	+	-	+	-	-	-	-	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	+	-	-	-	-	-	+	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-	-	+	-	+	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	+	+	-	-	+	-	+	-	-	+	-
34		<i>Maruina</i>	+	-	+	-	-	-	+	-	-	-	+	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	+	-	-	-	-	+	+	-	-	+	+
37		<i>Horaia</i>	-	-	+	-	-	-	+	-	-	-	-	-	-	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	+	-	-	-	+	-	-	+	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	+
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	+	-	-	+	+	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
		Total	10	5	12	10	12	7	13	12	13	16	14	13	10	13

Outside basin

S.No.	Family	Genus	B1	B2
1	Heptageniidae	<i>Cinygmula</i>	+	+
2		<i>Stenonema</i>	-	-
3		<i>Heptagenia</i>	+	-
4		<i>Epeorus</i>	+	-
5	Baetidae	<i>Baetis</i>	-	+
6	Ephemerellidae	<i>Ephemerella</i>	+	+
7		<i>Ephemerella excrucians</i>	+	+
8	Caenidae	<i>Caenis</i>	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	+	-
10		<i>Chroterpes</i>	-	-
11		<i>Leptophlebia</i>	-	-
12	Neophemeridae	<i>Neophemeridae 1</i>	+	-
13		<i>Neophemeridae 2</i>	+	-
14	Perlidae	<i>Acroneuria</i>	-	+
15	Perlodidae	<i>Isoperla</i>	-	-
16	Elmidae	<i>Heterlimnius</i>	+	-
17	Psephenidae	<i>Psephenus</i>	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-
19	Corydalidae	<i>Corydalus</i>	+	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	+
21		<i>Hydroptila</i>	-	+
22		<i>Leucotrichia</i>	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	+	+
24	Helicopsychidae	<i>Helichopsyche</i>	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-
27	Molannidae	<i>Molanna</i>	+	-
28	Chironomidae	<i>Chironomus</i>	-	+
29		<i>Ablabesmyia</i>	+	+
30	Ephydriidae	Un identified genus/ species	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	+
32	Simuliidae	<i>Simulium pictipes</i>	+	+
33	Psychodidae	<i>Psychoda</i>	-	-
34		<i>Maruina</i>	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-
37		<i>Horaia</i>	-	+

38	Tabanidae	<i>Tabanus</i>	+	-
39	Rhagionidae	<i>Atherix variegata</i>	-	+
40	Culicidae	<i>Culex</i>	+	-
41	Limnocharidae	<i>Limnochares</i>	-	+
	Total		16	15

DENSITY & DIVERSITY OF MACRO-INVERTEBRATES

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (Indiv./m ²)	832	845	732	1066	1521	1042	944	744	3012	1488	588	307	1400	
Shannon Weiner Diversity	2.11	2.19	2.12	1.45	2.1	2.44	1.98	2.15	1.75	1.89	1.93	1.19	1.22	
Evenness Index	0.82	0.81	0.80	0.70	0.82	0.84	0.83	0.79	0.80	0.82	0.80	0.66	0.63	
No. of species	13	15	14	8	13	18	11	15	9	10	11	6	7	
March	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (Indiv./m ²)	1718	3534	3788	3142	1521	2142	3878							
Shannon Weiner Diversity	2.47	2.51	2.15	2.2	1.21	2.05	2.16							
Evenness Index	0.85	0.85	0.87	0.79	0.44	0.80	0.80							
No. of species	18	19	12	16	16	13	15							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (Indiv./m ²)	1443	1344	599	1414	930	771	753	699	588	1410	1199	1499	1554	
Shannon Weiner Diversity	2.06	2.15	2.04	2.41	1.92	2.36	2.31	2.08	2.13	2.46	2.17	2.19	2.06	
Evenness Index	0.80	0.79	0.80	0.85	0.83	0.83	0.83	0.81	0.81	0.85	0.80	0.81	0.83	
No. of species	13	15	13	17	10	17	16	13	14	18	15	15	12	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (Indiv./m ²)	675	741	410	751	369	1057	357	250	363	289	490	361	271	2453
Shannon Weiner Diversity	1.88	1.98	2.03	2.26	1.99	2.39	2.07	1.99	2.04	2.17	2.12	2.13	1.78	2.01
Evenness Index	0.82	0.83	0.82	0.82	0.80	0.84	0.81	0.80	0.80	0.80	0.80	0.83	0.77	0.78
No. of species	10	11	12	16	12	17	13	12	13	15	14	13	10	13
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (Indiv./m ²)	327		318											
Shannon Weiner Diversity	1.62		1.71											
Evenness Index	0.60		0.69											
No. of species	15		12											

Zooplanktons

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
	Protozoans													
1	<i>Actinophrys</i> sp.	+	-	+	+	+	-	+	-	+	-	-	-	+
2	<i>Arcella</i> sp.	-	+	-	+	-	+	-	+	-	-	+	+	+
3	<i>Ceratium</i> spp.	+	-	+	-	+	+	+	+	+	+	-	+	+
	Rotifers													
4	<i>Brachious</i>	+	+	-	-	-	+	-	-	-	-	-	-	+
5	<i>Keratella</i> sp.	-	-	+	+	+	-	+	+	+	+	-	+	+
6	<i>Epiphanes</i>	+	+	-	-	-	-	-	-	+	-	+	-	-
7	<i>Asplanchna</i> sp.	-	-	+	+	+	+	-	+	-	-	+	+	+
8	<i>Philodena</i> sp.	+	+	-	+	+	+	+	-	-	+	-	-	+
	Cladoceran													
9	<i>Bosmina</i> sp.	-	+	+	+	+	+	+	+	-	+	-	-	+
10	<i>Daphnia</i> sp.	+	-	-	+	+	-	-	+	+	-	+	+	-
	Copepods													
11	<i>Cyclops</i> sp.	+	-	+	-	-	+	-	-	+	+	+	+	-
12	<i>Diaptomus</i> sp.	-	+	+	-	+	-	+	-	-	+	-	-	+
	Total	7	6	7	7	8	7	6	6	6	6	5	6	9

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	SM1	SM2	SM3
	Protozoans							
1	<i>Actinophrys</i> sp.	+	+	-	+	+	+	-
2	<i>Arcella</i> sp.	+	-	-	+	-	-	-
3	<i>Ceratium</i> spp.	-	+	+	-	-	+	+
	Rotifers							
4	<i>Brachious</i>	+	+	+	-	+	-	-
5	<i>Keratella</i> sp.	-	-	+	+	-	+	+
6	<i>Epiphanes</i>	+	+	-	-	-	-	+
7	<i>Asplanchna</i> sp.	-	+	+	+	-	+	-
8	<i>Philodena</i> sp.	-	-	+	+	-	-	+
	Cladoceran							
9	<i>Bosmina</i> sp.	+	+	-	-	+	-	+
10	<i>Daphnia</i> sp.	+	+	+	+	-	-	+
	Copepods							
11	<i>Cyclops</i> sp.	+	+	-	+	+	-	+
12	<i>Diaptomus</i> sp.	-	+	-	+	-	+	-
	Total	7	9	6	8	4	5	7

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
	Protozoans													
1	<i>Actinophrys</i> sp.	+	-	+	+	-	+	-	+	-	+	+	+	-
2	<i>Arcella</i> sp.	+	+	+	-	+	-	+	+	+	-	-	-	+
3	<i>Ceratium</i> spp.	+	+	-	+	-	+	+	-	+	-	+	+	-
	Rotifers													
4	<i>Brachious</i>	+	-	+	+	-	+	+	+	+	+	+	+	+
5	<i>Keratella</i> sp.	-	+	-	-	+	-	+	-	+	-	+	+	+
6	<i>Epiphanes</i>	+	+	+	-	-	+	-	+	+	-	-	-	-
7	<i>Asplanchna</i> sp.	-	+	+	+	+	+	-	-	-	-	+	+	+
8	<i>Philodena</i> sp.	+	-	-	-	-	+	+	-	+	+	-	-	+
	Cladoceran													
9	<i>Bosmina</i> sp.	-	-	+	+	+	-	-	+	-	-	+	+	+
10	<i>Daphnia</i> sp.	+	+	-	-	-	+	+	-	+	+	-	+	-
	Copepods													
11	<i>Cyclops</i> sp.	+	-	+	+	+	-	+	+	+	-	-	+	+
12	<i>Diaptomus</i> sp.	+	+	+	-	+	-	+	-	-	+	+	-	-
	Total	9	7	8	6	6	7	8	6	8	5	7	8	7

Sub basin: Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
	Protozoans														
1	<i>Actinophrys</i> sp.	-	+	-	+	+	-	+	-	+	-	+	+	+	-
2	<i>Arcella</i> sp.	+	-	-	-	+	+	-	+	-	+	+	-	-	+
3	<i>Ceratium</i> spp.	+	+	-	+	-	-	+	-	-	-	-	-	+	-
	Rotifers														
4	<i>Brachious</i>	+	+	+	-	+	+	-	+	-	-	-	+	-	+
5	<i>Keratella</i> sp.	-	+	-	+	-	-	+	-	-	-	+	-	+	-
6	<i>Epiphanes</i>	+	-	-	-	+	-	-	-	+	+	-	+	-	+
7	<i>Asplanchna</i> sp.	-	-	-	+	-	-	+	-	-	-	-	-	+	-
8	<i>Philodena</i> sp.	+	-	+	-	+	+	-	-	-	+	+	-	-	+
	Cladoceran														
9	<i>Bosmina</i> sp.	+	+	-	-	+	+	+	-	-	+	+	-	-	-
10	<i>Daphnia</i> sp.	+	+	+	-	-	-	-	+	+	-	-	+	+	+
	Copepods														
11	<i>Cyclops</i> sp.	+	+	-	+	-	+	-	+	-	+	+	-	-	-
12	<i>Diaptomus</i> sp.	-	-	+	-	-	-	+	-	+	+	-	-	+	+
	Total	9	7	8	6	6	7	8	6	8	5	7	8	7	6

Outside basin

S.No.	Name of species	B1	B2
Protozoans			
1	<i>Actinophrys</i> sp.	+	+
2	<i>Arcella</i> sp.	-	+
3	<i>Ceratium</i> spp.	+	-
Rotifers			
4	<i>Brachious</i>	-	+
5	<i>Keratella</i> sp.	+	-
6	<i>Epiphanes</i>	-	-
7	<i>Asplanchna</i> sp.	-	+
8	<i>Philodena</i> sp.	-	-
Cladoceran			
9	<i>Bosmina</i> sp.	+	+
10	<i>Daphnia</i> sp.	-	+
Copepods			
11	<i>Cyclops</i> sp.	+	+
12	<i>Diaptomus</i> sp.	-	-
	Total	5	7

DENSITY & DIVERSITY OF ZOOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (indiv/lit.)	117	145	88	109	145	138	111	102	89	99	65	82	167	
Shannon Weiner Diversity	1.51	1.59	1.23	1.47	1.61	1.55	1.44	1.35	1.46	1.39	1.23	1.42	1.63	
Evenness Index	0.78	0.76	0.76	0.76	0.77	0.80	0.80	0.75	0.81	0.78	0.76	0.79	0.74	
No. of species	7	8	5	7	8	7	6	6	6	6	5	6	9	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (indiv/lit.)	124	155	90	104	45	66	109							
Shannon Weiner Diversity	1.41	1.67	1.43	1.56	1.06	1.26	1.49							
Evenness Index	0.72	0.76	0.80	0.75	0.76	0.78	0.77							
No. of species	7	9	6	8	4	5	7							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (indiv/lit.)	149	99	139	67	79	82	123	118	144	99	103	113	77	
Shannon Weiner Diversity	1.62	1.42	1.54	1.39	1.42	1.47	1.53	1.44	1.56	1.27	1.43	1.51	1.49	
Evenness Index	0.74	0.73	0.74	0.78	0.79	0.76	0.74	0.80	0.75	0.79	0.73	0.73	0.77	
No. of species	9	7	8	6	6	7	8	6	8	5	7	8	7	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (indiv/lit.)	133	120	49	77	83	67	83	55	33	79	65	38	63	79
Shannon Weiner Diversity	1.52	1.43	1.04	1.18	1.33	1.29	1.33	1.09	1.03	1.4	1.33	1.03	1.38	1.35
Evenness Index	0.73	0.73	0.75	0.73	0.74	0.80	0.74	0.79	0.74	0.72	0.74	0.74	0.77	0.75
No. of species	8	7	4	5	6	5	6	4	4	7	6	4	6	6
	Jiya Dhol & Karena Ghat													
Code	B1		B2											
Density (indiv/lit.)	55		80											
Shannon Weiner Diversity	1.25		1.41											
Evenness Index	0.78		0.72											
No. of species	5		7											

AQUATIC ECOLOGY:

April - June

Month of sample: April 2012

Physico-chemical parameters

Sub Basin- Siang: I-IV

S.No.	Physical / Chemical Characteristics	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Water Temperature (°C)	11.3	11.4	10.3	11	12	11.5	11.8	12.2	10.1	10.8	11	12.2	11.2
2	Dissolved Oxygen (mg/l)	10	9.9	10.25	10.1	9.8	9.9	9.95	9.75	10.15	10.05	10.15	9.7	10.1
3	Turbidity (NTU)	4.89	2.12	0.98	2.98	3.8	8.66	3.19	2.11	1.09	5.05	4.66	6.33	4.54
4	Total Suspended Solids (mg/l)	29	17	10.9	22	25	36	24	16	10.5	31	28	32	26
5	pH	8.56	8.34	8.41	8.54	8.53	8.47	8.12	8.26	8.51	8.33	8.56	8.37	8.31
6	Electrical Conductivity (µS/cm)	209	231	266	276	208	217	118	211	167	87	265	233	63.9
7	Total Dissolved Solids (mg/l)	129.6	143.2	164.9	171.1	129.0	134.5	73.2	130.8	103.5	53.9	164.3	144.5	39.6
8	Biological Oxygen Demand (mg/l)	1.56	0.81	0.87	1.11	1.21	0.99	1.21	0.87	0.81	0.36	0.41	0.69	0.99
9	Chemical Oxygen Demand (mg/l)	3.45	2.54	3.21	3.21	3.42	1.34	3.14	2.11	3.42	2.76	2.78	2.9	2.14
10	Total Coliform (MPN / 100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	7	8	9	7	6	7	7	8	7	7	6	7	6
12	Total alkalinity (mg/l of CaCO ₃)	35	36	39	33	32	36	35	35	34	35	33	34	33
13	Nitrates (NO ₃) (mg/l)	0.06	0.05	0.04	0.032	0.034	0.045	0.03	0.026	0.03	0.02	0.02	0.021	0.018
14	Sulphate (mg/l)	4	6	7	9	6	8	8	7	6	5	4	7	8
15	Phosphate (PO ₄) (mg/l)	0.001	0.006	0.001	0.002	0.001	0.005	0.004	0.004	0.004	0.001	0.002	0.003	0.007
16	Total Hardness (mg/l)	27	23	24	25	30	23	28	25	35	27	29	28	37
17	Calcium hardness (mg/l)	24	17	18	16	24	18	23	19	24	23	23	22	23

18	Calcium ions (mg/ l)	9.6	6.8	7.2	6.4	9.6	7.2	9.2	7.6	9.6	9.2	9.2	8.8	9.2
19	Magnesium Hardness (mg/l)	3	6	6	9	6	5	5	6	11	4	6	6	14
20	Magnesium ions (mg/l)	2.30	1.63	1.73	1.54	2.30	1.73	2.21	1.82	2.30	2.21	2.21	2.11	2.21
21	Potassium (mg/l)	0.4	0.5	0.7	1.3	0.4	0.5	0.8	0.8	1.7	0.4	0.4	1.8	1.4
22	Sodium (mg/l)	1.3	1.6	1.3	1.5	1.6	1.5	1.9	1.4	1.6	1.1	1.8	2.3	1.3
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	0.003	0.003	0.006	0.009	0.007	0.006	0.049	0.010	0.010	0.007	0.003	0.002	0.004
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub Basin- Yamne and Simang

S.No.	Physical / Chemical Characteristics	Y1	Y2	Y3	Y4	SM1	SM2	SM3
1	Water Temperature (°C)	11.6	11.3	11.5	12.3	13.2	10.8	11
2	Dissolved Oxygen (mg/l)	9.8	9.98	9.91	8.9	9.13	10.3	10.1
3	Turbidity (NTU)	1.33	2.43	3.32	1.82	7.32	5.87	8.67
4	Total Suspended Solids (mg/l)	12	20	23	15	29	30	39
5	pH	8.41	8.19	8.56	8.32	8.56	8.34	8.45
6	Electrical Conductivity (µS/cm)	167	167	185	156	267	178	127
7	Total Dissolved Solids (mg/l)	103.5	103.5	114.7	96.7	165.5	110.4	78.7
8	Biological Oxygen Demand (mg/l)	0.89	1.09	0.56	1.23	1.52	0.97	0.89
9	Chemical Oxygen Demand (mg/l)	2.34	3.21	1.85	2.34	2.88	2.57	2.54
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A
11	Chloride (mg/l)	6.90	8.62	7.24	6.90	6.21	6.55	5.86
12	Total alkalinity (mg/l of CaCO ₃)	37.92	34.17	44.58	33.33	51.25	51.25	40.83
13	Nitrates (NO ₃) (mg/l)	0.089	0.002	0.003	0.006	0.008	0.008	0.005
14	Sulphate (mg/l)	4.94	5.65	4.24	3.29	4.47	3.76	2.59
15	Phosphate (PO ₄) (mg/l)	0.007	0.005	0.002	0.007	0.007	0.008	0.005
16	Total Hardness (mg/l)	31.60	28.47	37.15	27.78	42.71	42.71	34.03
17	Calcium hardness (mg/l)	28.75	25.91	33.81	25.28	38.86	38.86	30.97
18	Calcium ions (mg/ l)	11.50	10.36	13.52	10.11	15.55	15.55	12.39
19	Magnesium Hardness (mg/l)	2.84	2.56	3.34	2.50	3.84	3.84	3.06
20	Magnesium ions (mg/l)	2.76	2.49	3.25	2.43	3.73	3.73	2.97
21	Potassium (mg/l)	0.39	0.89	0.56	0.89	0.98	0.66	1.31
22	Sodium (mg/l)	1.07	1.31	1.17	1.34	1.67	1.88	2.31
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	0.001	ND	ND	ND	ND	0.001	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND

Sub basin- Siyom: I-III and Hirit

S.No.	Physical / Chemical Characteristics	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Water Temperature (°C)	13.9	12.3	12.5	13.7	13.3	13.8	13.2	12.8	13	12.9	12.5	11.9	11.8
2	Dissolved Oxygen (mg/l)	8.9	9.4	9.2	9	9.95	9.85	10	10.05	10	9.58	9.76	9.77	8.23
3	Turbidity (NTU)	2.21	6.32	3.09	8.11	3.07	2.31	5.18	2.11	3.1	1.16	3.1	2.1	1.11
4	Total Suspended Solids (mg/l)	19	34	22	36	21	22	28	17	20	13	21	17	11
5	pH	7.72	7.68	7.41	7.56	8.28	8.35	8.37	7.68	7.3	7.39	7.67	7.67	7.66
6	Electrical Conductivity (µS/cm)	71.9	56	67	134	116	89.7	118	123	114	53	89	67	211
7	Total Dissolved Solids (mg/l)	44.58	34.72	41.54	83.08	71.92	55.61	73.16	76.26	70.68	32.86	55.18	41.54	130.82
8	Biological Oxygen Demand (mg/l)	0.65	0.69	0.43	0.89	0.89	0.9	0.43	0.76	0.7	0.9	1.52	0.62	0.87
9	Chemical Oxygen Demand (mg/l)	2.34	2.19	1.9	2.43	2.9	2.12	2.98	2.16	2.2	2.13	3.45	2.76	2.11
10	Total Coliform (MPN / 100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	8.28	6.55	5.17	5.17	4.83	5.52	6.55	10.69	7.24	8.28	7.24	4.83	8.90
12	Total alkalinity (mg/l of CaCO ₃)	28.75	25.83	23.33	24.58	23.33	32.50	16.67	30.42	31.67	31.67	20.83	32.50	39.58
13	Nitrates (NO ₃) (mg/l)	0.009	0.001	0.005	0.016	0.001	0.014	0.001	0.001	0.001	0.001	0.007	0.006	0.002
14	Sulphate (mg/l)	4.47	4.00	3.29	3.76	4.24	1.65	4.24	3.06	3.06	4.47	1.65	4.94	5.18
15	Phosphate (PO ₄) (mg/l)	0.005	0.002	0.005	0.008	0.001	0.002	0.000	0.000	0.000	0.003	0.007	0.003	0.002
16	Total Hardness (mg/l)	23.96	21.53	19.44	20.49	19.44	27.08	13.89	27.65	28.79	28.79	18.94	29.55	35.98
17	Calcium hardness (mg/l)	21.80	19.59	17.69	18.64	17.69	24.65	12.64	25.16	26.20	26.20	17.23	26.89	32.75
18	Calcium ions (mg/ l)	8.72	7.84	7.08	7.46	7.08	9.86	5.06	10.07	10.48	10.48	6.89	10.75	13.10
19	Magnesium Hardness (mg/l)	2.16	1.94	1.75	1.84	1.75	2.44	1.25	2.49	2.59	2.59	1.70	2.66	3.24
20	Magnesium ions (mg/l)	2.09	1.88	1.70	1.79	1.70	2.37	1.21	2.42	2.51	2.51	1.65	2.58	3.14
21	Potassium (mg/l)	1.3	1.03	0.31	0.21	1.34	1.14	0.02	0.23	1	1.05	0.21	1.08	1.21
22	Sodium (mg/l)	1.92	1.12	1.31	1.09	1.14	1.62	1.32	1.13	1.3	1.09	1.32	1.6	1.65

23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.001
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub Basin- Yargyap Chhu

S.No.	Physical / Chemical Characteristics	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Water Temperature (°C)	11.9	11.2	10.67	11.9	11.5	11.3	10.7	10.7	7.3	8.8	8.3	8.5	7.2	7.1
2	Dissolved Oxygen (mg/l)	9.84	9.98	10.1	9.44	9.68	9.78	9.9	10	11.2	10.6	10.89	10.75	11.4	11.45
3	Turbidity (NTU)	2.09	3.1	7.32	2.17	2.09	2.09	1.21	8.13	1.02	2.09	4.01	1.01	1.02	2.05
4	Total Suspended Solids (mg/l)	18	22	29	18	17	16	12	37	10	16	24	10	11	15
5	pH	7.88	7.54	7.61	7.67	7.67	7.53	7.76	7.45	7.22	7.24	7.24	7.18	7.26	7.65
6	Electrical Conductivity (µS/cm)	189	117.2	88.9	135	85.3	79	112	102	69	90	89.2	67.2	46	68
7	Total Dissolved Solids (mg/l)	117.18	72.664	55.118	83.7	52.886	48.98	69.44	63.24	42.78	55.8	55.304	41.664	28.52	42.16
8	Biological Oxygen Demand (mg/l)	0.67	0.37	0.51	0.66	0.77	0.89	0.32	0.64	0.25	0.89	0.52	0.67	0.98	0.09
9	Chemical Oxygen Demand (mg/l)	2.67	2.65	2.11	1	2.31	2.09	1.89	1.9	2.78	2.44	2.45	1.46	2.16	1.99
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	8.28	8.62	7.93	5.52	6.55	5.86	7.24	5.86	5.86	7.93	7.24	7.93	7.93	8.28
12	Total alkalinity (mg/l of CaCO ₃)	27.92	27.50	23.33	26.17	9.54	26.21	27.21	23.33	22.50	18.75	23.33	22.17	23.33	10.00
13	Nitrates (NO ₃) (mg/l)	0.008	0.010	0.006	0.008	0.008	0.008	0.009	0.009	0.000	0.005	0.001	0.006	0.010	0.006
14	Sulphate (mg/l)	4.0	5.2	4.5	3.5	3.5	2.1	3.8	4.5	4.9	4.0	4.0	4.0	5.2	4.5
15	Phosphate (PO ₄) (mg/l)	0.008	0.006	0.005	0.008	0.006	0.001	0.010	0.002	0.001	0.005	0.002	0.003	0.006	0.003
16	Total Hardness (mg/l)	25.38	25.00	21.21	23.79	8.67	23.83	24.73	21.21	20.45	17.05	21.21	20.15	21.21	9.09
17	Calcium hardness (mg/l)	23.09	22.75	19.30	21.65	7.89	21.68	22.51	19.30	18.61	15.51	19.30	18.34	19.30	8.27
18	Calcium ions (mg/ l)	9.24	9.10	7.72	8.66	3.16	8.67	9.00	7.72	7.45	6.20	7.72	7.34	7.72	3.31
19	Magnesium Hardness (mg/l)	2.28	2.25	1.91	2.14	0.78	2.14	2.23	1.91	1.84	1.53	1.91	1.81	1.91	0.82
20	Magnesium ions (mg/l)	2.22	2.18	1.85	2.08	0.76	2.08	2.16	1.85	1.79	1.49	1.85	1.76	1.85	0.79
21	Potassium (mg/l)	1.9	0.67	0.1	0.66	0.19	1.32	1.9	0.35	0.09	1.31	1.03	0.98	1.07	0.91

22	Sodium (mg/l)	0.9	0.76	1.45	1.08	0.76	0.11	0.92	0.76	0.78	0.31	1.03	1.14	1.76	1.21
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Outside basin

S.No.	Physical / Chemical Characteristics	B1	B2
1	Water Temperature (°C)	13.8	13.5
2	Dissolved Oxygen (mg/l)	9.45	9.55
3	Turbidity (NTU)	9.29	7.12
4	Total Suspended Solids (mg/l)	34	30
5	pH	8.26	8.34
6	Electrical Conductivity (µS/cm)	194.37	214.83
7	Total Dissolved Solids (mg/l)	129.6	143.2
8	Biological Oxygen Demand (mg/l)	1.56	0.81
9	Chemical Oxygen Demand (mg/l)	3.45	2.54
10	Total Coliform (MPN / 100 ml)	A	A
11	Chloride (mg/l)	10.2	8.3
12	Total alkalinity (mg/l of CaCO ₃)	53	47
13	Nitrates (NO ₃) (mg/l)	0.06	0.05
14	Sulphate (mg/l)	7.92	6.06
15	Phosphate (PO ₄) (mg/l)	0.001	0.006
16	Total Hardness (mg/l)	35	31
17	Calcium hardness (mg/l)	25.50	24.50
18	Calcium ions (mg/ l)	10.2	9.8
19	Magnesium Hardness (mg/l)	9.50	6.50
20	Magnesium ions (mg/l)	2.448	2.352
21	Potassium (mg/l)	0.4	0.5
22	Sodium (mg/l)	1.3	1.6
23	Iron (mg/l)	<0.01	<0.01
24	Manganese (mg/l)	0.003	0.003
25	Cadmium (Cd) (mg/l)	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND
27	Copper (Cu) (mg/l)	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND
30	Lead (Pb) (mg/l)	ND	ND

Biological Parameters

Phytoplanktons

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnantheidium affinis</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnantheidium andicola</i>	+	-	+	+	-	-	+	+	+	+	-	+	-
3	<i>Achnantheidium austriaca</i>	-	+	+	+	+	+	-	+	+	+	+	-	+
4	<i>Achnantheidium austriaca</i> var. <i>helvetica</i>	+	-	+	-	+	+	+	-	-	-	-	+	-
5	<i>Achnantheidium biasoletiana</i>	+	-	+	+	-	-	-	+	+	+	+	-	+
6	<i>Achnantheidium conspicua</i>	-	-	+	+	-	+	+	-	-	+	-	-	-
7	<i>Achnantheidium cranulata</i>	+	+	-	+	+	-	+	+	+	-	+	+	+
8	<i>Achnantheidium dispar</i>	-	-	+	-	-	-	-	-	-	+	+	-	+
9	<i>Achnantheidium exigua</i>	+	+	+	+	-	+	+	+	+	-	-	+	+
10	<i>Achnantheidium exilis</i>	-	-	-	+	-	-	-	-	+	+	+	-	-
11	<i>Achnantheidium fragilarioides</i>	+	-	+	-	+	+	-	-	-	+	-	+	+
12	<i>Achnantheidium Grimmei</i>	+	-	-	+	-	-	+	+	-	-	+	-	-
13	<i>Achnantheidium hauckiana</i>	-	-	+	+	+	+	+	+	+	+	-	+	+
14	<i>Achnantheidium holsti</i>	+	+	+	-	-	-	-	-	-	-	+	+	+
15	<i>Achnantheidium hungarica</i>	-	-	-	-	-	-	+	-	-	+	-	-	+
16	<i>Achnantheidium kryophila</i>	+	-	+	-	+	-	+	-	+	+	+	+	-
17	<i>Achnantheidium lanceolata</i>	+	-	+	+	-	+	-	+	-	-	-	-	+
18	<i>Achnantheidium lapidosa</i>	-	+	-	+	+	-	+	+	+	+	+	+	-
19	<i>Achnantheidium lavenderi</i>	+	-	-	-	-	-	+	-	-	-	-	-	+
20	<i>Achnantheidium lemmermanni</i>	-	-	+	+	+	-	-	-	-	+	+	+	-
21	<i>Achnantheidium Lillijeborgei</i>	+	+	+	-	-	-	+	+	-	-	-	-	+
22	<i>Achnantheidium linearis</i>	+	-	-	+	-	+	-	-	-	+	+	-	+
23	<i>Achnantheidium linearis</i> var. <i>pusila</i>	-	-	+	-	+	-	+	+	+	+	+	+	+
24	<i>Achnantheidium microcephala</i>	+	+	-	-	-	-	+	-	-	-	-	+	-
25	<i>Achnantheidium minutissima</i>	-	-	+	+	-	+	-	-	+	-	+	-	-
26	<i>Achnantheidium nodosa</i>	-	-	-	-	-	-	-	+	-	+	-	-	+

27	<i>Achnantheidium plonensis</i>	+	-	+	+	+	-	-	-	-	+	+	-	-
28	<i>Achnantheidium saxonica</i>	-	-	-	-	-	-	+	-	-	-	-	+	-
29	<i>Achnantheidium sp.</i>	-	-	+	-	-	+	-	+	-	+	-	-	+
30	<i>Achnantheidium suchlandti</i>	+	-	-	+	-	-	-	+	+	-	+	-	+
31	<i>Achnantheidium taeniata</i>	+	+	-	-	-	+	-	-	-	+	-	+	-
32	<i>Achnantheidiumb conspicua</i>	-	-	+	-	-	-	-	+	-	-	+	-	+
33	<i>Achnantheidiumlinearis</i> var. <i>pusila</i>	+	-	+	-	-	+	-	-	-	+	+	-	+
34	<i>Anomoeneis sp.</i>	-	+	-	+	-	-	-	+	+	+	-	-	+
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-	-	-	+	-	+	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	+	-	+	+	-	-	-	+	-	+	+	-	-
37	<i>Cocconeis placentula</i>	-	-	-	-	-	+	-	-	-	-	-	+	-
38	<i>Cymbella sp.</i>	+	-	-	+	-	-	+	+	-	-	+	-	+
39	<i>Cymbella affinis</i>	-	+	+	-	-	-	-	-	+	+	+	+	+
40	<i>Cymbella delicatula</i>	+	-	-	-	+	+	-	-	-	-	-	-	-
41	<i>Cymbella laevis</i>	-	-	+	-	-	-	-	+	-	-	-	-	-
42	<i>Cymbella microcephala</i>	-	-	-	-	-	-	+	-	-	-	+	+	+
43	<i>Cymbella pusila</i>	+	+	-	+	-	-	-	+	-	-	-	-	-
44	<i>Cymbella tumida</i>	-	-	-	-	-	-	+	-	-	-	-	+	+
45	<i>Cymbella turgida</i>	-	-	+	-	+	-	-	+	-	-	+	-	-
46	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	-	-	-	-	-	-	-	-	-	+	+
48	<i>Diatoma anceps</i>	-	-	+	+	-	+	+	-	-	-	+	-	-
49	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	-	+	-	+	-
51	<i>Diatoma vulgare</i>	-	+	+	-	+	+	+	+	-	-	+	+	+
52	<i>Didymosphaenia geminata</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
53	<i>Eunotia linearis</i>	-	+	-	-	-	-	-	-	-	-	-	+	-
54	<i>Eunotia sp.</i>	-	-	+	+	-	-	-	+	-	-	+	-	-
55	<i>Fragilaria capucina</i>	+	-	-	-	+	+	-	-	+	+	-	-	+
56	<i>Fragilaria construens</i>	-	+	+	-	-	-	+	-	-	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	+	-	-	-	-	-	-	-	+	+	+
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	-	-	+	-	-	-	+	+	-
59	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	+	+	-	-	-	-	+
60	<i>Fragilaria sp.</i>	-	+	-	-	+	-	-	-	-	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	-	+	-	-	-	+	-	-	-	+	+	-

62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
63	<i>Fragilaria pinnata</i>	+	+	-	+	-	+	-	-	-	-	-	+	+
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	-	-	+	+	-	-	-	-	-	-	+	-	+
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	+	+	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	-	+	-	+	-	-	-	-	-	-	+	-	+
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	+	+	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
73	<i>Gomphonema gracile</i>	-	+	+	-	+	-	-	-	+	-	+	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	+	-	-	+
75	<i>Gomphonema herbidense</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	-	+	+	-	-	+	+	+	-	-	+	+
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	+	-	-	-	-	-	+	-	-	-	-	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	-	-	-	-	-	-	-	+	+	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	+	-	-	-	+	-	+	-	-	-	-
81	<i>Gomphonema olivaceum</i>	-	-	-	+	-	+	-	-	-	-	-	-	+
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	+	-	+	-	-	-	-	-	-
83	<i>Gomphonema parvulum</i>	+	+	+	-	-	-	-	-	-	-	-	+	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	+	-	-	-	-	-	+	-	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	+	+	+	+	-	-
86	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
89	<i>Hannaea arcus</i>	-	+	-	-	-	-	-	-	-	-	-	-	+
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	-	-	+	+	+	+	-	+	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-	-	+	-	-	-	+	-	-	+	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	+	-	-	-	-	-

93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	+	+	-	-	-	-	-	-	-	+	-	+	+
95	<i>Navicula cryptocephala</i>	-	-	-	-	+	-	+	+	+	-	-	+	-
96	<i>Navicula feverborni</i>	-	-	-	+	-	+	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	-	-	+	-	-	-	-	+	-	-	-	-	-
98	<i>Navicula radiosa</i>	-	-	-	-	-	+	+	-	+	+	-	+	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	+	+	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	+	+	-	+	+	+	+	+	-	-	+	+	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	+	-	-	-	+
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	+	+	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	+	-	-	-	+	-	-	+	-	+	-
107	<i>Surirella ovata</i>	-	+	-	-	-	+	-	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	+	+	-	+	+	-	-	-	+	-
109	<i>Synedra</i> sp.	-	-	-	-	-	-	-	-	+	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	+	+	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
113	<i>Synedra ulna</i>	-	+	-	+	+	+	-	+	-	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	+	+	+	-	+
115	<i>Tabellaria flocculosa</i>	+	-	+	-	-	-	+	-	-	-	-	+	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-	+	-	-	-	-	-
-	Total	35	26	39	34	24	29	43	41	29	35	39	39	41

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	SM1	SM2	SM3
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	+	-	+	+	-	+	-
3	<i>Achnanthidium austriaca</i>	+	+	-	+	+	+	+
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-	+	-	+	+	-
5	<i>Achnanthidium biasoletiana</i>	+	+	+	+	-	-	+
6	<i>Achnanthidium conspicua</i>	+	-	+	+	+	+	-
7	<i>Achnanthidium cranulata</i>	-	+	-	-	+	-	+
8	<i>Achnanthidium dispar</i>	+	+	+	-	-	+	+
9	<i>Achnanthidium exigua</i>	+	-	+	+	-	+	-
10	<i>Achnanthidium exilis</i>	+	+	-	-	+	+	+
11	<i>Achnanthidium fragilarioides</i>	-	-	+	+	+	-	+
12	<i>Achnanthidium Grimmei</i>	+	+	+	-	-	+	-
13	<i>Achnanthidium hauckiana</i>	-	+	-	+	-	+	+
14	<i>Achnanthidium holsti</i>	+	-	-	-	+	-	-
15	<i>Achnanthidium hungarica</i>	-	+	+	+	-	-	+
16	<i>Achnanthidium kryophila</i>	+	-	+	+	-	+	-
17	<i>Achnanthidium lanceolata</i>	-	+	-	-	+	-	+
18	<i>Achnanthidium lapidosa</i>	+	+	-	+	-	+	-
19	<i>Achnanthidium lavenderi</i>	-	-	+	-	-	-	-
20	<i>Achnanthidium lemmermanni</i>	+	-	+	+	+	+	+
21	<i>Achnanthidium Lillijeborgei</i>	+	-	-	-	-	-	+
22	<i>Achnanthidium linearis</i>	+	+	+	+	-	+	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	+	+	+	-	+	+
24	<i>Achnanthidium microcephala</i>	-	-	-	-	+	-	-
25	<i>Achnanthidium minutissima</i>	+	+	-	-	-	+	+
26	<i>Achnanthidium nodosa</i>	-	-	-	+	-	-	-
27	<i>Achnanthidium plonensis</i>	+	-	-	-	-	+	-
28	<i>Achnanthidium saxonica</i>	-	-	+	+	+	-	+
29	<i>Achnanthidium</i> sp.	+	-	-	-	-	-	-
30	<i>Achnanthidium suchlandti</i>	-	-	+	-	-	+	+
31	<i>Achnanthidium taeniata</i>	-	+	-	+	-	+	-
32	<i>Achnanthidiumb conspicua</i>	+	-	-	-	-	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	-	+	+	-	+	-
34	<i>Anomoeneis</i> sp.	+	+	-	-	-	-	+
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	+	-	+	+	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	-	-	-
37	<i>Cocconeis placentula</i>	+	-	-	-	-	+	+

38	<i>Cymbella</i> sp.	-	-	+	+	-	-	-
39	<i>Cymbella affinis</i>	-	-	-	-	+	-	-
40	<i>Cymbella delicatula</i>	+	+	+	+	-	-	-
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	-
42	<i>Cymbella microcephala</i>	-	-	-	-	+	-	-
43	<i>Cymbella pusila</i>	+	-	+	-	-	-	-
44	<i>Cymbella tumida</i>	-	-	-	-	-	+	-
45	<i>Cymbella turgida</i>	-	+	-	-	-	+	+
46	<i>Cymbella ventricosa</i>	+	-	+	+	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	+	+	-
48	<i>Diatoma anceps</i>	-	+	+	-	-	-	-
49	<i>Diatoma hiemale</i>	-	-	-	-	-	+	+
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	+	+	-	-	-	-
51	<i>Diatoma vulgare</i>	-	-	-	-	-	-	-
52	<i>Didymosphaenia geminata</i>	-	-	+	-	-	-	-
53	<i>Eunotia linearis</i>	+	+	-	-	+	+	-
54	<i>Eunotia</i> sp.	-	-	-	+	-	+	-
55	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-
56	<i>Fragilaria construens</i>	-	-	+	-	-	+	-
57	<i>Fragilaria inflata</i>	+	-	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	+	-	-	-	+	+	-
59	<i>Fragilaria rumpens</i>	+	+	+	-	-	-	+
60	<i>Fragilaria</i> sp.	+	-	-	+	-	+	-
61	<i>Fragilaria vaucheriae</i>	-	-	+	-	-	-	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	+	-	-	-	-	-	-
63	<i>Fragilaria pinnata</i>	-	+	-	+	+	+	+
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	+	-	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	-	+	-	-	-	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-	+	-	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	+	-	-	+
69	<i>Gomphonema olivaceum</i>	-	+	-	-	-	-	-
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	+	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	-	-	-	-	-	+
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	+	-
73	<i>Gomphonema gracile</i>	+	+	-	-	-	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	+
75	<i>Gomphonema herbidense</i>	-	+	+	-	-	+	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	-	+	+	+	+	-

77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	+	-	-	-	-	-	+
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	+	-	-	-	+	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	-	+	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-	-	+	-	+	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	+
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	+	-	-	-
83	<i>Gomphonema parvulum</i>	+	-	-	-	+	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	+	+	-	-	-	+
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	+	-
86	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	+	-	-	-
89	<i>Hannaea arcus</i>	-	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	-	-	-	-	+
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	+	+	-	-	-
94	<i>Navicula andium</i>	-	-	-	-	+	-	-
95	<i>Navicula cryptocephala</i>	-	+	-	-	-	-	-
96	<i>Navicula feverborni</i>	-	-	-	-	+	-	+
97	<i>Navicula halophila</i>	-	+	+	-	-	+	+
98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	+	-	-	+	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	+	-	-	-	+	-	+
102	<i>Pinnularia</i> sp.	-	-	-	-	-	-	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	+	+	-	+	+	-	+
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	+	-	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	+
111	<i>Synedra amphirhynchus</i>	-	-	-	-	+	-	-
112	<i>Synedra rumpens</i>	-	+	-	+	-	-	-
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	+	-	-
115	<i>Tabellaria flocculosa</i>	+	-	+	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	+	-	-	-	+	-
-	Total	44	38	36	32	29	42	35

Sub Basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	+	+	+	+	+	+	-	-	+	+	+	+	-
3	<i>Achnanthidium austriaca</i>	+	-	-	+	+	+	+	+	-	+	+	-	+
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-	+	-	+	-	+	-	-	-	-	+	+
5	<i>Achnanthidium biasoletiana</i>	-	+	-	+	+	+	-	+	+	+	+	-	-
6	<i>Achnanthidium conspicua</i>	+	-	+	+	-	-	+	-	-	+	+	+	+
7	<i>Achnanthidium cranulata</i>	+	-	+	-	+	+	-	+	+	-	-	-	-
8	<i>Achnanthidium dispar</i>	+	+	-	-	+	-	+	-	-	+	-	+	-
9	<i>Achnanthidium exigua</i>	+	-	-	+	+	+	+	-	-	+	+	+	-
10	<i>Achnanthidium exilis</i>	+	+	+	-	+	+	+	-	+	-	-	-	+
11	<i>Achnanthidium fragilarioides</i>	-	-	-	+	-	-	-	+	-	+	-	-	-
12	<i>Achnanthidium Grimmei</i>	+	-	+	-	+	+	-	-	+	-	+	+	+
13	<i>Achnanthidium hauckiana</i>	-	+	+	-	+	+	-	+	-	+	-	-	+
14	<i>Achnanthidium holsti</i>	+	-	-	+	+	-	+	-	+	+	+	+	-
15	<i>Achnanthidium hungarica</i>	-	-	-	-	-	+	-	-	-	+	-	+	-
16	<i>Achnanthidium kryophila</i>	+	-	+	+	+	-	-	+	-	-	+	-	+
17	<i>Achnanthidium lanceolata</i>	-	-	-	-	+	+	-	-	-	+	-	-	+
18	<i>Achnanthidium lapidosa</i>	+	+	+	+	+	+	+	+	-	+	+	+	-
19	<i>Achnanthidium lavenderi</i>	-	-	-	-	-	-	-	+	+	-	-	-	-
20	<i>Achnanthidium lemmermanni</i>	-	-	+	+	+	-	-	-	-	+	+	-	-
21	<i>Achnanthidium Lillijeborgei</i>	+	-	+	-	-	+	-	-	-	-	-	+	+
22	<i>Achnanthidium linearis</i>	+	+	-	-	+	+	+	-	+	-	+	-	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	+	+	-	-	-	-	-	+	+	+	-
24	<i>Achnanthidium microcephala</i>	-	-	-	-	+	-	-	-	-	-	-	-	+
25	<i>Achnanthidium minutissima</i>	-	-	+	-	-	+	-	-	-	-	-	-	-
26	<i>Achnanthidium nodosa</i>	-	+	-	+	-	-	-	-	+	+	-	-	+
27	<i>Achnanthidium plonensis</i>	+	+	-	+	+	+	+	-	-	-	+	+	-
28	<i>Achnanthidium saxonica</i>	+	-	+	-	-	-	+	+	-	-	+	-	-

29	<i>Achnanthidium</i> sp.	+	-	-	+	-	+	+	-	-	+	-	-	+
30	<i>Achnanthidium suchlandti</i>	-	-	+	+	+	-	-	-	-	-	+	-	-
31	<i>Achnanthidium taeniata</i>	-	+	-	-	-	+	-	+	+	+	-	-	-
32	<i>Achnanthidiumb conspicua</i>	-	-	+	-	-	-	-	+	-	-	+	+	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	+	-	-	+	+	+	+	-	-	-	-	-	+
34	<i>Anomoeneis</i> sp.	-	-	+	-	+	-	-	+	+	+	+	+	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	+	+	+	+	-	+	+	+	+	-	-
37	<i>Cocconeis placentula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
38	<i>Cymbella</i> sp.	+	-	-	-	-	+	+	-	-	-	-	-	-
39	<i>Cymbella affinis</i>	-	+	-	+	+	-	-	+	-	+	+	-	-
40	<i>Cymbella delicatula</i>	-	-	-	+	+	-	-	-	-	+	-	+	+
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
42	<i>Cymbella microcephala</i>	+	-	+	+	+	+	+	-	-	-	-	-	-
43	<i>Cymbella pusila</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
44	<i>Cymbella tumida</i>	+	-	-	-	+	-	-	-	-	+	-	-	-
45	<i>Cymbella turgida</i>	-	-	+	+	+	-	-	-	-	-	+	-	-
46	<i>Cymbella ventricosa</i>	+	-	-	-	-	-	+	-	-	-	-	+	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	+	-	-	-	-	+	-	-	-
48	<i>Diatoma anceps</i>	+	-	-	+	+	+	-	-	+	-	+	-	-
49	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	-	-	-	-	-	-	-	-	-	+	-
51	<i>Diatoma vulgare</i>	+	-	-	-	+	+	+	-	-	+	-	-	+
52	<i>Didymosphaenia geminata</i>	-	-	-	+	+	-	-	+	-	-	+	-	-
53	<i>Eunotia linearis</i>	+	-	-	-	-	-	-	-	-	-	-	+	-
54	<i>Eunotia</i> sp.	-	-	-	-	+	-	-	-	-	+	+	-	-
55	<i>Fragilaria capucina</i>	+	+	-	-	-	-	+	-	-	-	-	-	-
56	<i>Fragilaria construens</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
57	<i>Fragilaria inflata</i>	+	-	-	-	+	+	+	-	-	+	-	+	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	+	-	+	-	-	+	-	+	+	-	-
59	<i>Fragilaria rumpens</i>	+	-	-	-	-	-	-	-	-	-	-	+	+

60	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	+	-	+	+	+	-	-	-	+	-	+	-	+
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	+	-	+	-	-	-
63	<i>Fragilaria pinnata</i>	-	-	-	-	-	+	-	-	-	-	-	-	+
64	<i>Gomphonema gracile</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	+	-	-	-	-	+	+	+	-	+	-	-	-
66	<i>Gomphonema intricatum</i>	-	-	-	-	+	+	-	-	-	-	-	-	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	+	+	-	-	-	-	+	+	+	+	+
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	-	-	-	+	+	-	-	-	-	-	+	-	-
70	<i>Gomphonema parvulum</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	+	+	-	-	-	-
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
73	<i>Gomphonema gracile</i>	+	-	-	+	+	-	+	-	-	+	-	-	-
74	<i>Gomphonema helveticum</i>	-	+	+	-	-	-	-	+	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	-	-	-	-	-	-	-	-	+	+	+	+	+
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	+	-	+	-	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	+	-	+	+	+	+	+	-	-	-	+	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	+	-	-	-	+	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-	+	-	-	-	-	+
83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
85	<i>Gomphonema sphaerophorum</i>	+	+	-	-	+	-	+	-	+	-	-	-	-
86	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	+	-	+
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	+	-	+	-	-	-	-	+	-	-	-

89	<i>Hannaea arcus</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	-	-	-	-	-	-	-	-	-	-	+
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	+	+	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	+	-	-	-	-	-	-	+	-	-
94	<i>Navicula andium</i>	-	+	+	-	-	-	-	-	-	+	-	-	-
95	<i>Navicula cryptocephala</i>	-	-	-	-	-	-	-	+	-	-	+	-	-
96	<i>Navicula feverborni</i>	-	-	-	-	-	-	-	-	+	-	-	+	+
97	<i>Navicula halophila</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
98	<i>Navicula radiosa</i>	+	+	+	+	-	-	+	+	-	+	+	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
102	<i>Pinnularia</i> sp.	-	-	+	-	+	-	-	-	-	-	-	-	+
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	+	-	-	-	-	+	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	+	-	-	+	-	-	+	+	-	-	-	+	-
105	<i>Reimeria sinuata</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	+	-	-	-	-	-	-	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	+	-	-	-	-	-	-	+	+	+	-
108	<i>Surirella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
109	<i>Synedra</i> sp.	+	-	-	-	-	+	+	+	-	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
111	<i>Synedra amphirhynchus</i>	-	+	+	+	+	-	-	-	-	-	+	-	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+	-	-	+	+	-	-	-	-	-	-	-
115	<i>Tabellaria flocculosa</i>	+	-	+	+	-	-	+	-	-	+	-	+	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	38	25	34	35	46	33	28	29	23	42	37	32	29

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	-	+	-	+	+	-	+	+	-	+	+	+	+	-
3	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	-	+	+	-	-	+	+	+
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	+	-	-	-	-	+	+	-	+	+	+	-	-
5	<i>Achnanthidium biasoletiana</i>	-	+	+	+	+	+	-	-	+	+	+	+	+	+
6	<i>Achnanthidium conspicua</i>	-	+	-	+	-	-	+	+	-	+	-	+	-	+
7	<i>Achnanthidium cranulata</i>	+	-	+	-	-	+	+	-	+	-	-	-	+	+
8	<i>Achnanthidium dispar</i>	-	+	+	-	+	-	-	+	-	-	+	+	+	+
9	<i>Achnanthidium exigua</i>	+	-	-	+	-	+	+	+	+	+	-	-	-	-
10	<i>Achnanthidium exilis</i>	-	-	-	-	+	-	-	+	+	-	+	-	+	-
11	<i>Achnanthidium fragilarioides</i>	+	+	+	+	+	+	-	-	-	+	-	+	-	+
12	<i>Achnanthidium Grimmei</i>	-	-	-	+	-	-	+	-	-	-	+	-	+	-
13	<i>Achnanthidium hauckiana</i>	-	+	-	+	+	-	-	+	+	+	+	+	+	+
14	<i>Achnanthidium holsti</i>	+	-	+	+	-	+	+	-	-	-	-	-	-	+
15	<i>Achnanthidium hungarica</i>	-	+	-	-	+	-	-	+	+	-	+	+	-	-
16	<i>Achnanthidium kryophila</i>	+	-	+	+	+	+	+	-	-	+	-	-	-	+
17	<i>Achnanthidium lanceolata</i>	-	+	-	-	-	-	-	+	+	-	+	+	-	-
18	<i>Achnanthidium lapidosa</i>	-	-	-	+	+	+	+	-	+	+	-	-	+	+
19	<i>Achnanthidium lavenderi</i>	+	+	+	-	-	-	-	+	-	-	+	-	-	-
20	<i>Achnanthidium lemmermanni</i>	-	+	-	+	-	-	-	+	-	-	-	+	-	-
21	<i>Achnanthidium Lillijeborgei</i>	+	-	+	+	+	+	+	-	+	+	+	-	+	+
22	<i>Achnanthidium linearis</i>	-	+	-	+	+	-	+	+	+	-	+	-	-	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	+	-	-	-	+	+	-	-	+	-	-	-	+
24	<i>Achnanthidium microcephala</i>	+	-	-	-	+	-	-	-	-	-	-	-	-	-

25	<i>Achnantheidium minutissima</i>	-	+	-	+	-	+	-	-	-	-	-	-	+	+
26	<i>Achnantheidium nodosa</i>	-	-	+	-	+	-	-	-	-	+	-	-	-	-
27	<i>Achnantheidium plonensis</i>	-	+	-	-	-	-	+	+	-	-	+	+	-	+
28	<i>Achnantheidium saxonica</i>	+	+	-	+	+	-	-	-	-	-	-	-	-	-
29	<i>Achnantheidium sp.</i>	-	-	-	-	-	-	-	+	+	+	-	-	-	-
30	<i>Achnantheidium suchlandti</i>	-	+	+	+	+	-	-	-	-	-	+	+	+	+
31	<i>Achnantheidium taeniata</i>	+	-	-	-	-	+	-	-	-	-	-	-	-	+
32	<i>Achnantheidiumb conspicua</i>	-	+	-	-	-	-	+	-	-	-	+	-	-	-
33	<i>Achnantheidiumlinearis</i> var. <i>pusila</i>	-	-	+	+	+	-	-	+	+	+	-	-	-	-
34	<i>Anomoeneis sp.</i>	+	-	-	-	-	-	+	-	-	+	-	+	+	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	-	-	+	-	+	-	-	-	-	+	-	-	+
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	+	+	-	+	-	-	+	+	-	-	-	-	-
37	<i>Cocconeis placentula</i>	-	-	-	+	-	-	-	-	-	+	+	-	-	-
38	<i>Cymbella sp.</i>	-	+	-	+	-	-	-	-	+	-	-	+	+	+
39	<i>Cymbella affinis</i>	-	-	-	-	+	-	-	+	-	+	+	-	-	-
40	<i>Cymbella delicatula</i>	+	-	+	-	-	-	+	-	-	-	-	-	-	+
41	<i>Cymbella laevis</i>	-	+	-	-	+	-	-	-	-	+	+	-	-	-
42	<i>Cymbella microcephala</i>	+	-	-	+	-	+	-	-	+	-	-	-	-	+
43	<i>Cymbella pusila</i>	-	+	-	-	-	-	+	+	-	-	+	-	+	-
44	<i>Cymbella tumida</i>	-	-	-	+	-	-	-	-	-	+	-	-	-	-
45	<i>Cymbella turgida</i>	-	-	+	+	+	+	-	+	+	-	-	-	-	+
46	<i>Cymbella ventricosa</i>	-	+	-	-	-	-	+	-	-	+	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	+	-	-	-	-	-	-	-	+	-	+	-	-
48	<i>Diatoma anceps</i>	-	-	+	-	+	+	-	-	+	-	-	-	+	+
49	<i>Diatoma hiemale</i>	-	+	-	+	-	-	-	+	-	-	-	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	+	-	-	-	+	-	-	-	+	-	-	+
51	<i>Diatoma vulgare</i>	+	+	-	-	-	-	-	-	+	+	-	-	-	-

52	<i>Didymosphaenia geminata</i>	-	-	-	+	-	-	-	+	+	-	-	-	-	-
53	<i>Eunotia linearis</i>	+	+	-	-	+	-	+	-	-	-	-	+	-	-
54	<i>Eunotia</i> sp.	-	-	+	-	-	-	-	-	-	+	-	-	+	-
55	<i>Fragilaria capucina</i>	-	+	-	-	-	+	-	+	+	-	+	-	-	+
56	<i>Fragilaria construens</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
57	<i>Fragilaria inflata</i>	-	+	-	+	-	-	+	-	+	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	+	-	-	+	-	+	-	-	+	-
59	<i>Fragilaria rumpens</i>	-	-	+	-	-	+	+	-	-	-	+	-	-	+
60	<i>Fragilaria</i> sp.	+	+	-	-	-	-	-	-	-	-	-	+	-	-
61	<i>Fragilaria vaucheriae</i>	-	-	-	+	+	-	-	-	-	-	-	-	-	+
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	+	-	+	-	-	-	-
63	<i>Fragilaria pinnata</i>	+	-	+	-	-	+	-	-	+	+	-	-	+	-
64	<i>Gomphonema gracile</i>	-	-	-	+	-	-	-	+	-	-	+	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
66	<i>Gomphonema intricatum</i>	-	+	+	+	+	-	+	-	+	-	-	-	-	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	+	-	-	+	-	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	-	-	+	-	-	+	-	-	-	-	-	-	+	+
70	<i>Gomphonema parvulum</i>	-	+	-	-	-	-	-	-	-	+	+	+	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	+	+	-	-	-	+	-	-	-	-	-	-
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-	-	-	+	-	-	+	-
73	<i>Gomphonema gracile</i>	-	-	-	-	+	+	-	-	-	+	-	-	-	+
74	<i>Gomphonema helveticum</i>	-	+	-	-	-	-	-	-	+	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	-	-	-	-	-	+	+	-	-	-	-	-	-	+
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	+	-	+	-	-	-	-	-	-	-	+	+	-

77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	-	-	-	+	-	-	+	-	-	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	+	-	-	+	-	-	-	-	-	-	+	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	+	-	-	-	-	-	-	-	+	-	-	-	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	+	+	-	-	+	-	-	-
81	<i>Gomphonema olivaceum</i>	-	-	+	-	-	-	-	-	-	+	-	-	+	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+	-	-	-	+	-	-	-	-	-	+	-	+
83	<i>Gomphonema parvulum</i>	-	-	-	+	-	-	-	-	-	+	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	+	-	-	-	-	-	+	-	-	+	+	-	-
86	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	+	-	+	-	+	-	-	-	+
89	<i>Hannaea arcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-	+	+	-	+	+	-	-	-	-	-	-	+
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
93	<i>Melosira junergensii</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	+	-	+	-	-	-	-	-	-	+	+	-	-	-
95	<i>Navicula cryptocephala</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	+
96	<i>Navicula feverborni</i>	-	+	+	-	-	-	-	-	-	-	-	+	+	-
97	<i>Navicula halophila</i>	-	+	-	-	-	+	-	-	+	-	-	+	-	-
98	<i>Navicula radiosa</i>	-	-	+	-	-	-	-	+	-	+	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	+
100	<i>Pinnularia borealis</i>	-	-	-	+	-	+	-	-	-	-	-	-	-	-

101	<i>Pinnularia molaris</i>	-	-	+	-	-	-	+	-	-	-	+	-	+	-
102	<i>Pinnularia</i> sp.	-	-	-	-	+	-	-	-	-	-	-	-	+	-
103	<i>Planothidium lanceolata</i>	+	-	-	-	-	-	-	+	+	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	+	+	-	+	+	-	-	-	-	-	-	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
106	<i>Stauroneis</i> sp.	-	+	-	-	-	-	-	-	-	-	+	+	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	+	-	+	-	-	-	-	+	-
108	<i>Surirella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	+	+	-	-	+	-	-	-	-	+
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	+	+	-	-	-	-	-	+	+	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	+	-	+	-	-	-	-	-	-
113	<i>Synedra ulna</i>	-	+	-	-	-	-	-	-	-	-	-	+	+	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-	-	-	-	-	-	-	+	-	+	-	-	-
115	<i>Tabellaria flocculosa</i>	-	-	+	-	-	+	+	+	-	+	-	-	-	+
116	<i>Tetracyclus</i> sp.	-	+	-	+	+	-	-	-	-	-	-	+	-	-
	Total	28	44	34	40	33	36	32	36	31	41	33	29	31	39

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnanthidium affinis</i>	+	+
2	<i>Achnanthidium andicola</i>	-	+
3	<i>Achnanthidium austriaca</i>	-	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-
5	<i>Achnanthidium biasoletiana</i>	+	-
6	<i>Achnanthidium conspicua</i>	-	+
7	<i>Achnanthidium cranulata</i>	-	-
8	<i>Achnanthidium dispar</i>	+	-
9	<i>Achnanthidium exigua</i>	-	-
10	<i>Achnanthidium exilis</i>	-	-
11	<i>Achnanthidium fragilarioides</i>	+	-
12	<i>Achnanthidium Grimmei</i>	-	-
13	<i>Achnanthidium hauckiana</i>	+	+
14	<i>Achnanthidium holsti</i>	-	+
15	<i>Achnanthidium hungarica</i>	-	-
16	<i>Achnanthidium kryophila</i>	-	-
17	<i>Achnanthidium lanceolata</i>	+	-
18	<i>Achnanthidium lapidosa</i>	-	-
19	<i>Achnanthidium lavenderi</i>	+	-
20	<i>Achnanthidium lemmermanni</i>	-	-
21	<i>Achnanthidium Lilljeborgei</i>	-	+
22	<i>Achnanthidium linearis</i>	-	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	-
24	<i>Achnanthidium microcephala</i>	-	-
25	<i>Achnanthidium minutissima</i>	-	+
26	<i>Achnanthidium nodosa</i>	+	-
27	<i>Achnanthidium plonensis</i>	-	-
28	<i>Achnanthidium saxonica</i>	-	-
29	<i>Achnanthidium</i> sp.	-	-
30	<i>Achnanthidium suchlandti</i>	-	+
31	<i>Achnanthidium taeniata</i>	-	-
32	<i>Achnanthidiumb conspicua</i>	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	+

34	<i>Anomoeneis</i> sp.	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-
37	<i>Cocconeis placentula</i>	-	-
38	<i>Cymbella</i> sp.	+	-
39	<i>Cymbella affinis</i>	-	-
40	<i>Cymbella delicatula</i>	-	-
41	<i>Cymbella laevis</i>	-	-
42	<i>Cymbella microcephala</i>	-	+
43	<i>Cymbella pusila</i>	-	-
44	<i>Cymbella tumida</i>	-	-
45	<i>Cymbella turgida</i>	-	+
46	<i>Cymbella ventricosa</i>	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-
48	<i>Diatoma anceps</i>	-	-
49	<i>Diatoma hiemale</i>	-	+
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-
51	<i>Diatoma vulgare</i>	-	-
52	<i>Didymosphaenia geminata</i>	-	-
53	<i>Eunotia linearis</i>	-	-
54	<i>Eunotia</i> sp.	-	-
55	<i>Fragilaria capucina</i>	+	-
56	<i>Fragilaria construens</i>	-	-
57	<i>Fragilaria inflata</i>	-	+
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-
59	<i>Fragilaria rumpens</i>	-	-
60	<i>Fragilaria</i> sp.	-	-
61	<i>Fragilaria vaucheriae</i>	-	+
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-
63	<i>Fragilaria pinnata</i>	+	-
64	<i>Gomphonema gracile</i>	-	-
65	<i>Gomphonema helveticum</i>	-	-
66	<i>Gomphonema intricatum</i>	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-
68	<i>Gomphonema olivaceoides</i>	-	-
69	<i>Gomphonema olivaceum</i>	+	-
70	<i>Gomphonema parvulum</i>	-	-

71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-
72	<i>Gomphonema bohemicum</i>	-	-
73	<i>Gomphonema gracile</i>	-	-
74	<i>Gomphonema helveticum</i>	-	-
75	<i>Gomphonema herbidense</i>	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	+
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-
81	<i>Gomphonema olivaceum</i>	+	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-
83	<i>Gomphonema parvulum</i>	-	+
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-
85	<i>Gomphonema sphaerophorum</i>	-	+
86	<i>Gomphonema. intricatum</i>	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
89	<i>Hannaea arcus</i>	+	+
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
93	<i>Melosira junergensii</i>	-	-
94	<i>Navicula andium</i>	+	-
95	<i>Navicula cryptocephala</i>	-	-
96	<i>Navicula feverborni</i>	-	-
97	<i>Navicula halophila</i>	-	-
98	<i>Navicula radiosa</i>	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-
100	<i>Pinnularia borealis</i>	-	+
101	<i>Pinnularia molaris</i>	-	-
102	<i>Pinnularia</i> sp.	-	-
103	<i>Planothidium lanceolata</i>	+	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-
105	<i>Reimeria sinuata</i>	-	-
106	<i>Stauroneis</i> sp.	-	+
107	<i>Surirella ovata</i>	-	-

108	<i>Surirella</i> sp.	-	-
109	<i>Synedra</i> sp.	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+
111	<i>Synedra amphirhynchus</i>	-	-
112	<i>Synedra rumpens</i>	-	-
113	<i>Synedra ulna</i>	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-
115	<i>Tabellaria flocculosa</i>	-	-
116	<i>Tetracyclus</i> sp.	-	+
	Total	21	24

DENSITY & DIVERSITY OF PHYTOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/lit.)	1287	1390	908	1029	565	626	1050	894	340	360	234	1366	1276	
Shannon Weiner Diversity	2.42	2.23	2.52	2.39	2.15	2.27	2.59	2.46	2.32	2.28	2.33	2.38	2.52	
Evenness Index	0.68	0.68	0.69	0.68	0.68	0.67	0.69	0.66	0.69	0.71	0.69	0.65	0.68	
No. of species	35	26	39	34	24	29	43	41	29	25	29	39	41	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/lit.)	876	978	654	342	543	257	490							
Shannon Weiner Diversity	2.64	2.39	2.23	2.17	2.28	2.45	2.32							
Evenness Index	0.70	0.66	0.62	0.63	0.68	0.66	0.65							
No. of species	44	38	36	32	29	42	35							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/lit.)	667	342	246	740	960	1270	567	356	569	987	746	890	968	
Shannon Weiner Diversity	2.34	2.21	2.31	2.35	2.53	2.31	2.22	2.39	2.19	2.63	2.35	2.31	2.17	
Evenness Index	0.64	0.69	0.66	0.66	0.66	0.66	0.67	0.71	0.70	0.70	0.65	0.67	0.64	
No. of species	38	25	34	35	46	33	28	29	23	42	37	32	29	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/lit.)	467	1025	678	967	865	876	495	765	809	996	509	464	348	764
Shannon Weiner Diversity	2.25	2.57	2.33	2.56	2.27	2.39	2.29	2.45	2.21	2.63	2.42	2.29	2.21	2.55
Evenness Index	0.68	0.68	0.66	0.69	0.65	0.67	0.66	0.68	0.64	0.71	0.69	0.68	0.64	0.70
No. of species	28	44	34	40	33	36	32	36	31	41	33	29	31	39
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/lit.)	208		322											
Shannon Weiner Diversity	1.95		2.42											
Evenness Index	0.56		0.61											
No. of species	32		53											

Phytobenthos

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnantheidium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnantheidium austriaca</i> var. <i>helvetica</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
3	<i>Achnantheidium boyei</i>	+	+	-	-	+	-	+	+	+	+	+	-	+
4	<i>Achnantheidium conspicua</i>	-	-	+	+	+	+	+	-	+	-	-	+	-
5	<i>Achnantheidium cranulata</i>	+	+	-	-	-	-	-	+	-	-	-	-	-
6	<i>Achnantheidium exigua</i>	-	-	-	+	-	+	-	-	-	-	+	+	-
7	<i>Achnantheidium Grimmei</i>	-	+	-	-	+	-	+	-	+	-	-	+	+
8	<i>Achnantheidium holsti</i>	+	+	+	-	-	-	-	+	-	+	-	-	-
9	<i>Achnantheidium hungarica</i>	-	+	-	+	+	+	+	+	+	-	-	-	+
10	<i>Achnantheidium lapidosa</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	-	-	-	+	+	-
11	<i>Achnantheidium linearis</i>	+	-	-	-	-	-	+	-	+	-	-	-	-
12	<i>Achnantheidium linearis</i> var. <i>pusila</i>	+	+	-	-	+	-	-	-	-	-	-	-	-
13	<i>Achnantheidium microcephala</i>	-	-	+	+	+	+	-	-	-	-	-	+	-
14	<i>Achnantheidium minutissima</i>	-	-	-	-	-	-	+	+	-	+	-	-	-
15	<i>Achnantheidium nodosa</i>	+	-	+	+	-	+	-	-	+	-	+	+	-
16	<i>Achnantheidium plonensis</i>	-	+	-	-	+	-	-	-	-	-	-	-	-
17	<i>Achnantheidium saxonica</i>	+	-	-	-	-	-	+	+	-	-	-	+	-
18	<i>Achnantheidium suchlandti</i>	+	+	-	+	+	+	-	-	+	+	-	-	+
19	<i>Achnantheidium affinis</i>	-	+	+	-	-	-	+	+	+	-	+	-	-
20	<i>Achnantheidium exilis</i>	-	-	-	-	+	-	-	-	+	+	-	-	-
21	<i>Achnantheidium lapidosa</i>	-	-	+	+	-	+	-	+	-	-	-	+	-
22	<i>Cocconeis placentula</i>	+	+	-	-	+	-	-	-	-	-	+	+	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-	+	+	-	-	+	-
24	<i>Cyclotella</i> sp.	-	-	-	-	-	-	+	-	-	+	-	-	-
25	<i>Cymbella amphicephala</i>	+	-	-	-	-	-	-	-	-	-	+	-	+
26	<i>Cymbella laevis</i>	-	+	+	-	+	-	-	-	-	-	-	-	-
27	<i>Cymbella perpusila</i>	-	-	+	+	-	+	+	+	+	+	-	+	-
28	<i>Cymbella tumidula</i>	+	-	-	-	-	-	-	-	-	-	-	-	-

29	<i>Cymbella turgidula</i>	-	-	-	+	-	+	-	-	-	-	+	-	-
30	<i>Cymbella ventricosa</i>	-	+	-	+	-	+	-	+	+	-	-	+	+
31	<i>Cymbella affinis</i>	-	+	+	-	+	-	-	-	-	+	-	-	-
32	<i>Diatoma hiemale</i>	+	-	+	-	-	-	+	+	+	-	+	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	+	+	+	-	+	-	-	+	+	-
34	<i>Didymosphenia geminata</i>	+	-	-	-	-	-	-	+	+	+	-	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	+	+	-	-	-	+	-	+	-	-	-	-
36	<i>Eunotia arcus</i>	-	-	-	-	+	-	-	+	-	-	+	+	-
37	<i>Fragilaria capucina</i>	+	-	-	+	+	+	+	-	-	-	-	-	-
38	<i>Fragilaria construens</i>	-	+	+	-	+	-	-	+	-	-	+	-	-
39	<i>Fragilaria leptostauron</i>	+	-	-	-	-	-	-	-	+	-	+	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	-	-	+	-	-	+	-	-	-	+	+
42	<i>Fragilaria rumpens</i>	+	+	+	-	+	-	+	-	-	+	-	-	-
43	<i>Fragilaria brevistriata</i>	-	+	-	+	-	+	-	-	-	-	-	+	-
44	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-	-	-	-	+	-	+
45	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
46	<i>Gomphonema bohemicum</i>	-	-	+	-	+	-	+	-	+	+	+	+	-
47	<i>Gomphonema gracile</i>	+	-	-	+	-	+	-	+	-	-	+	-	+
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	+	+	-	-	-	+	-	-	-	-	-	+
49	<i>Gomphonema lanceolatum</i>	+	-	-	-	+	-	-	+	-	+	-	+	-
50	<i>Gomphonema nagpurenses</i>	-	+	-	-	-	-	-	+	-	-	+	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	+	-	+	-	-	-	-	-	-	-	+
52	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	+	-	-	+	-	+	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-	+	+	-	-	-	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	+	+	-	+	-	-	+	-	-	-	+	-
55	<i>Gomphonema parvulum</i>	-	+	-	+	-	+	-	-	-	+	+	-	+
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	+	-	-	+	+	-
57	<i>Gomphonema sphaerophorum</i>	+	+	+	-	+	-	-	-	-	-	-	+	-
58	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	+	+	+	-	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	+	-	+	-	+	+	-	-	-	-	-	+
60	<i>Gomphonema logiceps</i> var. <i>subalavata</i> ¹	-	-	-	-	-	-	-	-	-	-	+	-	-
61	<i>Gomphonema logiceps</i> var. <i>subalavata</i>	+	-	+	+	+	+	-	-	+	-	-	-	-

62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	-	-	-	-	+	-	-	+	-	+	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	+	+	+	-	+	-	-	+	-	+
64	<i>Navicula microcephala</i>	-	-	+	-	-	-	+	-	+	-	-	-	-
65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	+	-	-	-	+	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	+	-	-	-	-	+	-	-	+
67	<i>Navicula rostellata</i>	-	+	-	-	-	-	+	+	-	-	-	-	-
68	<i>Navicula cari</i>	+	-	+	-	+	-	-	+	+	-	+	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	-	-	-	+	-	+	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	+	-	-	-	+	-
71	<i>Planothidium lanceolata</i>	+	+	-	-	-	-	-	-	-	-	+	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	+	-	+	-	+	+	+	-	-	-
73	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+	-	-	-	-	-	-	-	-	+	-	-
75	<i>Synedra ulna</i>	-	-	-	+	+	+	+	+	-	+	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	+	-	-	-	-	-	-	-	+	-	-	+	+
77	<i>Tabellaria flocculus</i>	-	+	+	-	-	-	+	-	-	-	+	-	-
78	<i>Tabellaria</i> sp.	-	-	-	+	+	+	-	+	+	-	+	+	-
79	<i>Tetracyclus lacustris</i>	+	-	-	-	+	-	-	-	-	-	-	-	+
	Total	26	29	23	22	31	22	24	33	26	21	27	31	18

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthydium austriaca</i>	+	+	+	+	+	+	+
2	<i>Achnanthydium austriaca</i> var. <i>helvetica</i>	-	+	-	-	-	-	-
3	<i>Achnanthydium boyei</i>	+	-	+	-	+	+	-
4	<i>Achnanthydium conspicua</i>	-	+	+	+	-	-	+
5	<i>Achnanthydium cranulata</i>	+	+	-	-	+	-	-
6	<i>Achnanthydium exigua</i>	-	-	-	+	-	+	-
7	<i>Achnanthydium Grimmei</i>	-	+	-	+	+	-	+
8	<i>Achnanthydium holsti</i>	+	-	-	-	+	-	-
9	<i>Achnanthydium hungarica</i>	-	-	+	-	+	-	-
10	<i>Achnanthydium lapidosa</i> var. <i>lanceolata</i>	-	+	-	+	-	+	-
11	<i>Achnanthydium linearis</i>	+	-	-	-	-	-	+
12	<i>Achnanthydium linearis</i> var. <i>pusila</i>	-	+	+	-	+	-	-
13	<i>Achnanthydium microcephala</i>	-	-	-	+	-	-	-
14	<i>Achnanthydium minutissima</i>	+	+	-	-	-	-	-
15	<i>Achnanthydium nodosa</i>	-	-	+	+	-	+	-
16	<i>Achnanthydium plonensis</i>	-	+	+	-	+	-	-
17	<i>Achnanthydium saxonica</i>	+	-	-	+	-	-	-
18	<i>Achnanthydium suchlandti</i>	-	+	+	-	+	-	-
19	<i>Achnanthydium affinis</i>	-	+	+	-	+	+	-
20	<i>Achnanthydium exilis</i>	-	-	-	-	-	-	-
21	<i>Achnanthydium lapidosa</i>	+	-	+	+	-	-	+
22	<i>Cocconeis placentula</i>	+	+	-	+	+	+	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	+	+	-	-	+
24	<i>Cyclotella</i> sp.	-	+	-	-	-	-	-
25	<i>Cymbella amphicephala</i>	-	-	+	-	-	+	-
26	<i>Cymbella laevis</i>	-	-	-	-	+	-	-
27	<i>Cymbella perpusila</i>	+	+	-	+	-	-	-
28	<i>Cymbella tumidula</i>	-	-	-	-	-	-	-
29	<i>Cymbella turgidula</i>	-	-	+	-	-	+	-
30	<i>Cymbella ventricosa</i>	-	+	-	+	+	-	+
31	<i>Cymbella affinis</i>	+	-	-	-	+	-	-
32	<i>Diatoma hiemale</i>	-	-	+	-	-	+	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	+	+	-	+	-

34	<i>Didymosphenia geminata</i>	+	+	-	-	-	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	-	+	-	+	-	+
36	<i>Eunotia arcus</i>	-	-	+	+	-	+	-
37	<i>Fragilaria capucina</i>	+	-	-	-	-	-	-
38	<i>Fragilaria construens</i>	-	+	-	-	+	+	-
39	<i>Fragilaria leptostauron</i>	-	-	+	-	-	+	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	-
41	<i>Fragilaria pinnata</i>	+	+	+	+	-	-	-
42	<i>Fragilaria rumpens</i>	-	+	-	-	+	-	-
43	<i>Fragilaria brevistriata</i>	-	-	+	+	+	-	-
44	<i>Fragilaria</i> sp.	+	+	-	-	-	+	-
45	<i>Fragilaria vaucheriae</i>	-	-	+	+	-	-	-
46	<i>Gomphonema bohemicum</i>	+	+	-	+	-	+	-
47	<i>Gomphonema gracile</i>	-	-	-	-	-	+	+
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	+	-	+	-	+	-	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	+	-	-	-
50	<i>Gomphonema nagpurenses</i>	-	+	-	-	+	+	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-
52	<i>Gomphonema olivaceum</i>	-	+	+	+	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-	-	-	-	-	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	+	+	-	-
55	<i>Gomphonema parvulum</i>	-	-	-	-	+	+	+
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	+	+	-	+	-
57	<i>Gomphonema sphaerophorum</i>	+	-	-	+	+	-	-
58	<i>Gomphonema. intricatum</i>	-	+	-	-	-	-	-
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	+	-	+	-	+	-	+
60	<i>Gomphonema logiceps</i> var. <i>subalavata</i>	-	+	-	-	-	+	-
61	<i>Gomphonema logiceps</i> var. <i>subalavata</i>	+	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	+	+	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	+	-	-	+	+
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	-
65	<i>Navicula radiosa</i>	+	-	-	+	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-
67	<i>Navicula rostellata</i>	-	+	+	-	+	-	-
68	<i>Navicula cari</i>	-	-	-	-	-	+	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	+	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	+	+	+	-	-	+

71	<i>Planothidium lanceolata</i>	+	+	-	-	+	+	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	+	-	-	-	-
73	<i>Reimeria sinuata</i>	+	+	-	+	-	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+	+	-	+	+	-
75	<i>Synedra ulna</i>	-	-	+	-	-	-	+
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	+	-	-	+	-	-	-
77	<i>Tabellaria flocculus</i>	-	+	-	-	+	+	-
78	<i>Tabellaria</i> sp.	+	+	+	+	-	+	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-
-	Total	27	34	32	31	29	27	14

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
3	<i>Achnanthidium boyei</i>	+	+	-	-	+	-	+	+	+	-	+	+	+
4	<i>Achnanthidium conspicua</i>	+	+	+	+	-	+	-	-	-	+	+	-	-
5	<i>Achnanthidium cranulata</i>	-	+	-	-	-	-	+	+	+	-	-	+	-
6	<i>Achnanthidium exigua</i>	-	-	+	-	+	+	-	-	-	+	-	+	-
7	<i>Achnanthidium Grimmei</i>	+	+	+	-	-	-	+	-	-	+	+	-	-
8	<i>Achnanthidium holsti</i>	-	-	-	+	-	-	-	+	+	-	-	-	+
9	<i>Achnanthidium hungarica</i>	+	+	-	-	-	-	-	-	-	-	-	+	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-	+	-	+	+	+	-	-	+	+	-	-
11	<i>Achnanthidium linearis</i>	+	+	-	-	-	-	-	-	-	-	-	+	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
13	<i>Achnanthidium microcephala</i>	-	+	+	+	-	-	-	-	-	+	+	-	-
14	<i>Achnanthidium minutissima</i>	+	+	-	-	-	-	-	+	+	-	-	+	+
15	<i>Achnanthidium nodosa</i>	-	-	+	+	+	+	-	-	-	+	-	-	-
16	<i>Achnanthidium plonensis</i>	-	+	-	-	-	-	+	-	-	-	-	-	-
17	<i>Achnanthidium saxonica</i>	+	+	+	-	-	-	-	-	-	+	-	+	-
18	<i>Achnanthidium suchlandti</i>	-	-	-	-	-	+	-	+	+	-	+	+	+
19	<i>Achnanthidium affinis</i>	+	+	-	+	+	+	+	-	-	-	-	-	-
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	+	+	-	-	-	+
21	<i>Achnanthidium lapidosa</i>	-	-	+	+	-	-	-	-	-	+	-	+	-
22	<i>Cocconeis placentula</i>	-	-	+	-	-	-	+	-	-	+	-	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	+	-	-	-	-	-	-	+	+	-	-
24	<i>Cyclotella</i> sp.	+	+	-	-	-	+	+	+	+	-	-	+	+
25	<i>Cymbella amphicephala</i>	-	-	-	-	+	-	-	-	-	-	-	-	-

26	<i>Cymbella laevis</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
27	<i>Cymbella perpusila</i>	+	+	+	+	-	-	-	+	+	+	+	+	+
28	<i>Cymbella tumidula</i>	-	-	-	-	-	+	-	-	-	-	-	+	-
29	<i>Cymbella turgidula</i>	-	-	-	-	+	+	+	-	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	-	+	+	-	-	-	-	-	-	+	-	-	-
31	<i>Cymbella affinis</i>	-	-	-	+	-	-	-	+	+	-	-	+	+
32	<i>Diatoma hiemale</i>	+	+	-	+	+	-	-	-	-	-	-	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	+	-	+	+	-	-	-	+	-	-	-
34	<i>Didymosphenia geminata</i>	-	-	-	-	-	+	+	+	+	-	+	+	+
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	+	-	+	-	-	-	-	-	-	-	-	-
36	<i>Eunotia arcus</i>	-	-	+	-	+	-	-	-	-	+	-	-	-
37	<i>Fragilaria capucina</i>	+	+	-	-	-	+	-	-	-	-	+	-	-
38	<i>Fragilaria construens</i>	-	-	-	+	+	+	-	-	-	-	-	+	-
39	<i>Fragilaria leptostauron</i>	-	+	-	-	-	-	+	-	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	+	-	-	-	-	+	-	-
41	<i>Fragilaria pinnata</i>	-	-	+	-	-	-	+	-	-	+	+	-	-
42	<i>Fragilaria rumpens</i>	+	+	-	+	-	-	-	+	+	-	-	-	+
43	<i>Fragilaria brevistriata</i>	-	-	+	-	-	-	-	-	-	+	-	+	-
44	<i>Fragilaria</i> sp.	-	+	-	-	+	+	+	-	-	-	-	-	-
45	<i>Fragilaria vaucheriae</i>	-	-	+	-	-	-	-	-	-	+	+	-	-
46	<i>Gomphonema bohemicum</i>	+	+	+	+	+	-	-	+	+	+	-	-	+
47	<i>Gomphonema gracile</i>	-	-	-	-	+	-	+	-	-	-	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	+	+	-	+	-	+	-	-	-	-	-	+	-
49	<i>Gomphonema lanceolatum</i>	-	-	+	-	-	-	-	+	+	+	-	-	+
50	<i>Gomphonema nagpurenses</i>	-	+	-	-	+	-	+	-	-	-	+	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
52	<i>Gomphonema olivaceum</i>	+	+	+	-	-	+	-	+	+	+	-	-	+
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	+	-	-	-	+	+	-

54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	+	+	-	+	-	-	-	+	-	-	-
55	<i>Gomphonema parvulum</i>	-	-	-	-	+	-	-	+	+	-	-	-	+
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	+	-	-	-	+	-	-	+	+	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	+	+	-	-	+	-	-	+	-	+	-
58	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	-	+	+	-	-	-	+
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	+	+	-	-	-	-	+	-	-	-	+	+	-
60	<i>Gomphonema logiceps</i> var. <i>subalavata</i> ¹	-	-	-	-	+	-	-	-	-	-	-	-	-
61	<i>Gomphonema logiceps</i> var. <i>subalavata</i>	-	+	-	+	-	-	+	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	+	+	+	-	-	+	-	+	+	+	+	+	+
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	+	-	-	-	-	-	+	-	-
64	<i>Navicula microcephala</i>	+	+	-	+	-	-	-	-	-	-	-	-	-
65	<i>Navicula radiosa</i>	-	-	+	-	-	-	-	-	-	+	-	+	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	+	-	+	+	-	+	-	+
67	<i>Navicula rostellata</i>	+	+	-	-	-	-	+	-	-	-	+	-	-
68	<i>Navicula cari</i>	-	-	-	+	+	-	-	-	-	-	-	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	+	+	-	-	-	-	+	+	+	-	+	+
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	+	-	-	-	+	-	-	+	+	-	-
71	<i>Planothidium lanceolata</i>	-	-	-	-	+	+	+	-	-	-	-	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	-	-	-	+	+	-	-	-	+
73	<i>Reimeria sinuata</i>	-	+	+	-	-	-	+	-	-	+	-	+	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
75	<i>Synedra ulna</i>	+	+	-	-	-	+	-	+	+	-	-	-	+
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	+	-	-	-	+	-	-	+	-	+	-
77	<i>Tabellaria flocculus</i>	+	+	-	+	-	-	-	-	-	-	+	+	-
78	<i>Tabellaria</i> sp.	-	-	+	-	+	+	+	+	+	+	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	24	35	31	23	23	25	28	23	23	31	24	27	21

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	+	-	-	-	-	-	-	-	+	+
3	<i>Achnanthidium boyei</i>	+	+	-	-	+	+	+	+	-	+	+	-	+	-
4	<i>Achnanthidium conspicua</i>	+	+	+	+	+	+	+	-	+	+	-	+	-	+
5	<i>Achnanthidium cranulata</i>	+	-	-	-	-	-	+	-	-	-	+	-	+	+
6	<i>Achnanthidium exigua</i>	-	+	+	-	+	-	+	-	-	-	-	+	+	-
7	<i>Achnanthidium Grimmei</i>	-	-	-	-	+	+	-	-	+	+	-	-	+	+
8	<i>Achnanthidium holsti</i>	+	-	-	+	+	-	+	+	-	-	-	+	-	-
9	<i>Achnanthidium hungarica</i>	+	+	+	-	-	+	-	-	-	+	+	+	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	+	-	-	-	-	+	-	-	-	-	-	+	+
11	<i>Achnanthidium linearis</i>	-	-	-	-	+	+	-	-	-	+	-	+	-	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	-	-	-	-	-	+	-	+	-	+	+	-	+
13	<i>Achnanthidium microcephala</i>	-	+	+	+	-	+	+	-	-	-	+	-	+	-
14	<i>Achnanthidium minutissima</i>	+	+	-	-	+	+	-	+	-	-	-	-	-	+
15	<i>Achnanthidium nodosa</i>	-	-	+	+	-	-	+	-	-	+	-	+	-	-
16	<i>Achnanthidium plonensis</i>	+	+	-	-	-	+	+	-	-	-	+	-	+	+
17	<i>Achnanthidium saxonica</i>	-	-	-	-	-	-	-	-	+	-	+	+	-	-
18	<i>Achnanthidium suchlandti</i>	+	-	+	-	+	-	+	-	-	+	-	-	+	+
19	<i>Achnanthidium affinis</i>	-	+	-	+	-	+	-	-	-	+	+	+	+	+
20	<i>Achnanthidium exilis</i>	-	+	-	-	+	-	-	+	+	+	-	-	-	-
21	<i>Achnanthidium lapidosa</i>	-	-	+	+	+	-	+	-	-	-	-	+	-	-
22	<i>Cocconeis placentula</i>	+	-	-	-	-	-	-	-	-	-	+	-	+	+
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	-	-	+	-	-	-	+	+	-	-	-	-
24	<i>Cyclotella</i> sp.	-	-	-	-	-	+	+	+	-	-	-	+	+	+

25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
26	<i>Cymbella laevis</i>	+	+	-	+	-	-	-	-	-	-	-	-	+	-
27	<i>Cymbella perpusila</i>	-	-	+	+	-	+	+	+	-	+	-	+	-	+
28	<i>Cymbella tumidula</i>	-	-	-	-	+	-	-	-	-	-	+	-	-	-
29	<i>Cymbella turgidula</i>	-	-	+	-	-	-	+	-	-	-	-	-	+	-
30	<i>Cymbella ventricosa</i>	+	-	-	-	+	+	-	-	+	+	-	+	-	+
31	<i>Cymbella affinis</i>	-	-	-	+	-	-	+	+	-	-	+	-	-	-
32	<i>Diatoma hiemale</i>	-	-	-	+	-	+	-	-	-	+	+	+	+	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	+	-	+	-	+	-	+	-	-	-	-	-
34	<i>Didymosphenia geminata</i>	-	-	-	-	-	-	+	+	-	+	+	-	+	+
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	-	-	+	+	+	-	-	-	+	+	+	-	-
36	<i>Eunotia arcus</i>	-	+	-	-	-	-	-	-	+	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	-	+	-	-	+	+	-	-	-	-	-	-	-
38	<i>Fragilaria construens</i>	+	+	-	+	-	-	-	-	-	-	-	+	-	+
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	+	-	-	+	+	+	-	+	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
41	<i>Fragilaria pinnata</i>	-	+	-	-	+	-	-	-	-	-	+	-	+	+
42	<i>Fragilaria rumpens</i>	-	-	-	+	-	+	-	+	+	-	-	-	-	+
43	<i>Fragilaria brevistriata</i>	+	-	+	-	-	-	+	-	-	-	+	+	-	-
44	<i>Fragilaria</i> sp.	-	+	-	-	-	+	-	-	-	-	-	-	+	+
45	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	+	-	+	-	+	-	+	-	+	-	+
47	<i>Gomphonema gracile</i>	-	-	+	-	+	-	+	-	-	-	+	-	+	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	+	-	-	+	-	+	-	-	+	-	-	-	-	-
49	<i>Gomphonema lanceolatum</i>	-	+	-	-	-	-	+	+	-	-	+	-	-	-
50	<i>Gomphonema nagpurenses</i>	+	-	-	-	-	+	-	-	-	-	-	-	+	+
51	<i>Gomphonema olivaceoides</i>	-	-	-	+	-	-	-	-	-	-	-	+	-	-
52	<i>Gomphonema olivaceum</i>	-	-	-	-	+	+	+	-	-	-	-	-	-	+
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-	-	+	+	-	-	+	-

54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	+	-	-	+	-	-	-	-	-	-	+	-	-	-
55	<i>Gomphonema paruvulum</i>	-	-	+	-	+	-	+	+	-	-	+	+	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	-	-	-	+	-	-	+	-	-	-	+	+
57	<i>Gomphonema sphaerophorum</i>	+	-	-	+	-	-	-	-	-	-	-	-	+	-
58	<i>Gomphonema. intricatum</i>	-	+	-	-	-	-	-	+	-	+	-	+	-	+
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	+	-	-	-	+	+	-	-	-	-	-	-	+	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	+
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	+	+	-	+	+	-	+	+	-	+	+	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-	-	-	-	+	-	+	-	-	-	-	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	+	-	+	-	+	-	-	-	-	-	-	+
64	<i>Navicula microcephala</i>	-	-	-	+	-	+	-	-	-	+	+	-	+	-
65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	+	+	-	+	+	-	-
67	<i>Navicula rostellata</i>	-	-	-	-	-	+	-	-	-	-	-	-	+	+
68	<i>Navicula cari</i>	-	-	-	+	-	-	-	-	-	+	-	-	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	+	-	-	-	+	-	+	-	-	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	+	-	-	-	-	-	+	+	+	-
71	<i>Planothidium lanceolata</i>	+	-	-	-	-	-	-	-	+	-	-	-	+	+
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	+	+	-	-	-	+	+	-	+	-	-	-	-
73	<i>Reimeria sinuata</i>	-	-	-	-	-	+	-	-	-	-	+	-	+	+
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	+	-	-	+	-	+
75	<i>Synedra ulna</i>	-	+	-	-	+	+	-	+	-	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	+	+	-	-	+	-
77	<i>Tabellaria flocculus</i>	-	-	-	+	-	+	-	-	-	-	-	-	-	+
78	<i>Tabellaria</i> sp.	-	+	+	-	-	-	+	-	+	+	+	+	+	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	+	+	-	-	+	-
	Total	23	26	19	23	25	33	29	19	21	26	30	28	34	32

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnanthidium austriaca</i>	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-
3	<i>Achnanthidium boyei</i>	+	+
4	<i>Achnanthidium conspicua</i>	+	-
5	<i>Achnanthidium cranulata</i>	-	+
6	<i>Achnanthidium exigua</i>	-	+
7	<i>Achnanthidium Grimmei</i>	+	-
8	<i>Achnanthidium holsti</i>	-	-
9	<i>Achnanthidium hungarica</i>	-	+
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	+	-
11	<i>Achnanthidium linearis</i>	-	+
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-
13	<i>Achnanthidium microcephala</i>	+	-
14	<i>Achnanthidium minutissima</i>	-	+
15	<i>Achnanthidium nodosa</i>	-	-
16	<i>Achnanthidium plonensis</i>	-	-
17	<i>Achnanthidium saxonica</i>	-	+
18	<i>Achnanthidium suchlandti</i>	+	+
19	<i>Achnanthidium affinis</i>	-	-
20	<i>Achnanthidium exilis</i>	-	-
21	<i>Achnanthidium lapidosa</i>	-	+
22	<i>Cocconeis placentula</i>	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	-
24	<i>Cyclotella</i> sp.	-	+
25	<i>Cymbella amphicephala</i>	-	-
26	<i>Cymbella laevis</i>	-	-
27	<i>Cymbella perpusila</i>	+	+
28	<i>Cymbella tumidula</i>	-	+
29	<i>Cymbella turgidula</i>	-	-
30	<i>Cymbella ventricosa</i>	-	-
31	<i>Cymbella affinis</i>	-	+
32	<i>Diatoma hiemale</i>	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-
34	<i>Didymosphenia geminata</i>	+	+
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-

36	<i>Eunotia arcus</i>	-	-
37	<i>Fragilaria capucina</i>	+	-
38	<i>Fragilaria construens</i>	-	+
39	<i>Fragilaria leptostauron</i>	-	-
40	<i>Fragilaria olivaceoides</i>	+	-
41	<i>Fragilaria pinnata</i>	+	-
42	<i>Fragilaria rumpens</i>	-	-
43	<i>Fragilaria brevistriata</i>	-	+
44	<i>Fragilaria</i> sp.	-	-
45	<i>Fragilaria vaucheriae</i>	+	-
46	<i>Gomphonema bohemicum</i>	-	-
47	<i>Gomphonema gracile</i>	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	+
49	<i>Gomphonema lanceolatum</i>	-	-
50	<i>Gomphonema nagpurenses</i>	+	-
51	<i>Gomphonema olivaceoides</i>	-	-
52	<i>Gomphonema olivaceum</i>	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	+
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-
55	<i>Gomphonema parvulum</i>	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	-
57	<i>Gomphonema sphaerophorum</i>	-	+
58	<i>Gomphonema. intricatum</i>	-	-
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	+	+
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	+	+
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-
64	<i>Navicula microcephala</i>	-	-
65	<i>Navicula radiosa</i>	-	+
66	<i>Navicula radiosa</i> var. <i>tenella</i>	+	-
67	<i>Navicula rostellata</i>	+	-
68	<i>Navicula cari</i>	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	+
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	+	-
71	<i>Planothidium lanceolata</i>	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-
73	<i>Reimeria sinuata</i>	-	+
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-

75	<i>Synedra ulna</i>	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	+
77	<i>Tabellaria flocculus</i>	+	+
78	<i>Tabellaria</i> sp.	-	-
79	<i>Tetracyclus lacustris</i>	-	-
	Total	24	27

DENSTIY & DIVERSITY OF PHYTOBENTHOS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/cm ²)	389	165	149	2483	1845	2988	198	3522	28093	621	75350	485	460	
Shannon Weiner Diversity	2.59	2.74	2.42	2.40	2.77	2.39	2.48	3.06	2.50	2.35	2.56	2.85	2.29	
Evenness Index	0.79	0.81	0.77	0.78	0.81	0.77	0.78	0.88	0.77	0.77	0.78	0.83	0.79	
No. of species	26	29	23	22	31	22	24	33	26	21	27	31	18	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/cm ²)	1838	1412	2940	1380	29640	14635	13860							
Shannon Weiner Diversity	2.60	3.03	2.87	2.79	2.61	2.51	2.06							
Evenness Index	0.79	0.86	0.83	0.81	0.78	0.76	0.78							
No. of species	27	34	32	31	29	27	14							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/cm ²)	54330	73440	26061	1210	905	923	903	827	957	1188	918	1320	1347	
Shannon Weiner Diversity	2.45	3.09	2.78	2.26	2.23	2.30	2.43	2.24	2.29	2.77	2.31	2.46	2.22	
Evenness Index	0.77	0.87	0.81	0.72	0.71	0.71	0.73	0.71	0.73	0.81	0.73	0.75	0.73	
No. of species	24	35	31	23	23	25	28	23	23	31	24	27	21	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/cm ²)	918	1320	2347	2456	2918	4020	4347	5234	5918	6578	7689	5437	7665	8112
Shannon Weiner Diversity	2.22	2.33	2.16	2.28	2.29	2.71	2.58	2.29	2.31	2.38	2.66	2.53	2.98	2.79
Evenness Index	0.71	0.72	0.73	0.73	0.71	0.78	0.77	0.78	0.76	0.73	0.78	0.76	0.85	0.81
No. of species	23	26	19	23	25	33	29	19	21	26	30	28	34	32
Jiya Dhol & Kareng Ghat														
Code	B1		B2											
Density (cells/cm ²)	312		486											
Shannon Weiner Diversity	2.28		2.39											
Evenness Index	0.71		0.79											
No. of species	25		21											

Macro-Invertibrates

Sub basin- Siang: I-IV

S.No.	Family	Genus	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>	+	+	-	-	-	-	-	-	-	-	-	-	+
3		<i>Heptagenia</i>	+	+	-	+	+	-	-	-	+	-	+	-	-
4		<i>Epeorus</i>	+	-	+	-	-	-	-	+	-	-	-	-	-
5	Baetidae	<i>Baetis</i>	+	+	-	+	-	-	-	+	-	-	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	+	-	+	-	-	+	+	+	-	-	-	+	+
7		<i>Ephemerella excrucians</i>	-	-	-	-	-	-	-	-	-	+	-	-	+
8	Caenidae	<i>Caenis</i>	+	+	+	-	-	-	-	-	-	-	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	+	+	-	+	+	-	-	-	-	-	+	-	-
10		<i>Chroterpes</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	-	+	+	-	-	+	-	-	-	-	-	-	+
12	Neophemeridae	<i>Neophemeridae 1</i>	-	-	-	-	-	-	-	-	-	+	-	+	-
13		<i>Neophemeridae 2</i>	+	+	+	+	+	-	-	-	+	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	+	-	-	-	-	+	-	-	+	-	+
15	Perlodidae	<i>Isoperla</i>	-	+	-	+	-	-	-	-	-	+	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	+	-	-	-	-	-	+	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	+	-	-	+	+	-	+	-	-	-	+
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	+	-	-	-	+	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	+	+	-	-	-	-	-	-	-
21		<i>Hydroptila</i>	-	-	-	+	-	-	-	-	-	+	-	-	+
22		<i>Leucotrichia</i>	-	-	-	-	-	-	-	-	-	-	+	-	-

23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	+	-	-	-	+	+	+	+	-	+	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	-	-	-	-	+	+	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	+	+	-	-	-	-	-	+	-	-	-
27	Molannidae	<i>Molanna</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
29		<i>Ablabesmyia</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
30	Ephydriidae	Unidentified genus / species	+	+	-	-	-	-	-	+	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	+	+	-	-	-	-	-	-	+	-	+
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	+	+	-	-	+	-	-	-	-	-	-	-	-
34		<i>Maruina</i>	+	+	-	-	-	+	+	+	-	-	-	+	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	+	+	-	-	-	+	-	-
37		<i>Horaia</i>	-	-	-	+	+	-	-	-	+	-	-	-	+
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	+	-	-	-	-	-	-	-	-	+	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	12	15	12	11	9	10	6	9	6	7	11	5	10

Sub basin- Yamne and Simang

S.No.	Family	Genus	Y1	Y2	Y3	Y4	SM1	SM2	SM3
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+
2		<i>Stenonema</i>	-	-	-	-	-	-	-
3		<i>Heptagenia</i>	-	-	-	-	-	-	-
4		<i>Epeorus</i>	-	-	-	-	+	-	-
5	Baetidae	<i>Baetis</i>	+	-	-	-	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	+	+	+	+	-	+	-
7		<i>Ephemerella excrucians</i>	-	-	-	-	-	-	-
8	Caenidae	<i>Caenis</i>	-	-	-	-	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	+	-	-	-	-	-	-
10		<i>Chroterpes</i>	-	+	+	+	+	-	-
11		<i>Leptophlebia</i>	-	+	+	-	-	+	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	-	-	-	-
13		<i>Neoephemeridae 2</i>	+	-	-	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	+	-	-	-	+	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	+	+	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	+	+
19	Corydalidae	<i>Corydalus</i>	-	+	-	+	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	+	+	-	-	-	-
21		<i>Hydroptila</i>	+	-	-	-	-	+	-
22		<i>Leucotrichia</i>	-	-	-	-	+	+	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	+	+	+	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	+	-	-	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	+	-	-	-	-	-
27	Molannidae	<i>Molanna</i>	-	+	+	+	-	+	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	-	-	-
29		<i>Ablabesmyia</i>	-	+	-	+	-	-	-
30	Ephydriidae	Unidentified genus / species	+	-	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	+	-	-	-	-	-
34		<i>Maruina</i>	-	+	+	+	-	+	+
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	+	+	+	-	-	-

37		<i>Horaia</i>	+	-	-	-	-	-	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	+	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	+	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	+	-	-	+	-	-	-
		Total	10	14	10	12	6	8	3

Sub basin- Siyom: I-III and Hirit

S.No.	Family	Genus	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
3		<i>Heptagenia</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
4		<i>Epeorus</i>	-	-	-	-	-	-	+	-	+	-	-	-	-
5	Baetidae	<i>Baetis</i>	-	-	-	-	-	-	-	-	-	+	-	+	-
6	Ephemerellidae	<i>Ephemerella</i>	+	+	+	+	+	+	+	+	-	-	-	-	+
7		<i>Ephemerella excrucians</i>	-	-	-	-	-	+	-	-	-	+	+	-	-
8	Caenidae	<i>Caenis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	+	-	-	+	-	-	-	-	+
10		<i>Chroterpes</i>	-	+	+	-	+	-	+	-	+	-	-	-	-
11		<i>Leptophlebia</i>	+	+	+	-	-	+	-	+	+	+	-	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	+	-	+	-	-	-	-	-	-	-	+	+	-
13		<i>Neoephemeridae 2</i>	-	-	-	-	-	-	-	-	-	+	+	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	-	+	+	-	-	-	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	-	-	-	+	-	-	+	-
17	Psephenidae	<i>Psephenus</i>	-	+	-	-	-	+	-	+	-	+	-	-	+
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	+	-	-	-	-	-	-	-	-	-	+	-
21		<i>Hydroptila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
22		<i>Leucotrichia</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	+	+	+	+	+	+	-	-	-	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	-	-	+	-	-	-	-

26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	+	-	-	+	-	-	-
27	Molannidae	<i>Molanna</i>	-	+	-	-	+	+	-	+	-	-	+	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	+	-	-	-	-	+	-
30	Ephydriidae	Unidentified genus / species	-	-	-	-	-	-	-	-	+	+	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	+	-	-	-	-	-	+
34		<i>Maruina</i>	+	+	+	+	+	+	-	+	-	-	-	-	+
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	+	+	+	-	+	+	-	-	-	-	-	-	-
37		<i>Horaia</i>	-	-	-	-	-	-	-	+	-	-	-	+	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
		Total	7	10	8	4	9	11	10	9	8	10	5	7	6

Sub basin- Yargyap Chhu

S.No.	Family	Genus	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Heptageniidae	<i>Cinygmula</i>	+	+	-	+	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>	+	+	+	-	-	-	-	-	-	-	-	-	+	-
3		<i>Heptagenia</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
4		<i>Epeorus</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	+
5	Baetidae	<i>Baetis</i>	-	+	-	-	-	-	-	+	-	-	-	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	+	-	-	+	-	+	-	-	+	-	+	-	+	+
7		<i>Ephemerella excrucians</i>	-	-	+	-	+	-	-	-	-	-	-	-	+	-
8	Caenidae	<i>Caenis</i>	-	-	-	-	+	-	+	+	-	-	-	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
10		<i>Chroterpes</i>	-	-	-	-	-	+	-	-	-	-	-	+	-	-
11		<i>Leptophlebia</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	+
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	-	+	-	-	+	+	-	-	-	-	-
13		<i>Neoephemeridae 2</i>	-	+	+	-	-	-	-	-	-	-	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	+	-	-	-	-	-	+	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	-	-	-	+	-	-	+	-	-	+
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	Psephenidae	<i>Psephenus</i>	+	-	-	+	-	-	+	-	-	+	-	-	+	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	+	-	-	-	-	-	+	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	+	-	-	-	-	-	+	-	-	-
21		<i>Hydroptila</i>	-	+	-	-	-	+	+	+	-	-	-	+	+	-
22		<i>Leucotrichia</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	+	-	-	-	-	+	-	-	-	+	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	+	-	-	+	-	-	+	+	+	-	+	-	-	+

26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Molannidae	<i>Molanna</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	+	-	-	+	-	-	-	-	-	-	-	-	-
29		<i>Ablabesmyia</i>	-	+	+	-	-	-	-	-	-	-	-	-	-	-
30	Ephydriidae	Unidentified genus / species	-	+	-	-	-	+	+	+	-	+	+	-	-	+
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	+	+	+	+	-	-	-	-	-	-	-	-	-	-
34		<i>Maruina</i>	+	-	-	+	-	-	-	+	-	+	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	+	+	+	+	-	-	-	-	+	-	-
37		<i>Horaia</i>	+	-	-	-	-	-	-	-	-	-	-	-	+	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	+
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
		Total	10	9	7	7	7	9	9	10	7	5	7	4	10	8

Outside basin

S.No.	Family	Genus	B1	B2
1	Heptageniidae	<i>Cinygmula</i>	+	+
2		<i>Stenonema</i>	-	-
3		<i>Heptagenia</i>	+	+
4		<i>Epeorus</i>	-	+
5	Baetidae	<i>Baetis</i>	-	-
6	Ephemerellidae	<i>Ephemerella</i>	+	-
7		<i>Ephemerella excrucians</i>	-	-
8	Caenidae	<i>Caenis</i>	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-
10		<i>Chroterpes</i>	-	-
11		<i>Leptophlebia</i>	+	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	+
13		<i>Neoephemeridae 2</i>	-	-
14	Perlidae	<i>Acroneuria</i>	-	-
15	Perlodidae	<i>Isoperla</i>	-	+
16	Elmidae	<i>Heterlimnius</i>	+	-
17	Psephenidae	<i>Psephenus</i>	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-
19	Corydalidae	<i>Corydalus</i>	+	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-
21		<i>Hydroptila</i>	-	-
22		<i>Leucotrichia</i>	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	+
25	Glossosomatidae	<i>Glossosoma</i>	-	-
26	Leptoceridae	<i>Leptocerus</i>	+	-
27	Molannidae	<i>Molanna</i>	-	-
28	Chironomidae	<i>Chironomus</i>	-	-
29		<i>Ablabesmyia</i>	-	+
30	Ephydriidae	Unidentified genus / species	-	-
31	Tipulidae	<i>Antocha saxicola</i>	+	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-
33	Psychodidae	<i>Psychoda</i>	-	-
34		<i>Maruina</i>	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	+	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-

37		<i>Horaia</i>	-	-
38	Tabanidae	<i>Tabanus</i>	-	-
39	Rhagionidae	<i>Atherix variegata</i>	+	+
40	Culicidae	<i>Culex</i>	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-
		Total	10	8

DENSITY & DIVERSITY OF MACRO-INVERTEBRATES

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (Indiv./m ²)	510	469	569	892	333	721	244	264	159	115	368	116	401	
Shannon Weiner Diversity	1.98	2.02	1.9	1.95	1.78	1.89	1.37	1.77	1.53	1.5	1.99	1.25	1.77	
Evenness Index	0.83	0.79	0.83	0.81	0.81	0.82	0.76	0.81	0.79	0.77	0.80	0.78	0.77	
No. of species	11	13	10	11	9	10	6	9	7	7	12	5	10	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (Indiv./m ²)	553	1743	721	1340	323	101	299							
Shannon Weiner Diversity	2.04	2.13	1.88	1.98	1.89	1.65	1.69							
Evenness Index	0.82	0.81	0.82	0.80	0.82	0.79	0.77							
No. of species	12	14	10	12	10	8	9							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (Indiv./m ²)	244	721	1166	681	1199	630	828	520	345	387	121	159	666	
Shannon Weiner Diversity	1.72	1.86	1.5	2.07	1.79	1.85	1.89	1.75	1.65	1.72	1.23	1.48	1.33	
Evenness Index	0.78	0.81	0.72	0.78	0.81	0.77	0.79	0.76	0.75	0.75	0.76	0.76	0.74	
No. of species	9	10	8	14	9	11	11	10	9	10	5	7	6	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (Indiv./m ²)	1310	1332	1602	618	241	1054	823	1698	1351	233	469	549	401	602
Shannon Weiner Diversity	1.89	1.63	1.52	1.59	1.42	1.53	1.55	1.69	1.49	1.2	1.44	1.22	1.67	1.43
Evenness Index	0.79	0.71	0.69	0.69	0.73	0.70	0.71	0.73	0.72	0.75	0.74	0.76	0.73	0.69
No. of species	11	10	9	10	7	9	9	10	8	5	7	5	10	8
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (Indiv./m ²)	190		223											
Shannon Weiner Diversity	1.8		1.68											
Evenness Index	1.12		1.53											
No. of species	5		3											

Zooplanktons

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
	Protozoans													
1	<i>Actinophrys</i> sp.	+	-	-	+	+	+	+	+	-	+	+	+	+
2	<i>Arcella</i> sp.	-	-	+	-	+	-	-	+	+	-	-	+	+
3	<i>Ceratium</i> spp.	-	+	-	-	-	-	+	-	-	-	+	-	-
	Rotifers													
4	<i>Brachious</i>	-	+	-	+	+	-	+	-	+	+	+	-	+
5	<i>Keratella</i> sp.	+	-	-	-	-	-	-	-	-	-	-	+	-
6	<i>Epiphanes</i>	-	-	-	-	+	+	-	+	+	-	+	-	-
7	<i>Asplanchna</i> sp.	-	+	+	-	-	-	+	-	-	-	-	-	+
8	<i>Philodena</i> sp.	-	-	-	-	-	+	-	-	-	+	-	-	-
	Cladoceran													
9	<i>Bosmina</i> sp.	-	-	-	+	+	-	-	-	-	+	-	-	+
10	<i>Daphnia</i> sp.	+	-	+	-	-	+	+	+	+	-	+	-	-
	Copepods													
11	<i>Cyclops</i> sp.	-	+	-	-	+	-	-	-	+	-	+	+	-
12	<i>Diaptomus</i> sp.	-	-	-	+	-	-	+	-	+	+	-	-	-
	Total	3	4	3	4	6	7	6	4	6	5	6	4	5

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
	Protozoans							
1	<i>Actinophrys</i> sp.	+	+	-	+	+	+	-
2	<i>Arcella</i> sp.	-	-	+	-	-	-	-
3	<i>Ceratium</i> spp.	+	-	-	-	-	+	+
	Rotifers							
4	<i>Brachious</i>	-	+	+	-	-	-	-
5	<i>Keratella</i> sp.	+	-	-	-	+	-	-
6	<i>Epiphanes</i>	-	+	-	+	-	+	+
7	<i>Asplanchna</i> sp.	-	-	-	+	+	-	-
8	<i>Philodena</i> sp.	+	+	-	-	-	+	+
	Cladoceran							
9	<i>Bosmina</i> sp.	+	+	-	-	-	+	-
10	<i>Daphnia</i> sp.	-	-	+	-	-	-	-
	Copepods							
11	<i>Cyclops</i> sp.	-	-	-	+	+	-	+
12	<i>Diaptomus</i> sp.	-	+	-	-	-	+	-
	Total	5	6	3	5	4	7	4

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY4	SY3	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
	Protozoans													
1	<i>Actinophrys</i> sp.	+	+	+	+	+	-	+	+	+	+	+	+	-
2	<i>Arcella</i> sp.	+	-	-	-	-	+	-	-	-	-	-	-	-
3	<i>Ceratium</i> spp.	-	+	-	+	+	-	-	+	-	+	-	-	+
	Rotifers													
4	<i>Brachious</i>	-	+	+	+	-	+	-	-	+	-	-	-	-
5	<i>Keratella</i> sp.	+	-	-	-	-	-	+	+	-	-	+	+	-
6	<i>Epiphanes</i>	-	+	-	-	+	-	-	-	-	+	-	-	+
7	<i>Asplanchna</i> sp.	-	-	+	+	-	-	+	-	+	-	-	+	-
8	<i>Philodena</i> sp.	+	-	-	-	+	-	-	+	-	-	-	-	-
	Cladoceran													
9	<i>Bosmina</i> sp.	-	+	+	-	-	-	+	-	-	-	+	+	+
10	<i>Daphnia</i> sp.	+	-	-	+	-	-	-	-	+	-	-	-	-
	Copepods													
11	<i>Cyclops</i> sp.	+	-	-	-	-	+	-	-	-	+	-	+	-
12	<i>Diaptomus</i> sp.	-	+	+	+	-	-	-	+	-	-	+	-	-
	Total	6	6	6	5	4	3	4	5	4	4	4	5	3

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
	Protozoans														
1	<i>Actinophrys</i> sp.	-	+	-	-	+	-	-	-	+	+	-	+	+	+
2	<i>Arcella</i> sp.	+	-	-	-	-	-	+	+	-	+	-	-	-	-
3	<i>Ceratium</i> spp.	-	-	+	-	+	+	-	-	-	-	+	-	+	-
	Rotifers														
4	<i>Brachious</i>	+	-	-	-	-	-	+	-	-	-	-	-	-	-
5	<i>Keratella</i> sp.	-	-	+	-	-	-	-	-	-	-	-	+	-	+
6	<i>Epiphanes</i>	+	-	-	+	+	+	+	+	+	-	-	-	-	+
7	<i>Asplanchna</i> sp.	-	-	+	-	-	-	-	-	-	-	-	-	-	-
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-	-	-	-	+	-	+	-
	Cladoceran														
9	<i>Bosmina</i> sp.	-	-	-	-	+	-	+	+	-	-	-	-	+	-
10	<i>Daphnia</i> sp.	+	+	+	-	+	+	-	-	+	+	-	-	-	-
	Copepods														
11	<i>Cyclops</i> sp.	-	-	-	+	-	-	-	+	-	-	-	-	-	+
12	<i>Diaptomus</i> sp.	+	-	-	-	-	-	-	-	-	+	-	-	+	+
	Total	6	6	6	5	4	3	4	5	4	4	4	5	3	6

Outside basin

S.No.	Name of species	B1	B2
	Protozoans		
1	<i>Actinophrys</i> sp.	+	+
2	<i>Arcella</i> sp.	-	-
3	<i>Ceratium</i> spp.	-	-
	Rotifers		
4	<i>Brachious</i>	+	-
5	<i>Keratella</i> sp.	-	-
6	<i>Epiphanes</i>	-	-
7	<i>Asplanchna</i> sp.	-	-
8	<i>Philodena</i> sp.	-	-
	Cladoceran		
9	<i>Bosmina</i> sp.	-	-
10	<i>Daphnia</i> sp.	-	-
	Copepods		
11	<i>Cyclops</i> sp.	+	-
12	<i>Diaptomus</i> sp.	-	+
	Total	3	2

DENSITY & DIVERSITY OF ZOOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (indiv/lit.)	67	88	71	83	132	59	129	67	121	89	134	67	37	
Shannon Weiner Diversity	0.77	0.93	0.71	0.84	1.11	0.93	1.04	0.89	1.09	0.88	1.11	0.83	0.74	
Evenness Index	0.70	0.67	0.65	0.61	0.62	0.67	0.58	0.64	0.61	0.55	0.62	0.60	0.67	
No. of species	3.00	4.00	3.00	4.00	6.00	4.00	6.00	4.00	6.00	5.00	6.00	4.00	3.00	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (indiv/lit.)	93	116	66	73	54	145	66							
Shannon Weiner Diversity	0.94	1.03	0.71	0.88	0.77	1.23	0.92							
Evenness Index	0.58	0.57	0.65	0.55	0.56	0.63	0.66							
No. of species	5.00	6.00	3.00	5.00	4.00	7.00	4.00							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (indiv/lit.)	121	116	132	112	88	30	55	62	76	71	67	89	52	
Shannon Weiner Diversity	1.02	1.13	1.09	0.91	0.88	0.65	0.77	0.93	0.72	0.79	0.93	0.89	0.66	
Evenness Index	0.57	0.63	0.61	0.57	0.63	0.59	0.56	0.58	0.52	0.57	0.67	0.55	0.60	
No. of species	6.00	6.00	6.00	5.00	4.00	3.00	4.00	5.00	4.00	4.00	4.00	5.00	3.00	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (indiv/lit.)	76	24	62	33	56	42	66	52	38	65	18	23	72	80
Shannon Weiner Diversity	0.82	0.44	0.75	0.38	0.82	0.59	0.78	0.80	0.63	0.74	0.33	0.38	0.89	0.75
Evenness Index	0.51	0.63	0.54	0.55	0.51	0.54	0.56	0.58	0.57	0.53	0.48	0.55	0.55	0.47
No. of species	5.00	2.00	4.00	2.00	5.00	3.00	4.00	4.00	3.00	4.00	2.00	2.00	5.00	5.00
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (indiv/lit.)	60		65											
Shannon Weiner Diversity	0.95		0.36											
Evenness Index	0.69		0.26											
No. of species	4		4											

Month of sample: May 2012

Physico -Chemical parameters

Sub Basin- Siang: I-IV

S.No.	Physical / Chemical Characteristics	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Water Temperature (°C)	14.3	14.1	13.9	14.8	12.9	13.9	14.2	14.1	14	13.3	13.9	13.4	13
2	Dissolved Oxygen (mg/l)	9.09	9.1	9.15	9.3	9.4	9.1	9	9.1	9.05	9.3	9.15	9.2	9.25
3	Turbidity (NTU)	3.8	4.2	1.2	5.2	7.1	7.5	10	13	9	4.12	11.9	10.3	6.73
4	Total Suspended Solids (mg/l)	26	28	12	31	35	35	41	45	38	27	43	43	33
5	pH	8.45	8.20	8.40	8.40	8.40	8.30	8.19	8.25	8.70	8.21	8.35	8.38	8.45
6	Electrical Conductivity (µS/cm)	245	216	213	229	188	187	123	209	181	66	192	187	78
7	Total Dissolved Solids (mg/l)	150.4	132.6	130.8	140.6	115.4	114.8	75.5	128.3	111.1	40.5	117.9	114.8	47.9
8	Biological Oxygen Demand (mg/l)	1	0.8	1	1	0.9	0.8	0.9	0.8	1	0.67	0.59	0.55	0.67
9	Chemical Oxygen Demand (mg/l)	2.9	2.3	2.7	3.5	3	2	3	2.4	2.9	2.99	3.09	2.43	2.56
10	Total Coliform (MPN / 100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	6	7	8	5	5	6	6	7	6	5	6	6	5
12	Total alkalinity (mg/l of CaCO ₃)	32	33	34	31	30	35	34	33	32	34	32	33	32
13	Nitrates (NO ₃) (mg/l)	0.040	0.045	0.042	0.035	0.031	0.035	0.037	0.029	0.031	0.022	0.021	0.020	0.020
14	Sulphate (mg/l)	5	4	6	8	6	6	7	5	5	4	4	6	7

15	Phosphate (PO ₄) (mg/l)	0.004	0.004	0.004	0.001	0.002	0.003	0.004	0.007	0.003	0.001	0.001	0.001	0.002
16	Total Hardness (mg/l)	25	24	23	23	24	26	25	25	26	27	25	24	24
17	Calcium hardness (mg/l)	22	21	21	21	21	23	23	22	23	24	22	21	20
18	Calcium ions (mg/ l)	8.8	8.4	8.4	8.4	8.4	9.2	9.2	8.8	9.2	9.6	8.8	8.4	8
19	Magnesium Hardness (mg/l)	3.0	3.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0	4.0
20	Magnesium ions (mg/l)	2.112	2.016	2.016	2.016	2.016	2.208	2.208	2.112	2.208	2.304	2.112	2.016	1.92
21	Potassium (mg/l)	0.7	0.3	0.8	1.9	0.5	0.7	1.1	0.8	1.2	0.46	0.32	1.78	2.09
22	Sodium (mg/l)	1.4	1.4	1.1	2.7	1.7	1.9	1.5	1.3	1.9	1.14	1.06	3.21	3.89
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	0.01	0.01	0.01	ND	ND	ND	0.01	0.00	0.00	0.00
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub Basin- Yamne and Simang

S.No.	Physical / Chemical Characteristics	Y1	Y2	Y3	Y4	SM1	SM2	SM3
1	Water Temperature (°C)	14.3	13.8	13.9	14	13.5	14	13.9
2	Dissolved Oxygen (mg/l)	8.9	9.1	9.05	8.95	9.13	8.9	9
3	Turbidity (NTU)	2.45	3.67	3.41	4.98	11.33	10.45	10.44
4	Total Suspended Solids (mg/l)	19	25	23	30	42	39	39
5	pH	8.36	8.23	8.48	8.43	8.37	8.37	8.23
6	Electrical Conductivity (µS/cm)	134	176	159	189	234	190	189
7	Total Dissolved Solids (mg/l)	83.1	109.1	98.6	117.2	145.1	117.8	117.2
8	Biological Oxygen Demand (mg/l)	0.56	1.28	0.78	1.02	1.22	0.76	0.76
9	Chemical Oxygen Demand (mg/l)	2.98	3.43	2.87	2.78	2.98	2.9	2.98
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A
11	Chloride (mg/l)	6.34	7.93	6.66	6.34	5.71	6.03	5.39
12	Total alkalinity (mg/l of CaCO ₃)	34.58	31.16	40.66	30.40	46.74	46.74	37.24
13	Nitrates (NO ₃) (mg/l)	0.080	0.001	0.003	0.006	0.006	0.007	0.005
14	Sulphate (mg/l)	4.50	5.14	3.85	3.00	4.07	3.43	2.36
15	Phosphate (PO ₄) (mg/l)	0.005	0.008	0.001	0.002	0.000	0.000	0.000
16	Total Hardness (mg/l)	31.12	28.04	36.59	27.36	42.07	42.07	33.52
17	Calcium hardness (mg/l)	28.01	25.24	32.93	24.62	37.86	37.86	30.16
18	Calcium ions (mg/ l)	11.20	10.10	13.17	9.85	15.14	15.14	12.07
19	Magnesium Hardness (mg/l)	3.11	2.80	3.66	2.74	4.21	4.21	3.35
20	Magnesium ions (mg/l)	2.69	2.42	3.16	2.36	3.63	3.63	2.90
21	Potassium (mg/l)	0.87	0.78	0.32	0.89	0.98	0.31	1.45
22	Sodium (mg/l)	1.73	1.21	1.06	1.19	1.65	1.27	2.56
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	0.001	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND

Sub basin- Siyom: I-III and Hirit

S.No.	Physical / Chemical Characteristics	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Water Temperature (°C)	13	14.2	14.2	14.5	14.9	14.1	14.2	13.7	13.1	12.8	12.6	12	11
2	Dissolved Oxygen (mg/l)	9.5	8.99	8.97	8.9	8.85	8.9	8.9	9.22	9.55	9.48	9.55	9.88	10.1
3	Turbidity (NTU)	4.78	9.21	5.02	10.09	7.12	8.21	8.17	7	9.1	3.12	5.1	5.02	2.09
4	Total Suspended Solids (mg/l)	29	36	30	37	35	36	36	35	37	24	31	30	16
5	pH	7.45	7.59	7.56	7.76	8.15	8.32	8.34	7.9	7.6	7.42	7.87	7.98	7.51
6	Electrical Conductivity (µS/cm)	98.2	76	81	112	124	59.8	89	90	93	76.9	112	52	167
7	Total Dissolved Solids (mg/l)	60.9	47.1	50.2	69.4	76.9	37.1	55.2	55.8	57.7	47.7	69.4	32.2	103.5
8	Biological Oxygen Demand (mg/l)	0.98	0.77	0.39	0.76	0.76	0.76	0.76	0.5	0.5	0.64	0.9	0.99	0.81
9	Chemical Oxygen Demand (mg/l)	2.12	2.43	2.54	2.65	2.65	2.45	2.9	2.6	2.4	2.87	2.98	2.9	3.42
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	7.61	6.03	4.76	4.76	4.44	5.08	6.03	9.83	6.66	7.61	6.66	4.44	8.18
12	Total alkalinity (mg/l of CaCO ₃)	26.22	23.56	21.28	22.42	21.28	29.64	15.20	27.74	28.88	28.88	19.00	29.64	36.10
13	Nitrates (NO ₃) (mg/l)	0.008	0.001	0.005	0.013	0.001	0.014	0.001	0.001	0.001	0.001	0.006	0.005	0.002
14	Sulphate (mg/l)	4.07	3.64	3.00	3.43	3.85	1.50	3.85	2.78	2.78	4.07	1.50	4.50	4.71
15	Phosphate (PO ₄) (mg/l)	0.003	0.002	0.005	0.008	0.001	0.010	0.002	0.001	0.005	0.002	0.003	0.003	0.002
16	Total Hardness (mg/l)	23.60	21.20	19.15	20.18	19.15	26.68	13.68	24.97	25.99	25.99	17.10	26.68	32.49
17	Calcium hardness (mg/l)	21.24	19.08	17.24	18.16	17.24	24.01	12.31	22.47	23.39	23.39	15.39	24.01	29.24
18	Calcium ions (mg/ l)	8.50	7.63	6.89	7.26	6.89	9.60	4.92	8.99	9.36	9.36	6.16	9.60	11.70
19	Magnesium Hardness (mg/l)	2.36	2.12	1.92	2.02	1.92	2.67	1.37	2.50	2.60	2.60	1.71	2.67	3.25
20	Magnesium ions (mg/l)	2.04	1.83	1.65	1.74	1.65	2.30	1.18	2.16	2.25	2.25	1.48	2.30	2.81
21	Potassium (mg/l)	1.23	1.11	0.45	0.76	0.07	1.31	0.09	0.3	1.1	0.45	0.54	0.28	0.77
22	Sodium (mg/l)	2.67	2.67	1.56	1.34	1.14	2.89	1.78	1.2	1.8	1.15	1.65	1.54	1.51

23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	0.001	0.001	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub Basin- Yargyap Chhu

S.No.	Physical / Chemical Characteristics	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Water Temperature (°C)	13.23	13.9	12.9	12.3	12.2	12.5	11.5	11.7	11.2	10.8	10	10.2	9.2	8.8
2	Dissolved Oxygen (mg/l)	9.35	9.02	9.44	9.75	9.8	9.79	9.97	9.94	10	10.33	10.6	10.3	10.5	10.85
3	Turbidity (NTU)	5.11	9.09	9.12	13.02	19.12	19.056	11.13	5.21	6.04	2.03	6.02	3.01	2.06	1.02
4	Total Suspended Solids (mg/l)	31	40	41	45	49	48	43	31	33	17	34	23	16	11
5	pH	7.91	7.61	7.76	7.42	7.87	7.67	7.98	7.81	7.09	7.35	7.28	7.25	7.38	7.67
6	Electrical Conductivity (µS/cm)	165	89.2	119	121	67	65	63.9	98	62	68	102	88	51.3	46
7	Total Dissolved Solids (mg/l)	102.3	55.304	73.78	75.02	41.54	40.3	39.618	60.76	38.44	42.16	63.24	54.56	31.806	28.52
8	Biological Oxygen Demand (mg/l)	0.09	0.76	0.56	0.43	0.52	0.65	0.12	0.99	0.9	0.59	0.88	0.9	0.65	0.56
9	Chemical Oxygen Demand (mg/l)	2.55	2.13	2.19	2.16	2.45	2.17	1.98	1.55	2.31	2.15	2.89	2.87	2.21	2.34
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	7.61	7.93	7.30	5.08	6.03	5.39	6.66	5.39	5.39	7.30	6.66	7.30	7.30	7.61
12	Total alkalinity (mg/l of CaCO ₃)	25.46	25.08	21.28	23.86	8.70	23.90	24.81	21.28	20.52	17.10	21.28	20.22	21.28	9.12
13	Nitrates (NO ₃) (mg/l)	0.008	0.010	0.006	0.007	0.008	0.007	0.006	0.009	0.000	0.005	0.001	0.005	0.003	0.005
14	Sulphate (mg/l)	3.64	4.71	4.07	3.21	3.21	1.93	3.43	4.07	4.50	3.64	3.64	3.64	4.71	4.07
15	Phosphate (PO ₄) (mg/l)	0.008	0.006	0.005	0.008	0.006	0.001	0.010	0.002	0.001	0.006	0.005	0.008	0.006	0.002
16	Total Hardness (mg/l)	22.91	22.57	19.15	21.48	7.83	21.51	22.33	19.15	18.47	15.39	19.15	18.19	19.15	8.21
17	Calcium hardness (mg/l)	20.62	20.31	17.24	19.33	7.05	19.36	20.10	17.24	16.62	13.85	17.24	16.37	17.24	7.39
18	Calcium ions (mg/ l)	8.25	8.13	6.89	7.73	2.82	7.74	8.04	6.89	6.65	5.54	6.89	6.55	6.89	2.95
19	Magnesium Hardness (mg/l)	2.29	2.26	1.92	2.15	0.78	2.15	2.23	1.92	1.85	1.54	1.92	1.82	1.92	0.82
20	Magnesium ions (mg/l)	1.98	1.95	1.65	1.86	0.68	1.86	1.93	1.65	1.60	1.33	1.65	1.57	1.65	0.71

21	Potassium (mg/l)	0.09	0.98	0.21	0.31	0.67	0.06	0.23	0.67	0.19	1.45	0.76	0.56	0.98	0.52
22	Sodium (mg/l)	0.89	1.6	0.98	1.27	1.76	1.24	1.67	1.76	0.89	2.56	1.88	0.82	1.6	1.34
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Outside basin

S.No.	Physical / Chemical Characteristics	B1	B2
1	Water Temperature (° C)	15.5	14.7
2	Dissolved Oxygen (mg/l)	9.09	9.22
3	Turbidity (NTU)	15.2	13.21
4	Total Suspended Solids (mg/l)	46	41
5	pH	8.30	8.23
6	Electrical Conductivity (µS/cm)	225.6	198.9
7	Total Dissolved Solids (mg/l)	150.4	132.6
8	Biological Oxygen Demand (mg/l)	1	0.8
9	Chemical Oxygen Demand (mg/l)	2.9	2.3
10	Total Coliform (MPN /100 ml)	A	A
11	Chloride (mg/l)	7.2	6.7
12	Total alkalinity (mg/l of CaCO ₃)	36	31
13	Nitrates (NO ₃) (mg/l)	0.040	0.045
14	Sulphate (mg/l)	5.67	4.89
15	Phosphate (PO ₄) (mg/l)	0.004	0.004
16	Total Hardness (mg/l)	30	24
17	Calcium hardness (mg/l)	22.00	18.50
18	Calcium ions (mg/ l)	8.8	7.4
19	Magnesium Hardness (mg/l)	8.00	5.50
20	Magnesium ions (mg/l)	2.112	1.776
21	Potassium (mg/l)	0.7	0.3
22	Sodium (mg/l)	1.4	1.4
23	Iron (mg/l)	<0.01	<0.01
24	Manganese (mg/l)	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND
27	Copper (Cu) (mg/l)	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND
30	Lead (Pb) (mg/l)	ND	ND

Biological Parameters

Phytoplanktons

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnanthydium affinis</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthydium andicola</i>	-	-	-	-	-	-	-	+	-	-	-	+	-
3	<i>Achnanthydium austriaca</i>	+	-	+	-	+	+	+	-	+	+	+	-	+
4	<i>Achnanthydium austriaca</i> var. <i>helvetica</i>	-	+	-	+	+	-	-	+	-	-	-	+	-
5	<i>Achnanthydium biasoletiana</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
6	<i>Achnanthydium conspicua</i>	-	-	-	-	-	-	-	-	+	+	-	+	-
7	<i>Achnanthydium cranulata</i>	+	-	-	+	+	+	-	+	-	-	+	-	-
8	<i>Achnanthydium dispar</i>	-	-	+	-	-	-	+	-	-	-	-	-	+
9	<i>Achnanthydium exigua</i>	-	-	-	-	-	-	-	-	+	-	-	+	-
10	<i>Achnanthydium exilis</i>	+	-	-	-	-	+	+	-	-	-	-	-	-
11	<i>Achnanthydium fragilarioides</i>	-	+	-	+	-	-	-	+	-	+	-	-	-
12	<i>Achnanthydium Grimmei</i>	-	-	+	-	-	-	-	-	-	-	-	+	+
13	<i>Achnanthydium hauckiana</i>	-	-	-	-	+	+	+	-	-	+	+	-	-
14	<i>Achnanthydium holsti</i>	-	+	+	-	-	-	-	+	-	-	-	+	+
15	<i>Achnanthydium hungarica</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
16	<i>Achnanthydium kryophila</i>	-	-	-	+	+	-	-	-	-	-	-	-	-
17	<i>Achnanthydium lanceolata</i>	-	-	-	-	-	-	-	+	-	+	-	-	-
18	<i>Achnanthydium lapidosa</i>	+	-	+	-	-	+	-	-	+	-	+	+	+
19	<i>Achnanthydium lavenderi</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
20	<i>Achnanthydium lemmermanni</i>	-	+	+	-	+	-	+	-	-	-	-	-	+
21	<i>Achnanthydium Lillijeborgei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
22	<i>Achnanthydium linearis</i>	-	-	-	-	-	-	-	+	-	+	-	-	-
23	<i>Achnanthydium linearis</i> var. <i>pusila</i>	+	-	-	-	+	-	+	-	+	-	+	+	-
24	<i>Achnanthydium microcephala</i>	-	+	-	+	-	-	-	+	-	-	-	-	-
25	<i>Achnanthydium minutissima</i>	+	-	-	-	-	+	-	-	-	+	-	-	-
26	<i>Achnanthydium nodosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
27	<i>Achnanthydium plonensis</i>	-	-	+	-	+	-	+	+	+	-	-	+	+
28	<i>Achnanthydium saxonica</i>	-	+	-	+	-	-	-	-	-	-	-	-	-

29	<i>Achnantheidium</i> sp.	-	-	-	-	-	-	-	-	-	+	-	-	-
30	<i>Achnantheidium suchlandti</i>	-	-	+	-	-	+	+	-	+	-	-	-	+
31	<i>Achnantheidium taeniata</i>	+	-	-	-	-	-	-	+	-	+	-	-	-
32	<i>Achnantheidiumb conspicua</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
33	<i>Achnantheidiumlinearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
34	<i>Anomoeneis</i> sp.	+	-	-	-	-	+	-	-	-	-	+	+	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	+	-	+	-	-	-	-	-	-	-	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	+	-	-	-	-	+	+	-	-	-	+
37	<i>Cocconeis placentula</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
38	<i>Cymbella</i> sp.	-	-	-	-	-	+	-	-	-	-	+	-	-
39	<i>Cymbella affinis</i>	-	+	-	-	-	-	-	-	+	-	-	-	-
40	<i>Cymbella delicatula</i>	+	-	-	-	+	-	-	+	-	+	-	+	-
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
42	<i>Cymbella microcephala</i>	-	+	+	+	-	-	-	-	-	-	-	-	+
43	<i>Cymbella pusila</i>	-	-	-	-	-	+	-	+	-	-	-	+	-
44	<i>Cymbella tumida</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
45	<i>Cymbella turgida</i>	+	-	+	-	+	-	-	-	+	-	+	-	+
46	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	-	+	-	-	+	+	-	-	-	-	-
48	<i>Diatoma anceps</i>	+	-	+	-	-	+	-	-	+	+	-	-	+
49	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	-	-	-	-	-	-	-	-	-	+	-
51	<i>Diatoma vulgare</i>	-	-	-	-	+	-	-	-	-	+	+	-	-
52	<i>Didymosphaenia geminata</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
53	<i>Eunotia linearis</i>	+	+	-	+	-	-	+	-	-	-	-	+	-
54	<i>Eunotia</i> sp.	-	-	+	-	-	+	-	-	+	-	+	-	+
55	<i>Fragilaria capucina</i>	-	-	-	-	+	-	-	+	-	+	-	-	-
56	<i>Fragilaria construens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	+	+	-	-	+	+	-	+	-	-	-	+
59	<i>Fragilaria rumpens</i>	+	-	-	-	-	-	-	-	-	-	+	+	-
60	<i>Fragilaria</i> sp.	-	-	-	-	+	-	+	-	-	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	-	+	-	-	-	-	-	+	-	-	-	+
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
63	<i>Fragilaria pinnata</i>	+	+	-	+	-	+	+	+	-	+	-	-	-

64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	+	-	+	-	-	-	+	-	-	-	-	+	+
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	+	+	-	+	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
69	<i>Gomphonema olivaceum</i>	+	-	+	-	-	+	-	-	+	-	-	-	+
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
73	<i>Gomphonema gracile</i>	+	-	+	-	+	-	-	-	-	-	-	-	+
74	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	+	-	-	-	-	-	-	-	+	+	-	+	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	+	-	+	-	+	+	-	-	-	+	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	+	-	-	-	+	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	+	-	-	-	-	-	+	-	-	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	+	+	+	-	-	-	-	+	-	-	-	+
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	-	+	-	-	-	+	-	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
83	<i>Gomphonema parvulum</i>	-	+	-	-	-	-	-	+	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	+	-	-	-	+	-	-	-	+	-	+
86	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	+	+	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
89	<i>Hannaea arcus</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	+	-	-	-	-	+	+	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-	+	+	-	-	-	-	-	-	-	+	+
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
94	<i>Navicula andium</i>	-	+	-	+	-	-	-	+	-	-	-	-	-
95	<i>Navicula cryptocephala</i>	-	-	-	-	+	-	-	-	-	-	+	-	-

96	<i>Navicula feverborni</i>	-	-	-	-	-	+	-	-	-	+	-	-	-
97	<i>Navicula halophila</i>	+	-	-	-	-	-	+	-	-	-	-	-	-
98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	+	-	-	-	-	-	+	-
102	<i>Pinnularia</i> sp.	-	-	+	-	+	+	-	+	-	+	-	-	+
103	<i>Planothidium lanceolata</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	+	-	-	-	-	-	-	-	-	-	-	+	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	-	+	-	-	+	-	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	+	+	-	-	-	-	-	+	-	-	-	+
112	<i>Synedra rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
113	<i>Synedra ulna</i>	-	-	-	-	+	+	-	-	-	+	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	+	+	-	-	-	-	-	-	-	-	+
115	<i>Tabellaria flocculosa</i>	-	-	-	-	-	-	-	+	-	-	-	+	-
116	<i>Tetracyclus</i> sp.	+	-	-	-	-	-	+	-	-	-	+	-	-
	Total	28	19	26	18	22	26	22	23	24	25	21	28	26

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	+	+	+	-	-	-	-
3	<i>Achnanthidium austriaca</i>	-	-	-	-	-	+	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-	+	+	-	-	+
5	<i>Achnanthidium biasoletiana</i>	-	+	-	-	-	-	-
6	<i>Achnanthidium conspicua</i>	-	-	+	-	-	-	+
7	<i>Achnanthidium cranulata</i>	+	-	-	-	+	+	-
8	<i>Achnanthidium dispar</i>	-	-	-	-	-	-	-
9	<i>Achnanthidium exigua</i>	+	-	+	-	-	-	-
10	<i>Achnanthidium exilis</i>	-	+	-	-	-	-	+
11	<i>Achnanthidium fragilarioides</i>	+	-	-	+	-	-	-
12	<i>Achnanthidium Grimmei</i>	-	-	+	-	-	-	-
13	<i>Achnanthidium hauckiana</i>	-	+	-	-	-	+	+
14	<i>Achnanthidium holsti</i>	+	-	+	+	-	-	-
15	<i>Achnanthidium hungarica</i>	-	-	-	-	-	-	-
16	<i>Achnanthidium kryophila</i>	+	-	-	-	-	+	+
17	<i>Achnanthidium lanceolata</i>	+	+	-	-	-	-	-
18	<i>Achnanthidium lapidosa</i>	-	-	+	-	+	+	-
19	<i>Achnanthidium lavenderi</i>	-	-	-	-	-	+	-
20	<i>Achnanthidium lemmermanni</i>	+	-	-	+	-	-	-
21	<i>Achnanthidium Lillijeborgei</i>	-	-	-	-	-	-	+
22	<i>Achnanthidium linearis</i>	+	+	-	-	-	-	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	+	-	+	-	-
24	<i>Achnanthidium microcephala</i>	+	-	-	+	-	-	-
25	<i>Achnanthidium minutissima</i>	-	-	-	-	-	-	+
26	<i>Achnanthidium nodosa</i>	+	-	-	-	-	-	-
27	<i>Achnanthidium plonensis</i>	+	+	+	-	-	-	-
28	<i>Achnanthidium saxonica</i>	-	-	-	+	-	+	-
29	<i>Achnanthidium</i> sp.	+	-	-	-	-	-	-
30	<i>Achnanthidium suchlandti</i>	-	-	-	-	-	-	-
31	<i>Achnanthidium taeniata</i>	+	-	-	-	-	+	-
32	<i>Achnanthidiumb conspicua</i>	-	-	+	-	-	+	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-
34	<i>Anomoeneis</i> sp.	+	-	+	-	-	+	+

35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	-	+	+	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	+	-	-	-	-	+	+
37	<i>Cocconeis placentula</i>	-	-	-	-	-	-	-
38	<i>Cymbella</i> sp.	-	-	-	-	-	-	-
39	<i>Cymbella affinis</i>	-	-	-	+	-	+	-
40	<i>Cymbella delicatula</i>	+	-	+	-	-	-	-
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	-
42	<i>Cymbella microcephala</i>	-	-	-	+	+	-	+
43	<i>Cymbella pusila</i>	+	+	+	-	-	-	-
44	<i>Cymbella tumida</i>	-	-	-	-	-	-	-
45	<i>Cymbella turgida</i>	-	-	-	-	+	-	+
46	<i>Cymbella ventricosa</i>	-	-	+	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	-	+	-	-	-
48	<i>Diatoma anceps</i>	-	-	-	-	-	-	-
49	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i> ¹	-	+	+	-	-	-	-
51	<i>Diatoma vulgare</i>	-	-	-	-	-	-	-
52	<i>Didymosphaenia geminata</i>	-	-	-	-	-	+	-
53	<i>Eunotia linearis</i>	-	-	+	+	-	-	-
54	<i>Eunotia</i> sp.	-	-	-	-	-	-	-
55	<i>Fragilaria capucina</i>	+	+	-	-	+	-	-
56	<i>Fragilaria construens</i>	-	-	-	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	+	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	+	-	+	+
59	<i>Fragilaria rumpens</i>	+	+	+	-	+	-	-
60	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	+
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	-	+	-
63	<i>Fragilaria pinnata</i>	+	-	-	+	-	-	-
64	<i>Gomphonema gracile</i>	-	+	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	-	-	-	+	-
66	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	+	-	-	-	+
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	-	-	-	-	+	-	-
70	<i>Gomphonema parvulum</i>	-	+	-	-	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	+	-
72	<i>Gomphonema bohemicum</i>	+	-	-	-	-	-	-

73	<i>Gomphonema gracile</i>	-	-	-	-	+	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	-	+	+
75	<i>Gomphonema herbidense</i>	-	-	-	-	+	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	+	-	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	+	-	-	-	-	+	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	-	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	+	-	-	+	-	-	+
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	+	+	-	-	+	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	+	+	-
83	<i>Gomphonema parvulum</i>	+	-	-	+	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	+	-	-	-	-	-
86	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	+
89	<i>Hannaea arcus</i>	+	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	+	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	+	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	+	+	-	+	-	-	+
95	<i>Navicula cryptocephala</i>	-	-	-	-	+	+	-
96	<i>Navicula feverborni</i>	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	-	-	-	-	-	-	-
98	<i>Navicula radiosa</i>	-	-	-	-	-	+	-
99	<i>Navicula radiosa</i> var. <i>Tenella</i>	-	-	-	-	+	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	+	+	-	-	-	-
102	<i>Pinnularia</i> sp.	+	-	-	-	-	-	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	+	-	-	+	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	+	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	+
108	<i>Surirella</i> sp.	+	-	-	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	+	+	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-

111	<i>Synedra amphirhynchus</i>	-	-	-	+	-	-	+
112	<i>Synedra rumpens</i>	-	-	-	-	-	-	-
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+	-	-	-	-	-
115	<i>Tabellaria flocculosa</i>	+	-	+	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-
	Total	33	21	24	19	17	27	21

Sub Basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	-	+	-	-	+	-	-	-	-	-	-	+	-
3	<i>Achnanthidium austriaca</i>	-	-	+	+	-	-	+	+	+	+	+	-	+
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-	-	-	-	-	-	-	-	-	-	+	-
5	<i>Achnanthidium biasoletiana</i>	-	-	+	-	+	-	+	-	-	-	-	-	-
6	<i>Achnanthidium conspicua</i>	+	-	-	-	-	+	-	-	-	+	-	+	-
7	<i>Achnanthidium cranulata</i>	-	+	+	-	-	-	+	+	+	-	-	-	+
8	<i>Achnanthidium dispar</i>	-	-	-	+	+	-	-	-	-	-	+	-	-
9	<i>Achnanthidium exigua</i>	-	+	+	-	-	-	-	-	-	-	-	+	-
10	<i>Achnanthidium exilis</i>	-	-	-	-	+	-	+	-	+	-	+	-	-
11	<i>Achnanthidium fragilarioides</i>	+	-	-	-	-	-	-	-	-	+	-	-	-
12	<i>Achnanthidium Grimmei</i>	-	+	-	-	-	-	+	-	-	-	-	+	-
13	<i>Achnanthidium hauckiana</i>	+	-	-	-	+	+	-	+	-	+	+	-	+
14	<i>Achnanthidium holsti</i>	-	-	+	+	-	-	-	-	-	-	-	+	-
15	<i>Achnanthidium hungarica</i>	-	-	-	-	-	-	+	-	+	-	-	-	-
16	<i>Achnanthidium kryophila</i>	+	-	-	-	-	+	-	+	-	-	-	-	-
17	<i>Achnanthidium lanceolata</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
18	<i>Achnanthidium lapidosa</i>	-	+	+	-	+	-	+	+	+	-	-	+	+
19	<i>Achnanthidium lavenderi</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
20	<i>Achnanthidium lemmermanni</i>	+	-	-	+	-	+	-	-	-	-	+	-	-
21	<i>Achnanthidium Lillijeborgei</i>	-	+	+	-	-	-	+	-	-	-	-	-	-
22	<i>Achnanthidium linearis</i>	+	-	-	-	+	+	-	-	-	+	-	-	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	+	-	+	-	+	+	-
24	<i>Achnanthidium microcephala</i>	-	+	+	-	-	-	-	-	-	-	-	-	-

25	<i>Achnanthidium minutissima</i>	+	-	-	-	-	-	+	-	+	+	-	-	+
26	<i>Achnanthidium nodosa</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
27	<i>Achnanthidium plonensis</i>	-	-	-	-	+	-	-	-	-	-	+	+	-
28	<i>Achnanthidium saxonica</i>	+	+	-	-	-	+	-	+	-	-	-	-	-
29	<i>Achnanthidium</i> sp.	-	-	-	-	-	-	+	-	-	+	-	-	-
30	<i>Achnanthidium suchlandti</i>	-	-	-	+	-	-	-	-	-	-	+	-	+
31	<i>Achnanthidium taeniata</i>	-	-	+	-	+	-	+	+	+	+	-	-	-
32	<i>Achnanthidiumb conspicua</i>	-	-	-	-	-	-	-	+	-	-	-	+	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	+	-	-	-	-	+	-	-	-	+	-	-	-
34	<i>Anomoeneis</i> sp.	-	-	+	-	-	-	+	+	+	-	-	+	+
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	+	-	+	-	+	-	-	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
37	<i>Cocconeis placentula</i>	-	-	-	-	-	-	+	-	-	+	-	-	-
38	<i>Cymbella</i> sp.	+	+	-	-	-	+	-	-	-	-	-	-	+
39	<i>Cymbella affinis</i>	-	-	+	-	+	-	-	+	-	-	-	-	-
40	<i>Cymbella delicatula</i>	+	-	-	-	-	+	+	-	+	+	-	+	-
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
42	<i>Cymbella microcephala</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
43	<i>Cymbella pusila</i>	-	-	+	-	-	-	+	-	-	-	-	+	+
44	<i>Cymbella tumida</i>	-	+	-	-	-	-	-	-	-	-	+	-	-
45	<i>Cymbella turgida</i>	-	-	-	+	-	-	+	-	+	-	-	-	-
46	<i>Cymbella ventricosa</i>	+	-	-	-	-	+	-	-	-	-	-	+	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
48	<i>Diatoma anceps</i>	-	-	-	+	-	-	+	-	+	-	-	-	+
49	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	+	-	+	-	+	-	-	+	-
51	<i>Diatoma vulgare</i>	-	+	+	-	-	-	-	-	-	+	-	-	-
52	<i>Didymosphaenia geminata</i>	-	-	-	-	-	-	-	+	-	-	-	-	-

53	<i>Eunotia linearis</i>	-	-	+	-	-	-	+	-	+	-	+	+	-
54	<i>Eunotia</i> sp.	+	-	-	+	-	+	-	-	-	-	-	-	+
55	<i>Fragilaria capucina</i>	-	-	-	-	+	-	-	-	-	+	-	-	-
56	<i>Fragilaria construens</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	-	-	+	+	-	-	+	-	-
59	<i>Fragilaria rumpens</i>	-	+	-	-	-	-	+	-	+	-	-	+	-
60	<i>Fragilaria</i> sp.	+	-	+	-	-	+	-	-	-	-	+	-	-
61	<i>Fragilaria vaucheriae</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
63	<i>Fragilaria pinnata</i>	+	-	+	-	-	+	+	-	+	-	+	-	+
64	<i>Gomphonema gracile</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	-	-	-	+	-	-	+	-	+	-	+	-	+
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	+	-	+	-
68	<i>Gomphonema olivaceoides</i>	+	+	-	-	-	+	-	-	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	-	-	+	-	-	-	+	-	+	-	-	-	+
70	<i>Gomphonema parvulum</i>	-	-	-	-	+	-	-	-	-	-	+	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
73	<i>Gomphonema gracile</i>	+	-	+	+	-	-	+	-	+	-	-	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	+	-	-	+	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	-	-	-	-	-	-	+	-	+	+	-	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	+	-	-	-	+	-	-	-	-	+	-	+
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	+	-	-	-	+	-	+	-	+	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	+	-	-	-	-	-	-	-	-	-

80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	+	-	-	-	+	-	+	-	-	-	+	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	+	-	-	+
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-	-	-	-	+	-	+	-	-	-	-	-
83	<i>Gomphonema parvulum</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	+	-	+	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	+	+	-	-	-	-	-	+	+	-
86	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-	-	-	-	+	-	-	-	-	-	-	-
89	<i>Hannaea arcus</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	-	-	+	-	-	-	-	+	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	+	-	-	+	-	+	-	-	-	+
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
93	<i>Melosira junergensii</i>	+	-	-	-	-	+	-	-	-	-	-	+	-
94	<i>Navicula andium</i>	-	-	+	-	+	-	-	-	-	-	-	-	-
95	<i>Navicula cryptocephala</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
96	<i>Navicula feverborni</i>	-	-	-	-	-	-	-	-	-	+	-	-	+
97	<i>Navicula halophila</i>	-	-	-	-	-	-	+	-	+	-	+	-	-
98	<i>Navicula radiosa</i>	-	-	-	-	+	-	-	+	-	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	-	-	-	-	-	+	+
102	<i>Pinnularia</i> sp.	-	+	+	-	-	-	-	-	-	+	-	-	+
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	+	-	-	-	-	+	+	+	+	-	-	+	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	-	+	-	-	-	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	+	-	-	-	-	-	-	-	-	-	-

108	<i>Surirella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	+
109	<i>Synedra</i> sp.	-	-	-	-	-	-	-	+	-	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	-	+	+	-	-	-	-	-	-	-	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
113	<i>Synedra ulna</i>	-	-	+	-	-	-	-	-	-	+	-	-	+
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
115	<i>Tabellaria flocculosa</i>	-	+	-	-	-	-	-	-	-	-	-	+	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	+	-	+	-	+	-	-
	Total	26	20	27	16	25	22	35	27	28	25	22	26	24

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	-	-	-	-	-	-	+	-	-	+	-	+	+	-
3	<i>Achnanthidium austriaca</i>	-	+	+	+	-	+	-	-	+	-	-	+	+	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-	-	-	+	-	+	-	+	+	-	+	-	+
5	<i>Achnanthidium biasoletiana</i>	-	-	-	+	-	+	-	-	+	-	-	-	+	-
6	<i>Achnanthidium conspicua</i>	+	+	+	-	+	-	+	+	-	-	+	+	+	+
7	<i>Achnanthidium cranulata</i>	-	-	-	+	-	+	-	-	+	+	-	-	-	-
8	<i>Achnanthidium dispar</i>	-	+	-	-	-	-	-	-	-	-	-	-	+	+
9	<i>Achnanthidium exigua</i>	-	-	-	-	-	-	+	-	+	-	-	+	-	-
10	<i>Achnanthidium exilis</i>	+	+	+	+	+	+	-	-	-	-	-	-	+	+
11	<i>Achnanthidium fragilarioides</i>	-	-	-	-	-	-	-	-	+	+	-	-	-	-
12	<i>Achnanthidium Grimmei</i>	-	-	-	-	-	-	+	-	-	-	-	+	+	-
13	<i>Achnanthidium hauckiana</i>	+	+	+	+	+	+	-	+	+	-	+	-	+	+
14	<i>Achnanthidium holsti</i>	-	-	-	-	-	-	+	-	-	+	-	+	-	-
15	<i>Achnanthidium hungarica</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
16	<i>Achnanthidium kryophila</i>	+	+	-	+	+	+	-	+	+	-	+	-	-	+
17	<i>Achnanthidium lanceolata</i>	-	-	-	-	-	-	-	-	-	+	-	+	+	-
18	<i>Achnanthidium lapidosa</i>	-	+	-	+	-	+	+	-	-	-	-	-	+	+
19	<i>Achnanthidium lavenderi</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
20	<i>Achnanthidium lemmermanni</i>	-	+	+	-	-	-	-	+	+	-	+	-	+	-
21	<i>Achnanthidium Lillijeborgei</i>	+	-	-	-	+	+	-	-	-	-	-	+	-	+
22	<i>Achnanthidium linearis</i>	-	-	+	-	-	-	-	+	-	+	+	+	+	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	+	-	+	-	-	+	-	+	-	-	-	-	-

24	<i>Achnanthidium microcephala</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	+
25	<i>Achnanthidium minutissima</i>	+	-	-	-	+	+	-	-	-	-	-	+	+	+
26	<i>Achnanthidium nodosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	<i>Achnanthidium plonensis</i>	-	+	+	-	-	+	+	-	+	+	-	-	+	-
28	<i>Achnanthidium saxonica</i>	-	-	-	-	-	-	-	+	-	-	+	-	-	-
29	<i>Achnanthidium</i> sp.	-	-	-	+	-	-	-	-	-	-	-	+	+	-
30	<i>Achnanthidium suchlandti</i>	-	+	-	-	-	+	-	-	+	-	-	-	-	-
31	<i>Achnanthidium taeniata</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
32	<i>Achnanthidiumb conspicua</i>	-	+	-	-	-	+	+	-	-	-	-	-	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	-	+	-	-	-	-	+	+	-	+	+	+	-
34	<i>Anomoeneis</i> sp.	+	-	-	+	+	+	+	-	-	-	-	-	-	+
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	+	-	-	-	+	+	-	-	+	+	-	+	-	+
37	<i>Cocconeis placentula</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
38	<i>Cymbella</i> sp.	-	-	-	+	-	+	-	+	-	-	+	-	+	-
39	<i>Cymbella affinis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	<i>Cymbella delicatula</i>	-	+	-	-	-	-	+	+	+	+	+	-	-	-
41	<i>Cymbella laevis</i>	-	-	-	+	-	-	-	-	-	-	-	+	-	-
42	<i>Cymbella microcephala</i>	+	-	-	-	+	-	-	-	-	-	-	-	-	+
43	<i>Cymbella pusila</i>	-	-	-	-	-	+	+	-	+	+	-	-	-	-
44	<i>Cymbella tumida</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
45	<i>Cymbella turgida</i>	+	-	+	+	+	+	-	-	+	-	-	+	+	+
46	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	+	+	-	-	+	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	-	-	-	-	-	-	-	+	-	-	-	-
48	<i>Diatoma anceps</i>	-	-	-	-	-	+	-	-	+	-	-	-	-	-
49	<i>Diatoma hiemale</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	-	-	-	+	+	-	-	-	-	-	-	-

51	<i>Diatoma vulgare</i>	-	-	-	+	-	-	-	-	+	-	-	+	-	-
52	<i>Didymosphaenia geminata</i>	-	-	+	-	-	-	-	-	-	-	-	-	+	-
53	<i>Eunotia linearis</i>	-	+	-	-	-	-	+	-	-	-	-	-	-	-
54	<i>Eunotia</i> sp.	-	-	-	+	-	+	-	+	+	-	+	-	-	-
55	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	+	+	-	+	-	-
56	<i>Fragilaria construens</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	+	+	+	-	+	+	-	-	+	-	-	-	+	+
59	<i>Fragilaria rumpens</i>	-	-	-	+	-	-	+	-	-	-	-	-	-	-
60	<i>Fragilaria</i> sp.	-	+	-	-	-	-	-	+	+	-	+	-	-	-
61	<i>Fragilaria vaucheriae</i>	+	-	-	-	+	+	-	-	-	-	-	+	-	+
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	+	-	-	-	-	-	-	-	-	-	+	-
63	<i>Fragilaria pinnata</i>	-	+	-	-	-	+	-	+	-	+	+	-	-	-
64	<i>Gomphonema gracile</i>	-	-	+	-	-	-	-	-	-	-	-	-	+	-
65	<i>Gomphonema helveticum</i>	-	+	-	-	-	-	-	-	+	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	-	+	-	-	-	+	-	-	-	-	-	+	-	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-	-	-	+	-	+	-	-	-	-	-	-	+
68	<i>Gomphonema olivaceoides</i>	-	-	-	+	-	-	-	+	-	-	+	-	-	-
69	<i>Gomphonema olivaceum</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
70	<i>Gomphonema parvulum</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	+	-	-	-	-	-	-	-	-	-	+	-
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
73	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	+	-	-	+	-	-
74	<i>Gomphonema helveticum</i>	+	+	-	-	+	-	-	-	-	-	-	-	-	+
75	<i>Gomphonema herbidense</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	+	-	+	-	+	-	+	-	-	+	-	-	-
77	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-

	var. <i>subclavata</i>														
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	+	-	-	-	+	-	-	-	-	-	-	-	-	+
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	+	-	-	-	+	+	-	-	+	-	+	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-	+	+	-	+	-	-	-
83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	+	-	+	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
85	<i>Gomphonema</i> <i>sphaerophorum</i>	-	+	+	+	-	-	-	-	-	-	-	-	+	-
86	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-	+	-	+	-	-	+	-	-	+	-	+	+
89	<i>Hannaea arcus</i>	-	-	-	-	-	+	+	-	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	+	-	-	-	-	+	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-	+	-	-	+	-	-	-
94	<i>Navicula andium</i>	+	-	-	-	+	-	-	-	-	+	-	-	-	+
95	<i>Navicula cryptocephala</i>	-	-	-	+	-	-	-	-	+	-	-	-	-	-
96	<i>Navicula feyerborni</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	+
97	<i>Navicula halophila</i>	-	+	-	-	-	-	-	-	-	-	-	+	-	-
98	<i>Navicula radiosa</i>	-	-	+	-	-	-	-	-	-	-	-	-	+	+
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101	<i>Pinnularia molaris</i>	-	-	-	-	-	+	+	-	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	-	-	-	-	-	+	-	-	+	+	-	-	-	+
103	<i>Planothidium lanceolata</i>	-	-	+	-	-	-	-	-	-	-	-	-	+	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	-	-	-	-	+	+	-	-	+	-	-	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	-	-	-	-	-	+	-	-
107	<i>Surirella ovata</i>	+	-	+	-	+	+	-	-	-	-	-	-	+	+
108	<i>Surirella</i> sp.	-	-	-	-	-	-	-	-	+	+	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	+
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	+	-	-	-	+	-	-	-	-	-	-	-	-	+
112	<i>Synedra rumpens</i>	-	-	+	-	-	-	-	+	-	-	+	-	+	-
113	<i>Synedra ulna</i>	-	-	-	-	-	+	-	-	+	-	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
115	<i>Tabellaria flocculosa</i>	-	-	+	-	-	-	+	-	-	+	-	+	+	-
116	<i>Tetracyclus</i> sp.	-	+	-	+	-	-	-	-	-	-	-	-	-	-
	Total	21	32	23	25	21	36	26	22	32	23	22	27	33	29

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnanthidium affinis</i>	+	-
2	<i>Achnanthidium andicola</i>	-	+
3	<i>Achnanthidium austriaca</i>	+	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-
5	<i>Achnanthidium biasoletiana</i>	-	-
6	<i>Achnanthidium conspicua</i>	-	+
7	<i>Achnanthidium cranulata</i>	+	-
8	<i>Achnanthidium dispar</i>	-	-
9	<i>Achnanthidium exigua</i>	-	+
10	<i>Achnanthidium exilis</i>	+	-
11	<i>Achnanthidium fragilarioides</i>	-	-
12	<i>Achnanthidium Grimmei</i>	-	+
13	<i>Achnanthidium hauckiana</i>	-	-
14	<i>Achnanthidium holsti</i>	-	-
15	<i>Achnanthidium hungarica</i>	+	-
16	<i>Achnanthidium kryophila</i>	-	+
17	<i>Achnanthidium lanceolata</i>	-	-
18	<i>Achnanthidium lapidosa</i>	+	-
19	<i>Achnanthidium lavenderi</i>	-	-
20	<i>Achnanthidium lemmermanni</i>	-	+
21	<i>Achnanthidium Lilljeborgei</i>	-	-
22	<i>Achnanthidium linearis</i>	-	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	+
24	<i>Achnanthidium microcephala</i>	-	-
25	<i>Achnanthidium minutissima</i>	+	-
26	<i>Achnanthidium nodosa</i>	-	-
27	<i>Achnanthidium plonensis</i>	-	-
28	<i>Achnanthidium saxonica</i>	-	+
29	<i>Achnanthidium</i> sp.	-	-
30	<i>Achnanthidium suchlandti</i>	-	-
31	<i>Achnanthidium taeniata</i>	+	-
32	<i>Achnanthidiumb conspicua</i>	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	+
34	<i>Anomoeneis</i> sp.	+	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	+

36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-
37	<i>Cocconeis placentula</i>	-	-
38	<i>Cymbella</i> sp.	-	+
39	<i>Cymbella affinis</i>	-	-
40	<i>Cymbella delicatula</i>	+	+
41	<i>Cymbella laevis</i>	-	-
42	<i>Cymbella microcephala</i>	-	-
43	<i>Cymbella pusila</i>	-	+
44	<i>Cymbella tumida</i>	-	-
45	<i>Cymbella turgida</i>	+	-
46	<i>Cymbella ventricosa</i>	-	+
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-
48	<i>Diatoma anceps</i>	+	-
49	<i>Diatoma hiemale</i>	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	+
51	<i>Diatoma vulgare</i>	-	-
52	<i>Didymosphaenia geminata</i>	-	+
53	<i>Eunotia linearis</i>	+	-
54	<i>Eunotia</i> sp.	-	-
55	<i>Fragilaria capucina</i>	-	-
56	<i>Fragilaria construens</i>	-	+
57	<i>Fragilaria inflata</i>	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-
59	<i>Fragilaria rumpens</i>	+	+
60	<i>Fragilaria</i> sp.	-	-
61	<i>Fragilaria vaucheriae</i>	-	+
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-
63	<i>Fragilaria pinnata</i>	+	-
64	<i>Gomphonema gracile</i>	-	-
65	<i>Gomphonema helveticum</i>	-	-
66	<i>Gomphonema intricatum</i>	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	+
68	<i>Gomphonema olivaceoides</i>	-	-
69	<i>Gomphonema olivaceum</i>	+	-
70	<i>Gomphonema parvulum</i>	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-
72	<i>Gomphonema bohemicum</i>	-	-
73	<i>Gomphonema gracile</i>	+	-
74	<i>Gomphonema helveticum</i>	-	-

75	<i>Gomphonema herbidense</i>	+	+
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	+
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	+	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-
81	<i>Gomphonema olivaceum</i>	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-
83	<i>Gomphonema parvulum</i>	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	+	+
85	<i>Gomphonema sphaerophorum</i>	-	-
86	<i>Gomphonema. intricatum</i>	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
89	<i>Hannaea arcus</i>	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
93	<i>Melosira junergensii</i>	-	+
94	<i>Navicula andium</i>	-	-
95	<i>Navicula cryptocephala</i>	-	-
96	<i>Navicula feverborni</i>	-	-
97	<i>Navicula halophila</i>	+	+
98	<i>Navicula radiosa</i>	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-
100	<i>Pinnularia borealis</i>	-	-
101	<i>Pinnularia molaris</i>	-	-
102	<i>Pinnularia</i> sp.	-	-
103	<i>Planothidium lanceolata</i>	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	+	-
105	<i>Reimeria sinuata</i>	-	-
106	<i>Stauroneis</i> sp.	-	-
107	<i>Surirella ovata</i>	-	-
108	<i>Surirella</i> sp.	-	-
109	<i>Synedra</i> sp.	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
111	<i>Synedra amphirhynchus</i>	-	-
112	<i>Synedra rumpens</i>	-	-
113	<i>Synedra ulna</i>	-	-

114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
115	<i>Tabellaria flocculosa</i>	-	+
116	<i>Tetracyclus</i> sp.	+	-
-	Total	28	26

DENSITY & DIVERSITY OF PHYTOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/lit.)	387	496	209	476	296	367	469	605	451	367	307	666	867	
Shannon Weiner Diversity	2.17	1.79	2.11	1.63	1.88	2.11	2.02	2.05	2.13	2.16	1.97	2.23	2.14	
Evenness Index	0.65	0.61	0.65	0.56	0.61	0.65	0.65	0.65	0.67	0.67	0.65	0.67	0.66	
No. of species	28	19	26	18	22	26	22	23	24	25	21	28	26	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/lit.)	396	421	432	320	267	432	321							
Shannon Weiner Diversity	2.33	1.91	2.11	1.76	1.65	2.19	2.01							
Evenness Index	0.67	0.63	0.66	0.60	0.58	0.66	0.66							
No. of species	33	21	24	19	17	27	21							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/lit.)	547	278	355	257	438	367	498	441	209	287	245	453	401	
Shannon Weiner Diversity	2.16	1.92	2.19	1.55	2.13	2.07	2.22	2.25	1.64	2.09	2.07	2.17	2.19	
Evenness Index	0.66	0.64	0.66	0.56	0.66	0.67	0.69	0.68	0.57	0.67	0.67	0.67	0.69	
No. of species	26	20	27	16	25	22	25	27	18	23	22	26	24	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/lit.)	603	765	421	456	357	459	876	375	675	453	322	542	766	590
Shannon Weiner Diversity	2.25	2.32	2.14	2.19	1.88	2.38	2.24	1.87	2.33	2.13	2.09	2.23	2.36	2.21
Evenness Index	0.67	0.67	0.68	0.68	0.62	0.66	0.69	0.60	0.67	0.68	0.68	0.68	0.67	0.66
No. of species	29	32	23	25	21	36	26	22	32	23	22	27	33	29
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/lit.)	254		360											
Shannon Weiner Diversity	1.38		1.88											
Evenness Index	0.41		0.49											
No. of species	29		47											

Phytobenthos

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnantheidium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnantheidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
3	<i>Achnantheidium boyei</i>	+	-	+	+	-	-	+	-	+	+	+	-	-
4	<i>Achnantheidium conspicua</i>	-	+	+	-	+	+	+	-	-	+	-	+	+
5	<i>Achnantheidium cranulata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
6	<i>Achnantheidium exigua</i>	+	+	-	-	+	+	-	+	+	-	-	+	-
7	<i>Achnantheidium Grimmei</i>	-	-	+	-	-	-	+	-	-	+	-	-	-
8	<i>Achnantheidium holsti</i>	-	-	-	+	-	-	-	-	+	-	-	-	+
9	<i>Achnantheidium hungarica</i>	-	-	-	-	+	+	+	-	-	+	+	+	-
10	<i>Achnantheidium lapidosa</i> var. <i>lanceolata</i>	+	+	+	-	-	-	-	+	+	-	-	-	-
11	<i>Achnantheidium linearis</i>	-	-	-	-	-	-	+	-	-	+	-	-	-
12	<i>Achnantheidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
13	<i>Achnantheidium microcephala</i>	-	-	+	-	-	+	-	+	-	-	-	-	+
14	<i>Achnantheidium minutissima</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
15	<i>Achnantheidium nodosa</i>	-	+	-	-	-	+	+	-	+	-	-	-	+
16	<i>Achnantheidium plonensis</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
17	<i>Achnantheidium saxonica</i>	-	-	-	-	+	-	-	-	-	+	-	+	-
18	<i>Achnantheidium suchlandti</i>	-	+	+	-	-	+	+	-	+	-	-	-	-
19	<i>Achnantheidium affinis</i>	+	-	-	-	-	-	+	-	-	-	+	-	+

20	<i>Achnantheidium exilis</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
21	<i>Achnantheidium lapidosa</i>	-	-	-	-	-	+	-	-	+	+	-	-	+
22	<i>Cocconeis placentula</i>	-	-	-	-	-	-	-	+	-	-	+	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	+	-	-	-	+	-	-	+	-	-	-
24	<i>Cyclotella</i> sp.	-	+	-	+	-	-	-	-	+	-	-	-	-
25	<i>Cymbella amphicephala</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
26	<i>Cymbella laevis</i>	-	-	-	-	-	-	-	+	-	-	+	+	+
27	<i>Cymbella perpusila</i>	-	-	+	-	-	+	+	-	-	-	-	-	+
28	<i>Cymbella tumidula</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
29	<i>Cymbella turgidula</i>	+	-	-	-	-	+	-	-	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	-	-	-	-	-	+	+	-	-	+	+	-	-
31	<i>Cymbella affinis</i>	-	-	-	+	-	-	-	-	+	-	-	-	+
32	<i>Diatoma hiemale</i>	-	-	-	-	+	-	+	-	-	-	-	+	+
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	-	-	-	+	-	-	-	-	-	-	-
34	<i>Didymosphenia geminata</i>	-	+	+	+	-	-	+	-	-	-	-	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	-	+	-	+	-	-	+	+	+	+
36	<i>Eunotia arcus</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	-	+	-	-	+	-	-	+	-	-	-	-
38	<i>Fragilaria construens</i>	+	-	-	-	-	-	-	-	-	-	+	-	+
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	-	+	+	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	+	+	-	-	-	-	-	-	-	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
42	<i>Fragilaria rumpens</i>	-	-	-	+	-	-	-	-	-	-	-	-	+
43	<i>Fragilaria brevistriata</i>	-	-	-	-	+	+	-	-	+	-	-	+	-
44	<i>Fragilaria</i> sp.	+	-	-	-	-	-	-	+	-	-	-	-	-
45	<i>Fragilaria vaucheriae</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	+	+	-	+	-	-	-	-	+	+

47	<i>Gomphonema gracile</i>	+	-	-	-	-	+	-	-	+	+	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	+	-	-	-	-	-	-	-	-	+	-	+
49	<i>Gomphonema lanceolatum</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
50	<i>Gomphonema nagpurenses</i>	+	-	+	-	-	-	-	-	-	-	+	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
52	<i>Gomphonema olivaceum</i>	-	+	-	+	-	-	-	-	+	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	+	-	-	-	+	+	-	-	-	-	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	-	-	-	+	-	+
55	<i>Gomphonema parvulum</i>	+	-	-	-	+	+	-	-	+	+	-	+	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	-	+	-	+
58	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	-	+	-	-	+	-	+	-	+	+	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	+	+	+	+	+	-	-	+	+
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	+	+	-	-	-	-	-	-	+	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	+	-	-	+	-	-	+	+	-	-	-
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	+	-	-	-	-	-	+
65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	+	+	+	-	-	-	-	-	-	-	-	-
67	<i>Navicula rostellata</i>	-	-	+	-	-	-	-	-	-	-	+	-	-
68	<i>Navicula cari</i>	-	-	-	-	-	-	+	-	-	-	-	-	+
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	+	-	+	-	-	-	-	+	-	+	-
71	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	+	-	+	+	-	+	-	-	-	-

73	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-	-	-	-	-	-	-	-	-	+	-	-
75	<i>Synedra ulna</i>	-	+	-	+	-	+	-	-	-	+	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	-	-	-	+	+	-	-	-	-	-
77	<i>Tabellaria flocculus</i>	-	-	+	-	-	-	-	-	-	-	+	-	+
78	<i>Tabellaria</i> sp.	-	-	-	-	+	+	+	-	+	-	-	+	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	17	15	24	16	13	22	26	14	19	17	21	14	23

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthydium austriaca</i>	+	+	+	+	+	+	+
2	<i>Achnanthydium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	+	-
3	<i>Achnanthydium boyei</i>	-	+	-	+	+	+	+
4	<i>Achnanthydium conspicua</i>	+	-	-	+	+	-	-
5	<i>Achnanthydium cranulata</i>	-	-	-	-	-	+	-
6	<i>Achnanthydium exigua</i>	+	-	-	-	-	-	-
7	<i>Achnanthydium Grimmei</i>	-	-	-	+	+	-	-
8	<i>Achnanthydium holsti</i>	-	-	-	-	-	+	+
9	<i>Achnanthydium hungarica</i>	+	+	-	+	+	-	-
10	<i>Achnanthydium lapidosa</i> var. <i>lanceolata</i>	-	-	+	-	-	-	-
11	<i>Achnanthydium linearis</i>	-	-	-	+	+	+	-
12	<i>Achnanthydium linearis</i> var. <i>pusila</i>	-	-	-	-	-	+	-
13	<i>Achnanthydium microcephala</i>	+	-	-	-	-	-	-
14	<i>Achnanthydium minutissima</i>	-	-	-	+	-	-	+
15	<i>Achnanthydium nodosa</i>	+	+	+	-	+	+	-
16	<i>Achnanthydium plonensis</i>	-	-	-	-	-	-	-
17	<i>Achnanthydium saxonica</i>	-	-	-	+	-	+	-
18	<i>Achnanthydium suchlandti</i>	+	-	-	-	+	+	-
19	<i>Achnanthydium affinis</i>	-	-	+	+	+	-	-
20	<i>Achnanthydium exilis</i>	-	-	-	-	+	-	-
21	<i>Achnanthydium lapidosa</i>	+	+	-	-	-	-	-
22	<i>Cocconeis placentula</i>	-	-	-	-	-	+	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	+	-	-
24	<i>Cyclotella</i> sp.	-	-	+	+	-	-	+
25	<i>Cymbella amphicephala</i>	-	+	-	-	-	+	-
26	<i>Cymbella laevis</i>	-	-	-	-	-	-	-
27	<i>Cymbella perpusila</i>	+	-	-	+	+	-	-
28	<i>Cymbella tumidula</i>	-	-	+	-	-	+	-
29	<i>Cymbella turgidula</i>	+	-	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	-	-	-	-	+	-	-
31	<i>Cymbella affinis</i>	-	-	-	-	-	-	+
32	<i>Diatoma hiemale</i>	-	+	-	+	+	+	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	-	-	-	-	-

34	<i>Didymosphenia geminata</i>	-	-	-	-	+	+	+
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	+	+	-	-
36	<i>Eunotia arcus</i>	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	+	-	+	+	-	+	-
38	<i>Fragilaria construens</i>	-	-	+	-	-	-	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	+	+	-
40	<i>Fragilaria olivaceoides</i>	-	-	+	-	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-
42	<i>Fragilaria rumpens</i>	-	-	-	+	-	+	+
43	<i>Fragilaria brevistriata</i>	+	-	-	-	-	-	-
44	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-
45	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	+	+	-	+
47	<i>Gomphonema gracile</i>	+	-	-	-	-	+	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	+	+	-	-	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	-	+	+
50	<i>Gomphonema nagpurenses</i>	-	-	-	-	-	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-
52	<i>Gomphonema olivaceum</i>	-	+	-	+	-	-	+
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	+	-	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	-	-	-
55	<i>Gomphonema parvulum</i>	+	-	-	-	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	+	-
58	<i>Gomphonema. intricatum</i>	-	-	-	-	+	-	-
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	+	-	+	-	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	+	-	-	-	+	+	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	+	+	-	-	+
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	-	-	-	-	-
64	<i>Navicula microcephala</i>	-	-	-	+	+	-	-
65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	+	-	-	-	+
67	<i>Navicula rostellata</i>	-	+	-	+	-	-	-
68	<i>Navicula cari</i>	-	-	-	-	+	+	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	+
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	-	-	-

71	<i>Planothidium lanceolata</i>	-	-	+	-	-	+	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	+	+	-	-	+	-	+
73	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-
75	<i>Synedra ulna</i>	-	-	+	+	-	-	+
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	-	+	+	-
77	<i>Tabellaria flocculus</i>	-	-	-	+	-	-	-
78	<i>Tabellaria</i> sp.	+	+	+	-	+	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-
	Total	19	12	15	24	26	25	16

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	-	-	-	-	+	+	-
3	<i>Achnanthidium boyei</i>	+	-	+	+	-	-	+	-	-	-	+	+	+
4	<i>Achnanthidium conspicua</i>	+	+	+	+	+	+	+	+	+	+	-	-	+
5	<i>Achnanthidium cranulata</i>	+	-	-	-	-	-	-	-	-	-	+	+	+
6	<i>Achnanthidium exigua</i>	-	+	-	-	-	-	-	+	+	-	-	-	-
7	<i>Achnanthidium Grimmei</i>	-	-	-	+	+	-	+	-	+	+	-	+	-
8	<i>Achnanthidium holsti</i>	+	-	-	-	-	+	-	-	-	-	+	-	+
9	<i>Achnanthidium hungarica</i>	+	-	+	+	-	-	+	+	-	-	-	-	+
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	+	-	-	-	-	-	-	+	-	-	+	-
11	<i>Achnanthidium linearis</i>	-	-	-	+	-	-	+	-	-	-	+	-	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	-	+	-	+	-	-	-	-	+	+	-	+
13	<i>Achnanthidium microcephala</i>	-	+	-	-	-	+	+	+	+	-	-	-	-
14	<i>Achnanthidium minutissima</i>	+	-	-	-	-	-	+	-	-	-	-	-	+
15	<i>Achnanthidium nodosa</i>	-	-	-	+	-	+	-	+	+	-	+	-	-
16	<i>Achnanthidium plonensis</i>	+	-	-	-	-	-	+	-	-	-	-	+	+
17	<i>Achnanthidium saxonica</i>	-	+	-	-	+	-	-	-	+	+	+	-	-
18	<i>Achnanthidium suchlandti</i>	+	-	+	+	-	-	-	+	-	-	+	-	+
19	<i>Achnanthidium affinis</i>	-	-	-	+	-	+	+	-	-	-	-	+	-
20	<i>Achnanthidium exilis</i>	-	-	-	+	+	-	-	-	-	+	-	-	-
21	<i>Achnanthidium lapidosa</i>	-	-	+	-	-	+	-	+	+	-	-	-	-
22	<i>Cocconeis placentula</i>	+	-	-	-	-	-	-	-	+	-	+	+	+
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	+	+	+	-	-	-	+	+	-	-	-

24	<i>Cyclotella</i> sp.	-	-	-	-	-	-	+	-	-	-	-	+	-
25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
26	<i>Cymbella laevis</i>	+	-	-	-	-	+	-	-	-	-	-	-	+
27	<i>Cymbella perpusila</i>	-	+	-	+	-	+	+	+	+	-	-	-	-
28	<i>Cymbella tumidula</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
29	<i>Cymbella turgidula</i>	-	-	+	-	-	-	-	+	-	-	-	+	-
30	<i>Cymbella ventricosa</i>	+	+	-	+	+	-	+	+	+	+	-	-	+
31	<i>Cymbella affinis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
32	<i>Diatoma hiemale</i>	-	-	-	+	-	+	+	-	-	-	+	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	+	-	-	+	+	+	-	-	-
34	<i>Didymosphenia geminata</i>	-	-	-	+	-	-	-	-	-	-	+	+	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	-	-	+	-	+	+	-	-	-	-	-	+
36	<i>Eunotia arcus</i>	-	-	-	-	+	-	-	-	+	+	-	-	-
37	<i>Fragilaria capucina</i>	-	-	-	-	-	-	+	+	-	-	+	-	-
38	<i>Fragilaria construens</i>	+	-	-	-	-	+	-	-	-	-	-	-	+
39	<i>Fragilaria leptostauron</i>	-	-	+	+	+	-	+	-	-	+	+	+	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
41	<i>Fragilaria pinnata</i>	-	+	+	-	-	-	-	-	+	-	-	+	-
42	<i>Fragilaria rumpens</i>	-	-	-	-	+	+	+	-	-	+	+	-	-
43	<i>Fragilaria brevistriata</i>	+	+	+	-	-	-	-	+	+	-	-	-	+
44	<i>Fragilaria</i> sp.	-	-	-	-	-	-	+	-	-	-	-	+	-
45	<i>Fragilaria vaucheriae</i>	-	-	+	-	-	-	-	-	+	-	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	+	-	+	+	-	+	-	-	-	-
47	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	+	-	-	+	+	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	+	-	-	-	+	+	+	-	-	+	-	-	+
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	-	-	-	-	+	-	+	-	-
50	<i>Gomphonema nagpurenses</i>	+	-	-	-	-	-	+	-	-	-	-	+	+

51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
52	<i>Gomphonema olivaceum</i>	-	-	+	-	-	-	+	-	+	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	+	+	-	-	-	-	+	-	+	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	+	-	-	-	-	+	-	-	+	-	-	-	+
55	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	+	-	+	-	+	-	+	+	-	+	-
57	<i>Gomphonema sphaerophorum</i>	+	+	-	-	-	+	-	-	+	-	+	+	+
58	<i>Gomphonema. intricatum</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	+	-	-	-	-	-	+	+	-	-	-	+	+
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	+	+	+	+	+	-	+	+	+	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	+	+	-	-	-	-	+	-	+	-	-	-	+
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	-	-	-	-	+	-	-	-	-	-
64	<i>Navicula microcephala</i>	-	-	-	+	-	+	+	-	-	-	-	-	-
65	<i>Navicula radiosa</i>	-	+	-	-	-	-	-	-	+	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	+	-	-	-	-	+	-	-	-
67	<i>Navicula rostellata</i>	-	-	+	-	-	-	+	-	-	-	-	+	-
68	<i>Navicula cari</i>	-	-	-	+	-	+	-	-	-	-	+	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	+	-	+	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	+	-	-	-	-	-	+	-	-	+	-
71	<i>Planothidium lanceolata</i>	+	-	-	-	+	-	-	-	-	+	+	+	+
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	+	+	-	-	-	+	-	-	-	-	-
73	<i>Reimeria sinuata</i>	-	+	-	-	-	-	+	-	+	-	-	+	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	+	-	+	-	-	-	-	+	-	-	-
75	<i>Synedra ulna</i>	-	-	+	-	-	-	+	+	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	+	-	+	+	-	-	-	+	+	+	+	-

77	<i>Tabellaria flocculus</i>	-	-	-	-	-	+	+	-	-	-	-	-	-
78	<i>Tabellaria</i> sp.	-	-	+	+	+	-	-	+	+	+	-	+	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	23	16	22	26	21	23	33	22	31	21	26	28	23

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	+
3	<i>Achnanthidium boyei</i>	-	+	-	-	+	+	+	+	-	+	+	+	+	+
4	<i>Achnanthidium conspicua</i>	+	+	+	+	-	+	+	-	+	-	+	+	-	-
5	<i>Achnanthidium cranulata</i>	-	-	-	-	-	-	-	-	-	+	-	-	+	+
6	<i>Achnanthidium exigua</i>	-	-	+	+	+	-	-	-	+	-	-	-	-	-
7	<i>Achnanthidium Grimmei</i>	-	+	-	-	-	+	+	-	-	-	+	+	-	+
8	<i>Achnanthidium holsti</i>	+	-	-	-	-	-	-	+	-	+	-	-	-	-
9	<i>Achnanthidium hungarica</i>	-	-	+	-	-	+	-	-	+	-	+	-	+	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	+	-	+	+	-	+	-	-	-	-	+	-	+
11	<i>Achnanthidium linearis</i>	-	-	-	-	-	+	-	-	-	+	+	-	-	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	+	-	-	-	-	-	+	-	-	+	-
13	<i>Achnanthidium microcephala</i>	+	+	+	-	-	-	+	-	+	-	+	+	+	-
14	<i>Achnanthidium minutissima</i>	-	-	-	-	-	-	-	+	-	-	+	-	-	-
15	<i>Achnanthidium nodosa</i>	+	-	+	+	+	+	-	-	+	+	-	-	-	-
16	<i>Achnanthidium plonensis</i>	-	-	-	-	-	-	-	-	-	-	+	-	+	+
17	<i>Achnanthidium saxonica</i>	-	-	-	-	-	-	-	-	-	+	-	-	+	-
18	<i>Achnanthidium suchlandti</i>	-	+	+	+	-	+	+	+	+	+	-	+	-	-
19	<i>Achnanthidium affinis</i>	+	-	-	+	+	+	-	-	-	-	+	-	+	+
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	+	-	+	-	-	-	-	-	-

21	<i>Achnantheidium lapidosa</i>	+	-	+	-	-	-	-	-	+	-	-	-	-	-
22	<i>Cocconeis placentula</i>	-	-	-	-	+	-	-	-	-	+	-	-	+	+
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	-	-	-	+	+	-	-	-	-	+	-	-
24	<i>Cyclotella</i> sp.	-	-	-	+	-	-	-	+	-	-	+	-	-	+
25	<i>Cymbella amphicephala</i>	-	-	-	-	+	-	-	-	-	+	-	-	+	-
26	<i>Cymbella laevis</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
27	<i>Cymbella perpusila</i>	+	+	+	-	-	+	+	+	+	-	+	+	-	-
28	<i>Cymbella tumidula</i>	-	-	-	+	-	-	-	-	-	+	-	-	+	-
29	<i>Cymbella turgidula</i>	-	-	+	+	+	-	-	-	+	-	-	-	-	+
30	<i>Cymbella ventricosa</i>	-	-	+	-	-	+	-	-	-	-	+	-	-	-
31	<i>Cymbella affinis</i>	+	-	-	-	-	-	-	+	-	-	-	-	+	-
32	<i>Diatoma hiemale</i>	+	-	-	-	+	+	-	-	-	+	+	-	+	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	+	+	+	-	-	-	+	-	-	-	-	-
34	<i>Didymosphenia geminata</i>	-	+	-	+	-	+	+	+	-	+	-	+	+	+
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	-	-	-	-	+	-	-	-	-	+	-	+	-
36	<i>Eunotia arcus</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	+	+	+	-	-	+	-	+	+	+	+	-	-
38	<i>Fragilaria construens</i>	+	-	-	+	+	-	-	-	-	-	-	-	-	-
39	<i>Fragilaria leptostaurum</i>	-	-	-	-	+	+	-	-	-	+	+	-	+	+
40	<i>Fragilaria olivaceoides</i>	-	+	-	+	-	-	+	-	-	-	-	+	-	-
41	<i>Fragilaria pinnata</i>	-	+	-	-	-	-	+	-	-	-	-	+	+	+
42	<i>Fragilaria rumpens</i>	+	-	-	-	-	-	-	+	-	+	+	-	-	-
43	<i>Fragilaria brevistriata</i>	-	-	+	-	-	-	-	-	+	-	-	-	+	-
44	<i>Fragilaria</i> sp.	-	-	-	+	+	-	-	-	-	-	+	-	-	+
45	<i>Fragilaria vaucheriae</i>	-	+	-	-	-	-	+	-	-	-	-	+	+	-
46	<i>Gomphonema bohemicum</i>	+	-	-	-	+	+	-	+	-	-	+	-	-	-
47	<i>Gomphonema gracile</i>	-	-	+	-	+	-	-	-	+	+	-	-	+	+

48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	+	-	-	+	-	-	-	-	-	-	+	-	-	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	-	-	-	+	-	+	-	-	+	-
50	<i>Gomphonema nagpurenses</i>	-	+	-	-	+	-	+	-	-	-	+	+	-	+
51	<i>Gomphonema olivaceoides</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
52	<i>Gomphonema olivaceum</i>	-	-	-	+	-	-	-	+	-	-	+	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+	-	-	-	+	+	-	-	-	-	+	-	+
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	+	-	-	+	-	-	-	-	-	-	-	-	+	-
55	<i>Gomphonema parvulum</i>	-	-	+	-	+	-	-	+	+	-	-	-	+	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	-	-	+	-	+	-	-	-	+	+	-	+
57	<i>Gomphonema sphaerophorum</i>	+	-	-	-	-	-	-	-	-	+	-	-	-	+
58	<i>Gomphonema. intricatum</i>	-	-	-	-	-	+	-	+	-	-	-	-	-	-
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	+	+	-	-	-	+	-	-	-	+	+	-	+
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	+	-	-	-	-	-	-	-	+	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	+	-	+	-	-	+	-	-	+	+	+	-	-	+
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	-	+	-	-	+	+	-	-	+	+	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	+	-	+	-	+	-	+	-	-	+	-	-
64	<i>Navicula microcephala</i>	+	-	-	-	-	+	-	-	-	-	+	-	+	-
65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	+	-	+	-	-	+	+	-	-	-	+	+	-
67	<i>Navicula rostellata</i>	-	+	-	-	-	-	+	-	-	-	+	+	-	+
68	<i>Navicula cari</i>	+	-	-	-	+	+	-	-	-	+	-	-	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	-	+	-	-	+	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	+	-	-	-	-	+	-	-	-	-	+	+	+

71	<i>Planothidium lanceolata</i>	-	-	-	+	+	-	-	-	-	+	-	-	-	+
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	+	-	-	+	-	+	+	-	-	-	-	-
73	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	+	-	+	+
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
75	<i>Synedra ulna</i>	-	-	+	+	-	-	-	+	-	-	+	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	-	-	+	-	-	-	+	-	-	-	+
77	<i>Tabellaria flocculus</i>	+	+	-	-	+	-	+	-	-	-	+	+	-	-
78	<i>Tabellaria</i> sp.	-	-	+	+	+	+	-	-	+	-	-	-	+	+
79	<i>Tetracyclus lacustris</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
-	Total	23	24	22	25	27	26	24	21	19	25	33	24	30	28

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnanthidium austriaca</i>	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-
3	<i>Achnanthidium boyei</i>	+	+
4	<i>Achnanthidium conspicua</i>	+	+
5	<i>Achnanthidium cranulata</i>	-	-
6	<i>Achnanthidium exigua</i>	-	-
7	<i>Achnanthidium Grimmei</i>	+	+
8	<i>Achnanthidium holsti</i>	-	-
9	<i>Achnanthidium hungarica</i>	+	+
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-
11	<i>Achnanthidium linearis</i>	+	+
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-
13	<i>Achnanthidium microcephala</i>	+	-
14	<i>Achnanthidium minutissima</i>	+	-
15	<i>Achnanthidium nodosa</i>	-	+
16	<i>Achnanthidium plonensis</i>	+	-
17	<i>Achnanthidium saxonica</i>	-	-
18	<i>Achnanthidium suchlandti</i>	-	+
19	<i>Achnanthidium affinis</i>	+	+
20	<i>Achnanthidium exilis</i>	-	+
21	<i>Achnanthidium lapidosa</i>	-	-
22	<i>Cocconeis placentula</i>	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+
24	<i>Cyclotella</i> sp.	+	-
25	<i>Cymbella amphicephala</i>	-	-
26	<i>Cymbella laevis</i>	-	-
27	<i>Cymbella perpusila</i>	+	+
28	<i>Cymbella tumidula</i>	-	-
29	<i>Cymbella turgidula</i>	-	-
30	<i>Cymbella ventricosa</i>	+	+
31	<i>Cymbella affinis</i>	-	-
32	<i>Diatoma hiemale</i>	+	+
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-
34	<i>Didymosphenia geminata</i>	-	+

35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	+
36	<i>Eunotia arcus</i>	-	-
37	<i>Fragilaria capucina</i>	+	-
38	<i>Fragilaria construens</i>	-	-
39	<i>Fragilaria leptostauron</i>	+	+
40	<i>Fragilaria olivaceoides</i>	-	-
41	<i>Fragilaria pinnata</i>	-	-
42	<i>Fragilaria rumpens</i>	+	-
43	<i>Fragilaria brevistriata</i>	-	-
44	<i>Fragilaria</i> sp.	+	-
45	<i>Fragilaria vaucheriae</i>	-	-
46	<i>Gomphonema bohemicum</i>	+	+
47	<i>Gomphonema gracile</i>	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	+	-
49	<i>Gomphonema lanceolatum</i>	-	-
50	<i>Gomphonema nagpurenses</i>	+	-
51	<i>Gomphonema olivaceoides</i>	-	-
52	<i>Gomphonema olivaceum</i>	+	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-
55	<i>Gomphonema parvulum</i>	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	-
57	<i>Gomphonema sphaerophorum</i>	-	-
58	<i>Gomphonema. intricatum</i>	-	+
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	+	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	+	+
62	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
64	<i>Navicula microcephala</i>	+	+
65	<i>Navicula radiosa</i>	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-
67	<i>Navicula rostellata</i>	+	-
68	<i>Navicula cari</i>	-	+
69	<i>Navicula minima</i> var. <i>atomoides</i>	+	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-
71	<i>Planothidium lanceolata</i>	-	-

72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	+
73	<i>Reimeria sinuata</i>	+	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
75	<i>Synedra ulna</i>	+	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	+
77	<i>Tabellaria flocculus</i>	+	-
78	<i>Tabellaria</i> sp.	-	+
79	<i>Tetracyclus lacustris</i>	-	-
-	Total	33	26

DENSITY & DIVERSITY OF PHYTOBENTHOS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/cm ²)	354	143	134	Nil	432	1542	267	1067	1679	601	1589	565	459	
Shannon Weiner Diversity	2.19	2.14	2.32	Nil	1.88	2.29	2.31	2.09	2.23	2.20	2.26	2.09	2.29	
Evenness Index	0.77	0.79	0.73	Nil	0.73	0.74	0.71	0.79	0.76	0.78	0.74	0.79	0.73	
No. of species	17	15	24	Nil	13	22	26	14	19	17	21	14	23	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/cm ²)	587	789	833	432	Nil	4320	5672							
Shannon Weiner Diversity	2.19	1.89	2.10	2.21	Nil	2.36	2.10							
Evenness Index	0.74	0.76	0.78	0.70	Nil	0.73	0.76							
No. of species	19	12	15	24	Nil	25	16							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/cm ²)	3290	1782	2349	1096	633	783	643	781	563	Nil	439	890	1453	
Shannon Weiner Diversity	2.31	2.19	2.28	2.30	2.20	2.30	2.43	2.24	2.29	Nil	2.31	2.46	2.22	
Evenness Index	0.74	0.79	0.74	0.71	0.72	0.73	0.69	0.72	0.67	Nil	0.71	0.74	0.71	
No. of species	23	16	22	26	21	23	33	22	31	Nil	26	28	23	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/cm ²)	782	1056	1342	879	956	1567	1732	2078	2344	1567	1872	2067	2341	1742
Shannon Weiner Diversity	2.22	2.33	2.16	2.28	2.39	2.33	2.28	2.19	2.21	2.31	2.56	2.33	2.45	2.39
Evenness Index	0.71	0.73	0.70	0.71	0.73	0.72	0.72	0.72	0.75	0.72	0.73	0.73	0.72	0.72
No. of species	23	24	22	25	27	26	24	21	19	25	33	24	30	28
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/cm ²)	325		482											
Shannon Weiner Diversity	2.15		2.12											
Evenness Index	0.70		0.71											
No. of species	22		20											

Macro-Invertebrates

Sub basin- Siang: I-IV

S.No.	Family	Genus	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>		-	+	-	-	-	-	+	+	-	-	-	-
3		<i>Heptagenia</i>	+	+	-	+	-	-	+	-	-	-	-	+	+
4		<i>Epeorus</i>	-	-	-	-	-	+	-	-	+	-	+	-	-
5	Baetidae	<i>Baetis</i>	-	+	-	-	-	-	-	+	-	-	-	+	-
6	Ephemerellidae	<i>Ephemerella</i>	+	-	+	-	-	+	-	-	-	+	+	-	+
7		<i>Ephemerella excrucians</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
8	Caenidae	<i>Caenis</i>	+	-	+	-	-	+	-	+	+	-	-	+	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	-	+	-	-	-	+	-	-
10		<i>Chroterpes</i>	-	+	+	-	-	-	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	+	-	-	-	-	-	-	-	+	+	+	-	+
12	Neophemeridae	<i>Neophemeridae 1</i>	-	+	-	-	-	+	-	+	+	-	-	+	-
13		<i>Neophemeridae 2</i>	+	-	-	+	-	-	-	-	-	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	+	-	-	+	+	-	-	-	+	+	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
16	Elmidae	<i>Heterlimnius</i>	+	+	-	-	-	-	+	+	-	-	-	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	+	+	+	-	-	+	-	-	+	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	+	+	+	-	-	-	-	+	-	+	-	-	-

19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
21		<i>Hydroptila</i>	-	+	+	-	-	-	-	+	-	+	+	-	+
22		<i>Leucotrichia</i>	-	-	-	-	-	+	+	-	+	+	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	+	+	+	+	-	-	-	-	-	-	+	+
25	Glossosomatidae	<i>Glossosoma</i>	+	-	-	-	-	+	+	+	-	-	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
27	Molannidae	<i>Molanna</i>	-	+	+	-	-	+	-	-	-	+	+	-	+
28	Chironomidae	<i>Chironomus</i>	+	+	-	-	-	-	-	-	-	-	-	+	-
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
30	Ephydriidae	Unidentified genus / species	-	+	+	-	+	+	-	+	+	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
34		<i>Maruina</i>	-	-	-	-	+	-	-	-	+	+	+	-	+
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	+	-	-	-	-	-	+	-	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	+	-	-	+	+	-	-	-	-	-	-
37		<i>Horaia</i>	-	-	-	+	-	-	-	-	-	-	-	+	-
38	Tabanidae	<i>Tabanus</i>	+	-	-	-	-	-	-	+	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	+	-	-	-	+	+	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	+	-	+
		Total	13	16	14	6	5	13	10	12	11	8	10	10	10

Sub basin- Yamne and Simang

S.No.	Family	Genus	Y1	Y2	Y3	Y4	SM1	SM2	SM3
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+
2		<i>Stenonema</i>	+	-	-	-	-	+	-
3		<i>Heptagenia</i>	-	-	+	+	+	-	-
4		<i>Epeorus</i>	-	+	-	-	-	-	-
5	Baetidae	<i>Baetis</i>	-	-	+	+	+	+	-
6	Ephemerellidae	<i>Ephemerella</i>	-	+	-	-	-	-	-
7		<i>Ephemerella excrucians</i>	-	-	-	-	-	-	+
8	Caenidae	<i>Caenis</i>	+	-	-	+	+	+	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	+	-	-	-	+	-
10		<i>Chroterpes</i>	-	-	+	-	-	-	-
11		<i>Leptophlebia</i>	+	-	-	+	-	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	+	-	-	-	-	+
13		<i>Neoephemeridae 2</i>	+	-	+	+	+	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	+	-	-	-	-	+
16	Elmidae	<i>Heterlimnius</i>	+	-	+	+	-	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	+	+	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	+	+	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	+	+	-	+	-	-
21		<i>Hydroptila</i>	-	-	-	-	-	-	+
22		<i>Leucotrichia</i>	-	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	+	+	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	+	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	+	-	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	+	-	-	+	-	-	+
27	Molannidae	<i>Molanna</i>	-	-	-	-	-	+	-
28	Chironomidae	<i>Chironomus</i>	-	-	+	-	-	-	-
29		<i>Ablabesmyia</i>	-	+	-	+	-	-	-
30	Ephydriidae	Unidentified genus / species	+	-	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	+	+	-	-	+	-
32	Simuliidae	<i>Simulium pictipes</i>	+	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	+	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	-	-

35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	+
36	Blepharoceridae	<i>Blepharocera</i>	+	+	-	-	-	+	-
37		<i>Horiaia</i>	-	+	-	-	+	-	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	+	+	-	-	-	-
40	Culicidae	<i>Culex</i>	-	+	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-
		Total	11	15	12	10	10	9	7

Sub basin- Siyom: I-III Hirit

S.No.	Family	Genus	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
3		<i>Heptagenia</i>	-	+	-	+	-	-	-	+	+	+	+	+	-
4		<i>Epeorus</i>	+	-	-	-	+	+	+	-	-	-	-	-	+
5	Baetidae	<i>Baetis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	+	-	+	+	+	+	-	+	+	-	-	-	-
7		<i>Ephemerella excrucians</i>	-	-	-	-	-	-	+	-	-	-	+	-	-
8	Caenidae	<i>Caenis</i>	-	-	+	-	-	+	-	-	-	-	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	+	+	-	+	-	-	+	-	+	-
10		<i>Chroterpes</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
11		<i>Leptophlebia</i>	-	-	-	-	+	-	-	+	+	-	-	-	+
12	Neoephemeridae	<i>Neoephemeridae 1</i>	+	-	-	-	-	+	+	-	-	-	-	-	-
13		<i>Neoephemeridae 2</i>	-	+	+	-	-	-	-	-	-	-	+	+	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	+	+	+	-	-	-	+	-	-	-
15	Perlodidae	<i>Isoperla</i>	+	-	-	-	-	-	-	+	-	-	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	-	-	-	+	-	-	+	+
17	Psephenidae	<i>Psephenus</i>	-	+	+	-	-	+	+	-	-	+	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	+	-	-	+	-	-	-	-	+	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
21		<i>Hydroptila</i>	-	-	-	-	+	-	+	+	-	+	+	-	-
22		<i>Leucotrichia</i>	+	-	+	-	-	+	-	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	+	-	-	-	-	-	+	-	-	-	-	-

25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	+	+	-	-	-	-	-	+
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
27	Molannidae	<i>Molanna</i>	-	-	-	+	+	+	-	+	-	+	+	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
29		<i>Ablabesmyia</i>	+	-	-	-	-	-	-	-	-	-	-	+	-
30	Ephydriidae	Unidentified genus / species	-	-	-	-	-	+	+	-	-	-	-	-	+
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	+	-	-	-	-	+	-	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-	-	-	+	-	-	+
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
34		<i>Maruina</i>	-	-	+	-	+	-	-	+	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	+	-	-	-	-	+	-	-	-	-	-	-	-
37		<i>Horaia</i>	-	+	-	-	-	-	-	-	-	+	+	+	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	+	-	-	+	-	+	-	-	-
		Total	9	6	7	8	10	13	10	10	10	10	7	9	8

Sub basin- Yargyap Chhu

S.No.	Family	Genus	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>	+	+	+	-	+	-	-	+	-	-	-	-	-	-
3		<i>Heptagenia</i>	-	-	-	-	-	-	-	-	+	-	+	-	+	+
4		<i>Epeorus</i>	-	-	-	-	-	+	+	+	-	+	-	-	-	-
5	Baetidae	<i>Baetis</i>	-	+	+	+	+	-	-	-	-	-	-	+	-	+
6	Ephemerellidae	<i>Ephemerella</i>	+	-	-	+	-	+	+	-	+	-	+	-	+	-
7		<i>Ephemerella excrucians</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
8	Caenidae	<i>Caenis</i>	-	-	+	-	-	-	-	+	+	+	-	-	+	+
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	+	-	+	-	+	+	-	-	-	-	-	-	-
10		<i>Chroterpes</i>	+	-	+	-	+	-	-	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	-	-	-	-	-	-	-	+	-	+	+	+	-	-
12	Neophemeridae	<i>Neophemeridae 1</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	+
13		<i>Neophemeridae 2</i>	-	+	+	+	-	-	-	-	+	+	-	-	+	-
14	Perlidae	<i>Acroneuria</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	+
15	Perlodidae	<i>Isoperla</i>	-	-	-	+	+	-	-	-	-	-	-	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	+	-	-	-	+	+	-	+	-	+	-	+	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	-	-	+	-	-	-	+	-	+
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	+	-	-	-	-	-	+	-	-	-	+	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	+	-	-	-	-	+	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
21		<i>Hydroptila</i>	+	-	-	+	-	-	-	-	+	+	-	+	+	+
22		<i>Leucotrichia</i>	-	+	-	-	-	+	-	+	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	+	-	-	-	-	-	-	-	-	+	-	-

24	Helicopsychidae	<i>Helichopsyche</i>	-	+	-	-	-	-	+	-	+	+	-	-	+	-
25	Glossosomatidae	<i>Glossosoma</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	+	-	-	+	-	-	+	-	-	-
27	Molannidae	<i>Molanna</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	-	+	+	-	+	-	-	-	+	+
29		<i>Ablabesmyia</i>	-	-	+	-	-	-	-	-	-	+	-	-	-	-
30	Ephydriidae	Unidentified genus / species	-	+	-	+	-	-	-	+	-	-	-	+	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	+	-	-	-	-	+	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	+	-	-	-	-	-	-	-	+	+	-	-	+	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
34		<i>Maruina</i>	-	+	+	-	-	-	-	+	-	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	+	-	+	-	+	-	-	-	+	-	-	+	+	-
37		<i>Horaia</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	+
38	Tabanidae	<i>Tabanus</i>	-	+	-	-	-	+	+	-	-	+	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-	-	-	-	+	+	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
			10	11	11	10	8	10	10	11	12	10	10	10	12	10

Outside basin

S.No.	Family	Genus	B1	B2
1	Heptageniidae	<i>Cinygmula</i>	+	+
2		<i>Stenonema</i>	+	-
3		<i>Heptagenia</i>	-	-
4		<i>Epeorus</i>	-	-
5	Baetidae	<i>Baetis</i>	-	-
6	Ephemerellidae	<i>Ephemerella</i>	+	-
7		<i>Ephemerella excrucians</i>	+	+
8	Caenidae	<i>Caenis</i>	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-
10		<i>Chroterpes</i>	-	-
11		<i>Leptophlebia</i>	+	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	+
13		<i>Neoephemeridae 2</i>	-	-
14	Perlidae	<i>Acroneuria</i>	+	-
15	Perlodidae	<i>Isoperla</i>	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-
17	Psephenidae	<i>Psephenus</i>	+	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-
19	Corydalidae	<i>Corydalus</i>	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	+
21		<i>Hydroptila</i>	+	-
22		<i>Leucotrichia</i>	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-
27	Molannidae	<i>Molanna</i>	-	-
28	Chironomidae	<i>Chironomus</i>	-	+
29		<i>Ablabesmyia</i>	-	+
30	Ephydriidae	Unidentified genus / species	-	-
31	Tipulidae	<i>Antocha saxicola</i>	+	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-
33	Psychodidae	<i>Psychoda</i>	-	-
34		<i>Maruina</i>	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-

36	Blepharoceridae	<i>Blepharocera</i>	-	+
37		<i>Horaia</i>	+	-
38	Tabanidae	<i>Tabanus</i>	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-
40	Culicidae	<i>Culex</i>	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-
		Total	10	7

DENSITY & DIVERSITY OF MACRO-INVERTEBRATES

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (Indiv./m ²)	444	302	476	Nil	233	521	283	186	Nil	79	Nil	215	Nil	
Shannon Weiner Diversity	1.55	1.32	1.25	Nil	1.21	1.93	1.35	1.22	Nil	1.26	Nil	1.32	Nil	
Evenness Index	0.71	0.68	0.70	Nil	0.75	0.75	0.69	0.68	Nil	0.70	Nil	0.68	Nil	
No. of species	9	7	6	Nil	5	13	7	6	Nil	6	Nil	7	Nil	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (Indiv./m ²)	301	1153	439	555	159	145	115							
Shannon Weiner Diversity	1.79	1.62	1.56	1.38	1.32	1.21	1.37							
Evenness Index	0.75	0.70	0.71	0.71	0.68	0.75	0.70							
No. of species	11	10	9	7	7	5	7							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (Indiv./m ²)	301	Nil	861	485	558	354	594	355	Nil	250	193	295	189	
Shannon Weiner Diversity	1.31	Nil	1.42	1.67	1.33	1.59	1.27	0.86	Nil	1.28	0.87	1.21	0.67	
Evenness Index	0.67	Nil	0.68	0.76	0.68	0.72	0.71	0.62	Nil	0.66	0.63	0.68	0.61	
No. of species	7	Nil	8	9	7	9	6	4	Nil	7	4	6	3	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (Indiv./m ²)	655	808	796	490	253	688	483	818	467	65	131	252	542	102
Shannon Weiner Diversity	1.55	1.42	1.24	1.25	1.17	0.94	0.91	1.15		0.78	0.89	1.04	1.44	0.96
Evenness Index	0.71	0.68	0.69	0.70	0.73	0.68	0.66	0.64	0.00	0.71	0.64	0.65	0.69	0.69
No. of species	9	8	6	6	5	4	4	6	5	3	4	5	8	4
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (Indiv./m ²)	195		245											
Shannon Weiner Diversity	1.57		1.9											
Evenness Index	0.76		1.37											
No. of species	8		4											

Zooplanktons

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
	Protozoans													
1	<i>Actinophrys</i> sp.	+	+	-	-	+	-	+	-	-	+	+	+	-
2	<i>Arcella</i> sp.	-	-	-	+	-	+	-	+	+	-	-	-	+
3	<i>Ceratium</i> spp.	-	+	+	-	-	-	-	-	-	-	+	-	-
	Rotifers													
4	<i>Brachious</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
5	<i>Keratella</i> sp.	-	+	-	-	+	-	-	-	+	+	-	-	-
6	<i>Epiphanes</i>	-	-	-	-	-	-	+	-	+	-	+	-	-
7	<i>Asplanchna</i> sp.	-	-	-	+	-	+	-	-	-	-	-	+	-
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-	-	+	-	-	-	-
	Cladoceran													
9	<i>Bosmina</i> sp.	+	-	+	-	+	-	+	-	-	-	+	-	-
10	<i>Daphnia</i> sp.	-	-	-	-	+	-	-	-	-	+	-	-	-
	Copepods													
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-	-	+	-	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-	+	-	-	+	-	-
	Total	2	3	2	2	4	2	3	3	4	4	4	2	1

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	SM1	SM2	SM3
	Protozoans							
1	<i>Actinophrys</i> sp.	+	+	-	+	+	-	+
2	<i>Arcella</i> sp.	-	-	-	-	-	-	-
3	<i>Ceratium</i> spp.	-	-	+	-	-	+	-
	Rotifers							
4	<i>Brachious</i>	+	-	-	+	-	-	-
5	<i>Keratella</i> sp.	-	-	-	-	-	+	-
6	<i>Epiphanes</i>	-	-	-	-	-	-	-
7	<i>Asplanchna</i> sp.	+	-	-	-	+	-	-
8	<i>Philodena</i> sp.	-	-	-	+	-	-	-
	Cladoceran							
9	<i>Bosmina</i> sp.	-	+	-	-	-	-	-
10	<i>Daphnia</i> sp.	-	-	-	-	-	-	-
	Copepods							
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	+	-
	Total	3	2	1	3	2	2	1

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY4	SY3	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	YG14
	Protozoans														-
1	<i>Actinophrys</i> sp.	+	+	-	+	-	-	-	+	-	+	+	+	-	+
2	<i>Arcella</i> sp.	-	-	-	-	+	-	+	-	+	-	-	-	+	-
3	<i>Ceratium</i> spp.	-	-	+	+	+	+	-	+	-	-	-	+	-	-
	Rotifers														-
4	<i>Brachious</i>	-	-	-	-	-	-	+	-	-	-	-	+	-	-
5	<i>Keratella</i> sp.	+	+	-	-	-	-	-	-	-	-	-	-	-	+
6	<i>Epiphanes</i>	-	-	-	-	-	-	-	-	+	-	+	-	-	+
7	<i>Asplanchna</i> sp.	-	-	-	-	-	-	-	-	-	+	-	-	+	-
8	<i>Philodena</i> sp.	-	+	-	-	-	-	-	-	-	-	-	-	-	-
	Cladoceran														-
9	<i>Bosmina</i> sp.	-	-	+	-	-	-	-	-	-	-	-	-	-	-
10	<i>Daphnia</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Copepods														-
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-	+	-	-	-	-	-	+
12	<i>Diaptomus</i> sp.	-	-	-	+	+	-	-	-	-	-	-	+	-	+
	Total	2	3	2	3	3	1	2	3	2	2	2	3	2	6

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
	Protozoans														
1	<i>Actinophrys</i> sp.	+	+	-	+	+	+	-	+	+	-	+	+	+	+
2	<i>Arcella</i> sp.	-	-	-	+	+	-	+	-	-	-	-	+	-	+
3	<i>Ceratium</i> spp.	-	+	+	-	-	-	-	-	-	-	+	-	+	-
	Rotifers														
4	<i>Brachious</i>	+	-	-	-	-	-	+	+	-	-	-	-	-	-
5	<i>Keratella</i> sp.	-	-	+	+	-	-	-	-	-	+	-	-	+	-
6	<i>Epiphanes</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
7	<i>Asplanchna</i> sp.	+	-	-	+	-	+	-	-	-	-	-	-	-	-
8	<i>Philodena</i> sp.	-	-	-	-	+	-	-	-	-	-	+	-	-	-
	Cladoceran														
9	<i>Bosmina</i> sp.	-	-	-	-	-	-	-	-	-	+	-	+	-	+
10	<i>Daphnia</i> sp.	+	+	-	-	-	-	-	-	-	-	-	-	-	-
	Copepods														
11	<i>Cyclops</i> sp.	-	-	+	-	-	-	-	+	-	-	-	-	+	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	+	-	-	-	-	-	-	-
	Total	4	3	2	3	3	2	3	3	2	2	3	3	4	3

Outside basin

S.No.	Name of species	B1	B2
	Protozoans		
1	<i>Actinophrys</i> sp.	-	+
2	<i>Arcella</i> sp.	+	-
3	<i>Ceratium</i> spp.	-	-
	Rotifers		
4	<i>Brachious</i>	+	+
5	<i>Keratella</i> sp.	-	-
6	<i>Epiphanes</i>	-	-
7	<i>Asplanchna</i> sp.	-	-
8	<i>Philodena</i> sp.	-	-
	Cladoceran		
9	<i>Bosmina</i> sp.	-	-
10	<i>Daphnia</i> sp.	-	-
	Copepods		
11	<i>Cyclops</i> sp.	-	+
12	<i>Diaptomus</i> sp.	+	-
	Total	3	3

DENSITY & DIVERSITY OF ZOOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (indiv/lit.)	25	57	20	10	17	19	66	76	98	61	77	43	Nil	
Shannon Weiner Diversity	0.33	0.54	0.31	0.23	0.31	0.37	0.45	0.52	0.66	0.41	0.54	0.33	Nil	
Evenness Index	0.48	0.49	0.45	0.33	0.45	0.53	0.41	0.47	0.41	0.37	0.34	0.48	Nil	
No. of species	2.00	3.00	2.00	2.00	2.00	2.00	3.00	3.00	5.00	3.00	5.00	2.00	Nil	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (indiv/lit.)	62	48	Nil	50	39	55	Nil							
Shannon Weiner Diversity	0.43	0.31	Nil	0.47	0.27	0.42	Nil							
Evenness Index	0.39	0.45	Nil	0.43	0.39	0.38	Nil							
No. of species	3.00	2.00	Nil	3.00	2.00	3.00	Nil							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (indiv/lit.)	45	59	61	47	56	Nil	28	41	29	33	18	58	29	
Shannon Weiner Diversity	0.27	0.39	0.41	0.31	0.39	Nil	0.25	0.31	0.25	0.29	0.24	0.45	0.28	
Evenness Index	0.39	0.35	0.37	0.45	0.35	Nil	0.36	0.28	0.36	0.42	0.35	0.32	0.40	
No. of species	2.00	3.00	3.00	2.00	3.00	Nil	2.00	3.00	2.00	2.00	2.00	4.00	2.00	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (indiv/lit.)	55	Nil	49	Nil	37	18	51	44	39	37	Nil	34	53	28
Shannon Weiner Diversity	0.38	Nil	0.33	Nil	0.25	0.21	0.37	0.31	0.27	0.23	Nil	0.22	0.37	0.21
Evenness Index	0.27	Nil	0.30	Nil	0.36	0.30	0.34	0.28	0.39	0.33	Nil	0.32	0.34	0.30
No. of species	4.00	Nil	3.00	Nil	2.00	2.00	3.00	3.00	2.00	2.00	Nil	2.00	3.00	2.00
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (indiv/lit.)	65		71											
Shannon Weiner Diversity	0.62		0.45											
Evenness Index	0.35		0.41											
No. of species	6		3											

Month of sample: June 2012

Physico chemical parameters

Sub Basin- Siang: I-IV

S.No.	Physical / Chemical Characteristics	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Water Temperature (°C)	13.4	14.5	14.9	13.9	14.6	15.8	14.5	15	15.2	14.3	13.9	13.6	14
2	Dissolved Oxygen (mg/l)	9.45	8.95	8.8	8.85	9.95	8.4	9.9	8.6	8.65	8.98	8.8	9	9.1
3	Turbidity (NTU)	9.7	3.1	13	13	19	12	20	19	21	14.2	21.3	18.5	10.9
4	Total Suspended Solids (mg/l)	38	24	44	45	47	41	51	50	53	46	56	48	39
5	pH	8.34	8.40	8.20	8.40	8.40	8.10	8.15	8.14	8.40	8.03	8.42	8.38	8.14
6	Electrical Conductivity (µS/cm)	176	147	127	178	106	131	55	128	101	27.1	113	167	23.5
7	Total Dissolved Solids (mg/l)	107.4	89.7	77.5	108.6	64.7	79.9	33.6	78.1	61.6	16.5	68.9	101.9	14.3
8	Biological Oxygen Demand (mg/l)	1.1	1	0.4	1.6	1.3	0.5	0.9	0.7	0.8	0.67	0.56	1.65	1.43
9	Chemical Oxygen Demand (mg/l)	2.3	1.5	1.3	2.2	2.1	1.7	1.8	1.2	2	1.34	1.78	2.87	2.43
10	Total Coliform (MPN /100 ml)	1	A	A	1	A	A	A	A	A	A	A	A	1
11	Chloride (mg/l)	6	7	8	6	6	6	5	7	6	7	6	6	7
12	Total alkalinity (mg/l of CaCO ₃)	31.5	32.4	35.1	29.7	28.8	32.4	31.5	31.5	30.6	31.5	29.7	30.6	29.7
13	Nitrates (NO ₃) (mg/l)	0.05	0.05	0.04	0.03	0.03	0.04	0.03	0.02	0.03	0.02	0.02	0.02	0.02
14	Sulphate (mg/l)	7	5	5	5	4	7	8	5	6	5	6	7	8
15	Phosphate (PO ₄) (mg/l)	0.001	0.005	0.001	0.002	0.001	0.005	0.004	0.004	0.004	0.001	0.002	0.003	0.006
16	Total Hardness (mg/l)	25.11	21.39	22.32	23.25	27.9	21.39	26.04	23.25	32.55	25.11	26.97	26.04	34.41
17	Calcium hardness (mg/l)	21.39	17.67	19	19	23	17	21.39	18	26	19	21	20	27

18	Calcium ions (mg/ l)	8.556	7.068	7.6	7.6	9.2	6.8	8.556	7.2	10.4	7.6	8.4	8	10.8
19	Magnesium Hardness (mg/l)	3.72	3.72	3.32	4.25	4.9	4.39	4.65	5.25	6.55	6.11	5.97	6.04	7.41
20	Magnesium ions (mg/l)	2.053	1.696	1.824	1.824	2.208	1.632	2.053	1.728	2.496	1.824	2.016	1.920	2.592
21	Potassium (mg/l)	0.3	0.3	0.5	0.4	0.3	0.3	0.1	0.5	0.7	0.1	0.39	1.65	0.14
22	Sodium (mg/l)	1.3	1.4	1.2	1.4	1.7	1.3	1.2	1.3	1.6	1.14	1.19	2.34	1.15
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	0.00	0.00	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub Basin- Yamne and Simang

S.No.	Physical / Chemical Characteristics	Y1	Y2	Y3	Y4	SM1	SM2	SM3
1	Water Temperature (°C)	14.6	14.9	14.5	15	16	15	14.6
2	Dissolved Oxygen (mg/l)	8.9	8.8	8.95	8.7	8.4	8.35	8.95
3	Turbidity (NTU)	5.59	6.02	7.58	9.53	16.45	16.42	16.37
4	Total Suspended Solids (mg/l)	23	25	32	38	44	45	42
5	pH	8.35	8.13	8.3	8.38	8.46	8.54	8.17
6	Electrical Conductivity (µS/cm)	114.8	108	114.6	111	216	91.8	79.8
7	Total Dissolved Solids (mg/l)	71.2	67.0	71.1	68.8	133.9	56.9	49.5
8	Biological Oxygen Demand (mg/l)	0.67	1.21	1.43	1.18	1.76	1.23	0.56
9	Chemical Oxygen Demand (mg/l)	1.87	2.16	2.34	2.87	2.78	2.18	1.34
10	Total Coliform (MPN /100 ml)	1	A	A	A	A	1	A
11	Chloride (mg/l)	6.4	8.0	6.7	6.4	5.8	6.1	5.5
12	Total alkalinity (mg/l of CaCO ₃)	35.0	31.5	41.1	30.7	47.3	47.3	37.6
13	Nitrates (NO ₃) (mg/l)	0.082	0.002	0.002	0.005	0.007	0.007	0.005
14	Sulphate (mg/l)	4.66	5.33	3.99	3.11	4.22	3.55	2.44
15	Phosphate (PO ₄) (mg/l)	0.006	0.004	0.002	0.006	0.006	0.007	0.004
16	Total Hardness (mg/l)	29.51	26.59	34.70	25.94	39.89	39.89	31.78
17	Calcium hardness (mg/l)	27.21	24.52	31.99	23.92	36.78	36.78	29.30
18	Calcium ions (mg/ l)	10.88	9.81	12.80	9.57	14.71	14.71	11.72
19	Magnesium Hardness (mg/l)	2.30	2.07	2.71	2.02	3.11	3.11	2.48
20	Magnesium ions (mg/l)	2.61	2.35	3.07	2.30	3.53	3.53	2.81
21	Potassium (mg/l)	0.2	0.6	0.3	0.4	0.4	0.2	0.2
22	Sodium (mg/l)	1.3	1.3	1.3	1.3	1.4	1.2	1.3
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND

Sub basin- Siyom: I-III and Hirit

S.No.	Physical / Chemical Characteristics	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Water Temperature (°C)	14.6	14.5	13.6	14.3	12.8	13	13	12.8	12.5	12.9	11.9	11.8	11.5
2	Dissolved Oxygen (mg/l)	8.9	8.91	9.05	8.89	9.3	9.1	9.05	9.1	9.2	9.28	9.45	9.5	9.64
3	Turbidity (NTU)	10.71	14.65	7.15	20.16	10.23	15.56	13.27	16.2	23.1	7.1	7.12	4.06	7.16
4	Total Suspended Solids (mg/l)	49	41	31	55	39	42	40	41	58	30	27	19	27
5	pH	7.89	7.7	7.39	7.54	8.23	8.27	8.21	7.98	7.87	7.21	7.81	7.78	7.32
6	Electrical Conductivity (µS/cm)	37.1	28.53	23.8	56.6	67.5	43.43	65	54.3	67.3	24	52	27	43.1
7	Total Dissolved Solids (mg/l)	23.0	17.7	14.8	35.1	41.9	26.9	40.3	33.7	41.7	14.9	32.2	16.7	26.7
8	Biological Oxygen Demand (mg/l)	0.45	0.69	0.79	0.43	0.89	0.65	0.45	0.98	0.32	0.78	1.52	0.56	0.89
9	Chemical Oxygen Demand (mg/l)	1.23	1.78	1.45	1.98	1.78	1.54	1.56	2.19	1.32	1.45	1.85	1.32	1.78
10	Total Coliform (MPN /100 ml)	A	A	A	1	A	A	A	A	1	A	A	A	1
11	Chloride (mg/l)	7.70	6.09	4.81	4.81	4.49	5.13	5.90	9.62	6.52	7.45	6.52	4.34	8.01
12	Total alkalinity (mg/l of CaCO ₃)	26.51	23.82	21.51	22.67	21.51	29.97	15.37	28.04	29.20	29.20	19.21	29.97	36.50
13	Nitrates (NO ₃) (mg/l)	0.008	0.001	0.005	0.014	0.001	0.013	0.001	0.001	0.001	0.001	0.006	0.005	0.002
14	Sulphate (mg/l)	4.22	3.77	3.11	3.55	3.99	1.55	3.99	2.88	2.88	4.22	1.55	4.66	4.88
15	Phosphate (PO ₄) (mg/l)	0.005	0.002	0.004	0.007	0.000	0.002	0.000	0.000	0.000	0.003	0.006	0.003	0.002
16	Total Hardness (mg/l)	22.38	20.11	18.16	19.13	18.16	25.30	12.97	25.83	26.89	26.89	17.69	27.60	33.61
17	Calcium hardness (mg/l)	20.63	18.54	16.74	17.64	16.74	23.32	11.96	23.81	24.79	24.79	16.31	25.44	30.99
18	Calcium ions (mg/ l)	8.25	7.42	6.70	7.06	6.70	9.33	4.78	9.52	9.92	9.92	6.52	10.18	12.40
19	Magnesium Hardness (mg/l)	1.75	1.57	1.42	1.49	1.42	1.97	1.01	2.01	2.10	2.10	1.38	2.15	2.62
20	Magnesium ions (mg/l)	1.98	1.78	1.61	1.69	1.61	2.24	1.15	2.29	2.38	2.38	1.57	2.44	2.97
21	Potassium (mg/l)	0.29	0.14	0.15	0.23	0.13	0.12	0.19	0.32	0.45	0.46	0.56	0.78	0.56
22	Sodium (mg/l)	1.35	1.26	1.28	1.38	1.18	1.15	0.89	1.32	1.26	1.18	1.87	1.87	1.76
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub Basin- Yargyap Chhu

S.No.	Physical / Chemical Characteristics	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Water Temperature (°C)	13.5	13.21	13.7	13.4	13.9	12.3	12.9	12.3	12	10.2	9.1	9.2	9.1	9.9
2	Dissolved Oxygen (mg/l)	8.9	8.97	8.87	8.94	8.68	9.15	9.1	9.3	9.4	10.6	10.89	10.75	10.9	10.35
3	Turbidity (NTU)	16.19	19.12	18.17	25.13	24.2	23.2	20.1	6.2	14	5.5	5.2	4.3	4.01	1.09
4	Total Suspended Solids (mg/l)	43	49	48	61	59	58	49	24	38	22	21	17	16	7
5	pH	7.56	7.62	7.45	7.89	7.49	7.87	7.78	7.00	7.23	7.19	7.12	7.21	7.87	7.56
6	Electrical Conductivity (μS/cm)	92.8	67.1	78.1	68	39	48	39	41	33	45	42	35	37	29
7	Total Dissolved Solids (mg/l)	57.54	41.60	48.42	42.16	24.18	29.76	24.18	25.42	20.46	27.90	26.04	21.70	22.94	17.98
8	Biological Oxygen Demand (mg/l)	0.56	0.76	0.49	0.59	0.78	0.89	0.65	1	0.6	0.78	0.56	0.78	0.13	0.17
9	Chemical Oxygen Demand (mg/l)	1.45	1.86	1.21	1.37	1.89	1.32	1.67	2	1.8	1.46	1.78	1.24	1.34	1.89
10	Total Coliform (MPN /100 ml)	A	1	A	A	A	A	1	1	A	A	A	1	A	A
11	Chloride (mg/l)	7.45	7.76	7.14	4.97	5.90	5.28	6.52	5.28	5.28	7.14	6.52	7.14	7.14	7.45
12	Total alkalinity (mg/l of CaCO ₃)	25.74	25.36	21.51	24.13	8.80	24.16	25.09	21.51	20.75	17.29	21.51	20.44	21.51	9.22
13	Nitrates (NO ₃) (mg/l)	0.007	0.009	0.005	0.007	0.008	0.007	0.008	0.008	0.000	0.005	0.001	0.005	0.009	0.005
14	Sulphate (mg/l)	3.77	4.88	4.22	3.33	3.33	2.00	3.55	4.22	4.66	3.77	3.77	3.77	4.88	4.22
15	Phosphate (PO ₄) (mg/l)	0.007	0.005	0.005	0.007	0.006	0.001	0.009	0.002	0.001	0.004	0.002	0.003	0.005	0.003
16	Total Hardness (mg/l)	23.70	23.35	19.81	22.22	8.10	22.25	23.10	19.81	19.10	15.92	19.81	18.82	19.81	8.49
17	Calcium hardness (mg/l)	21.85	21.53	18.27	20.48	7.47	20.52	21.30	18.27	17.61	14.68	18.27	17.35	18.27	7.83
18	Calcium ions (mg/ l)	8.74	8.61	7.31	8.19	2.99	8.21	8.52	7.31	7.05	5.87	7.31	6.94	7.31	3.13
19	Magnesium Hardness (mg/l)	1.85	1.82	1.55	1.73	0.63	1.74	1.80	1.55	1.49	1.24	1.55	1.47	1.55	0.66
20	Magnesium ions (mg/l)	2.10	2.07	1.75	1.97	0.72	1.97	2.04	1.75	1.69	1.41	1.75	1.67	1.75	0.75
21	Potassium (mg/l)	0.35	0.16	0.13	0.45	0.7	0.39	0.78	1	0.9	0.76	0.69	0.45	0.18	0.17

22	Sodium (mg/l)	1.76	0.91	0.98	1.79	1.43	1.19	1.21	1.6	1.8	1.56	1.39	1.39	0.93	0.84
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Outside basin

S.No.	Physical / Chemical Characteristics	B1	B2
1	Water Temperature (° C)	16.7	15.5
2	Dissolved Oxygen (mg/l)	8.98	8.05
3	Turbidity (NTU)	25.7	22.1
4	Total Suspended Solids (mg/l)	62	59
5	pH	8.28	8.38
6	Electrical Conductivity (µS/cm)	161	135
7	Total Dissolved Solids (mg/l)	107.4	89.7
8	Biological Oxygen Demand (mg/l)	1.1	1
9	Chemical Oxygen Demand (mg/l)	2.3	1.5
10	Total Coliform (MPN /100 ml)	1	A
11	Chloride (mg/l)	6	5.2
12	Total alkalinity (mg/l of CaCO ₃)	29	27
13	Nitrates (NO ₃) (mg/l)	0.05	0.05
14	Sulphate (mg/l)	5.09	4.5
15	Phosphate (PO ₄) (mg/l)	0.001	0.005
16	Total Hardness (mg/l)	25.11	21.39
17	Calcium hardness (mg/l)	16.39	12.67
18	Calcium ions (mg/ l)	6.556	5.068
19	Magnesium Hardness (mg/l)	8.72	8.72
20	Magnesium ions (mg/l)	1.57	1.22
21	Potassium (mg/l)	0.3	0.3
22	Sodium (mg/l)	1.3	1.4
23	Iron (mg/l)	<0.01	<0.01
24	Manganese (mg/l)	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND
27	Copper (Cu) (mg/l)	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND
30	Lead (Pb) (mg/l)	ND	ND

Biological Parameters

Phytoplanktons

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnantheidium affinis</i>	-	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnantheidium andicola</i>	+	-	-	-	-	-	-	-	-	+	-	-	-
3	<i>Achnantheidium austriaca</i>	-	-	+	+	+	-	+	+	+	-	+	+	+
4	<i>Achnantheidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Achnantheidium biasoletiana</i>	-	+	-	-	-	-	-	-	-	-	+	-	-
6	<i>Achnantheidium conspicua</i>	+	-	-	-	+	-	-	-	-	-	-	+	-
7	<i>Achnantheidium cranulata</i>	-	-	+	-	-	+	-	+	+	-	-	-	+
8	<i>Achnantheidium dispar</i>	-	+	-	+	-	+	+	-	-	-	+	-	-
9	<i>Achnantheidium exigua</i>	+	-	+	-	-	-	-	+	-	+	-	-	+
10	<i>Achnantheidium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
11	<i>Achnantheidium fragilarioides</i>	-	-	-	-	+	-	+	-	-	-	-	-	-
12	<i>Achnantheidium Grimmei</i>	+	-	-	-	-	-	-	-	-	+	-	-	-
13	<i>Achnantheidium hauckiana</i>	-	-	+	+	-	-	-	-	-	-	+	+	+
14	<i>Achnantheidium holsti</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
15	<i>Achnantheidium hungarica</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
16	<i>Achnantheidium kryophila</i>	+	-	-	-	-	+	-	-	-	-	-	-	-
17	<i>Achnantheidium lanceolata</i>	-	+	+	-	+	-	+	-	-	-	-	-	+
18	<i>Achnantheidium lapidosa</i>	-	-	+	-	-	-	-	+	-	+	-	-	+
19	<i>Achnantheidium lavenderi</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
20	<i>Achnantheidium lemmermanni</i>	+	-	-	+	-	-	-	-	-	-	+	+	-
21	<i>Achnantheidium Lilljeborgei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
22	<i>Achnantheidium linearis</i>	-	-	-	-	-	-	+	-	-	-	-	+	+
23	<i>Achnantheidium linearis</i> var. <i>pusila</i>	+	+	-	-	-	+	-	-	+	-	-	-	-
24	<i>Achnantheidium microcephala</i>	-	-	-	-	-	-	-	+	-	+	-	-	-
25	<i>Achnantheidium minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
26	<i>Achnantheidium nodosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
27	<i>Achnantheidium plonensis</i>	-	-	-	+	-	-	-	-	-	-	+	+	-

28	<i>Achnantheidium saxonica</i>	+	-	-	-	-	-	-	-	-	+	-	-	-
29	<i>Achnantheidium</i> sp.	-	-	+	-	-	-	-	-	-	-	-	-	+
30	<i>Achnantheidium suchlandti</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
31	<i>Achnantheidium taeniata</i>	-	-	-	-	+	+	-	+	+	-	-	-	-
32	<i>Achnantheidiumb conspicua</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
33	<i>Achnantheidiumlinearis</i> var. <i>pusila</i>	+	-	-	-	-	-	-	-	-	-	-	+	+
34	<i>Anomoeneis</i> sp.	-	-	-	-	-	-	-	+	+	-	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	+	-	-	+	-	-	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
37	<i>Cocconeis placentula</i>	-	-	-	-	+	-	+	-	-	-	-	-	-
38	<i>Cymbella</i> sp.	+	+	+	+	-	-	-	-	-	+	+	-	+
39	<i>Cymbella affinis</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
40	<i>Cymbella delicatula</i>	+	-	-	-	-	-	-	-	+	-	-	-	-
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
42	<i>Cymbella microcephala</i>	-	-	+	-	-	+	-	-	-	+	-	-	+
43	<i>Cymbella pusila</i>	+	-	-	+	-	-	-	-	-	-	+	-	-
44	<i>Cymbella tumida</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
45	<i>Cymbella turgida</i>	-	-	-	-	-	+	+	-	+	-	-	+	-
46	<i>Cymbella ventricosa</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	-	+	-	-	-	-	-	-	+	-	-
48	<i>Diatoma anceps</i>	-	-	+	-	+	+	-	-	-	-	-	-	+
49	<i>Diatoma hiemale</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	-	-	-	-	-	-	+	-	-	-	-
51	<i>Diatoma vulgare</i>	-	-	+	-	-	-	-	+	-	+	-	-	+
52	<i>Didymosphaenia geminata</i>	+	-	-	-	-	-	-	-	-	-	-	+	-
53	<i>Eunotia linearis</i>	-	-	-	+	-	-	-	-	-	-	+	-	-
54	<i>Eunotia</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
55	<i>Fragilaria capucina</i>	-	+	-	-	+	+	-	-	-	-	-	-	-
56	<i>Fragilaria construens</i>	+	-	-	-	-	-	-	+	-	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
59	<i>Fragilaria rumpens</i>	+	-	-	-	-	+	+	-	+	+	-	-	-
60	<i>Fragilaria</i> sp.	-	-	-	+	-	-	-	+	-	-	+	-	-
61	<i>Fragilaria vaucheriae</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
63	<i>Fragilaria pinnata</i>	-	+	+	-	+	-	+	-	+	-	-	-	+

64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
66	<i>Gomphonema intricatum</i>	-	+	+	+	-	-	-	-	+	-	+	-	+
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	+	-	-	+	-	-	-
69	<i>Gomphonema olivaceum</i>	-	+	-	-	-	+	-	+	+	-	-	-	-
70	<i>Gomphonema parvulum</i>	-	-	-	+	-	-	-	-	-	-	+	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	+	-	-	-	-	+	-
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
73	<i>Gomphonema gracile</i>	-	-	-	-	-	+	-	-	+	-	-	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	+	-	-	-	-	+	-	-	+	-	-	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	+	-	+	-	-	-	-	-	+	+	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	-	+	-	-	-	+	+	-	+	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	+	-	+	-	-	-	-	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	+	-	-	-	-	-	-	+	-	-
83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	+	-	+	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
86	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
89	<i>Hannaea arcus</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	+	-	+	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
95	<i>Navicula cryptocephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
96	<i>Navicula feverborni</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	+	-	+	-	-	-	-	-	+	-	-	-	+

98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	-	-	-	-	+	-	-	-	-	+	-	-	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	+	-	-	-	-	-	-	+	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	+	-	-	-	-	-	-	+
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
113	<i>Synedra ulna</i>	-	-	-	+	-	-	-	-	-	-	+	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+	-	-	-	-	-	-	-	-	-	-	+
115	<i>Tabellaria flocculosa</i>	+	-	-	-	-	-	+	-	-	+	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-	-	+	-	-	-	-
-	Total	23	14	19	18	13	18	21	18	23	23	20	17	23

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	-	-	-	-	-	+	-
3	<i>Achnanthidium austriaca</i>	+	+	+	-	+	-	+
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	-
5	<i>Achnanthidium biasoletiana</i>	-	+	-	+	-	+	-
6	<i>Achnanthidium conspicua</i>	-	-	-	-	+	-	+
7	<i>Achnanthidium cranulata</i>	+	-	+	-	-	-	-
8	<i>Achnanthidium dispar</i>	-	+	-	+	-	-	-
9	<i>Achnanthidium exigua</i>	+	-	-	-	-	-	+
10	<i>Achnanthidium exilis</i>	-	-	-	-	+	+	-
11	<i>Achnanthidium fragilarioides</i>	-	-	-	+	-	-	+
12	<i>Achnanthidium Grimmei</i>	-	-	-	-	-	-	-
13	<i>Achnanthidium hauckiana</i>	-	+	-	-	+	-	-
14	<i>Achnanthidium holsti</i>	+	-	-	-	-	+	-
15	<i>Achnanthidium hungarica</i>	-	-	+	-	-	-	-
16	<i>Achnanthidium kryophila</i>	-	-	-	-	-	-	+
17	<i>Achnanthidium lanceolata</i>	-	+	-	+	-	-	-
18	<i>Achnanthidium lapidosa</i>	+	-	-	-	-	-	+
19	<i>Achnanthidium lavenderi</i>	-	-	-	+	-	+	-
20	<i>Achnanthidium lemmermanni</i>	-	+	-	-	+	-	-
21	<i>Achnanthidium Lillijeborgei</i>	+	-	-	-	-	-	-
22	<i>Achnanthidium linearis</i>	-	-	-	-	+	-	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	+	+	-	-	+
24	<i>Achnanthidium microcephala</i>	+	-	-	-	-	-	-
25	<i>Achnanthidium minutissima</i>	-	-	-	-	-	-	-
26	<i>Achnanthidium nodosa</i>	-	-	-	+	-	+	-
27	<i>Achnanthidium plonensis</i>	-	+	-	-	+	-	+
28	<i>Achnanthidium saxonica</i>	-	-	-	-	-	-	-
29	<i>Achnanthidium</i> sp.	-	-	-	-	-	-	-
30	<i>Achnanthidium suchlandti</i>	-	+	-	-	-	-	+
31	<i>Achnanthidium taeniata</i>	+	-	+	-	-	-	-
32	<i>Achnanthidiumb conspicua</i>	-	-	-	-	-	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	-	-	-	+	-	-
34	<i>Anomoeneis</i> sp.	+	+	+	-	-	+	-

35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	+	-	-	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	-	+	+
37	<i>Cocconeis placentula</i>	-	-	-	-	-	-	-
38	<i>Cymbella</i> sp.	-	+	-	+	-	-	-
39	<i>Cymbella affinis</i>	+	-	-	-	-	-	+
40	<i>Cymbella delicatula</i>	-	-	+	-	-	-	-
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	-
42	<i>Cymbella microcephala</i>	-	-	-	-	-	-	+
43	<i>Cymbella pusila</i>	+	-	-	-	-	-	-
44	<i>Cymbella tumida</i>	-	-	-	-	-	-	-
45	<i>Cymbella turgida</i>	-	-	+	-	+	-	-
46	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	-	+	-	-	-
48	<i>Diatoma anceps</i>	-	-	-	-	-	+	-
49	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	+	-	-	-	-
51	<i>Diatoma vulgare</i>	+	-	-	-	-	-	-
52	<i>Didymosphaenia geminata</i>	-	-	-	-	+	-	+
53	<i>Eunotia linearis</i>	+	+	-	-	-	-	-
54	<i>Eunotia</i> sp.	-	-	-	-	-	-	-
55	<i>Fragilaria capucina</i>	-	-	-	+	-	-	-
56	<i>Fragilaria construens</i>	+	-	-	-	-	-	+
57	<i>Fragilaria inflata</i>	-	-	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	-	+	-
59	<i>Fragilaria rumpens</i>	-	-	+	-	-	-	-
60	<i>Fragilaria</i> sp.	+	+	-	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	+
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	+	-	-
63	<i>Fragilaria pinnata</i>	+	-	+	-	-	-	-
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	-	-	+	-	-	-	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	+	-	+	+	-	-	-
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	+	+	-

72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-
73	<i>Gomphonema gracile</i>	+	-	+	-	-	-	+
74	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	-	-	+	-	-	+	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	+	-	+	-	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	-	-	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	+	+	+	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	-	-	-	+
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-
81	<i>Gomphonema olivaceum</i>	-	-	-	+	-	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-
83	<i>Gomphonema parvulum</i>	+	-	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	+	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	+	-	-	+	+	-
86	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-
89	<i>Hannaea arcus</i>	+	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	+	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	+	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	+
94	<i>Navicula andium</i>	+	-	-	+	-	-	-
95	<i>Navicula cryptocephala</i>	-	-	-	-	-	-	-
96	<i>Navicula feverborni</i>	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	-	-	+	-	-	-	-
98	<i>Navicula radiosa</i>	-	-	-	-	+	-	+
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	+	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	+	-	-	-	-	-	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	+	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	+	-	-	-	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	+	-	-	-	-	-
107	<i>Surirella ovata</i>	+	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	-	-

110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	-	-	-	-	+
112	<i>Synedra rumpens</i>	-	-	-	-	+	-	-
113	<i>Synedra ulna</i>	+	+	-	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	+	-	-	-
115	<i>Tabellaria flocculosa</i>	-	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	+	-	-	-	-
-	Total	26	19	23	16	17	16	21

Sub Basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	-	+	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	-	-	-	-	-	-	+	+	+	-	-	-	-
3	<i>Achnanthidium austriaca</i>	-	+	+	+	+	-	-	-	-	+	+	+	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-	-	-	-	+	-	-	-	-	-	-	+
5	<i>Achnanthidium biasoletiana</i>	-	-	+	-	-	-	-	+	+	-	-	-	-
6	<i>Achnanthidium conspicua</i>	-	-	-	-	+	-	+	-	-	-	-	-	-
7	<i>Achnanthidium cranulata</i>	-	+	-	+	-	-	-	+	-	+	+	+	+
8	<i>Achnanthidium dispar</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
9	<i>Achnanthidium exigua</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
10	<i>Achnanthidium exilis</i>	-	+	+	-	-	-	-	+	+	+	-	+	-
11	<i>Achnanthidium fragilarioides</i>	+	-	-	-	+	+	-	-	-	-	-	-	+
12	<i>Achnanthidium Grimmei</i>	-	-	-	-	-	-	+	+	-	-	-	-	-
13	<i>Achnanthidium hauckiana</i>	-	-	+	+	+	-	-	-	+	+	+	-	-
14	<i>Achnanthidium holsti</i>	+	-	-	-	-	+	-	+	-	-	-	-	-
15	<i>Achnanthidium hungarica</i>	-	+	-	-	-	-	-	-	-	-	-	+	-
16	<i>Achnanthidium kryophila</i>	-	-	+	-	-	-	+	-	-	-	+	-	+
17	<i>Achnanthidium lanceolata</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
18	<i>Achnanthidium lapidosa</i>	-	+	+	+	-	-	-	-	-	+	+	+	-
19	<i>Achnanthidium lavenderi</i>	-	-	-	-	-	-	-	+	-	-	+	-	-
20	<i>Achnanthidium lemmermanni</i>	+	-	-	-	-	+	+	-	-	-	-	-	-
21	<i>Achnanthidium Lillijeborgei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
22	<i>Achnanthidium linearis</i>	-	-	-	+	+	-	-	+	-	-	-	-	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	+	+	-	-	-	+	-	-	-	-	+	-

24	<i>Achnanthydium microcephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
25	<i>Achnanthydium minutissima</i>	-	+	+	-	+	-	-	-	-	+	-	+	-
26	<i>Achnanthydium nodosa</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
27	<i>Achnanthydium plonensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
28	<i>Achnanthydium saxonica</i>	-	-	-	-	-	-	+	-	-	-	+	-	+
29	<i>Achnanthydium sp.</i>	-	-	-	+	+	-	-	+	-	-	-	-	-
30	<i>Achnanthydium suchlandti</i>	-	-	+	-	-	-	-	-	-	+	-	-	-
31	<i>Achnanthydium taeniata</i>	-	+	-	-	+	-	-	+	-	-	-	+	-
32	<i>Achnanthydiumb conspicua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
33	<i>Achnanthydiumlinearis</i> var. <i>pusila</i>	-	-	-	-	+	-	+	-	-	-	-	-	-
34	<i>Anomoeneis sp.</i>	-	+	+	-	-	-	-	+	-	+	-	+	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	-	-	-	-	+	-	+	-	-	+	+
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	+	-	-	-	+	-	-	-	-	-
37	<i>Cocconeis placentula</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
38	<i>Cymbella sp.</i>	-	-	-	+	-	-	+	-	-	+	-	-	-
39	<i>Cymbella affinis</i>	+	-	+	-	-	+	-	-	-	-	+	-	-
40	<i>Cymbella delicatula</i>	-	+	-	-	+	-	+	-	-	-	-	+	-
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
42	<i>Cymbella microcephala</i>	+	-	-	-	-	+	-	-	-	-	-	-	-
43	<i>Cymbella pusila</i>	-	-	-	-	-	-	+	-	+	+	-	-	-
44	<i>Cymbella tumida</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
45	<i>Cymbella turgida</i>	-	+	-	-	-	-	-	-	-	-	-	+	-
46	<i>Cymbella ventricosa</i>	-	-	+	-	-	-	+	-	-	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	-	-	-	+	-	-	-	-	-	-	+
48	<i>Diatoma anceps</i>	-	+	-	+	+	-	-	+	-	+	-	+	-
49	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	-	-	-	-	+	-	+	-	-	+	-

51	<i>Diatoma vulgare</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
52	<i>Didymosphaenia geminata</i>	-	-	-	-	-	-	+	-	-	-	+	-	-
53	<i>Eunotia linearis</i>	+	+	-	-	-	+	-	-	-	-	-	+	-
54	<i>Eunotia</i> sp.	-	-	-	-	-	-	-	-	-	+	-	-	-
55	<i>Fragilaria capucina</i>	-	-	+	-	+	-	-	-	-	-	-	-	-
56	<i>Fragilaria construens</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	+	-	-	-	-	+	-	+	-	+	-	-	-
59	<i>Fragilaria rumpens</i>	-	+	-	-	-	-	+	-	-	-	-	+	-
60	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	+	+	-	-	-	-	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	+	-	-	-	-	-	-	-	+	-	-
63	<i>Fragilaria pinnata</i>	+	-	-	+	+	+	-	-	-	+	-	-	+
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	-	+	-	-	-	-	-	-	-	-	-	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	+	-	+	+	-	-	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	-	+	-	-	-	-	-	-	-	-	-	+	-
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
73	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	-	-	-	-	+	-	+	+	-	-	-	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	-	+	-	-	+	+	-	-	+	-	-	+

77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	+	-	-	-	-	-	-	-	-	-	+	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	+	-	-	-	-	-	-	-	-	+
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	+	-	-	-	-	-	+	-	+	-	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	+	-	-	-	-	+	-	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	+	-	-	-	-	+	-	-	-	-	+	-
85	<i>Gomphonema sphaerophorum</i>	-	-	+	-	-	-	-	+	+	-	-	-	-
86	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
89	<i>Hannaea arcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	+	-	-	+	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
94	<i>Navicula andium</i>	+	-	-	-	-	+	-	-	-	-	-	-	+
95	<i>Navicula cryptocephala</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
96	<i>Navicula feverborni</i>	-	-	-	-	+	-	-	+	-	+	-	-	-
97	<i>Navicula halophila</i>	-	-	-	+	-	-	+	-	-	-	-	-	-
98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	-	-	-	-	+	-	-	-	-	-	-	-	-
103	<i>Planothidium lanceolata</i>	-	-	+	-	-	-	-	-	-	-	-	-	+

104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	+	-	-	-	-	-	-	-	-	+	+	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	-	-	+	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	-	-	-	-	-	+	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	+	-	-	-	-	+	-	-	-	-	-	-	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
113	<i>Synedra ulna</i>	-	-	-	-	+	-	-	-	-	+	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	+	+	-	-	-	-	+	-	-	-	+
115	<i>Tabellaria flocculosa</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	+	-	-	-	-	-	-	-	-	-	+	-
	Total	17	23	21	15	25	17	23	25	21	19	17	23	14

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	-	-	-	+	-	-	+	-	-	-	+	-	-	-
3	<i>Achnanthidium austriaca</i>	+	+	-	-	+	-	-	+	+	+	-	+	+	+
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	+	+	+	-	+	-	-	-
5	<i>Achnanthidium biasoletiana</i>	-	-	+	-	-	-	+	-	-	-	-	-	+	-
6	<i>Achnanthidium conspicua</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
7	<i>Achnanthidium cranulata</i>	+	+	-	+	-	+	+	+	+	-	-	-	-	+
8	<i>Achnanthidium dispar</i>	-	-	+	-	-	+	+	-	-	-	-	+	+	-
9	<i>Achnanthidium exigua</i>	+	-	-	-	+	-	-	-	-	+	+	-	+	+
10	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
11	<i>Achnanthidium fragilarioides</i>	-	-	+	+	-	-	-	+	-	-	+	-	+	-
12	<i>Achnanthidium Grimmei</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
13	<i>Achnanthidium hauckiana</i>	-	+	+	-	-	-	+	+	+	-	+	-	+	-
14	<i>Achnanthidium holsti</i>	+	-	-	+	-	-	-	+	-	+	+	+	-	+
15	<i>Achnanthidium hungarica</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
16	<i>Achnanthidium kryophila</i>	-	+	-	-	-	+	+	-	+	-	-	-	-	-
17	<i>Achnanthidium lanceolata</i>	-	-	+	+	-	-	-	+	-	-	-	-	+	-
18	<i>Achnanthidium lapidosa</i>	+	+	-	-	-	+	+	-	-	-	+	+	-	+
19	<i>Achnanthidium lavenderi</i>	-	+	+	-	-	-	-	-	-	-	-	-	+	-
20	<i>Achnanthidium lemmermanni</i>	-	-	-	-	-	-	+	+	+	-	+	+	-	-
21	<i>Achnanthidium Lillijeborgei</i>	+	-	-	-	-	-	+	+	-	-	-	-	-	+
22	<i>Achnanthidium linearis</i>	-	-	-	+	-	-	+	-	-	-	+	-	+	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	+	-	+	+	-	-	+	-	-	-	+	-
24	<i>Achnanthidium microcephala</i>	+	-	-	+	-	-	-	+	-	+	+	-	-	+

25	<i>Achnantheidium minutissima</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
26	<i>Achnantheidium nodosa</i>	-	-	+	-	-	-	+	+	-	-	-	-	+	-
27	<i>Achnantheidium plonensis</i>	-	-	-	-	+	-	+	-	+	-	-	+	-	-
28	<i>Achnantheidium saxonica</i>	-	+	-	-	-	-	-	+	-	-	+	-	-	-
29	<i>Achnantheidium sp.</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	<i>Achnantheidium suchlandti</i>	-	-	-	-	-	-	-	+	-	-	-	+	-	-
31	<i>Achnantheidium taeniata</i>	+	+	-	-	-	+	+	-	-	+	-	-	+	+
32	<i>Achnantheidiumb conspicua</i>	-	+	-	-	-	-	-	+	-	-	+	-	-	-
33	<i>Achnantheidiumlinearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	<i>Anomoeneis sp.</i>	+	+	-	-	-	-	-	-	-	+	-	-	-	+
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	+	+	-	-	-	+	-	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	+	-	+	+	-	-	-	-	-	-	+	+	-
37	<i>Cocconeis placentula</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
38	<i>Cymbella sp.</i>	-	-	+	-	-	-	-	+	-	-	-	-	+	-
39	<i>Cymbella affinis</i>	+	+	-	-	-	-	+	-	-	-	+	-	-	+
40	<i>Cymbella delicatula</i>	-	-	-	+	-	-	-	-	+	-	-	-	-	-
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
42	<i>Cymbella microcephala</i>	-	-	-	-	+	+	-	+	-	-	+	+	-	-
43	<i>Cymbella pusila</i>	+	-	-	+	-	-	-	-	-	-	-	-	+	+
44	<i>Cymbella tumida</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
45	<i>Cymbella turgida</i>	-	-	-	-	-	+	-	-	+	-	-	+	-	-
46	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	+	+	-	-	-	+	-	-	+	-	+	-
48	<i>Diatoma anceps</i>	-	-	-	-	+	+	-	-	-	-	-	-	-	-
49	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-

51	<i>Diatoma vulgare</i>	+	-	-	-	-	-	-	-	+	+	-	-	-	+
52	<i>Didymosphaenia geminata</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
53	<i>Eunotia linearis</i>	+	-	-	-	-	-	-	+	-	+	+	-	-	+
54	<i>Eunotia</i> sp.	-	-	-	-	-	-	-	-	-	-	-	+	-	-
55	<i>Fragilaria capucina</i>	-	-	+	-	-	+	+	-	+	-	-	-	+	-
56	<i>Fragilaria construens</i>	+	-	-	-	+	-	-	-	-	+	-	-	-	+
57	<i>Fragilaria inflata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	+	-	-	-	-	-	+	-	-	+	+	-	-
59	<i>Fragilaria rumpens</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
60	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-	-	+	+	-	-	-	+
61	<i>Fragilaria vaucheriae</i>	-	-	-	-	+	-	-	-	-	-	-	+	-	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
63	<i>Fragilaria pinnata</i>	+	-	+	+	-	-	-	-	-	+	+	-	+	+
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	+	-	-	-	-	-	-	+	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	-	-	+	-	-	-	-	-	-	-	-	+	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	+	-	+	-	-	+	-	-	-	+	-	+	+	+
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	<i>Gomphonema gracile</i>	+	-	-	-	+	+	-	-	+	+	-	+	-	+
74	<i>Gomphonema helveticum</i>	-	+	-	-	-	-	+	-	-	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
76	<i>Gomphonema intricatum</i> var.	-	-	+	-	-	-	-	-	-	-	+	-	+	-

	<i>pumila</i>														
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	+	-	-	-	-	-	-	-	-	+	-	-	-	+
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	-	+	-	-	+	-	-	+	-	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
81	<i>Gomphonema olivaceum</i>	-	-	+	-	-	-	-	-	-	-	-	-	+	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+	-	-	-	+	-	-	+	-	-	-	-	-
83	<i>Gomphonema parvulum</i>	-	-	-	+	-	-	-	+	-	+	+	-	-	+
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
86	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	+	-	-	-	-	-	+	-	-
89	<i>Hannaea arcus</i>	+	-	-	-	-	-	-	-	-	+	-	-	+	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	+	-	+	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	+	-	-	-	-	-	+	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	+	-	-	-	-	-	+	+	-	+	+	-	+	+
95	<i>Navicula cryptocephala</i>	-	+	-	-	-	+	-	-	+	-	-	-	-	-
96	<i>Navicula feverborni</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
98	<i>Navicula radiosa</i>	-	+	-	-	+	-	+	-	-	-	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-

100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	+	-	-	+	-	-	-	-	+	+	-	+	-	-
103	<i>Planothidium lanceolata</i>	-	-	+	-	-	-	-	-	-	-	-	-	+	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	+	-	-	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	+	-	-	-	-	+	-	-	-	-	-
109	<i>Synedra</i> sp.	-	+	-	-	-	-	-	-	-	-	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	-	-	+	-	+	+	-	-	+	+	-	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
113	<i>Synedra ulna</i>	+	-	-	-	-	-	-	-	+	+	-	-	-	+
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	+	-	-	-	+	-	-	-	-	-	+	-
115	<i>Tabellaria flocculosa</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	23	26	19	17	15	22	30	15	23	21	27	22	27	23

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnanthidium affinis</i>	+	+
2	<i>Achnanthidium andicola</i>	-	+
3	<i>Achnanthidium austriaca</i>	+	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-
5	<i>Achnanthidium biasoletiana</i>	-	+
6	<i>Achnanthidium conspicua</i>	-	-
7	<i>Achnanthidium cranulata</i>	+	-
8	<i>Achnanthidium dispar</i>	-	-
9	<i>Achnanthidium exigua</i>	-	-
10	<i>Achnanthidium exilis</i>	+	+
11	<i>Achnanthidium fragilarioides</i>	-	-
12	<i>Achnanthidium Grimmei</i>	-	-
13	<i>Achnanthidium hauckiana</i>	-	+
14	<i>Achnanthidium holsti</i>	-	-
15	<i>Achnanthidium hungarica</i>	+	-
16	<i>Achnanthidium kryophila</i>	-	-
17	<i>Achnanthidium lanceolata</i>	-	+
18	<i>Achnanthidium lapidosa</i>	+	-
19	<i>Achnanthidium lavenderi</i>	-	-
20	<i>Achnanthidium lemmermanni</i>	-	-
21	<i>Achnanthidium Lilljeborgei</i>	-	-
22	<i>Achnanthidium linearis</i>	-	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	-
24	<i>Achnanthidium microcephala</i>	-	-
25	<i>Achnanthidium minutissima</i>	+	-
26	<i>Achnanthidium nodosa</i>	-	-
27	<i>Achnanthidium plonensis</i>	-	+
28	<i>Achnanthidium saxonica</i>	-	-
29	<i>Achnanthidium</i> sp.	-	-
30	<i>Achnanthidium suchlandti</i>	-	-
31	<i>Achnanthidium taeniata</i>	+	-
32	<i>Achnanthidiumb conspicua</i>	-	-

33	<i>Achnanthyidium linearis</i> var. <i>pusila</i>	-	-
34	<i>Anomoeneis</i> sp.	+	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	+
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-
37	<i>Cocconeis placentula</i>	-	-
38	<i>Cymbella</i> sp.	-	-
39	<i>Cymbella affinis</i>	-	-
40	<i>Cymbella delicatula</i>	+	-
41	<i>Cymbella laevis</i>	-	-
42	<i>Cymbella microcephala</i>	-	-
43	<i>Cymbella pusila</i>	-	+
44	<i>Cymbella tumida</i>	-	-
45	<i>Cymbella turgida</i>	+	-
46	<i>Cymbella ventricosa</i>	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-
48	<i>Diatoma anceps</i>	+	-
49	<i>Diatoma hiemale</i>	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	+
51	<i>Diatoma vulgare</i>	-	-
52	<i>Didymosphaenia geminata</i>	-	-
53	<i>Eunotia linearis</i>	+	-
54	<i>Eunotia</i> sp.	-	-
55	<i>Fragilaria capucina</i>	-	+
56	<i>Fragilaria construens</i>	-	-
57	<i>Fragilaria inflata</i>	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-
59	<i>Fragilaria rumpens</i>	+	+
60	<i>Fragilaria</i> sp.	-	-
61	<i>Fragilaria vaucheriae</i>	-	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-
63	<i>Fragilaria pinnata</i>	+	-
64	<i>Gomphonema gracile</i>	-	+
65	<i>Gomphonema helveticum</i>	-	-
66	<i>Gomphonema intricatum</i>	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-
68	<i>Gomphonema olivaceoides</i>	-	-

69	<i>Gomphonema olivaceum</i>	+	-
70	<i>Gomphonema parvulum</i>	-	+
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-
72	<i>Gomphonema bohemicum</i>	-	-
73	<i>Gomphonema gracile</i>	+	-
74	<i>Gomphonema helveticum</i>	-	-
75	<i>Gomphonema herbidense</i>	+	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	+	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	+
81	<i>Gomphonema olivaceum</i>	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-
83	<i>Gomphonema parvulum</i>	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	+	-
85	<i>Gomphonema sphaerophorum</i>	-	+
86	<i>Gomphonema. intricatum</i>	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
89	<i>Hannaea arcus</i>	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i> 1	+	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
93	<i>Melosira junergensii</i>	-	-
94	<i>Navicula andium</i>	-	+
95	<i>Navicula cryptocephala</i>	-	-
96	<i>Navicula feverborni</i>	-	-
97	<i>Navicula halophila</i>	+	-
98	<i>Navicula radiosa</i>	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-
100	<i>Pinnularia borealis</i>	-	-
101	<i>Pinnularia molaris</i>	-	+
102	<i>Pinnularia</i> sp.	-	-
103	<i>Planothidium lanceolata</i>	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	+	-

105	<i>Reimeria sinuata</i>	-	-
106	<i>Stauroneis</i> sp.	-	+
107	<i>Surirella ovata</i>	-	-
108	<i>Surirella</i> sp.	-	-
109	<i>Synedra</i> sp.	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
111	<i>Synedra amphirhynchus</i>	-	-
112	<i>Synedra rumpens</i>	-	-
113	<i>Synedra ulna</i>	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+
115	<i>Tabellaria flocculosa</i>	-	-
116	<i>Tetracyclus</i> sp.	+	-
-	Total	28	21

DENSITY & DIVERSITY OF PHYTOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/lit.)	309	239	372	216	129	178	345	267	Nil	189	Nil	266	361	
Shannon Weiner Diversity	2.06	1.52	1.88	1.65	1.43	1.73	1.87	1.75	Nil	1.66	Nil	1.67	2.05	
Evenness Index	0.66	0.58	0.64	0.60	0.56	0.60	0.61	0.61	0.66	0.60	0.62	0.59	0.65	
No. of species	23	14	19	16	13	18	21	18	Nil	16	Nil	17	23	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/lit.)	460	342	379	218	Nil	165	209							
Shannon Weiner Diversity	2.15	1.99	2.06	1.72	Nil	1.56	1.94							
Evenness Index	0.66	0.68	0.66	0.62	Nil	0.56	0.64							
No. of species	26	19	23	16	Nil	16	21							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/lit.)	Nil	Nil	342	169	217	198	278	309	127	187	145	256	187	
Shannon Weiner Diversity	Nil	Nil	1.87	1.75	2.19	1.82	2.03	2.24	1.56	1.79	1.77	2.1	1.69	
Evenness Index	Nil	Nil	0.61	0.65	0.68	0.64	0.65	0.70	0.61	0.61	0.62	0.67	0.64	
No. of species	Nil	Nil	21	15	25	17	23	25	13	19	17	23	14	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/lit.)	465	543	378	258	298	342	468	299	289	265	389	276	453	390
Shannon Weiner Diversity	2.08	2.13	1.89	1.76	1.65	2.1	2.33	1.68	1.98	1.87	2.19	1.88	2.19	1.94
Evenness Index	0.66	0.65	0.64	0.62	0.61	0.68	0.69	0.62	0.63	0.61	0.66	0.61	0.66	0.62
No. of species	23	26	19	17	15	22	30	15	23	21	27	22	28	23
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/lit.)	240		385											
Shannon Weiner Diversity	1.65		1.86											
Evenness Index	0.51		0.47											
No. of species	25		53											

Phytobenthos

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnanthydium austriaca</i>	+	+	+	+	+	+	+	+	+	-	+	+	+
2	<i>Achnanthydium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	-	+	-	+	-	-	-
3	<i>Achnanthydium boyei</i>	+	+	+	+	-	+	+	-	+	-	+	+	-
4	<i>Achnanthydium conspicua</i>	-	-	+	+	+	-	-	-	-	-	-	+	+
5	<i>Achnanthydium cranulata</i>	+	-	-	-	-	-	+	-	-	-	-	-	-
6	<i>Achnanthydium exigua</i>	-	-	+	-	-	-	-	-	+	-	-	+	-
7	<i>Achnanthydium Grimmei</i>	-	+	-	-	+	-	-	+	-	+	+	-	-
8	<i>Achnanthydium holsti</i>	+	-	-	+	-	-	-	-	-	-	-	-	-
9	<i>Achnanthydium hungarica</i>	-	-	+	-	-	+	+	-	-	-	+	+	+
10	<i>Achnanthydium lapidosa</i> var. <i>lanceolata</i>	-	-	-	+	-	-	-	+	-	-	-	-	-
11	<i>Achnanthydium linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
12	<i>Achnanthydium linearis</i> var. <i>pusila</i>	+	-	-	+	-	-	-	-	-	-	-	-	-
13	<i>Achnanthydium microcephala</i>	-	-	-	+	-	-	-	-	-	+	-	-	-
14	<i>Achnanthydium minutissima</i>	-	-	-	-	-	+	-	-	+	+	-	-	-
15	<i>Achnanthydium nodosa</i>	-	-	-	+	-	-	-	-	-	-	+	-	-
16	<i>Achnanthydium plonensis</i>	+	+	-	+	-	-	+	+	-	-	-	-	-
17	<i>Achnanthydium saxonica</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Achnanthydium suchlandti</i>	-	-	-	+	-	-	-	-	-	-	+	-	+
19	<i>Achnanthydium affinis</i>	-	+	-	-	+	+	+	-	-	-	-	-	-
20	<i>Achnanthydium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Achnanthydium lapidosa</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
22	<i>Cocconeis placentula</i>	+	-	-	-	-	-	-	+	-	+	-	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-	-	+	-	+	-	-
24	<i>Cyclotella</i> sp.	-	-	+	+	+	-	-	+	-	-	-	+	-
25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
26	<i>Cymbella laevis</i>	+	-	-	-	-	-	-	-	+	-	-	-	-
27	<i>Cymbella perpusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
28	<i>Cymbella tumidula</i>	-	-	-	-	-	-	+	-	-	+	-	-	-

29	<i>Cymbella turgidula</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
31	<i>Cymbella affinis</i>	-	-	+	+	-	-	+	-	-	-	-	+	-
32	<i>Diatoma hiemale</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	+	-	-	-	+
34	<i>Didymosphenia geminata</i>	-	+	-	+	-	-	-	-	-	-	-	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	-	+	+	-	-	-	+	+	-	-
36	<i>Eunotia arcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
38	<i>Fragilaria construens</i>	+	-	-	-	-	-	-	+	-	+	-	-	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	-	+	-	-	-	+	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
42	<i>Fragilaria rumpens</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
43	<i>Fragilaria brevistriata</i>	+	-	+	-	-	-	+	-	-	-	-	+	-
44	<i>Fragilaria</i> sp.	-	+	-	-	-	-	-	+	+	-	-	-	-
45	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	-	+	+	-	-	-	-	-	-	-
47	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
50	<i>Gomphonema nagpurenses</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
52	<i>Gomphonema olivaceum</i>	-	-	-	+	+	-	-	+	-	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+	+	-	-	-	-	-	-	-	+	+	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	+	-	-	-	-	-	+	-	-	-	-	-	-
55	<i>Gomphonema parvulum</i>	-	-	-	+	-	-	-	-	-	-	-	-	+
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
58	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	-	+	+	+	-	-	-
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	+	+	+	-	-	-	-	-	-	-	-	+	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	+	-	+	-	-	-	-	-	-	+	-

63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	+	-	-	+
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
67	<i>Navicula rostellata</i>	-	-	-	-	+	+	-	+	-	+	-	-	-
68	<i>Navicula cari</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
71	<i>Planothidium lanceolata</i>	+	-	-	-	-	-	-	+	-	-	-	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	+	-	-	-	-	-	-	-	-	+
73	<i>Reimeria sinuata</i>	-	-	+	-	-	-	+	-	-	-	-	+	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
75	<i>Synedra ulna</i>	-	-	-	-	+	+	-	-	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	+	+	-	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
78	<i>Tabellaria</i> sp.	-	+	-	-	-	-	-	-	-	-	+	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	33	26	22	18	12	26	24	21	11	25	14	24	30

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	-
3	<i>Achnanthidium boyei</i>	-	-	+	-	+	+	-
4	<i>Achnanthidium conspicua</i>	+	+	-	-	+	-	-
5	<i>Achnanthidium cranulata</i>	-	-	-	-	-	-	+
6	<i>Achnanthidium exigua</i>	-	-	-	-	-	-	-
7	<i>Achnanthidium Grimmei</i>	-	-	+	-	-	-	-
8	<i>Achnanthidium holsti</i>	+	-	-	-	+	-	-
9	<i>Achnanthidium hungarica</i>	-	-	-	+	-	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	+	-	-	+	-	-
11	<i>Achnanthidium linearis</i>	-	-	-	-	-	-	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	+	+	-
13	<i>Achnanthidium microcephala</i>	-	+	-	-	+	-	-
14	<i>Achnanthidium minutissima</i>	-	-	-	-	-	-	+
15	<i>Achnanthidium nodosa</i>	-	-	-	-	+	-	-
16	<i>Achnanthidium plonensis</i>	-	-	+	-	+	-	-
17	<i>Achnanthidium saxonica</i>	-	-	-	-	-	-	-
18	<i>Achnanthidium suchlandti</i>	-	-	-	-	+	-	+
19	<i>Achnanthidium affinis</i>	+	-	-	+	-	-	-
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-
21	<i>Achnanthidium lapidosa</i>	-	+	-	-	+	-	-
22	<i>Cocconeis placentula</i>	-	-	-	-	-	+	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	+	-	-	-
24	<i>Cyclotella</i> sp.	-	-	+	-	+	-	+
25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	-
26	<i>Cymbella laevis</i>	+	-	-	-	-	-	-
27	<i>Cymbella perpusila</i>	-	+	-	-	-	-	-
28	<i>Cymbella tumidula</i>	-	-	-	-	-	-	-
29	<i>Cymbella turgidula</i>	-	-	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	-	-	-	+	-	-	-
31	<i>Cymbella affinis</i>	-	-	-	-	+	-	-
32	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-
34	<i>Didymosphenia geminata</i>	-	-	+	-	+	-	+
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	-	-	-	-	+	-

36	<i>Eunotia arcus</i>	-	+	-	+	-	-	-
37	<i>Fragilaria capucina</i>	-	-	-	-	+	-	-
38	<i>Fragilaria construens</i>	-	-	-	-	-	-	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	-
41	<i>Fragilaria pinnata</i>	-	+	-	+	-	-	-
42	<i>Fragilaria rumpens</i>	+	-	-	-	-	+	+
43	<i>Fragilaria brevistriata</i>	-	-	-	-	-	-	-
44	<i>Fragilaria sp.</i>	-	-	+	-	-	-	-
45	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	-
46	<i>Gomphonema bohemicum</i>	+	-	-	-	-	-	-
47	<i>Gomphonema gracile</i>	-	-	+	-	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	-	-	-	-	-
49	<i>Gomphonema lanceolatum</i>	-	+	-	-	-	-	+
50	<i>Gomphonema nagpurenses</i>	-	-	+	-	-	+	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-
52	<i>Gomphonema olivaceum</i>	-	+	-	-	+	-	+
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	+	-	-	-	-	-	-
55	<i>Gomphonema parvulum</i>	-	-	-	-	+	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	+	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-
58	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	+	-	-	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	+	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	-	-	-	+	+
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	+	-	-	-
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	-
65	<i>Navicula radiosa</i>	-	+	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	+
67	<i>Navicula rostellata</i>	-	-	-	+	-	-	-
68	<i>Navicula cari</i>	+	-	-	-	-	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	+
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	-	-	-
71	<i>Planothidium lanceolata</i>	-	-	-	-	-	+	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	+	+	-	-
73	<i>Reimeria sinuata</i>	-	-	+	-	-	-	-

74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-
75	<i>Synedra ulna</i>	-	-	-	-	-	-	+
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	+	-	-	-	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-
78	<i>Tabellaria</i> sp.	-	-	+	-	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-
	Total	10	12	14	11	18	9	13

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium austriaca</i>	-	+	+	+	+	+	+	+	-	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-	-	-	-	-	-	-	+	+	-	-	-
3	<i>Achnanthidium boyei</i>	-	-	-	-	+	-	+	-	-	-	-	-	+
4	<i>Achnanthidium conspicua</i>	-	-	-	+	-	+	+	+	-	-	-	+	-
5	<i>Achnanthidium cranulata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
6	<i>Achnanthidium exigua</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
7	<i>Achnanthidium Grimmei</i>	+	+	-	+	+	-	-	+	-	+	-	+	-
8	<i>Achnanthidium holsti</i>	-	-	-	-	-	-	+	-	+	-	-	+	-
9	<i>Achnanthidium hungarica</i>	-	+	-	+	+	+	-	-	-	-	-	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-	-	-	-	-	+	-	-	+	-	-	-
11	<i>Achnanthidium linearis</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	+	-	-	-	+	-	-
13	<i>Achnanthidium microcephala</i>	+	-	-	+	-	-	+	-	-	-	-	-	-
14	<i>Achnanthidium minutissima</i>	+	-	-	+	-	-	-	-	+	-	-	+	+
15	<i>Achnanthidium nodosa</i>	-	-	+	-	+	-	+	-	-	-	-	-	-
16	<i>Achnanthidium plonensis</i>	-	+	-	-	-	-	+	-	-	+	-	-	-
17	<i>Achnanthidium saxonica</i>	-	-	-	+	-	-	-	-	+	-	-	-	-
18	<i>Achnanthidium suchlandti</i>	-	-	-	-	+	+	+	-	+	-	-	+	-
19	<i>Achnanthidium affinis</i>	-	-	-	-	-	-	-	+	-	-	+	-	-
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
21	<i>Achnanthidium lapidosa</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
22	<i>Cocconeis placentula</i>	+	-	-	-	-	-	-	-	+	+	-	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	+	+	-	-	-	-	-	-	-	+
24	<i>Cyclotella</i> sp.	-	-	+	-	-	-	+	+	-	+	-	+	-

25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
26	<i>Cymbella laevis</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
27	<i>Cymbella perpusila</i>	-	-	-	-	-	+	-	-	-	-	-	+	-
28	<i>Cymbella tumidula</i>	+	-	+	-	-	-	-	-	-	-	-	-	-
29	<i>Cymbella turgidula</i>	-	-	-	+	-	+	-	-	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	-	+	-	-	-	+	-	-	-	-	+	-	-
31	<i>Cymbella affinis</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
32	<i>Diatoma hiemale</i>	-	-	-	+	-	-	-	-	+	-	-	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	+	-	-	+	-	-	-	-	-	-	+
34	<i>Didymosphenia geminata</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	-	-	-	+	-	-	+	-	-	+	-	-
36	<i>Eunotia arcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	-	-	-	-	-	+	-	+	-	-	-	-
38	<i>Fragilaria construens</i>	+	-	-	-	-	-	-	-	+	+	+	-	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	+	-	+	-	-	-	-	-	-	-	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	-	+	-	-	-	-	-	-	-	-	+
42	<i>Fragilaria rumpens</i>	-	+	-	-	-	-	-	+	+	-	+	+	-
43	<i>Fragilaria brevistriata</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
44	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-	-	-	+	-	-	+
45	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-	+	-	-	-	+	-
47	<i>Gomphonema gracile</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	+	-	-	-	-	-	-	+	-	+	-	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
50	<i>Gomphonema nagpurenses</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
52	<i>Gomphonema olivaceum</i>	-	-	+	+	-	-	+	+	-	+	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	+	-	-	-	+	-	-	-	-
54	<i>Gomphonema olivaceum</i> var.	-	-	-	-	-	-	-	-	-	-	-	-	-

	<i>minutissima</i>													
55	<i>Gomphonema paruvulum</i>	-	-	-	-	-	-	+	-	-	-	+	+	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
58	<i>Gomphonema. intricatum</i>	+	-	-	-	-	-	-	-	-	+	-	-	+
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i> 1	-	-	-	+	-	-	-	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	+	-	-	-	-	+	-	-	+	+	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	-	-	-	+	-	-	-	-	-	-	-
64	<i>Navicula microcephala</i>	-	+	-	-	+	-	-	-	-	-	-	-	-
65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	+	-	-	+	-
67	<i>Navicula rostellata</i>	+	-	-	-	-	-	-	+	-	+	-	-	-
68	<i>Navicula cari</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	-	-	-	-	-	+	+
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
71	<i>Planothidium lanceolata</i>	-	-	+	-	-	-	-	-	-	+	+	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	-	-	+	-	-	-	-	+	-
73	<i>Reimeria sinuata</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	+	-	+	-	-
75	<i>Synedra ulna</i>	-	-	+	+	-	-	-	+	-	-	-	+	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	+	-	-	-	+	-	-	-	+	-	-	-	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-	-	-	+	+	-	-
78	<i>Tabellaria</i> sp.	-	-	+	-	+	-	-	-	-	-	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	13	9	12	16	14	11	18	12	18	21	14	16	11

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium austriaca</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	+	-	-	-	-	+	-	-	-	+
3	<i>Achnanthidium boyei</i>	-	+	+	-	-	+	+	+	-	-	+	+	+	-
4	<i>Achnanthidium conspicua</i>	-	+	-	+	-	-	-	-	-	+	-	-	-	+
5	<i>Achnanthidium cranulata</i>	-	-	-	-	+	+	-	+	+	-	+	+	-	-
6	<i>Achnanthidium exigua</i>	+	+	-	-	-	-	+	-	-	+	-	-	-	+
7	<i>Achnanthidium Grimmei</i>	-	-	+	+	-	-	-	-	-	-	-	-	-	-
8	<i>Achnanthidium holsti</i>	-	-	-	+	+	-	-	-	-	+	-	-	-	+
9	<i>Achnanthidium hungarica</i>	-	+	+	-	-	-	+	+	+	-	+	-	+	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Achnanthidium linearis</i>	+	-	+	-	-	-	+	-	-	+	-	-	-	+
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	+	-	-	+	-	-	-	-	-
13	<i>Achnanthidium microcephala</i>	-	-	-	+	-	-	-	-	-	+	-	-	-	+
14	<i>Achnanthidium minutissima</i>	-	+	-	-	-	-	-	-	-	-	-	-	+	-
15	<i>Achnanthidium nodosa</i>	-	-	-	+	-	-	-	-	-	+	-	+	-	+
16	<i>Achnanthidium plonensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Achnanthidium saxonica</i>	-	-	-	-	-	+	+	-	-	-	-	-	-	-
18	<i>Achnanthidium suchlandti</i>	-	-	-	-	+	-	-	+	-	-	+	-	-	-
19	<i>Achnanthidium affinis</i>	-	-	+	+	-	+	-	-	-	+	-	-	-	+
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Achnanthidium lapidosa</i>	-	+	-	+	-	-	+	-	-	-	-	-	+	-
22	<i>Cocconeis placentula</i>	-	-	-	-	+	+	-	+	-	-	+	+	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	-	-	-	-	-	-	-	-	-	-	-	+	-
24	<i>Cyclotella</i> sp.	-	+	-	-	-	-	+	-	-	-	-	-	-	-
25	<i>Cymbella amphicephala</i>	-	-	-	-	+	+	-	-	-	-	-	-	-	-
26	<i>Cymbella laevis</i>	-	-	-	+	-	-	-	+	-	-	+	-	-	-

27	<i>Cymbella perpusila</i>	-	-	+	+	-	-	+	-	-	+	-	-	+	+
28	<i>Cymbella tumidula</i>	+	-	-	-	-	+	+	-	-	-	-	-	-	-
29	<i>Cymbella turgidula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	+	-	-	-	-	-	-	+	-	-	+	-	-	-
31	<i>Cymbella affinis</i>	-	+	-	+	-	-	+	-	+	+	-	-	-	+
32	<i>Diatoma hiemale</i>	-	-	-	+	-	-	-	-	-	+	-	-	-	+
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
34	<i>Didymosphenia geminata</i>	-	-	-	-	-	+	+	-	-	-	-	-	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	-	+	-	-	+	-	-	-	-	-	-	-	-
36	<i>Eunotia arcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
37	<i>Fragilaria capucina</i>	-	-	-	-	+	-	-	-	-	-	-	+	-	-
38	<i>Fragilaria construens</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	+	+	-	-	-	-	-	+	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
42	<i>Fragilaria rumpens</i>	-	-	-	+	+	-	-	-	-	+	-	-	-	+
43	<i>Fragilaria brevistriata</i>	-	-	-	-	-	+	+	+	+	-	+	-	-	-
44	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-	-	-	+	-	-	-	+
45	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	+	-	-	-	-	-	+	-	-	-	+
47	<i>Gomphonema gracile</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	+	+	-	-	+	+	-	+	+	-	-	+
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
50	<i>Gomphonema nagpurenses</i>	-	-	-	-	-	-	-	+	-	-	-	-	+	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	+	-	-	-	-	-	+	-	-	-	+
52	<i>Gomphonema olivaceum</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+	-	-	-	-	+	-	-	-	-	-	+	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	+	+	-	+	-	-	-

55	<i>Gomphonema paruvulum</i>	+	-	-	-	-	+	-	-	-	-	-	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	+	-	-	+	+	-	-
58	<i>Gomphonema. intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	+	+	-	-	-	+	-	+	-	-	-	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	+	-	-	-	-	-	+	-	+	-	+
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	+	+	-	+	-	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	-	-	-	-	-	-	-	-	-	-	+	-
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65	<i>Navicula radiosa</i>	-	+	-	-	-	-	+	-	-	-	-	-	+	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
67	<i>Navicula rostellata</i>	-	-	+	-	-	-	-	-	-	-	+	-	-	-
68	<i>Navicula cari</i>	-	-	-	+	-	-	-	-	-	+	-	+	-	+
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
71	<i>Planothidium lanceolata</i>	-	-	-	-	+	-	-	+	+	-	-	-	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
73	<i>Reimeria sinuata</i>	+	+	-	-	-	+	-	-	-	-	-	-	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
75	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	-	-	-	+	-	-	-	-	+	-	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
78	<i>Tabellaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	+	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
-	Total	13	14	11	18	12	17	19	15	12	18	15	11	16	18

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnanthidium austriaca</i>	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-
3	<i>Achnanthidium boyei</i>	-	+
4	<i>Achnanthidium conspicua</i>	+	+
5	<i>Achnanthidium cranulata</i>	-	-
6	<i>Achnanthidium exigua</i>	+	-
7	<i>Achnanthidium Grimmei</i>	-	+
8	<i>Achnanthidium holsti</i>	-	-
9	<i>Achnanthidium hungarica</i>	+	+
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-
11	<i>Achnanthidium linearis</i>	-	+
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-
13	<i>Achnanthidium microcephala</i>	+	-
14	<i>Achnanthidium minutissima</i>	-	-
15	<i>Achnanthidium nodosa</i>	+	+
16	<i>Achnanthidium plonensis</i>	-	-
17	<i>Achnanthidium saxonica</i>	-	-
18	<i>Achnanthidium suchlandti</i>	+	+
19	<i>Achnanthidium affinis</i>	-	+
20	<i>Achnanthidium exilis</i>	-	+
21	<i>Achnanthidium lapidosa</i>	+	-
22	<i>Cocconeis placentula</i>	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+
24	<i>Cyclotella</i> sp.	-	-
25	<i>Cymbella amphicephala</i>	-	-
26	<i>Cymbella laevis</i>	-	-
27	<i>Cymbella perpusila</i>	+	+
28	<i>Cymbella tumidula</i>	-	-
29	<i>Cymbella turgidula</i>	+	-
30	<i>Cymbella ventricosa</i>	-	+
31	<i>Cymbella affinis</i>	-	-
32	<i>Diatoma hiemale</i>	-	+
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-
34	<i>Didymosphenia geminata</i>	-	+
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	+

36	<i>Eunotia arcus</i>	-	-
37	<i>Fragilaria capucina</i>	+	-
38	<i>Fragilaria construens</i>	-	-
39	<i>Fragilaria leptostauron</i>	-	+
40	<i>Fragilaria olivaceoides</i>	-	-
41	<i>Fragilaria pinnata</i>	-	-
42	<i>Fragilaria rumpens</i>	-	-
43	<i>Fragilaria brevistriata</i>	+	-
44	<i>Fragilaria</i> sp.	-	-
45	<i>Fragilaria vaucheriae</i>	-	-
46	<i>Gomphonema bohemicum</i>	-	+
47	<i>Gomphonema gracile</i>	+	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-
49	<i>Gomphonema lanceolatum</i>	-	-
50	<i>Gomphonema nagpurenses</i>	-	-
51	<i>Gomphonema olivaceoides</i>	-	-
52	<i>Gomphonema olivaceum</i>	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-
55	<i>Gomphonema parvulum</i>	+	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-
58	<i>Gomphonema. intricatum</i>	-	+
59	<i>Gomphonema. intricatum</i> var. <i>pumila</i>	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i> 1	+	+
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-
64	<i>Navicula microcephala</i>	-	+
65	<i>Navicula radiosa</i>	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-
67	<i>Navicula rostellata</i>	-	-
68	<i>Navicula cari</i>	-	+
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-
71	<i>Planothidium lanceolata</i>	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	+	+
73	<i>Reimeria sinuata</i>	-	-

74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
75	<i>Synedra ulna</i>	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	+
77	<i>Tabellaria flocculus</i>	-	-
78	<i>Tabellaria</i> sp.	+	+
79	<i>Tetracyclus lacustris</i>	-	-
-	Total	19	26

DENSITY & DIVERSITY OF PHYTOBENTHOS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/cm ²)	267	102	119	Nil	Nil	378	209	482	Nil	309	Nil	289	189	
Shannon Weiner Diversity	1.69	1.62	1.52	Nil	Nil	1.45	1.71	1.66	Nil	1.60	Nil	1.51	1.43	
Evenness Index	0.64	0.63	0.61	Nil	Nil	0.63	0.62	0.63	Nil	0.62	Nil	0.61	0.62	
No. of species	14	13	12	Nil	Nil	10	16	14	Nil	13	Nil	12	10	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/cm ²)	266	365	452	289	Nil	372	443							
Shannon Weiner Diversity	1.49	1.52	1.64	1.49	Nil	1.41	1.54							
Evenness Index	0.65	0.61	0.62	0.62	Nil	0.64	0.60							
No. of species	10	12	14	11	Nil	9	13							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/cm ²)	582	390	504	555	467	398	277	452	509	Nil	304	542	672	
Shannon Weiner Diversity	1.53	1.39	1.48	1.72	1.61	1.42	1.78	1.49	1.79	Nil	1.63	1.66	1.42	
Evenness Index	0.60	0.63	0.60	0.62	0.61	0.59	0.62	0.60	0.62	Nil	0.62	0.60	0.59	
No. of species	13	9	12	16	14	11	18	12	18	Nil	14	16	11	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/cm ²)	444	542	892	159	387	672	892	789	549	689	955	267	459	462
Shannon Weiner Diversity	1.53	1.59	1.46	1.68	1.51	1.53	1.68	1.59	1.48	1.56	1.56	1.43	1.55	1.59
Evenness Index	0.60	0.60	0.61	0.58	0.61	0.54	0.57	0.59	0.60	0.54	0.58	0.60	0.56	0.55
No. of species	13	14	11	18	12	17	19	15	12	18	15	11	16	18
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/cm ²)	329		499											
Shannon Weiner Diversity	1.99		2.01											
Evenness Index	0.66		0.63											
No. of species	20		24											

Macro-Invertebrates

Sub basin- Siang: I-IV

S.No.	Family	Genus	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>	+	-	-	-	+	-	+	-	-	-	-	-	-
3		<i>Heptagenia</i>	-	+	-	+	-	-	-	+	-	-	+	-	+
4		<i>Epeorus</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
5	Baetidae	<i>Baetis</i>	-	-	-	-	-	-	+	-	-	+	-	+	+
6	Ephemerellidae	<i>Ephemerella</i>	-	+	-	+	-	+	-	-	+	-	-	-	-
7		<i>Ephemerella excrucians</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
8	Caenidae	<i>Caenis</i>	+	+	+	-	+	-	+	-	-	-	+	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	-	-	+	-	-	-	-	+
10		<i>Chroterpes</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	-	-	-	-	-	+	-	-	-	+	+	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	+	-	-	+	-	-	-	-	+	-
13		<i>Neoephemeridae 2</i>	+	-	-	-	+	-	-	-	-	-	-	-	+
14	Perlidae	<i>Acroneuria</i>	-	+	-	-	-	-	-	+	+	-	+	-	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
16	Elmidae	<i>Heterlimnius</i>	-	-	+	-	+	+	+	-	-	+	-	-	-
17	Psephenidae	<i>Psephenus</i>	-	+	-	-	-	-	-	+	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	+	-	-	+	-	+	-	+	-	-
19	Corydalidae	<i>Corydalus</i>	-	+	-	-	-	-	-	-	-	+	-	-	+
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	+	+	-	-	-	-	-	-	+	-
21		<i>Hydroptila</i>	-	+	-	-	-	-	+	+	-	-	+	-	+

22		<i>Leucotrichia</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	-	-	-	-	-	+	-	+	-
24	Helicopsychidae	<i>Helichopsyche</i>	+	-	-	+	+	-	-	-	-	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	+	+	-	-	-	-	-	-	-	-	+	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	+	+	+	-	-	+	+	-	+
27	Molannidae	<i>Molanna</i>	-	+	+	-	-	-	-	+	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	+	-	-	-	+	-	-	-	+	-	-	-	-
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
30	Ephydriidae	Unidentified genus / species	-	+	-	+	+	-	-	-	-	+	+	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	+	-	-	-	-	+	+
32	Simuliidae	<i>Simulium pictipes</i>	+	-	+	-	+	-	-	+	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	+	-	+	-	-	-	-
37		<i>Horaia</i>	-	-	+	+	-	-	-	+	-	-	-	+	+
38	Tabanidae	<i>Tabanus</i>	+	-	-	-	+	+	-	-	-	-	+	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	+	+	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	8	11	8	9	12	8	12	10	7	9	10	9	11

Sub basin- Yamne and Simang

S.No.	Family	Genus	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+
2		<i>Stenonema</i>	-	-	-	+	-	-	-
3		<i>Heptagenia</i>	+	+	-	-	-	-	-
4		<i>Epeorus</i>	-	-	+	-	-	-	+
5	Baetidae	<i>Baetis</i>	-	-	-	+	-	+	-
6	Ephemerellidae	<i>Ephemerella</i>	+	+	-	-	+	-	-
7		<i>Ephemerella excrucians</i>	-	-	+	+	+	-	-
8	Caenidae	<i>Caenis</i>	-	-	-	-	-	-	+
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	-	-
10		<i>Chroterpes</i>	-	+	+	+	-	-	-
11		<i>Leptophlebia</i>	+	-	-	+	+	+	+
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	-	-	-	-
13		<i>Neoephemeridae 2</i>	+	-	-	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	+	+	-	+	-	-	+
15	Perlodidae	<i>Isoperla</i>	-	-	+	-	-	-	+
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	+	+	-
17	Psephenidae	<i>Psephenus</i>	-	+	-	+	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	+	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	+	-	-	-	-	-
21		<i>Hydroptila</i>	-	-	-	+	-	-	+
22		<i>Leucotrichia</i>	-	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	+	+	+	-	-	-	+
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	+	-	+	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	+	-	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	+	-	+	+	-	-
27	Molannidae	<i>Molanna</i>	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	+	-	-	-	-	-	-
29		<i>Ablabesmyia</i>	-	-	-	+	-	+	-
30	Ephydriidae	Unidentified genus / species	-	-	+	-	-	-	+
31	Tipulidae	<i>Antocha saxicola</i>	+	-	-	-	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	+	-	+	-	+	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	-
34		<i>Maruina</i>	-	+	+	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	+	-	-	+	+	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	-

37		<i>Horaia</i>	-	+	-	-	-	+	-
38	Tabanidae	<i>Tabanus</i>	+	-	-	-	+	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	+	-	-	-	-
40	Culicidae	<i>Culex</i>	-	+	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-
		Total	12	13	10	14	8	8	9

Sub basin- Siyom: I-III and Hirit

S.No.	Family	Genus	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>	+	-	-	-	-	-	-	-	+	-	-	-	+
3		<i>Heptagenia</i>	+	-	-	-	+	+	+	+	-	+	+	-	-
4		<i>Epeorus</i>	-	-	-	-	-	-	-	-	-	-	+	+	-
5	Baetidae	<i>Baetis</i>	+	-	-	+	-	-	-	-	-	-	-	-	+
6	Ephemerellidae	<i>Ephemerella</i>	-	+	+	-	-	-	-	+	-	+	-	-	-
7		<i>Ephemerella excrucians</i>	-	+	-	-	-	-	-	-	-	-	-	+	+
8	Caenidae	<i>Caenis</i>	+	-	-	-	+	-	+	-	+	+	+	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	+	+	-	-	-	-	-	-
10		<i>Chroterpes</i>	+	-	-	-	-	-	-	-	-	-	-	+	+
11		<i>Leptophlebia</i>	-	+	-	+	+	-	-	-	-	-	-	-	+
12	Neophemeridae	<i>Neophemeridae 1</i>	-	-	-	-	-	-	-	+	-	-	+	-	-
13		<i>Neophemeridae 2</i>	+	-	-	-	-	-	-	-	+	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	+	-	+	+	-	-	-	+	-	-	+
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	-	-	+	-	-	-	-	+	-
16	Elmidae	<i>Heterlimnius</i>	+	+	-	+	-	-	-	-	+	-	+	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	+	-	-	-	+	-	-	+
18	Dytiscidae	<i>Agabinus glabrellus</i>	+	-	+	-	+	-	-	+	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	+	-	-	-	-	-	+	+	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	+	-	-	-	-	-	+	+	+	-	-	-	-
21		<i>Hydroptila</i>	-	-	-	-	+	+	-	-	-	+	-	-	+
22		<i>Leucotrichia</i>	-	-	+	-	-	-	-	-	-	-	+	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	+	-	-	+	-	-	+	-	-	-	-	+	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	-	-	+	+	-	-	-	+
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	+	-	-	+	+	+	-
26	Leptoceridae	<i>Leptocerus</i>	-	+	-	+	+	-	-	-	+	-	-	-	+

27	Molannidae	<i>Molanna</i>	-	-	-	-	-	+	-	-	-	+	+	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	+	-	-	-	-	-	+	-	-	-	-
29		<i>Ablabesmyia</i>	+	-	-	-	-	-	-	-	-	-	-	-	+
30	Ephydriidae	Unidentified genus / species	-	-	-	+	+	-	-	+	+	+	+	+	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	-	+	-	-	+	-	+	-	+
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
34		<i>Maruina</i>	+	-	-	-	-	-	-	-	-	-	-	+	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	+	+	-	-	-	+	-	-	-	+	-	+
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
37		<i>Horaia</i>	-	-	-	-	-	+	-	-	-	-	+	-	-
38	Tabanidae	<i>Tabanus</i>	-	+	-	+	+	-	-	-	+	+	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	+	-	-	-	-	-	+	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	+	+	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	13	8	7	9	10	10	10	9	12	12	14	10	14

Sub basin- Yargyap Chhu

S.No.	Family	Genus	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>	-	-	-	+	+	-	-	-	+	+	-	-	-	+
3		<i>Heptagenia</i>	+	+	+	-	-	-	-	+	-	-	+	+	-	-
4		<i>Epeorus</i>	-	-	-	-	-	-	+	-	-	-	+	-	+	-
5	Baetidae	<i>Baetis</i>	+	+	-	-	+	-	-	-	+	+	-	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	-	-	+	+	-	+	+	-	-	-	-	+	-	-
7		<i>Ephemerella excrucians</i>	-	-	-	+	+	-	-	-	-	+	-	-	+	-
8	Caenidae	<i>Caenis</i>	-	-	-	-	-	-	-	+	+	-	-	-	-	+
9	Leptophlebiidae	<i>Paraleptophlebia</i>	+	+	-	-	-	-	-	-	-	-	-	-	-	-
10		<i>Chroterpes</i>	-	-	-	-	-	-	-	-	-	+	-	+	+	-
11		<i>Leptophlebia</i>	-	-	+	+	+	-	+	-	+	+	-	-	-	+
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	-	-	+	-	-	-	-	+	-	-	-
13		<i>Neoephemeridae 2</i>	-	+	+	-	+	-	-	-	-	-	-	-	-	+
14	Perlidae	<i>Acroneuria</i>	+	-	+	+	-	-	-	+	-	+	-	+	-	-
15	Perlodidae	<i>Isoperla</i>	-	+	-	-	-	-	-	-	+	-	+	-	+	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	+
17	Psephenidae	<i>Psephenus</i>	+	-	-	+	+	-	+	-	+	+	-	+	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	+
19	Corydalidae	<i>Corydalus</i>	-	+	+	-	-	-	-	+	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	-	-	+	-	+	-	-	+	-	-
21		<i>Hydroptila</i>	+	+	-	+	-	-	-	-	-	+	-	-	-	-
22		<i>Leucotrichia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	+	-	+	-	-	-	-	-	-	-	-	+	+	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	-	-	+	+	+	+	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	+	-	-	-	-	-	+	-
26	Leptoceridae	<i>Leptocerus</i>	-	+	-	-	+	+	-	-	-	+	-	+	-	+

27	Molannidae	<i>Molanna</i>	+	-	-	-	-	-	-	-	+	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	-	+	+	+	+	-	-	-
30	Ephydriidae	Unidentified genus / species	-	-	-	-	+	+	+	-	-	-	-	-	+	+
31	Tipulidae	<i>Antocha saxicola</i>	-	+	+	+	-	-	-	-	+	-	-	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-	-	-	+	-	+	-	+
33	Psychodidae	<i>Psychoda</i>	+	-	-	-	-	-	-	+	-	-	-	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	+	-	-	+	-	-	+	+	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	+	-	-	-	+	+	-	+	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
37		<i>Horiaia</i>	-	+	-	+	-	-	-	-	-	-	-	+	-	-
38	Tabanidae	<i>Tabanus</i>	-	-	+	-	-	+	-	+	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	+	-	+	-	-	-	+	-	+	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	10	11	12	10	10	8	10	11	13	14	8	13	10	11

Outside basin

S.No.	Family	Genus	B1	B2
1	Heptageniidae	<i>Cinygmula</i>	+	+
2		<i>Stenonema</i>	-	+
3		<i>Heptagenia</i>	+	-
4		<i>Epeorus</i>	-	+
5	Baetidae	<i>Baetis</i>	-	-
6	Ephemerellidae	<i>Ephemerella</i>	-	-
7		<i>Ephemerella excrucians</i>	-	-
8	Caenidae	<i>Caenis</i>	+	+
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-
10		<i>Chroterpes</i>	-	-
11		<i>Leptophlebia</i>	-	+
12	Neophemeridae	<i>Neophemeridae 1</i>	-	-
13		<i>Neophemeridae 2</i>	-	+
14	Perlidae	<i>Acroneuria</i>	-	-
15	Perlodidae	<i>Isoperla</i>	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-
17	Psephenidae	<i>Psephenus</i>	+	+
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-
19	Corydalidae	<i>Corydalus</i>	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-
21		<i>Hydroptila</i>	-	+
22		<i>Leucotrichia</i>	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	+	+
25	Glossosomatidae	<i>Glossosoma</i>	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-
27	Molannidae	<i>Molanna</i>	-	-
28	Chironomidae	<i>Chironomus</i>	-	-
29		<i>Ablabesmyia</i>	-	-
30	Ephydriidae	Unidentified genus / species	+	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-
33	Psychodidae	<i>Psychoda</i>	-	-
34		<i>Maruina</i>	+	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-
37		<i>Horaia</i>	-	-
38	Tabanidae	<i>Tabanus</i>	-	+

39	Rhagionidae	<i>Atherix variegata</i>	-	-
40	Culicidae	<i>Culex</i>	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-
		Total	7	10

DENSITY & DIVERSITY OF MACRO-INVERTEBRATES

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (Indiv./m ²)	265	301	172	Nil	186	459	325	355	Nil	173	Nil	213	Nil	
Shannon Weiner Diversity	1.24	1.51	0.84	Nil	0.76	1.43	1.19	1.28	Nil	0.78	Nil	0.96	Nil	
Evenness Index	0.64	0.66	0.61	Nil	0.55	0.65	0.66	0.66	Nil	0.56	Nil	0.60	Nil	
No. of species	7	10	4	Nil	4	9	6	7	Nil	4	Nil	5	Nil	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (Indiv./m ²)	639	738	779	265	134	62	48							
Shannon Weiner Diversity	1.29	1.12	0.66	0.98	0.97	0.65	0.71							
Evenness Index	0.62	0.63	0.60	0.61	0.60	0.59	0.65							
No. of species	8	6	3	5	5	3	3							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (Indiv./m ²)	204	Nil	587	260	449	263	341	360	Nil	Nil	258	190	305	
Shannon Weiner Diversity	1.02	Nil	0.92	0.93	1.04	1.12	0.99	0.72	Nil	Nil	0.91	0.93	0.84	
Evenness Index	0.57	Nil	0.57	0.58	0.58	0.58	0.62	0.66	Nil	Nil	0.57	0.58	0.61	
No. of species	6	Nil	5	5	6	7	5	3	Nil	Nil	5	5	4	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (Indiv./m ²)	874	563	519	227	237	585	125	493	573	123	50	120	290	224
Shannon Weiner Diversity	1.15	0.96	0.65	0.71	0.87	0.59	0.41	0.66	0.72	0.69	0.43	0.67	0.67	Nil
Evenness Index	0.59	0.60	0.47	0.51	0.54	0.54	0.59	0.60	0.52	0.63	0.62	0.61	0.48	Nil
No. of species	7	5	4	4	5	3	2	3	4	3	2	3	4	Nil
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (Indiv./m ²)	205		269											
Shannon Weiner Diversity	1.29		2.09											
Evenness Index	0.56		1.07											
No. of species	10		7											

Zooplanktons

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
	Protozoans													
1	<i>Actinophrys</i> sp.	+	+	+	+	+	+	+	-	+	+	-	+	+
2	<i>Arcella</i> sp.	-	-	-	-	-	-	-	+	-	-	-	-	+
3	<i>Ceratium</i> spp.	-	-	-	-	-	-	+	-	-	-	+	+	+
	Rotifers													
4	<i>Brachious</i>	+	-	+	+	-	-	-	+	-	+	-	-	-
5	<i>Keratella</i> sp.	-	-	-	-	+	-	-	-	-	-	-	-	-
6	<i>Epiphanes</i>	-	+	-	-	-	+	-	-	-	-	-	-	-
7	<i>Asplanchna</i> sp.	-	-	-	-	-	-	-	-	-	-	+	-	-
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cladoceran													
9	<i>Bosmina</i> sp.	-	-	-	-	-	-	-	-	-	+	-	-	+
10	<i>Daphnia</i> sp.	-	-	-	+	-	-	-	-	-	-	+	-	-
	Copepods													
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-	-	+	-	-	+	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	2	2	2	3	2	2	2	2	2	3	3	3	4

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
	Protozoans							
1	<i>Actinophrys</i> sp.	-	+	+	-	+	+	-
2	<i>Arcella</i> sp.	+	-	-	+	-	-	+
3	<i>Ceratium</i> spp.	-	-	-	-	-	-	-
	Rotifers							
4	<i>Brachious</i>	-	-	-	-	-	+	-
5	<i>Keratella</i> sp.	-	-	-	-	-	-	-
6	<i>Epiphanes</i>	-	-	-	-	-	-	-
7	<i>Asplanchna</i> sp.	-	+	-	-	+	-	-
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-
	Cladoceran							
9	<i>Bosmina</i> sp.	-	-	-	-	-	-	-
10	<i>Daphnia</i> sp.	-	-	-	-	-	-	-
	Copepods							
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-
	Total	1	2	1	1	2	2	1

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY4	SY3	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
Protozoans														
1	<i>Actinophrys</i> sp.	+	-	+	-	-	+	+	+	+	-	-	+	+
2	<i>Arcella</i> sp.	-	-	-	-	-	-	-	-	-	+	+	+	-
3	<i>Ceratium</i> spp.	+	-	-	+	-	-	-	-	-	-	-	-	-
Rotifers														
4	<i>Brachious</i>	-	+	-	-	-	-	-	+	-	+	-	-	+
5	<i>Keratella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
6	<i>Epiphanes</i>	-	-	-	-	-	-	+	-	-	-	+	-	-
7	<i>Asplanchna</i> sp.	-	+	-	-	+	-	-	-	-	-	-	-	-
8	<i>Philodena</i> sp.	-	-	-	-	-	-	+	+	-	-	-	-	-
Cladoceran														
9	<i>Bosmina</i> sp.	-	-	-	-	+	-	-	-	-	+	-	-	-
10	<i>Daphnia</i> sp.	-	-	-	-	-	-	-	-	-	-	-	+	+
Copepods														
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-	-	-	-	-	+	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
		2	2	1	1	2	1	3	3	1	3	2	4	3

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
	Protozoans														
1	<i>Actinophrys</i> sp.	+	+	-	-	+	+	-	-	-	-	-	+	+	+
2	<i>Arcella</i> sp.	-	-	+	+	-	-	-	+	-	+	+	-	-	+
3	<i>Ceratium</i> spp.	-	+	-	-	-	-	-	-	-	-	-	-	-	-
	Rotifers														
4	<i>Brachious</i>	+	-	+	-	-	-	-	-	+	-	-	-	+	-
5	<i>Keratella</i> sp.	-	-	-	-	-	-	-	-	-	+	-	+	-	-
6	<i>Epiphanes</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	<i>Asplanchna</i> sp.	-	-	-	-	-	+	-	-	+	-	-	-	-	+
8	<i>Philodena</i> sp.	-	+	-	-	-	-	+	-	-	-	-	-	-	-
	Cladoceran														
9	<i>Bosmina</i> sp.	-	-	-	-	+	-	-	+	-	-	-	-	+	-
10	<i>Daphnia</i> sp.	-	-	-	-	-	-	-	-	-	+	+	-	-	-
	Copepods														
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	+	-	-	-	-	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-	+	-	-	-	-	-	-
	Total	2	3	2	1	2	2	2	3	2	3	2	2	3	3

Outside basin

Name of species	B1	B2
Protozoans		
<i>Actinophrys</i> sp.	+	+
<i>Arcella</i> sp.	-	-
<i>Ceratium</i> spp.	-	-
Rotifers		
<i>Brachious</i>	-	+
<i>Keratella</i> sp.	+	-
<i>Epiphanes</i>	-	-
<i>Asplanchna</i> sp.	-	-
<i>Philodena</i> sp.	-	-
Cladoceran		
<i>Bosmina</i> sp.	-	+
<i>Daphnia</i> sp.	-	-
Copepods		
<i>Cyclops</i> sp.	-	-
<i>Diaptomus</i> sp.	-	-
Total	2	3

DENSITY & DIVERSITY OF ZOOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (indiv/lit.)	Nil	27	Nil	35	Nil	Nil	Nil	Nil	18	14	23	Nil	Nil	
Shannon Weiner Diversity	Nil	0.14	Nil	0.19	Nil	Nil	Nil	Nil	0.15	0.13	0.23	Nil	Nil	
Evenness Index	Nil	0.20	Nil	0.27	Nil	Nil	Nil	Nil	0.22	0.19	0.21	Nil	Nil	
No. of species	Nil	2.00	Nil	2.00	Nil	Nil	Nil	Nil	2.00	2.00	3.00	Nil	Nil	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (indiv/lit.)	Nil	Nil	31	22	Nil		Nil							
Shannon Weiner Diversity	Nil	Nil	0.31	0.17	Nil	0.16	Nil							
Evenness Index	Nil	Nil	0.28	0.25	Nil	0.23	Nil							
No. of species	Nil	Nil	3.00	2.00	Nil	2.00	Nil							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (indiv/lit.)	24	Nil	Nil	Nil	16	Nil	19	13	Nil	Nil	30	26	Nil	
Shannon Weiner Diversity	0.18	Nil	Nil	Nil	0.13	Nil	0.16	0.12	Nil	Nil	0.22	0.18	Nil	
Evenness Index	0.26	Nil	Nil	Nil	0.19	Nil	0.23	0.17	Nil	Nil	0.32	0.26	Nil	
No. of species	2.00	Nil	Nil	Nil	2.00	Nil	2.00	2.00	Nil	Nil	2.00	2.00	Nil	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (indiv/lit.)	17	Nil	Nil	Nil	Nil	13	17	28	15	Nil	Nil	21	27	Nil
Shannon Weiner Diversity	0.14	Nil	Nil	Nil	Nil	0.11	0.13	0.17	0.13	Nil	Nil	0.15	0.18	Nil
Evenness Index	0.20	Nil	Nil	Nil	Nil	0.16	0.19	0.15	0.19	Nil	Nil	0.22	0.26	Nil
No. of species	2.00	Nil	Nil	Nil	Nil	2.00	2.00	3.00	2.00	Nil	Nil	2.00	2.00	Nil
	Jiya Dhol & Karena Ghat													
Code	B1		B2											
Density (indiv/lit.)	79		84											
Shannon Weiner Diversity	0.49		0.52											
Evenness Index	0.25		0.75											
No. of species	7		2											

AQUATIC ECOLOGY:

July - September

Month of sample: July 2012

Physico - chemical parameters

Sub basin- Siang: I-IV

S.No.	Physical / Chemical Characteristics	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Water Temperature (°C)	17.3	16.5	16.3	16.3	16.4	16.3	16.7	16.7	16.4	17	17.3	17.2	17.1
2	Dissolved Oxygen (mg/l)	8.1	8.2	8.35	8.34	8.28	8.32	8.22	8.12	8.2	8.15	8.05	8	8.2
3	Turbidity (NTU)	132	102	189	121	121	142	123	145	122	152	127	105	139
4	Total Suspended Solids (mg/l)	257.4	198.9	368.55	235.95	235.95	276.9	239.85	282.75	237.9	296.4	241.3	199.5	264.1
5	pH	8.40	8.20	8.40	8.10	8.08	8.10	8.30	8.23	8.20	8.36	8.25	8.46	8.44
6	Electrical Conductivity (µS/cm)	112	132	78	53	32	67	54	145	89	78	68.2	65	72
7	Total Dissolved Solids (mg/l)	68.32	80.52	47.58	32.33	19.52	40.87	32.94	88.45	54.29	47.58	41.602	39.65	43.92
8	Biological Oxygen Demand (mg/l)	1.6	1.5	1.3	1.6	1.8	1.9	1.2	1.6	1.7	1.72	1.87	1.78	1.98
9	Chemical Oxygen Demand (mg/l)	3.3	3.2	3.6	3.3	2.9	3.9	3.2	3.3	2.9	3.2	3.87	3.29	3.98
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	7	8	9	7	6	7	7	8	7	7	6	7	6
12	Total alkalinity (mg/l of CaCO ₃)	35	36	39	33	32	36	35	35	34	35	33	34	33
13	Nitrates (NO ₃) (mg/l)	0.06	0.05	0.04	0.032	0.034	0.045	0.03	0.026	0.03	0.02	0.02	0.021	0.018
14	Sulphate (mg/l)	4	6	7	9	6	8	8	7	6	5	4	7	8
15	Phosphate (PO ₄) (mg/l)	0.001	0.006	0.001	0.002	0.001	0.005	0.004	0.004	0.004	0.001	0.002	0.003	0.007

16	Total Hardness (mg/l)	27	23	24	25	30	23	28	25	35	27	29	28	37
17	Calcium hardness (mg/l)	24	17	18	16	24	18	23	19	24	23	23	22	23
18	Calcium ions (mg/ l)	9.6	6.8	7.2	6.4	9.6	7.2	9.2	7.6	9.6	9.2	9.2	8.8	9.2
19	Magnesium Hardness (mg/l)	3	6	6	9	6	5	5	6	11	4	6	6	14
20	Magnesium ions (mg/l)	2.30	1.63	1.73	1.54	2.30	1.73	2.21	1.82	2.30	2.21	2.21	2.11	2.21
21	Potassium (mg/l)	0.7	0.7	1	0.2	1.5	1.3	0.8	1	0.4	0.76	0.31	0.09	1.31
22	Sodium (mg/l)	1.3	1.6	1.3	1.5	2.6	2.5	1.9	1.4	1.6	1.1	1.8	1.3	2.3
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	0.00	0.00	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.00	0.00	0.00
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub Basin- Yamne and Simang

S.No.	Physical / Chemical Characteristics	Y1	Y2	Y3	Y4	SM1	SM2	SM3
1	Water Temperature (°C)	14.8	15.8	16.7	17.9	16.4	15.5	15.66
2	Dissolved Oxygen (mg/l)	9.05	8.7	8.45	8	8.4	8.77	8.7
3	Turbidity (NTU)	145	131	146	165	146	145	156
4	Total Suspended Solids (mg/l)	275.5	248.9	277.4	313.5	277.4	275.5	296.4
5	pH	8.12	8.28	8.46	8.21	7.21	7.45	7.31
6	Electrical Conductivity (µS/cm)	94.5	83	73	94	63	84	92.3
7	Total Dissolved Solids (mg/l)	58.59	51.46	45.26	58.28	39.06	52.08	57.226
8	Biological Oxygen Demand (mg/l)	1.76	1.87	1.45	1.98	1.88	1.98	1.98
9	Chemical Oxygen Demand (mg/l)	3.28	3.98	3.46	2.98	3.89	3.29	3.92
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A
11	Chloride (mg/l)	6.41	8.02	6.73	6.41	5.77	6.09	5.45
12	Total alkalinity (mg/l of CaCO ₃)	34.96	31.50	41.11	30.73	47.25	47.25	37.65
13	Nitrates (NO ₃) (mg/l)	0.082	0.002	0.002	0.005	0.007	0.007	0.005
14	Sulphate (mg/l)	4.66	5.33	3.99	3.11	4.22	3.55	2.44
15	Phosphate (PO ₄) (mg/l)	0.006	0.004	0.002	0.006	0.006	0.007	0.004
16	Total Hardness (mg/l)	29.51	26.59	34.70	25.94	39.89	39.89	31.78
17	Calcium hardness (mg/l)	27.21	24.52	31.99	23.92	36.78	36.78	29.30
18	Calcium ions (mg/ l)	10.88	9.81	12.80	9.57	14.71	14.71	11.72
19	Magnesium Hardness (mg/l)	2.30	2.07	2.71	2.02	3.11	3.11	2.48
20	Magnesium ions (mg/l)	2.61	2.35	3.07	2.30	3.53	3.53	2.81
21	Potassium (mg/l)	0.15	0.23	0.21	0.45	0.36	0.75	0.52
22	Sodium (mg/l)	1.3	1.3	1.3	1.3	1.4	1.2	1.3
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND

Sub basin- Siyom: I-III and Hirit

S.No.	Physical / Chemical Characteristics	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Water Temperature (°C)	14.9	14.2	14	13.9	13	13.9	14	12.9	12.5	13	12.5	12.9	12
2	Dissolved Oxygen (mg/l)	8.8	8.91	9.05	9.33	9.55	9.3	9.2	9.6	9.8	9.6	9.85	9.65	9.88
3	Turbidity (NTU)	105	115	128	78	92	85	73	101	92	95	66	57	42
4	Total Suspended Solids (mg/l)	199.5	218.5	245.76	149.76	176.64	163.2	140.16	193.92	176.64	182.4	126.72	109.44	80.64
5	pH	8.13	8.37	8.09	7.67	7.98	7.87	7.62	8.29	8.45	8.29	7.56	8.35	7.87
6	Electrical Conductivity (µS/cm)	25.2	26	32	42	41.8	35.2	43.2	66	43	50	53	58.3	61.9
7	Total Dissolved Solids (mg/l)	15.624	16.12	19.84	26.04	25.916	21.824	26.784	40.92	26.66	31	32.86	36.146	38.378
8	Biological Oxygen Demand (mg/l)	1.54	1.87	1.53	1.34	1.77	1.02	1.67	1.76	1.42	1.98	1.22	1.98	1.44
9	Chemical Oxygen Demand (mg/l)	2.19	3.22	2.98	3.21	3.29	3.21	3.19	3.28	3.88	3.29	2.98	3.01	2.98
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	7.70	6.09	4.81	4.81	4.49	5.13	5.90	9.62	6.52	7.45	6.52	4.34	8.01
12	Total alkalinity (mg/l of CaCO ₃)	26.51	23.82	21.51	22.67	21.51	29.97	15.37	28.04	29.20	29.20	19.21	29.97	36.50
13	Nitrates (NO ₃) (mg/l)	0.008	0.001	0.005	0.014	0.001	0.013	0.001	0.001	0.001	0.001	0.006	0.005	0.002
14	Sulphate (mg/l)	4.22	3.77	3.11	3.55	3.99	1.55	3.99	2.88	2.88	4.22	1.55	4.66	4.88
15	Phosphate (PO ₄) (mg/l)	0.005	0.002	0.004	0.007	0.000	0.002	0.000	0.000	0.000	0.003	0.006	0.003	0.002
16	Total Hardness (mg/l)	22.38	20.11	18.16	19.13	18.16	25.30	12.97	25.83	26.89	26.89	17.69	27.60	33.61
17	Calcium hardness (mg/l)	20.63	18.54	16.74	17.64	16.74	23.32	11.96	23.81	24.79	24.79	16.31	25.44	30.99
18	Calcium ions (mg/ l)	8.25	7.42	6.70	7.06	6.70	9.33	4.78	9.52	9.92	9.92	6.52	10.18	12.40
19	Magnesium Hardness	1.75	1.57	1.42	1.49	1.42	1.97	1.01	2.01	2.10	2.10	1.38	2.15	2.62

	(mg/l)													
20	Magnesium ions (mg/l)	1.98	1.78	1.61	1.69	1.61	2.24	1.15	2.29	2.38	2.38	1.57	2.44	2.97
21	Potassium (mg/l)	0.98	0.98	0.3	0.4	1.45	1.21	1.1	0.45	1.3	0.59	0.7	0.63	0.54
22	Sodium (mg/l)	1.35	1.26	1.28	1.38	2.18	2.15	1.89	1.32	2.26	1.18	1.87	1.87	1.76
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub basin- Yargyap Chhu

S.No.	Physical / Chemical Characteristics	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Water Temperature (°C)	11	10.9	11.2	12	11	10.5	9.7	8.7	9	9.6	9.9	8.8	8.4	8.2
2	Dissolved Oxygen (mg/l)	10.1	10.23	10.05	9.85	10.1	10.35	10.6	10.85	10.75	10.4	10.3	10.8	10.9	11.1
3	Turbidity (NTU)	43	36	33	50	59	40	43	37	39	33	27	21	22	17
4	Total Suspended Solids (mg/l)	81.7	68.04	62.37	94.5	111.51	75.6	81.27	69.93	73.71	62.37	51.03	39.69	41.58	32.13
5	pH	7.89	7.19	7.33	7.76	8.08	7.45	8.17	8.34	7.7	7.65	7.54	7.1	7.78	7.45
6	Electrical Conductivity (µS/cm)	23.9	27	18.9	12.9	31.2	22.9	16	23	24	34	24	23	24	23
7	Total Dissolved Solids (mg/l)	14.818	16.74	11.718	7.998	19.344	14.198	9.92	14.26	14.88	21.08	14.88	14.26	14.88	14.26
8	Biological Oxygen Demand (mg/l)	1.24	1.25	1.98	1.92	0.45	1.33	1.87	2	1.2	1.28	1.27	1.33	1.31	1.76
9	Chemical Oxygen Demand (mg/l)	3.21	3.29	3.18	3.29	2.67	3.29	3.29	3.2	3.1	3.33	3.21	2.18	3.28	3.29
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	7.45	7.76	7.14	4.97	5.90	5.28	6.52	5.28	5.28	7.14	6.52	7.14	7.14	7.45
12	Total alkalinity (mg/l of CaCO ₃)	25.74	25.36	21.51	24.13	8.80	24.16	25.09	21.51	20.75	17.29	21.51	20.44	21.51	9.22
13	Nitrates (NO ₃) (mg/l)	0.007	0.009	0.005	0.007	0.008	0.007	0.008	0.008	0.000	0.005	0.001	0.005	0.009	0.005
14	Sulphate (mg/l)	3.77	4.88	4.22	3.33	3.33	2.00	3.55	4.22	4.66	3.77	3.77	3.77	4.88	4.22
15	Phosphate (PO ₄) (mg/l)	0.007	0.005	0.005	0.007	0.006	0.001	0.009	0.002	0.001	0.004	0.002	0.003	0.005	0.003
16	Total Hardness (mg/l)	23.70	23.35	19.81	22.22	8.10	22.25	23.10	19.81	19.10	15.92	19.81	18.82	19.81	8.49
17	Calcium hardness (mg/l)	21.85	21.53	18.27	20.48	7.47	20.52	21.30	18.27	17.61	14.68	18.27	17.35	18.27	7.83
18	Calcium ions (mg/	8.74	8.61	7.31	8.19	2.99	8.21	8.52	7.31	7.05	5.87	7.31	6.94	7.31	3.13

	l)														
19	Magnesium Hardness (mg/l)	1.85	1.82	1.55	1.73	0.63	1.74	1.80	1.55	1.49	1.24	1.55	1.47	1.55	0.66
20	Magnesium ions (mg/l)	2.10	2.07	1.75	1.97	0.72	1.97	2.04	1.75	1.69	1.41	1.75	1.67	1.75	0.75
21	Potassium (mg/l)	0.56	0.19	0.45	0.4	0.9	0.19	0.19	0.3	0.2	0.18	0.18	0.43	0.4	0.69
22	Sodium (mg/l)	1.76	0.91	1.38	1.79	1.43	1.19	1.21	1.6	1.8	1.56	1.39	1.39	1.33	1.24
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Outside basin

S.No.	Physical / Chemical Characteristics	B1	B2
1	Water Temperature (°C)	17.3	16
2	Dissolved Oxygen (mg/l)	8.21	8.32
3	Turbidity (NTU)	143	122
4	Total Suspended Solids (mg/l)	289	205
5	pH	8.32	8.24
6	Electrical Conductivity (µS/cm)	102.48	120.78
7	Total Dissolved Solids (mg/l)	68.32	80.52
8	Biological Oxygen Demand (mg/l)	1.6	1.5
9	Chemical Oxygen Demand (mg/l)	3.3	3.2
10	Total Coliform (MPN /100 ml)	A	A
11	Chloride (mg/l)	5.4	6.6
12	Total alkalinity (mg/l of CaCO ₃)	34	38
13	Nitrates (NO ₃) (mg/l)	0.06	0.05
14	Sulphate (mg/l)	4.3	6.1
15	Phosphate (PO ₄) (mg/l)	0.001	0.006
16	Total Hardness (mg/l)	29	31
17	Calcium hardness (mg/l)	18.75	22
18	Calcium ions (mg/ l)	7.5	8.8
19	Magnesium Hardness (mg/l)	10.25	9
20	Magnesium ions (mg/l)	1.80	1.63
21	Potassium (mg/l)	0.7	0.7
22	Sodium (mg/l)	1.3	1.6
23	Iron (mg/l)	<0.01	<0.01
24	Manganese (mg/l)	0.00	0.00
25	Cadmium (Cd) (mg/l)	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND
27	Copper (Cu) (mg/l)	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND
30	Lead (Pb) (mg/l)	ND	ND

Biological Parameters

Phytoplankton

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnantheidium affinis</i>	+	+	+	-	+	+	+	+	+	+	+	+	+
2	<i>Achnantheidium andicola</i>		-	-	+	-	-	-	-	-	-	-	-	-
3	<i>Achnantheidium austriaca</i>	-	-	-	-	-	-	-	+	+	-	+	-	-
4	<i>Achnantheidium austriaca</i> var. <i>helvetica</i>	+	+	-	-	-	+	+	-	-	-	-	+	+
5	<i>Achnantheidium biasoletiana</i>	-	-	-	+	+	-	-	+	+	+	+	-	-
6	<i>Achnantheidium conspicua</i>	+	-	-	-	-	-	+	-	-	-	-	-	-
7	<i>Achnantheidium cranulata</i>	-	+	-	-	-	-	-	-	-	-	-	+	+
8	<i>Achnantheidium dispar</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
9	<i>Achnantheidium exigua</i>	-	-	+	+	-	-	-	+	+	-	+	-	-
10	<i>Achnantheidium exilis</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
11	<i>Achnantheidium fragilarioides</i>	-	-	-	-	+	-	-	-	-	-	+	-	+
12	<i>Achnantheidium Grimmei</i>	-	-	-	-	-	-	-	+	+	-	-	-	-
13	<i>Achnantheidium hauckiana</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
14	<i>Achnantheidium holsti</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
15	<i>Achnantheidium hungarica</i>	-	+	-	-	-	-	-	+	+	-	-	+	-
16	<i>Achnantheidium kryophila</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
17	<i>Achnantheidium lanceolata</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
18	<i>Achnantheidium lapidosa</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
19	<i>Achnantheidium lavenderi</i>	-	-	-	-	-	-	-	-	-	+	+	-	-
20	<i>Achnantheidium lemmermanni</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Achnantheidium Lillijeborgei</i>	-	-	-	-	-	-	-	+	+	-	-	-	+
22	<i>Achnantheidium linearis</i>	-	+	+	-	+	+	-	-	-	-	-	+	-
23	<i>Achnantheidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
24	<i>Achnantheidium microcephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
25	<i>Achnantheidium minutissima</i>	+	-	-	-	-	-	-	-	-	+	-	-	-
26	<i>Achnantheidium nodosa</i>	-	-	-	-	+	-	-	+	+	-	-	-	-
27	<i>Achnantheidium plonensis</i>	-	-	-	-	-	-	+	-	-	-	+	-	-
28	<i>Achnantheidium saxonica</i>	-	-	+	-	-	-	-	-	-	-	-	-	-

29	<i>Achnantheidium</i> sp.	-	-	-	-	+	-	-	-	-	-	-	-	+
30	<i>Achnantheidium suchlandti</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
31	<i>Achnantheidium taeniata</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
32	<i>Achnantheidiumb conspicua</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
33	<i>Achnantheidiumlinearis</i> var. <i>pusila</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
34	<i>Anomoeneis</i> sp.	-	-	-	-	-	+	+	-	-	-	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	+	-	-	+	+	-	-	-	-
37	<i>Cocconeis placentula</i>	-	-	+	-	-	+	-	-	-	-	-	-	+
38	<i>Cymbella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
39	<i>Cymbella affinis</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
40	<i>Cymbella delicatula</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
41	<i>Cymbella laevis</i>	-	-	-	+	-	-	+	-	-	-	-	-	-
42	<i>Cymbella microcephala</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
43	<i>Cymbella pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
44	<i>Cymbella tumida</i>	-	+	-	+	+	-	-	-	-	-	-	+	+
45	<i>Cymbella turgida</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
46	<i>Cymbella ventricosa</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
48	<i>Diatoma anceps</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
49	<i>Diatoma hiemale</i>	-	-	-	-	+	-	+	+	+	+	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
51	<i>Diatoma vulgare</i>	-	+	+	-	-	-	-	-	-	-	+	+	-
52	<i>Didymosphaenia geminata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
53	<i>Eunotia linearis</i>	-	-	-	-	-	+	-	-	-	-	-	-	+
54	<i>Eunotia</i> sp.	-	+	-	-	-	-	-	-	-	-	-	+	-
55	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
56	<i>Fragilaria construens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	-	-	-	+	+	-	-	-	-
59	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
60	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-	-	-	+	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	+	-	-	+	-	-	-	-	-	-	+	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
63	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	+

65	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	-	+	-	-	-	+	-	+	+	-	-	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	+	-	-	-	+	-	-	-	-	-	-
72	<i>Gomphonema bohemicum</i>	-	+	-	-	-	-	-	-	-	-	-	+	-
73	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	+	-	-	-	-	-	+	-	+
75	<i>Gomphonema herbidense</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	+	+	+	-	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	+	-	-	-	-	+	-	-	-	-	-	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	+	-	-	+	-	-	-	-	-	+
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	+	+	-	-	-	+	+	+	-	-	-
83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
86	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	+	-	+	+	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	+	-	-	-	-	-	+
89	<i>Hannaea arcus</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	-	-	-	-	-	+	+	-	-	+	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
95	<i>Navicula cryptocephala</i>	-	-	-	-	-	+	-	-	-	-	-	-	+
96	<i>Navicula feyerborni</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	-	-	-	-	+	-	-	-	-	-	-	-	-

98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	+	-	-	-	+	+	-	-	-	-	-
102	<i>Pinnularia</i> sp.	+	+	+	-	-	-	-	-	-	+	+	-	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	-	+	-	-	+	-	-	-	-	-	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
108	<i>Surirella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	+
109	<i>Synedra</i> sp.	-	-	-	-	-	-	+	+	-	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
113	<i>Synedra ulna</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+	+	-	-	-	-	-	-	-	+	-	-
115	<i>Tabellaria flocculosa</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	12	14	13	10	15	16	15	18	18	13	20	14	16

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthidium affinis</i>	+	+	+	-	+	+	+
2	<i>Achnanthidium andicola</i>	-	-	+	+	-	-	-
3	<i>Achnanthidium austriaca</i>	-	+	-	-	-	-	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	-
5	<i>Achnanthidium biasoletiana</i>	+	+	-	+	+	-	+
6	<i>Achnanthidium conspicua</i>	-	-	+	-	-	+	-
7	<i>Achnanthidium cranulata</i>	-	-	-	-	-	-	-
8	<i>Achnanthidium dispar</i>	-	-	-	-	-	-	-
9	<i>Achnanthidium exigua</i>	-	-	-	+	-	-	-
10	<i>Achnanthidium exilis</i>	-	+	-	-	+	-	-
11	<i>Achnanthidium fragilarioides</i>	-	-	-	-	-	-	+
12	<i>Achnanthidium Grimmei</i>	-	+	-	-	-	-	-
13	<i>Achnanthidium hauckiana</i>	-	-	-	-	-	+	-
14	<i>Achnanthidium holsti</i>	-	-	+	-	-	-	-
15	<i>Achnanthidium hungarica</i>	-	-	-	-	-	-	-
16	<i>Achnanthidium kryophila</i>	+	+	-	-	-	-	-
17	<i>Achnanthidium lanceolata</i>	-	-	+	-	-	-	+
18	<i>Achnanthidium lapidosa</i>	-	-	-	-	-	-	-
19	<i>Achnanthidium lavenderi</i>	-	-	-	-	+	-	-
20	<i>Achnanthidium lemmermanni</i>	-	-	-	-	-	-	-
21	<i>Achnanthidium Lillijeborgei</i>	-	+	-	-	-	-	-
22	<i>Achnanthidium linearis</i>	-	-	-	-	-	+	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-
24	<i>Achnanthidium microcephala</i>	-	-	-	-	-	-	-
25	<i>Achnanthidium minutissima</i>	+	+	-	-	+	-	-
26	<i>Achnanthidium nodosa</i>	-	-	-	-	-	-	+
27	<i>Achnanthidium plonensis</i>	-	-	-	-	-	-	-
28	<i>Achnanthidium saxonica</i>	-	-	-	-	-	+	-
29	<i>Achnanthidium</i> sp.	-	+	-	-	-	-	+
30	<i>Achnanthidium suchlandti</i>	-	-	-	-	-	-	-
31	<i>Achnanthidium taeniata</i>	+	-	-	+	-	+	-
32	<i>Achnanthidiumb conspicua</i>	-	-	-	-	-	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	-	-	-	-	-	+
34	<i>Anomoeneis</i> sp.	+	-	-	-	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	+	-	-	-	-

36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	-	-	+
37	<i>Cocconeis placentula</i>	-	-	-	-	-	+	-
38	<i>Cymbella</i> sp.	-	-	-	-	-	-	-
39	<i>Cymbella affinis</i>	-	-	-	-	-	-	-
40	<i>Cymbella delicatula</i>	+	+	-	-	-	-	-
41	<i>Cymbella laevis</i>	-	-	+	+	-	-	-
42	<i>Cymbella microcephala</i>	-	-	-	-	-	-	-
43	<i>Cymbella pusila</i>	-	-	-	-	-	-	-
44	<i>Cymbella tumida</i>	-	-	-	+	-	-	+
45	<i>Cymbella turgida</i>	-	-	-	-	-	-	-
46	<i>Cymbella ventricosa</i>	+	-	-	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-
48	<i>Diatoma anceps</i>	-	+	+	-	-	-	-
49	<i>Diatoma hiemale</i>	-	-	-	-	+	-	+
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	+	-
51	<i>Diatoma vulgare</i>	-	-	-	-	-	-	-
52	<i>Didymosphaenia geminata</i>	-	-	-	-	-	-	-
53	<i>Eunotia linearis</i>	-	-	-	-	-	-	-
54	<i>Eunotia</i> sp.	-	-	+	-	-	-	-
55	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-
56	<i>Fragilaria construens</i>	-	+	-	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	-	-	-
59	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-
60	<i>Fragilaria</i> sp.	-	-	+	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	+
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	+	+	-	-	-	+	-
63	<i>Fragilaria pinnata</i>	-	-	-	-	+	-	-
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	+	-	-	-	-
66	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	+	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	+	-	-	-
69	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	+	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	-	-	-	-	-
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-
73	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-

74	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	+
75	<i>Gomphonema herbidense</i>	-	-	+	-	-	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	+	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	-	-	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	-	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	+	-	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-	-	-	-	-	-
81	<i>Gomphonema olivaceum</i>	-	+	-	-	-	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	+	+	-	-
83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-
86	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-
89	<i>Hannaea arcus</i>	-	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	-	+	-	-	-	+	-
95	<i>Navicula cryptocephala</i>	-	-	-	-	-	-	-
96	<i>Navicula feverborni</i>	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	-	-	-	-	-	-	+
98	<i>Navicula radiosa</i>	-	-	-	-	+	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	-	-	-	-	-	-	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	+	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	-	+	-	-	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	+	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	+	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	+	-	-
111	<i>Synedra amphirhynchus</i>	-	-	-	-	-	-	+

112	<i>Synedra rumpens</i>	+	-	+	-	-	-	-
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-
115	<i>Tabellaria flocculosa</i>	-	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-
	Total	11	19	14	10	13	12	15

Sub Basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	+	+		+	+		+	+
2	<i>Achnanthidium andicola</i>	-	-	-	-	-	-	-	+	-	-	+	-	-
3	<i>Achnanthidium austriaca</i>	-	-	-	+	+	-	+	-	+	+	-	+	+
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Achnanthidium biasoletiana</i>	-	-	+	-	+	-	+	-	-	-	-	+	+
6	<i>Achnanthidium conspicua</i>	-	-	-	-	-	+	-	-	+	-	+	-	-
7	<i>Achnanthidium cranulata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
8	<i>Achnanthidium dispar</i>	-	-	-	+	-	-	+	+	-	+	-	-	-
9	<i>Achnanthidium exigua</i>	+	-	-	-	+	+	-	-	+	-	+	+	-
10	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Achnanthidium fragilarioides</i>	-	-	-	+	-	-	-	-	+	+	-	+	-
12	<i>Achnanthidium Grimmei</i>	-	-	-	-	+	-	-	-	-	-	-	-	+
13	<i>Achnanthidium hauckiana</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
14	<i>Achnanthidium holsti</i>	+	-	+	-	-	-	-	-	-	-	-	-	-
15	<i>Achnanthidium hungarica</i>	-	-	-	-	+	-	-	-	+	-	-	-	-
16	<i>Achnanthidium kryophila</i>	-	-	-	+	-	-	-	-	-	+	-	+	+
17	<i>Achnanthidium lanceolata</i>	-	-	-	-	-	-	+	+	-	-	-	-	+
18	<i>Achnanthidium lapidosa</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
19	<i>Achnanthidium lavenderi</i>	-	-	-	+	-	-	-	-	+	+	-	+	-
20	<i>Achnanthidium lemmermanni</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
21	<i>Achnanthidium Lillijeborgei</i>	-	+	-	-	+	+	-	-	+	-	-	-	+
22	<i>Achnanthidium linearis</i>	+	-	-	-	-	-	+	+	-	-	+	-	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
24	<i>Achnanthidium microcephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
25	<i>Achnanthidium minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
26	<i>Achnanthidium nodosa</i>	-	-	-	+	+	-	-	-	-	+	-	-	-

27	<i>Achnantheidium plonensis</i>	-	-	+	-	-	-	-	-	+	-	-	+	+
28	<i>Achnantheidium saxonica</i>	+	-	-	-	-	+	+	-	-	-	-	-	-
29	<i>Achnantheidium sp.</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
30	<i>Achnantheidium suchlandti</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
31	<i>Achnantheidium taeniata</i>	-	-	-	+	-	-	-	-	-	+	-	-	-
32	<i>Achnantheidiumb conspicua</i>	-	-	-	-	-	-	-	-	+	-	-	+	-
33	<i>Achnantheidiumlinearis</i> var. <i>pusila</i>	-	+	-	-	-	-	+	-	-	-	+	-	+
34	<i>Anomoeneis sp.</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	+	-	-	-	-	-	+	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	+	-	-	-	+	-	-	-	-
37	<i>Cocconeis placentula</i>	+	-	+	+	-	-	-	-	-	+	-	-	-
38	<i>Cymbella sp.</i>	-	-	-	-	-	-	-	+	+	-	-	-	-
39	<i>Cymbella affinis</i>	-	-	-	+	-	-	+	-	-	+	+	+	+
40	<i>Cymbella delicatula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
41	<i>Cymbella laevis</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
42	<i>Cymbella microcephala</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
43	<i>Cymbella pusila</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
44	<i>Cymbella tumida</i>	-	-	-	-	-	-	-	+	-	-	+	-	+
45	<i>Cymbella turgida</i>	-	-	-	+	-	-	-	-	+	+	-	+	-
46	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	+	-	-	-	-	+	-	-
48	<i>Diatoma anceps</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
49	<i>Diatoma hiemale</i>	-	-	+	+	+	-	-	-	-	+	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
51	<i>Diatoma vulgare</i>	+	-	-	-	-	-	-	-	-	-	-	+	-
52	<i>Didymosphaenia geminata</i>	-	-	+	-	-	-	-	-	-	-	+	-	-
53	<i>Eunotia linearis</i>	-	-	-	-	-	-	+	-	-	-	-	-	+
54	<i>Eunotia sp.</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
55	<i>Fragilaria capucina</i>	-	+	-	-	-	-	-	-	-	-	-	+	-

56	<i>Fragilaria construens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	-	-	-	+	-	+	-	-	-	-	-
58	<i>Fragilaria pinnata f. subrotunda</i>	-	-	-	+	+	-	-	-	-	+	-	-	-
59	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
60	<i>Fragilaria sp.</i>	-	-	-	-	-	-	-	+	-	-	-	+	-
61	<i>Fragilaria vaucheriae</i>	-	+	-	-	-	-	+	-	-	-	+	-	-
62	<i>Fragilaria capucina var. lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
63	<i>Fragilaria pinnata</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	-	+	-	-	+	-	-	-	-	-	-	-	-
67	<i>Gomphonema longiceps var. subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
70	<i>Gomphonema parvulum</i>	-	+	-	-	-	+	-	-	-	-	-	-	-
71	<i>Gomphonema parvulum var. exilissimum</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	+	-	-	-	+	-	-
73	<i>Gomphonema gracile</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	-	+	-	+	-	-	-	+	-
75	<i>Gomphonema herbidense</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
76	<i>Gomphonema intricatum var. pumila</i>	-	+	-	-	+	-	+	-	-	-	-	-	-
77	<i>Gomphonema intricatum var. subclavata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
78	<i>Gomphonema intricatum var. pusila</i>	-	-	-	-	-	-	-	+	-	-	-	+	-
79	<i>Gomphonema lanceolatum var. affine</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
80	<i>Gomphonema longiceps var. subclavata</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
82	<i>Gomphonema olivaceum var. calcarea</i>	+	-	-	-	+	-	-	-	-	-	-	-	-

83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	+	-	-	-	-	+	-	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	+	-	-	-	-	-	-	-	-	+	-
86	<i>Gomphonema intricatum</i>	-	-	-	-	-	+	-	+	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	+	-	-	-	-	-	-	-	+
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
89	<i>Hannaea arcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	-	+	+	-	-	-	+	+	-	-	+
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	+	-	-	-	-	-	-	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	-	-	-	-	-	+	-	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	+	+	-	-	-	-	-	-
94	<i>Navicula andium</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
95	<i>Navicula cryptocephala</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
96	<i>Navicula feverborni</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
101	<i>Pinnularia molaris</i>	+	-	-	-	+	-	-	-	-	-	-	-	+
102	<i>Pinnularia</i> sp.	+	-	+	+	-	+	-	-	-	+	-	+	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	+	-	+	-	+
106	<i>Stauroneis</i> sp.	-	-	+	-	-	-	+	-	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	+	-	-	-	-	-	+	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	+	-	-	+	-	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-

112	<i>Synedra rumpens</i>	-	+	-	-	-	+	+	-	-	-	-	+	+
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-	+	-	-	-	-	-	-	-	-	-	-
115	<i>Tabellaria flocculosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	13	15	18	16	18	15	19	15	19	16	15	20	21

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium affinis</i>	+	+	+	+			+	+	+		+	+		+
2	<i>Achnanthidium andicola</i>	-	+	-	-	-	-	-	-	-	-	+	-	-	-
3	<i>Achnanthidium austriaca</i>	+	-	-	+	+	+	+	-	-	+	-	+	+	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Achnanthidium biasoletiana</i>	-	+	+	-	-	-	-	-	-	-	+	-	-	-
6	<i>Achnanthidium conspicua</i>	+	+	-	-	+	-	+	+	+	-	+	+	-	-
7	<i>Achnanthidium cranulata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	<i>Achnanthidium dispar</i>	-	+	-	+	-	-	+	-	-	-	+	-	+	-
9	<i>Achnanthidium exigua</i>	+	-	-	-	-	+	-	-	+	+	-	+	-	-
10	<i>Achnanthidium exilis</i>	-	+	-	-	-	-	-	-	-	-	+	-	-	-
11	<i>Achnanthidium fragilarioides</i>	+	-	+	-	-	-	+	-	+	-	-	+	-	-
12	<i>Achnanthidium Grimmei</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
13	<i>Achnanthidium hauckiana</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	<i>Achnanthidium holsti</i>	-	+	-	-	-	-	+	-	-	-	+	-	-	-
15	<i>Achnanthidium hungarica</i>	+	-	-	-	-	+	-	-	-	+	-	+	+	-
16	<i>Achnanthidium kryophila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Achnanthidium lanceolata</i>	-	+	+	-	-	-	-	-	-	-	+	-	-	-
18	<i>Achnanthidium lapidosa</i>	+	-	-	+	-	-	+	+	+	-	-	-	+	-
19	<i>Achnanthidium lavenderi</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
20	<i>Achnanthidium lemmermanni</i>	-	-	-	-	-	+	-	-	-	+	-	-	-	-
21	<i>Achnanthidium Lillijeborgei</i>	-	+	-	-	-	-	+	-	-	-	+	+	-	+
22	<i>Achnanthidium linearis</i>	+	+	+	-	-	-	-	-	-	-	+	-	+	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	+	-	-	-	+	-	-	-	-
24	<i>Achnanthidium microcephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	<i>Achnanthidium minutissima</i>	-	+	-	-	-	-	+	+	-	-	+	-	-	-
26	<i>Achnanthidium nodosa</i>	+	-	+	-	-	-	-	-	-	-	-	-	-	-

27	<i>Achnantheidium plonensis</i>	-	-	-	-	+	-	-	-	-	-	-	+	-	-
28	<i>Achnantheidium saxonica</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
29	<i>Achnantheidium</i> sp.	-	-	+	-	-	-	-	-	-	-	-	-	-	-
30	<i>Achnantheidium suchlandti</i>	-	+	-	-	-	+	-	-	+	+	+	-	-	-
31	<i>Achnantheidium taeniata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	<i>Achnantheidiumb conspicua</i>	-	-	-	-	+	-	+	+	-	-	-	+	-	-
33	<i>Achnantheidiumlinearis</i> var. <i>pusila</i>	-	-	+	-	-	-	-	-	+	-	-	-	-	+
34	<i>Anomoeneis</i> sp.	-	-	-	-	-	-	+	-	+	-	-	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	-	-	-	-	-	-	-	-	+	-	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	+	-	-	-	-	-	+	-	-	+	-	-
37	<i>Cocconeis placentula</i>	-	-	-	-	-	-	-	+	-	-	-	-	+	-
38	<i>Cymbella</i> sp.	+	-	-	+	-	-	+	-	-	-	-	+	-	-
39	<i>Cymbella affinis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	<i>Cymbella delicatula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	<i>Cymbella laevis</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	+
42	<i>Cymbella microcephala</i>	-	-	-	-	-	+	+	-	-	+	-	-	-	+
43	<i>Cymbella pusila</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
44	<i>Cymbella tumida</i>	-	+	+	-	-	-	-	-	+	-	+	-	-	-
45	<i>Cymbella turgida</i>	-	-	-	-	+	-	-	-	-	-	-	+	-	-
46	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	<i>Diatoma anceps</i>	+	-	-	+	-	-	-	-	-	-	-	-	-	+
49	<i>Diatoma hiemale</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	+	-	-	-	-	+	-	-
51	<i>Diatoma vulgare</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52	<i>Didymosphaenia geminata</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
53	<i>Eunotia linearis</i>	-	+	-	+	+	-	-	-	-	-	+	-	-	-

54	<i>Eunotia</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55	<i>Fragilaria capucina</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	+
56	<i>Fragilaria construens</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
57	<i>Fragilaria inflata</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
59	<i>Fragilaria rumpens</i>	-	-	-	-	+	-	-	-	-	-	-	+	-	-
60	<i>Fragilaria</i> sp.	+	-	-	-	-	-	-	-	+	-	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	+	+	-	-	-	-	-	-	-	+	-	-	+
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
63	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64	<i>Gomphonema gracile</i>	-	-	-	-	-	+	-	-	-	+	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	+	-	-	-	-	-	-	-	+	-	-	-	-	+
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	+	-	-	-	-	-	-	-	+	-
69	<i>Gomphonema olivaceum</i>	-	+	-	-	-	-	+	-	-	-	+	+	-	-
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
73	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74	<i>Gomphonema helveticum</i>	+	-	+	+	-	+	-	-	-	+	-	-	-	-
75	<i>Gomphonema herbidense</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	+	+	-	-	-	-	-	+
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	+	-	-	-	-	-	-	+	-	+	-	+	-

79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	+	-	-	-	+	-	-	-	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
85	<i>Gomphonema sphaerophorum</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
86	<i>Gomphonema intricatum</i>	-	-	-	-	+	-	-	-	+	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	+	-	-	-	+	-	-	+	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
89	<i>Hannaea arcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	-	-	-	-	-	-	-	-	-	+	-	+
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	+
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	-	-	-	-	+	-	-	-	-	-	-	-	+	-
95	<i>Navicula cryptocephala</i>	-	+	-	-	-	-	+	-	-	-	+	-	-	-
96	<i>Navicula feverborni</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	+	-	-	-	-	-	-	+	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	-	+	-	-	-	-	-	-	+	-	+	-	-	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var.	-	-	-	-	-	-	-	+	-	-	-	-	-	-

	<i>elliptica</i>														
105	<i>Reimeria sinuata</i>	-	-	-	+	-	-	-	-	-	-	-	+	-	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	+	-	-	-	+	-	-	+	-
107	<i>Surirella ovata</i>	+	-	-	-	+	-	-	-	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	+	-	-	-	-	+	-	-	+	-	-
111	<i>Synedra amphirhynchus</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
112	<i>Synedra rumpens</i>	+	+	-	-	-	-	-	-	-	-	+	-	-	+
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	+	+	-	-	-	-	-	-
115	<i>Tabellaria flocculosa</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	19	21	15	13	15	11	22	13	18	11	21	19	13	15

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnanthidium affinis</i>	+	+
2	<i>Achnanthidium andicola</i>		-
3	<i>Achnanthidium austriaca</i>	-	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-
5	<i>Achnanthidium biasoletiana</i>	-	-
6	<i>Achnanthidium conspicua</i>	-	+
7	<i>Achnanthidium cranulata</i>	+	-
8	<i>Achnanthidium dispar</i>	-	-
9	<i>Achnanthidium exigua</i>	-	-
10	<i>Achnanthidium exilis</i>	-	-
11	<i>Achnanthidium fragilarioides</i>	-	-
12	<i>Achnanthidium Grimmei</i>	-	-
13	<i>Achnanthidium hauckiana</i>	-	-
14	<i>Achnanthidium holsti</i>	-	-
15	<i>Achnanthidium hungarica</i>	+	-
16	<i>Achnanthidium kryophila</i>	-	-
17	<i>Achnanthidium lanceolata</i>	-	-
18	<i>Achnanthidium lapidosa</i>	-	+
19	<i>Achnanthidium lavenderi</i>	-	-
20	<i>Achnanthidium lemmermanni</i>	-	-
21	<i>Achnanthidium Lilljeborgei</i>	-	-
22	<i>Achnanthidium linearis</i>	+	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-
24	<i>Achnanthidium microcephala</i>	-	-
25	<i>Achnanthidium minutissima</i>	-	+
26	<i>Achnanthidium nodosa</i>	-	-
27	<i>Achnanthidium plonensis</i>	-	-
28	<i>Achnanthidium saxonica</i>	-	-
29	<i>Achnanthidium</i> sp.	-	-
30	<i>Achnanthidium suchlandti</i>	-	-
31	<i>Achnanthidium taeniata</i>	-	-
32	<i>Achnanthidiumb conspicua</i>	-	+
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	-
34	<i>Anomoeneis</i> sp.	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-
37	<i>Cocconeis placentula</i>	-	+
38	<i>Cymbella</i> sp.	-	-

39	<i>Cymbella affinis</i>	-	-
40	<i>Cymbella delicatula</i>	-	-
41	<i>Cymbella laevis</i>	-	-
42	<i>Cymbella microcephala</i>	-	-
43	<i>Cymbella pusila</i>	-	+
44	<i>Cymbella tumida</i>	+	-
45	<i>Cymbella turgida</i>	-	-
46	<i>Cymbella ventricosa</i>	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-
48	<i>Diatoma anceps</i>	-	-
49	<i>Diatoma hiemale</i>	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-
51	<i>Diatoma vulgare</i>	+	-
52	<i>Didymosphaenia geminata</i>	-	-
53	<i>Eunotia linearis</i>	-	-
54	<i>Eunotia</i> sp.	+	-
55	<i>Fragilaria capucina</i>	-	-
56	<i>Fragilaria construens</i>	-	+
57	<i>Fragilaria inflata</i>	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-
59	<i>Fragilaria rumpens</i>	-	-
60	<i>Fragilaria</i> sp.	-	-
61	<i>Fragilaria vaucheriae</i>	+	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-
63	<i>Fragilaria pinnata</i>	-	-
64	<i>Gomphonema gracile</i>	-	-
65	<i>Gomphonema helveticum</i>	-	-
66	<i>Gomphonema intricatum</i>	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-
68	<i>Gomphonema olivaceoides</i>	-	-
69	<i>Gomphonema olivaceum</i>	-	-
70	<i>Gomphonema parvulum</i>	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-
72	<i>Gomphonema bohemicum</i>	+	-
73	<i>Gomphonema gracile</i>	-	-
74	<i>Gomphonema helveticum</i>	-	-
75	<i>Gomphonema herbidense</i>	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	+
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-

78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-
81	<i>Gomphonema olivaceum</i>	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-
83	<i>Gomphonema parvulum</i>	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-
86	<i>Gomphonema intricatum</i>	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
89	<i>Hannaea arcus</i>	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+
93	<i>Melosira junergensii</i>	-	-
94	<i>Navicula andium</i>	-	-
95	<i>Navicula cryptocephala</i>	-	-
96	<i>Navicula feverborni</i>	-	-
97	<i>Navicula halophila</i>	-	-
98	<i>Navicula radiosa</i>	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	+
100	<i>Pinnularia borealis</i>	-	-
101	<i>Pinnularia molaris</i>	-	-
102	<i>Pinnularia</i> sp.	-	-
103	<i>Planothidium lanceolata</i>	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	+
105	<i>Reimeria sinuata</i>	-	-
106	<i>Stauroneis</i> sp.	-	-
107	<i>Surirella ovata</i>	-	-
108	<i>Surirella</i> sp.	-	-
109	<i>Synedra</i> sp.	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
111	<i>Synedra amphirhynchus</i>	-	-
112	<i>Synedra rumpens</i>	-	-
113	<i>Synedra ulna</i>	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	+
115	<i>Tabellaria flocculosa</i>	-	-
116	<i>Tetracyclus</i> sp.	-	-
-	Total	15	13

DENSITY & DIVERSITY OF PHYTOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/lit.)	290	309	354	Nil	Nil	143	305	287	Nil	Nil	Nil	Nil	354	
Shannon Weiner Diversity	1.35	1.41	1.38	Nil	Nil	1.57	1.53	1.37	Nil	Nil	Nil	Nil	1.57	
Evenness Index	0.54	0.53	0.54	Nil	Nil	0.57	0.56	0.53	Nil	Nil	Nil	Nil	0.57	
No. of species	12	14	13	Nil	Nil	16	15	13	Nil	Nil	Nil	Nil	16	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/lit.)	341	245	276	209	Nil	245	Nil							
Shannon Weiner Diversity	1.36	1.68	1.47	1.31	Nil	1.35	Nil							
Evenness Index	0.57	0.57	0.56	0.57	Nil	0.54	Nil							
No. of species	11	19	14	10	Nil	12	Nil							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/lit.)	Nil	Nil	205	Nil	189	156	200	276	Nil	166	123	200	157	
Shannon Weiner Diversity	Nil	Nil	1.58	Nil	1.57	1.51	1.57	1.46	Nil	1.59	1.54	1.36	1.63	
Evenness Index	Nil	Nil	0.55	Nil	0.54	0.56	0.53	0.54	Nil	0.57	0.57	0.53	0.54	
No. of species	Nil	Nil	18	Nil	18	15	19	15	Nil	16	15	13	21	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/lit.)	355	402	342	221	244	Nil	367	207	233	190	234	209	322	256
Shannon Weiner Diversity	1.58	1.66	1.46	1.38	1.49	Nil	1.68	1.45	1.57	1.39	1.69	1.58	1.39	1.57
Evenness Index	0.54	0.55	0.54	0.54	0.55	Nil	0.54	0.57	0.54	0.58	0.56	0.54	0.54	0.57
No. of species	19	21	15	13	15	Nil	22	13	18	11	21	19	13	16
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/lit.)	78		98											
Shannon Weiner Diversity	1.25		1.42											
Evenness Index	0.39		0.47											
No. of species	24		21											

Phytobenthos

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnanthydium austriaca</i>	-	-	+	-	+	+	+	+	-	+	-	+	+
2	<i>Achnanthydium austriaca</i> var. <i>helvetica</i>	-	+	-	-	+	-	-	-	+	+	+	-	-
3	<i>Achnanthydium boyei</i>	+	-	+	-	+	-	+	+	-	-	-	+	-
4	<i>Achnanthydium conspicua</i>	-	-	-	-	-	-	+	-	-	+	-	-	-
5	<i>Achnanthydium cranulata</i>	-	-	-	-	-	+	-	-	+	-	+	-	-
6	<i>Achnanthydium exigua</i>	+	-	-	-	+	-	+	-	-	-	-	+	+
7	<i>Achnanthydium Grimmei</i>	-	-	+	-	-	-	-	-	-	-	+	-	-
8	<i>Achnanthydium holsti</i>	-	+	-	+	+	-	-	-	-	-	-	-	-
9	<i>Achnanthydium hungarica</i>	+	-	-	-	-	+	-	-	+	-	-	-	-
10	<i>Achnanthydium lapidosa</i> var. <i>lanceolata</i>	-	-	+	-	-	-	+	-	-	+	-	-	-
11	<i>Achnanthydium linearis</i>	-	+	-	+	-	-	-	+	-	-	+	+	-
12	<i>Achnanthydium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	+	-	+	+	-	-	-
13	<i>Achnanthydium microcephala</i>	+	-	+	-	-	+	-	-	-	-	-	-	-
14	<i>Achnanthydium minutissima</i>	-	-	-	+	-	-	-	-	-	-	+	-	-
15	<i>Achnanthydium nodosa</i>	-	-	-	-	-	-	+	-	-	+	-	-	-
16	<i>Achnanthydium plonensis</i>	-	+	-	-	+	-	-	-	+	-	-	+	+
17	<i>Achnanthydium saxonica</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Achnanthydium suchlandti</i>	-	-	-	+	-	-	-	-	-	-	+	+	-
19	<i>Achnanthydium affinis</i>	+	-	-	-	-	+	-	+	-	+	-	-	-
20	<i>Achnanthydium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Achnanthydium lapidosa</i>	-	-	-	-	-	-	-	-	-	-	+	+	-
22	<i>Cocconeis placentula</i>	-	-	+	-	-	-	+	-	-	-	-	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
24	<i>Cyclotella</i> sp.	-	-	-	-	+	-	+	-	-	+	-	+	+
25	<i>Cymbella amphicephala</i>	-	-	-	+	-	-	-	-	-	-	+	-	-
26	<i>Cymbella laevis</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
27	<i>Cymbella perpusila</i>	-	-	-	-	-	+	+	+	-	-	-	-	-
28	<i>Cymbella tumidula</i>	-	-	+	-	+	-	-	-	-	-	-	-	-
29	<i>Cymbella turgidula</i>	-	-	-	-	-	-	-	-	+	+	-	-	-
30	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	+

31	<i>Cymbella affinis</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
32	<i>Diatoma hiemale</i>	-	-	-	-	+	-	+	-	-	-	+	+	+
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
34	<i>Didymosphenia geminata</i>	-	-	-	+	-	-	-	+	-	-	-	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
36	<i>Eunotia arcus</i>	-	-	-	-	+	-	-	-	-	-	-	+	+
37	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
38	<i>Fragilaria construens</i>	-	+	-	-	-	+	-	-	+	-	+	+	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	+	-	-	-	+	-	-	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
42	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
43	<i>Fragilaria brevistriata</i>	-	-	-	-	-	-	-	-	-	+	-	+	-
44	<i>Fragilaria</i> sp.	-	+	-	+	-	-	-	-	-	-	-	-	-
45	<i>Fragilaria vaucheriae</i>	+	-	-	-	-	+	-	-	-	-	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
47	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	+	-	-	+	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
49	<i>Gomphonema lanceolatum</i>	-	+	-	-	+	+	-	-	-	+	-	-	-
50	<i>Gomphonema nagpurenses</i>	-	-	-	+	-	-	-	-	+	-	-	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
52	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
55	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
58	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	+	-	-	-	-	-	-	+	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	+	-	-	-	-	+	-	-	-	-	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-	-	-	-	+	-	-	-	-	-	+	+
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
64	<i>Navicula microcephala</i>	-	-	-	+	-	-	-	-	-	-	-	-	-

65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
67	<i>Navicula rostellata</i>	-	-	-	-	-	-	-	-	+	-	+	-	-
68	<i>Navicula cari</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
71	<i>Planothidium lanceolata</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
73	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
75	<i>Synedra ulna</i>	-	-	-	-	-	-	+	-	-	-	-	+	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	+	-	-	-	-	-	-	-	+	-	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
78	<i>Tabellaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	10	12	9	11	12	13	14	11	11	12	14	13	10

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthidium austriaca</i>	+	+	+	+	-		+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>		-	-	-	-	+	-
3	<i>Achnanthidium boyei</i>	-	-	-	+	-	-	-
4	<i>Achnanthidium conspicua</i>	-	+	-	-	-	-	+
5	<i>Achnanthidium cranulata</i>	-	-	-	-	-	-	-
6	<i>Achnanthidium exigua</i>	-	-	-	-	-	-	-
7	<i>Achnanthidium Grimmei</i>	-	-	-	+	-	+	+
8	<i>Achnanthidium holsti</i>	-	-	-	-	+	-	-
9	<i>Achnanthidium hungarica</i>	-	+	-	-	-	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	+	-	-	+	-	-	-
11	<i>Achnanthidium linearis</i>	-	+	+	-	+	-	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	+	-
13	<i>Achnanthidium microcephala</i>	-	-	-	+	-	-	-
14	<i>Achnanthidium minutissima</i>	-	-	-	-	+	-	+
15	<i>Achnanthidium nodosa</i>	-	+	-	-	-	-	-
16	<i>Achnanthidium plonensis</i>	-	-	-	-	-	-	-
17	<i>Achnanthidium saxonica</i>	+	-	-	-	-	-	-
18	<i>Achnanthidium suchlandti</i>	-	-	-	-	+	-	+
19	<i>Achnanthidium affinis</i>	-	-	-	-	-	+	-
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	+
21	<i>Achnanthidium lapidosa</i>	-	-	-	-	-	-	-
22	<i>Cocconeis placentula</i>	+	-	-	+	-	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-
24	<i>Cyclotella</i> sp.	-	+	-	-	-	+	+
25	<i>Cymbella amphicephala</i>	-	-	-	-	+	-	-
26	<i>Cymbella laevis</i>	-	-	-	-	-	-	-
27	<i>Cymbella perpusila</i>	-	-	-	-	-	-	-
28	<i>Cymbella tumidula</i>	-	-	-	+	-	-	-
29	<i>Cymbella turgidula</i>	-	+	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-
31	<i>Cymbella affinis</i>	-	-	-	-	-	-	+
32	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-
34	<i>Didymosphenia geminata</i>	-	-	-	-	+	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	+	-	-	-	-	-

36	<i>Eunotia arcus</i>	-	-	-	-	-	-	+
37	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-
38	<i>Fragilaria construens</i>	-	-	+	-	-	-	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	+	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	+	-	-
41	<i>Fragilaria pinnata</i>	-	-	+	-	-	-	-
42	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-
43	<i>Fragilaria brevistriata</i>	-	-	-	-	-	-	-
44	<i>Fragilaria</i> sp.	-	-	+	-	+	-	-
45	<i>Fragilaria vaucheriae</i>	-	+	-	-	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	+	-	-	-
47	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	+	-	-	-	-	+	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	-	-	-
50	<i>Gomphonema nagpurenses</i>	-	-	-	-	+	-	-
51	<i>Gomphonema olivaceoides</i>	-	+	-	-	-	-	-
52	<i>Gomphonema olivaceum</i>	+	-	-	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	+	-	-	-	-
55	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	+
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	-	-	-	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-
58	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	+	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	+	-	-	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	+	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	+
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
64	<i>Navicula microcephala</i>	-	-	+	-	+	-	-
65	<i>Navicula radiosa</i>	-	+	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-
67	<i>Navicula rostellata</i>	-	-	-	-	-	-	-
68	<i>Navicula cari</i>	-	-	-	-	-	+	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	+	-	-	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	-	-	-
71	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	-	-	-
73	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	+	-

75	<i>Synedra ulna</i>	-	-	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	+	-	-	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-
78	<i>Tabellaria</i> sp.	-	-	-	-	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-
-	Total	10	9	8	9	11	9	11

Sub basin: Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium austriaca</i>	+	+	+	+		+	+	+	+	-	+	+	
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	+	-	+	-	-	-	-	-	-	-	+
3	<i>Achnanthidium boyei</i>	+	+	-	+	-	-	-	+	+	+	-	+	-
4	<i>Achnanthidium conspicua</i>	-	-	-	+	-	-	-	+	-	-	-	-	-
5	<i>Achnanthidium cranulata</i>	-	-	-	-	-	-	+	-	-	-	-	-	+
6	<i>Achnanthidium exigua</i>	-	+	+	+	-	-	-	+	-	+	-	-	-
7	<i>Achnanthidium Grimmei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
8	<i>Achnanthidium holsti</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
9	<i>Achnanthidium hungarica</i>	-	-	-	-	-	+	+	-	-	+	-	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-	-	+	-	-	-	+	-	-	-	-	-
11	<i>Achnanthidium linearis</i>	-	+	-	-	-	-	-	-	+	-	+	-	+
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	+	-	-	-	+	-	-	-	-	-
13	<i>Achnanthidium microcephala</i>	+	-	-	-	-	-	+	-	-	+	-	-	-
14	<i>Achnanthidium minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
15	<i>Achnanthidium nodosa</i>	-	-	-	+	-	-	-	+	-	-	-	+	-
16	<i>Achnanthidium plonensis</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
17	<i>Achnanthidium saxonica</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
18	<i>Achnanthidium suchlandti</i>	-	+	-	-	-	-	-	-	-	-	-	+	-
19	<i>Achnanthidium affinis</i>	-	-	-	-	+	-	+	-	+	+	-	-	-
20	<i>Achnanthidium exilis</i>	+	-	-	-	-	-	-	-	-	-	-	-	+
21	<i>Achnanthidium lapidosa</i>	-	+	+	-	-	-	-	-	-	-	-	-	-
22	<i>Cocconeis placentula</i>	-	-	-	+	-	-	-	+	-	-	-	-	+
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
24	<i>Cyclotella</i> sp.	-	+	+	+	-	-	-	+	-	-	-	-	-
25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-

26	<i>Cymbella laevis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
27	<i>Cymbella perpusila</i>	+	-	-	+	-	-	+	+	+	-	-	-	-
28	<i>Cymbella tumidula</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
29	<i>Cymbella turgidula</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
31	<i>Cymbella affinis</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
32	<i>Diatoma hiemale</i>	-	+	-	+	-	+	-	+	-	-	-	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
34	<i>Didymosphenia geminata</i>	-	-	-	-	-	-	-	-	+	-	-	-	+
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
36	<i>Eunotia arcus</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
38	<i>Fragilaria construens</i>	-	+	-	-	-	+	+	-	-	-	+	-	-
39	<i>Fragilaria leptostauron</i>	+	-	-	+	-	-	-	+	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	+	-	-	-	-	-	-	-	+	-	-
42	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
43	<i>Fragilaria brevistriata</i>	-	+	-	-	-	+	-	-	-	-	-	-	-
44	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-	-	-	-	+	+	-
45	<i>Fragilaria vaucheriae</i>	-	-	-	-	+	-	+	-	-	+	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
47	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	+	-	-	-	+
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
50	<i>Gomphonema nagpurenses</i>	-	-	-	-	+	-	-	-	-	-	-	+	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	+	-	-	-	+
52	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	+	-	-	-	-	+	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	+	-	-	+	-	-	-	-	+	-	-

55	<i>Gomphonema paruvulum</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	+	+	-	-	-	-	-	-
58	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
60	<i>Gomphonema logiceps</i> var. <i>subalavata</i>	-	-	-	+	-	+	-	+	-	-	+	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	-	-	-	-	+	-	-	+	-	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	-	-	-	-	+	-	+
65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
67	<i>Navicula rostellata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
68	<i>Navicula cari</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
71	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
73	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
75	<i>Synedra ulna</i>	-	+	-	+	-	+	-	+	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
78	<i>Tabellaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	8	13	9	14	7	11	13	14	11	10	8	9	11

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium austriaca</i>	+	+	-	+		+	+	+		+	+		+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	+	+	-	-	+	-	-	+	+	-	+	-	-
3	<i>Achnanthidium boyei</i>	+	-	-	-	+	+	-	+	-	-	+	-	-	-
4	<i>Achnanthidium conspicua</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Achnanthidium cranulata</i>	-	-	+	+	-	-	+	-	+	+	-	-	-	+
6	<i>Achnanthidium exigua</i>	+	-	-	-	-	+	-	-	-	-	-	-	-	-
7	<i>Achnanthidium Grimmei</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
8	<i>Achnanthidium holsti</i>	-	-	-	-	-	+	-	-	-	-	-	+	-	-
9	<i>Achnanthidium hungarica</i>	-	-	-	-	-	-	+	+	-	-	-	-	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	+	+	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Achnanthidium linearis</i>	-	-	+	+	-	-	-	-	-	-	+	-	-	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	+	-	-	-	-	-	-	+	-	-	+	-	+
13	<i>Achnanthidium</i> <i>microcephala</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	+
14	<i>Achnanthidium minutissima</i>	-	-	+	-	-	-	-	+	-	+	-	-	-	-
15	<i>Achnanthidium nodosa</i>	+	+	-	-	+	-	-	-	+	-	-	-	-	-
16	<i>Achnanthidium plonensis</i>	-	-	-	-	-	+	-	-	-	-	-	-	+	-
17	<i>Achnanthidium saxonica</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Achnanthidium suchlandti</i>	-	-	+	+	-	-	-	+	-	-	-	-	-	-
19	<i>Achnanthidium affinis</i>	-	+	-	-	-	-	+	-	-	-	+	-	+	-
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Achnanthidium lapidosa</i>	-	-	+	-	-	-	-	-	-	+	-	-	-	+
22	<i>Cocconeis placentula</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-

24	<i>Cyclotella</i> sp.	+	+	-	+	-	+	-	-	-	-	-	-	-	-
25	<i>Cymbella amphicephala</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
26	<i>Cymbella laevis</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
27	<i>Cymbella perpusila</i>	-	-	-	+	-	-	+	-	-	-	+	-	-	-
28	<i>Cymbella tumidula</i>	-	-	-	-	-	+	-	-	-	-	-	-	+	+
29	<i>Cymbella turgidula</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-	+	-	-	-	+	-	-
31	<i>Cymbella affinis</i>	-	-	-	-	+	-	-	-	+	-	-	-	-	-
32	<i>Diatoma hiemale</i>	-	-	+	-	-	+	-	-	-	-	-	-	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
34	<i>Didymosphenia geminata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	-	-	-	-	-	-	-	+	-	-	-	-	-
36	<i>Eunotia arcus</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	<i>Fragilaria construens</i>	-	-	+	-	-	-	+	-	+	+	-	-	-	+
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	+	+	-	-
41	<i>Fragilaria pinnata</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
42	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	<i>Fragilaria brevistriata</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
44	<i>Fragilaria</i> sp.	-	-	-	-	+	-	-	-	-	-	-	-	-	-
45	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
47	<i>Gomphonema gracile</i>	-	-	+	-	+	-	-	+	-	-	+	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49	<i>Gomphonema lanceolatum</i>	-	+	-	-	-	+	+	-	-	-	-	+	-	-
50	<i>Gomphonema nagpurenses</i>	+	-	-	-	-	-	-	-	-	-	-	-	+	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	+	-	-	-	-	-	-	+	-	-	-

52	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	+	-	+	+	-	-	-	-	-	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
55	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	+	-	+	-	+	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
58	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	+
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	+	-	-	+	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	+	+	-	-	-	-	-
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
65	<i>Navicula radiosa</i>	-	-	-	+	-	-	-	-	-	-	+	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
67	<i>Navicula rostellata</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	+
68	<i>Navicula cari</i>	-	-	-	-	-	-	+	-	+	-	-	-	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
71	<i>Planothidium lanceolata</i>	-	-	-	+	-	+	-	+	-	+	-	+	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	<i>Reimeria sinuata</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-

74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
75	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	+	+	-	-	-	-	-	-	-	-	-	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
78	<i>Tabellaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	8	12	14	11	7	12	13	12	10	9	11	11	8	11

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnanthidium austriaca</i>	+	
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-
3	<i>Achnanthidium boyei</i>	-	+
4	<i>Achnanthidium conspicua</i>	-	-
5	<i>Achnanthidium cranulata</i>	+	-
6	<i>Achnanthidium exigua</i>	-	-
7	<i>Achnanthidium Grimmei</i>	-	-
8	<i>Achnanthidium holsti</i>	-	-
9	<i>Achnanthidium hungarica</i>	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-
11	<i>Achnanthidium linearis</i>	+	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-
13	<i>Achnanthidium microcephala</i>	-	-
14	<i>Achnanthidium minutissima</i>	-	-
15	<i>Achnanthidium nodosa</i>	-	+
16	<i>Achnanthidium plonensis</i>	-	-
17	<i>Achnanthidium saxonica</i>	-	-
18	<i>Achnanthidium suchlandti</i>	+	-
19	<i>Achnanthidium affinis</i>	-	-
20	<i>Achnanthidium exilis</i>	-	-
21	<i>Achnanthidium lapidosa</i>	-	-
22	<i>Cocconeis placentula</i>	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-
24	<i>Cyclotella</i> sp.	+	-
25	<i>Cymbella amphicephala</i>	-	-
26	<i>Cymbella laevis</i>	-	-
27	<i>Cymbella perpusila</i>	+	-
28	<i>Cymbella tumidula</i>	-	-
29	<i>Cymbella turgidula</i>	-	-
30	<i>Cymbella ventricosa</i>	-	-
31	<i>Cymbella affinis</i>	-	+
32	<i>Diatoma hiemale</i>	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-
34	<i>Didymosphenia geminata</i>	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-
36	<i>Eunotia arcus</i>	-	-

37	<i>Fragilaria capucina</i>	-	-
38	<i>Fragilaria construens</i>	-	-
39	<i>Fragilaria leptostauron</i>	-	-
40	<i>Fragilaria olivaceoides</i>	-	-
41	<i>Fragilaria pinnata</i>	+	-
42	<i>Fragilaria rumpens</i>	-	-
43	<i>Fragilaria brevistriata</i>	-	-
44	<i>Fragilaria</i> sp.	-	+
45	<i>Fragilaria vaucheriae</i>	-	-
46	<i>Gomphonema bohemicum</i>	-	-
47	<i>Gomphonema gracile</i>	-	+
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-
49	<i>Gomphonema lanceolatum</i>	-	-
50	<i>Gomphonema nagpurenses</i>	-	-
51	<i>Gomphonema olivaceoides</i>	+	-
52	<i>Gomphonema olivaceum</i>	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-
55	<i>Gomphonema parvulum</i>	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-
58	<i>Gomphonema intricatum</i>	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
64	<i>Navicula microcephala</i>	-	-
65	<i>Navicula radiosa</i>	+	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-
67	<i>Navicula rostellata</i>	-	-
68	<i>Navicula cari</i>	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-
71	<i>Planothidium lanceolata</i>	+	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-
73	<i>Reimeria sinuata</i>	-	+
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
75	<i>Synedra ulna</i>	-	-

76	<i>Synedra ulna</i> var. <i>amphioxys</i>	+	-
77	<i>Tabellaria flocculus</i>	-	-
78	<i>Tabellaria</i> sp.	-	-
79	<i>Tetracyclus lacustris</i>	-	-
-	Total	11	7

DENSITY & DIVERSITY OF PHYTOBENTHOS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/cm ²)	87.00	98.00	Nil	Nil	Nil	209.00	167.00	256.00	Nil	Nil	Nil	184.00	146.00	
Shannon Weiner Diversity	1.29	1.32	Nil	Nil	Nil	1.25	1.41	1.36	Nil	Nil	Nil	1.36	1.23	
Evenness Index	0.56	0.55	Nil	Nil	Nil	0.60	0.55	0.57	Nil	Nil	Nil	0.55	0.56	
No. of species	10	11	Nil	Nil	Nil	8	13	11	Nil	Nil	Nil	12	9	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/cm ²)	201.00	169.00	Nil	Nil	Nil	191.00	274.00							
Shannon Weiner Diversity	1.29	1.22	Nil	Nil	Nil	1.21	1.28							
Evenness Index	0.56	0.56	Nil	Nil	Nil	0.55	0.53							
No. of species	10	9	Nil	Nil	Nil	9	11							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/cm ²)	221.00	Nil	187.00	Nil	133.00	105.00	Nil	Nil	Nil	Nil	142.00	278.00	290.00	
Shannon Weiner Diversity	1.23	Nil	1.28	Nil	1.21	1.32	Nil	Nil	Nil	Nil	1.23	1.26	1.32	
Evenness Index	0.59	Nil	0.58	Nil	0.62	0.55	Nil	Nil	Nil	Nil	0.59	0.57	0.55	
No. of species	8	Nil	9	Nil	7	11	Nil	Nil	Nil	Nil	8	9	11	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/cm ²)	203.00	Nil	Nil	89.00	120.00	Nil	Nil	433.00	329.00	189.00	Nil	126.00	209.00	179.00
Shannon Weiner Diversity	1.23	Nil	Nil	1.38	1.21	Nil	Nil	1.39	1.22	1.22	Nil	1.23	1.22	1.29
Evenness Index	0.59	Nil	Nil	0.58	0.62	Nil	Nil	0.56	0.53	0.56	Nil	0.51	0.59	0.54
No. of species	8	Nil	Nil	11	7	Nil	Nil	12	10	9	Nil	11	8	11
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/cm ²)	93		121											
Shannon Weiner Diversity	1.37		1.11											
Evenness Index	0.55		0.57											
No. of species	12		7											

Macro- Inveribrates

Sub basin- Siang: I-IV

S.No.	Family	Genus	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Heptageniidae	<i>Cinygmula</i>	+	+	+		-	+	+	+	+	+	-	+	-
2		<i>Stenonema</i>	-	-	-	+	+	-	-	-	-	-	+	-	+
3		<i>Heptagenia</i>	-	-	-	+	-	-	+	-	+	-	-	+	-
4		<i>Epeorus</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
5	Baetidae	<i>Baetis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	-	-	-	-	+	-	-	+	-	+	+	+	-
7		<i>Ephemerella excrucians</i>	+	-	-	+	-	-	-	-	-	-	-	-	-
8	Caenidae	<i>Caenis</i>	-	-	-	-	-	-	+	-	-	-	-	-	+
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	+	+	-	-	+	-	-	+	-	-	-	-
10		<i>Chroterpes</i>	-	-	-	-	+	-	-	-	-	+	+	-	-
11		<i>Leptophlebia</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
12	Neophemeridae	<i>Neophemeridae 1</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
13		<i>Neophemeridae 2</i>	-	+	-	-	-	+	+	-	-	+	-	-	+
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	-	+	-	-	-	-	-	+	+	+	+	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	+	-	+	-	-	-	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	+	-	-	+	-	-	-	+	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	+	-	-	+	-	-	-	+	-	+
21		<i>Hydroptila</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
22		<i>Leucotrichia</i>	-	-	-	-	-	-	-	-	+	-	-	-	-

23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	+	-	-	+	-	-	-	+	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Molannidae	<i>Molanna</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	+	+	-	-	-	+	-	-	+
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
30	Ephydriidae	Unidentified genus / species	-	+	-	+	-	-	-	-	-	-	+	+	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
37		<i>Horaia</i>	+	-	-	-	-	+	-	+	-	-	-	-	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	5	4	5	7	5	8	6	5	7	9	6	8	7

Sub basin- Yamne and Simang

S.No.	Family	Genus	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	-	+	+
2		<i>Stenonema</i>	-	-	-	-	-	-	-
3		<i>Heptagenia</i>	-	+	-	-	+	-	-
4		<i>Epeorus</i>	-	-	-	-	-	-	-
5	Baetidae	<i>Baetis</i>	-	-	-	+	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	+	-	-	-	+	-	+
7		<i>Ephemerella excrucians</i>	-	+	-	-	-	-	-
8	Caenidae	<i>Caenis</i>	-	-	+	-	+	+	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	-	-
10		<i>Chroterpes</i>	-	-	-	-	+	-	-
11		<i>Leptophlebia</i>	-	-	+	-	-	-	+
12	Neoephemeridae	<i>Neoephemeridae 1</i>	+	-	-	-	-	+	-
13		<i>Neoephemeridae 2</i>	-	-	-	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	+	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	+	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	+	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	+	+	-	-	-	-	-
21		<i>Hydroptila</i>	-	-	-	-	-	+	-
22		<i>Leucotrichia</i>	-	-	+	-	+	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	+	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	-	+
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-
27	Molannidae	<i>Molanna</i>	+	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	+	-	-	-	-	-
29		<i>Ablabesmyia</i>	-	-	-	+	+	-	-
30	Ephydriidae	Unidentified genus / species	-	-	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	+	+	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	+	-	-	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	-

37		<i>Horaia</i>	-	-	-	-	-	-	-
38	Tabanidae	<i>Tabanus</i>	-	+	-	+	-	+	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-
		Total	6	8	5	6	7	5	4

Sub basin- Siyom: I-III and Hirit

S.No.	Family	Genus	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Heptageniidae	<i>Cinygmula</i>	-	-	+	-	+	+	+	+	-	+	+	-	+
2		<i>Stenonema</i>	+	-	-	+	-	-	-	-	-	-	-	+	-
3		<i>Heptagenia</i>	-	+	-	+	+	-	+	-	+	-	-	-	-
4		<i>Epeorus</i>	-	-	+	-	-	-	-	-	-	+	-	-	-
5	Baetidae	<i>Baetis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
7		<i>Ephemerella excrucians</i>	+	-	+	+	-	-	-	-	-	-	-	-	+
8	Caenidae	<i>Caenis</i>	-	+	-	-	-	-	+	-	-	-	+	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	+	-	-	-	+	-	-	-	+	-	-	-	-
10		<i>Chroterpes</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	-	+	-	-	-	-	-	+	-	-	-	+	-
12	Neophemeridae	<i>Neophemeridae 1</i>	+	-	-	-	-	-	-	-	-	-	-	-	+
13		<i>Neophemeridae 2</i>	-	-	-	+	-	-	-	-	-	+	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	+	-	-	-	-	-	-	-	+
16	Elmidae	<i>Heterlimnius</i>	+	+	-	-	-	-	+	-	-	-	-	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	+	-	-	-	-	-	+	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
21		<i>Hydroptila</i>	+	-	+	-	-	-	-	-	+	-	-	-	+
22		<i>Leucotrichia</i>	-	+	-	-	+	-	-	+	-	-	-	+	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	-	-	-	+	+	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	+	-	-	-	-	-	+

27	Molannidae	<i>Molanna</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	+	-	-	+	-	-	-	-	-	-	-	+	-
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
30	Ephydriidae	Unidentified genus / species	-	-	+	-	-	-	-	-	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	-	+	-	+	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
36	Blepharoceridae	<i>Blepharocera</i>	-	+	-	-	+	-	-	-	-	-	-	-	-
37		<i>Horaia</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	+	+	-	+	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	8	6	5	8	7	4	6	4	5	6	4	5	7

Sub basin- Yargyap Chhu

S.No.	Family	Genus	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	-	+	+	+	+	+	+	+	+	+	+
2		<i>Stenonema</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3		<i>Heptagenia</i>	-	-	-	+	-	-	-	-	-	-	-	+	-	+
4		<i>Epeorus</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
5	Baetidae	<i>Baetis</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	-	+	+	-	-	+	-	+	-	-	-	-	-	+
7		<i>Ephemerella excrucians</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
8	Caenidae	<i>Caenis</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	+	-	-	-	-	+	-	-	-	-	-
10		<i>Chroterpes</i>	+	-	-	-	-	-	+	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	-	-	-	-	-	+	-	-	-	+	-	-	-	+
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
13		<i>Neoephemeridae 2</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	+	-	-	-	-	-	+	-	-	-	+	+	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	+
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	+	-	-	-	-	-	+	-	-	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21		<i>Hydroptila</i>	-	-	-	+	-	-	-	-	-	-	-	+	+	-
22		<i>Leucotrichia</i>	+	-	-	-	-	-	+	-	-	-	+	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	+	+	-	-	-	-	-	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	+	-	-	-	-	-	-	+	+

27	Molannidae	<i>Molanna</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	+	+	-	-	-	-	+	+	-	+	-	-	-	-
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	Ephydriidae	Unidentified genus / species	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	+
32	Simulidae	<i>Simulium pictipes</i>	-	-	-	+	-	-	-	-	-	-	+	+	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34		<i>Maruina</i>	+	-	-	-	-	-	+	-	-	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	+	-	-	-	+	-	+	-	-	-	-	+	+
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37		<i>Horia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	+	-	-	-	-	-	+	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	+	-	+	-	-	-	-	-	-	-	-	+
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	6	5	4	5	6	7	6	5	4	3	5	6	7	10

Outside basin

S.No.	Family	Genus	B1	B2
1	Heptageniidae	<i>Cinygmula</i>	+	+
2		<i>Stenonema</i>	-	+
3		<i>Heptagenia</i>	-	-
4		<i>Epeorus</i>	+	-
5	Baetidae	<i>Baetis</i>	-	-
6	Ephemerellidae	<i>Ephemerella</i>	-	-
7		<i>Ephemerella excrucians</i>	-	-
8	Caenidae	<i>Caenis</i>	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-
10		<i>Chroterpes</i>	-	-
11		<i>Leptophlebia</i>	-	-
12	Neophemeridae	<i>Neophemeridae 1</i>	-	-
13		<i>Neophemeridae 2</i>	-	-
14	Perlidae	<i>Acroneuria</i>	-	-
15	Perlodidae	<i>Isoperla</i>	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-
17	Psephenidae	<i>Psephenus</i>	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-
19	Corydalidae	<i>Corydalus</i>	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-
21		<i>Hydroptila</i>	-	-
22		<i>Leucotrichia</i>	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	+
25	Glossosomatidae	<i>Glossosoma</i>	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-
27	Molannidae	<i>Molanna</i>	+	-
28	Chironomidae	<i>Chironomus</i>	-	-
29		<i>Ablabesmyia</i>	-	-
30	Ephydriidae	Unidentified genus / species	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-
33	Psychodidae	<i>Psychoda</i>	+	-
34		<i>Maruina</i>	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-
37		<i>Horaia</i>	-	-

38	Tabanidae	<i>Tabanus</i>	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-
40	Culicidae	<i>Culex</i>	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-
		Total	4	3

DENSITY & DIVERSITY OF MACRO-INVERTEBRATES

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (Indiv./m ²)	109	121	40	Nil	Nil	208	135	123	Nil	Nil	Nil	53	Nil	
Shannon Weiner Diversity	0.76	0.87	0.55	Nil	Nil	0.81	0.64	0.71	Nil	Nil	Nil	0.69	Nil	
Evenness Index	0.47	0.49	0.50	Nil	Nil	0.45	0.46	0.44	Nil	Nil	Nil	0.43	Nil	
No. of species	5	6	3	Nil	Nil	6	4	5	Nil	Nil	Nil	5	Nil	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (Indiv./m ²)	Nil	69	Nil	90	Nil	Nil	101							
Shannon Weiner Diversity	Nil	0.54	Nil	0.66	Nil	Nil	0.63							
Evenness Index	Nil	0.49	Nil	0.48	Nil	Nil	0.45							
No. of species	Nil	3	Nil	4	Nil	Nil	4							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (Indiv./m ²)	Nil	Nil	113	Nil	194	128	174	82	Nil	Nil	187	342	Nil	
Shannon Weiner Diversity	Nil	Nil	0.56	Nil	0.51	0.57	0.49	0.62	Nil	Nil	0.55	0.32	Nil	
Evenness Index	Nil	Nil	0.51	Nil	0.46	0.41	0.45	0.39	Nil	Nil	0.40	0.46	Nil	
No. of species	Nil	Nil	3	Nil	3	4	3	5	Nil	Nil	4	2	Nil	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (Indiv./m ²)	108	75	47	72	46	138	68	166	75	110	42	105	Nil	Nil
Shannon Weiner Diversity	0.68	0.49	0.41	0.65	0.39	0.44	0.38	0.62	0.38	0.33	0.52	0.62	Nil	Nil
Evenness Index	0.38	0.35	0.37	0.40	0.35	0.32	0.35	0.39	0.35	0.48	0.47	0.45	Nil	Nil
No. of species	6	4	3	5	3	4	3	5	3	2	3	4	Nil	Nil
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (Indiv./m ²)	38		102											
Shannon Weiner Diversity	0.99		1.48											
Evenness Index	1.43		1.07											
No. of species	2		4											

Zooplanktons

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
	Protozoans													
1	<i>Actinophrys</i> sp.	-	+	-	+	-	+	+	-	+	+	-	+	+
2	<i>Arcella</i> sp.	+	-	+	-	+	-	-	+	-	-	+	-	-
3	<i>Ceratium</i> spp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Rotifers													
4	<i>Brachious</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
5	<i>Keratella</i> sp.	-	+	-	-	-	-	-	-	-	-	-	-	-
6	<i>Epiphanes</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
7	<i>Asplanchna</i> sp.	-	-	-	-	+	-	-	-	+	+	-	-	-
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cladoceran													
9	<i>Bosmina</i> sp.	-	-	-	-	-	-	-	-	-	-	+	-	-
10	<i>Daphnia</i> sp.	-	-	+	-	-	-	-	+	-	-	-	+	-
	Copepods													
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	1	2	1	1	2	2	1	2	2	2	2	2	2

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
	Protozoans							
1	<i>Actinophrys</i> sp.	-	+	+	-	+	+	+
2	<i>Arcella</i> sp.	+	-	-	+	-	-	+
3	<i>Ceratium</i> spp.	-	-	-	-	-	-	-
	Rotifers							
4	<i>Brachious</i>	-	-	-	-	-	-	-
5	<i>Keratella</i> sp.	-	-	-	-	-	-	-
6	<i>Epiphanes</i>	-	-	-	-	-	+	-
7	<i>Asplanchna</i> sp.	-			-	-	-	+
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-
	Cladoceran							
9	<i>Bosmina</i> sp.	-	-	-	+	-	-	-
10	<i>Daphnia</i> sp.	+	-	-	-	+	-	-
	Copepods							
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-
	Total	2	1	1	2	2	2	3

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY4	SY3	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
	Protozoans													
1	<i>Actinophrys</i> sp.	+	+	-	+	-	+	+	+	+	+	-	-	+
2	<i>Arcella</i> sp.	-	-	+	-	+	-	-	-	+	-	-	+	-
3	<i>Ceratium</i> spp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Rotifers													
4	<i>Brachious</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
5	<i>Keratella</i> sp.	-	-	-	-	-	-	-	-	-	-	+	-	-
6	<i>Epiphanes</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
7	<i>Asplanchna</i> sp.	-	+	-	-	-	-	-	+	+	-	-	-	-
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cladoceran													
9	<i>Bosmina</i> sp.	-	-	-	+	+	-	-	-	-	-	-	-	-
10	<i>Daphnia</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Copepods													
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	2	2	1	2	2	2	3	2	3	2	2	2	2

Sub basin- Yargyap Chhu

S.No.	Name of species	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
	Protozoans													
1	<i>Actinophrys</i> sp.	+	-	+	-	+	+	-	+	+	-	+	+	+
2	<i>Arcella</i> sp.	-	+	-	+	-	-	+	-	-	+	-	-	-
3	<i>Ceratium</i> spp.	-	-	-	-	-	-	-	-	-	-	-	-	+
	Rotifers													
4	<i>Brachious</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
5	<i>Keratella</i> sp.	+	-	-	-	-	-	-	-	-	-	-	-	-
6	<i>Epiphanes</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
7	<i>Asplanchna</i> sp.	-	-	-	+	-	-	-	+	+	-	-	-	+
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cladoceran													
9	<i>Bosmina</i> sp.	-	-	-	-	-	-	-	-	-	+	-	-	-
10	<i>Daphnia</i> sp.	-	+	-	-	-	-	+	-	-	-	+	-	-
	Copepods													
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	2	1	1	2	2	1	2	2	2	2	2	2	3

Outside basin

S.No.	Name of species	B1	B2
	Protozoans		
1	<i>Actinophrys</i> sp.	-	+
2	<i>Arcella</i> sp.	+	-
3	<i>Ceratium</i> spp.	-	-
	Rotifers		
4	<i>Brachious</i>	-	+
5	<i>Keratella</i> sp.	-	-
6	<i>Epiphanes</i>	-	-
7	<i>Asplanchna</i> sp.	+	-
8	<i>Philodena</i> sp.	-	-
	Cladoceran		
9	<i>Bosmina</i> sp.	-	-
10	<i>Daphnia</i> sp.	-	-
	Copepods		
11	<i>Cyclops</i> sp.	-	-
12	<i>Diaptomus</i> sp.	-	-
		2	2

DENSITY & DIVERSITY OF ZOOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (indiv/lit.)	34	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	16	Nil	Nil	Nil	
Shannon Weiner Diversity	0.17	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	0.13	Nil	Nil	Nil	
Evenness Index	0.25	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	0.19	Nil	Nil	Nil	
No. of species	2.00	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	2.00	Nil	Nil	Nil	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (indiv/lit.)	Nil	Nil	Nil	Nil	Nil	Nil	Nil							
Shannon Weiner Diversity	Nil	Nil	Nil	Nil	Nil	Nil	Nil							
Evenness Index	Nil	Nil	Nil	Nil	Nil	Nil	Nil							
No. of species	Nil	Nil	Nil	Nil	Nil	Nil	Nil							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (indiv/lit.)	Nil	Nil	29	Nil	35	Nil	26	17	Nil	Nil	Nil	Nil	Nil	
Shannon Weiner Diversity	Nil	Nil	0.16	Nil	0.14	Nil	0.13	0.11	Nil	Nil	Nil	Nil	Nil	
Evenness Index	Nil	Nil	0.23	Nil	0.20	Nil	0.19	0.16	Nil	Nil	Nil	Nil	Nil	
No. of species	Nil	Nil	2.00	Nil	2.00	Nil	2.00	2.00	Nil	Nil	Nil	Nil	Nil	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (indiv/lit.)	Nil	Nil	Nil	Nil	32	Nil	21	Nil	25	17	Nil	Nil	Nil	Nil
Shannon Weiner Diversity	Nil	Nil	Nil	Nil	0.17	Nil	0.13	Nil	0.14	0.11	Nil	Nil	Nil	Nil
Evenness Index	Nil	Nil	Nil	Nil	0.25	Nil	0.19	Nil	0.20	0.16	Nil	Nil	Nil	Nil
No. of species	Nil	Nil	Nil	Nil	2.00	Nil	2.00	Nil	2.00	2.00	Nil	Nil	Nil	Nil
	Jiya Dhol & Karena Ghat													
Code	B1		B2											
Density (indiv/lit.)	32		26											
Shannon Weiner Diversity	0.52		0.25											
Evenness Index	0.75		0.36											
No. of species	2		2											

Month of Sample: August 2012

Physico-chemical parameters

Sub basin- Siang: I-IV

S.No.	Physical / Chemical Characteristics	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Water Temperature (°C)	17.2	17.5	16.9	16.5	17	17.2	16.7	16.3	17	16.9	16.3	16.3	16.2
2	Dissolved Oxygen (mg/l)	8	8	8.15	8.2	8.15	8.05	8.15	8.2	8.1	8.1	8.22	8.2	8.25
3	Turbidity (NTU)	156	187	103	169	199	157	145	181	198	145	111	97	99
4	Total Suspended Solids (mg/l)	304.2	364.65	200.85	329.55	388.05	306.15	282.75	352.95	386.1	282.75	210.9	184.3	188.1
5	pH	8.50	8.10	8.20	8.00	8.00	8.09	8.16	8.13	8.12	8.18	8.26	8.43	8.37
6	Electrical Conductivity (µS/cm)	153	113	119	38	54	87	78	65	77	56	54	89	89
7	Total Dissolved Solids (mg/l)	93.9	69.4	73.1	23.3	33.2	53.4	47.9	39.9	47.3	34.4	33.2	54.6	54.6
8	Biological Oxygen Demand (mg/l)	1.7	1.4	1.5	1.8	1.1	1.9	1.7	1.8	1.7	1.67	1.25	1.56	1.62
9	Chemical Oxygen Demand (mg/l)	4	3.8	3.4	3.1	3.3	3.4	3.4	4	3.3	3.67	3.87	3.21	3.92
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	5.39	5.39	7.30	6.66	7.30	7.30	7.61	5.08	6.03	9.00	6.66	7.61	6.66
12	Total alkalinity (mg/l of CaCO ₃)	31	30	34	34	35	35	37	33	32	38	34	35	33
13	Nitrates (NO ₃) (mg/l)	0.04	0.045	0.042	0.035	0.031	0.035	0.037	0.029	0.031	0.022	0.021	0.02	0.02
14	Sulphate (mg/l)	5.00	4.00	4.00	6.00	7.00	4.50	5.14	3.85	3.00	4.07	4.00	6.00	7.00
15	Phosphate (PO ₄) (mg/l)	0.004	0.004	0.004	0.001	0.002	0.003	0.004	0.007	0.003	0.001	0.001	0.001	0.002

16	Total Hardness (mg/l)	28.6	27.6	31.3	31.3	32.2	32.2	34.1	30.4	29.5	35.0	31.3	32.2	30.4
17	Calcium hardness (mg/l)	22	21	21	21	21	23	23	22	23	24	22	21	20
18	Calcium ions (mg/ l)	8.8	8.4	8.4	8.4	8.4	9.2	9.2	8.8	9.2	9.6	8.8	8.4	8
19	Magnesium Hardness (mg/l)	6.55	6.63	10.31	10.31	11.24	9.24	11.08	8.39	6.47	11.00	9.31	11.24	10.39
20	Magnesium ions (mg/l)	2.11	2.02	2.02	2.02	2.02	2.21	2.21	2.11	2.21	2.30	2.11	2.02	1.92
21	Potassium (mg/l)	0.7	1	0.6	0.9	0.62	1.3	0.4	0.6	0.3	0.45	0.2	0.19	0.45
22	Sodium (mg/l)	1.4	1.84	1.71	2.7	1.7	1.9	1.5	1.3	1.9	1.44	1.06	1.21	1.89
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	0.01	0.01	0.01	ND	ND	ND	0.01	0.00	0.00	0.00
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub Basin- Yamne and Simang

S.No.	Physical / Chemical Characteristics	Y1	Y2	Y3	Y4	SM1	SM2	SM3
1	Water Temperature (°C)	17	16.1	16.2	17.2	16.89	17.9	17.2
2	Dissolved Oxygen (mg/l)	8.11	8.31	8.3	8.08	8.13	8	8.01
3	Turbidity (NTU)	134	189	176	189	132	131	138
4	Total Suspended Solids (mg/l)	254.6	359.1	334.4	359.1	250.8	248.9	262.2
5	pH	8.18	8.26	8.26	8.34	7.19	7.43	7.43
6	Electrical Conductivity (µS/cm)	73	89	82	99.2	84	97.9	95.9
7	Total Dissolved Solids (mg/l)	45.26	55.18	50.84	61.50	52.08	60.70	59.46
8	Biological Oxygen Demand (mg/l)	1.7	1.9	1.87	1.43	1.53	1.55	1.55
9	Chemical Oxygen Demand (mg/l)	3.56	3.27	3.09	3.29	3.29	3.28	3.231
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A
11	Chloride (mg/l)	7.61	6.66	4.44	8.18	7.61	7.93	7.30
12	Total alkalinity (mg/l of CaCO ₃)	35	32	29	36	36	37	34
13	Nitrates (NO ₃) (mg/l)	0.080	0.001	0.003	0.006	0.006	0.007	0.005
14	Sulphate (mg/l)	4.50	5.14	3.85	3.00	4.07	3.43	2.36
15	Phosphate (PO ₄) (mg/l)	0.005	0.008	0.001	0.002	0.000	0.000	0.000
16	Total Hardness (mg/l)	32.24	29.47	26.71	33.16	33.16	34.08	31.31
17	Calcium hardness (mg/l)	28.01	25.24	32.93	24.62	37.86	37.86	30.16
18	Calcium ions (mg/ l)	11.20	10.10	13.17	9.85	15.14	15.14	12.07
19	Magnesium Hardness (mg/l)	4.23	4.23	6.23	8.53	4.70	3.78	1.15
20	Magnesium ions (mg/l)	2.69	2.42	3.16	2.36	3.63	3.63	2.90
21	Potassium (mg/l)	0.21	0.65	0.76	0.19	0.39	0.45	0.66
22	Sodium (mg/l)	1.73	1.21	2.06	1.19	1.65	1.27	1.56
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	0.001	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND

Sub basin- Siyom: I-III and Hirit

S.No.	Physical / Chemical Characteristics	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Water Temperature (°C)	14.3	14.5	14.3	14.3	14.4	14.3	14.7	13.7	13.4	13	13.3	13.2	13.1
2	Dissolved Oxygen (mg/l)	8.91	8.68	8.9	8.83	8.85	8.9	8.6	9.22	8.95	9.05	8.9	8.96	9
3	Turbidity (NTU)	89	67	66	107	136	109	147	92	87	94	78	69	56
4	Total Suspended Solids (mg/l)	169.1	127.3	126.72	205.44	261.12	209.28	282.24	176.64	167.04	180.48	149.76	132.48	107.52
5	pH	8.32	8.23	8.13	7.88	7.78	7.99	7.82	8.15	8.23	8.45	7.65	8.15	7.9
6	Electrical Conductivity (µS/cm)	24.4	31.62	35.64	34.83	35.9	27.48	38.25	35.13	49.62	36.41	38.97	52.68	55.13
7	Total Dissolved Solids (mg/l)	15.1	19.6	22.1	21.6	22.3	17.0	23.7	21.8	30.8	22.6	24.2	32.7	34.2
8	Biological Oxygen Demand (mg/l)	1.77	1.66	1.32	1.42	1.37	1.76	1.9	1.3	1.8	1.32	1.98	1.53	1.98
9	Chemical Oxygen Demand (mg/l)	3.27	3.28	3.21	3.29	3.19	2.19	3.2	3.2	3.3	3.92	3.45	3.21	3.09
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	5.08	6.03	5.39	4.76	4.44	5.08	6.03	9.00	6.66	7.61	6.66	4.44	8.18
12	Total alkalinity (mg/l of CaCO ₃)	31	31	20	29	29	31	31	39	34	35	32	27	36.1
13	Nitrates (NO ₃) (mg/l)	0.008	0.001	0.005	0.013	0.001	0.014	0.001	0.001	0.001	0.001	0.006	0.005	0.002
14	Sulphate (mg/l)	4.07	4.71	3.64	4.71	4.07	3.21	3.21	1.93	3.43	4.07	4.50	3.64	4.71
15	Phosphate (PO ₄) (mg/l)	0.003	0.002	0.005	0.008	0.001	0.010	0.002	0.001	0.005	0.002	0.003	0.003	0.002
16	Total Hardness (mg/l)	28.55	28.55	18.42	26.71	26.71	28.55	28.55	35.92	31.31	32.24	29.47	24.87	33.25
17	Calcium hardness (mg/l)	21.24	19.08	17.24	18.16	17.24	24.01	12.31	22.47	23.39	23.39	15.39	24.01	29.24
18	Calcium ions (mg/ l)	8.50	7.63	6.89	7.26	6.89	9.60	4.92	8.99	9.36	9.36	6.16	9.60	11.70
19	Magnesium Hardness (mg/l)	7.31	9.47	1.18	8.55	9.47	4.54	16.24	13.45	7.92	8.84	14.08	0.86	4.01
20	Magnesium ions (mg/l)	2.04	1.83	1.65	1.74	1.65	2.30	1.18	2.16	2.25	2.25	1.48	2.30	2.81

21	Potassium (mg/l)	0.56	0.4	0.52	0.66	0.2	1.06	1.78	1.7	0.61	1.32	1.32	1.34	0.98
22	Sodium (mg/l)	1.67	2.67	1.56	1.34	1.14	2.89	2.55	2.2	1.8	2.15	2.65	2.54	1.51
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	0.001	0.001	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub basin- Yargyap Chhu

S.No.	Physical / Chemical Characteristics	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Water Temperature (°C)	11	10.9	11.2	12	11	10.5	9.7	8.7	9	9.6	9.9	8.8	8.4	8.2
2	Dissolved Oxygen (mg/l)	10.1	10.2	10	9.8	10.15	10.35	10.6	10.85	10.77	10.65	10.45	10.78	10.91	11.1
3	Turbidity (NTU)	88	132	114	146	138	89	117	56	44	38	21	19	20	14
4	Total Suspended Solids (mg/l)	167.2	249.48	215.46	275.94	260.82	168.21	221.13	105.84	83.16	71.82	39.69	35.91	37.8	26.46
5	pH	7.60	7.08	7.49	7.82	8.13	7.88	8.35	8.26	7.98	7.67	7.34	7.29	7.15	7.66
6	Electrical Conductivity (µS/cm)	15.1	16.4	19.2	16.4	17.8	19.2	23.3	16.4	18.3	21.9	19.2	26	19.2	21.9
7	Total Dissolved Solids (mg/l)	9.36	10.17	11.90	10.17	11.04	11.90	14.45	10.17	11.35	13.58	11.90	16.12	11.90	13.58
8	Biological Oxygen Demand (mg/l)	1.53	1.76	1.67	1.62	1.02	1.98	1.67	1.56	1.02	1.66	1.44	1.27	1.36	1.87
9	Chemical Oxygen Demand (mg/l)	3.29	3.29	3.19	3.98	2.78	3.19	3.2	3.29	3.29	3.29	3.219	3.28	3.18	3.18
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	4.76	4.44	5.08	6.03	9.00	6.66	7.61	6.66	4.76	4.44	5.08	6.03	9.00	6.00
12	Total alkalinity (mg/l of CaCO ₃)	28	25.08	27	32	37	34	37	33	29	28	29	31	38	33
13	Nitrates (NO ₃) (mg/l)	0.008	0.010	0.006	0.007	0.008	0.007	0.006	0.009	0.000	0.005	0.001	0.005	0.003	0.005
14	Sulphate (mg/l)	3.64	4.71	4.07	3.21	3.21	1.93	3.43	4.07	4.50	3.64	3.21	3.21	1.93	3.43
15	Phosphate (PO ₄) (mg/l)	0.008	0.006	0.005	0.008	0.006	0.001	0.010	0.002	0.001	0.006	0.005	0.008	0.006	0.002
16	Total Hardness (mg/l)	25.79	23.10	24.87	29.47	34.08	31.31	34.08	30.39	26.71	25.79	26.71	28.55	35.00	30.39
17	Calcium hardness (mg/l)	20.62	20.31	17.24	19.33	7.05	19.36	20.10	17.24	16.62	13.85	17.24	16.37	17.24	7.39
18	Calcium ions (mg/ l)	8.25	8.13	6.89	7.73	2.82	7.74	8.04	6.89	6.65	5.54	6.89	6.55	6.89	2.95
19	Magnesium Hardness	5.17	2.78	7.63	10.14	27.03	11.95	13.98	13.16	10.09	11.94	9.47	12.18	17.76	23.01

	(mg/l)														
20	Magnesium ions (mg/l)	1.98	1.95	1.65	1.86	0.68	1.86	1.93	1.65	1.60	1.33	1.65	1.57	1.65	0.71
21	Potassium (mg/l)	0.56	1.31	0.19	0.66	0.45	1.31	1.31	0.4	0.52	1.19	0.9	0.34	0.98	0.49
22	Sodium (mg/l)	1.89	1.6	0.98	1.27	1.76	1.24	1.67	1.76	1.89	1.56	1.88	1.82	1.6	1.34
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Outside basin

S.No.	Physical / Chemical Characteristics	B1	B2
1	Water Temperature (°C)	18.2	17.5
2	Dissolved Oxygen (mg/l)	8.14	8.22
3	Turbidity (NTU)	197	166
4	Total Suspended Solids (mg/l)	378	325
5	pH	8.21	8.19
6	Electrical Conductivity (µS/cm)	140.9	104.1
7	Total Dissolved Solids (mg/l)	93.9	69.4
8	Biological Oxygen Demand (mg/l)	1.7	1.4
9	Chemical Oxygen Demand (mg/l)	4	3.8
10	Total Coliform (MPN /100 ml)	A	A
11	Chloride (mg/l)	5.39	6.39
12	Total alkalinity (mg/l of CaCO ₃)	31	30
13	Nitrates (NO ₃) (mg/l)	0.04	0.045
14	Sulphate (mg/l)	4.60	4.90
15	Phosphate (PO ₄) (mg/l)	0.004	0.004
16	Total Hardness (mg/l)	28.6	27.6
17	Calcium hardness (mg/l)	17	18.5
18	Calcium ions (mg/ l)	6.8	7.4
19	Magnesium Hardness (mg/l)	11.55	9.13
20	Magnesium ions (mg/l)	1.63	1.78
21	Potassium (mg/l)	0.7	1
22	Sodium (mg/l)	1.4	1.84
23	Iron (mg/l)	<0.01	<0.01
24	Manganese (mg/l)	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND
27	Copper (Cu) (mg/l)	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND
30	Lead (Pb) (mg/l)	ND	ND

Phytoplankton

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnanthyidum affinis</i>	+	+	+	-	+	+	+	+	-	-	+	+	+
2	<i>Achnanthyidum andicola</i>	-	-	-	+	-	-	-	-	+	+	-	-	-
3	<i>Achnanthyidum austriaca</i>	-	-	-	-	+	+	-	-	-	-	-	-	-
4	<i>Achnanthyidum austriaca</i> var. <i>helvetica</i>	-	-	+	-	-	-	-	-	+	-	+	+	+
5	<i>Achnanthyidum biasoletiana</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
6	<i>Achnanthyidum conspicua</i>	+	+	-	+	-	-	+	-	-	+	-	-	-
7	<i>Achnanthyidum cranulata</i>	-	-	+	-	-	+	-	-	-	-	-	-	+
8	<i>Achnanthyidum dispar</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
9	<i>Achnanthyidum exigua</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
10	<i>Achnanthyidum exilis</i>	-	+	+	+	-	-	-	-	-	-	-	-	+
11	<i>Achnanthyidum fragilarioides</i>	-	-	-	-	-	+	-	+	-	-	-	-	-
12	<i>Achnanthyidum Grimmei</i>	+	-	-	-	-	-	-	-	+	-	+	-	-
13	<i>Achnanthyidum hauckiana</i>	-	-	-	+	-	-	+	-	-	-	-	-	-
14	<i>Achnanthyidum holsti</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
15	<i>Achnanthyidum hungarica</i>	-	-	+	-	-	-	-	-	-	+	-	-	+
16	<i>Achnanthyidum kryophila</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Achnanthyidum lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Achnanthyidum lapidosa</i>	-	+	-	-	+	-	-	-	-	-	-	-	-
19	<i>Achnanthyidum lavenderi</i>	-	-	-	+	-	-	-	-	+	-	-	-	-
20	<i>Achnanthyidum lemmermanni</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Achnanthyidum Lillijeborgei</i>	-	-	-	-	-	-	-	-	-	+	-	+	-
22	<i>Achnanthyidum linearis</i>	-	+	+	-	-	+	+	-	-	-	+	-	+
23	<i>Achnanthyidum linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
24	<i>Achnanthyidum microcephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
25	<i>Achnanthyidum minutissima</i>	-	+	-	-	+	-	-	-	-	-	-	-	-
26	<i>Achnanthyidum nodosa</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
27	<i>Achnanthyidum plonensis</i>	+	-	-	-	-	-	-	-	-	-	-	+	-
28	<i>Achnanthyidum saxonica</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
29	<i>Achnanthyidum</i> sp.	-	-	-	-	-	-	-	+	-	-	-	-	-
30	<i>Achnanthyidum suchlandti</i>	-	-	-	-	-	-	-	-	+	-	-	-	-

31	<i>Achnantheidium taeniata</i>	-	-	-	-	-	+	+	-	-	-	+	-	-
32	<i>Achnantheidiumb conspicua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
33	<i>Achnantheidiumlinearis</i> var. <i>pusila</i>	-	+	-	+	+	-	-	+	-	-	-	-	-
34	<i>Anomoeneis</i> sp.	-	-	-	-	-	-	-	-	-	+	-	+	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
37	<i>Cocconeis placentula</i>	+	-	-	-	-	-	+	-	-	-	-	-	-
38	<i>Cymbella</i> sp.	-	-	-	-	-	-	-	-	-	+	-	+	-
39	<i>Cymbella affinis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
40	<i>Cymbella delicatula</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
41	<i>Cymbella laevis</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
42	<i>Cymbella microcephala</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
43	<i>Cymbella pusila</i>	+	-	-	+	+	-	-	-	-	-	+	-	-
44	<i>Cymbella tumida</i>	-	-	+	-	-	-	-	+	-	-	-	-	+
45	<i>Cymbella turgida</i>	+	-	-	-	-	+	-	-	-	-	-	-	-
46	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	-	-	+	-	-	-	+	-	-	-	-
48	<i>Diatoma anceps</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
49	<i>Diatoma hiemale</i>	-	-	-	-	-	+	-	+	-	+	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
51	<i>Diatoma vulgare</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
52	<i>Didymosphaenia geminata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
53	<i>Eunotia linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
54	<i>Eunotia</i> sp.	-	-	+	-	-	-	-	-	-	+	-	-	+
55	<i>Fragilaria capucina</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
56	<i>Fragilaria construens</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	-	+	+	-	+	-	+	-	-
59	<i>Fragilaria rumpens</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
60	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	-	+	-	+	-	-	+	-	+	-	-	+
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	-	-	+	-	-	-	-	+	-
63	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	-	-	+	-	-	-	-	-	+	-	-	-	+
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-

68	<i>Gomphonema olivaceoides</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
72	<i>Gomphonema bohemicum</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
73	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	-	+	-	-	-	-	+	-	+	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
86	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
89	<i>Hannaea arcus</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	-	-	+	-	-	-	-	-	-	+
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
95	<i>Navicula cryptocephala</i>	+	-	-	-	-	-	-	-	-	-	-	+	-
96	<i>Navicula feverborni</i>	-	+	-	-	-	-	-	-	-	-	+	-	-
97	<i>Navicula halophila</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
102	<i>Pinnularia</i> sp.	-	-	-	-	-	+	-	-	-	-	-	-	-

103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	-	-	+	-	-	-	-	+	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	-	+	-	-	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	+	-	-	-	-	-	-	-	-	+	+
115	<i>Tabellaria flocculosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	11	12	14	12	9	13	11	12	14	13	12	13	14

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthidium affinis</i>	+	+	-	+	+	-	+
2	<i>Achnanthidium andicola</i>	-	-	-	-	-	+	-
3	<i>Achnanthidium austriaca</i>	-	-	+	-	-	-	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-	-	-	-	-	-
5	<i>Achnanthidium biasoletiana</i>	-	-	-	+	-	+	+
6	<i>Achnanthidium conspicua</i>	-	+	-	-	+	-	-
7	<i>Achnanthidium cranulata</i>	+	-	-	-	-	-	-
8	<i>Achnanthidium dispar</i>	-	-	-	-	-	-	-
9	<i>Achnanthidium exigua</i>	-	-	-	-	-	+	-
10	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	+
11	<i>Achnanthidium fragilarioides</i>	-	-	+	+	-	-	-
12	<i>Achnanthidium Grimmei</i>	-	-	-	-	-	-	-
13	<i>Achnanthidium hauckiana</i>	-	-	-	-	+	-	-
14	<i>Achnanthidium holsti</i>	-	-	-	-	-	+	-
15	<i>Achnanthidium hungarica</i>	+	-	-	-	-	-	-
16	<i>Achnanthidium kryophila</i>	-	-	-	-	-	-	+
17	<i>Achnanthidium lanceolata</i>	-	-	-	-	-	-	-
18	<i>Achnanthidium lapidosa</i>	-	+	+	-	-	-	-
19	<i>Achnanthidium lavenderi</i>	-	-	-	-	-	+	-
20	<i>Achnanthidium lemmermanni</i>	-	-	-	-	-	-	-
21	<i>Achnanthidium Lillijeborgei</i>	-	-	-	-	-	-	+
22	<i>Achnanthidium linearis</i>	+	-	+	-	+	-	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-
24	<i>Achnanthidium microcephala</i>	-	+	-	-	-	-	-
25	<i>Achnanthidium minutissima</i>	-	-	-	-	-	-	+
26	<i>Achnanthidium nodosa</i>	-	-	+	-	-	-	-
27	<i>Achnanthidium plonensis</i>	-	-	-	-	-	-	-
28	<i>Achnanthidium saxonica</i>	-	-	-	-	+	-	-
29	<i>Achnanthidium</i> sp.	-	-	-	-	-	-	+
30	<i>Achnanthidium suchlandti</i>	-	-	-	-	-	-	-
31	<i>Achnanthidium taeniata</i>	-	-	+	-	+	+	-
32	<i>Achnanthidiumb conspicua</i>	-	-	-	-	-	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-

34	<i>Anomoeneis</i> sp.	-	+	-	-	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	+	-	-	-
37	<i>Cocconeis placentula</i>	-	-	-	-	+	-	-
38	<i>Cymbella</i> sp.	-	-	-	-	-	-	-
39	<i>Cymbella affinis</i>	-	-	+	-	-	-	-
40	<i>Cymbella delicatula</i>	-	-	-	-	-	-	+
41	<i>Cymbella laevis</i>	-	+	-	-	-	-	-
42	<i>Cymbella microcephala</i>	-	-	-	-	-	-	-
43	<i>Cymbella pusila</i>	-	-	-	-	-	-	-
44	<i>Cymbella tumida</i>	+	-	-	+	-	-	-
45	<i>Cymbella turgida</i>	-	-	+	-	-	-	-
46	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-
48	<i>Diatoma anceps</i>	-	-	-	-	-	-	+
49	<i>Diatoma hiemale</i>	-	+	+	+	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	+	+	-
51	<i>Diatoma vulgare</i>	+	-	-	-	-	-	-
52	<i>Didymosphaenia geminata</i>	-	-	-	-	-	-	-
53	<i>Eunotia linearis</i>	-	-	-	-	-	-	-
54	<i>Eunotia</i> sp.	+	-	-	-	-	+	-
55	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-
56	<i>Fragilaria construens</i>	-	+	-	-	-	-	+
57	<i>Fragilaria inflata</i>	-	-	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	+	-	+	-	-
59	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-
60	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	+	-	-	+	-	-	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	+	-	-
63	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	+	-	-	-	-	-	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	+	-
69	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-
70	<i>Gomphonema parvulum</i>	-	-	-	-	+	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	+	-	-	-	-	-

72	<i>Gomphonema bohemicum</i>	+	-	-	-	-	-	-
73	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	+	-	-	-
75	<i>Gomphonema herbidense</i>	-	-	-	-	-	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	-	-	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	-	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	+	-	-	-	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-	-	-	-	-	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	+	-	+
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	+	-
83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	+	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-
86	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	-	-	-	-	-
89	<i>Hannaea arcus</i>	-	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	+	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	-	-	-	-	+	-	-
95	<i>Navicula cryptocephala</i>	-	-	-	-	-	-	-
96	<i>Navicula feverborni</i>	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	-	-	+	+	-	-	-
98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	-	-	+	-	-	-	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	+	-	-	-	+	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	+
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	+	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	-	-

110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	-	+	-	-	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	-	-
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-
115	<i>Tabellaria flocculosa</i>	-	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-
-	Total	12	12	15	10	13	11	12

Sub Basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium affinis</i>	+	-	+	+	+	+	+	+	+	+	+	+	-
2	<i>Achnanthidium andicola</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
3	<i>Achnanthidium austriaca</i>	-	-	+	-	+	+	-	-	-	-	-	-	+
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	+	-	-	-	-	-	+	-	+	-
5	<i>Achnanthidium biasoletiana</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
6	<i>Achnanthidium conspicua</i>	-	+	-	-	-	-	+	-	+	-	+	-	-
7	<i>Achnanthidium cranulata</i>	-	-	+	+	-	+	-	-	-	+	-	-	-
8	<i>Achnanthidium dispar</i>	-	-	-	-	+	-	-	-	-	-	-	+	-
9	<i>Achnanthidium exigua</i>	+	+	+	-	-	-	-	-	-	-	-	-	-
10	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	+	+	+	-	-	-
11	<i>Achnanthidium fragilarioides</i>	-	-	-	-	+	+	-	-	-	-	-	-	+
12	<i>Achnanthidium Grimmei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
13	<i>Achnanthidium hauckiana</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
14	<i>Achnanthidium holsti</i>	+	-	+	-	-	-	-	-	-	-	-	-	-
15	<i>Achnanthidium hungarica</i>	-	-	-	+	-	-	-	-	-	+	-	-	-
16	<i>Achnanthidium kryophila</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
17	<i>Achnanthidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Achnanthidium lapidosa</i>	-	-	-	-	+	-	+	-	+	-	-	-	-
19	<i>Achnanthidium lavenderi</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
20	<i>Achnanthidium lemmermanni</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Achnanthidium Lillijeborgei</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
22	<i>Achnanthidium linearis</i>	+	+	+	+	+	+	-	-	+	+	+	+	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
24	<i>Achnanthidium microcephala</i>	-	-	-	-	-	-	+	-	-	-	-	-	-

25	<i>Achnantheidium minutissima</i>	-	-	-	-	-	-	-	+	+	-	-	-	-
26	<i>Achnantheidium nodosa</i>	-	-	-	-	+	+	-	-	-	-	-	-	+
27	<i>Achnantheidium plonensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
28	<i>Achnantheidium saxonica</i>	+	-	+	-	-	-	-	-	-	-	+	-	-
29	<i>Achnantheidium sp.</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
30	<i>Achnantheidium suchlandti</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
31	<i>Achnantheidium taeniata</i>	-	-	-	-	+	+	-	-	-	-	+	-	+
32	<i>Achnantheidiumb conspicua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
33	<i>Achnantheidiumlinearis</i> var. <i>pusila</i>	-	+	-	-	-	-	-	-	+	-	-	-	-
34	<i>Anomoeneis sp.</i>	-	-	-	-	-	-	+	-	-	-	-	+	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
37	<i>Cocconeis placentula</i>	+	-	+	-	-	-	-	-	-	-	+	+	-
38	<i>Cymbella sp.</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
39	<i>Cymbella affinis</i>	-	+	-	-	+	+	-	-	-	-	-	-	+
40	<i>Cymbella delicatula</i>	-	-	-	-	-	-	-	+	+	-	-	+	-
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
42	<i>Cymbella microcephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
43	<i>Cymbella pusila</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
44	<i>Cymbella tumida</i>	-	+	-	+	-	-	-	-	-	+	-	-	-
45	<i>Cymbella turgida</i>	-	-	-	-	+	+	-	-	-	-	-	-	+
46	<i>Cymbella ventricosa</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	-	-	-	-	-	-	+	-	-	-	-
48	<i>Diatoma anceps</i>	-	-	-	-	-	-	-	+	-	-	-	+	-
49	<i>Diatoma hiemale</i>	-	-	-	-	+	+	+	-	-	-	-	-	+
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
51	<i>Diatoma vulgare</i>	+	-	+	+	-	-	-	-	-	+	-	-	-
52	<i>Didymosphaenia geminata</i>	-	+	-	-	-	-	-	-	-	-	-	-	-

53	<i>Eunotia linearis</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
54	<i>Eunotia</i> sp.	-	-	-	+	-	-	-	-	-	+	-	-	-
55	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
56	<i>Fragilaria construens</i>	-	-	-	-	-	-	+	+	+	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	+	+	-	-	-	-	-	-	+
59	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
60	<i>Fragilaria</i> sp.	-	-	+	-	-	-	-	-	-	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	-	-	+	-	-	-	-	-	+	-	-	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	+	-	-	-	-	-	+	-	-	-	-	-
63	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	-	-	-	+	-	-	-	-	-	+	-	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	-	+	-	-	-	+	-	-	-	-	-	-
72	<i>Gomphonema bohemicum</i>	-	+	-	+	-	-	-	-	-	+	-	-	-
73	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	+	+	-	-	-	-	-	-	-	-	-	+	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	-	-	-	+	-	-	-	-	-	-

80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	+	-	-	-	-	-	-	-	+	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	+	-	-	+	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
86	<i>Gomphonema intricatum</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
89	<i>Hannaea arcus</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	+	+	+	-	-	-	+	-	-	+
91	<i>Hannaea arcus</i> var. <i>linearis</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
95	<i>Navicula cryptocephala</i>	-	+	-	-	-	-	-	-	-	-	-	+	-
96	<i>Navicula feverborni</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
97	<i>Navicula halophila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	-	-	-	-	+	+	-	-	-	-	-	-	+
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
105	<i>Reimeria sinuata</i>	-	+	-	-	-	-	-	-	-	-	-	+	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	-	+	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-

108	<i>Surirella</i> sp.	-	-	-	-	+	+	-	-	-	-	-	-	+
109	<i>Synedra</i> sp.	-	-	-	-	-	-	-	-	-	-	+	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
115	<i>Tabellaria flocculosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	11	16	14	12	15	13	12	14	12	14	11	16	13

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium affinis</i>	-	-	+	+	+	+	-	+	-	+	+	+	-	+
2	<i>Achnanthidium andicola</i>	-	+	-	-	-	-	+	-	+	-	-	-	+	-
3	<i>Achnanthidium austriaca</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
5	<i>Achnanthidium biasoletiana</i>	-	+	-	+	-	+	-	-	-	-	+	-	+	+
6	<i>Achnanthidium conspicua</i>	-	-	-	-	+	-	+	-	+	+	-	+	-	-
7	<i>Achnanthidium cranulata</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
8	<i>Achnanthidium dispar</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	<i>Achnanthidium exigua</i>	-	-	-	-	+	-	+	+	+	-	-	-	+	-
10	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
11	<i>Achnanthidium fragilarioides</i>	+	-	-	-	-	-	-	-	-	-	+	-	-	-
12	<i>Achnanthidium Grimmei</i>	-	-	-	+	-	+	-	-	-	-	-	-	-	-
13	<i>Achnanthidium hauckiana</i>	-	-	-	-	-	-	-	-	-	+	-	+	-	-
14	<i>Achnanthidium holsti</i>	-	-	-	-	-	-	-	+	-	-	-	-	+	-
15	<i>Achnanthidium hungarica</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
16	<i>Achnanthidium kryophila</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	+
17	<i>Achnanthidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Achnanthidium lapidosa</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
19	<i>Achnanthidium lavenderi</i>	-	+	-	-	-	-	-	-	-	-	-	-	+	-
20	<i>Achnanthidium lemmermanni</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Achnanthidium Lillijeborgei</i>	-	-	-	+	+	+	-	-	-	-	-	-	-	+
22	<i>Achnanthidium linearis</i>	-	-	+	-	-	-	+	+	+	+	-	+	-	-

23	<i>Achnantheidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	<i>Achnantheidium microcephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	<i>Achnantheidium minutissima</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	+
26	<i>Achnantheidium nodosa</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
27	<i>Achnantheidium plonensis</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
28	<i>Achnantheidium saxonica</i>	-	-	-	-	+	-	-	+	-	+	-	+	-	-
29	<i>Achnantheidium</i> sp.	-	-	-	-	-	-	-	-	-	-	+	-	-	+
30	<i>Achnantheidium suchlandti</i>	-	-	-	-	-	-	+	-	+	-	-	-	-	-
31	<i>Achnantheidium taeniata</i>	+	+	-	-	-	+	-	-	-	+	-	+	+	-
32	<i>Achnantheidiumb conspicua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	<i>Achnantheidiumlinearis</i> var. <i>pusila</i>	-	-	-	-	-	-	+	-	+	-	+	-	-	-
34	<i>Anomoeneis</i> sp.	-	-	-	-	-	+	-	-	-	-	-	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
37	<i>Cocconeis placentula</i>	-	-	-	-	-	-	-	+	-	+	-	+	-	-
38	<i>Cymbella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	<i>Cymbella affinis</i>	+	-	-	+	-	-	+	-	+	-	-	-	-	-
40	<i>Cymbella delicatula</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	+
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	<i>Cymbella microcephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	<i>Cymbella pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	<i>Cymbella tumida</i>	-	-	+	-	-	-	+	-	+	-	+	-	-	-
45	<i>Cymbella turgida</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
46	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	+	-	+	-	+	-	-	-	-	-

48	<i>Diatoma anceps</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
49	<i>Diatoma hiemale</i>	+	-	-	-	-	+	-	-	-	-	+	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+	-	-	-	-	-	-	-	+	-	+	+	-
51	<i>Diatoma vulgare</i>	-	-	+	-	-	-	-	+	-	-	-	-	-	-
52	<i>Didymosphaenia geminata</i>	-	-	-	-	-	-	+	-	+	-	-	-	-	-
53	<i>Eunotia linearis</i>	+	-	-	+	-	-	-	-	-	-	-	-	-	-
54	<i>Eunotia</i> sp.	-	-	+	-	-	-	-	-	-	-	-	-	+	-
55	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56	<i>Fragilaria construens</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	+
57	<i>Fragilaria inflata</i>	-	-	-	-	+	-	-	-	-	-	+	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	+	-	-	-	-	-	-	-	-	-	-	+	-	-
59	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	-	+	-	-	-	-	-	-	-	+	-	-	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	+	-	-	+	-	+	-	-	+	-	-
63	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	-	-	+	-	-	-	-	-	-	-	+	-	-	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	+	-	-	-	-	-	-	-	-	-	-	+	-
69	<i>Gomphonema olivaceum</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
70	<i>Gomphonema parvulum</i>	-	-	-	-	+	-	-	-	-	+	-	+	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	+	-	-	+	-	-	-
72	<i>Gomphonema bohemicum</i>	-	-	+	-	-	-	+	-	+	-	-	-	-	-

73	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	+	-	-	-	-	-	+	-	-	-
75	<i>Gomphonema herbidense</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	+	-	-	-	+	+	+	-	-	-	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	+	-	-	-	-	-	-	-	-	+	-	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
81	<i>Gomphonema olivaceum</i>	+	-	-	+	-	-	-	-	-	-	-	+	-	+
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+	-	-	-	-	-	-	-	-	-	-	+	-
83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
86	<i>Gomphonema intricatum</i>	-	-	-	-	+	-	+	-	+	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	+	-	-	-	-	-	-	+	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
89	<i>Hannaea arcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-	+	-	-	-	-	-	-	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
95	<i>Navicula cryptocephala</i>	-	+	-	-	-	-	+	-	+	-	-	-	-	-

96	<i>Navicula feverborni</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	-	-	-	+	-	+	-	-	-	-	+	-	-	-
98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	+	-	-	-	+	-	-	-	-	-	-	-	-	-
103	<i>Planothidium lanceolata</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	+	-	-	-	-	-	-	-	-	-	-	+	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	+	-	+	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	+
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
108	<i>Surirella</i> sp.	+	-	-	-	-	-	-	-	-	-	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	-	-	-	-	+	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	+	-	-	-	-	-	-	-	+	-	-	-
112	<i>Synedra rumpens</i>	-	-	-	+	+	+	-	-	-	-	-	-	-	-
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
115	<i>Tabellaria flocculosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	+	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	16	11	17	13	15	13	16	11	16	10	18	13	11	12

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnanthidium affinis</i>	+	+
2	<i>Achnanthidium andicola</i>	-	-
3	<i>Achnanthidium austriaca</i>	-	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-
5	<i>Achnanthidium biasoletiana</i>	-	-
6	<i>Achnanthidium conspicua</i>	-	-
7	<i>Achnanthidium cranulata</i>	+	-
8	<i>Achnanthidium dispar</i>	-	-
9	<i>Achnanthidium exigua</i>	-	+
10	<i>Achnanthidium exilis</i>	-	-
11	<i>Achnanthidium fragilarioides</i>	-	-
12	<i>Achnanthidium Grimmei</i>	-	-
13	<i>Achnanthidium hauckiana</i>	-	-
14	<i>Achnanthidium holsti</i>	-	+
15	<i>Achnanthidium hungarica</i>	+	-
16	<i>Achnanthidium kryophila</i>	-	-
17	<i>Achnanthidium lanceolata</i>	-	-
18	<i>Achnanthidium lapidosa</i>	-	-
19	<i>Achnanthidium lavenderi</i>	-	-
20	<i>Achnanthidium lemmermanni</i>	-	-
21	<i>Achnanthidium Lilljeborgei</i>	-	-
22	<i>Achnanthidium linearis</i>	+	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-
24	<i>Achnanthidium microcephala</i>	-	-
25	<i>Achnanthidium minutissima</i>	-	-
26	<i>Achnanthidium nodosa</i>	-	-
27	<i>Achnanthidium plonensis</i>	-	-
28	<i>Achnanthidium saxonica</i>	-	+
29	<i>Achnanthidium</i> sp.	-	-
30	<i>Achnanthidium suchlandti</i>	-	-
31	<i>Achnanthidium taeniata</i>	-	-
32	<i>Achnanthidiumb conspicua</i>	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	-

34	<i>Anomoeneis</i> sp.	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-
37	<i>Cocconeis placentula</i>	-	+
38	<i>Cymbella</i> sp.	-	-
39	<i>Cymbella affinis</i>	-	-
40	<i>Cymbella delicatula</i>	-	-
41	<i>Cymbella laevis</i>	-	-
42	<i>Cymbella microcephala</i>	-	-
43	<i>Cymbella pusila</i>	-	-
44	<i>Cymbella tumida</i>	+	-
45	<i>Cymbella turgida</i>	-	-
46	<i>Cymbella ventricosa</i>	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-
48	<i>Diatoma anceps</i>	-	-
49	<i>Diatoma hiemale</i>	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-
51	<i>Diatoma vulgare</i>	+	+
52	<i>Didymosphaenia geminata</i>	-	-
53	<i>Eunotia linearis</i>	-	-
54	<i>Eunotia</i> sp.	+	-
55	<i>Fragilaria capucina</i>	-	-
56	<i>Fragilaria construens</i>	-	-
57	<i>Fragilaria inflata</i>	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-
59	<i>Fragilaria rumpens</i>	-	-
60	<i>Fragilaria</i> sp.	-	-
61	<i>Fragilaria vaucheriae</i>	+	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-
63	<i>Fragilaria pinnata</i>	-	-
64	<i>Gomphonema gracile</i>	-	-
65	<i>Gomphonema helveticum</i>	-	-
66	<i>Gomphonema intricatum</i>	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-
68	<i>Gomphonema olivaceoides</i>	-	-
69	<i>Gomphonema olivaceum</i>	-	-
70	<i>Gomphonema parvulum</i>	-	-
71	<i>Gomphonema parvulum</i> var.	-	+

	<i>exilissimum</i>		
72	<i>Gomphonema bohemicum</i>	+	-
73	<i>Gomphonema gracile</i>	-	-
74	<i>Gomphonema helveticum</i>	-	-
75	<i>Gomphonema herbidense</i>	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-
81	<i>Gomphonema olivaceum</i>	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-
83	<i>Gomphonema parvulum</i>	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-
86	<i>Gomphonema intricatum</i>	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
89	<i>Hannaea arcus</i>	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
93	<i>Melosira junergensii</i>	-	-
94	<i>Navicula andium</i>	-	-
95	<i>Navicula cryptocephala</i>	-	-
96	<i>Navicula feverborni</i>	-	-
97	<i>Navicula halophila</i>	-	-
98	<i>Navicula radiosa</i>	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-
100	<i>Pinnularia borealis</i>	-	-
101	<i>Pinnularia molaris</i>	-	-
102	<i>Pinnularia</i> sp.	-	-
103	<i>Planothidium lanceolata</i>	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-
105	<i>Reimeria sinuata</i>	-	-
106	<i>Stauroneis</i> sp.	-	-
107	<i>Surirella ovata</i>	-	-

108	<i>Surirella</i> sp.	-	-
109	<i>Synedra</i> sp.	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
111	<i>Synedra amphirhynchus</i>	-	-
112	<i>Synedra rumpens</i>	-	-
113	<i>Synedra ulna</i>	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
115	<i>Tabellaria flocculosa</i>	-	-
116	<i>Tetracyclus</i> sp.	-	-
-	Total	11	8

DENSITY & DIVERSITY OF PHYTOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/lit.)	189	Nil	266	Nil	Nil	121	235	200	Nil	Nil	Nil	211	Nil	
Shannon Weiner Diversity	1.33	Nil	1.46	Nil	Nil	1.34	1.31	1.37	Nil	Nil	Nil	1.38	Nil	
Evenness Index	0.55	Nil	0.55	Nil	Nil	0.52	0.55	0.55	Nil	Nil	Nil	0.54	Nil	
No. of species	11	Nil	14	Nil	Nil	13	11	12	Nil	Nil	Nil	13	Nil	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/lit.)	267	Nil	145	178	Nil	Nil	Nil							
Shannon Weiner Diversity	1.35	Nil	1.4	1.3	Nil	Nil	Nil							
Evenness Index	0.54	Nil	0.52	0.56	Nil	Nil	Nil							
No. of species	12	Nil	15	10	Nil	Nil	Nil							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/lit.)	Nil	Nil	167	Nil	162	Nil	188	176	Nil	Nil	121	156	132	
Shannon Weiner Diversity	Nil	Nil	1.39	Nil	1.46	Nil	1.35	1.39	Nil	Nil	1.31	1.46	1.38	
Evenness Index	Nil	Nil	0.53	Nil	0.54	Nil	0.54	0.53	Nil	Nil	0.55	0.53	0.54	
No. of species	Nil	Nil	14	Nil	15	Nil	12	14	Nil	Nil	11	16	13	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/lit.)	189	205	276	211	198	176	289	143	167	155	122	176	218	132
Shannon Weiner Diversity	1.55	1.33	1.52	1.33	1.41	1.35	1.47	1.32	1.49	1.3	1.59	1.35	1.35	1.35
Evenness Index	0.56	0.55	0.54	0.52	0.52	0.53	0.54	0.55	0.54	0.56	0.55	0.53	0.56	0.54
No. of species	16	11	17	13	15	13	15	11	16	10	18	13	11	12
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/lit.)	89		100											
Shannon Weiner Diversity	1.01		1.21											
Evenness Index	0.35		0.38											
No. of species	18		25											

Phytobenthos

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnanthidium austriaca</i>		+	+	-	-	+	-	-	+	+	-	-	-
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	+	+	-	+	-	-	-	-	+	+
3	<i>Achnanthidium boyei</i>	-	+	-	-	-	-	-	+	-	+	+	-	-
4	<i>Achnanthidium conspicua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Achnanthidium cranulata</i>	+	-	+	-	-	-	+	-	-	-	-	+	-
6	<i>Achnanthidium exigua</i>	-	-	-	+	-	-	-	+	-	-	-	-	+
7	<i>Achnanthidium Grimmei</i>	+	-	-	-	-	+	-	-	-	+	-	-	-
8	<i>Achnanthidium holsti</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
9	<i>Achnanthidium hungarica</i>	-	+	+	-	+	-	-	-	+	-	-	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Achnanthidium linearis</i>	-	-	-	-	-	-	-	-	-	+	-	-	+
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
13	<i>Achnanthidium microcephala</i>	-	-	+	-	+	-	-	-	+	-	-	-	-
14	<i>Achnanthidium minutissima</i>	-	-	-	-	-	+	-	-	-	-	+	-	-
15	<i>Achnanthidium nodosa</i>	-	-	-	+	-	-	-	-	-	-	-	+	-
16	<i>Achnanthidium plonensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Achnanthidium saxonica</i>	-	-	-	-	-	+	-	-	-	-	-	-	+
18	<i>Achnanthidium suchlandti</i>	-	-	+	-	+	-	+	-	-	-	+	-	-
19	<i>Achnanthidium affinis</i>	+	-	-	-	-	-	-	+	+	-	+	-	-
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Achnanthidium lapidosa</i>	-	+	+	-	-	-	-	-	-	-	-	-	-
22	<i>Cocconeis placentula</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
24	<i>Cyclotella</i> sp.	-	-	-	-	-	-	-	-	-	-	+	-	-
25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
26	<i>Cymbella laevis</i>	-	+	-	+	-	-	+	-	-	+	-	-	-
27	<i>Cymbella perpusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
28	<i>Cymbella tumidula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
29	<i>Cymbella turgidula</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
30	<i>Cymbella ventricosa</i>	+	-	-	-	-	-	+	-	-	+	-	-	-

31	<i>Cymbella affinis</i>	-	-	-	-	-	+	-	-	+	-	-	+	-
32	<i>Diatoma hiemale</i>	-	-	+	+	-	-	-	-	-	-	-	-	+
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
34	<i>Didymosphenia geminata</i>	+	-	-	-	-	-	+	-	-	-	-	+	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	+	-	+	-	+	-	-	-	+	+
36	<i>Eunotia arcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
38	<i>Fragilaria construens</i>	-	-	+	+	-	-	-	-	-	-	-	+	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-	+	-	+	-	-	-
42	<i>Fragilaria rumpens</i>	-	+	+	+	-	-	-	-	-	-	-	-	-
43	<i>Fragilaria brevistriata</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
44	<i>Fragilaria</i> sp.	-	-	-	+	-	-	-	-	-	-	-	-	-
45	<i>Fragilaria vaucheriae</i>	+	-	-	-	+	-	-	-	-	-	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
47	<i>Gomphonema gracile</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	-	+	-	+	-	-	-	-	+	-	+
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
50	<i>Gomphonema nagpurenses</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
52	<i>Gomphonema olivaceum</i>	-	-	-	-	-	+	-	-	-	+	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
55	<i>Gomphonema parvulum</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
57	<i>Gomphonema sphaerophorum</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
58	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	+	-	-	-	-	-	+	-	-	-	+	+
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	+	-	-	-	-	+	-	-	+	-
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	-	-	-	+	-	-	-

65	<i>Navicula radiosa</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
67	<i>Navicula rostellata</i>	-	-	+	-	+	-	+	-	-	-	-	-	-
68	<i>Navicula cari</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	+	-	-	-	+	-	-	+	-	-
71	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	+	+	-	-	-	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	+	-	-	-	+	-	-	-	-
73	<i>Reimeria sinuata</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	+	+	-
75	<i>Synedra ulna</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
78	<i>Tabellaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	10	10	12	15	7	10	11	8	8	11	9	9	13

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthidium austriaca</i>	+	+	+	-	-	+	-
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	+	-	+	-
3	<i>Achnanthidium boyei</i>	-	-	-	-	+	-	-
4	<i>Achnanthidium conspicua</i>	-	+	-	-	-	-	-
5	<i>Achnanthidium cranulata</i>	+	-	-	+	-	-	+
6	<i>Achnanthidium exigua</i>	-	-	-	-	+	-	-
7	<i>Achnanthidium Grimmei</i>	-	-	+	-	-	+	+
8	<i>Achnanthidium holsti</i>	-	-	-	-	-	-	-
9	<i>Achnanthidium hungarica</i>	+	-	-	-	-	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-
11	<i>Achnanthidium linearis</i>	-	-	-	-	-	+	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-
13	<i>Achnanthidium microcephala</i>	-	-	-	-	-	-	-
14	<i>Achnanthidium minutissima</i>	+	+	+	-	-	+	-
15	<i>Achnanthidium nodosa</i>	-	-	-	-	-	-	-
16	<i>Achnanthidium plonensis</i>	-	-	-	-	-	-	-
17	<i>Achnanthidium saxonica</i>	-	-	+	-	-	-	-
18	<i>Achnanthidium suchlandti</i>	-	-	-	+	-	-	-
19	<i>Achnanthidium affinis</i>	+	-	-	-	+	-	+
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-
21	<i>Achnanthidium lapidosa</i>	-	-	-	-	-	-	-
22	<i>Cocconeis placentula</i>	-	-	+	-	-	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-
24	<i>Cyclotella</i> sp.	-	+	-	-	-	-	-
25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	-
26	<i>Cymbella laevis</i>	-	-	-	+	-	-	-
27	<i>Cymbella perpusila</i>	-	+	-	-	-	-	-
28	<i>Cymbella tumidula</i>	-	-	-	-	-	-	-
29	<i>Cymbella turgidula</i>	-	-	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	-	-	-	+	-	-	+
31	<i>Cymbella affinis</i>	-	-	+	-	-	+	-
32	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-

33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	-	-	-	-	-
34	<i>Didymosphenia geminata</i>	-	-	-	+	-	-	+
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	+	-	+	-	-
36	<i>Eunotia arcus</i>	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-
38	<i>Fragilaria construens</i>	-	-	-	-	-	-	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	+	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	-	-	+	+	-
42	<i>Fragilaria rumpens</i>	-	+	-	-	-	-	-
43	<i>Fragilaria brevistriata</i>	-	-	-	-	-	-	-
44	<i>Fragilaria</i> sp.	-	-	-	-	-	+	-
45	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	+
46	<i>Gomphonema bohemicum</i>	+	+	-	+	-	-	-
47	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	+	-	-	+	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	+	-	-	-
50	<i>Gomphonema nagpurenses</i>	-	-	-	-	-	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-
52	<i>Gomphonema olivaceum</i>	-	-	+	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	+
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	-	-	-
55	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	+
58	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	+	+	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	+	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	-	-	-	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	-
65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-
67	<i>Navicula rostellata</i>	+	-	-	+	-	-	-
68	<i>Navicula cari</i>	-	-	-	-	-	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	-

70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	+	-	-
71	<i>Planothidium lanceolata</i>	-	-	-	+	+	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	-	-	-
73	<i>Reimeria sinuata</i>	-	-	-	-	-	-	+
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+	-	-	-	-	-
75	<i>Synedra ulna</i>	-	-	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	-	-	+	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-
78	<i>Tabellaria</i> sp.	-	-	-	-	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-
	Total	8	9	10	11	8	11	10

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium austriaca</i>	+	+	-	+	+	+	+	+	-	-	-	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	-	-	-	+	+	-	-
3	<i>Achnanthidium boyei</i>	+	+	+	-	-	+	-	+	+	-	-	-	+
4	<i>Achnanthidium conspicua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Achnanthidium cranulata</i>	-	-	+	-	-	-	-	-	-	+	-	-	-
6	<i>Achnanthidium exigua</i>	+	+	-	-	+	+	-	-	-	-	+	-	+
7	<i>Achnanthidium Grimmei</i>	-	-	+	+	-	-	-	+	-	-	-	-	-
8	<i>Achnanthidium holsti</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
9	<i>Achnanthidium hungarica</i>	+	-	-	-	-	-	+	-	-	-	-	+	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
11	<i>Achnanthidium linearis</i>	+	-	-	-	-	-	-	+	-	-	+	-	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	+	-	-	-	+	-	-	+
13	<i>Achnanthidium microcephala</i>	-	-	-	-	+	-	+	-	-	-	-	-	-
14	<i>Achnanthidium minutissima</i>	-	-	-	+	-	-	-	-	+	-	-	-	-
15	<i>Achnanthidium nodosa</i>	+	+	+	-	-	-	-	-	-	+	-	+	-
16	<i>Achnanthidium plonensis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
17	<i>Achnanthidium saxonica</i>	-	-	-	+	-	-	-	-	-	-	+	-	-
18	<i>Achnanthidium suchlandti</i>	+	+	-	-	-	+	-	-	+	-	-	-	-
19	<i>Achnanthidium affinis</i>	-	-	-	-	-	-	+	-	+	-	-	-	-
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Achnanthidium lapidosa</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
22	<i>Cocconeis placentula</i>	-	-	-	+	-	-	-	-	-	-	-	-	+
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	-	-	+	-	-	-	-	-	-	-	-
24	<i>Cyclotella</i> sp.	-	-	-	-	-	+	-	-	+	-	-	-	-
25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	-	-	-	-	+	-	-

26	<i>Cymbella laevis</i>	-	-	+	-	-	-	-	+	-	-	-	-	-
27	<i>Cymbella perpusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
28	<i>Cymbella tumidula</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
29	<i>Cymbella turgidula</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
30	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
31	<i>Cymbella affinis</i>	-	-	-	+	+	-	+	-	-	+	-	-	-
32	<i>Diatoma hiemale</i>	-	-	+	-	-	-	-	-	-	-	+	+	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
34	<i>Didymosphenia geminata</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	+	-	-	-	-	-	+	+	-	-
36	<i>Eunotia arcus</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
38	<i>Fragilaria construens</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	-	-	+	-	-	+	-	-	-	-	-
42	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
43	<i>Fragilaria brevistriata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
44	<i>Fragilaria</i> sp.	+	+	-	-	-	-	-	-	-	-	-	-	-
45	<i>Fragilaria vaucheriae</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	-	+	-	-	-	-	-	-	+	-
47	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	-	+	-	-	-	-	+	-	+	-	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
50	<i>Gomphonema nagpurenses</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
52	<i>Gomphonema olivaceum</i>	-	-	-	+	-	-	-	+	-	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	+	-	-	-	-	-	-	-	-	-	-	-

54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
55	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	+	-	-	+	-	-	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
58	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	+	+	-	+
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i> 1	-	-	-	+	-	-	-	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	-	-	-	+	-	-	+	-	+	-
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	-	+	-	-	-	-	+
65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	+	-	-	-	+	-	-	-
67	<i>Navicula rostellata</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
68	<i>Navicula cari</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	+	+	-	-	-	-	-	-	+	-	-	-	-
71	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
73	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	+	+	-	-	-
75	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
78	<i>Tabellaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	11	10	10	10	10	11	8	11	9	9	13	8	7

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium austriaca</i>	+	+	+	-	+	+	+	+	+	+	+	-	+	-
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	+	-	-	-	-	-	-	+	-	-	+
3	<i>Achnanthidium boyei</i>	-	+	-	-	+	-	+	+	+	-	-	-	+	-
4	<i>Achnanthidium conspicua</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
5	<i>Achnanthidium cranulata</i>	-	-	+	+	-	-	-	-	-	-	-	+	-	+
6	<i>Achnanthidium exigua</i>	+	+	-	-	-	-	-	+	+	+	-	-	+	-
7	<i>Achnanthidium Grimmei</i>	-	-	-	-	-	-	+	-	-	-	+	+	-	-
8	<i>Achnanthidium holsti</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	<i>Achnanthidium hungarica</i>	-	-	+	-	-	-	-	+	-	-	-	-	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Achnanthidium linearis</i>	-	-	-	-	-	-	+	+	-	-	+	-	-	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
13	<i>Achnanthidium microcephala</i>	+	-	-	-	-	-	-	-	-	+	-	-	-	-
14	<i>Achnanthidium minutissima</i>	-	-	+	-	-	+	-	-	-	-	+	-	-	-
15	<i>Achnanthidium nodosa</i>	-	+	-	+	+	-	-	+	+	-	-	-	+	-
16	<i>Achnanthidium plonensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Achnanthidium saxonica</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Achnanthidium suchlandti</i>	-	+	-	-	-	-	-	+	+	-	-	-	-	+
19	<i>Achnanthidium affinis</i>	-	-	+	-	-	-	-	-	-	-	-	+	-	-
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Achnanthidium lapidosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	<i>Cocconeis placentula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	+	-	+	-	-	-	-	+	+	-	-	-	-

24	<i>Cyclotella</i> sp.	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	<i>Cymbella laevis</i>	-	-	-	-	-	-	+	-	-	-	-	-	+	+	+
27	<i>Cymbella perpusila</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
28	<i>Cymbella tumidula</i>	+	-	-	+	-	-	-	-	-	+	-	-	-	-	-
29	<i>Cymbella turgidula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	-	-	-	-	+	-	+	-	-	-	-	+	+	+	+
31	<i>Cymbella affinis</i>	+	-	-	-	-	-	-	-	-	+	+	-	-	-	-
32	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-
34	<i>Didymosphenia geminata</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	+	+
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
36	<i>Eunotia arcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	<i>Fragilaria construens</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
41	<i>Fragilaria pinnata</i>	+	-	-	-	-	-	+	-	-	+	+	-	-	-	-
42	<i>Fragilaria rumpens</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
43	<i>Fragilaria brevistriata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	<i>Fragilaria</i> sp.	-	+	-	-	+	-	-	+	+	-	+	-	+	-	-
45	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
46	<i>Gomphonema bohemicum</i>	+	-	+	-	-	+	-	-	-	+	-	-	-	-	+
47	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	-	+	-	-	-	-	-	-	+	-	-	-	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
50	<i>Gomphonema nagpurenses</i>	-	+	-	-	+	-	-	+	+	-	-	-	+	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

52	<i>Gomphonema olivaceum</i>	+	-	-	-	-	-	+	-	-	-	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+	-	-	+	-	-	+	+	-	-	+	+	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
58	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
67	<i>Navicula rostellata</i>	+	-	+	-	-	-	-	-	-	+	-	-	-	+
68	<i>Navicula cari</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	+	-	-	+	-	-	+	+	-	-	-	+	-
71	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
74	<i>Synedra ulna</i> var.	-	-	-	-	-	+	-	-	-	-	-	-	-	-

	<i>amphirhynchus</i>														
75	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
77	<i>Tabellaria flocculus</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
78	<i>Tabellaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	10	10	8	11	8	9	11	11	10	9	11	10	10	11

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnanthidium austriaca</i>	-	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-
3	<i>Achnanthidium boyei</i>	-	-
4	<i>Achnanthidium conspicua</i>	-	+
5	<i>Achnanthidium cranulata</i>	+	-
6	<i>Achnanthidium exigua</i>	-	-
7	<i>Achnanthidium Grimmei</i>	-	-
8	<i>Achnanthidium holsti</i>	-	-
9	<i>Achnanthidium hungarica</i>	-	+
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-
11	<i>Achnanthidium linearis</i>	-	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	+	-
13	<i>Achnanthidium microcephala</i>	-	-
14	<i>Achnanthidium minutissima</i>	-	-
15	<i>Achnanthidium nodosa</i>	+	+
16	<i>Achnanthidium plonensis</i>	-	-
17	<i>Achnanthidium saxonica</i>	-	-
18	<i>Achnanthidium suchlandti</i>	-	-
19	<i>Achnanthidium affinis</i>	-	+
20	<i>Achnanthidium exilis</i>	-	-
21	<i>Achnanthidium lapidosa</i>	-	-
22	<i>Cocconeis placentula</i>	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-
24	<i>Cyclotella</i> sp.	-	-
25	<i>Cymbella amphicephala</i>	-	-
26	<i>Cymbella laevis</i>	-	-
27	<i>Cymbella perpusila</i>	-	-
28	<i>Cymbella tumidula</i>	-	-
29	<i>Cymbella turgidula</i>	-	+
30	<i>Cymbella ventricosa</i>	-	-
31	<i>Cymbella affinis</i>	+	-
32	<i>Diatoma hiemale</i>	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-

34	<i>Didymosphenia geminata</i>	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	+	+
36	<i>Eunotia arcus</i>	-	-
37	<i>Fragilaria capucina</i>	-	-
38	<i>Fragilaria construens</i>	+	-
39	<i>Fragilaria leptostauron</i>	-	+
40	<i>Fragilaria olivaceoides</i>	-	-
41	<i>Fragilaria pinnata</i>	-	-
42	<i>Fragilaria rumpens</i>	-	-
43	<i>Fragilaria brevistriata</i>	-	+
44	<i>Fragilaria</i> sp.	-	-
45	<i>Fragilaria vaucheriae</i>	-	+
46	<i>Gomphonema bohemicum</i>	-	-
47	<i>Gomphonema gracile</i>	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-
49	<i>Gomphonema lanceolatum</i>	-	-
50	<i>Gomphonema nagpurenses</i>	-	-
51	<i>Gomphonema olivaceoides</i>	-	+
52	<i>Gomphonema olivaceum</i>	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-
55	<i>Gomphonema parvulum</i>	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-
58	<i>Gomphonema intricatum</i>	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	+	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	+	-
64	<i>Navicula microcephala</i>	-	-
65	<i>Navicula radiosa</i>	-	+
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-
67	<i>Navicula rostellata</i>	-	-
68	<i>Navicula cari</i>	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-

71	<i>Planothidium lanceolata</i>	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-
73	<i>Reimeria sinuata</i>	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
75	<i>Synedra ulna</i>	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-
77	<i>Tabellaria flocculus</i>	-	+
78	<i>Tabellaria</i> sp.	-	-
79	<i>Tetracyclus lacustris</i>	-	-
	Total	9	12

DENSITY & DIVERSITY OF PHYTOBENTHOS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/cm ²)	67.00	Nil	Nil	Nil	Nil	123.00	103.00	166.00	Nil	Nil	Nil	122.00	99.00	
Shannon Weiner Diversity	1.21	Nil	Nil	Nil	Nil	1.24	1.21	1.21	Nil	Nil	Nil	1.26	1.29	
Evenness Index	0.58	Nil	Nil	Nil	Nil	0.54	0.50	0.58	Nil	Nil	Nil	0.57	0.54	
No. of species	8	Nil	Nil	Nil	Nil	10	11	8	Nil	Nil	Nil	9	11	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/cm ²)	111.00	95.00	Nil	Nil	Nil	105.00	Nil							
Shannon Weiner Diversity	1.2	1.23	Nil	Nil	Nil	1.27	Nil							
Evenness Index	0.58	0.56	Nil	Nil	Nil	0.53	Nil							
No. of species	8	9	Nil	Nil	Nil	11	Nil							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/cm ²)	Nil	Nil	114.00	Nil	78.00	85.00	Nil	Nil	Nil	Nil	Nil	116.00	127.00	
Shannon Weiner Diversity	Nil	Nil	1.23	Nil	1.21	1.32	Nil	Nil	Nil	Nil	Nil	1.21	1.22	
Evenness Index	Nil	Nil	0.56	Nil	0.53	0.55	Nil	Nil	Nil	Nil	Nil	0.58	0.63	
No. of species	Nil	Nil	9	Nil	10	11	Nil	Nil	Nil	Nil	Nil	8	7	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/cm ²)	99.00	Nil	Nil	76.00	96.00	Nil	Nil	126.00	167.00	99.00	Nil	89.00	77.00	Nil
Shannon Weiner Diversity	1.26	Nil	Nil	1.3	1.21	Nil	Nil	1.29	1.22	1.22	Nil	1.23	1.22	Nil
Evenness Index	0.55	Nil	Nil	0.54	0.58	Nil	Nil	0.54	0.53	0.56	Nil	0.56	0.53	Nil
No. of species	10	Nil	Nil	11	8	Nil	Nil	11	10	9	Nil	9	10	Nil
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/cm ²)	95		135											
Shannon Weiner Diversity	1.23		1.01											
Evenness Index	0.44		0.46											
No. of species	16		9											

Macro- Inveribrates

Sub basin- Siang: I-IV

S.No.	Family	Genus	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	-	-	+	+	+	-	-	+	+	-
2		<i>Stenonema</i>	-	-	-	+	+	-	-	-	+	+	-	-	+
3		<i>Heptagenia</i>	-	-	-	-	-	+	+	-	-	-	-	-	-
4		<i>Epeorus</i>	+	+	-	-	-	-	-	-	-	-	-	+	-
5	Baetidae	<i>Baetis</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
7		<i>Ephemerella excrucians</i>	-	-	-	-	-	-	-	-	-	+	-	-	+
8	Caenidae	<i>Caenis</i>	-	-	-	-	+	-	-	+	-	-	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	+	-	-	-	-	+	-	-
10		<i>Chroterpes</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
12	Neophemeridae	<i>Neophemeridae 1</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
13		<i>Neophemeridae 2</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	+	-	-	-	-	+	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	+	-	-	-	-	-	-	+	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
21		<i>Hydroptila</i>	-	-	-	-	+	+	+	-	-	-	+	-	+

22		<i>Leucotrichia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
27	Molannidae	<i>Molanna</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
30	Ephydriidae	Unidentified genus / species	-	-	-	-	-	-	-	-	-	-	+	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	+	-	-	-	-	-	-	-	-	+	-
32	Simuliidae	<i>Simulium pictipes</i>	-	+	-	-	-	-	-	+	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	+	-	-	-	+	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
37		<i>Horaia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	3	4	4	2	4	5	3	4	5	5	6	4	3

Sub basin- Yamne and Simang

S.No.	Family	Genus	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	Heptageniidae	<i>Cinygmula</i>	+	+	-	-	+	-	+
2		<i>Stenonema</i>	-	-	-	+	-	-	-
3		<i>Heptagenia</i>	-	+	+	-	-	-	-
4		<i>Epeorus</i>	+	-	-	-	-	-	-
5	Baetidae	<i>Baetis</i>	-	-	-	+	+	-	-
6	Ephemerellidae	<i>Ephemerella</i>	-	-	-	-	-	+	-
7		<i>Ephemerella excrucians</i>	-	-	-	-	-	-	+
8	Caenidae	<i>Caenis</i>	-	-	-	-	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	+	-	-	-	-
10		<i>Chroterpes</i>	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	+	-	-	+	-	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	-	+	-	-
13		<i>Neoephemeridae 2</i>	-	-	-	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	-	-	+
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	+	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	-	-	-
21		<i>Hydroptila</i>	+	-	+	-	-	-	-
22		<i>Leucotrichia</i>	-	-	-	-	-	-	+
23	Hydropsychidae	<i>Hydropsyche</i>	-	+	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	+	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	+	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-
27	Molannidae	<i>Molanna</i>	-	-	-	+	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	-	-	-
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	-
30	Ephydriidae	Unidentified genus / species	-	-	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	+	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	+	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	+

37		<i>Horaia</i>	-	-	-	-	-	-	-
38	Tabanidae	<i>Tabanus</i>	+	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochores</i>	-	-	-	-	-	-	-
		Total	5	3	5	4	4	3	5

Sub basin- Siyom: I-III and Hirit

S.No.	Family	Genus	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Heptageniidae	<i>Cinygmula</i>	-	+	-	-	+	+	+	-	-	+	+	+	-
2		<i>Stenonema</i>	+	-	+	-	-	-	-	+	-	+	-	-	+
3		<i>Heptagenia</i>	-	+	-	+	-	-	-	-	+	-	+	-	-
4		<i>Epeorus</i>	-	-	-	-	-	-	+	-	-	+	-	-	-
5	Baetidae	<i>Baetis</i>	-	-	-	-	+	+	-	-	+	-	-	-	+
6	Ephemerellidae	<i>Ephemerella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
7		<i>Ephemerella excrucians</i>	-	-	+	-	-	-	-	-	-	-	+	+	+
8	Caenidae	<i>Caenis</i>	+	-	-	-	-	-	-	+	-	-	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
10		<i>Chroterpes</i>	-	-	-	+	-	-	-	-	+	-	-	-	-
11		<i>Leptophlebia</i>	-	-	-	-	-	-	-	-	-	+	-	-	+
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	-	+	-	-	-	-	-	+	-	-
13		<i>Neoephemeridae 2</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	+	-	-	-	-	-	+	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	+	-	-	-	-	-	-	-	+	-	-	-	-
21		<i>Hydroptila</i>	+	+	-	-	-	-	-	-	-	+	-	+	-
22		<i>Leucotrichia</i>	-	-	-	+	-	-	+	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	+	+	-	-	+	-	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-

27	Molannidae	<i>Molanna</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
30	Ephydriidae	Unidentified genus / species	-	-	-	-	-	-	-	-	+	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	+	-	+	-	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	+	-	-	-	-	+	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
37		<i>Horaia</i>	-	-	-	-	-	+	-	-	-	-	-	-	+
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
		Total	4	5	4	5	4	5	5	4	8	7	6	5	5

Sub basin- Yargyap Chhu

S.No.	Family	Genus	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	-	+	+	-	+	-	+	+
2		<i>Stenonema</i>	-	+	-	-	-	-	+	-	-	-	-	+	-	-
3		<i>Heptagenia</i>	-	-	-	+	-	-	-	+	-	-	-	-	-	-
4		<i>Epeorus</i>	-	-	+	-	-	+	-	-	-	-	-	-	-	+
5	Baetidae	<i>Baetis</i>	+	-	-	-	-	-	+	-	+	-	-	+	+	-
6	Ephemerellidae	<i>Ephemerella</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
7		<i>Ephemerella excrucians</i>	+	+	-	-	-	-	-	+	-	-	-	-	-	-
8	Caenidae	<i>Caenis</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
10		<i>Chroterpes</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	-	+	-	-	-	-	+	-	-	-	-	-	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	-	+	-	-	-	+	+	+	+	-	-
13		<i>Neoephemeridae 2</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
21		<i>Hydroptila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22		<i>Leucotrichia</i>	+	-	-	-	-	+	-	-	+	-	-	-	-	+
23	Hydropsychidae	<i>Hydropsyche</i>	-	+	-	-	+	-	-	-	-	+	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	+	-	+	-	-	-	-	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	-	-	+	-	+	-	+	-

26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Molannidae	<i>Molanna</i>	-	-	+	-	-	+	+	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	+
30	Ephydriidae	Unidentified genus / species	+	+	-	-	-	-	-	-	-	-	-	+	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	+	-	-	-	-	-	-	-	+	-
33	Psychodidae	<i>Psychoda</i>	-	-	+	-	-	-	-	-	-	-	-	+	-	-
34		<i>Maruina</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	+
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
37		<i>Horia</i>	-	-	-	-	-	-	+	+	+	-	+	+	+	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	5	6	4	5	6	7	5	8	6	6	4	7	5	6

Outside basin

S.No.	Family	Genus	B1	B2
1	Heptageniidae	<i>Cinygmula</i>	-	+
2		<i>Stenonema</i>	-	-
3		<i>Heptagenia</i>	-	-
4		<i>Epeorus</i>	-	-
5	Baetidae	<i>Baetis</i>	-	-
6	Ephemerellidae	<i>Ephemerella</i>	+	-
7		<i>Ephemerella excrucians</i>	-	-
8	Caenidae	<i>Caenis</i>	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-
10		<i>Chroterpes</i>	-	-
11		<i>Leptophlebia</i>	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	+	-
13		<i>Neoephemeridae 2</i>	-	+
14	Perlidae	<i>Acroneuria</i>	-	-
15	Perlodidae	<i>Isoperla</i>	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-
17	Psephenidae	<i>Psephenus</i>	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-
19	Corydalidae	<i>Corydalus</i>	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-
21		<i>Hydroptila</i>	-	-
22		<i>Leucotrichia</i>	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-
27	Molannidae	<i>Molanna</i>	-	-
28	Chironomidae	<i>Chironomus</i>	-	-
29		<i>Ablabesmyia</i>	-	-
30	Ephydriidae	Unidentified genus / species	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-
33	Psychodidae	<i>Psychoda</i>	-	+
34		<i>Maruina</i>	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-
37		<i>Horaia</i>	-	-

38	Tabanidae	<i>Tabanus</i>	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-
40	Culicidae	<i>Culex</i>	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-
		Total	2	3

DENSITY & DIVERSITY OF MACRO-INVERTEBRATES

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (Indiv./m ²)	Nil	93	Nil	Nil	Nil	Nil	59	73	Nil	Nil	Nil	Nil	Nil	
Shannon Weiner Diversity	Nil	0.53	Nil	Nil	Nil	Nil	0.39	0.42	Nil	Nil	Nil	Nil	Nil	
Evenness Index	Nil	0.38	Nil	Nil	Nil	Nil	0.35	0.38	Nil	Nil	Nil	Nil	Nil	
No. of species	Nil	4	Nil	Nil	Nil	Nil	3	3	Nil	Nil	Nil	Nil	Nil	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (Indiv./m ²)	Nil	188	Nil	71	Nil	Nil	95							
Shannon Weiner Diversity	Nil	0.62	Nil	0.39	Nil	Nil	0.41							
Evenness Index	Nil	0.39	Nil	0.35	Nil	Nil	0.37							
No. of species	Nil	5	Nil	3	Nil	Nil	3							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (Indiv./m ²)	Nil	Nil	Nil	Nil	84	46	Nil	63	Nil	Nil	Nil	Nil	Nil	
Shannon Weiner Diversity	Nil	Nil	Nil	Nil	0.39	0.34	Nil	0.45	Nil	Nil	Nil	Nil	Nil	
Evenness Index	Nil	Nil	Nil	Nil	0.35	0.31	Nil	0.32	Nil	Nil	Nil	Nil	Nil	
No. of species	Nil	Nil	Nil	Nil	3	3	Nil	4	Nil	Nil	Nil	Nil	Nil	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (Indiv./m ²)	93	Nil	Nil	50	62	101	45	143	Nil	Nil	Nil	49	Nil	Nil
Shannon Weiner Diversity	0.38	Nil	Nil	0.36	0.51	0.41	0.33	0.43	Nil	Nil	Nil	0.38	Nil	Nil
Evenness Index	0.35	Nil	Nil	0.33	0.37	0.37	0.48	0.39	Nil	Nil	Nil	0.35	Nil	Nil
No. of species	3	Nil	Nil	3	4	3	2	3	Nil	Nil	Nil	3	Nil	Nil
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (Indiv./m ²)	46		88											
Shannon Weiner Diversity	0.88		1.09											
Evenness Index	0.80		1.57											
No. of species	3		2											

Zooplanktons

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
	Protozoans													
1	<i>Actinophrys</i> sp.	+	-	-	+	-	+	+	-	-	+	+	-	+
2	<i>Arcella</i> sp.	-	-	+	-	-	-	-	-	+	-	-	+	-
3	<i>Ceratium</i> spp.	-	+	-	-	+	-	-	-	-	-	-	-	-
	Rotifers													
4	<i>Brachious</i>	+	-	-	-	-	-	-	-	-	-	+	-	+
5	<i>Keratella</i> sp.	-	-	-	-	-	+	-	-	-	-	-	-	-
6	<i>Epiphanes</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
7	<i>Asplanchna</i> sp.	-	-	-	-	-	-	-	+	-	-	-	-	-
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cladoceran													
9	<i>Bosmina</i> sp.	-	-	-	-	-	-	-	-	-	-	-	+	-
10	<i>Daphnia</i> sp.	-	-	+	-	-	+	+	-	-	-	-	-	-
	Copepods													
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-	-	-	+	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	2	1	2	2	1	3	2	1	1	1	2	2	2

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
	Protozoans							
1	<i>Actinophrys</i> sp.	+	-	+	-	-	+	-
2	<i>Arcella</i> sp.	-	+	-	+	-	-	+
3	<i>Ceratium</i> spp.	-	-	-	-	-	-	-
	Rotifers							
4	<i>Brachious</i>	-	-	-	-	-	-	-
5	<i>Keratella</i> sp.	-	-	+	-	-	-	-
6	<i>Epiphanes</i>	-	-	-	-	-	-	-
7	<i>Asplanchna</i> sp.	-	-	-	-	+	-	-
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-
	Cladoceran							
9	<i>Bosmina</i> sp.	-	-	-	-	-	+	-
10	<i>Daphnia</i> sp.	-	-	-	-	-	-	+
	Copepods							
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-
	Total	1	1	2	1	1	2	2

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY4	SY3	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
	Protozoans													
1	<i>Actinophrys</i> sp.	+	+	-	-	+	+	+	-	-	+	+	-	-
2	<i>Arcella</i> sp.	-	-	-	+	-	-	-	-	-	-	-	+	-
3	<i>Ceratium</i> spp.	-	-	-	-	-	-	-	+	+	-	-	-	-
	Rotifers													
4	<i>Brachious</i>	-	-	-	-	-	+	+	-	-	-	-	-	-
5	<i>Keratella</i> sp.	+	-	-	-	-	-	-	-	-	+	+	-	-
6	<i>Epiphanes</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
7	<i>Asplanchna</i> sp.	-	-	+	-	-	-	-	-	-	-	-	-	+
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cladoceran													
9	<i>Bosmina</i> sp.	-	-	-	-	-	-	-	-	+	-	-	+	-
10	<i>Daphnia</i> sp.	-	+	-	-	-	-	-	-	-	-	+	-	-
	Copepods													
11	<i>Cyclops</i> sp.	-	-	-	-	+	-	-	-	-	-	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	2	2	1	2	1	2	2	1	2	2	3	2	1

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
	Protozoans														
1	<i>Actinophrys</i> sp.	-	+	-	-	-	-	-	-	-	-	-	-	-	-
2	<i>Arcella</i> sp.	+	-	-	-	+	+	-	+	+	-	-	+	-	+
3	<i>Ceratium</i> spp.	-	-	-	+	-	-	+	-	-	+	+	+	-	-
	Rotifers														
4	<i>Brachious</i>	-	-	+	-	+	-	-	-	+	-	-	-	+	-
5	<i>Keratella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	<i>Epiphanes</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
7	<i>Asplanchna</i> sp.	-	-	-	-	-	-	+	+	-	-	+	-	-	+
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	+	-
	Cladoceran														
9	<i>Bosmina</i> sp.	-	-	-	+	+	-	-	-	+	+	-	-	-	-
10	<i>Daphnia</i> sp.	-	+	-	-	-	-	-	-	-	-	-	-	-	-
	Copepods														-
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		1	1	1	2	3	1	2	2	3	2	3	2	2	2

Outside basin

S.No.	Name of species	B1	B2
	Protozoans		
1	<i>Actinophrys</i> sp.	-	-
2	<i>Arcella</i> sp.	-	-
3	<i>Ceratium</i> spp.	-	+
	Rotifers		
4	<i>Brachious</i>	+	-
5	<i>Keratella</i> sp.	-	-
6	<i>Epiphanes</i>	-	-
7	<i>Asplanchna</i> sp.	-	-
8	<i>Philodena</i> sp.	-	-
	Cladoceran		
9	<i>Bosmina</i> sp.	-	+
10	<i>Daphnia</i> sp.	-	-
	Copepods		
11	<i>Cyclops</i> sp.	-	-
12	<i>Diaptomus</i> sp.	-	-
		1	2

DENSITY & DIVERSITY OF ZOOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (indiv/lit.)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
Shannon Weiner Diversity	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
Evenness Index	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
No. of species	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (indiv/lit.)	Nil	Nil	Nil	Nil	Nil	Nil	Nil							
Shannon Weiner Diversity	Nil	Nil	Nil	Nil	Nil	Nil	Nil							
Evenness Index	Nil	Nil	Nil	Nil	Nil	Nil	Nil							
No. of species	Nil	Nil	Nil	Nil	Nil	Nil	Nil							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (indiv/lit.)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
Shannon Weiner Diversity	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
Evenness Index	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
No. of species	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (indiv/lit.)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Shannon Weiner Diversity	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Evenness Index	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
No. of species	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Jiya Dhol & Karena Ghat													
Code	B1	B2												
Density (indiv/lit.)	Nil	Nil												
Shannon Weiner Diversity	Nil	Nil												
Evenness Index	Nil	Nil												
No. of species	Nil	Nil												

Month of Sample: September 2012

Physico-chemical parameters

Sub Basin- Siang: I-IV

S.No.	Physical / Chemical Characteristics	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Water Temperature (°C)	18.6	18.2	17.6	18.2	16.3	17.3	19	16.6	17.2	18.2	17.2	19.2	17.2
2	Dissolved Oxygen (mg/l)	7.8	7.9	8.1	7.95	8.35	8.4	7.5	8.2	8.45	7.9	8.5	7.45	8.4
3	Turbidity (NTU)	195	126	122	187	167	114	143	177	108	169	131	109	121
4	Total Suspended Solids (mg/l)	380.25	245.7	237.9	364.65	325.65	222.3	278.85	345.15	210.6	329.55	248.9	207.1	229.9
5	pH	8.42	8.36	8.43	8.12	8.16	8.35	8.09	8.16	8.37	8.14	8.13	8.29	8.34
6	Electrical Conductivity (µS/cm)	122.7	105.1	99.1	114.2	93.6	86.6	97.6	103.5	97.1	99.4	80.5	86.7	108.3
7	Total Dissolved Solids (mg/l)	74.85	64.11	60.45	69.66	57.10	52.83	59.54	63.14	59.23	60.63	49.11	52.89	66.06
8	Biological Oxygen Demand (mg/l)	1.4	1.23	1.67	1.56	1	1.8	1.72	1.22	1.3	1.42	1.78	1.62	1.34
9	Chemical Oxygen Demand (mg/l)	3.16	2.89	3.15	3.78	2.98	3.9	3.17	3.56	2.67	3.1	3.45	3.23	3.55
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	5.53	6.45	7.37	5.53	5.53	5.53	4.61	6.45	5.53	6.45	5.53	5.53	6.45
12	Total alkalinity (mg/l)	29.01	29.84	32.33	27.35	26.52	29.84	29.01	29.01	28.18	29.01	27.35	28.18	27.35

	of CaCO ₃)													
13	Nitrates (NO ₃) (mg/l)	0.051	0.043	0.034	0.027	0.029	0.039	0.026	0.022	0.026	0.017	0.017	0.018	0.015
14	Sulphate (mg/l)	6.66	4.76	4.76	4.76	3.80	6.66	7.61	4.76	5.71	4.76	5.71	6.66	7.61
15	Phosphate (PO ₄) (mg/l)	0.001	0.006	0.001	0.002	0.001	0.005	0.004	0.004	0.004	0.001	0.002	0.003	0.008
16	Total Hardness (mg/l)	24.23	20.64	21.54	22.44	26.92	20.64	25.13	22.44	31.41	24.23	26.03	25.13	33.21
17	Calcium hardness (mg/l)	23.38	19.92	20.78	21.65	25.98	19.92	24.25	21.65	30.31	23.38	25.12	24.25	32.04
18	Calcium ions (mg/ l)	9.35	7.97	8.31	8.66	10.39	7.97	9.70	8.66	12.12	9.35	10.05	9.70	12.82
19	Magnesium Hardness (mg/l)	0.85	0.72	0.75	0.79	0.94	0.72	0.88	0.79	1.10	0.85	0.91	0.88	1.16
20	Magnesium ions (mg/l)	2.24	1.91	2.00	2.08	2.49	1.91	2.33	2.08	2.91	2.24	2.41	2.33	3.08
21	Potassium (mg/l)	0.42	0.98	0.67	0.24	0.43	0.34	0.66	0.87	0.34	0.27	0.56	0.68	0.14
22	Sodium (mg/l)	1.3	1.62	1.23	1.34	1.27	1.13	2	1.36	15.6	1.14	1.59	1.67	1.15
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.007	0.003	0.002	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub Basin- Yamne and Simang

S.No.	Physical / Chemical Characteristics	Y1	Y2	Y3	Y4	SM1	SM2	SM3
1	Water Temperature (°C)	18.2	16.3	17.3	19	16.6	17.2	17.2
2	Dissolved Oxygen (mg/l)	7.99	8.27	8.4	7.4	8.22	8.42	8.44
3	Turbidity (NTU)	196	185	128	133	151	163	156
4	Total Suspended Solids (mg/l)	372.4	351.5	243.2	252.7	286.9	309.7	296.4
5	pH	8.13	8.35	8.14	8.37	7.23	7.78	7.56
6	Electrical Conductivity (µS/cm)	47.5	54	59	66	67	77	52
7	Total Dissolved Solids (mg/l)	29.5	33.5	36.6	40.9	41.5	47.7	32.2
8	Biological Oxygen Demand (mg/l)	1.43	1.98	1.23	1.6	1.78	1.34	1.45
9	Chemical Oxygen Demand (mg/l)	3.87	3.15	2.98	3.56	3.12	3.17	3.44
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A
11	Chloride (mg/l)	5.91	7.38	6.20	5.91	5.32	5.61	5.02
12	Total alkalinity (mg/l of CaCO ₃)	32.20	29.01	37.86	28.31	43.52	43.52	34.67
13	Nitrates (NO ₃) (mg/l)	0.078	0.001	0.002	0.005	0.007	0.007	0.005
14	Sulphate (mg/l)	4.43	5.06	3.80	2.95	4.01	3.38	2.32
15	Phosphate (PO ₄) (mg/l)	0.008	0.005	0.002	0.007	0.007	0.009	0.005
16	Total Hardness (mg/l)	28.48	25.66	33.49	25.04	38.49	38.49	30.67
17	Calcium hardness (mg/l)	27.48	24.76	32.31	24.16	37.15	37.15	29.60
18	Calcium ions (mg/ l)	10.99	9.91	12.93	9.66	14.86	14.86	11.84
19	Magnesium Hardness (mg/l)	1.00	0.90	1.17	0.88	1.35	1.35	1.07
20	Magnesium ions (mg/l)	2.64	2.38	3.10	2.32	3.57	3.57	2.84
21	Potassium (mg/l)	0.15	0.56	0.34	0.23	0.49	0.16	0.12
22	Sodium (mg/l)	1.32	1.73	1.21	1.31	1.4	1.2	1.3
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND

Sub basin- Siyom: I-III and Hirit

S.No.	Physical / Chemical Characteristics	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Water Temperature (°C)	17.2	16.5	16.8	16.7	17	17.5	16	15.5	15.8	14.9	14.9	14.5	14.6
2	Dissolved Oxygen (mg/l)	8.4	8.28	8.2	8.22	8.15	8	8.12	8.82	8.78	8.9	8.86	8.97	8.95
3	Turbidity (NTU)	73	83	94	98	106	98	81	79	102	74	66	48	32
4	Total Suspended Solids (mg/l)	138.7	157.7	180.5	188.2	203.5	188.2	155.5	151.7	195.8	142.1	126.7	92.2	61.4
5	pH	8.45	8.12	8.16	7.87	7.45	7.65	7.41	8.2	8.21	8.18	7.23	8.11	7.87
6	Electrical Conductivity (µS/cm)	25	36	49	39	39	48	54	45	44	49	39.1	47.33	53.66
7	Total Dissolved Solids (mg/l)	15.5	22.32	30.38	24.18	24.18	29.76	33.48	27.9	27.28	30.38	24.242	29.3446	33.2692
8	Biological Oxygen Demand (mg/l)	0.91	1.67	0.67	1.17	1.23	0.63	1.27	1.4	1.6	0.42	1.32	0.57	0.89
9	Chemical Oxygen Demand (mg/l)	2.18	3.19	3.67	3.89	3.67	2.34	3.19	3.7	3.98	2.19	3.55	2.34	2.76
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	7.09	5.61	4.43	4.43	4.13	4.73	5.43	8.86	6.00	6.86	6.00	4.00	7.37
12	Total alkalinity (mg/l of CaCO ₃)	24.41	21.94	19.81	20.88	19.81	27.60	14.15	25.83	26.89	26.89	17.69	27.60	33.61
13	Nitrates (NO ₃) (mg/l)	0.008	0.001	0.005	0.014	0.001	0.012	0.001	0.001	0.001	0.001	0.006	0.005	0.002
14	Sulphate (mg/l)	4.01	3.59	2.95	3.38	3.80	1.48	3.80	2.74	2.74	4.01	1.48	4.43	4.64
15	Phosphate (PO ₄) (mg/l)	0.005	0.003	0.005	0.009	0.001	0.002	0.000	0.000	0.000	0.003	0.007	0.004	0.002
16	Total Hardness (mg/l)	21.59	19.40	17.53	18.46	17.53	24.41	12.52	24.92	25.95	25.95	17.07	26.63	32.43
17	Calcium hardness (mg/l)	20.84	18.72	16.91	17.82	16.91	23.56	12.08	24.05	25.04	25.04	16.47	25.70	31.30
18	Calcium ions (mg/ l)	8.34	7.49	6.76	7.13	6.76	9.42	4.83	9.62	10.02	10.02	6.59	10.28	12.52
19	Magnesium Hardness (mg/l)	0.76	0.68	0.61	0.65	0.61	0.85	0.44	0.87	0.91	0.91	0.60	0.93	1.14

20	Magnesium ions (mg/l)	2.00	1.80	1.62	1.71	1.62	2.26	1.16	2.31	2.40	2.40	1.58	2.47	3.00
21	Potassium (mg/l)	0.56	0.89	0.34	0.67	0.12	0.39	0.9	0.52	0.69	0.55	0.23	0.29	0.83
22	Sodium (mg/l)	1.32	1.29	1.28	1.33	1.58	1.05	1.89	1.38	1.55	1.22	1.37	1.09	1.88
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sub basin- Yargyap Chhu

S.No.	Physical / Chemical Characteristics	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Water Temperature (°C)	13	13.5	13	12.5	12.3	13.2	11.6	11.5	10.5	10.6	10	9.6	9.5	8.5
2	Dissolved Oxygen (mg/l)	9.5	9.22	9.4	9.6	9.8	9.3	10.1	10.2	10.4	10.45	10.5	10.75	10.88	10.9
3	Turbidity (NTU)	44	32	46	52	52	36	23	32	27	24	13	14	13	4
4	Total Suspended Solids (mg/l)	83.6	60.5	86.9	98.3	98.3	68.0	43.5	60.5	51.0	45.4	24.6	26.5	24.6	7.6
5	pH	7.56	7.20	7.21	7.31	8.04	7.59	8.13	8.20	7.56	7.28	7.10	7.00	7.10	7.40
6	Electrical Conductivity (µS/cm)	18.5	14.5	17.4	14.9	16.3	19.5	21.5	23.6	17.4	18.7	21.4	22.9	18.8	18.5
7	Total Dissolved Solids (mg/l)	11.47	8.99	10.788	9.238	10.106	12.09	13.33	14.632	10.788	11.594	13.268	14.198	11.656	11.47
8	Biological Oxygen Demand (mg/l)	1.31	0.99	1.12	0.98	0.78	2.01	1.34	1.3	0.13	1.2	1.3	1.5	1.4	1.4
9	Chemical Oxygen Demand (mg/l)	3.12	1.89	4.19	2.1	1.56	4.03	3.1	2.9	2.98	3.45	3.1	2.89	3.57	3.18
10	Total Coliform (MPN /100 ml)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
11	Chloride (mg/l)	6.86	7.15	6.57	4.57	5.43	4.86	6.00	4.86	4.86	6.57	6.00	6.57	6.57	6.86
12	Total alkalinity (mg/l of CaCO ₃)	23.71	23.35	19.81	22.22	8.10	22.26	23.10	19.81	19.11	15.92	19.81	18.82	19.81	8.49
13	Nitrates (NO ₃) (mg/l)	0.007	0.008	0.005	0.007	0.007	0.007	0.008	0.008	0.000	0.005	0.001	0.005	0.008	0.005
14	Sulphate (mg/l)	3.59	4.64	4.01	3.17	3.17	1.90	3.38	4.01	4.43	3.59	3.59	3.59	4.64	4.01
15	Phosphate (PO ₄) (mg/l)	0.009	0.006	0.006	0.009	0.007	0.002	0.011	0.002	0.001	0.005	0.002	0.004	0.006	0.003
16	Total Hardness (mg/l)	22.76	22.42	19.02	21.33	7.78	21.36	22.18	19.02	18.34	15.28	19.02	18.07	19.02	8.15
17	Calcium hardness (mg/l)	21.85	21.52	18.26	20.48	7.47	20.51	21.29	18.26	17.61	14.67	18.26	17.35	18.26	7.83

18	Calcium ions (mg/ l)	8.74	8.61	7.30	8.19	2.99	8.20	8.52	7.30	7.04	5.87	7.30	6.94	7.30	3.13
19	Magnesium Hardness (mg/l)	0.91	0.90	0.76	0.85	0.31	0.85	0.89	0.76	0.73	0.61	0.76	0.72	0.76	0.33
20	Magnesium ions (mg/l)	2.10	2.07	1.75	1.97	0.72	1.97	2.04	1.75	1.69	1.41	1.75	1.67	1.75	0.75
21	Potassium (mg/l)	0.23	0.24	0.18	0.9	0.13	0.21	0.09	0.11	0.17	0.6	0.17	0.19	0.43	0.11
22	Sodium (mg/l)	1.12	0.99	0.96	1.99	1.44	1.02	1.24	1.06	1.08	1.45	1.44	1.11	1.22	0.84
23	Iron (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Manganese (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27	Copper (Cu) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30	Lead (Pb) (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Outside basin

S.No.	Physical / Chemical Characteristics	B1	B2
1	Water Temperature (°C)	19.6	18.7
2	Dissolved Oxygen (mg/l)	7.79	7.97
3	Turbidity (NTU)	230	205
4	Total Suspended Solids (mg/l)	402.3	294.0
5	pH	8.22	8.16
6	Electrical Conductivity (µS/cm)	112.3	96.2
7	Total Dissolved Solids (mg/l)	74.85	64.11
8	Biological Oxygen Demand (mg/l)	1.4	1.23
9	Chemical Oxygen Demand (mg/l)	3.16	2.89
10	Total Coliform (MPN /100 ml)	A	A
11	Chloride (mg/l)	5.53	6.45
12	Total alkalinity (mg/l of CaCO ₃)	32.00	33.90
13	Nitrates (NO ₃) (mg/l)	0.051	0.043
14	Sulphate (mg/l)	6.66	4.76
15	Phosphate (PO ₄) (mg/l)	0.001	0.006
16	Total Hardness (mg/l)	27.00	29.00
17	Calcium hardness (mg/l)	20.88	24.92
18	Calcium ions (mg/ l)	8.35	9.97
19	Magnesium Hardness (mg/l)	6.12	4.08
20	Magnesium ions (mg/l)	2.00	2.39
21	Potassium (mg/l)	0.42	0.98
22	Sodium (mg/l)	1.3	1.62
23	Iron (mg/l)	<0.01	<0.01
24	Manganese (mg/l)	ND	ND
25	Cadmium (Cd) (mg/l)	ND	ND
26	Mercury (Hg) (mg/l)	ND	ND
27	Copper (Cu) (mg/l)	ND	ND
28	Zinc (Zn) (mg/l)	ND	ND
29	Chromium (Cr) (mg/l)	ND	ND
30	Lead (Pb) (mg/l)	ND	ND

Phytoplankton

Biological parameters

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnanthidium affinis</i>	+	+	+	+	+	-	+	+	-	+	+	+	+
2	<i>Achnanthidium andicola</i>	-	-	-	-	-	+	-	-	-	-	-	+	-
3	<i>Achnanthidium austriaca</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	+	-	-	+	-	-	-	-	+	-	-	-
5	<i>Achnanthidium biasoletiana</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
6	<i>Achnanthidium conspicua</i>	-	-	-	+	-	+	+	-	+	-	-	+	+
7	<i>Achnanthidium cranulata</i>	-	+	-	-	+	-	-	-	-	+	-	-	-
8	<i>Achnanthidium dispar</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
9	<i>Achnanthidium exigua</i>	-	-	+	-	-	+	-	+	-	-	+	-	-
10	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Achnanthidium fragilarioides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
12	<i>Achnanthidium Grimmei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
13	<i>Achnanthidium hauckiana</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
14	<i>Achnanthidium holsti</i>	-	-	+	-	-	-	-	+	-	-	+	-	-
15	<i>Achnanthidium hungarica</i>	-	+	-	-	+	-	-	-	-	+	-	-	-
16	<i>Achnanthidium kryophila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Achnanthidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Achnanthidium lapidosa</i>	-	-	-	-	-	-	+	-	-	-	-	-	+
19	<i>Achnanthidium lavenderi</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
20	<i>Achnanthidium lemmermanni</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
21	<i>Achnanthidium Lilljeborgei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
22	<i>Achnanthidium linearis</i>	+	+	+	-	+	-	-	+	-	+	+	+	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
24	<i>Achnanthidium microcephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
25	<i>Achnanthidium minutissima</i>	-	-	-	+	-	-	-	-	-	-	-	-	+
26	<i>Achnanthidium nodosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
27	<i>Achnanthidium plonensis</i>	-	-	-	-	-	-	-	-	+	-	-	-	-

28	<i>Achnantheidium saxonica</i>	-	-	+	-	-	-	-	+	-	-	+	-	-
29	<i>Achnantheidium</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
30	<i>Achnantheidium suchlandti</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
31	<i>Achnantheidium taeniata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
32	<i>Achnantheidiumb conspicua</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
33	<i>Achnantheidiumlinearis</i> var. <i>pusila</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
34	<i>Anomoeneis</i> sp.	+	-	-	-	-	-	+	-	-	-	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
37	<i>Cocconeis placentula</i>	+	-	+	-	-	-	-	+	+	-	+	-	+
38	<i>Cymbella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
39	<i>Cymbella affinis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
40	<i>Cymbella delicatula</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	+	-	-	-	-	+	-
42	<i>Cymbella microcephala</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
43	<i>Cymbella pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
44	<i>Cymbella tumida</i>	-	+	-	-	+	-	-	-	-	+	-	-	-
45	<i>Cymbella turgida</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
46	<i>Cymbella ventricosa</i>	-	-	-	+	-	-	-	+	-	-	-	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
48	<i>Diatoma anceps</i>	+	-	-	-	-	-	-	-	-	-	-	+	-
49	<i>Diatoma hiemale</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
51	<i>Diatoma vulgare</i>	-	+	+	-	+	-	-	+	-	-	+	-	-
52	<i>Didymosphaenia geminata</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
53	<i>Eunotia linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
54	<i>Eunotia</i> sp.	-	+	-	-	+	-	-	-	-	-	-	-	-
55	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
56	<i>Fragilaria construens</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
57	<i>Fragilaria inflata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
59	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
60	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	+	-	-	+	-	-	-	-	+	-	-	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
63	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-

65	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
66	<i>Gomphonema intricatum</i>	+	+	-	-	+	-	-	-	-	+	-	-	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	+	-	-	-	+	+	-	-	+	-	-
72	<i>Gomphonema bohemicum</i>	-	+	-	-	+	+	-	-	-	+	-	-	-
73	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	-	-	+	-	-	-	-	-	-	-	-	+	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	-	+	-	-	-	+
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	+	-	+	-	-	-	-	-	-	-
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
86	<i>Gomphonema intricatum</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
89	<i>Hannaea arcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	-	-	+	-	-	-	-	+	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
95	<i>Navicula cryptocephala</i>	-	-	-	-	-	+	+	-	+	-	-	-	-
96	<i>Navicula feyerborni</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	+	-	-	-	-	-

100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	-	-	-	-	-	-	+	-	-	-	-	-	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
105	<i>Reimeria sinuata</i>	+	-	+	-	-	+	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	-	-	-	+	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+	-	-	+	-	-	-	-	+	-	-	+
115	<i>Tabellaria flocculosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	11	13	12	8	13	10	9	12	9	13	8	10	11

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthidium affinis</i>	+	+	-	+	+	+	+
2	<i>Achnanthidium andicola</i>	-	-	+	-	-	-	+
3	<i>Achnanthidium austriaca</i>	-	-	-	-	-	-	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	-
5	<i>Achnanthidium biasoletiana</i>	-	-	-	-	-	+	-
6	<i>Achnanthidium conspicua</i>	-	-	+	-	+	-	+
7	<i>Achnanthidium cranulata</i>	-	-	-	-	-	-	-
8	<i>Achnanthidium dispar</i>	-	-	-	-	-	-	-
9	<i>Achnanthidium exigua</i>	+	-	+	+	-	-	-
10	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-
11	<i>Achnanthidium fragilarioides</i>	-	-	-	-	-	+	+
12	<i>Achnanthidium Grimmei</i>	-	-	-	-	-	-	-
13	<i>Achnanthidium hauckiana</i>	-	-	-	-	-	-	-
14	<i>Achnanthidium holsti</i>	+	-	-	+	-	-	+
15	<i>Achnanthidium hungarica</i>	-	-	-	-	-	-	-
16	<i>Achnanthidium kryophila</i>	-	-	-	-	-	-	-
17	<i>Achnanthidium lanceolata</i>	-	-	-	-	-	-	+
18	<i>Achnanthidium lapidosa</i>	-	-	-	-	-	-	-
19	<i>Achnanthidium lavenderi</i>	-	-	-	-	-	-	-
20	<i>Achnanthidium lemmermanni</i>	-	-	-	-	+	-	-
21	<i>Achnanthidium Lilljeborgei</i>	-	-	-	-	-	-	-
22	<i>Achnanthidium linearis</i>	+	+	+	+	-	-	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-
24	<i>Achnanthidium microcephala</i>	-	-	-	-	-	-	-
25	<i>Achnanthidium minutissima</i>	-	-	-	-	+	-	-
26	<i>Achnanthidium nodosa</i>	-	-	-	-	-	-	-
27	<i>Achnanthidium plonensis</i>	-	-	-	-	-	-	-
28	<i>Achnanthidium saxonica</i>	+	-	-	+	-	-	-
29	<i>Achnanthidium</i> sp.	-	-	-	-	-	+	-
30	<i>Achnanthidium suchlandti</i>	-	-	+	-	-	-	-
31	<i>Achnanthidium taeniata</i>	-	-	-	-	-	-	-
32	<i>Achnanthidiumb conspicua</i>	-	-	-	-	-	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	-	+	-	-	+	-
34	<i>Anomoeneis</i> sp.	-	-	-	-	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	+
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	-	+	-
37	<i>Cocconeis placentula</i>	+	-	-	+	-	-	-
38	<i>Cymbella</i> sp.	-	-	-	-	-	-	-

39	<i>Cymbella affinis</i>	-	-	+	-	-	-	-
40	<i>Cymbella delicatula</i>	-	-	-	-	-	-	-
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	+
42	<i>Cymbella microcephala</i>	-	-	-	-	+	-	-
43	<i>Cymbella pusila</i>	-	-	-	-	-	-	-
44	<i>Cymbella tumida</i>	-	-	-	-	-	+	-
45	<i>Cymbella turgida</i>	+	-	-	+	-	-	-
46	<i>Cymbella ventricosa</i>	-	-	-	-	+	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-
48	<i>Diatoma anceps</i>	-	-	-	-	-	-	+
49	<i>Diatoma hiemale</i>	-	-	-	-	-	+	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-
51	<i>Diatoma vulgare</i>	+	-	-	+	-	-	-
52	<i>Didymosphaenia geminata</i>	-	-	-	-	-	-	-
53	<i>Eunotia linearis</i>	-	-	-	-	-	-	-
54	<i>Eunotia</i> sp.	-	-	-	-	-	-	+
55	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-
56	<i>Fragilaria construens</i>	-	-	-	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	-	-	-
59	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-
60	<i>Fragilaria</i> sp.	-	-	-	-	-	-	+
61	<i>Fragilaria vaucheriae</i>	+	-	-	+	-	+	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-
63	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	+	-	-	-	-	+
66	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	+	-	-	+	-	-	-
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	-
73	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	-	+	-
75	<i>Gomphonema herbidense</i>	-	+	-	-	-	-	+
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	-	+	-	-

78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	-	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	-	-	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-
81	<i>Gomphonema olivaceum</i>	-	+	-	-	-	-	+
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-
83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	+	-	-	-	-	-	-
86	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	+	-	-	-	-	+
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-
89	<i>Hannaea arcus</i>	-	-	-	-	+	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	+
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	-	-	-	-	+	-	-
95	<i>Navicula cryptocephala</i>	-	-	+	-	-	-	-
96	<i>Navicula feverborni</i>	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	-	-	-	-	-	+	-
98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	+	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	-	-	-	-	+	-	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	-	-	-	-	-
105	<i>Reimeria sinuata</i>	-	-	+	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	-	-	-	-	+	-
112	<i>Synedra rumpens</i>	-	+	-	-	-	-	+
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	+	-	-
115	<i>Tabellaria flocculosa</i>	-	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-
-	Total	12	7	9	10	11	12	18

Sub Basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium affinis</i>	+	-	+	+	+	+	+	+	+	-	+	+	-
2	<i>Achnanthidium andicola</i>	-	-	-	-	-	-	-	+	-	-	-	-	+
3	<i>Achnanthidium austriaca</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	+	-	-	-	-	-	+	-	-	+	-
5	<i>Achnanthidium biasoletiana</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
6	<i>Achnanthidium conspicua</i>	+	-	-	+	-	-	-	-	-	+	+	-	+
7	<i>Achnanthidium cranulata</i>	-	-	+	-	-	-	-	-	-	-	-	+	-
8	<i>Achnanthidium dispar</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
9	<i>Achnanthidium exigua</i>	-	-	-	-	+	-	-	-	-	-	-	-	+
10	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Achnanthidium fragilarioides</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
12	<i>Achnanthidium Grimmei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
13	<i>Achnanthidium hauckiana</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
14	<i>Achnanthidium holsti</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
15	<i>Achnanthidium hungarica</i>	-	-	+	-	-	-	-	-	-	-	-	+	-
16	<i>Achnanthidium kryophila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Achnanthidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Achnanthidium lapidosa</i>	+	-	-	+	-	-	-	-	-	-	-	-	-
19	<i>Achnanthidium lavenderi</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
20	<i>Achnanthidium lemmermanni</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
21	<i>Achnanthidium Lilljeborgei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
22	<i>Achnanthidium linearis</i>	-	-	+	-	+	+	+	+	+	-	-	+	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
24	<i>Achnanthidium microcephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
25	<i>Achnanthidium minutissima</i>	+	-	-	+	-	-	-	-	-	-	+	-	-

26	<i>Achnantheidium nodosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
27	<i>Achnantheidium plonensis</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
28	<i>Achnantheidium saxonica</i>	-	-	-	-	+	-	+	-	-	-	-	-	-
29	<i>Achnantheidium sp.</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
30	<i>Achnantheidium suchlandti</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
31	<i>Achnantheidium taeniata</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
32	<i>Achnantheidiumb conspicua</i>	+	-	-	+	-	-	-	-	-	-	-	-	-
33	<i>Achnantheidiumlinearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
34	<i>Anomoeneis sp.</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
37	<i>Cocconeis placentula</i>	+	-	-	+	+	-	+	-	+	+	-	-	-
38	<i>Cymbella sp.</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
39	<i>Cymbella affinis</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
40	<i>Cymbella delicatula</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
42	<i>Cymbella microcephala</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
43	<i>Cymbella pusila</i>	+	-	-	+	-	-	-	-	-	-	-	-	-
44	<i>Cymbella tumida</i>	-	-	+	-	-	-	-	-	-	-	-	+	-
45	<i>Cymbella turgida</i>	-	-	-	-	+	-	-	-	-	+	-	-	-
46	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
48	<i>Diatoma anceps</i>	-	-	-	-	-	-	-	+	+	-	-	-	-
49	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
51	<i>Diatoma vulgare</i>	-	-	+	-	+	-	-	-	-	-	-	-	-
52	<i>Didymosphaenia geminata</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
53	<i>Eunotia linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
54	<i>Eunotia sp.</i>	-	-	+	-	-	-	-	-	-	-	-	-	-

55	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
56	<i>Fragilaria construens</i>	+	-	-	+	-	-	-	-	-	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
59	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
60	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
61	<i>Fragilaria vaucheriae</i>	-	-	+	-	+	-	-	-	-	-	-	+	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
63	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	-	-	-	+	-	+	-	-	-	-	-
66	<i>Gomphonema intricatum</i>	-	-	+	-	-	-	-	-	-	-	-	+	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
72	<i>Gomphonema bohemicum</i>	-	-	+	-	-	-	-	-	-	-	-	+	+
73	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
74	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
75	<i>Gomphonema herbidense</i>	-	-	-	-	-	+	-	+	-	-	-	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	+	-	-	+	-	-	-	-	-	+	-	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	+	-	+	-	+
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	-	+	+	+	-	-	-	-	-

82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
83	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
86	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	+	-	+	-	-	-	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
89	<i>Hannaea arcus</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	-	-	-	-	-	-	-	-	+	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	-	-	-	-	-	-	+	-	-	-	+	-	-
95	<i>Navicula cryptocephala</i>	-	-	-	-	-	-	-	-	+	+	-	-	-
96	<i>Navicula feverborni</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	+	-	-	+	-	-	-	-	-	-	-	-	-
105	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	-	-	+	-	-	+	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-

111	<i>Synedra amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	+	-	+	-	-	-	-	-
113	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	+	-	+	+	-	-	-	-	-	-	+	+	-
115	<i>Tabellaria flocculosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	11	-	13	11	12	7	10	13	11	8	10	11	11

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium affinis</i>	-	+	+	+	-	+	+	+	-	+	+	+	+	+
2	<i>Achnanthidium andicola</i>	+	-	-	-	-	-	-	-	+	-	-	-	-	+
3	<i>Achnanthidium austriaca</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	+	-	+	-	+	-	-	-	-	-	-
5	<i>Achnanthidium biasoletiana</i>	-	+	+	-	-	-	-	-	+	-	-	-	+	-
6	<i>Achnanthidium conspicua</i>	+	-	-	-	+	-	-	-	-	+	-	+	-	+
7	<i>Achnanthidium cranulata</i>	-	-	-	-	-	+	-	+	-	-	-	-	-	-
8	<i>Achnanthidium dispar</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	<i>Achnanthidium exigua</i>	-	-	+	-	-	-	+	-	+	-	+	-	-	-
10	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Achnanthidium fragilarioides</i>	-	+	-	-	-	-	-	-	-	-	-	-	+	+
12	<i>Achnanthidium Grimmei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	<i>Achnanthidium hauckiana</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	<i>Achnanthidium holsti</i>	-	-	+	-	-	-	+	-	+	-	+	-	-	+
15	<i>Achnanthidium hungarica</i>	-	-	-	-	-	+	-	+	-	-	-	-	-	-
16	<i>Achnanthidium kryophila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Achnanthidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
18	<i>Achnanthidium lapidosa</i>	-	-	+	-	-	-	-	-	-	+	-	-	-	-
19	<i>Achnanthidium lavenderi</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
20	<i>Achnanthidium lemmermanni</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
21	<i>Achnanthidium Lillijeborgei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	<i>Achnanthidium linearis</i>	+	-	+	+	-	+	+	+	-	-	+	-	-	+
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
24	<i>Achnanthidium microcephala</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-

25	<i>Achnanthidium minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
26	<i>Achnanthidium nodosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	<i>Achnanthidium plonensis</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
28	<i>Achnanthidium saxonica</i>	-	-	+	-	-	-	+	-	-	-	+	-	-	-
29	<i>Achnanthidium</i> sp.	-	+	-	-	-	-	-	-	-	-	-	-	+	-
30	<i>Achnanthidium suchlandti</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
31	<i>Achnanthidium taeniata</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
32	<i>Achnanthidiumb conspicua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	+	-	-	-	-	-	-	-	-	-	-	+	-
34	<i>Anomoeneis</i> sp.	-	-	+	-	-	-	-	-	-	+	-	-	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	+	-	-	-	-	-	-	-	-	-	-	+	-
37	<i>Cocconeis placentula</i>	-	-	+	+	+	-	+	-	-	-	+	-	-	-
38	<i>Cymbella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	<i>Cymbella affinis</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
40	<i>Cymbella delicatula</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
41	<i>Cymbella laevis</i>	-	-	-	-	-	-	-	-	+	+	-	-	-	+
42	<i>Cymbella microcephala</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
43	<i>Cymbella pusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	<i>Cymbella tumida</i>	+	+	-	-	-	+	-	+	+	-	-	-	+	-
45	<i>Cymbella turgida</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
46	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	<i>Diatoma anceps</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	+
49	<i>Diatoma hiemale</i>	-	+	-	-	-	-	-	-	-	+	-	-	+	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
51	<i>Diatoma vulgare</i>	-	-	+	-	-	-	+	+	-	-	+	-	-	-

52	<i>Didymosphaenia geminata</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
53	<i>Eunotia linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54	<i>Eunotia</i> sp.	-	-	-	-	-	-	-	+	+	-	-	-	-	+
55	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56	<i>Fragilaria construens</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
57	<i>Fragilaria inflata</i>	-	-	+	+	-	-	-	-	-	-	-	-	-	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
59	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60	<i>Fragilaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	+
61	<i>Fragilaria vaucheriae</i>	-	+	-	-	-	+	-	+	-	-	-	-	+	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
63	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65	<i>Gomphonema helveticum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
66	<i>Gomphonema intricatum</i>	-	-	-	-	-	+	-	+	-	-	-	-	-	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
69	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	+	-	-	-	+	-	-	+	+	-	-	-
72	<i>Gomphonema bohemicum</i>	-	-	-	-	-	+	-	+	-	-	-	-	-	-
73	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74	<i>Gomphonema helveticum</i>	-	+	-	-	-	-	-	-	-	-	-	-	+	-
75	<i>Gomphonema herbidense</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	+
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
77	<i>Gomphonema intricatum</i> var. <i>subclavata</i>	+	-	-	+	-	-	-	-	-	-	-	+	-	-
78	<i>Gomphonema intricatum</i> var.	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	<i>pusila</i>														
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-	-	-	-	-	-	-	+	+	-	-	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
81	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
83	<i>Gomphonema parvulum</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
86	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
89	<i>Hannaea arcus</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	+	-	+	-	-	-	-	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
93	<i>Melosira junergensii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
94	<i>Navicula andium</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
95	<i>Navicula cryptocephala</i>	+	-	-	+	+	-	-	-	+	+	-	-	-	-
96	<i>Navicula feverborni</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
97	<i>Navicula halophila</i>	-	+	-	-	-	-	-	-	-	-	-	-	+	-
98	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	<i>Pinnularia borealis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
101	<i>Pinnularia molaris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102	<i>Pinnularia</i> sp.	-	-	-	-	-	-	-	-	-	-	-	+	-	-
103	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-	-	-	-	-	-	-	+	+	-	-	-	-

105	<i>Reimeria sinuata</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
106	<i>Stauroneis</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
107	<i>Surirella ovata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
108	<i>Surirella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
109	<i>Synedra</i> sp.	-	-	-	-	+	-	-	-	-	-	-	-	-	-
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
111	<i>Synedra amphirhynchus</i>	-	+	-	-	-	-	-	-	-	-	-	-	+	-
112	<i>Synedra rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
113	<i>Synedra ulna</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	+	-	+	-	-	-	+	-	-
115	<i>Tabellaria flocculosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
116	<i>Tetracyclus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	10	12	13	11	8	13	8	13	16	13	8	11	12	18

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnanthidium affinis</i>	+	-
2	<i>Achnanthidium andicola</i>	-	-
3	<i>Achnanthidium austriaca</i>	-	-
4	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	+	-
5	<i>Achnanthidium biasoletiana</i>	-	-
6	<i>Achnanthidium conspicua</i>	-	+
7	<i>Achnanthidium cranulata</i>	-	-
8	<i>Achnanthidium dispar</i>	-	-
9	<i>Achnanthidium exigua</i>	-	-
10	<i>Achnanthidium exilis</i>	-	-
11	<i>Achnanthidium fragilarioides</i>	-	-
12	<i>Achnanthidium Grimmei</i>	-	-
13	<i>Achnanthidium hauckiana</i>	-	-
14	<i>Achnanthidium holsti</i>	-	-
15	<i>Achnanthidium hungarica</i>	-	-
16	<i>Achnanthidium kryophila</i>	-	-
17	<i>Achnanthidium lanceolata</i>	-	-
18	<i>Achnanthidium lapidosa</i>	-	-
19	<i>Achnanthidium lavenderi</i>	-	-
20	<i>Achnanthidium lemmermanni</i>	-	-
21	<i>Achnanthidium Lilljeborgei</i>	-	-
22	<i>Achnanthidium linearis</i>	+	-
23	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-
24	<i>Achnanthidium microcephala</i>	-	-
25	<i>Achnanthidium minutissima</i>	-	-
26	<i>Achnanthidium nodosa</i>	-	-
27	<i>Achnanthidium plonensis</i>	-	+
28	<i>Achnanthidium saxonica</i>	-	-
29	<i>Achnanthidium</i> sp.	-	-
30	<i>Achnanthidium suchlandti</i>	-	-
31	<i>Achnanthidium taeniata</i>	-	-
32	<i>Achnanthidiumb conspicua</i>	-	-
33	<i>Achnanthidiumlinearis</i> var. <i>pusila</i>	-	-
34	<i>Anomoeneis</i> sp.	-	-
35	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-
36	<i>Cocconeis placentula</i> var. <i>lineata</i>	-	-
37	<i>Cocconeis placentula</i>	+	+

38	<i>Cymbella</i> sp.	-	-
39	<i>Cymbella affinis</i>	-	-
40	<i>Cymbella delicatula</i>	+	-
41	<i>Cymbella laevis</i>	-	-
42	<i>Cymbella microcephala</i>	-	-
43	<i>Cymbella pusila</i>	-	-
44	<i>Cymbella tumida</i>	-	-
45	<i>Cymbella turgida</i>	-	+
46	<i>Cymbella ventricosa</i>	-	-
47	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-
48	<i>Diatoma anceps</i>	+	-
49	<i>Diatoma hiemale</i>	-	-
50	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-
51	<i>Diatoma vulgare</i>	-	-
52	<i>Didymosphaenia geminata</i>	-	-
53	<i>Eunotia linearis</i>	-	-
54	<i>Eunotia</i> sp.	-	-
55	<i>Fragilaria capucina</i>	-	-
56	<i>Fragilaria construens</i>	-	-
57	<i>Fragilaria inflata</i>	+	-
58	<i>Fragilaria pinnata</i> f. <i>subrotunda</i>	-	-
59	<i>Fragilaria rumpens</i>	-	-
60	<i>Fragilaria</i> sp.	-	-
61	<i>Fragilaria vaucheriae</i>	-	-
62	<i>Fragilaria capucina</i> var. <i>lanceolata</i>	-	-
63	<i>Fragilaria pinnata</i>	-	-
64	<i>Gomphonema gracile</i>	-	-
65	<i>Gomphonema helveticum</i>	-	-
66	<i>Gomphonema intricatum</i>	-	-
67	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	-	-
68	<i>Gomphonema olivaceoides</i>	-	-
69	<i>Gomphonema olivaceum</i>	-	-
70	<i>Gomphonema parvulum</i>	-	-
71	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-
72	<i>Gomphonema bohemicum</i>	-	-
73	<i>Gomphonema gracile</i>	-	-
74	<i>Gomphonema helveticum</i>	-	-
75	<i>Gomphonema herbidense</i>	-	-
76	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	+
77	<i>Gomphonema intricatum</i> var.	+	-

	<i>subclavata</i>		
78	<i>Gomphonema intricatum</i> var. <i>pusila</i>	-	-
79	<i>Gomphonema lanceolatum</i> var. <i>affine</i>	-	-
80	<i>Gomphonema longiceps</i> var. <i>subclavata</i>	+	-
81	<i>Gomphonema olivaceum</i>	-	-
82	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-
83	<i>Gomphonema parvulum</i>	-	+
84	<i>Gomphonema parvulum</i> var. <i>micropus</i>	-	-
85	<i>Gomphonema sphaerophorum</i>	-	-
86	<i>Gomphonema intricatum</i>	-	-
87	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
88	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
89	<i>Hannaea arcus</i>	-	-
90	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
91	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
92	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
93	<i>Melosira junergensii</i>	-	-
94	<i>Navicula andium</i>	-	-
95	<i>Navicula cryptocephala</i>	+	+
96	<i>Navicula feverborni</i>	-	-
97	<i>Navicula halophila</i>	-	-
98	<i>Navicula radiosa</i>	-	-
99	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-
100	<i>Pinnularia borealis</i>	-	-
101	<i>Pinnularia molaris</i>	-	-
102	<i>Pinnularia</i> sp.	-	-
103	<i>Planothidium lanceolata</i>	-	-
104	<i>Planothidium lanceolata</i> var. <i>elliptica</i>	-	-
105	<i>Reimeria sinuata</i>	-	-
106	<i>Stauroneis</i> sp.	-	-
107	<i>Surirella ovata</i>	-	-
108	<i>Surirella</i> sp.	-	-
109	<i>Synedra</i> sp.	-	+
110	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
111	<i>Synedra amphirhynchus</i>	-	-
112	<i>Synedra rumpens</i>	-	-
113	<i>Synedra ulna</i>	+	-
114	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
115	<i>Tabellaria flocculosa</i>	-	-
116	<i>Tetracyclus</i> sp.	-	-
-	Total	11	8

DENSITY & DIVERSITY OF PHYTOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/lit.)	109	Nil	166	Nil	Nil	121	235	200	Nil	Nil	Nil	211	Nil	
Shannon Weiner Diversity	1.33	Nil	1.34	Nil	Nil	1.3	1.3	1.36	Nil	Nil	Nil	1.33	Nil	
Evenness Index	0.55	Nil	0.54	Nil	Nil	0.56	0.56	0.55	Nil	Nil	Nil	0.55	Nil	
No. of species	11	Nil	12	Nil	Nil	10	10	12	Nil	Nil	Nil	11	Nil	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/lit.)	267	Nil	145	178	Nil	Nil	Nil							
Shannon Weiner Diversity	1.31	Nil	1.3	1.3	Nil	Nil	Nil							
Evenness Index	0.51	Nil	0.52	0.56	Nil	Nil	Nil							
No. of species	13	Nil	12	10	Nil	Nil	Nil							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/lit.)	Nil	Nil	167	Nil	Nil	Nil	188	176	Nil	Nil	121	156	132	
Shannon Weiner Diversity	Nil	Nil	1.38	Nil	Nil	Nil	1.3	1.36	Nil	Nil	1.32	1.34	1.31	
Evenness Index	Nil	Nil	0.54	Nil	Nil	Nil	0.56	0.53	Nil	Nil	0.57	0.56	0.55	
No. of species	Nil	Nil	13	Nil	Nil	Nil	10	13	Nil	Nil	10	11	11	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/lit.)	189	205	276	211	198	176	Nil	143	167	155	122	176	218	132
Shannon Weiner Diversity	1.3	1.34	1.39	1.35	1.26	1.38	Nil	1.32	1.42	1.34	1.27	1.32	1.38	1.45
Evenness Index	0.56	0.54	0.54	0.56	0.61	0.54	Nil	0.51	0.51	0.52	0.61	0.55	0.56	0.50
No. of species	10	12	13	11	8	13	Nil	13	16	13	8	11	12	18
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/lit.)	82		115											
Shannon Weiner Diversity	0.85		0.99											
Evenness Index	0.28		0.31											
No. of species	20		24											

Phytobenthos

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Achnanthidium austriaca</i>		+	+	-	-	+	-	-	+	+	-	-	-
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	+	+	-	+	-	-	-	-	+	+
3	<i>Achnanthidium boyei</i>	-	+	-	-	-	-	-	+	-	+	+	-	-
4	<i>Achnanthidium conspicua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Achnanthidium cranulata</i>	+	-	+	-	-	-	+	-	-	-	-	+	-
6	<i>Achnanthidium exigua</i>	-	-	-	+	-	-	-	+	-	-	-	-	+
7	<i>Achnanthidium Grimmei</i>	+	-	-	-	-	+	-	-	-	+	-	-	-
8	<i>Achnanthidium holsti</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
9	<i>Achnanthidium hungarica</i>	-	+	+	-	+	-	-	-	+	-	-	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Achnanthidium linearis</i>	-	-	-	-	-	-	-	-	-	+	-	-	+
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
13	<i>Achnanthidium microcephala</i>	-	-	+	-	+	-	-	-	+	-	-	-	-
14	<i>Achnanthidium minutissima</i>	-	-	-	-	-	+	-	-	-	-	+	-	-
15	<i>Achnanthidium nodosa</i>	-	-	-	+	-	-	-	-	-	-	-	+	-
16	<i>Achnanthidium plonensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Achnanthidium saxonica</i>	-	-	-	-	-	+	-	-	-	-	-	-	+
18	<i>Achnanthidium suchlandti</i>	-	-	+	-	+	-	+	-	-	-	+	-	-
19	<i>Achnanthidium affinis</i>	+	-	-	-	-	-	-	+	+	-	+	-	-
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Achnanthidium lapidosa</i>	-	+	+	-	-	-	-	-	-	-	-	-	-
22	<i>Cocconeis placentula</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	+	-	-	-	-	-	-	-	-	-

24	<i>Cyclotella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	+	-	-
25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
26	<i>Cymbella laevis</i>	-	+	-	+	-	-	+	-	-	+	-	-	-	-
27	<i>Cymbella perpusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	<i>Cymbella tumidula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	<i>Cymbella turgidula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
30	<i>Cymbella ventricosa</i>	+	-	-	-	-	-	+	-	-	+	-	-	-	-
31	<i>Cymbella affinis</i>	-	-	-	-	-	+	-	-	+	-	-	-	+	-
32	<i>Diatoma hiemale</i>	-	-	+	+	-	-	-	-	-	-	-	-	-	+
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
34	<i>Didymosphenia geminata</i>	+	-	-	-	-	-	+	-	-	-	-	-	+	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	+	-	+	-	+	-	-	-	-	+	+
36	<i>Eunotia arcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
38	<i>Fragilaria construens</i>	-	-	+	+	-	-	-	-	-	-	-	-	+	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	-	-	-	-	-	+	-	+	-	-	-	-
42	<i>Fragilaria rumpens</i>	-	+	+	+	-	-	-	-	-	-	-	-	-	-
43	<i>Fragilaria brevistriata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
44	<i>Fragilaria</i> sp.	-	-	-	+	-	-	-	-	-	-	-	-	-	-
45	<i>Fragilaria vaucheriae</i>	+	-	-	-	+	-	-	-	-	-	-	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
47	<i>Gomphonema gracile</i>	-	+	-	-	-	-	-	-	-	-	-	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	-	-	-	+	-	-	-	-	+	-	-	+
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
50	<i>Gomphonema nagpurenses</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	+
52	<i>Gomphonema olivaceum</i>	-	-	-	-	-	+	-	-	+	+	-	-	-	-

53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
55	<i>Gomphonema parvulum</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
57	<i>Gomphonema sphaerophorum</i>	+	-	-	-	-	-	-	-	+	-	-	-	-
58	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	+	-	-	-	-	-	+	-	-	-	+	+
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	+	-	-	+	-
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
65	<i>Navicula radiosa</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
67	<i>Navicula rostellata</i>	-	-	+	-	+	-	-	-	-	-	-	-	-
68	<i>Navicula cari</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	+	-	-	+	-	-
71	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	+	-	-	-	+	-	-	-	-
73	<i>Reimeria sinuata</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	-	-	+	+	-
75	<i>Synedra ulna</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
78	<i>Tabellaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	9	8	12	11	7	10	9	8	10	11	9	10	13

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Achnanthidium austriaca</i>	+	+	+	-	-	+	-
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	+	-	+	-
3	<i>Achnanthidium boyei</i>	-	-	-	-	+	-	-
4	<i>Achnanthidium conspicua</i>	-	+	-	-	-	-	-
5	<i>Achnanthidium cranulata</i>	+	-	-	+	-	-	+
6	<i>Achnanthidium exigua</i>	-	-	-	-	+	-	-
7	<i>Achnanthidium Grimmei</i>	-	-	+	-	-	+	+
8	<i>Achnanthidium holsti</i>	-	-	-	-	-	-	-
9	<i>Achnanthidium hungarica</i>	+	-	-	-	-	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-
11	<i>Achnanthidium linearis</i>	-	-	-	-	-	+	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	-	-
13	<i>Achnanthidium microcephala</i>	-	-	-	-	-	-	-
14	<i>Achnanthidium minutissima</i>	+	+	+	-	-	+	-
15	<i>Achnanthidium nodosa</i>	-	-	-	-	-	-	-
16	<i>Achnanthidium plonensis</i>	-	-	-	-	-	-	-
17	<i>Achnanthidium saxonica</i>	-	-	+	-	-	-	-
18	<i>Achnanthidium suchlandti</i>	-	-	-	+	-	-	-
19	<i>Achnanthidium affinis</i>	+	-	-	-	+	-	+
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-
21	<i>Achnanthidium lapidosa</i>	-	-	-	-	-	-	-
22	<i>Cocconeis placentula</i>	-	-	+	-	-	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	-	-	-	-	-	-
24	<i>Cyclotella</i> sp.	-	+	-	-	-	-	-
25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	-
26	<i>Cymbella laevis</i>	-	-	-	+	-	-	-
27	<i>Cymbella perpusila</i>	-	+	-	-	-	-	-
28	<i>Cymbella tumidula</i>	-	-	-	-	-	-	-
29	<i>Cymbella turgidula</i>	-	-	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	-	-	-	+	-	-	+
31	<i>Cymbella affinis</i>	-	-	+	-	-	+	-
32	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-

33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	+	-	-	-	-	-	-
34	<i>Didymosphenia geminata</i>	-	-	-	+	-	-	+
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	+	-	+	-	-
36	<i>Eunotia arcus</i>	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-
38	<i>Fragilaria construens</i>	-	-	-	-	-	-	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	+	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	-	-	+	+	-
42	<i>Fragilaria rumpens</i>	-	+	-	-	-	-	-
43	<i>Fragilaria brevistriata</i>	-	-	-	-	-	-	-
44	<i>Fragilaria</i> sp.	-	-	-	-	-	+	-
45	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	+
46	<i>Gomphonema bohemicum</i>	+	+	-	+	-	-	-
47	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	+	-	-	+	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	+	-	-	-
50	<i>Gomphonema nagpurenses</i>	-	-	-	-	-	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-
52	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	-	-	-	-	-	+
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	-	-	-
55	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	+
58	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	+	+	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	+	-	-	-	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	-
65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-
67	<i>Navicula rostellata</i>	-	-	-	+	-	-	-

68	<i>Navicula cari</i>	-	-	-	-	-	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	+	-	-
71	<i>Planothidium lanceolata</i>	-	-	-	+	+	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	-	-	-
73	<i>Reimeria sinuata</i>	-	-	-	-	-	-	+
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	+	-	-	-	-	-
75	<i>Synedra ulna</i>	-	-	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	-	-	+	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-
78	<i>Tabellaria</i> sp.	-	-	-	-	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-
-	Total	7	9	8	11	8	11	10

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Achnanthidium austriaca</i>	+	+	-	+	+	+	+	+	-	-	-	+	+
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	-	-	-	-	-	-	+	+	-	-
3	<i>Achnanthidium boyei</i>	+	+	+	-	-	+	-	+	+	-	-	-	+
4	<i>Achnanthidium conspicua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Achnanthidium cranulata</i>	-	-	+	-	-	-	-	-	-	+	-	-	-
6	<i>Achnanthidium exigua</i>	+	+	-	-	+	+	-	-	-	-	+	-	+
7	<i>Achnanthidium Grimmei</i>	-	-	+	+	-	-	-	+	-	-	-	-	-
8	<i>Achnanthidium holsti</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
9	<i>Achnanthidium hungarica</i>	+	-	-	-	-	-	+	-	-	-	-	+	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
11	<i>Achnanthidium linearis</i>	+	-	-	-	-	-	-	+	-	-	+	-	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	-	-	+	-	-	-	+	-	-	+
13	<i>Achnanthidium microcephala</i>	-	-	-	-	+	-	+	-	-	-	-	-	-
14	<i>Achnanthidium minutissima</i>	-	-	-	+	-	-	-	-	+	-	-	-	-
15	<i>Achnanthidium nodosa</i>	+	+	+	-	-	-	-	-	-	+	-	+	-
16	<i>Achnanthidium plonensis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
17	<i>Achnanthidium saxonica</i>	-	-	-	+	-	-	-	-	-	-	+	-	-
18	<i>Achnanthidium suchlandti</i>	+	+	-	-	-	+	-	-	+	-	-	-	-
19	<i>Achnanthidium affinis</i>	-	-	-	-	-	-	+	-	+	-	-	-	-
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Achnanthidium lapidosa</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
22	<i>Cocconeis placentula</i>	-	-	-	+	-	-	-	-	-	-	-	-	+
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	-	+	-	-	+	-	-	-	-	-	-	-	-
24	<i>Cyclotella</i> sp.	-	-	-	-	-	+	-	-	+	-	-	-	-
25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
26	<i>Cymbella laevis</i>	-	-	+	-	-	-	-	+	-	-	-	-	-

27	<i>Cymbella perpusila</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
28	<i>Cymbella tumidula</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
29	<i>Cymbella turgidula</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
30	<i>Cymbella ventricosa</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
31	<i>Cymbella affinis</i>	-	-	-	+	+	-	+	-	-	+	-	-	-
32	<i>Diatoma hiemale</i>	-	-	+	-	-	-	-	-	-	-	+	+	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
34	<i>Didymosphenia geminata</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	+	-	-	-	-	-	+	+	-	-
36	<i>Eunotia arcus</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
38	<i>Fragilaria construens</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
41	<i>Fragilaria pinnata</i>	-	-	-	-	+	-	-	+	-	-	-	-	-
42	<i>Fragilaria rumpens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
43	<i>Fragilaria brevistriata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
44	<i>Fragilaria</i> sp.	+	+	-	-	-	-	-	-	-	-	-	-	-
45	<i>Fragilaria vaucheriae</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
46	<i>Gomphonema bohemicum</i>	-	-	-	-	+	-	-	-	-	-	-	+	-
47	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	-	-	-	-	-	-	+	-	+	-	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
50	<i>Gomphonema nagpurenses</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
52	<i>Gomphonema olivaceum</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	+	-

55	<i>Gomphonema parvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	+	-	-	+	-	-	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
58	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	+	+	-	+
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	+	-	-	-	+	-	-	+	-	+	-
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	-	+	-	-	-	-	+
65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	+	-	-	-	+	-	-	-
67	<i>Navicula rostellata</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
68	<i>Navicula cari</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	+	+	-	-	-	-	-	-	+	-	-	-	-
71	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
73	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	-	-	-	+	+	-	-	-
75	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
77	<i>Tabellaria flocculus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
78	<i>Tabellaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	13	9	10	7	10	11	8	11	9	9	12	8	7

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Achnanthidium austriaca</i>	+	+	+	-	+	+	+	+	+	+	+	-	+	-
2	<i>Achnanthidium austriaca</i> var. <i>helvetica</i>	-	-	-	+	-	-	-	-	-	-	+	-	-	+
3	<i>Achnanthidium boyei</i>	-	+	-	-	+	-	+	+	+	-	-	-	+	-
4	<i>Achnanthidium conspicua</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
5	<i>Achnanthidium cranulata</i>	-	-	+	+	-	-	-	-	-	-	-	+	-	+
6	<i>Achnanthidium exigua</i>	+	+	-	-	-	-	-	+	+	+	-	-	+	-
7	<i>Achnanthidium Grimmei</i>	-	-	-	-	-	-	+	-	-	-	+	+	-	-
8	<i>Achnanthidium holsti</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	<i>Achnanthidium hungarica</i>	-	-	+	-	-	-	-	+	-	-	-	-	-	-
10	<i>Achnanthidium lapidosa</i> var. <i>lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Achnanthidium linearis</i>	-	-	-	-	-	-	+	+	-	-	+	-	-	-
12	<i>Achnanthidium linearis</i> var. <i>pusila</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
13	<i>Achnanthidium microcephala</i>	+	-	-	-	-	-	-	-	-	+	-	-	-	-
14	<i>Achnanthidium minutissima</i>	-	-	+	-	-	+	-	-	-	-	+	-	-	-
15	<i>Achnanthidium nodosa</i>	-	+	-	+	+	-	-	+	+	-	-	-	+	-
16	<i>Achnanthidium plonensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Achnanthidium saxonica</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Achnanthidium suchlandti</i>	-	+	-	-	-	-	-	+	+	-	-	-	-	+
19	<i>Achnanthidium affinis</i>	-	-	+	-	-	-	-	-	-	-	-	+	-	-
20	<i>Achnanthidium exilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Achnanthidium lapidosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	<i>Cocconeis placentula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	+	-	+	-	-	-	-	+	+	-	-	-	-
24	<i>Cyclotella</i> sp.	-	-	-	-	-	+	-	-	-	-	-	-	-	-
25	<i>Cymbella amphicephala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	<i>Cymbella laevis</i>	-	-	-	-	-	-	+	-	-	-	-	-	+	+

27	<i>Cymbella perpusila</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
28	<i>Cymbella tumidula</i>	+	-	-	+	-	-	-	-	-	+	-	-	-	-
29	<i>Cymbella turgidula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	<i>Cymbella ventricosa</i>	-	-	-	-	+	-	+	-	-	-	-	+	+	+
31	<i>Cymbella affinis</i>	+	-	-	-	-	-	-	-	-	+	+	-	-	-
32	<i>Diatoma hiemale</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	-	+	-	-	-	+	-	-	-	-	-	-	-
34	<i>Didymosphenia geminata</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	+
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
36	<i>Eunotia arcus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	<i>Fragilaria capucina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	<i>Fragilaria construens</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
39	<i>Fragilaria leptostauron</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	<i>Fragilaria olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
41	<i>Fragilaria pinnata</i>	+	-	-	-	-	-	+	-	-	+	+	-	-	-
42	<i>Fragilaria rumpens</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
43	<i>Fragilaria brevistriata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	<i>Fragilaria</i> sp.	-	+	-	-	+	-	-	+	+	-	+	-	+	-
45	<i>Fragilaria vaucheriae</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
46	<i>Gomphonema bohemicum</i>	+	-	+	-	-	+	-	-	-	+	-	-	-	+
47	<i>Gomphonema gracile</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-	-	+	-	-	-	-	-	-	+	-	-	-
49	<i>Gomphonema lanceolatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
50	<i>Gomphonema nagpurenses</i>	-	+	-	-	+	-	-	+	+	-	-	-	+	-
51	<i>Gomphonema olivaceoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52	<i>Gomphonema olivaceum</i>	+	-	-	-	-	-	+	-	-	-	-	-	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	-	+	-	-	+	-	-	+	+	-	-	+	+	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55	<i>Gomphonema paruvulum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-

56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
58	<i>Gomphonema intricatum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64	<i>Navicula microcephala</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
65	<i>Navicula radiosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
67	<i>Navicula rostellata</i>	+	-	+	-	-	-	-	-	-	+	-	-	-	+
68	<i>Navicula cari</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>	-	-	-	-	+	-	-	+	+	-	-	-	+	-
71	<i>Planothidium lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	+
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	<i>Reimeria sinuata</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
75	<i>Synedra ulna</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
77	<i>Tabellaria flocculus</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-
78	<i>Tabellaria</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
79	<i>Tetracyclus lacustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total	10	9	8	11	8	9	11	11	10	9	11	10	10	9

Outside basin

S.No.	Name of species	B1	B2
1	<i>Achnantheidium austriaca</i>	+	+
2	<i>Achnantheidium austriaca</i> var. <i>helvetica</i>	-	-
3	<i>Achnantheidium boyei</i>	+	-
4	<i>Achnantheidium conspicua</i>	-	-
5	<i>Achnantheidium cranulata</i>	-	+
6	<i>Achnantheidium exigua</i>	+	-
7	<i>Achnantheidium Grimmei</i>	-	-
8	<i>Achnantheidium holsti</i>	-	-
9	<i>Achnantheidium hungarica</i>	-	+
10	<i>Achnantheidium lapidosa</i> var. <i>lanceolata</i>	-	-
11	<i>Achnantheidium linearis</i>	-	-
12	<i>Achnantheidium linearis</i> var. <i>pusila</i>	-	-
13	<i>Achnantheidium microcephala</i>	-	-
14	<i>Achnantheidium minutissima</i>	-	+
15	<i>Achnantheidium nodosa</i>	+	-
16	<i>Achnantheidium plonensis</i>	-	-
17	<i>Achnantheidium saxonica</i>	-	-
18	<i>Achnantheidium suchlandti</i>	+	-
19	<i>Achnantheidium affinis</i>	-	+
20	<i>Achnantheidium exilis</i>	-	-
21	<i>Achnantheidium lapidosa</i>	-	-
22	<i>Cocconeis placentula</i>	-	-
23	<i>Cocconeis placentula</i> var. <i>euglypta</i>	+	-
24	<i>Cyclotella</i> sp.	-	-
25	<i>Cymbella amphicephala</i>	-	-
26	<i>Cymbella laevis</i>	-	-
27	<i>Cymbella perpusila</i>	-	-
28	<i>Cymbella tumidula</i>	-	-
29	<i>Cymbella turgidula</i>	-	-
30	<i>Cymbella ventricosa</i>	-	-
31	<i>Cymbella affinis</i>	-	-
32	<i>Diatoma hiemale</i>	-	-
33	<i>Diatoma hiemale</i> var. <i>mesodon</i>	-	+
34	<i>Didymosphenia geminata</i>	-	-
35	<i>Eunotia fallax</i> var. <i>gracillima</i>	-	-
36	<i>Eunotia arcus</i>	-	-
37	<i>Fragilaria capucina</i>	-	-
38	<i>Fragilaria construens</i>	-	-
39	<i>Fragilaria leptostauron</i>	-	-

40	<i>Fragilaria olivaceoides</i>	-	-
41	<i>Fragilaria pinnata</i>	-	-
42	<i>Fragilaria rumpens</i>	-	-
43	<i>Fragilaria brevistriata</i>	-	-
44	<i>Fragilaria</i> sp.	+	-
45	<i>Fragilaria vaucheriae</i>	-	-
46	<i>Gomphonema bohemicum</i>	-	+
47	<i>Gomphonema gracile</i>	-	-
48	<i>Gomphonema intricatum</i> var. <i>bohemicum</i>	-	-
49	<i>Gomphonema lanceolatum</i>	-	-
50	<i>Gomphonema nagpurenses</i>	+	-
51	<i>Gomphonema olivaceoides</i>	-	-
52	<i>Gomphonema olivaceum</i>	-	-
53	<i>Gomphonema olivaceum</i> var. <i>calcareum</i>	+	-
54	<i>Gomphonema olivaceum</i> var. <i>minutissima</i>	-	-
55	<i>Gomphonema parvulum</i>	-	-
56	<i>Gomphonema parvulum</i> var. <i>exilissimum</i>	-	-
57	<i>Gomphonema sphaerophorum</i>	-	-
58	<i>Gomphonema intricatum</i>	-	-
59	<i>Gomphonema intricatum</i> var. <i>pumila</i>	-	-
60	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-
61	<i>Gomphonema logiceps</i> var. <i>subclavata</i>	-	-
62	<i>Hannaea arcus</i> var. <i>linearis</i>	-	-
63	<i>Hannaea arcus</i> var. <i>amphioxys</i>	-	-
64	<i>Navicula microcephala</i>	-	-
65	<i>Navicula radiosa</i>	-	-
66	<i>Navicula radiosa</i> var. <i>tenella</i>	-	-
67	<i>Navicula rostellata</i>	-	+
68	<i>Navicula cari</i>	-	-
69	<i>Navicula minima</i> var. <i>atomoides</i>	-	-
70	<i>Navicula radiosa</i> var. <i>minutissima</i>		-
71	<i>Planothidium lanceolata</i>	-	-
72	<i>Planothidium lanceolata</i> var. <i>rostrata</i>	-	-
73	<i>Reimeria sinuata</i>	-	-
74	<i>Synedra ulna</i> var. <i>amphirhynchus</i>	-	-
75	<i>Synedra ulna</i>	-	-
76	<i>Synedra ulna</i> var. <i>amphioxys</i>	-	-
77	<i>Tabellaria flocculus</i>	-	-
78	<i>Tabellaria</i> sp.	-	-
79	<i>Tetracyclus lacustris</i>	-	-
-	Total	9	8

DENSITY & DIVERSITY OF PHYTOBENTHOS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (cells/cm ²)	55.00	Nil	Nil	Nil	Nil	79.00	67.00	Nil	Nil	Nil	Nil	89.00	Nil	
Shannon Weiner Diversity	1.29	Nil	Nil	Nil	Nil	1.2	1.21	Nil	Nil	Nil	Nil	1.22	Nil	
Evenness Index	0.56	Nil	Nil	Nil	Nil	0.55	0.62	Nil	Nil	Nil	Nil	0.56	Nil	
No. of species	10	Nil	Nil	Nil	Nil	9	7	Nil	Nil	Nil	Nil	9	Nil	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (cells/cm ²)	96.00	Nil	Nil	Nil	Nil	Nil	Nil							
Shannon Weiner Diversity	1.22	Nil	Nil	Nil	Nil	Nil	Nil							
Evenness Index	0.59	Nil	Nil	Nil	Nil	Nil	Nil							
No. of species	8	Nil	Nil	Nil	Nil	Nil	Nil							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (cells/cm ²)	Nil	Nil	66.00	Nil	66.00	73.00	Nil	Nil	Nil	Nil	65.00	Nil	Nil	
Shannon Weiner Diversity	Nil	Nil	1.22	Nil	1.21	1.22	Nil	Nil	Nil	Nil	1.23	Nil	Nil	
Evenness Index	Nil	Nil	0.56	Nil	0.55	0.53	Nil	Nil	Nil	Nil	0.59	Nil	Nil	
No. of species	Nil	Nil	9	Nil	9	10	Nil	Nil	Nil	Nil	8	Nil	Nil	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (cells/cm ²)	67.00	Nil	Nil	57.00	66.00	Nil	Nil	78.00	84.00	56.00	Nil	58.00	67.00	88.00
Shannon Weiner Diversity	1.23	Nil	Nil	1.28	1.21	Nil	Nil	1.29	1.24	1.21	Nil	1.25	1.22	1.27
Evenness Index	0.59	Nil	Nil	0.52	0.55	Nil	Nil	0.56	0.52	0.55	Nil	0.54	0.56	0.55
No. of species	8	Nil	Nil	12	9	Nil	Nil	10	11	9	Nil	10	9	10
	Jiya Dhol & Kareng Ghat													
Code	B1		B2											
Density (cells/cm ²)	105		146											
Shannon Weiner Diversity	1.01		0.99											
Evenness Index	0.44		0.40											
No. of species	10		12											

Macro- Inverbrates

Sub basin- Siang: I-IV

S.No.	Family	Genus	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	Heptageniidae	<i>Cinygmula</i>	+	+	-	-	+	-	-	+	-	-	-	+	-
2		<i>Stenonema</i>	-	-	-	-	-	-	-	-	+	-	+	-	-
3		<i>Heptagenia</i>	-	-	-	-	-	+	+	-	-	+	-	-	-
4		<i>Epeorus</i>	-	-	-	+	-	-	-	-	-	-	-	-	+
5	Baetidae	<i>Baetis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
7		<i>Ephemerella excrucians</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
8	Caenidae	<i>Caenis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
10		<i>Chroterpes</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	-	-	-	-	+	-	-	-	-	+	-	-	-
12	Neophemeridae	<i>Neophemeridae 1</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
13		<i>Neophemeridae 2</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	-	-	-	-	+	-	-	-	+
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
21		<i>Hydroptila</i>	-	-	-	+	-	+	-	-	-	-	-	-	-

22		<i>Leucotrichia</i>	-	-	-	-	+	-	-	-	-	+	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
27	Molannidae	<i>Molanna</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
30	Ephydriidae	Unidentified genus / species	-	-	-	-	-	-	-	-	-	-	-	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
37		<i>Horaia</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	2	3	1	2	3	2	2	2	2	3	1	4	3

Sub basin- Yamne and Simang

S.No.	Family	Genus	Y1	Y2	Y3	Y4	SM1	SM2	SM3
1	Heptageniidae	<i>Cinygmula</i>	-	+	+	+	-	+	-
2		<i>Stenonema</i>	+	-	-	-	-	-	-
3		<i>Heptagenia</i>	-	-	-	-	+	-	-
4		<i>Epeorus</i>	-	-	-	-	-	-	-
5	Baetidae	<i>Baetis</i>	-	-	-	-	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	-	+	-	+	-	-	+
7		<i>Ephemerella excrucians</i>	-	-	+	-	-	-	-
8	Caenidae	<i>Caenis</i>	-	-	-	-	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	-	-
10		<i>Chroterpes</i>	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	-	-	-	-	-	+	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	+	-	-	-	-
13		<i>Neoephemeridae 2</i>	-	-	-	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	-	-	-	-	-
17	Psephenidae	<i>Psephenus</i>	+	-	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	-	+
19	Corydalidae	<i>Corydalus</i>	-	-	+	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	+	-	-
21		<i>Hydroptila</i>	-	+	-	-	-	-	-
22		<i>Leucotrichia</i>	-	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-
27	Molannidae	<i>Molanna</i>	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	-	-	-
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	-
30	Ephydriidae	Unidentified genus / species	-	-	-	-	-	+	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	+
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-

36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	+	-	-	-
37		<i>Horaia</i>	-	-	-	-	-	-	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochores</i>	-	-	-	-	-	-	-
		Total	2	3	4	3	2	3	3

Sub basin- Siyom: I-III and Hirit

S.No.	Family	Genus	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	Heptageniidae	<i>Cinygmula</i>	-	-	+	-	+	-	-	-	-	-	+	+	-
2		<i>Stenonema</i>	-	-	-	-	-	+	-	-	+	-	-	-	-
3		<i>Heptagenia</i>	-	+	-	-	-	-	-	-	-	-	-	-	+
4		<i>Epeorus</i>	-	-	-	-	-	-	-	+	-	+	-	-	-
5	Baetidae	<i>Baetis</i>	+	-	-	-	-	-	+	-	-	-	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
7		<i>Ephemerella excrucians</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
8	Caenidae	<i>Caenis</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
10		<i>Chroterpes</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
11		<i>Leptophlebia</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	-	-	-	-	+	-	-	-	-	-	-	-	-
13		<i>Neoephemeridae 2</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	-	+	-	-	-	-	-	-	-	-	+	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	-	-	-	-	-	-	-	+	-	+	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	-	+	-	-	-	-	-	-	-
21		<i>Hydroptila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
22		<i>Leucotrichia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	-	-	-	-	-	-	-

26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Molannidae	<i>Molanna</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	+	-	-	+	-	-	-	-	-
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
30	Ephydriidae	Unidentified genus / species	-	-	-	-	-	-	-	-	-	-	-	-	+
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
32	Simulidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	+	-	+	-	+	-	-	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
37		<i>Horaia</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	1	2	4	1	3	4	3	4	2	1	2	3	2

Sub basin- Yargyap Chhu

S.No.	Family	Genus	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	Heptageniidae	<i>Cinygmula</i>	+	+	+	+	+	+	+	+	+	+	+	-	+	-
2		<i>Stenonema</i>	-	-	+	-	-	-	-	-	-	-	-	+	-	-
3		<i>Heptagenia</i>	+	-	-	-	-	-	-	-	+	-	-	-	-	+
4		<i>Epeorus</i>	-	-	-	-	-	-	-	+	-	-	+	-	-	-
5	Baetidae	<i>Baetis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Ephemerellidae	<i>Ephemerella</i>	-	-	-	+	-	-	+	-	-	-	-	-	-	-
7		<i>Ephemerella excrucians</i>	-	+	-	-	+	-	-	-	-	-	-	-	-	-
8	Caenidae	<i>Caenis</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10		<i>Chroterpes</i>	-	-	-	-	-	+	-	+	-	-	-	-	-	-
11		<i>Leptophlebia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Neoephemeridae	<i>Neoephemeridae 1</i>	+	-	-	-	-	-	-	-	-	-	-	-	-	-
13		<i>Neoephemeridae 2</i>	-	-	-	-	-	-	-	-	+	+	+	-	-	-
14	Perlidae	<i>Acroneuria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Perlodidae	<i>Isoperla</i>	-	-	-	-	-	+	-	+	-	-	-	-	-	-
16	Elmidae	<i>Heterlimnius</i>	-	+	-	+	-	-	-	-	-	-	-	-	+	-
17	Psephenidae	<i>Psephenus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	Corydalidae	<i>Corydalus</i>	-	+	-	-	+	-	-	-	-	-	-	-	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21		<i>Hydroptila</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
22		<i>Leucotrichia</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-

25	Glossosomatidae	<i>Glossosoma</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Molannidae	<i>Molanna</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Chironomidae	<i>Chironomus</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-
29		<i>Ablabesmyia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	Ephydriidae	Unidentified genus / species	-	-	-	-	-	-	-	-	-	-	-	+	-	+
31	Tipulidae	<i>Antocha saxicola</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	Psychodidae	<i>Psychoda</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-
34		<i>Maruina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37		<i>Horaia</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-
38	Tabanidae	<i>Tabanus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	Culicidae	<i>Culex</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	3	4	3	3	3	4	3	4	4	3	3	4	3	2

Outside basin

S.No.	Family	Genus	B1	B2
1	Heptageniidae	<i>Cinygmula</i>	-	-
2		<i>Stenonema</i>	+	-
3		<i>Heptagenia</i>	-	-
4		<i>Epeorus</i>	-	-
5	Baetidae	<i>Baetis</i>	-	-
6	Ephemerellidae	<i>Ephemerella</i>	-	-
7		<i>Ephemerella excrucians</i>	-	-
8	Caenidae	<i>Caenis</i>	-	+
9	Leptophlebiidae	<i>Paraleptophlebia</i>	-	-
10		<i>Chroterpes</i>	-	-
11		<i>Leptophlebia</i>	-	-
12	Neophemeridae	<i>Neophemeridae 1</i>	-	-
13		<i>Neophemeridae 2</i>	-	-
14	Perlidae	<i>Acroneuria</i>	-	-
15	Perlodidae	<i>Isoperla</i>	-	-
16	Elmidae	<i>Heterlimnius</i>	-	+
17	Psephenidae	<i>Psephenus</i>	-	-
18	Dytiscidae	<i>Agabinus glabrellus</i>	-	-
19	Corydalidae	<i>Corydalus</i>	-	-
20	Hydroptilidae	<i>Ochrotrichia</i>	-	-
21		<i>Hydroptila</i>	-	-
22		<i>Leucotrichia</i>	-	-
23	Hydropsychidae	<i>Hydropsyche</i>	-	-
24	Helicopsychidae	<i>Helichopsyche</i>	-	-
25	Glossosomatidae	<i>Glossosoma</i>	-	-
26	Leptoceridae	<i>Leptocerus</i>	-	-
27	Molannidae	<i>Molanna</i>	-	-
28	Chironomidae	<i>Chironomus</i>	-	-
29		<i>Ablabesmyia</i>	-	-
30	Ephydriidae	Unidentified genus / species	-	-
31	Tipulidae	<i>Antocha saxicola</i>	-	-
32	Simuliidae	<i>Simulium pictipes</i>	-	-
33	Psychodidae	<i>Psychoda</i>	-	-
34		<i>Maruina</i>	-	-
35	Ceratopogonidae	<i>Culicoides variipennis</i>	-	-
36	Blepharoceridae	<i>Blepharocera</i>	-	-

37		<i>Horaia</i>	-	-
38	Tabanidae	<i>Tabanus</i>	-	-
39	Rhagionidae	<i>Atherix variegata</i>	-	-
40	Culicidae	<i>Culex</i>	-	-
41	Limnocharidae	<i>Limnochares</i>	-	-
			1	2

DENSITY & DIVERSITY OF MACRO-INVERTEBRATES

	Siang Sub-basins I-IV																		
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13						
Density (Indiv./m ²)	Nil	Nil	Nil	Nil	Nil	Nil	52	Nil	Nil	Nil	Nil	Nil	Nil						
Shannon Weiner Diversity	Nil	Nil	Nil	Nil	Nil	Nil	0.35	Nil	Nil	Nil	Nil	Nil	Nil						
Evenness Index	Nil	Nil	Nil	Nil	Nil	Nil	0.32	Nil	Nil	Nil	Nil	Nil	Nil						
No. of species	Nil	Nil	Nil	Nil	Nil	Nil	3	Nil	Nil	Nil	Nil	Nil	Nil						
	Yamne & Simang Sub-basins																		
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3												
Density (Indiv./m ²)	Nil	43	Nil	Nil	Nil	52	Nil												
Shannon Weiner Diversity	Nil	0.37	Nil	Nil	Nil	0.29	Nil												
Evenness Index	Nil	0.34	Nil	Nil	Nil	0.42	Nil												
No. of species	Nil	3	Nil	Nil	Nil	2	Nil												
	Hirit Sub-basin and Siyom Sub-basins I-III																		
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7							SY8	SY9	SY10	SY11	SY12	SY13
Density (Indiv./m ²)	Nil	Nil	Nil	Nil	Nil	Nil	Nil							Nil	Nil	Nil	32	45	Nil
Shannon Weiner Diversity	Nil	Nil	Nil	Nil	Nil	Nil	Nil							Nil	Nil	Nil	0.31	0.39	Nil
Evenness Index	Nil	Nil	Nil	Nil	Nil	Nil	Nil							Nil	Nil	Nil	0.45	0.35	Nil
No. of species	Nil	Nil	Nil	Nil	Nil	Nil	Nil							Nil	Nil	Nil	2	3	Nil
	Yargyap Chhu Sub-basin																		
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14					
Density (Indiv./m ²)	Nil	Nil	Nil	48	110	Nil	Nil	99	Nil	Nil	Nil	Nil	Nil	Nil					
Shannon Weiner Diversity	Nil	Nil	Nil	0.33	0.41	Nil	Nil	0.51	Nil	Nil	Nil	Nil	Nil	Nil					
Evenness Index	Nil	Nil	Nil	0.48	0.37	Nil	Nil	0.37	Nil	Nil	Nil	Nil	Nil	Nil					
No. of species	Nil	Nil	Nil	2	3	Nil	Nil	4	Nil	Nil	Nil	Nil	Nil	Nil					
	Jiya Dhol & Kareng Ghat																		
Code	B1		B2																
Density (Indiv./m ²)	52		78																
Shannon Weiner Diversity	0.79		0.99																
Evenness Index	0.49		1.43																
No. of species	5		2																

Zooplanktons

Sub basin- Siang: I-IV

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
	Protozoans													
1	<i>Actinophrys</i> sp.	+	-	-	+	-	+	+	-	-	+	+	-	+
2	<i>Arcella</i> sp.	-	-	+	-	-	-	-	-	+	-	-	+	-
3	<i>Ceratium</i> spp.	-	+	-	-	+	-	-	-	-	-	-	-	-
	Rotifers													
4	<i>Brachious</i>	+	-	-	-	-	-	-	-	-	-	+	-	+
5	<i>Keratella</i> sp.	-	-	-	-	-	+	-	-	-	-	-	-	-
6	<i>Epiphanes</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
7	<i>Asplanchna</i> sp.	-	-	-	-	-	-	-	+	-	-	-	-	-
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cladoceran													
9	<i>Bosmina</i> sp.	-	-	-	-	-	-	-	-	-	-	-	+	-
10	<i>Daphnia</i> sp.	-	-	+	-	-	+	+	-	-	-	-	-	-
	Copepods													
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-	-	-	+	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	2	1	2	2	1	3	2	1	1	1	2	2	2

Sub basin- Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	SM1	SM2	SM3
	Protozoans							
1	<i>Actinophrys</i> sp.	+	-	+	-	-	+	-
2	<i>Arcella</i> sp.	-	+	-	+	-	-	+
3	<i>Ceratium</i> spp.	-	-	-	-	-	-	-
	Rotifers							
4	<i>Brachious</i>	-	-	-	-	-	-	-
5	<i>Keratella</i> sp.	-	-	+	-	-	-	-
6	<i>Epiphanes</i>	-	-	-	-	-	-	-
7	<i>Asplanchna</i> sp.	-	-	-	-	+	-	-
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-
	Cladoceran							
9	<i>Bosmina</i> sp.	-	-	-	-	-	+	-
10	<i>Daphnia</i> sp.	-	-	-	-	-	-	+
	Copepods							
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-
	Total	1	1	2	1	1	2	2

Sub basin- Siyom: I-III and Hirit

S.No.	Name of species	SY1	SY2	SY4	SY3	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
	Protozoans													
1	<i>Actinophrys</i> sp.	+	+	-	-	+	+	+	-	-	+	+	-	-
2	<i>Arcella</i> sp.	-	-	-	+	-	-	-	-	-	-	-	+	-
3	<i>Ceratium</i> spp.	-	-	-	-	-	-	-	+	+	-	-	-	-
	Rotifers													
4	<i>Brachious</i>	-	-	-	-	-	+	+	-	-	-	-	-	-
5	<i>Keratella</i> sp.	+	-	-	-	-	-	-	-	-	+	+	-	-
6	<i>Epiphanes</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
7	<i>Asplanchna</i> sp.	-	-	+	-	-	-	-	-	-	-	-	-	+
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cladoceran													
9	<i>Bosmina</i> sp.	-	-	-	-	-	-	-	-	+	-	-	+	-
10	<i>Daphnia</i> sp.	-	+	-	-	-	-	-	-	-	-	+	-	-
	Copepods													
11	<i>Cyclops</i> sp.	-	-	-	-	+	-	-	-	-	-	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	2	2	1	2	1	2	2	1	2	2	3	2	1

Sub basin- Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
	Protozoans														
1	<i>Actinophrys</i> sp.	-	+	-	-	-	-	-	-	-	-	-	-	-	-
2	<i>Arcella</i> sp.	+	-	-	-	+	+	-	+	+	-	-	+	-	+
3	<i>Ceratium</i> spp.	-	-	-	+	-	-	+	-	-	+	+	+	-	-
	Rotifers														
4	<i>Brachious</i>	-	-	+	-	+	-	-	-	+	-	-	-	+	-
5	<i>Keratella</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	<i>Epiphanes</i>	-	-	-	-	-	-	-	-	-	-	+	-	-	-
7	<i>Asplanchna</i> sp.	-	-	-	-	-	-	+	+	-	-	+	-	-	+
8	<i>Philodena</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	+	-
	Cladoceran														
9	<i>Bosmina</i> sp.	-	-	-	+	+	-	-	-	+	+	-	-	-	-
10	<i>Daphnia</i> sp.	-	+	-	-	-	-	-	-	-	-	-	-	-	-
	Copepods														-
11	<i>Cyclops</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	<i>Diaptomus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	1	1	1	2	3	1	2	2	3	2	3	2	2	2

Outside basin

S.No.	Name of species	B1	B2
	Protozoans		
1	<i>Actinophrys</i> sp.	-	+
2	<i>Arcella</i> sp.	+	-
3	<i>Ceratium</i> spp.	-	-
	Rotifers		
4	<i>Brachious</i>	-	-
5	<i>Keratella</i> sp.	-	-
6	<i>Epiphanes</i>	-	-
7	<i>Asplanchna</i> sp.	-	-
8	<i>Philodena</i> sp.	-	-
	Cladoceran		
9	<i>Bosmina</i> sp.	-	-
10	<i>Daphnia</i> sp.	-	+
	Copepods		
11	<i>Cyclops</i> sp.	-	-
12	<i>Diaptomus</i> sp.	-	-
		1	1

DENSITY & DIVERSITY OF ZOOPLANKTONS

	Siang Sub-basins I-IV													
Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	
Density (indiv/lit.)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
Shannon Weiner Diversity	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
Evenness Index	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
No. of species	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
	Yamne & Simang Sub-basins													
Code	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3							
Density (indiv/lit.)	Nil	Nil	Nil	Nil	Nil	Nil	Nil							
Shannon Weiner Diversity	Nil	Nil	Nil	Nil	Nil	Nil	Nil							
Evenness Index	Nil	Nil	Nil	Nil	Nil	Nil	Nil							
No. of species	Nil	Nil	Nil	Nil	Nil	Nil	Nil							
	Hirit Sub-basin and Siyom Sub-basins I-III													
Code	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13	
Density (indiv/lit.)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
Shannon Weiner Diversity	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
Evenness Index	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
No. of species	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
	Yargyap Chhu Sub-basin													
Code	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
Density (indiv/lit.)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Shannon Weiner Diversity	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Evenness Index	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
No. of species	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Jiya Dhol & Karena Ghat													
Code	B1		B2											
Density (indiv/lit.)	Nil		Nil											
Shannon Weiner Diversity	Nil		Nil											
Evenness Index	Nil		Nil											
No. of species	Nil		Nil											

Annexure-VI

Primary Productivity (January)

Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)	Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
S1	60.6	12.5	S8	32.5	14.0
S2	79.1	26.0	S9	28.1	15.0
S3	59.3	18.0	S10	23.3	16.0
S4	60.5	18.0	S11	19.5	12.5
S5	49.2	25.5	S12	19.5	12.5
S6	38.1	18.0	S13	20.6	11.5
S7	39.2	16.0			

Sites	Yamne river		Sites	Simang River	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
Y1	62.1	25.0	Sm1	63.1	23.0
Y2	48.3	25.0	Sm2	45.6	22.0
Y3	35.3	24.0	Sm3	71.2	11.0
Y4	59.3	12.5			

Sites	Siyom river		Sites	Yargyap Chhu	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
SY1	67.3	24.0	YG1	19.5	2.9
SY2	61.2	12.5	YG2	18.1	2.5
SY3	45.1	12.5	YG3	12.5	2.1
SY4	39.5	12.5	YG4	7.5	1.8
SY5	39.5	12.5	YG5	6.7	1.6
SY6	27.1	14.0	YG6	4.0	1.4
SY7	24.6	12.5	YG7	3.8	1.1
SY8	29.5	8.0	YG8	3.6	1.1
SY9	27.4	6.0	YG9	3.1	0.5
SY10	27.0	11.0	YG10	1.9	0.5
SY11	24.4	10.0	YG11	1.7	0.5
SY12	21.2	9.0	YG12	1.3	0.4
SY13	16.3	3.2	YG13	1.3	0.3
			YG14	0.6	0.3

Primary Productivity (February)

Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)	Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
S1	59.3	24.9	S8	31.9	13.4
S2	77.5	32.6	S9	27.5	11.6
S3	58.1	24.4	S10	22.8	9.6
S4	59.3	24.9	S11	19.1	8.0
S5	48.2	20.3	S12	19.1	8.2
S6	37.3	15.7	S13	20.2	8.5
S7	38.4	15.8			

Sites	Yamne river		Sites	Simang River	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
Y1	60.9	25.6	Sm1	61.8	26.0
Y2	47.3	20.1	Sm2	44.7	18.8
Y3	34.6	14.6	Sm3	69.8	29.3
Y4	58.1	24.4			

Sites	Siyom river		Sites	Yargyap Chhu	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
SY1	66.0	27.7	YG1	19.1	8.0
SY2	60.0	25.2	YG2	17.7	7.4
SY3	44.2	20.0	YG3	12.3	5.1
SY4	38.7	16.3	YG4	7.4	3.1
SY5	38.7	16.3	YG5	6.6	2.9
SY6	26.6	11.2	YG6	3.9	1.7
SY7	24.1	10.1	YG7	3.7	1.6
SY8	28.9	12.2	YG8	3.5	1.5
SY9	26.9	12.8	YG9	3.1	1.4
SY10	26.5	11.1	YG10	1.9	0.8
SY11	23.9	10.0	YG11	1.7	0.7
SY12	20.8	8.7	YG12	1.3	0.5
SY13	16.0	6.8	YG13	1.2	0.6
			YG14	0.6	0.3

Primary Productivity (March)

Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)	Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
S1	56.0	23.5	S8	30.1	12.6
S2	73.2	30.7	S9	26.0	10.9
S3	54.8	23.0	S10	21.5	9.1
S4	56.0	23.5	S11	18.0	7.6
S5	45.5	19.1	S12	18.0	7.7
S6	35.2	14.8	S13	19.1	8.0
S7	36.3	14.9			

Sites	Yamne river		Sites	Simang River	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
Y1	57.4	24.1	Sm1	59.4	24.9
Y2	44.7	18.8	Sm2	42.9	18.0
Y3	32.6	13.8	Sm3	67.0	28.1
Y4	55.8	23.4			

Sites	Siyom river		Sites	Yargyap Chhu	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
SY1	63.3	26.6	YG1	18.0	7.6
SY2	56.6	23.8	YG2	16.7	7.0
SY3	41.7	18.9	YG3	11.6	4.9
SY4	36.5	15.3	YG4	6.9	2.9
SY5	36.5	15.3	YG5	6.2	2.7
SY6	25.1	10.5	YG6	3.7	1.6
SY7	22.7	9.6	YG7	3.5	1.5
SY8	27.3	11.5	YG8	3.3	1.4
SY9	25.4	12.1	YG9	2.9	1.3
SY10	25.0	10.5	YG10	1.8	0.7
SY11	22.6	9.5	YG11	1.6	0.7
SY12	19.6	8.2	YG12	1.2	0.5
SY13	15.1	6.4	YG13	1.2	0.5
			YG14	0.6	0.3

Primary Productivity (April)

Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)	Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
S1	52.8	22.2	S8	28.4	11.9
S2	69.1	29.0	S9	24.5	10.3
S3	51.7	21.7	S10	20.3	8.5
S4	52.8	22.2	S11	17.1	7.2
S5	43.2	18.1	S12	17.0	7.3
S6	33.2	14.0	S13	18.0	7.6
S7	34.2	14.1			

Sites	Yamne river		Sites	Simang River	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
Y1	54.2	22.8	Sm1	56.0	23.5
Y2	42.2	17.7	Sm2	40.5	17.0
Y3	30.8	13.0	Sm3	63.2	26.5
Y4	53.5	22.5			

Sites	Siyom river		Sites	Yargyap Chhu	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
SY1	59.7	25.1	YG1	17.0	7.1
SY2	53.4	22.4	YG2	15.8	6.6
SY3	39.4	17.8	YG3	10.9	4.6
SY4	34.5	14.5	YG4	6.5	2.7
SY5	34.5	14.5	YG5	5.8	2.5
SY6	23.7	9.9	YG6	3.5	1.5
SY7	21.5	9.0	YG7	3.3	1.4
SY8	25.8	10.8	YG8	3.1	1.3
SY9	23.9	11.4	YG9	2.7	1.2
SY10	23.6	9.9	YG10	1.7	0.7
SY11	21.3	8.9	YG11	1.5	0.7
SY12	18.5	7.8	YG12	1.1	0.5
SY13	14.2	6.1	YG13	1.1	0.5
			YG14	0.5	0.2

Primary Productivity (May)

Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)	Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
S1	49.9	20.9	S8	26.8	11.2
S2	65.2	27.4	S9	23.1	9.7
S3	48.8	20.5	S10	19.2	8.1
S4	49.8	20.9	S11	16.3	6.8
S5	41.5	17.4	S12	16.1	6.9
S6	31.4	13.2	S13	17.0	7.1
S7	32.3	13.3			

Sites	Yamne river		Sites	Simang River	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
Y1	51.1	21.5	Sm1	52.9	22.2
Y2	39.8	16.7	Sm2	38.2	16.0
Y3	29.1	12.3	Sm3	58.3	24.5
Y4	51.4	21.6			

Sites	Siyom river		Sites	Yargyap Chhu	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
SY1	56.4	29.9	YG1	16.1	6.7
SY2	50.4	21.2	YG2	14.9	6.3
SY3	37.1	16.8	YG3	10.3	4.3
SY4	32.5	13.7	YG4	6.2	2.6
SY5	32.5	13.7	YG5	5.5	2.4
SY6	22.3	9.4	YG6	3.3	1.4
SY7	20.3	8.5	YG7	3.1	1.3
SY8	24.3	10.2	YG8	3.0	1.2
SY9	22.6	10.8	YG9	2.6	1.2
SY10	22.2	9.3	YG10	1.6	0.8
SY11	19.9	8.4	YG11	1.4	0.6
SY12	17.5	7.3	YG12	1.1	0.5
SY13	13.4	5.7	YG13	1.0	0.5
			YG14	0.5	0.2

Primary Productivity (June)

Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)	Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
S1	47.1	19.8	S8	25.3	10.6
S2	61.5	25.8	S9	21.8	9.2
S3	46.1	19.4	S10	18.1	7.6
S4	47.0	19.7	S11	15.5	6.5
S5	39.3	16.5	S12	15.2	6.5
S6	29.6	12.4	S13	16.0	6.7
S7	30.5	12.6			

Sites	Yamne river		Sites	Simang River	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
Y1	48.3	20.3	Sm1	49.9	21.0
Y2	37.5	15.8	Sm2	36.1	15.1
Y3	27.4	11.6	Sm3	55.0	23.1
Y4	49.4	20.7			

Sites	Siyom river		Sites	Yargyap Chhu	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
SY1	53.2	22.3	YG1	15.2	6.4
SY2	47.6	20.4	YG2	14.1	5.9
SY3	35.0	15.8	YG3	9.7	4.1
SY4	30.7	12.9	YG4	5.8	2.4
SY5	30.7	12.9	YG5	5.2	2.3
SY6	21.1	8.8	YG6	3.1	1.3
SY7	19.1	8.0	YG7	3.0	1.2
SY8	23.0	9.6	YG8	2.8	1.2
SY9	21.3	10.1	YG9	2.4	1.1
SY10	21.0	8.8	YG10	1.5	0.6
SY11	18.8	7.9	YG11	1.3	0.6
SY12	16.5	6.9	YG12	1.0	0.4
SY13	12.7	5.4	YG13	1.0	0.5
			YG14	0.5	0.2

Primary Productivity (July)

Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)	Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
S1	44.4	18.7	S8	23.0	9.7
S2	58.0	24.4	S9	20.6	8.7
S3	43.5	18.3	S10	17.1	8.2
S4	44.4	18.6	S11	14.7	6.2
S5	37.3	15.7	S12	14.3	6.1
S6	27.9	11.7	S13	15.1	6.3
S7	28.7	11.8			

Sites	Yamne river		Sites	Simang River	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
Y1	45.5	19.1	Sm1	47.1	19.8
Y2	35.4	14.9	Sm2	34.0	14.3
Y3	25.9	12.7	Sm3	51.9	21.8
Y4	47.4	19.9			

Sites	Siyom river		Sites	Yargyap Chhu	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
SY1	50.2	21.1	YG1	14.3	6.0
SY2	44.9	18.9	YG2	13.3	5.6
SY3	33.1	15.0	YG3	9.2	3.9
SY4	29.0	12.2	YG4	5.5	2.3
SY5	29.0	12.2	YG5	4.9	2.1
SY6	19.9	8.3	YG6	3.0	1.3
SY7	18.0	7.6	YG7	2.9	1.2
SY8	21.7	9.1	YG8	2.6	1.1
SY9	20.1	9.6	YG9	2.3	1.0
SY10	19.8	8.3	YG10	1.4	0.6
SY11	17.8	7.5	YG11	1.2	0.6
SY12	15.5	6.5	YG12	1.0	0.4
SY13	12.0	5.1	YG13	0.9	0.4
			YG14	0.4	0.2

Primary Productivity (August)

Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)	Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
S1	41.9	17.6	S8	21.7	9.1
S2	54.8	23.0	S9	19.4	8.2
S3	41.0	17.2	S10	16.1	6.8
S4	41.9	17.6	S11	14.0	5.9
S5	35.4	14.9	S12	13.5	5.8
S6	26.4	11.1	S13	14.3	6.0
S7	27.1	13.3			

Sites	Yamne river		Sites	Simang River	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
Y1	43.0	18.1	Sm1	44.4	18.7
Y2	32.6	13.7	Sm2	32.1	13.5
Y3	24.4	10.3	Sm3	49.0	20.6
Y4	45.5	20.6			

Sites	Siyom river		Sites	Yargyap Chhu	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
SY1	47.6	20.0	YG1	13.5	5.7
SY2	42.4	17.8	YG2	12.5	5.3
SY3	29.4	13.3	YG3	8.7	3.6
SY4	27.3	11.5	YG4	5.2	2.2
SY5	27.3	11.5	YG5	4.6	2.0
SY6	18.8	7.9	YG6	2.8	1.5
SY7	17.0	7.2	YG7	2.7	1.2
SY8	20.4	8.6	YG8	2.5	1.0
SY9	18.5	8.8	YG9	2.2	1.0
SY10	18.7	7.8	YG10	1.3	0.6
SY11	16.8	7.0	YG11	1.2	0.5
SY12	14.7	6.2	YG12	0.9	0.4
SY13	11.3	4.8	YG13	0.9	0.4
			YG14	0.4	0.2

Primary Productivity (September)

Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)	Sites	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
S1	39.5	18.0	S8	20.5	9.3
S2	51.7	23.5	S9	18.4	8.3
S3	38.7	17.6	S10	15.2	6.9
S4	39.5	17.9	S11	13.3	6.0
S5	33.6	15.3	S12	12.7	5.8
S6	24.9	11.3	S13	12.8	5.8
S7	25.6	11.6			

Sites	Yamne river		Sites	Simang River	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
Y1	40.6	18.4	Sm1	41.9	19.0
Y2	30.8	14.0	Sm2	30.7	13.9
Y3	23.1	10.5	Sm3	46.2	21.0
Y4	43.7	19.8			
Sites	Siyom river		Sites	Yargyap Chhu	
	Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)		Gross Primary Productivity (mgC/m ³ /day)	Net Primary Productivity (mgC/m ³ /day)
SY1	45.0	20.4	YG1	12.7	5.3
SY2	40.0	18.2	YG2	11.8	5.0
SY3	27.8	12.6	YG3	8.6	3.6
SY4	25.8	11.7	YG4	4.9	2.1
SY5	25.8	11.7	YG5	4.4	1.9
SY6	17.7	8.0	YG6	2.7	1.1
SY7	16.1	6.7	YG7	2.6	1.1
SY8	19.3	7.8	YG8	2.5	1.0
SY9	17.5	8.3	YG9	2.0	0.9
SY10	17.6	7.4	YG10	1.2	0.5
SY11	15.8	6.6	YG11	1.1	0.5
SY12	13.8	5.8	YG12	0.9	0.4
SY13	10.6	4.5	YG13	0.8	0.4
			YG14	0.4	0.2

Fish Data- Siang Basin

January 2012
Sub basin: Siang

S. No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Neolissochilus hexagonolepis</i>	+	+	-	-	-	+	+	+	-	+	+	-	-
2	<i>Bagarius bagarius</i>	-	-	-	-	+	-	+	-	+	-	-	-	-
3	<i>Barilius barila</i>	-	+	-	+	-	+	-	+	-	-	+	-	-
4	<i>Barilius shacra</i>	-	-	-	-	-	-	+	-	-	-	-	-	-
5	<i>Barilius tileo</i>	-	-	-	-	-	-	+	+	-	-	+	-	-
6	<i>Changunius changunio</i>	+	+	+	-	-	-	+	+	-	-	+	+	-
7	<i>Garra annandalei</i>	-	-	+	+	+	+	-	-	+	+	-	-	+
8	<i>Garra naganensis</i> (=Garra tirapensis)	-	+	+	+	-	-	-	-	-	-	-	+	-
9	<i>Glyptothorax annandeli</i>	-	-	-	-	-	-	-	-	-	+	-	-	-
10	<i>Glyptothorax trilineatus</i>	-	-	-	-	-	-	+	+	-	-	-	-	-
11	<i>Labeo gonius</i>	-	-	+	+	+	+	-	-	+	+	-	-	-
12	<i>Labeo pangusia</i>	+	+	-	-	-	-	+	+	-	-	+	+	-
13	<i>Mystus bleekeri</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
14	<i>Mystus cavasius</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
15	<i>Psilorhynchus balitora</i>	-	+	+	-	+	-	-	+	+	-	-	-	+
16	<i>Puntius sarana</i>	-	+	-	+	-	-	+	+	-	-	+	+	-
17	<i>Puntius ticto</i>	+	+	+	-	+	-	+	+	+	-	+	+	+
18	<i>Schizothorax esocinus</i>	-	-	-	+	-	+	-	-	-	+	-	-	-
19	<i>Schizothorax progastus</i>	+	+	+	-	-	-	-	+	-	-	-	-	-
20	<i>Schizothorax richardsonii</i>	-	+	-	-	-	+	-	-	-	-	-	-	-
21	<i>Sperata aor</i> (=Aorichthys aor)	-	-	-	-	-	-	-	-	+	+	-	-	-
	Total no. of species	6	10	7	7	5	6	9	10	6	6	7	5	3

- Absent; + Present

Sub basin: Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Barilius barila</i>	-	-	+	-	-	+	+
2	<i>Garra annadalei</i>	-	-	-	-	+	+	-
3	<i>Garra naganensis</i> (= <i>Garra tirapensis</i>)	+	+	+	+	-	-	-
4	<i>Glossogobius giuris</i>	+	-	-	-	-	-	+
5	<i>Glyptothorax annandeli</i>	-	+	+	+	-	-	-
6	<i>Glyptothorax trilineatus</i>	-	-	+	+	-	-	-
7	<i>Labeo pangusia</i>	+	+	+	+	-	-	-
8	<i>Mystus bleekeri</i>	-	+	+	+	-	-	+
9	<i>Ompok bimaculatus</i>	-	-	+	+	-	-	-
10	<i>Puntius sarana</i>	-	-	+	+	-	-	-
11	<i>Schistura rupecula</i>	+	+	+	+	-	-	-
12	<i>Schizothorax progastus</i>	-	-	-	+	+	+	+
13	<i>Schizothorax richardsonii</i>	-	-	+	+	-	-	-
14	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	-	-	+	-	-	-	-
15	<i>Tor putitora</i>	-	-	-	-	-	-	+
	Total no. of species	4	5	11	10	2	3	5

Sub basin: Hirit and Siyom

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Neolissochilus hexagonolepis</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
2	<i>Barilius sacara</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
3	<i>Barilius tileo</i>	-	-	+	+	+	+	+	+	-	-	-	-	-
4	<i>Chagunius chagunio</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
5	<i>Garra annandalei</i>	-	-	+	+	-	+	-	-	-	-	-	-	-
6	<i>Garra naganensis</i> (= <i>Garra tirapensis</i>)	+	-	+	+	-	+	-	-	-	-	-	-	+
7	<i>Glossogobius giuris</i>	+	-	-	-	-	+	-	-	-	-	-	-	-
8	<i>Glyptothorax trilineatus</i>	-	-	+	-	-	-	-	-	-	-	-	-	+
9	<i>Mystus bleekeri</i>	-	+	+	+	-	+	-	-	-	+	-	-	-
10	<i>Mystus cavasius</i>	-	-	+	-	-	-	-	-	+	-	-	-	-
11	<i>Ompok bimaculatus</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
12	<i>Psilorhynchus balitora</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
13	<i>Schistura multifasciata</i> (= <i>Nemacheilus multifasciatus</i>)	-	-	-	-	+	-	-	-	-	-	-	-	-
14	<i>Schistura rupecula</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
15	<i>Schizothorax esocinus</i>	-	-	+	+	-	-	-	-	-	-	-	-	-
16	<i>Schizothorax progastus</i>	+	+	+	+	+	+	+	+	+	+	+	-	+
17	<i>Schizothorax richardsonii</i>	+	+	+	+	+	+	-	-	-	-	+	-	+
18	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	-	+	-	-	-	+	-	-	-	-	-	-	-
	Total no. of species	6	7	12	7	4	8	2	2	2	2	2	0	4

Sub basin: Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Pseudecheneis sulcata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	<i>Cyprinion semiplotum</i> (= <i>Semiplotus semiplotum</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	<i>Cyprinus carpio</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	<i>Garra annandalei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Garra naganensis</i> (= <i>Garra tirapensis</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	<i>Glossogobius giuris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	<i>Glyptothorax annandeli</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	<i>Mystus bleekeri</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	<i>Parachiloganis hodgarti</i> (= <i>Euchiloglanis hodgarti</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	<i>Parambassis ranga</i> (= <i>Chanda ranga</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Pseuecheneis sulcata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	<i>Puntius ticto</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	<i>Schistura multifasciata</i> (= <i>Nemacheilus multifasciatus</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	<i>Schistura rupecula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	<i>Schizothorax esocinus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	<i>Schizothorax progastus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Schizothorax richardsonii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total no. of species	-	-	-	-	-	-	-	-	-	-	-	-	-	-

February 2012

Sub basin: Siang

S. No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Neolissochilus hexagonolepis</i>	+	+	-	-	+	-	+	+	+	-	+	-	+
2	<i>Barilius arunachalensis</i>	+	+	+	+	+	+	+	-	-	+	-	-	-
3	<i>Bagarius bagarius</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
4	<i>Barilius barila</i>	+	+	-	+	-	+	-	-	-	+	-	-	-
5	<i>Barilius shacra</i>	+	-	+	+	+	+	+	-	-	-	-	-	+
6	<i>Barilius tileo</i>	+	-	+	+	+	+	+	+	-	-	-	-	+
7	<i>Changunius changunio</i>	+	+	-	-	-	-	+	+	-	-	+	+	-
8	<i>Cyprinion semiplotum</i> (=Semiplotus semiplotum)	+	+	-	-	-	-	-	-	-	-	-	-	-
9	<i>Garra annandalei</i>	+	-	+	+	+	+	-	-	+	+	-	-	+
10	<i>Garra naganensis</i> (=Garra tirapensis)	+	+	+	+	+	+	-	+	+	+	-	+	+
11	<i>Glossogobius giuris</i>	+	+	-	-	-	-	+	-	-	-	-	+	-
12	<i>Glyptothorax annandeli</i>	-	-	-	-	-	-	-	-	-	+	-	+	+
13	<i>Glyptothorax trilineatus</i>	-	-	-	-	+	-	+	-	-	-	-	-	-
14	<i>Labeo gonius</i>	-	+	+	+	-	-	-	-	+	+	-	+	-
15	<i>Labeo pangusia</i>	+	+	-	-	+	+	+	+	-	-	+	+	-
16	<i>Mystus bleekeri</i>	+	+	-	-	-	-	+	-	+	+	+	-	-
17	<i>Mystus cavasius</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Ompok bimaculatus</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
19	<i>Pseudolaguvia viriosa</i>	+	+	+	+	-	+	-	+	-	-	-	-	-
20	<i>Psilorhynchus balitora</i>	+	+	-	-	-	-	+	+	-	-	+	-	-
21	<i>Puntius sarana</i>	+	+	-	-	-	-	+	-	-	-	+	+	-
22	<i>Puntius ticto</i>	+	+	+	+	+	-	+	+	+	-	+	+	+
23	<i>Schizothorax richardsonii</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
24	<i>Sperata aor</i> (=Aorichthys aor)	-	+	-	-	-	-	-	-	+	-	-	-	-
25	<i>Xenetodon cancila</i>	+	+	-	-	-	-	+	-	-	-	+	+	-
	Total no. of species	19	17	8	9	9	8	13	8	7	7	8	9	8

Sub basin: Yamne and Simang

S. No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Neolissochilus hexagonolepis</i>	+	+	-	-	-	-	-
2	<i>Barilius barila</i>	+	+	-	-	-	-	-
3	<i>Barilius shacra</i>	+	+	-	-	-	-	-
4	<i>Barilius tileo</i>	-	-	-	-	-	-	+
5	<i>Changunius changunio</i>	+	+	-	-	-	-	-
6	<i>Garra annadalei</i>	+	+	+	-	-	-	-
7	<i>Garra naganensis</i> (= <i>Garra tirapensis</i>)	+	+	+	+	-	-	+
8	<i>Glossogobius giuris</i>	+	-	-	-	-	-	-
9	<i>Glyptothorax annandeli</i>	+	+	+	+	+	+	+
10	<i>Glyptothorax trilineatus</i>	+	+	+	+	-	-	-
11	<i>Labeo pangusia</i>	-	+	+	+	+	+	+
12	<i>Mystus bleekeri</i>	+	+	+	-	-	-	-
13	<i>Ompok bimaculatus</i>	+	-	+	-	+	+	+
14	<i>Puntius sarana</i>	-	-	+	+	-	-	-
15	<i>Schistura multifasciata</i> (= <i>Nemacheilus multifasciatus</i>)	-	-	-	-	-	+	-
16	<i>Schistura rupecula</i>	+	+	+	+	+	+	+
17	<i>Schizothorax esocinus</i>	-	-	-	-	-	-	+
18	<i>Schizothorax richardsonii</i>	+	-	+	-	-	-	+
19	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	-	-	+	+	-	-	-
20	<i>Xenotodon cancila</i>	+	+	+	-	-	-	-
	Total no. of species	14	12	12	7	4	5	8

Sub basin: Hirit and Siyom

S. No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Barilius sacara</i>	+	-	-	-	-	-	-	+	+	-	+	+	+
2	<i>Barilius tileo</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
3	<i>Garra annandalei</i>	+	-	+	+	+	-	+	+	+	+	+	+	+
4	<i>Garra naganensis</i> (= <i>Garra tirapensis</i>)	+	-	+	+	+	+	+	+	+	+	+	+	+
5	<i>Glossogobius giuris</i>	-	-	+	+	+	-	+	+	-	-	+	+	+
6	<i>Glyptothorax trilineatus</i>	+	-	-	-	+	+	+	-	-	+	+	+	+
7	<i>Mystus bleekeri</i>	+	-	-	+	+	-	+	+	-	+	+	+	+
8	<i>Mystus cavasius</i>	+	-	-	-	+	+	+	+	-	+	+	+	+
9	<i>Ompok bimaculatus</i>	+	+	+	+	-	+	-	+	-	-	+	+	+
10	<i>Parachiloganis hodgarti</i> (= <i>Euchiloglanis hodgarti</i>)	+	-	-	-	+	+	+	+	+	+	+	+	+
11	<i>Psilorhynchus balitora</i>	-	-	-	-	+	+	+	-	-	+	+	+	+
12	<i>Schistura multifasciata</i> (= <i>Nemacheilus multifasciatus</i>)	+	+	+	+	+	+	+	+	+	+	+	+	+
13	<i>Schistura rupecula</i>	+	+	-	-	+	+	+	+	-	-	+	+	+
14	<i>Schizothorax esocinus</i>	+	-	+	+	-	+	+	+	+	+	-	-	-
15	<i>Schizothorax progastus</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
16	<i>Schizothorax richardsonii</i>	+	+	+	+	+	+	+	+	+	-	+	+	+
17	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	+	+	-	-	-	+	+	+	+	-	+	-	-
18	<i>Tor putitora</i>	-	-	-	-	-	-	-	-	+	+	-	-	-
	Total no. of species	15	7	9	10	13	13	15	15	11	12	16	15	15

Sub basin: Yargyap Chhu

S. No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Barilius tileo</i>	+	+	+	+	+	+	-	-	-	-	-	-	-	-
2	<i>Cyprinus caprio</i>	+	+	+	+	+	+	-	-	-	-	-	-	-	-
3	<i>Garra annandalei</i>	+	+	+	+	+	+	-	-	-	-	-	-	-	-
4	<i>Garra naganensis</i> (= <i>Garra tirapensis</i>)	+	+	+	+	+	+	-	-	-	-	-	-	-	-
5	<i>Glyptothorax annandeli</i>	-	+	+	+	+	+	-	-	-	-	-	-	-	-
6	<i>Glyptothorax trilineatus</i>	+	+	+	+	+	+	-	-	-	-	-	-	-	-
7	<i>Mystus bleekeri</i>	+	+	+	+	+	+	-	-	-	-	-	-	-	-
8	<i>Ompok bimaculatus</i>	-	+	-	+	-	-	-	-	-	-	-	-	-	-
9	<i>Parachiloganis hodgarti</i> (= <i>Euchiloglanis hodgarti</i>)	-	+	+	+	+	+	-	-	-	-	-	-	-	-
10	<i>Pseudecheneis sulcata</i>	+	-	+	-	+	+	-	-	-	-	-	-	-	-
11	<i>Schistura multifasciata</i> (= <i>Nemacheilus multifasciatus</i>)	+	-	+	-	+	+	-	-	-	-	-	-	-	-
12	<i>Schistura rupecula</i>	+	+	-	+	+	+	-	-	-	-	-	-	-	-
13	<i>Schizothorax esocinus</i>	+	+	+	+	-	-	-	-	-	-	-	-	-	-
14	<i>Schizothorax progastus</i>	+	+	+	+	+	+	-	-	-	-	-	-	-	-
15	<i>Schizothorax richardsonii</i>	+	+	-	+	+	+	-	-	-	-	-	-	-	-
16	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	-	+	-	+	-	-	-	-	-	-	-	-	-	-
17	<i>Tor putitora</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-
	Total no. of species	12	14	13	14	13	13	0	0	0	0	0	0	0	0

March 2012

Sub basin: Siang

S. No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Neolissochilus hexagonolepis</i>	+	+	+	+	-	-	+	+	-	-	+	-	-
2	<i>Barilius arunachalensis</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
3	<i>Bagarius bagarius</i>	-	+	+	-	-	-	-	-	-	-	-	-	-
4	<i>Barilius barila</i>	+	+	+	-	-	-	+	-	+	+	-	-	-
5	<i>Barilius shacra</i>	+	-	+	+	+	+	-	-	-	-	-	-	+
6	<i>Barilius tileo</i>	+	+	+	+	+	+	-	-	+	-	-	-	+
7	<i>Changunius changunio</i>	+	+	-	-	-	-	+	+	-	-	+	+	-
8	<i>Cyprinion semiplotum</i> (=Semiplotus semiplotum)	+	+	-	-	+	+	-	-	-	-	-	-	-
9	<i>Garra annandalei</i>	-	+	-	-	-	-	-	-	-	-	-	-	+
10	<i>Garra naganensis</i> (=Garra tirapensis)	-	-	+	+	+	+	-	-	+	+	-	-	-
11	<i>Glyptothorax annandeli</i>	+	+	-	-	+	-	-	+	-	-	-	+	+
12	<i>Glyptothorax trilineatus</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
13	<i>Labeo gonius</i>	+	+	+	-	-	-	-	-	-	-	-	+	-
14	<i>Labeo pangusia</i>	+	+	+	-	-	-	+	+	-	-	+	+	-
15	<i>Mystus cavaus</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
16	<i>Ompok bimaculatus</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
17	<i>Pseudolaguvia viriosa</i>	+	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Pseuecheneis sulcata</i>	-	-	-	-	-	-	-	-	+	+	-	-	-
19	<i>Psilorhynchus balitora</i>	+	+	-	-	-	-	+	+	-	-	+	-	-
20	<i>Puntius sarana</i>	+	+	-	-	-	-	+	-	-	-	+	+	-
21	<i>Puntius ticto</i>	+	+	+	+	-	-	+	+	-	-	+	+	-
22	<i>Schizothorax richardsonii</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
23	<i>Sperata aor</i> (=Aorichthys aor)	+	-	-	+	-	-	-	-	-	-	-	-	-
24	<i>Xenetodon cancila</i>	+	+	-	+	+	-	+	-	-	-	+	+	-
	Total no. of species	18	15	10	7	6	4	8	6	4	3	7	7	5

Sub basin: Yamne and Simang

S. No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Neolissochilus hexagonolepis</i>	+	+	-	-	-	-	-
2	<i>Bagarius bagarius</i>	-	+	-	-	-	-	-
3	<i>Barilius barila</i>	+	+	-	-	+	-	-
4	<i>Barilius shacra</i>	+	+	-	-	+	+	-
5	<i>Barilius tileo</i>	-	-	-	-	+	+	+
6	<i>Changunius changunio</i>	+	+	+	-	-	-	-
7	<i>Garra annadalei</i>	+	+	+	-	+	-	-
8	<i>Garra naganensis</i> (= <i>Garra tirapensis</i>)	+	+	+	+	-	-	-
9	<i>Glossogobius giuris</i>	-	-	-	-	-	+	-
10	<i>Glyptothorax annandeli</i>	+	+	+	+	+	+	+
11	<i>Glyptothorax trilineatus</i>	+	+	+	+	-	-	-
12	<i>Labeo gonius</i>	-	+	-	-	-	+	-
13	<i>Labeo pangusia</i>	+	-	+	+	+	+	+
14	<i>Mystus bleekeri</i>	+	+	+	-	-	+	-
15	<i>Ompok bimaculatus</i>	-	-	-	+	+	+	+
16	<i>Schistura multifasciata</i> (= <i>Nemacheilus multifasciatus</i>)	-	-	-	-	+	-	+
17	<i>Schistura rupecula</i>	+	+	+	+	+	+	+
18	<i>Schizothorax esocinus</i>	-	-	-	-	-	-	+
19	<i>Schizothorax progastus</i>	-	-	-	-	-	-	+
20	<i>Schizothorax richardsonii</i>	-	-	-	-	+	+	+
21	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	-	-	-	+	-	-	-
	Total no. of species	11	12	8	7	10	10	9

Sub basin: Hirit and Siyom

S. No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Barilius sacara</i>	-	-	-	+	-	-	-	-	-	-	-	-	-
2	<i>Barilius tileo</i>	+	+	+	+	+	+	+	+	+	+	-	-	-
3	<i>Garra annandalei</i>	-	+	+	+	-	-	-	-	-	-	-	-	-
4	<i>Garra naganensis</i> (= <i>Garra tirapensis</i>)	+	-	+	+	+	+	+	+	+	+	+	+	+
5	<i>Glossogobius giuris</i>	+	+	+	+	+	-	-	-	-	-	-	-	-
6	<i>Glyptothorax annandeli</i>	-	+	-	+	+	+	+	+	+	+	+	-	-
7	<i>Glyptothorax trilineatus</i>	-	+	-	-	-	-	-	-	-	-	+	+	+
8	<i>Mystus bleekeri</i>	+	+	-	-	-	-	-	-	-	+	-	-	-
9	<i>Mystus cavasius</i>	-	+	-	+	-	-	-	-	-	-	-	-	-
10	<i>Ompok bimaculatus</i>	+	+	+	+	+	-	-	-	-	+	-	-	-
11	<i>Parachiloganis hodgarti</i> (= <i>Euchiloglanis hodgarti</i>)	+	+	+	+	-	+	+	+	+	+	-	-	-
12	<i>Psilorhynchus balitora</i>	-	+	+	+	-	-	-	-	-	-	-	-	-
13	<i>Schistura multifasciata</i> (= <i>Nemacheilus multifasciatus</i>)	+	+	+	+	+	+	+	+	+	+	-	-	-
14	<i>Schistura rupecula</i>	+	+	+	+	-	+	-	-	-	-	+	+	+
15	<i>Schizothorax esocinus</i>	+	-	+	+	-	-	-	-	-	-	-	-	-
16	<i>Schizothorax progastus</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
17	<i>Schizothorax richardsonii</i>	+	+	+	+	+	+	+	+	+	-	+	+	+
18	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	+	+	-	+	-	-	-	-	-	-	-	-	-
19	<i>Tor putitora</i>	+	+	-	+	-	-	-	-	-	-	-	-	-
	Total no. of species	13	16	12	17	8	8	7	7	7	8	6	5	5

Sub basin: Yargyap Chhu

S. No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Neolissochilus hexagonolepis</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-
2	<i>Barilius tileo</i>	+	+	+	+	+	+	-	+	+	+	+	+	+	+
3	<i>Cyprinus caprio</i>	+	-	+	+	+	+	+	+	+	+	+	+	+	+
4	<i>Garra annandalei</i>	+	-	-	+	+	+	+	-	+	+	+	+	-	+
5	<i>Garra naganensis</i> (= <i>Garra tirapensis</i>)	+	+	+	+	+	-	-	-	+	+	+	+	+	+
6	<i>Glyptothorax annandeli</i>	-	+	+	+	+	+	+	-	-	+	-	-	+	-
7	<i>Glyptothorax trilineatus</i>	+	+	+	+	-	+	+	-	-	+	-	-	+	-
8	<i>Mystus bleekeri</i>	+	+	-	-	+	-	-	-	-	+	+	+	-	-
9	<i>Mystus cavasius</i>	-	-	-	+	-	+	+	-	-	+	-	-	-	+
10	<i>Ompok bimaculatus</i>	-	+	-	+	-	-	-	+	-	-	+	+	-	-
11	<i>Parachiloganis hodgarti</i> (= <i>Euchiloglanis hodgarti</i>)	-	-	-	-	-	-	-	-	-	-	+	+	-	-
12	<i>Pseudecheneis sulcata</i>	+	-	+	-	+	-	-	-	-	+	-	-	+	-
13	<i>Schistura multifasciata</i> (= <i>Nemacheilus multifasciatus</i>)	-	-	+	-	+	+	+	-	-	-	-	-	+	-
14	<i>Schistura rupecula</i>	+	+	-	+	+	+	+	+	-	-	-	-	-	-
15	<i>Schizothorax esocinus</i>	+	-	-	+	-	-	+	-	+	-	+	+	-	+
16	<i>Schizothorax progastus</i>	+	+	+	+	+	-	+	-	+	+	+	+	+	+
17	<i>Schizothorax richardsonii</i>	+	+	-	-	+	+	+	+	+	+	+	+	-	+
18	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	-	+	-	+	-	-	+	+	-	-	-	-	-	-
19	<i>Tor putitora</i>	-	-	+	-	-	-	-	-	-	-	-	-	+	-
	Total no. of species	11	10	9	12	11	9	12	6	7	11	10	10	9	8

April 2012

Sub basin: Siang

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Neolissochilus hexagonolepis</i>	+	+	-	+	-	-	-	-	+	-	+	+	-
2	<i>Bagarius bagarius</i>	+	-	-	+	+	+	+	-	-	+	-	-	+
3	<i>Barilius barila</i>	-	-	-	-	-	-	-	+	-	-	+	+	-
4	<i>Barilius shacra</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
5	<i>Barilius tileo</i>	+	+	+	+	-	-	-	+	+	-	+	+	+
6	<i>Changunius changunio</i>	+	+	-	-	+	+	+	-	-	+	-	-	-
7	<i>Cyprinion semiplotum</i> (=Semiplotus semiplotum)	-	-	+	-	-	-	-	-	-	-	-	-	-
8	<i>Cyprinus carpio</i>	+	+	+	-	-	+	+	+	+	-	+	-	+
9	<i>Danio rerio</i> (=Brachydanio rerio)	-	-	-	+	-	-	-	-	-	-	-	-	-
10	<i>Garra naganensis</i> (=Garra tirapensis)	+	+	-	+	-	-	-	+	-	-	-	-	-
11	<i>Glossogobius giuris</i>	-	-	-	-	-	-	-	-	-	-	+	+	+
12	<i>Glyptothorax trilineatus</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
13	<i>Labeo gonius</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
14	<i>Lepidocephalichthys guntea</i> (=Lepidocephalus guntea)	-	-	-	-	+	-	-	-	-	-	-	-	-
15	<i>Mystus bleekeri</i>	-	-	+	-	-	+	-	-	+	-	-	-	-
16	<i>Mystus cavasius</i>	+	-	-	+	+	-	-	-	-	-	-	-	-
17	<i>Psilorhynchus balitora</i>	-	-	-	-	-	-	-	-	+	-	-	-	-
18	<i>Puntius sarana</i>	+	+	+	-	+	-	-	-	+	-	+	-	-
19	<i>Puntius ticto</i>	+	+	-	-	-	+	-	+	-	-	-	-	+
20	<i>Schistura multifasciata</i> (=Nemacheilus multifasciatus)	-	-	-	-	+	+	-	-	-	-	-	-	-
21	<i>Schizothorax esocinus</i>	-	-	-	-	-	-	-	-	+	-	-	-	-

22	<i>Schizothorax progastus</i>	+	+	+	-	-	-	-	-	-	-	-	-	-
23	<i>Schizothorax richardsonii</i>	+	+	-	+	-	+	+	+	+	+	+	+	+
24	<i>Sperata aor</i> (=Aorichthys aor)	-	-	-	-	-	-	-	-	+	-	-	-	-
25	<i>Sperata seenghala</i> (=Aorichthys seenghala)	+	+	+	-	+	-	-	-	-	-	-	-	-
26	<i>Syncrossus berdmorei</i> (= Botia berdmorei)	-	-	-	-	-	-	-	-	-	-	-	-	-
27	<i>Tor putitora</i>	+	+	-	-	+	-	-	-	-	-	-	-	-
28	<i>Xenetodon cancila</i>	-	-	-	-	+	-	-	-	+	-	+	-	-
	Total no. of species	14	12	7	7	9	7	4	6	11	3	8	6	6

Sub basin: Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Neolissochilus hexagonolepis</i>	+	-	-	-	-	-	-
2	<i>Bagarius bagarius</i>	+	+	+	+	+	-	+
3	<i>Barilius barila</i>	+	+	-	-	-	+	-
4	<i>Barilius shacra</i>	+	-	-	-	-	-	-
5	<i>Barilius tileo</i>	-	-	-	+	-	+	+
6	<i>Changunius changunio</i>	+	-	-	-	-	-	+
7	<i>Cyprinion semiplotum</i> (=Semiplotus semiplotum)	+	+	-	-	-	-	-
8	<i>Garra annadalei</i>	-	-	-	-	-	+	-
9	<i>Garra naganensis</i> (=Garra tirapensis)	+	-	-	-	-	-	-
10	<i>Glossogobius giuris</i>	-	+	+	-	+	-	-
11	<i>Glyptothorax trilineatus</i>	+	-	-	-	-	-	-
12	<i>Labeo gonius</i>	-	-	-	+	-	+	-
13	<i>Labeo pangusia</i>	+	+	+	-	+	-	+
14	<i>Puntius ticto</i>	-	-	-	-	-	+	+
15	<i>Schistura rupecula</i>	+	-	+	-	+	-	-
16	<i>Schizothorax esocinus</i>	-	-	-	-	-	+	-
17	<i>Schizothorax progastus</i>	-	-	-	+	-	-	+
18	<i>Schizothorax richardsonii</i>	-	-	-	-	-	+	+
19	<i>Tor putitora</i>	+	+	+	+	+	+	-
20	<i>Xenetodon cancila</i>	-	-	-	-	-	-	+
	Total no. of species	11	6	5	5	5	8	8

Sub basin: Hirit and Siyom

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Neolissochilus hexagonolepis</i>	+	+	+	+	+	+	+	+	+	+	-	-	-
2	<i>Bagarius bagarius</i>	-	-	-	-	-	+	+	+	+	-	-	-	-
3	<i>Barilius sacara</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
4	<i>Barilius tileo</i>	-	+	+	+	-	-	-	-	-	-	-	-	-
5	<i>Garra annandalei</i>	-	+	-	+	-	+	+	+	+	-	-	-	-
6	<i>Garra naganensis (=Garra tirapensis)</i>	-	+	+	+	+	-	-	-	-	+	+	+	+
7	<i>Glyptothorax annandeli</i>	+	+	-	-	+	-	-	-	-	+	-	-	-
8	<i>Glyptothorax trilineatus</i>	-	+	+	-	-	-	-	-	-	-	-	-	-
9	<i>Ompok bimaculatus</i>	+	+	+	+	+	-	-	-	-	+	-	-	-
10	<i>Parachiloganis hodgarti (=Euchiloglanis hodgarti)</i>	-	+	+	+	+	-	-	-	-	+	-	-	-
11	<i>Pseudecheneis sulcatus</i>	-	-	-	-	-	+	+	+	+	-	-	-	-
12	<i>Glossogobius giuris</i>	-	+	+	+	-	-	-	-	-	-	-	-	-
13	<i>Schistura multifasciata (=Nemacheilus multifasciatus)</i>	+	+	+	+	+	-	-	-	-	+	+	+	-
14	<i>Schistura rupecula</i>	-	-	-	-	-	-	-	-	-	-	+	+	+
15	<i>Schizothorax esocinus</i>	+	+	+	-	-	-	-	-	-	-	-	-	-
16	<i>Schizothorax progastus</i>	+	+	+	+	+	+	+	+	+	+	+	-	-
17	<i>Schizothorax richardsonii</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
18	<i>Syncrossus berdmorei (= Botia berdmorei)</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
19	<i>Tor putitora</i>	+	+	-	+	+	-	-	-	-	+	-	-	-
	Total no. of species	9	15	11	11	9	6	6	6	6	9	5	4	3

Sub basin: Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Pseudecheneis sulcata</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Glyptothorax annandeli</i>	+	+	+	+	-	-	+	-	-	+	+	+	+	+
3	<i>Glyptothorax trilineatus</i>	+	+	+	+	-	-	+	-	-	+	+	-	+	+
4	<i>Mystus bleekeri</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Parachiloganis hodgarti</i> (= <i>Euchiloganis hodgarti</i>)	+	+	+	+	-	-	+	-	+	+	+	-	+	+
6	<i>Schistura rupecula</i>	-	+	+	-	-	-	+	-	-	+	-	-	-	-
7	<i>Schizothorax progastus</i>	+	+	+	+	+	+	+	+	-	+	+	+	+	+
8	<i>Schizothorax richardsonii</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
9	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	+	+	+	-	+	+	+	+	-	+	-	+	-	+
	Total no. of species	7	8	8	6	4	4	8	4	3	8	6	5	6	7

May 2012

Sub basin: Siang

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Neolissochilus hexagonolepis</i>	+	+	-	-	-	-	-	-	-	-	+	+	+
2	<i>Bagarius bagarius</i>	+	-	+	+	+	+	+	+	-	+	-	-	-
3	<i>Barilius barila</i>	-	-	-	-	-	-	-	-	+	-	+	+	-
4	<i>Barilius tileo</i>	+	+	+	+	-	-	-	-	+	-	+	+	+
5	<i>Changunius changunio</i>	+	+	-	-	+	+	+	-	-	+	-	-	-
6	<i>Danio rerio</i> (=Brachydanio rerio)	-	-	+	-	-	-	-	-	-	-	-	-	-
7	<i>Garra annandalei</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
8	<i>Garra naganensis</i> (=Garra tirapensis)	+	+	-	-	-	-	-	-	+	-	-	-	-
9	<i>Glossogobius giuris</i>	-	-	-	+	-	-	-	-	-	-	+	+	+
10	<i>Glyptothorax trilineatus</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
11	<i>Labeo pangusia</i>	+	+	-	+	-	+	+	-	+	+	-	-	-
12	<i>Lepidocephalichthys guntea</i> (=Lepidocephalus guntea)	-	-	+	-	+	-	-	-	-	-	-	-	-
13	<i>Mystus bleekeri</i>	-	-	-	-	-	+	+	-	-	-	-	-	-
14	<i>Mystus cavaus</i>	+	-	+	-	+	-	-	-	-	-	-	-	-
15	<i>Ompok bimaculatus</i>	-	-	-	-	-	-	-	-	-	-	-	-	+
16	<i>Puntius sarana</i>	+	-	-	-	+	-	-	-	-	-	+	+	+
17	<i>Puntius ticto</i>	+	+	+	+	-	+	+	+	+	-	-	-	-
18	<i>Schistura multifasciata</i> (=Nemacheilus multifasciatus)	-	-	-	-	+	+	+	-	-	-	-	-	-
19	<i>Schizothorax progastus</i>	+	+	+	-	-	-	-	-	-	-	-	-	-
20	<i>Schizothorax richardsonii</i>	+	+	+	+	-	+	+	+	+	+	+	+	+
21	<i>Sperata aor</i> (=Aorichthys aor)	-	-	-	-	+	-	-	-	-	-	-	-	-
22	<i>Tor putitora</i>	+	+	+	-	+	-	-	-	-	-	-	-	-
	Total no. of species	13	10	9	6	8	7	7	4	6	4	6	6	6

Sub basin: Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Neolissochilus hexagonolepis</i>	+	-	-	-	-	-	-
2	<i>Bagarius bagarius</i>	+	+	+	+	+	-	+
3	<i>Barilius barila</i>	+	+	-	-	-	+	-
4	<i>Barilius shacra</i>	+	-	-	-	-	-	-
5	<i>Barilius tileo</i>	-	-	-	+	-	+	+
6	<i>Changunius changunio</i>	+	-	-	-	-	-	+
7	<i>Cyprinion semiplotum</i> (=Semiplotus semiplotum)	+	+	-	-	-	-	-
8	<i>Garra annadalei</i>	-	-	-	-	-	+	-
9	<i>Garra naganensis</i> (=Garra tirapensis)	+	+	-	-	-	-	-
10	<i>Glossogobius giuris</i>	-	+	+	-	+	-	-
11	<i>Glyptothorax trilineatus</i>	+	-	-	-	-	-	-
12	<i>Labeo gonius</i>	-	-	-	+	-	+	-
13	<i>Labeo pangusia</i>	+	+	+	-	+	-	-
14	<i>Puntius ticto</i>	-	-	-	-	-	-	+
15	<i>Schistura rupecula</i>	+	+	+	-	+	-	-
16	<i>Schizothorax progastus</i>	-	-	-	+	-	-	-
17	<i>Schizothorax richardsonii</i>	-	-	-	-	-	+	+
18	<i>Tor putitora</i>	+	+	+	+	+	+	-
19	<i>Xenotodon cancila</i>	-	-	-	-	-	-	+
	Total no. of species	11	8	5	5	5	6	6

Sub basin: Hirit and Siyom

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Neolissochilus hexagonolepis</i>	+	+	+	+	+	+	+	+	+	+	-	-	-
2	<i>Bagarius bagarius</i>	-	-	-	-	-	+	+	+	+	-	-	-	-
3	<i>Barilius sacara</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
4	<i>Barilius tileo</i>	-	+	+	+	-	-	-	-	-	-	-	-	-
5	<i>Cyprinion semiplotum</i> (=Semiplotus semiplotum)	+	-	-	-	+	-	-	-	-	-	-	-	-
6	<i>Garra annandalei</i>	-	+	-	+	-	+	+	-	-	-	+	-	-
7	<i>Garra naganensis</i> (=Garra tirapensis)	-	+	-	+	+	-	-	-	-	+	-	+	+
8	<i>Glyptothorax trilineatus</i>	-	-	-	-	-	-	-	+	+	-	-	-	-
9	<i>Ompok bimaculatus</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
10	<i>Parachiloganis hodgarti</i> (=Euchiloglanis hodgarti)	-	+	+	+	+	-	-	-	-	+	+	-	-
11	<i>Pseudecheneis sulcatus</i>	-	-	-	-	-	+	+	-	-	-	-	-	-
12	<i>Glossogobius giuris</i>	-	+	+	+	-	-	-	-	-	-	-	-	-
13	<i>Schistura multifasciata</i> (=Nemacheilus multifasciatus)	+	+	+	-	-	-	-	-	-	-	+	-	+
14	<i>Schistura rupecula</i>	-	-	-	-	-	-	-	-	-	-	-	+	+
15	<i>Schizothorax esocinus</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
16	<i>Schizothorax progastus</i>	+	+	+	+	+	+	+	+	-	+	+	+	-
17	<i>Schizothorax richardsonii</i>	+	+	+	+	+	+	+	-	-	+	-	+	+
18	<i>Syncrossus berdmorei</i> (= Botia berdmorei)	-	-	-	-	-	-	-	+	+	-	-	-	-
19	<i>Tor putitora</i>	+	+	-	+	+	-	-	-	-	+	-	-	-
20	<i>Tor tor</i>	+	-	+	-	-	-	-	-	-	+	-	-	-
	Total no. of species	7	11	8	9	7	6	6	6	4	7	5	4	4

Sub basin: Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Pseudecheneis sulcata</i>	+	+	+	+	+	-	+	+	+	-	+	+	+	-
2	<i>Glyptothorax annandeli</i>	+	+	+	+	-	-	+	-	-	-	+	+	-	+
3	<i>Glyptothorax trilineatus</i>	-	-	+	+	-	-	+	-	-	+	-	-	-	-
4	<i>Mystus bleekeri</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Parachiloganis hodgarti</i> (= <i>Euchiloglanis hodgarti</i>)	-	-	-	+	-	-	+	-	+	-	-	-	+	-
6	<i>Schistura rupecula</i>	-	+	+	-	-	-	+	-	-	+	-	-	-	-
7	<i>Schizothorax progastus</i>	+	-	-	+	-	+	-	+	-	-	+	+	+	+
8	<i>Schizothorax richardsonii</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
9	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	+	-	+	-	+	+	-	+	-	+	-	+	-	-
	Total no. of species	5	4	6	6	3	3	6	4	3	4	4	5	4	3

June 2012
Sub basin: Siang

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Neolissochilus hexagonolepis</i>	+	+	-	+	-	-	-	+	-	-	+	+	+
2	<i>Bagarius bagarius</i>	+	-	+	+	+	+	+	-	-	+	-	-	-
3	<i>Barilius barila</i>	-	-	-	-	-	-	-	-	-	-	+	+	-
4	<i>Barilius tileo</i>	+	+	+	+	-	-	-	+	+	-	+	+	+
5	<i>Changunius changunio</i>	-	-	-	-	+	+	-	-	-	+	-	-	-
6	<i>Cyprinion semiplotum</i> (=Semiplotus semiplotum)	-	-	+	-	-	-	-	-	-	-	-	-	-
7	<i>Garra naganensis</i> (=Garra tirapensis)	+	+	-	-	-	-	-	-	-	-	-	-	-
8	<i>Glossogobius giuris</i>	-	-	-	-	-	-	-	-	-	-	-	+	+
9	<i>Labeo gonius</i>	-	-	-	-	-	-	-	-	-	-	-	+	-
10	<i>Labeo pangusia</i>	+	+	+	-	-	+	+	+	-	+	-	-	+
11	<i>Lepidocephalichthys guntea</i> (=Lepidocephalus guntea)	-	-	-	-	+	-	-	-	-	-	-	-	-
12	<i>Mystus bleekeri</i>	-	-	+	-	-	-	-	+	-	-	-	-	+
13	<i>Mystus cavasius</i>	-	-	-	+	+	-	-	-	-	-	-	-	-
14	<i>Psilorhynchus balitora</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
15	<i>Puntius sarana</i>	+	+	+	-	+	-	-	+	-	-	+	+	-
16	<i>Puntius ticto</i>	+	+	-	-	-	+	-	-	+	-	-	-	-
17	<i>Schistura multifasciata</i> (=Nemacheilus multifasciatus)	-	-	-	-	+	-	-	-	-	-	-	-	-
18	<i>Schizothorax esocinus</i>	-	-	-	-	-	-	-	+	-	-	-	-	-
19	<i>Schizothorax progastus</i>	+	+	+	-	-	-	-	-	-	-	-	-	-
20	<i>Schizothorax richardsonii</i>	+	+	-	+	-	+	+	+	+	+	-	+	-
21	<i>Sperata aor</i> (=Aorichthys aor)	-	-	-	-	+	-	-	-	-	-	-	-	-
22	<i>Sperata seenghala</i> (=Aorichthys seenghala)	-	-	+	-	-	-	-	+	-	-	-	-	-
23	<i>Tor putitora</i>	+	+	-	-	+	-	-	-	-	-	-	-	-
24	<i>Tor tor</i>	-	-	-	-	-	-	-	+	-	-	-	+	-
25	<i>Xenetodon cancila</i>	-	-	-	-	-	-	-	-	-	-	+	-	-
	Total no. of species	10	9	8	5	8	5	3	10	3	4	5	8	5

Sub basin: Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Neolissochilus hexagonolepis</i>	+	-	-	-	-	-	-
2	<i>Bagarius bagarius</i>	+	+	+	+	+	-	+
3	<i>Barilius barila</i>	+	-	-	-	-	+	-
4	<i>Barilius tileo</i>	-	-	-	+	-	+	+
5	<i>Changunius changunio</i>	+	-	-	-	-	-	+
6	<i>Cyprinion semiplotum</i> (=Semiplotus semiplotum)	+	-	-	-	-	-	-
7	<i>Garra annadalei</i>	-	-	-	-	-	+	-
8	<i>Garra naganensis</i> (=Garra tirapensis)	+	-	-	-	-	-	-
9	<i>Glossogobius giuris</i>	-	+	-	-	+	-	-
10	<i>Labeo gonius</i>	-	-	-	+	-	+	-
11	<i>Labeo pangusia</i>	+	+	+	-	-	-	-
12	<i>Puntius ticto</i>	-	-	-	-	-	-	+
13	<i>Schistura rupecula</i>	-	+	-	-	+	-	-
14	<i>Schizothorax richardsonii</i>	-	-	-	-	-	+	+
15	<i>Syncrossus berdmorei</i> (= Botia berdmorei)	-	-	-	-	-	-	-
16	<i>Tor putitora</i>	+	+	+	+	-	+	-
17	<i>Xenetodon cancila</i>	-	-	-	-	-	-	+
	Total no. of species	8	5	3	4	3	6	6

Sub basin: Hirit and Siyom

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Neolissochilus hexagonolepis</i>	+	+	+	+	-	+	-	-	-	+	-	-	-
2	<i>Barilius tileo</i>	-	+	+	+	-	-	-	-	-	-	-	-	-
3	<i>Cyprinion semiplotum</i> (=Semiplotus semiplotum)	-	-	-	-	+	-	-	-	-	-	-	-	-
4	<i>Garra annandalei</i>	-	+	-	-	-	+	+	-	-	-	-	-	-
5	<i>Garra naganensis</i> (=Garra tirapensis)	-	+	-	+	-	-	-	-	-	-	-	-	-
6	<i>Mystus cavasius</i>	-	-	-	-	-	-	-	+	+	-	-	-	-
7	<i>Ompok bimaculatus</i>	-	+	+	+	-	-	-	-	-	-	-	-	-
8	<i>Parachiloganis hodgarti</i> (=Euchiloglanis hodgarti)	-	+	+	-	+	-	-	-	-	+	-	-	-
9	<i>Pseudecheneis sulcatus</i>	-	-	-	-	-	+	+	-	-	-	-	-	-
10	<i>Glossogobius giuris</i>	-	+	-	-	-	-	-	-	-	-	-	-	-
11	<i>Schistura multifasciata</i> (=Nemacheilus multifasciatus)	-	+	-	-	-	-	-	-	-	-	-	-	-
12	<i>Schistura multifasciata</i> (=Nemacheilus multifasciatus)	+	+	-	+	+	-	-	-	-	-	-	-	-
13	<i>Schizothorax esocinus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
14	<i>Schizothorax progastus</i>	+	+	+	-	-	-	-	+	+	+	-	-	-
15	<i>Schizothorax richardsonii</i>	+	+	+	+	+	+	-	-	-	-	-	-	-
16	<i>Tor putitora</i>	+	+	-	-	+	-	-	-	-	-	-	-	-
	Total no. of species	5	12	6	6	5	4	2	2	2	3	0	0	0

Sub basin: Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Pseudecheneis sulcata</i>	+	+	+	+	+	-	+	+	+	-	+	+	+	-
2	<i>Glyptothorax annandeli</i>	+	+	+	+	-	-	+	-	-	-	+	-	-	+
3	<i>Glyptothorax trilineatus</i>	+	-	+	-	+	+	-	+	-	+	-	+	-	-
4	<i>Schizothorax richardsonii</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	Total no. of species	4	3	4	3	3	2	3	3	2	2	3	3	2	2

July 2012

Sub basin: Siang

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Neolissochilus hexagonolepis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
2	<i>Bagarius bagarius</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
4	<i>Barilius barila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Barilius shacra</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
6	<i>Barilius tileo</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
7	<i>Changunius changunio</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
8	<i>Cyprinion semiplotum</i> (=Semiplotus semiplotum)	-	-	-	-	-	-	-	-	-	-	-	-	-
9	<i>Danio rerio</i> (=Brachydanio rerio)	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Garra annandalei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
12	<i>Garra naganensis</i> (=Garra tirapensis)	-	-	-	-	-	-	-	-	-	-	-	-	-
13	<i>Glossogobius giuris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
14	<i>Glyptothorax trilineatus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
15	<i>Labeo gonius</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
16	<i>Labeo pangusia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Lepidocephalichthys guntea</i> (=Lepidocephalus guntea)	-	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Mastacembelus armatus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
19	<i>Mystus bleekeri</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
20	<i>Mystus cavasius</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
21	<i>Psilorhynchus balitora</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
22	<i>Puntius sarana</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
23	<i>Puntius ticto</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
24	<i>Schistura multifasciata</i> (=Nemacheilus multifasciatus)	-	-	-	-	-	-	-	-	-	-	-	-	-

25	<i>Schizothorax esocinus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
28	<i>Schizothorax richardsonii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
29	<i>Sperata aor</i> (= <i>Aorichthys aor</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-
30	<i>Sperata seenghala</i> (= <i>Aorichthys seenghala</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-
31	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-
32	<i>Tor putitora</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
33	<i>Tor tor</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
34	<i>Xenotodon cancila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total no. of species	0	0	0	0	0	0	0	0	0	0	0	0	0

Sub basin: Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Neolissochilus hexagonolepis</i>	-	-	-	-	-	-	-
2	<i>Bagarius bagarius</i>	-	-	-	-	-	-	-
3	<i>Barilius barila</i>	-	-	-	-	-	-	-
4	<i>Barilius shacra</i>	-	-	-	-	-	-	-
5	<i>Changunius changunio</i>	-	-	-	-	-	-	-
6	<i>Cyprinion semiplotum</i> (=Semiplotus semiplotum)	-	-	-	-	-	-	-
7	<i>Garra annadalei</i>	-	-	-	-	-	-	-
8	<i>Garra naganensis</i> (=Garra tirapensis)	-	-	-	-	-	-	-
9	<i>Glossogobius giuris</i>	-	-	-	-	-	-	-
10	<i>Glyptothorax annandeli</i>	-	-	-	-	-	-	-
11	<i>Glyptothorax trilineatus</i>	-	-	-	-	-	-	-
12	<i>Labeo gonius</i>	-	-	-	-	-	-	-
13	<i>Labeo pangusia</i>	-	-	-	-	-	-	-
14	<i>Puntius sarana</i>	-	-	-	-	-	-	-
15	<i>Schistura rupecula</i>	-	-	-	-	-	-	-
16	<i>Schizothorax progastus</i>	-	-	-	-	-	-	-
17	<i>Schizothorax richardsonii</i>	-	-	-	-	-	-	-
18	<i>Syncrossus berdmorei</i> (= Botia berdmorei)	-	-	-	-	-	-	-
19	<i>Tor putitora</i>	-	-	-	-	-	-	-
20	<i>Tor tor</i>	-	-	-	-	-	-	-
21	<i>Xenetodon cancila</i>	-	-	-	-	-	-	-
	Total no. of species	-	-	-	-	-	-	-

Sub basin: Hirit and Siyom

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Neolissochilus hexagonolepis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
2	<i>Barilius tileo</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
3	<i>Chagunius chagunio</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
4	<i>Cyprinion semiplotum</i> (=Semiplotus semiplotum)	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Garra naganensis</i> (=Garra tirapensis)	-	-	-	-	-	-	-	-	-	-	-	-	-
6	<i>Glossogobius giuris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
7	<i>Labeo gonius</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
8	<i>Labeo pangusia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
9	<i>Ompok bimaculatus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
10	<i>Psilorhynchus balitora</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Puntius sarana</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
12	<i>Puntius ticto</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
13	<i>Schistura rupecula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
14	<i>Schizothorax esocinus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
15	<i>Schizothorax progastus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
16	<i>Schizothorax richardsonii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Syncrossus berdmorei</i> (= Botia berdmorei)	-	-	-	-	-	-	-	-	-	-	-	-	-
18	<i>Tor putitora</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
19	<i>Tor tor</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
20	<i>Xenetodon cancila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total no. of species	0	0	0	0	0	0	0	0	0	0	0	0	0

Sub basin: Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Pseudecheneis sulcata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	<i>Cyprinion semiplotum</i> (= <i>Semiplotus semiplotum</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	<i>Garra annandalei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	<i>Garra naganensis</i> (= <i>Garra tirapensis</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Glossogobius giuris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	<i>Glyptothorax annandeli</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	<i>Mystus bleekeri</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	<i>Parachiloganis hodgarti</i> (= <i>Euchiloglanis hodgarti</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	<i>Parambassis ranga</i> (= <i>Chanda ranga</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	<i>Pseuecheneis sulcata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Puntius ticto</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	<i>Schistura multifasciata</i> (= <i>Nemacheilus multifasciatus</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	<i>Schistura rupecula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	<i>Schizothorax esocinus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	<i>Schizothorax progastus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	<i>Schizothorax richardsonii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total no. of species	0	0	0	0	0	0	0	0	0	0	0	0	0	0

August 2012

Sub basin: Siang

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Neolissochilus hexagonolepis</i>	-	+	+	+	-	-	-	-	-	-	+	+	+
2	<i>Danio rerio</i> (= <i>Brachydanio rerio</i>)	-	-	+	+	-	-	-	-	-	-	-	-	-
3	<i>Labeo pangusia</i>	-	+	+	+	-	-	-	-	-	-	-	-	-
4	<i>Sperata aor</i> (= <i>Aorichthys aor</i>)	-	+	-	-	-	-	-	-	-	-	-	-	-
	Total no. of species	0	3	3	3	0	0	0	0	0	0	1	1	1

Sub basin: Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Neolissochilus hexagonolepis</i>	-	-	-	-	-	-	-
2	<i>Bagarius bagarius</i>	-	-	-	-	-	-	-
3	<i>Changunius changunio</i>	-	-	-	-	-	-	-
4	<i>Cyprinion semiplotum</i> (=Semiplotus semiplotum)	-	-	-	-	-	-	-
5	<i>Garra annadalei</i>	-	-	-	-	-	-	-
6	<i>Garra naganensis</i> (=Garra tirapensis)	-	-	-	-	-	-	-
7	<i>Glossogobius giuris</i>	-	-	-	-	-	-	-
8	<i>Glyptothorax annandeli</i>	-	-	-	-	-	-	-
9	<i>Puntius sarana</i>	-	-	-	-	-	-	-
10	<i>Schistura rupecula</i>	-	-	-	-	-	-	-
11	<i>Schizothorax progastus</i>	-	-	-	-	-	-	-
12	<i>Schizothorax richardsonii</i>	-	-	-	-	-	-	-
13	<i>Syncrossus berdmorei</i> (= Botia berdmorei)	-	-	-	-	-	-	-
14	<i>Tor putitora</i>	-	-	-	-	-	-	-
15	<i>Tor tor</i>	-	-	-	-	-	-	-
16	<i>Xenetodon cancila</i>	-	-	-	-	-	-	-
	Total no. of species	0	0	0	0	0	0	0

Sub basin: Hirit and Siyom

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Neolissochilus hexagonolepis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
2	<i>Barilius tileo</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
3	<i>Chagunius chagunio</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
4	<i>Cyprinion semiplotum</i> (= <i>Semiplotus semiplotum</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Garra naganensis</i> (= <i>Garra tirapensis</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-
6	<i>Glossogobius giuris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
7	<i>Psilorhynchus balitora</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
8	<i>Puntius sarana</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
9	<i>Puntius ticto</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
10	<i>Schistura rupecula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Schizothorax esocinus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
12	<i>Schizothorax progastus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
13	<i>Schizothorax richardsonii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
14	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-
15	<i>Tor putitora</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
16	<i>Tor tor</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
17	<i>Xenetodon cancila</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total no. of species	0	0	0	0	0	0	0	0	0	0	0	0	0

Sub basin: Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Garra annandalei</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	<i>Garra naganensis</i> (= <i>Garra tirapensis</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	<i>Glossogobius giuris</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	<i>Glyptothorax annandeli</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	<i>Mystus bleekeri</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	<i>Parachiloganis hodgarti</i> (= <i>Euchiloglanis hodgarti</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	<i>Parambassis ranga</i> (= <i>Chanda ranga</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	<i>Pseuecheneis sulcata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	<i>Puntius ticto</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	<i>Schistura multifasciata</i> (= <i>Nemacheilus multifasciatus</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	<i>Schistura rupecula</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	<i>Schizothorax esocinus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	<i>Schizothorax progastus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	<i>Schizothorax richardsonii</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	-
15	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total no. of species	1	1	1	1	1	1	1	1	1	1	1	1	1	0

September 2012

Sub basin: Siang

S.No.	Name of species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
1	<i>Neolissochilus hexagonolepis</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
2	<i>Bagarius bagarius</i>	-	+	+	+	+	+	-	-	-	-	-	-	-
3	<i>Danio rerio</i> (= <i>Brachydanio rerio</i>)	-	+	+	+	+	+	-	-	-	-	-	-	-
4	<i>Garra annandalei</i>	-	-	-	-	-	-	-	+	+	+	-	-	-
5	<i>Labeo gonius</i>	+	+	-	-	-	-	-	-	-	-	-	-	-
6	<i>Labeo pangusia</i>	+	+	+	+	+	+	-	-	+	-	-	-	-
7	<i>Mastacembelus armatus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
8	<i>Mystus bleekeri</i>	+	+	+	-	-	+	-	-	-	-	-	-	-
9	<i>Schizothorax progastus</i>	-	-	-	-	-	-	-	-	-	-	+	+	+
10	<i>Schizothorax richardsonii</i>	-	-	-	-	-	-	+	+	+	-	+	+	+
11	<i>Sperata aor</i> (= <i>Aorichthys aor</i>)	-	+	-	-	-	-	-	-	-	-	+	+	-
	Total no. of species	4	7	5	4	4	5	2	3	4	2	4	4	3

Sub basin: Yamne and Simang

S.No.	Name of species	Y1	Y2	Y3	Y4	Sm1	Sm2	Sm3
1	<i>Neolissochilus hexagonolepis</i>	+	+	-	-	-	-	+
2	<i>Glyptothorax annandeli</i>	+	+	+	+	+	+	-
3	<i>Schistura rupecula</i>	+	+	-	-	-	-	-
4	<i>Schizothorax progastus</i>	+	+	+	+	+	+	+
5	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	-	-	-	-	-	+	+
6	<i>Tor putitora</i>	+	+	-	-	-	-	-
	Total no. of species	5	5	2	2	2	3	3

Sub basin: Hirit and Siyom

S.No.	Name of species	SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12	SY13
1	<i>Neolissochilus hexagonolepis</i>	+	+	+	+	+	-	-	-	+	+	-	-	-
2	<i>Danio rerio</i> (= <i>Brachydanio rerio</i>)	+	+	+	+	+	-	-	-	-	-	-	-	-
3	<i>Garra naganensis</i> (= <i>Garra tirapensis</i>)	+	+	+	+	+	-	+	+	+	+	+	+	+
4	<i>Schistura rupecula</i>	-	-	+	-	-	-	-	-	-	-	-	-	-
5	<i>Schizothorax progastus</i>	+	+	+	+	+	+	+	-	+	+	+	-	+
6	<i>Schizothorax richardsonii</i>	+	+	+	+	+	+	+	+	+	+	+	+	+
7	<i>Tor putitora</i>	+	+	+	+	-	-	-	-	-	-	-	-	-
	Total no. of species	6	6	7	6	5	2	3	2	4	4	3	2	3

Sub basin: Yargyap Chhu

S.No.	Name of species	YG1	YG2	YG3	YG4	YG5	YG6	YG7	YG8	YG9	YG10	YG11	YG12	YG13	YG14
1	<i>Glyptothorax annandeli</i>	+	+	+	+	+	-	-	+	+	+	+	+	+	-
2	<i>Schizothorax progastus</i>	+	+	+	+	+	+	+	+	+	-	+	-	+	+
3	<i>Schizothorax richardsonii</i>	+	+	+	+	+	+	+	-	-	+	-	+	-	+
4	<i>Syncrossus berdmorei</i> (= <i>Botia berdmorei</i>)	-	-	+	-	-	-	-	-	-	-	-	-	-	-
	Total no. of species	3	3	4	3	3	2	2	2	2	2	2	2	2	2

MODEL OUTPUT

Pemashelpu HEP - Water depth, flow velocity and flow top width for different release conditions
Lean

Pemashelpu-Dec to March

Note: River sta -100 denotes location along river reach 100 m d/s of Pemashelpu dam axis

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	0.43	2195.02	2195.28	26	0.74	4.49
Yargyap	-100.*	PF 10% release	0.43	2193.74	2194.15	41	0.81	2.58
Yargyap	-200.*	PF 10% release	0.43	2192.46	2192.75	29	1.01	2.91
Yargyap	-300.*	PF 10% release	0.43	2191.45	2191.78	33	0.56	4.68
Yargyap	-400.*	PF 10% release	0.43	2190.44	2190.63	19	0.92	4.93
Yargyap	-500	PF 10% release	0.43	2187.65	2187.91	26	1	3.19
Yargyap	-600	PF 10% release	0.43	2184.85	2185.14	29	1.21	2.46
Yargyap	-700	PF 10% release	0.43	2171.74	2172.02	28	1.18	2.6
Yargyap	-800	PF 10% release	0.43	2158.63	2158.89	26	1.15	2.89
Yargyap	-900	PF 10% release	0.43	2150.47	2150.73	26	1.15	2.87
Yargyap	-1000	PF 10% release	0.43	2142.3	2142.53	23	1.08	3.45
Average						27.82	0.98	3.37

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	0.64	2195.02	2195.33	31	0.78	5.33
Yargyap	-100.*	PF 15% release	0.64	2193.74	2194.21	47	0.92	2.96
Yargyap	-200.*	PF 15% release	0.64	2192.46	2192.8	34	1.09	3.42
Yargyap	-300.*	PF 15% release	0.64	2191.45	2191.83	38	0.63	5.39
Yargyap	-400.*	PF 15% release	0.64	2190.44	2190.66	22	0.99	5.77
Yargyap	-500	PF 15% release	0.64	2187.65	2187.96	31	1.12	3.69
Yargyap	-600	PF 15% release	0.64	2184.85	2185.19	34	1.32	2.88
Yargyap	-700	PF 15% release	0.64	2171.74	2172.07	33	1.28	3.05
Yargyap	-800	PF 15% release	0.64	2158.63	2158.93	30	1.25	3.38
Yargyap	-900	PF 15% release	0.64	2150.47	2150.77	30	1.24	3.37
Yargyap	-1000	PF 15% release	0.64	2142.3	2142.57	27	1.16	4.06
Average						32.45	1.07	3.94

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	0.85	2195.02	2195.37	35	0.82	6.01
Yargyap	-100.*	PF 20% release	0.85	2193.74	2194.26	52	1.01	3.26
Yargyap	-200.*	PF 20% release	0.85	2192.46	2192.85	39	1.14	3.84
Yargyap	-300.*	PF 20% release	0.85	2191.45	2191.87	42	0.68	5.95
Yargyap	-400.*	PF 20% release	0.85	2190.44	2190.69	25	1.05	6.48
Yargyap	-500	PF 20% release	0.85	2187.65	2187.99	34	1.22	4.06
Yargyap	-600	PF 20% release	0.85	2184.85	2185.23	38	1.38	3.24
Yargyap	-700	PF 20% release	0.85	2171.74	2172.11	37	1.37	3.4
Yargyap	-800	PF 20% release	0.85	2158.63	2158.97	34	1.31	3.81
Yargyap	-900	PF 20% release	0.85	2150.47	2150.81	34	1.32	3.76
Yargyap	-1000	PF 20% release	0.85	2142.3	2142.6	30	1.24	4.53

Average						36.36	1.14	4.39
Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	1.06	2195.02	2195.40	38.00	0.84	6.62
Yargyap	-100.*	PF 25% release	1.06	2193.74	2194.30	56.00	1.08	3.52
Yargyap	-200.*	PF 25% release	1.06	2192.46	2192.88	42.00	1.19	4.21
Yargyap	-300.*	PF 25% release	1.06	2191.45	2191.90	45.00	0.73	6.43
Yargyap	-400.*	PF 25% release	1.06	2190.44	2190.72	28.00	1.09	7.11
Yargyap	-500	PF 25% release	1.06	2187.65	2188.01	36.00	1.31	4.38
Yargyap	-600	PF 25% release	1.06	2184.85	2185.27	42.00	1.44	3.54
Yargyap	-700	PF 25% release	1.06	2171.74	2172.14	40.00	1.41	3.74
Yargyap	-800	PF 25% release	1.06	2158.63	2159.00	37.00	1.37	4.15
Yargyap	-900	PF 25% release	1.06	2150.47	2150.84	37.00	1.38	4.11
Yargyap	-1000	PF 25% release	1.06	2142.30	2142.63	33.00	1.28	4.97
Average						39.45	1.19	4.80

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	1.28	2195.02	2195.43	41	0.87	7.15
Yargyap	-100.*	PF 30% release	1.28	2193.74	2194.34	60	1.14	3.76
Yargyap	-200.*	PF 30% release	1.28	2192.46	2192.92	46	1.24	4.53
Yargyap	-300.*	PF 30% release	1.28	2191.45	2191.93	48	0.77	6.88
Yargyap	-400.*	PF 30% release	1.28	2190.44	2190.74	30	1.13	7.64
Yargyap	-500	PF 30% release	1.28	2187.65	2188.04	39	1.38	4.7
Yargyap	-600	PF 30% release	1.28	2184.85	2185.3	45	1.5	3.81
Yargyap	-700	PF 30% release	1.28	2171.74	2172.17	43	1.47	4.02
Yargyap	-800	PF 30% release	1.28	2158.63	2159.03	40	1.43	4.47
Yargyap	-900	PF 30% release	1.28	2150.47	2150.87	40	1.42	4.44
Yargyap	-1000	PF 30% release	1.28	2142.3	2142.66	36	1.34	5.34
Average						42.55	1.24	5.16

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	1.7	2195.02	2195.48	46	0.91	8.06
Yargyap	-100.*	PF 40% release	1.7	2193.74	2194.4	66	1.24	4.15
Yargyap	-200.*	PF 40% release	1.7	2192.46	2192.97	51	1.32	5.06
Yargyap	-300.*	PF 40% release	1.7	2191.45	2191.98	53	0.84	7.62
Yargyap	-400.*	PF 40% release	1.7	2190.44	2190.77	33	1.21	8.52
Yargyap	-500	PF 40% release	1.7	2187.65	2188.09	44	1.48	5.23
Yargyap	-600	PF 40% release	1.7	2184.85	2185.35	50	1.6	4.26
Yargyap	-700	PF 40% release	1.7	2171.74	2172.22	48	1.56	4.5
Yargyap	-800	PF 40% release	1.7	2158.63	2159.08	45	1.5	5.02
Yargyap	-900	PF 40% release	1.7	2150.47	2150.92	45	1.51	4.96
Yargyap	-1000	PF 40% release	1.7	2142.3	2142.7	40	1.42	5.98
Average						47.36	1.33	5.76

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	2.13	2195.02	2195.53	51	0.95	8.85
Yargyap	-100.*	PF 50% release	2.13	2193.74	2194.46	72	1.32	4.51
Yargyap	-200.*	PF 50% release	2.13	2192.46	2193.02	56	1.39	5.51
Yargyap	-300.*	PF 50% release	2.13	2191.45	2192.03	58	0.89	8.28
Yargyap	-400.*	PF 50% release	2.13	2190.44	2190.8	36	1.29	9.24
Yargyap	-500	PF 50% release	2.13	2187.65	2188.13	48	1.55	5.72
Yargyap	-600	PF 50% release	2.13	2184.85	2185.4	55	1.66	4.67
Yargyap	-700	PF 50% release	2.13	2171.74	2172.27	53	1.63	4.93
Yargyap	-800	PF 50% release	2.13	2158.63	2159.12	49	1.57	5.5
Yargyap	-900	PF 50% release	2.13	2150.47	2150.96	49	1.57	5.45
Yargyap	-1000	PF 50% release	2.13	2142.3	2142.74	44	1.49	6.55
Average						51.91	1.39	6.29

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	4.25	2195.02	2195.7	68	1.05	11.88
Yargyap	-100.*	PF 100% release	4.25	2193.74	2194.65	91	1.62	5.75
Yargyap	-200.*	PF 100% release	4.25	2192.46	2193.19	73	1.63	7.2
Yargyap	-300.*	PF 100% release	4.25	2191.45	2192.19	74	1.08	10.62
Yargyap	-400.*	PF 100% release	4.25	2190.44	2190.9	46	1.53	11.99
Yargyap	-500	PF 100% release	4.25	2187.65	2188.28	63	1.79	7.52
Yargyap	-600	PF 100% release	4.25	2184.85	2185.58	73	1.9	6.17
Yargyap	-700	PF 100% release	4.25	2171.74	2172.44	70	1.88	6.49
Yargyap	-800	PF 100% release	4.25	2158.63	2159.28	65	1.81	7.22
Yargyap	-900	PF 100% release	4.25	2150.47	2151.12	65	1.82	7.17
Yargyap	-1000	PF 100% release	4.25	2142.3	2142.88	58	1.71	8.63
Average						67.82	1.62	8.24

Monsoon

Pemashelpu-June to September

Note: River sta -100 denotes location along river reach 100 m d/s of Pemashelpu dam axis

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	4.25	2195.02	2195.7	68	1.05	11.88
Yargyap	-100.*	PF 10% release	4.25	2193.74	2194.65	91	1.62	5.75
Yargyap	-200.*	PF 10% release	4.25	2192.46	2193.19	73	1.63	7.2
Yargyap	-300.*	PF 10% release	4.25	2191.45	2192.19	74	1.08	10.62
Yargyap	-400.*	PF 10% release	4.25	2190.44	2190.9	46	1.53	11.99
Yargyap	-500	PF 10% release	4.25	2187.65	2188.28	63	1.79	7.52
Yargyap	-600	PF 10% release	4.25	2184.85	2185.58	73	1.9	6.17
Yargyap	-700	PF 10% release	4.25	2171.74	2172.44	70	1.88	6.49
Yargyap	-800	PF 10% release	4.25	2158.63	2159.28	65	1.81	7.22
Yargyap	-900	PF 10% release	4.25	2150.47	2151.12	65	1.82	7.17
Yargyap	-1000	PF 10% release	4.25	2142.3	2142.88	58	1.71	8.63
Average						67.82	1.62	8.24

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	6.37	2195.02	2195.83	81	1.11	14.14
Yargyap	-100.*	PF 15% release	6.37	2193.74	2194.79	105	1.83	6.61
Yargyap	-200.*	PF 15% release	6.37	2192.46	2193.31	85	1.77	8.45
Yargyap	-300.*	PF 15% release	6.37	2191.45	2192.31	86	1.22	12.23
Yargyap	-400.*	PF 15% release	6.37	2190.44	2190.99	55	1.66	14.08
Yargyap	-500	PF 15% release	6.37	2187.65	2188.39	74	1.94	8.84
Yargyap	-600	PF 15% release	6.37	2184.85	2185.7	85	2.05	7.27
Yargyap	-700	PF 15% release	6.37	2171.74	2172.56	82	2.03	7.64
Yargyap	-800	PF 15% release	6.37	2158.63	2159.39	76	1.96	8.5
Yargyap	-900	PF 15% release	6.37	2150.47	2151.24	77	1.95	8.46
Yargyap	-1000	PF 15% release	6.37	2142.3	2142.98	68	1.83	10.2
Average						79.45	1.76	9.67

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	8.5	2195.02	2195.94	92	1.15	16.03
Yargyap	-100.*	PF 20% release	8.5	2193.74	2194.9	116	2.01	7.3
Yargyap	-200.*	PF 20% release	8.5	2192.46	2193.41	95	1.88	9.47
Yargyap	-300.*	PF 20% release	8.5	2191.45	2192.4	95	1.33	13.5
Yargyap	-400.*	PF 20% release	8.5	2190.44	2191.05	61	1.75	15.83
Yargyap	-500	PF 20% release	8.5	2187.65	2188.48	83	2.05	9.93
Yargyap	-600	PF 20% release	8.5	2184.85	2185.81	96	2.19	8.13
Yargyap	-700	PF 20% release	8.5	2171.74	2172.67	93	2.14	8.6
Yargyap	-800	PF 20% release	8.5	2158.63	2159.49	86	2.07	9.55
Yargyap	-900	PF 20% release	8.5	2150.47	2151.33	86	2.08	9.46
Yargyap	-1000	PF 20% release	8.5	2142.3	2143.07	77	1.94	11.46
Average						89.09	1.87	10.84

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	10.62	2195.02	2196.04	102.00	1.18	17.68
Yargyap	-100.*	PF 25% release	10.62	2193.74	2194.99	125.00	2.15	7.88
Yargyap	-200.*	PF 25% release	10.62	2192.46	2193.50	104.00	1.98	10.32
Yargyap	-300.*	PF 25% release	10.62	2191.45	2192.47	102.00	1.43	14.57
Yargyap	-400.*	PF 25% release	10.62	2190.44	2191.11	67.00	1.84	17.29
Yargyap	-500	PF 25% release	10.62	2187.65	2188.56	91.00	2.13	10.90
Yargyap	-600	PF 25% release	10.62	2184.85	2185.90	105.00	2.28	8.90
Yargyap	-700	PF 25% release	10.62	2171.74	2172.75	101.00	2.25	9.36
Yargyap	-800	PF 25% release	10.62	2158.63	2159.57	94.00	2.17	10.43
Yargyap	-900	PF 25% release	10.62	2150.47	2151.41	94.00	2.16	10.39
Yargyap	-1000	PF 25% release	10.62	2142.30	2143.13	83.00	2.05	12.47
Average						97.09	1.97	11.84

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	12.75	2195.02	2196.12	110	1.21	19.17
Yargyap	-100.*	PF 30% release	12.75	2193.74	2195.07	133	2.28	8.39
Yargyap	-200.*	PF 30% release	12.75	2192.46	2193.58	112	2.06	11.09
Yargyap	-300.*	PF 30% release	12.75	2191.45	2192.54	109	1.51	15.5
Yargyap	-400.*	PF 30% release	12.75	2190.44	2191.16	72	1.9	18.62
Yargyap	-500	PF 30% release	12.75	2187.65	2188.63	98	2.22	11.69
Yargyap	-600	PF 30% release	12.75	2184.85	2185.98	113	2.37	9.57
Yargyap	-700	PF 30% release	12.75	2171.74	2172.83	109	2.31	10.12
Yargyap	-800	PF 30% release	12.75	2158.63	2159.64	101	2.25	11.23
Yargyap	-900	PF 30% release	12.75	2150.47	2151.48	101	2.26	11.13
Yargyap	-1000	PF 30% release	12.75	2142.3	2143.2	90	2.12	13.4
Average						104.36	2.04	12.72

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	17	2195.02	2196.27	125	1.25	21.78
Yargyap	-100.*	PF 40% release	17	2193.74	2195.21	147	2.5	9.25
Yargyap	-200.*	PF 40% release	17	2192.46	2193.71	125	2.19	12.41
Yargyap	-300.*	PF 40% release	17	2191.45	2192.65	120	1.66	17.08
Yargyap	-400.*	PF 40% release	17	2190.44	2191.25	81	2.01	20.89
Yargyap	-500	PF 40% release	17	2187.65	2188.75	110	2.33	13.16
Yargyap	-600	PF 40% release	17	2184.85	2186.11	126	2.51	10.73
Yargyap	-700	PF 40% release	17	2171.74	2172.96	122	2.45	11.35
Yargyap	-800	PF 40% release	17	2158.63	2159.76	113	2.38	12.61
Yargyap	-900	PF 40% release	17	2150.47	2151.6	113	2.4	12.47
Yargyap	-1000	PF 40% release	17	2142.3	2143.31	101	2.25	15.04
Average						116.64	2.18	14.25

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	21.25	2195.02	2196.4	138	1.27	24.08
Yargyap	-100.*	PF 50% release	21.25	2193.74	2195.32	158	2.69	9.96
Yargyap	-200.*	PF 50% release	21.25	2192.46	2193.83	137	2.29	13.56
Yargyap	-300.*	PF 50% release	21.25	2191.45	2192.74	129	1.79	18.38
Yargyap	-400.*	PF 50% release	21.25	2190.44	2191.33	89	2.09	22.94
Yargyap	-500	PF 50% release	21.25	2187.65	2188.86	121	2.44	14.4
Yargyap	-600	PF 50% release	21.25	2184.85	2186.23	138	2.61	11.78
Yargyap	-700	PF 50% release	21.25	2171.74	2173.08	134	2.56	12.42
Yargyap	-800	PF 50% release	21.25	2158.63	2159.87	124	2.47	13.83
Yargyap	-900	PF 50% release	21.25	2150.47	2151.71	124	2.5	13.66
Yargyap	-1000	PF 50% release	21.25	2142.3	2143.4	110	2.33	16.52
Average						127.45	2.28	15.59

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	42.49	2195.02	2196.90	188	1.39	32
Yargyap	-100.*	PF 100% release	42.49	2193.74	2195.80	206	3.18	12.96
Yargyap	-200.*	PF 100% release	42.49	2192.46	2194.24	178	2.7	17.66
Yargyap	-300.*	PF 100% release	42.49	2191.45	2193.08	163	2.26	23.18
Yargyap	-400.*	PF 100% release	42.49	2190.44	2191.61	117	2.42	30.13
Yargyap	-500	PF 100% release	42.49	2187.65	2189.24	159	2.82	18.92
Yargyap	-600	PF 100% release	42.49	2184.85	2186.67	182	3.02	15.49
Yargyap	-700	PF 100% release	42.49	2171.74	2173.5	176	2.96	16.33
Yargyap	-800	PF 100% release	42.49	2158.63	2160.27	164	2.84	18.24
Yargyap	-900	PF 100% release	42.49	2150.47	2152.12	165	2.85	18.09
Yargyap	-1000	PF 100% release	42.49	2142.3	2143.75	145	2.69	21.73
Average						167.55	2.65	20.43

Other 4 Months

Pemashelpu-Oct-Nov-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Pemashelpu dam axis

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	1.87	2195.02	2195.5	48	0.92	8.39
Yargyap	-100.*	PF 10% release	1.87	2193.74	2194.42	68	1.28	4.29
Yargyap	-200.*	PF 10% release	1.87	2192.46	2192.99	53	1.34	5.26
Yargyap	-300.*	PF 10% release	1.87	2191.45	2192	55	0.86	7.88
Yargyap	-400.*	PF 10% release	1.87	2190.44	2190.78	34	1.24	8.83
Yargyap	-500	PF 10% release	1.87	2187.65	2188.1	45	1.51	5.42
Yargyap	-600	PF 10% release	1.87	2184.85	2185.37	52	1.63	4.42
Yargyap	-700	PF 10% release	1.87	2171.74	2172.24	50	1.59	4.68
Yargyap	-800	PF 10% release	1.87	2158.63	2159.1	47	1.54	5.2
Yargyap	-900	PF 10% release	1.87	2150.47	2150.94	47	1.54	5.15
Yargyap	-1000	PF 10% release	1.87	2142.3	2142.71	41	1.46	6.2
Average						49.09	1.36	5.97

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	2.8	2195.02	2195.59	57	0.99	9.93
Yargyap	-100.*	PF 15% release	2.8	2193.74	2194.53	79	1.43	4.96
Yargyap	-200.*	PF 15% release	2.8	2192.46	2193.08	62	1.48	6.13
Yargyap	-300.*	PF 15% release	2.8	2191.45	2192.09	64	0.96	9.14
Yargyap	-400.*	PF 15% release	2.8	2190.44	2190.84	40	1.38	10.24
Yargyap	-500	PF 15% release	2.8	2187.65	2188.18	53	1.65	6.36
Yargyap	-600	PF 15% release	2.8	2184.85	2185.46	61	1.76	5.21
Yargyap	-700	PF 15% release	2.8	2171.74	2172.33	59	1.73	5.49
Yargyap	-800	PF 15% release	2.8	2158.63	2159.18	55	1.66	6.12
Yargyap	-900	PF 15% release	2.8	2150.47	2151.02	55	1.67	6.06
Yargyap	-1000	PF 15% release	2.8	2142.3	2142.79	49	1.57	7.3
Average						57.64	1.48	6.99

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	3.74	2195.02	2195.67	65	1.03	11.23
Yargyap	-100.*	PF 20% release	3.74	2193.74	2194.61	87	1.56	5.5
Yargyap	-200.*	PF 20% release	3.74	2192.46	2193.15	69	1.58	6.84
Yargyap	-300.*	PF 20% release	3.74	2191.45	2192.16	71	1.03	10.16
Yargyap	-400.*	PF 20% release	3.74	2190.44	2190.88	44	1.49	11.38
Yargyap	-500	PF 20% release	3.74	2187.65	2188.25	60	1.74	7.15
Yargyap	-600	PF 20% release	3.74	2184.85	2185.54	69	1.86	5.86
Yargyap	-700	PF 20% release	3.74	2171.74	2172.4	66	1.83	6.17
Yargyap	-800	PF 20% release	3.74	2158.63	2159.25	62	1.76	6.87
Yargyap	-900	PF 20% release	3.74	2150.47	2151.09	62	1.77	6.8
Yargyap	-1000	PF 20% release	3.74	2142.3	2142.85	55	1.67	8.2
Average						64.55	1.57	7.83

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	4.67	2195.02	2195.73	71.00	1.06	12.35
Yargyap	-100.*	PF 25% release	4.67	2193.74	2194.68	94.00	1.67	5.94
Yargyap	-200.*	PF 25% release	4.67	2192.46	2193.21	75.00	1.66	7.47
Yargyap	-300.*	PF 25% release	4.67	2191.45	2192.22	77.00	1.10	10.98
Yargyap	-400.*	PF 25% release	4.67	2190.44	2190.92	48.00	1.56	12.44
Yargyap	-500	PF 25% release	4.67	2187.65	2188.30	65.00	1.82	7.81
Yargyap	-600	PF 25% release	4.67	2184.85	2185.60	75.00	1.94	6.40
Yargyap	-700	PF 25% release	4.67	2171.74	2172.47	73.00	1.91	6.74
Yargyap	-800	PF 25% release	4.67	2158.63	2159.30	67.00	1.85	7.50
Yargyap	-900	PF 25% release	4.67	2150.47	2151.15	68.00	1.84	7.45
Yargyap	-1000	PF 25% release	4.67	2142.30	2142.90	60.00	1.74	8.96
Average						70.27	1.65	8.55

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	5.6	2195.02	2195.79	77	1.09	13.4
Yargyap	-100.*	PF 30% release	5.6	2193.74	2194.74	100	1.78	6.3
Yargyap	-200.*	PF 30% release	5.6	2192.46	2193.27	81	1.71	8.07
Yargyap	-300.*	PF 30% release	5.6	2191.45	2192.27	82	1.18	11.63
Yargyap	-400.*	PF 30% release	5.6	2190.44	2190.96	52	1.59	13.5
Yargyap	-500	PF 30% release	5.6	2187.65	2188.35	70	1.89	8.4
Yargyap	-600	PF 30% release	5.6	2184.85	2185.66	81	2.01	6.89
Yargyap	-700	PF 30% release	5.6	2171.74	2172.52	78	1.98	7.25
Yargyap	-800	PF 30% release	5.6	2158.63	2159.36	73	1.9	8.1
Yargyap	-900	PF 30% release	5.6	2150.47	2151.2	73	1.92	8
Yargyap	-1000	PF 30% release	5.6	2142.3	2142.95	65	1.8	9.66
Average						75.64	1.71	9.20

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	7.47	2195.02	2195.89	87	1.13	15.15
Yargyap	-100.*	PF 40% release	7.47	2193.74	2194.85	111	1.93	6.98
Yargyap	-200.*	PF 40% release	7.47	2192.46	2193.37	91	1.83	9
Yargyap	-300.*	PF 40% release	7.47	2191.45	2192.36	91	1.28	12.91
Yargyap	-400.*	PF 40% release	7.47	2190.44	2191.02	58	1.71	15.03
Yargyap	-500	PF 40% release	7.47	2187.65	2188.44	79	2	9.43
Yargyap	-600	PF 40% release	7.47	2184.85	2185.76	91	2.12	7.75
Yargyap	-700	PF 40% release	7.47	2171.74	2172.62	88	2.09	8.14
Yargyap	-800	PF 40% release	7.47	2158.63	2159.45	82	2.02	9.07
Yargyap	-900	PF 40% release	7.47	2150.47	2151.28	81	2.03	8.98
Yargyap	-1000	PF 40% release	7.47	2142.3	2143.02	72	1.91	10.83
Average						84.64	1.82	10.30

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	9.34	2195.02	2195.98	96	1.16	16.73
Yargyap	-100.*	PF 50% release	9.34	2193.74	2194.94	120	2.08	7.52
Yargyap	-200.*	PF 50% release	9.34	2192.46	2193.45	99	1.91	9.85
Yargyap	-300.*	PF 50% release	9.34	2191.45	2192.43	98	1.38	13.9
Yargyap	-400.*	PF 50% release	9.34	2190.44	2191.08	64	1.77	16.51
Yargyap	-500	PF 50% release	9.34	2187.65	2188.51	86	2.09	10.31
Yargyap	-600	PF 50% release	9.34	2184.85	2185.84	99	2.23	8.45
Yargyap	-700	PF 50% release	9.34	2171.74	2172.7	96	2.17	8.93
Yargyap	-800	PF 50% release	9.34	2158.63	2159.52	89	2.11	9.91
Yargyap	-900	PF 50% release	9.34	2150.47	2151.36	89	2.12	9.83
Yargyap	-1000	PF 50% release	9.34	2142.3	2143.09	79	2	11.84
Average						92.27	1.91	11.25

Reach	Ch d/s of Pemashelpu HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	18.68	2195.02	2196.33	131	1.26	22.7
Yargyap	-100.*	PF 100% release	18.68	2193.74	2195.26	152	2.57	9.56
Yargyap	-200.*	PF 100% release	18.68	2192.46	2193.76	130	2.24	12.87
Yargyap	-300.*	PF 100% release	18.68	2191.45	2192.69	124	1.71	17.65
Yargyap	-400.*	PF 100% release	18.68	2190.44	2191.28	84	2.06	21.68
Yargyap	-500	PF 100% release	18.68	2187.65	2188.79	114	2.4	13.61
Yargyap	-600	PF 100% release	18.68	2184.85	2186.16	131	2.54	11.18
Yargyap	-700	PF 100% release	18.68	2171.74	2173.01	127	2.51	11.75
Yargyap	-800	PF 100% release	18.68	2158.63	2159.81	118	2.41	13.13
Yargyap	-900	PF 100% release	18.68	2150.47	2151.65	118	2.43	12.99
Yargyap	-1000	PF 100% release	18.68	2142.3	2143.34	104	2.29	15.61
Average						121.18	2.22	14.79

Kangtangshiri HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Kangtangshiri-Dec to March

Note: River sta -100 denotes location along river reach 100 m d/s of Kangtangshiri dam axis

Reach	Ch d/s of Kangtangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	1.01	1880.11	1880.55	44	1.49	3.08
Yargyap	-100.*	PF 10% release	1.01	1874.31	1874.7	39	1.41	3.62
Yargyap	-200.*	PF 10% release	1.01	1868.51	1868.8	29	1.19	5.94
Yargyap	-300.*	PF 10% release	1.01	1856.86	1857.12	26	1.16	6.46
Yargyap	-400.*	PF 10% release	1.01	1845.2	1845.44	24	1.1	7.65
Yargyap	-500	PF 10% release	1.01	1838.85	1839.19	34	1.31	4.51
Yargyap	-600	PF 10% release	1.01	1832.49	1832.82	33	1.29	4.77
Yargyap	-700	PF 10% release	1.01	1826.54	1826.87	33	1.28	4.79
Yargyap	-800	PF 10% release	1.01	1820.58	1820.91	33	1.28	4.79
Yargyap	-900	PF 10% release	1.01	1817.02	1817.39	37	1.36	4.01
Yargyap	-1000	PF 10% release	1.01	1813.45	1813.85	40	1.41	3.61
Average						33.82	1.30	4.84

Reach	Ch d/s of Kangtangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	1.52	1880.11	1880.63	52	1.63	3.61
Yargyap	-100.*	PF 15% release	1.52	1874.31	1874.77	46	1.54	4.26
Yargyap	-200.*	PF 15% release	1.52	1868.51	1868.85	34	1.31	6.95
Yargyap	-300.*	PF 15% release	1.52	1856.86	1857.17	31	1.27	7.58
Yargyap	-400.*	PF 15% release	1.52	1845.2	1845.48	28	1.2	9
Yargyap	-500	PF 15% release	1.52	1838.85	1839.25	40	1.42	5.32
Yargyap	-600	PF 15% release	1.52	1832.49	1832.88	39	1.39	5.64
Yargyap	-700	PF 15% release	1.52	1826.54	1826.92	38	1.39	5.63
Yargyap	-800	PF 15% release	1.52	1820.58	1820.97	39	1.4	5.63
Yargyap	-900	PF 15% release	1.52	1817.02	1817.45	43	1.47	4.72
Yargyap	-1000	PF 15% release	1.52	1813.45	1813.92	47	1.53	4.25
Average						39.73	1.41	5.69

Reach	Ch d/s of Kangtangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	2.02	1880.11	1880.69	58	1.71	4.06
Yargyap	-100.*	PF 20% release	2.02	1874.31	1874.83	52	1.62	4.79
Yargyap	-200.*	PF 20% release	2.02	1868.51	1868.88	37	1.39	7.77
Yargyap	-300.*	PF 20% release	2.02	1856.86	1857.21	35	1.34	8.53
Yargyap	-400.*	PF 20% release	2.02	1845.2	1845.52	32	1.27	10.08
Yargyap	-500	PF 20% release	2.02	1838.85	1839.3	45	1.51	5.95
Yargyap	-600	PF 20% release	2.02	1832.49	1832.93	44	1.47	6.33
Yargyap	-700	PF 20% release	2.02	1826.54	1826.97	43	1.49	6.28
Yargyap	-800	PF 20% release	2.02	1820.58	1821.02	44	1.46	6.34
Yargyap	-900	PF 20% release	2.02	1817.02	1817.5	48	1.58	5.26
Yargyap	-1000	PF 20% release	2.02	1813.45	1813.97	52	1.62	4.76
Average						44.55	1.50	6.38

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	2.53	1880.11	1880.75	64.00	1.79	4.44
Yargyap	-100.*	PF 25% release	2.53	1874.31	1874.88	57.00	1.68	5.26
Yargyap	-200.*	PF 25% release	2.53	1868.51	1868.92	41.00	1.44	8.54
Yargyap	-300.*	PF 25% release	2.53	1856.86	1857.24	38.00	1.40	9.34
Yargyap	-400.*	PF 25% release	2.53	1845.20	1845.55	35.00	1.33	11.04
Yargyap	-500	PF 25% release	2.53	1838.85	1839.34	49.00	1.57	6.53
Yargyap	-600	PF 25% release	2.53	1832.49	1832.96	47.00	1.55	6.88
Yargyap	-700	PF 25% release	2.53	1826.54	1827.01	47.00	1.55	6.88
Yargyap	-800	PF 25% release	2.53	1820.58	1821.05	47.00	1.54	6.91
Yargyap	-900	PF 25% release	2.53	1817.02	1817.55	53.00	1.64	5.77
Yargyap	-1000	PF 25% release	2.53	1813.45	1814.02	57.00	1.70	5.21
Average						48.64	1.56	6.98

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	3.03	1880.11	1880.79	68	1.85	4.78
Yargyap	-100.*	PF 30% release	3.03	1874.31	1874.93	62	1.74	5.66
Yargyap	-200.*	PF 30% release	3.03	1868.51	1868.95	44	1.51	9.14
Yargyap	-300.*	PF 30% release	3.03	1856.86	1857.27	41	1.45	10.01
Yargyap	-400.*	PF 30% release	3.03	1845.2	1845.57	37	1.36	11.9
Yargyap	-500	PF 30% release	3.03	1838.85	1839.38	53	1.64	6.99
Yargyap	-600	PF 30% release	3.03	1832.49	1833	51	1.6	7.42
Yargyap	-700	PF 30% release	3.03	1826.54	1827.05	51	1.6	7.41
Yargyap	-800	PF 30% release	3.03	1820.58	1821.09	51	1.6	7.43
Yargyap	-900	PF 30% release	3.03	1817.02	1817.59	57	1.7	6.21
Yargyap	-1000	PF 30% release	3.03	1813.45	1814.06	61	1.76	5.59
Average						52.36	1.62	7.50

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	4.05	1880.11	1880.88	77	1.96	5.38
Yargyap	-100.*	PF 40% release	4.05	1874.31	1875	69	1.86	6.32
Yargyap	-200.*	PF 40% release	4.05	1868.51	1869.01	50	1.58	10.3
Yargyap	-300.*	PF 40% release	4.05	1856.86	1857.32	46	1.53	11.27
Yargyap	-400.*	PF 40% release	4.05	1845.2	1845.62	42	1.45	13.35
Yargyap	-500	PF 40% release	4.05	1838.85	1839.44	59	1.73	7.86
Yargyap	-600	PF 40% release	4.05	1832.49	1833.06	57	1.7	8.33
Yargyap	-700	PF 40% release	4.05	1826.54	1827.11	57	1.7	8.32
Yargyap	-800	PF 40% release	4.05	1820.58	1821.15	57	1.69	8.35
Yargyap	-900	PF 40% release	4.05	1817.02	1817.66	64	1.8	6.97
Yargyap	-1000	PF 40% release	4.05	1813.45	1814.14	69	1.85	6.31
Average						58.82	1.71	8.43

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	5.06	1880.11	1880.95	84	2.04	5.89
Yargyap	-100.*	PF 50% release	5.06	1874.31	1875.06	75	1.95	6.92
Yargyap	-200.*	PF 50% release	5.06	1868.51	1869.05	54	1.65	11.28
Yargyap	-300.*	PF 50% release	5.06	1856.86	1857.37	51	1.61	12.28
Yargyap	-400.*	PF 50% release	5.06	1845.2	1845.66	46	1.51	14.62
Yargyap	-500	PF 50% release	5.06	1838.85	1839.5	65	1.81	8.59
Yargyap	-600	PF 50% release	5.06	1832.49	1833.12	63	1.78	9.09
Yargyap	-700	PF 50% release	5.06	1826.54	1827.16	62	1.77	9.11
Yargyap	-800	PF 50% release	5.06	1820.58	1821.2	62	1.78	9.1
Yargyap	-900	PF 50% release	5.06	1817.02	1817.72	70	1.88	7.63
Yargyap	-1000	PF 50% release	5.06	1813.45	1814.21	76	1.95	6.88
Average						64.36	1.79	9.22

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	10	1880.11	1881.22	111	2.35	7.72
Yargyap	-100.*	PF 100% release	10	1874.31	1875.3	99	2.23	9.08
Yargyap	-200.*	PF 100% release	10	1868.51	1869.22	71	1.9	14.8
Yargyap	-300.*	PF 100% release	10	1856.86	1857.53	67	1.84	16.17
Yargyap	-400.*	PF 100% release	10	1845.2	1845.8	60	1.74	19.15
Yargyap	-500	PF 100% release	10	1838.85	1839.7	85	2.07	11.29
Yargyap	-600	PF 100% release	10	1832.49	1833.31	82	2.03	11.95
Yargyap	-700	PF 100% release	10	1826.54	1827.36	82	2.03	11.96
Yargyap	-800	PF 100% release	10	1820.58	1821.4	82	2.02	12.01
Yargyap	-900	PF 100% release	10	1817.02	1817.94	92	2.14	10.06
Yargyap	-1000	PF 100% release	10	1813.45	1814.44	99	2.23	9.04
Average						84.55	2.05	12.11

Monsoon

Katangshiri-June to September

Note: River sta -100 denotes location along river reach 100 m d/s of Kantangshiri dam axis

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	9.96	1880.11	1881.22	111	2.33	7.73
Yargyap	-100.*	PF 10% release	9.96	1874.31	1875.3	99	2.23	9.07
Yargyap	-200.*	PF 10% release	9.96	1868.51	1869.23	72	1.88	14.85
Yargyap	-300.*	PF 10% release	9.96	1856.86	1857.53	67	1.82	16.2
Yargyap	-400.*	PF 10% release	9.96	1845.2	1845.8	60	1.74	19.12
Yargyap	-500	PF 10% release	9.96	1838.85	1839.7	85	2.06	11.31
Yargyap	-600	PF 10% release	9.96	1832.49	1833.31	82	2.03	11.94
Yargyap	-700	PF 10% release	9.96	1826.54	1827.36	82	2.03	11.93
Yargyap	-800	PF 10% release	9.96	1820.58	1821.4	82	2.02	12
Yargyap	-900	PF 10% release	9.96	1817.02	1817.94	92	2.15	10.01
Yargyap	-1000	PF 10% release	9.96	1813.45	1814.45	100	2.21	9.06
Average						84.73	2.05	12.11

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	14.93	1880.11	1881.41	130	2.53	9.08
Yargyap	-100.*	PF 15% release	14.93	1874.31	1875.47	116	2.41	10.68
Yargyap	-200.*	PF 15% release	14.93	1868.51	1869.35	84	2.05	17.4
Yargyap	-300.*	PF 15% release	14.93	1856.86	1857.65	79	1.98	19.05
Yargyap	-400.*	PF 15% release	14.93	1845.2	1845.9	70	1.89	22.46
Yargyap	-500	PF 15% release	14.93	1838.85	1839.85	100	2.24	13.26
Yargyap	-600	PF 15% release	14.93	1832.49	1833.46	97	2.2	14.05
Yargyap	-700	PF 15% release	14.93	1826.54	1827.51	97	2.19	14.09
Yargyap	-800	PF 15% release	14.93	1820.58	1821.55	97	2.18	14.12
Yargyap	-900	PF 15% release	14.93	1817.02	1818.1	108	2.33	11.77
Yargyap	-1000	PF 15% release	14.93	1813.45	1814.62	117	2.4	10.64
Average						99.55	2.22	14.24

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	19.91	1880.11	1881.57	146	2.68	10.19
Yargyap	-100.*	PF 20% release	19.91	1874.31	1875.62	131	2.54	12.02
Yargyap	-200.*	PF 20% release	19.91	1868.51	1869.45	94	2.17	19.52
Yargyap	-300.*	PF 20% release	19.91	1856.86	1857.74	88	2.1	21.34
Yargyap	-400.*	PF 20% release	19.91	1845.2	1845.99	79	1.99	25.23
Yargyap	-500	PF 20% release	19.91	1838.85	1839.97	112	2.38	14.87
Yargyap	-600	PF 20% release	19.91	1832.49	1833.58	109	2.33	15.76
Yargyap	-700	PF 20% release	19.91	1826.54	1827.62	108	2.33	15.76
Yargyap	-800	PF 20% release	19.91	1820.58	1821.66	108	2.33	15.79
Yargyap	-900	PF 20% release	19.91	1817.02	1818.24	122	2.47	13.2
Yargyap	-1000	PF 20% release	19.91	1813.45	1814.76	131	2.56	11.91
Average						111.64	2.35	15.96

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	24.89	1880.11	1881.70	159.00	2.81	11.12
Yargyap	-100.*	PF 25% release	24.89	1874.31	1875.74	143.00	2.65	13.14
Yargyap	-200.*	PF 25% release	24.89	1868.51	1869.54	103.00	2.28	21.31
Yargyap	-300.*	PF 25% release	24.89	1856.86	1857.82	96.00	2.21	23.28
Yargyap	-400.*	PF 25% release	24.89	1845.20	1846.07	87.00	2.08	27.61
Yargyap	-500	PF 25% release	24.89	1838.85	1840.08	123.00	2.47	16.32
Yargyap	-600	PF 25% release	24.89	1832.49	1833.68	119.00	2.42	17.28
Yargyap	-700	PF 25% release	24.89	1826.54	1827.72	118.00	2.44	17.21
Yargyap	-800	PF 25% release	24.89	1820.58	1821.76	118.00	2.44	17.26
Yargyap	-900	PF 25% release	24.89	1817.02	1818.35	133.00	2.59	14.42
Yargyap	-1000	PF 25% release	24.89	1813.45	1814.88	143.00	2.66	13.06
Average						122.00	2.46	17.46

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	29.87	1880.11	1881.83	172	2.9	11.99
Yargyap	-100.*	PF 30% release	29.87	1874.31	1875.84	153	2.77	14.08
Yargyap	-200.*	PF 30% release	29.87	1868.51	1869.62	111	2.34	23.04
Yargyap	-300.*	PF 30% release	29.87	1856.86	1857.9	104	2.29	25.03
Yargyap	-400.*	PF 30% release	29.87	1845.2	1846.13	93	2.15	29.68
Yargyap	-500	PF 30% release	29.87	1838.85	1840.17	132	2.57	17.5
Yargyap	-600	PF 30% release	29.87	1832.49	1833.77	128	2.51	18.6
Yargyap	-700	PF 30% release	29.87	1826.54	1827.81	127	2.53	18.52
Yargyap	-800	PF 30% release	29.87	1820.58	1821.85	127	2.53	18.54
Yargyap	-900	PF 30% release	29.87	1817.02	1818.45	143	2.68	15.52
Yargyap	-1000	PF 30% release	29.87	1813.45	1814.99	154	2.77	14.01
Average						131.27	2.55	18.77

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	39.82	1880.11	1882.03	192	3.08	13.45
Yargyap	-100.*	PF 40% release	39.82	1874.31	1876.03	172	2.94	15.79
Yargyap	-200.*	PF 40% release	39.82	1868.51	1869.75	124	2.49	25.77
Yargyap	-300.*	PF 40% release	39.82	1856.86	1858.03	117	2.42	28.12
Yargyap	-400.*	PF 40% release	39.82	1845.2	1846.23	103	2.36	30.36
Yargyap	-500	PF 40% release	39.82	1838.85	1840.34	149	2.71	19.7
Yargyap	-600	PF 40% release	39.82	1832.49	1833.93	144	2.66	20.85
Yargyap	-700	PF 40% release	39.82	1826.54	1827.97	143	2.66	20.87
Yargyap	-800	PF 40% release	39.82	1820.58	1822.01	143	2.68	20.83
Yargyap	-900	PF 40% release	39.82	1817.02	1818.63	161	2.83	17.44
Yargyap	-1000	PF 40% release	39.82	1813.45	1815.17	172	2.94	15.7
Average						147.27	2.71	20.81

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	49.78	1880.11	1882.22	211	3.22	14.71
Yargyap	-100.*	PF 50% release	49.78	1874.31	1876.19	188	3.05	17.32
Yargyap	-200.*	PF 50% release	49.78	1868.51	1869.87	136	2.6	28.18
Yargyap	-300.*	PF 50% release	49.78	1856.86	1858.14	128	2.52	30.78
Yargyap	-400.*	PF 50% release	49.78	1845.2	1846.33	113	2.53	31.01
Yargyap	-500	PF 50% release	49.78	1838.85	1840.48	163	2.84	21.53
Yargyap	-600	PF 50% release	49.78	1832.49	1834.06	157	2.8	22.72
Yargyap	-700	PF 50% release	49.78	1826.54	1828.1	156	2.8	22.74
Yargyap	-800	PF 50% release	49.78	1820.58	1822.14	156	2.79	22.79
Yargyap	-900	PF 50% release	49.78	1817.02	1818.78	176	2.97	19.05
Yargyap	-1000	PF 50% release	49.78	1813.45	1815.34	189	3.05	17.24
Average						161.18	2.83	22.55

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	99.55	1880.11	1882.88	277	3.71	19.38
Yargyap	-100.*	PF 100% release	99.55	1874.31	1876.79	248	3.51	22.85
Yargyap	-200.*	PF 100% release	99.55	1868.51	1870.29	178	3.04	34.8
Yargyap	-300.*	PF 100% release	99.55	1856.86	1858.52	166	3.1	33.01
Yargyap	-400.*	PF 100% release	99.55	1845.2	1846.72	152	3.07	33.73
Yargyap	-500	PF 100% release	99.55	1838.85	1841	215	3.25	28.43
Yargyap	-600	PF 100% release	99.55	1832.49	1834.56	207	3.19	30.09
Yargyap	-700	PF 100% release	99.55	1826.54	1828.61	207	3.19	30.1
Yargyap	-800	PF 100% release	99.55	1820.58	1822.65	207	3.19	30.16
Yargyap	-900	PF 100% release	99.55	1817.02	1819.35	233	3.39	25.22
Yargyap	-1000	PF 100% release	99.55	1813.45	1815.95	250	3.5	22.75
Average						212.73	3.29	28.23

Other 4 Months

Kangtangshiri-Oct-Nov-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Kangtangshiri dam axis

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	4.39	1880.11	1880.9	79	2	5.54
Yargyap	-100.*	PF 10% release	4.39	1874.31	1875.02	71	1.89	6.54
Yargyap	-200.*	PF 10% release	4.39	1868.51	1869.03	52	1.59	10.7
Yargyap	-300.*	PF 10% release	4.39	1856.86	1857.34	48	1.56	11.61
Yargyap	-400.*	PF 10% release	4.39	1845.2	1845.63	43	1.48	13.77
Yargyap	-500	PF 10% release	4.39	1838.85	1839.46	61	1.75	8.15
Yargyap	-600	PF 10% release	4.39	1832.49	1833.08	59	1.72	8.61
Yargyap	-700	PF 10% release	4.39	1826.54	1827.13	59	1.72	8.61
Yargyap	-800	PF 10% release	4.39	1820.58	1821.17	59	1.73	8.61
Yargyap	-900	PF 10% release	4.39	1817.02	1817.68	66	1.82	7.22
Yargyap	-1000	PF 10% release	4.39	1813.45	1814.16	71	1.89	6.5
Average						60.73	1.74	8.71

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	6.58	1880.11	1881.05	94	2.15	6.54
Yargyap	-100.*	PF 15% release	6.58	1874.31	1875.15	84	2.03	7.72
Yargyap	-200.*	PF 15% release	6.58	1868.51	1869.11	60	1.74	12.52
Yargyap	-300.*	PF 15% release	6.58	1856.86	1857.42	56	1.7	13.66
Yargyap	-400.*	PF 15% release	6.58	1845.2	1845.71	51	1.58	16.3
Yargyap	-500	PF 15% release	6.58	1838.85	1839.57	72	1.9	9.56
Yargyap	-600	PF 15% release	6.58	1832.49	1833.19	70	1.87	10.12
Yargyap	-700	PF 15% release	6.58	1826.54	1827.23	69	1.86	10.15
Yargyap	-800	PF 15% release	6.58	1820.58	1821.27	69	1.87	10.12
Yargyap	-900	PF 15% release	6.58	1817.02	1817.8	78	1.97	8.5
Yargyap	-1000	PF 15% release	6.58	1813.45	1814.29	84	2.04	7.67
Average						71.55	1.88	10.26

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	8.77	1880.11	1881.16	105	2.29	7.32
Yargyap	-100.*	PF 20% release	8.77	1874.31	1875.25	94	2.17	8.62
Yargyap	-200.*	PF 20% release	8.77	1868.51	1869.19	68	1.85	14.04
Yargyap	-300.*	PF 20% release	8.77	1856.86	1857.49	63	1.79	15.33
Yargyap	-400.*	PF 20% release	8.77	1845.2	1845.77	57	1.69	18.21
Yargyap	-500	PF 20% release	8.77	1838.85	1839.66	81	2.02	10.71
Yargyap	-600	PF 20% release	8.77	1832.49	1833.27	78	1.98	11.34
Yargyap	-700	PF 20% release	8.77	1826.54	1827.32	78	1.98	11.33
Yargyap	-800	PF 20% release	8.77	1820.58	1821.36	78	1.98	11.38
Yargyap	-900	PF 20% release	8.77	1817.02	1817.89	87	2.1	9.51
Yargyap	-1000	PF 20% release	8.77	1813.45	1814.39	94	2.17	8.58
Average						80.27	2.00	11.49

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	10.97	1880.11	1881.26	115.00	2.38	8.03
Yargyap	-100.*	PF 25% release	10.97	1874.31	1875.34	103.00	2.26	9.44
Yargyap	-200.*	PF 25% release	10.97	1868.51	1869.25	74.00	1.93	15.37
Yargyap	-300.*	PF 25% release	10.97	1856.86	1857.56	70.00	1.86	16.82
Yargyap	-400.*	PF 25% release	10.97	1845.20	1845.82	62.00	1.77	19.86
Yargyap	-500	PF 25% release	10.97	1838.85	1839.74	89.00	2.10	11.75
Yargyap	-600	PF 25% release	10.97	1832.49	1833.35	86.00	2.06	12.43
Yargyap	-700	PF 25% release	10.97	1826.54	1827.39	85.00	2.07	12.42
Yargyap	-800	PF 25% release	10.97	1820.58	1821.43	85.00	2.07	12.43
Yargyap	-900	PF 25% release	10.97	1817.02	1817.98	96.00	2.18	10.44
Yargyap	-1000	PF 25% release	10.97	1813.45	1814.48	103.00	2.27	9.37
Average						88.00	2.09	12.58

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	13.16	1880.11	1881.35	124	2.47	8.64
Yargyap	-100.*	PF 30% release	13.16	1874.31	1875.42	111	2.34	10.18
Yargyap	-200.*	PF 30% release	13.16	1868.51	1869.31	80	2	16.52
Yargyap	-300.*	PF 30% release	13.16	1856.86	1857.61	75	1.92	18.13
Yargyap	-400.*	PF 30% release	13.16	1845.2	1845.87	67	1.83	21.43
Yargyap	-500	PF 30% release	13.16	1838.85	1839.8	95	2.17	12.64
Yargyap	-600	PF 30% release	13.16	1832.49	1833.41	92	2.15	13.34
Yargyap	-700	PF 30% release	13.16	1826.54	1827.46	92	2.13	13.39
Yargyap	-800	PF 30% release	13.16	1820.58	1821.5	92	2.14	13.38
Yargyap	-900	PF 30% release	13.16	1817.02	1818.05	103	2.26	11.22
Yargyap	-1000	PF 30% release	13.16	1813.45	1814.56	111	2.35	10.09
Average						94.73	2.16	13.54

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	17.55	1880.11	1881.49	138	2.63	9.65
Yargyap	-100.*	PF 40% release	17.55	1874.31	1875.55	124	2.47	11.43
Yargyap	-200.*	PF 40% release	17.55	1868.51	1869.4	89	2.12	18.56
Yargyap	-300.*	PF 40% release	17.55	1856.86	1857.7	84	2.05	20.27
Yargyap	-400.*	PF 40% release	17.55	1845.2	1845.95	75	1.95	23.99
Yargyap	-500	PF 40% release	17.55	1838.85	1839.92	107	2.3	14.2
Yargyap	-600	PF 40% release	17.55	1832.49	1833.52	103	2.27	14.98
Yargyap	-700	PF 40% release	17.55	1826.54	1827.57	103	2.26	15.03
Yargyap	-800	PF 40% release	17.55	1820.58	1821.61	103	2.25	15.07
Yargyap	-900	PF 40% release	17.55	1817.02	1818.18	116	2.39	12.59
Yargyap	-1000	PF 40% release	17.55	1813.45	1814.7	125	2.48	11.36
Average						106.09	2.29	15.19

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	21.94	1880.11	1881.62	151	2.74	10.58
Yargyap	-100.*	PF 50% release	21.94	1874.31	1875.66	135	2.61	12.44
Yargyap	-200.*	PF 50% release	21.94	1868.51	1869.49	98	2.21	20.29
Yargyap	-300.*	PF 50% release	21.94	1856.86	1857.78	92	2.14	22.18
Yargyap	-400.*	PF 50% release	21.94	1845.2	1846.03	83	2.02	26.34
Yargyap	-500	PF 50% release	21.94	1838.85	1840.02	117	2.43	15.45
Yargyap	-600	PF 50% release	21.94	1832.49	1833.62	113	2.38	16.37
Yargyap	-700	PF 50% release	21.94	1826.54	1827.67	113	2.37	16.41
Yargyap	-800	PF 50% release	21.94	1820.58	1821.71	113	2.36	16.48
Yargyap	-900	PF 50% release	21.94	1817.02	1818.29	127	2.5	13.77
Yargyap	-1000	PF 50% release	21.94	1813.45	1814.81	136	2.6	12.4
Average						116.18	2.40	16.61

Reach	Ch d/s of Kantangshiri HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	43.87	1880.11	1882.11	200	3.14	13.98
Yargyap	-100.*	PF 100% release	43.87	1874.31	1876.1	179	2.97	16.47
Yargyap	-200.*	PF 100% release	43.87	1868.51	1869.8	129	2.52	26.88
Yargyap	-300.*	PF 100% release	43.87	1856.86	1858.07	121	2.46	29.27
Yargyap	-400.*	PF 100% release	43.87	1845.2	1846.27	107	2.43	30.64
Yargyap	-500	PF 100% release	43.87	1838.85	1840.4	155	2.76	20.48
Yargyap	-600	PF 100% release	43.87	1832.49	1833.98	149	2.72	21.65
Yargyap	-700	PF 100% release	43.87	1826.54	1828.03	149	2.71	21.67
Yargyap	-800	PF 100% release	43.87	1820.58	1822.07	149	2.72	21.7
Yargyap	-900	PF 100% release	43.87	1817.02	1818.69	167	2.9	18.1
Yargyap	-1000	PF 100% release	43.87	1813.45	1815.25	180	2.97	16.39
Average						153.18	2.75	21.57

Rapum HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Rapum-Dec to March

Note: River sta -100 denotes location along river reach 100 m d/s of Rapum dam axis

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	1.24	1616.454	1616.709	25.5	1.12	8.68
Yargyap	-100.*	PF 10% release	1.24	1612.8	1613.059	25.9	1.15	8.34
Yargyap	-200.*	PF 10% release	1.24	1609.146	1609.414	26.8	1.15	8.08
Yargyap	-300.*	PF 10% release	1.24	1605.492	1605.767	27.5	1.17	7.72
Yargyap	-400.*	PF 10% release	1.24	1601.838	1602.12	28.2	1.21	7.27
Yargyap	-500	PF 10% release	1.24	1598.184	1598.51	32.6	1	7.38
Yargyap	-600	PF 10% release	1.24	1596.067	1596.253	18.6	1.21	6.97
Yargyap	-700	PF 10% release	1.24	1592.658	1593.068	41	0.27	16.72
Yargyap	-750	PF 10% release	1.24	1592.651	1593.017	36.6	0.39	12.15
Average						29.19	0.96	9.26

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	1.86	1616.454	1616.752	29.8	1.23	10.14
Yargyap	-100.*	PF 15% release	1.86	1612.8	1613.107	30.7	1.23	9.88
Yargyap	-200.*	PF 15% release	1.86	1609.146	1609.458	31.2	1.26	9.44
Yargyap	-300.*	PF 15% release	1.86	1605.492	1605.814	32.2	1.27	9.05
Yargyap	-400.*	PF 15% release	1.86	1601.838	1602.171	33.3	1.3	8.59
Yargyap	-500	PF 15% release	1.86	1598.184	1598.559	37.5	1.15	8.17
Yargyap	-600	PF 15% release	1.86	1596.067	1596.302	23.5	1.34	7.53
Yargyap	-700	PF 15% release	1.86	1592.658	1593.139	48.1	0.32	18.29
Yargyap	-750	PF 15% release	1.86	1592.651	1593.079	42.8	0.47	12.73
Average						34.34	1.06	10.42

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	2.48	1616.454	1616.789	33.5	1.3	11.4
Yargyap	-100.*	PF 20% release	2.48	1612.8	1613.144	34.4	1.3	11.07
Yargyap	-200.*	PF 20% release	2.48	1609.146	1609.498	35.2	1.32	10.64
Yargyap	-300.*	PF 20% release	2.48	1605.492	1605.854	36.2	1.35	10.16
Yargyap	-400.*	PF 20% release	2.48	1601.838	1602.211	37.3	1.39	9.4
Yargyap	-500	PF 20% release	2.48	1598.184	1598.6	41.6	1.26	8.84
Yargyap	-600	PF 20% release	2.48	1596.067	1596.344	27.7	1.45	8
Yargyap	-700	PF 20% release	2.48	1592.658	1593.197	53.9	0.35	19.55
Yargyap	-750	PF 20% release	2.48	1592.651	1593.128	47.7	0.54	13.2
Average						38.61	1.14	11.36

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	2.65	1616.45	1616.80	35.00	1.31	11.73
Yargyap	-100.*	PF 25% release	2.65	1612.80	1613.15	35.00	1.34	11.28
Yargyap	-200.*	PF 25% release	2.65	1609.15	1609.51	36.00	1.35	10.88
Yargyap	-300.*	PF 25% release	2.65	1605.49	1605.86	37.00	1.37	10.42
Yargyap	-400.*	PF 25% release	2.65	1601.84	1602.22	38.00	1.41	9.54
Yargyap	-500	PF 25% release	2.65	1598.18	1598.61	43.00	1.29	8.99
Yargyap	-600	PF 25% release	2.65	1596.07	1596.36	29.00	1.48	8.13
Yargyap	-700	PF 25% release	2.65	1592.66	1593.21	55.00	0.36	19.71
Yargyap	-750	PF 25% release	2.65	1592.65	1593.14	49.00	0.56	13.32
Average						39.67	1.16	11.56

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	3.72	1616.454	1616.849	39.5	1.4	13.45
Yargyap	-100.*	PF 30% release	3.72	1612.8	1613.203	40.3	1.43	12.96
Yargyap	-200.*	PF 30% release	3.72	1609.146	1609.559	41.3	1.44	12.49
Yargyap	-300.*	PF 30% release	3.72	1605.492	1605.918	42.6	1.46	11.96
Yargyap	-400.*	PF 30% release	3.72	1601.838	1602.275	43.7	1.54	10.35
Yargyap	-500	PF 30% release	3.72	1598.184	1598.666	48.2	1.44	9.9
Yargyap	-600	PF 30% release	3.72	1596.067	1596.416	34.9	1.61	8.82
Yargyap	-700	PF 30% release	3.72	1592.658	1593.291	63.3	0.42	20.23
Yargyap	-750	PF 30% release	3.72	1592.651	1593.212	56.1	0.65	13.99
Average						45.54	1.27	12.68

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	4.96	1616.454	1616.896	44.2	1.5	15.02
Yargyap	-100.*	PF 40% release	4.96	1612.8	1613.252	45.2	1.51	14.56
Yargyap	-200.*	PF 40% release	4.96	1609.146	1609.609	46.3	1.53	14
Yargyap	-300.*	PF 40% release	4.96	1605.492	1605.969	47.7	1.56	13.38
Yargyap	-400.*	PF 40% release	4.96	1601.838	1602.328	49	1.66	11.13
Yargyap	-500	PF 40% release	4.96	1598.184	1598.72	53.6	1.57	10.79
Yargyap	-600	PF 40% release	4.96	1596.067	1596.477	41	1.73	9.51
Yargyap	-700	PF 40% release	4.96	1592.658	1593.368	71	0.47	20.44
Yargyap	-750	PF 40% release	4.96	1592.651	1593.28	62.9	0.74	14.63
Average						51.21	1.36	13.72

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	6.19	1616.454	1616.938	48.4	1.56	16.45
Yargyap	-100.*	PF 50% release	6.19	1612.8	1613.294	49.4	1.58	15.89
Yargyap	-200.*	PF 50% release	6.19	1609.146	1609.653	50.7	1.59	15.32

Yargyap	-300.*	PF 50% release	6.19	1605.492	1606.013	52.1	1.62	14.59
Yargyap	-400.*	PF 50% release	6.19	1601.838	1602.378	54	1.73	11.87
Yargyap	-500	PF 50% release	6.19	1598.184	1598.767	58.3	1.68	11.55
Yargyap	-600	PF 50% release	6.19	1596.067	1596.53	46.3	1.83	10.11
Yargyap	-700	PF 50% release	6.19	1592.658	1593.436	77.8	0.52	20.62
Yargyap	-750	PF 50% release	6.19	1592.651	1593.339	68.8	0.82	15.19
Average						56.20	1.44	14.62

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	12.39	1616.454	1617.091	63.7	1.79	21.68
Yargyap	-100.*	PF 100% release	12.39	1612.8	1613.452	65.2	1.81	20.99
Yargyap	-200.*	PF 100% release	12.39	1609.146	1609.816	67	1.83	20.23
Yargyap	-300.*	PF 100% release	12.39	1605.492	1606.176	68.4	1.94	17.18
Yargyap	-400.*	PF 100% release	12.39	1601.838	1602.568	73	2.04	14.59
Yargyap	-500	PF 100% release	12.39	1598.184	1598.95	76.6	2.05	14.51
Yargyap	-600	PF 100% release	12.39	1596.067	1596.739	67.2	2.15	12.5
Yargyap	-700	PF 100% release	12.39	1592.658	1593.694	103.6	0.72	21.32
Yargyap	-750	PF 100% release	12.39	1592.651	1593.561	91	1.12	16.08
Average						75.08	1.72	17.68

Monsoon

Rapum-June to September

Note: River sta -100 denotes location along river reach 100 m d/s of Rapum dam axis

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	10.45	1616.45	1617.05	60	1.74	20.21
Yargyap	-100.*	PF 10% release	10.45	1612.8	1613.41	61	1.75	19.61
Yargyap	-200.*	PF 10% release	10.45	1609.15	1609.77	62	1.77	18.89
Yargyap	-300.*	PF 10% release	10.45	1605.49	1606.13	64	1.85	16.46
Yargyap	-400.*	PF 10% release	10.45	1601.84	1602.52	68	1.96	13.88
Yargyap	-500	PF 10% release	10.45	1598.18	1598.9	72	1.97	13.64
Yargyap	-600	PF 10% release	10.45	1596.07	1596.68	61	2.07	11.83
Yargyap	-700	PF 10% release	10.45	1592.66	1593.62	96	0.66	21.13
Yargyap	-750	PF 10% release	10.45	1592.65	1593.5	85	1.03	15.9
Average						69.89	1.64	16.84

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	15.68	1616.45	1617.16	71	1.87	23.86
Yargyap	-100.*	PF 15% release	15.68	1612.8	1613.52	72	1.9	23.05
Yargyap	-200.*	PF 15% release	15.68	1609.15	1609.88	73	1.95	21.46
Yargyap	-300.*	PF 15% release	15.68	1605.49	1606.25	76	2.04	18.23
Yargyap	-400.*	PF 15% release	15.68	1601.84	1602.64	80	2.17	15.45
Yargyap	-500	PF 15% release	15.68	1598.18	1599.03	85	2.18	15.22
Yargyap	-600	PF 15% release	15.68	1596.07	1596.83	76	2.26	13.54
Yargyap	-700	PF 15% release	15.68	1592.66	1593.8	114	0.8	21.61

Yargyap	-750	PF 15% release	15.68	1592.65	1593.65	100	1.25	16.37
Average						83.00	1.82	18.75
Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	20.91	1616.45	1617.24	79	1.99	26.76
Yargyap	-100.*	PF 20% release	20.91	1612.8	1613.61	81	1.99	25.92
Yargyap	-200.*	PF 20% release	20.91	1609.15	1609.97	82	2.09	22.62
Yargyap	-300.*	PF 20% release	20.91	1605.49	1606.34	85	2.21	19.19
Yargyap	-400.*	PF 20% release	20.91	1601.84	1602.76	92	2.32	16.72
Yargyap	-500	PF 20% release	20.91	1598.18	1599.14	96	2.35	15.88
Yargyap	-600	PF 20% release	20.91	1596.07	1596.95	88	2.41	14.91
Yargyap	-700	PF 20% release	20.91	1592.66	1593.96	130	0.91	22.02
Yargyap	-750	PF 20% release	20.91	1592.65	1593.78	113	1.42	16.76
Average						94.00	1.97	20.09

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	26.13	1616.45	1617.31	86.00	2.09	28.87
Yargyap	-100.*	PF 25% release	26.13	1612.80	1613.67	87.00	2.14	27.00
Yargyap	-200.*	PF 25% release	26.13	1609.15	1610.04	89.00	2.24	23.29
Yargyap	-300.*	PF 25% release	26.13	1605.49	1606.43	94.00	2.34	20.05
Yargyap	-400.*	PF 25% release	26.13	1601.84	1602.85	101.00	2.45	17.67
Yargyap	-500	PF 25% release	26.13	1598.18	1599.23	105.00	2.50	16.45
Yargyap	-600	PF 25% release	26.13	1596.07	1597.06	99.00	2.52	16.12
Yargyap	-700	PF 25% release	26.13	1592.66	1594.09	143.00	1.01	22.38
Yargyap	-750	PF 25% release	26.13	1592.65	1593.89	124.00	1.58	17.10
Average						103.11	2.10	20.99

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	31.36	1616.45	1617.38	93	2.17	30.3
Yargyap	-100.*	PF 30% release	31.36	1612.8	1613.74	94	2.24	27.6
Yargyap	-200.*	PF 30% release	31.36	1609.15	1610.11	96	2.34	23.97
Yargyap	-300.*	PF 30% release	31.36	1605.49	1606.51	102	2.47	20.8
Yargyap	-400.*	PF 30% release	31.36	1601.84	1602.94	110	2.56	18.53
Yargyap	-500	PF 30% release	31.36	1598.18	1599.32	114	2.64	16.95
Yargyap	-600	PF 30% release	31.36	1596.07	1597.15	108	2.65	16.9
Yargyap	-700	PF 30% release	31.36	1592.66	1594.21	155	1.1	22.71
Yargyap	-750	PF 30% release	31.36	1592.65	1593.99	134	1.72	17.4
Average						111.78	2.21	21.68

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	41.81	1616.45	1617.48	103	2.35	32.35
Yargyap	-100.*	PF 40% release	41.81	1612.8	1613.85	105	2.44	28.61

Yargyap	-200.*	PF 40% release	41.81	1609.15	1610.24	109	2.54	25.15
Yargyap	-300.*	PF 40% release	41.81	1605.49	1606.65	116	2.66	22.14
Yargyap	-400.*	PF 40% release	41.81	1601.84	1603.09	125	2.74	20.24
Yargyap	-500	PF 40% release	41.81	1598.18	1599.48	130	2.86	17.89
Yargyap	-600	PF 40% release	41.81	1596.07	1597.31	124	2.85	18.04
Yargyap	-700	PF 40% release	41.81	1592.66	1594.43	177	1.25	23.28
Yargyap	-750	PF 40% release	41.81	1592.65	1594.16	151	1.96	17.93
Average						126.67	2.41	22.85

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	52.26	1616.45	1617.58	113	2.49	33.21
Yargyap	-100.*	PF 50% release	52.26	1612.8	1613.95	115	2.6	29.51
Yargyap	-200.*	PF 50% release	52.26	1609.15	1610.35	120	2.71	26.17
Yargyap	-300.*	PF 50% release	52.26	1605.49	1606.77	128	2.82	23.31
Yargyap	-400.*	PF 50% release	52.26	1601.84	1603.24	140	2.87	21.81
Yargyap	-500	PF 50% release	52.26	1598.18	1599.62	144	3.03	18.74
Yargyap	-600	PF 50% release	52.26	1596.07	1597.46	139	3.01	19.04
Yargyap	-700	PF 50% release	52.26	1592.66	1594.62	196	1.37	23.8
Yargyap	-750	PF 50% release	52.26	1592.65	1594.31	166	2.17	18.39
Average						140.11	2.56	23.78

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	104.53	1616.45	1617.96	151	3.05	36.55
Yargyap	-100.*	PF 100% release	104.53	1612.8	1614.37	157	3.14	33.28
Yargyap	-200.*	PF 100% release	104.53	1609.15	1610.8	165	3.25	30.31
Yargyap	-300.*	PF 100% release	104.53	1605.49	1607.27	178	3.34	27.95
Yargyap	-400.*	PF 100% release	104.53	1601.84	1603.76	192	3.34	27.68
Yargyap	-500	PF 100% release	104.53	1598.18	1600.19	201	3.61	22.06
Yargyap	-600	PF 100% release	104.53	1596.07	1598.02	195	3.61	22.16
Yargyap	-700	PF 100% release	104.53	1592.66	1595.37	271	1.84	25.82
Yargyap	-750	PF 100% release	104.53	1592.65	1594.87	222	3	20.12
Average						192.44	3.13	27.33

Other 4 Months

Rapum-Oct-Nov-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Rapum dam axis

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	4.6	1616.45	1616.89	44	1.45	14.68
Yargyap	-100.*	PF 10% release	4.6	1612.8	1613.24	44	1.48	14.13
Yargyap	-200.*	PF 10% release	4.6	1609.15	1609.6	45	1.51	13.59
Yargyap	-300.*	PF 10% release	4.6	1605.49	1605.96	47	1.53	13.01
Yargyap	-400.*	PF 10% release	4.6	1601.84	1602.32	48	1.62	10.93
Yargyap	-500	PF 10% release	4.6	1598.18	1598.71	53	1.54	10.55
Yargyap	-600	PF 10% release	4.6	1596.07	1596.46	39	1.7	9.32

Yargyap	-700	PF 10% release	4.6	1592.66	1593.35	69	0.46	20.39
Yargyap	-750	PF 10% release	4.6	1592.65	1593.26	61	0.72	14.46
Average						50.00	1.33	13.45

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	6.91	1616.45	1616.96	51	1.59	17.21
Yargyap	-100.*	PF 15% release	6.91	1612.8	1613.32	52	1.61	16.62
Yargyap	-200.*	PF 15% release	6.91	1609.15	1609.67	52	1.64	15.96
Yargyap	-300.*	PF 15% release	6.91	1605.49	1606.04	55	1.67	14.95
Yargyap	-400.*	PF 15% release	6.91	1601.84	1602.4	56	1.79	12.23
Yargyap	-500	PF 15% release	6.91	1598.18	1598.79	61	1.74	11.95
Yargyap	-600	PF 15% release	6.91	1596.07	1596.56	49	1.88	10.44
Yargyap	-700	PF 15% release	6.91	1592.66	1593.47	81	0.55	20.72
Yargyap	-750	PF 15% release	6.91	1592.65	1593.37	72	0.86	15.49
Average						58.78	1.48	15.06

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	9.21	1616.45	1617.02	57	1.69	19.27
Yargyap	-100.*	PF 20% release	9.21	1612.8	1613.38	58	1.72	18.59
Yargyap	-200.*	PF 20% release	9.21	1609.15	1609.74	59	1.74	17.91
Yargyap	-300.*	PF 20% release	9.21	1605.49	1606.1	61	1.78	16
Yargyap	-400.*	PF 20% release	9.21	1601.84	1602.48	64	1.9	13.35
Yargyap	-500	PF 20% release	9.21	1598.18	1598.86	68	1.91	13.06
Yargyap	-600	PF 20% release	9.21	1596.07	1596.64	57	2	11.4
Yargyap	-700	PF 20% release	9.21	1592.66	1593.57	91	0.63	20.99
Yargyap	-750	PF 20% release	9.21	1592.65	1593.46	81	0.98	15.77
Average						66.22	1.59	16.26

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	11.51	1616.45	1617.07	62	1.77	21.04
Yargyap	-100.*	PF 25% release	11.51	1612.8	1613.43	63	1.79	20.36
Yargyap	-200.*	PF 25% release	11.51	1609.15	1609.8	65	1.8	19.65
Yargyap	-300.*	PF 25% release	11.51	1605.49	1606.16	67	1.9	16.85
Yargyap	-400.*	PF 25% release	11.51	1601.84	1602.54	70	2	14.32
Yargyap	-500	PF 25% release	11.51	1598.18	1598.93	75	2.02	14.11
Yargyap	-600	PF 25% release	11.51	1596.07	1596.71	64	2.11	12.22
Yargyap	-700	PF 25% release	11.51	1592.66	1593.66	100	0.69	21.23
Yargyap	-750	PF 25% release	11.51	1592.65	1593.53	88	1.08	16
Average						72.67	1.68	17.31

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	13.81	1616.45	1617.12	67	1.83	22.66
Yargyap	-100.*	PF 30% release	13.81	1612.8	1613.48	68	1.85	21.95
Yargyap	-200.*	PF 30% release	13.81	1609.15	1609.85	70	1.87	20.92
Yargyap	-300.*	PF 30% release	13.81	1605.49	1606.21	72	1.98	17.69
Yargyap	-400.*	PF 30% release	13.81	1601.84	1602.6	76	2.08	15.01

Yargyap	-500	PF 30% release	13.81	1598.18	1598.99	81	2.09	14.99
Yargyap	-600	PF 30% release	13.81	1596.07	1596.78	71	2.19	12.98
Yargyap	-700	PF 30% release	13.81	1592.66	1593.74	108	0.76	21.45
Yargyap	-750	PF 30% release	13.81	1592.65	1593.6	95	1.18	16.21
Average						78.67	1.76	18.21

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	18.42	1616.45	1617.2	75	1.93	25.49
Yargyap	-100.*	PF 40% release	18.42	1612.8	1613.57	77	1.95	24.66
Yargyap	-200.*	PF 40% release	18.42	1609.15	1609.93	78	2.02	22.25
Yargyap	-300.*	PF 40% release	18.42	1605.49	1606.3	81	2.13	18.75
Yargyap	-400.*	PF 40% release	18.42	1601.84	1602.71	87	2.25	16.16
Yargyap	-500	PF 40% release	18.42	1598.18	1599.08	90	2.28	15.57
Yargyap	-600	PF 40% release	18.42	1596.07	1596.9	83	2.35	14.26
Yargyap	-700	PF 40% release	18.42	1592.66	1593.89	123	0.86	21.83
Yargyap	-750	PF 40% release	18.42	1592.65	1593.72	107	1.34	16.58
Average						89.00	1.90	19.51

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	23.02	1616.45	1617.27	82	2.03	27.79
Yargyap	-100.*	PF 50% release	23.02	1612.8	1613.63	83	2.06	26.49
Yargyap	-200.*	PF 50% release	23.02	1609.15	1609.99	84	2.16	22.88
Yargyap	-300.*	PF 50% release	23.02	1605.49	1606.38	89	2.26	19.54
Yargyap	-400.*	PF 50% release	23.02	1601.84	1602.79	95	2.38	17.12
Yargyap	-500	PF 50% release	23.02	1598.18	1599.17	99	2.42	16.1
Yargyap	-600	PF 50% release	23.02	1596.07	1597	93	2.46	15.39
Yargyap	-700	PF 50% release	23.02	1592.66	1594.01	135	0.95	22.17
Yargyap	-750	PF 50% release	23.02	1592.65	1593.83	118	1.49	16.9
Average						97.56	2.02	20.49

Reach	Ch d/s of Rapum HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity
			(m ³ /s)	(m)	(m)	(cm)	(m/s)
Yargyap	0	PF 100% release	46.05	1616.45	1617.52	107	2.41
Yargyap	-100.*	PF 100% release	46.05	1612.8	1613.89	109	2.52
Yargyap	-200.*	PF 100% release	46.05	1609.15	1610.28	113	2.63
Yargyap	-300.*	PF 100% release	46.05	1605.49	1606.7	121	2.71
Yargyap	-400.*	PF 100% release	46.05	1601.84	1603.16	132	2.79
Yargyap	-500	PF 100% release	46.05	1598.18	1599.54	136	2.93
Yargyap	-600	PF 100% release	46.05	1596.07	1597.37	130	2.92
Yargyap	-700	PF 100% release	46.05	1592.66	1594.51	185	1.3
Yargyap	-750	PF 100% release	46.05	1592.65	1594.23	158	2.05
Average						132.33	2.47

Pauk HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Pauk HEP - Dec to March

Note: River sta -100 denotes location along river reach 100 m d/s of Pauk dam axis

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity
			(m ³ /s)	(m)	(m)	(cm)	(m/s)
Yargyap	0	PF 10% release	1.25	1475.82	1476.25	43	0.55
Yargyap	-100.*	PF 10% release	1.25	1475.41	1475.85	44	0.58
Yargyap	-200.*	PF 10% release	1.25	1474.99	1475.46	47	0.57
Yargyap	-300.*	PF 10% release	1.25	1474.58	1475.03	45	0.65
Yargyap	-400.*	PF 10% release	1.25	1474.16	1474.68	52	0.53
Yargyap	-500	PF 10% release	1.25	1473.75	1474.14	39	0.92
Average						45.00	0.63

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity
			(m ³ /s)	(m)	(m)	(cm)	(m/s)
Yargyap	0	PF 15% release	1.88	1475.82	1476.32	50	0.61
Yargyap	-100.*	PF 15% release	1.88	1475.41	1475.92	51	0.64
Yargyap	-200.*	PF 15% release	1.88	1474.99	1475.53	54	0.64
Yargyap	-300.*	PF 15% release	1.88	1474.58	1475.11	53	0.7
Yargyap	-400.*	PF 15% release	1.88	1474.16	1474.76	60	0.59
Yargyap	-500	PF 15% release	1.88	1473.75	1474.21	46	1.02
Average						52.33	0.70

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity
			(m ³ /s)	(m)	(m)	(cm)	(m/s)
Yargyap	0	PF 20% release	2.5	1475.82	1476.38	56	0.66
Yargyap	-100.*	PF 20% release	2.5	1475.41	1475.98	57	0.68
Yargyap	-200.*	PF 20% release	2.5	1474.99	1475.59	60	0.69
Yargyap	-300.*	PF 20% release	2.5	1474.58	1475.17	59	0.75
Yargyap	-400.*	PF 20% release	2.5	1474.16	1474.83	67	0.64
Yargyap	-500	PF 20% release	2.5	1473.75	1474.26	51	1.1
Average						58.33	0.75

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity
			(m ³ /s)	(m)	(m)	(cm)	(m/s)
Yargyap	0	PF 25% release	3.13	1475.82	1476.42	60	0.69
Yargyap	-100.*	PF 25% release	3.13	1475.41	1476.03	62	0.73
Yargyap	-200.*	PF 25% release	3.13	1474.99	1475.65	66	0.73
Yargyap	-300.*	PF 25% release	3.13	1474.58	1475.23	65	0.78
Yargyap	-400.*	PF 25% release	3.13	1474.16	1474.88	72	0.68
Yargyap	-500	PF 25% release	3.13	1473.75	1474.31	56	1.16
Average						63.50	0.80

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width

			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	3.75	1475.82	1476.47	65	0.72	16.02
Yargyap	-100.*	PF 30% release	3.75	1475.41	1476.08	67	0.75	14.78
Yargyap	-200.*	PF 30% release	3.75	1474.99	1475.69	70	0.77	14.02
Yargyap	-300.*	PF 30% release	3.75	1474.58	1475.28	70	0.81	13.14
Yargyap	-400.*	PF 30% release	3.75	1474.16	1474.93	77	0.71	13.71
Yargyap	-500	PF 30% release	3.75	1473.75	1474.35	60	1.22	10.37
Average						68.17	0.83	13.67

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	5	1475.82	1476.54	72	0.78	17.87
Yargyap	-100.*	PF 40% release	5	1475.41	1476.16	75	0.81	16.51
Yargyap	-200.*	PF 40% release	5	1474.99	1475.77	78	0.82	15.61
Yargyap	-300.*	PF 40% release	5	1474.58	1475.36	78	0.87	14.71
Yargyap	-400.*	PF 40% release	5	1474.16	1475.01	85	0.77	15.2
Yargyap	-500	PF 40% release	5	1473.75	1474.41	66	1.31	11.55
Average						75.67	0.89	15.24

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	6.25	1475.82	1476.61	79	0.82	19.47
Yargyap	-100.*	PF 50% release	6.25	1475.41	1476.22	81	0.85	17.98
Yargyap	-200.*	PF 50% release	6.25	1474.99	1475.84	85	0.87	16.97
Yargyap	-300.*	PF 50% release	6.25	1474.58	1475.43	85	0.91	16.06
Yargyap	-400.*	PF 50% release	6.25	1474.16	1475.08	92	0.82	16.47
Yargyap	-500	PF 50% release	6.25	1473.75	1474.47	72	1.38	12.56
Average						82.33	0.94	16.58

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	12.5	1475.82	1476.84	102	0.97	25.31
Yargyap	-100.*	PF 100% release	12.5	1475.41	1476.47	106	1.01	22.57
Yargyap	-200.*	PF 100% release	12.5	1474.99	1476.09	110	1.03	22.04
Yargyap	-300.*	PF 100% release	12.5	1474.58	1475.7	112	1.06	21.01
Yargyap	-400.*	PF 100% release	12.5	1474.16	1475.35	119	1	21.14
Yargyap	-500	PF 100% release	12.5	1473.75	1474.69	94	1.64	16.28
Average						107.17	1.12	21.39

Monsoon

Pauk HEP - June to September

Note: River sta -100 denotes location along river reach 100 m d/s of Pauk dam axis

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	12.23	1475.82	1476.83	101	0.96	25.1
Yargyap	-100.*	PF 10% release	12.23	1475.41	1476.46	105	1	22.47
Yargyap	-200.*	PF 10% release	12.23	1474.99	1476.08	109	1.03	21.86

Yargyap	-300.*	PF 10% release	12.23	1474.58	1475.69	111	1.06	20.84
Yargyap	-400.*	PF 10% release	12.23	1474.16	1475.34	118	1	20.97
Yargyap	-500	PF 10% release	12.23	1473.75	1474.68	93	1.63	16.15
Average						106.17	1.11	21.23

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	18.35	1475.82	1477	118	1.06	29.29
Yargyap	-100.*	PF 15% release	18.35	1475.41	1476.63	122	1.14	24.36
Yargyap	-200.*	PF 15% release	18.35	1474.99	1476.26	127	1.15	24.04
Yargyap	-300.*	PF 15% release	18.35	1474.58	1475.88	130	1.16	24.36
Yargyap	-400.*	PF 15% release	18.35	1474.16	1475.52	136	1.12	24.27
Yargyap	-500	PF 15% release	18.35	1473.75	1474.83	108	1.81	18.8
Average						123.50	1.24	24.19

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	24.47	1475.82	1477.14	132	1.13	32.41
Yargyap	-100.*	PF 20% release	24.47	1475.41	1476.77	136	1.25	25.95
Yargyap	-200.*	PF 20% release	24.47	1474.99	1476.39	140	1.27	25.26
Yargyap	-300.*	PF 20% release	24.47	1474.58	1476.02	144	1.26	25.54
Yargyap	-400.*	PF 20% release	24.47	1474.16	1475.67	151	1.21	26.41
Yargyap	-500	PF 20% release	24.47	1473.75	1474.95	120	1.94	20.95
Average						137.17	1.34	26.09

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	30.58	1475.82	1477.26	144	1.20	33.55
Yargyap	-100.*	PF 25% release	30.58	1475.41	1476.89	148	1.34	27.34
Yargyap	-200.*	PF 25% release	30.58	1474.99	1476.51	152	1.37	26.33
Yargyap	-300.*	PF 25% release	30.58	1474.58	1476.14	156	1.36	26.51
Yargyap	-400.*	PF 25% release	30.58	1474.16	1475.78	162	1.31	27.37
Yargyap	-500	PF 25% release	30.58	1473.75	1475.06	131	2.05	22.78
Average						148.83	1.44	27.31

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	36.7	1475.82	1477.37	155	1.26	34.57
Yargyap	-100.*	PF 30% release	36.7	1475.41	1477	159	1.41	28.61
Yargyap	-200.*	PF 30% release	36.7	1474.99	1476.62	163	1.45	27.32
Yargyap	-300.*	PF 30% release	36.7	1474.58	1476.25	167	1.45	27.4
Yargyap	-400.*	PF 30% release	36.7	1474.16	1475.89	173	1.4	28.22
Yargyap	-500	PF 30% release	36.7	1473.75	1475.15	140	2.15	24.39
Average						159.50	1.52	28.42
River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width

			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	48.93	1475.82	1477.56	174	1.36	36.42
Yargyap	-100.*	PF 40% release	48.93	1475.41	1477.2	179	1.54	30.87
Yargyap	-200.*	PF 40% release	48.93	1474.99	1476.82	183	1.59	29.07
Yargyap	-300.*	PF 40% release	48.93	1474.58	1476.44	186	1.59	28.97
Yargyap	-400.*	PF 40% release	48.93	1474.16	1476.07	191	1.55	29.71
Yargyap	-500	PF 40% release	48.93	1473.75	1475.31	156	2.31	27.16
Average						178.17	1.66	30.37

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	61.17	1475.82	1477.73	191	1.44	38.07
Yargyap	-100.*	PF 50% release	61.17	1475.41	1477.37	196	1.63	32.86
Yargyap	-200.*	PF 50% release	61.17	1474.99	1476.99	200	1.7	30.61
Yargyap	-300.*	PF 50% release	61.17	1474.58	1476.61	203	1.71	30.35
Yargyap	-400.*	PF 50% release	61.17	1474.16	1476.23	207	1.68	30.98
Yargyap	-500	PF 50% release	61.17	1473.75	1475.44	169	2.47	28.68
Average						194.33	1.77	31.93

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	122.33	1475.82	1478.4	258	1.75	44.5
Yargyap	-100.*	PF 100% release	122.33	1475.41	1478.05	264	1.97	39.8
Yargyap	-200.*	PF 100% release	122.33	1474.99	1477.66	267	2.1	36.6
Yargyap	-300.*	PF 100% release	122.33	1474.58	1477.25	267	2.14	35.66
Yargyap	-400.*	PF 100% release	122.33	1474.16	1476.85	269	2.15	35.93
Yargyap	-500	PF 100% release	122.33	1473.75	1475.92	217	3.09	32.66
Average						257.00	2.20	37.53

Other 4 Months

Pauk HEP-Oct-Nov-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Pauk dam axis

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	5.4	1475.82	1476.56	74	0.79	18.4
Yargyap	-100.*	PF 10% release	5.4	1475.41	1476.18	77	0.82	17
Yargyap	-200.*	PF 10% release	5.4	1474.99	1475.79	80	0.84	16.07
Yargyap	-300.*	PF 10% release	5.4	1474.58	1475.39	81	0.88	15.17
Yargyap	-400.*	PF 10% release	5.4	1474.16	1475.04	88	0.79	15.62
Yargyap	-500	PF 10% release	5.4	1473.75	1474.43	68	1.33	11.89
Average						78.00	0.91	15.69

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	8.1	1475.82	1476.69	87	0.87	21.49
Yargyap	-100.*	PF 15% release	8.1	1475.41	1476.31	90	0.9	19.85
Yargyap	-200.*	PF 15% release	8.1	1474.99	1475.92	93	0.93	18.71

Yargyap	-300.*	PF 15% release	8.1	1474.58	1475.53	95	0.96	17.76
Yargyap	-400.*	PF 15% release	8.1	1474.16	1475.17	101	0.89	18.08
Yargyap	-500	PF 15% release	8.1	1473.75	1474.55	80	1.47	13.84
Average						91.00	1.00	18.29
River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	10.8	1475.82	1476.79	97	0.93	23.98
Yargyap	-100.*	PF 20% release	10.8	1475.41	1476.41	100	0.97	21.94
Yargyap	-200.*	PF 20% release	10.8	1474.99	1476.03	104	1	20.85
Yargyap	-300.*	PF 20% release	10.8	1474.58	1475.64	106	1.03	19.86
Yargyap	-400.*	PF 20% release	10.8	1474.16	1475.29	113	0.96	20.05
Yargyap	-500	PF 20% release	10.8	1473.75	1474.64	89	1.58	15.42
Average						101.50	1.08	20.35

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	13.5	1475.82	1476.87	105	0.99	26.04
Yargyap	-100.*	PF 25% release	13.5	1475.41	1476.5	109	1.03	22.91
Yargyap	-200.*	PF 25% release	13.5	1474.99	1476.12	113	1.05	22.7
Yargyap	-300.*	PF 25% release	13.5	1474.58	1475.73	115	1.08	21.65
Yargyap	-400.*	PF 25% release	13.5	1474.16	1475.38	122	1.02	21.73
Yargyap	-500	PF 25% release	13.5	1473.75	1474.71	96	1.67	16.76
Average						110.00	1.14	21.97

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	16.2	1475.82	1476.95	113	1.03	27.91
Yargyap	-100.*	PF 30% release	16.2	1475.41	1476.57	116	1.1	23.75
Yargyap	-200.*	PF 30% release	16.2	1474.99	1476.2	121	1.11	23.53
Yargyap	-300.*	PF 30% release	16.2	1474.58	1475.82	124	1.13	23.22
Yargyap	-400.*	PF 30% release	16.2	1474.16	1475.46	130	1.08	23.2
Yargyap	-500	PF 30% release	16.2	1473.75	1474.78	103	1.75	17.95
Average						117.83	1.20	23.26

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	21.6	1475.82	1477.08	126	1.1	31.21
Yargyap	-100.*	PF 40% release	21.6	1475.41	1476.7	129	1.2	25.23
Yargyap	-200.*	PF 40% release	21.6	1474.99	1476.33	134	1.22	24.7
Yargyap	-300.*	PF 40% release	21.6	1474.58	1475.96	138	1.21	25.02
Yargyap	-400.*	PF 40% release	21.6	1474.16	1475.6	144	1.17	25.73
Yargyap	-500	PF 40% release	21.6	1473.75	1474.9	115	1.88	19.99
Average						131.00	1.30	25.31

River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	27	1475.82	1477.19	137	1.16	32.89
Yargyap	-100.*	PF 50% release	27	1475.41	1476.82	141	1.29	26.54

Yargyap	-200.*	PF 50% release	27	1474.99	1476.44	145	1.31	25.72
Yargyap	-300.*	PF 50% release	27	1474.58	1476.07	149	1.31	25.95
Yargyap	-400.*	PF 50% release	27	1474.16	1475.72	156	1.26	26.82
Yargyap	-500	PF 50% release	27	1473.75	1475	125	1.99	21.74
Average						142.17	1.39	26.61
River	Ch d/s of Pauk HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	54	1475.82	1477.63	181	1.4	37.13
Yargyap	-100.*	PF 100% release	54	1475.41	1477.27	186	1.58	31.72
Yargyap	-200.*	PF 100% release	54	1474.99	1476.89	190	1.64	29.73
Yargyap	-300.*	PF 100% release	54	1474.58	1476.51	193	1.64	29.56
Yargyap	-400.*	PF 100% release	54	1474.16	1476.14	198	1.6	30.26
Yargyap	-500	PF 100% release	54	1473.75	1475.37	162	2.37	28.1
Average						185.00	1.71	31.08

Heo HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Heo HEP-Dec to March

Note: River sta -100 denotes location along river reach 100 m d/s of Heo dam axis

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	1.35	1384.2	1384.76	56	0.7	6.83
Yargyap	-100.*	PF 10% release	1.35	1383.76	1384.32	56	0.71	6.81
Yargyap	-200.*	PF 10% release	1.35	1383.32	1383.88	56	0.69	6.89
Yargyap	-300.*	PF 10% release	1.35	1382.88	1383.43	55	0.73	6.72
Yargyap	-400.*	PF 10% release	1.35	1382.44	1383.03	59	0.64	7.19
Yargyap	-500	PF 10% release	1.35	1382	1382.5	50	0.88	6.15
Yargyap	-600.*	PF 10% release	1.35	1380.94	1381.43	49	1.14	4.84
Yargyap	-700.*	PF 10% release	1.35	1379.88	1380.46	58	0.92	5.02
Yargyap	-800.*	PF 10% release	1.35	1378.81	1379.33	52	1.32	3.99
Yargyap	-900.*	PF 10% release	1.35	1377.75	1378.4	65	0.89	4.66
Yargyap	-1000	PF 10% release	1.35	1376.69	1377.19	50	1.59	3.38
Yargyap	-1100.*	PF 10% release	1.35	1370.62	1371.11	49	1.57	3.53
Yargyap	-1200.*	PF 10% release	1.35	1364.55	1365.03	48	1.54	3.71
Yargyap	-1300.*	PF 10% release	1.35	1358.49	1358.94	45	1.51	3.92
Yargyap	-1400.*	PF 10% release	1.35	1352.42	1352.86	44	1.48	4.17
Yargyap	-1500	PF 10% release	1.35	1346.35	1346.77	42	1.45	4.48
Average						52.12	1.11	5.14

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	2.03	1384.2	1384.86	66	0.78	7.95
Yargyap	-100.*	PF 15% release	2.03	1383.76	1384.41	65	0.78	7.94
Yargyap	-200.*	PF 15% release	2.03	1383.32	1383.98	66	0.77	8.02
Yargyap	-300.*	PF 15% release	2.03	1382.88	1383.52	64	0.8	7.87
Yargyap	-400.*	PF 15% release	2.03	1382.44	1383.12	68	0.71	8.36

Yargyap	-500	PF 15% release	2.03	1382	1382.58	58	0.99	7.13
Yargyap	-600.*	PF 15% release	2.03	1380.94	1381.51	57	1.24	5.7
Yargyap	-700.*	PF 15% release	2.03	1379.88	1380.55	67	1.03	5.82
Yargyap	-800.*	PF 15% release	2.03	1378.81	1379.42	61	1.43	4.7
Yargyap	-900.*	PF 15% release	2.03	1377.75	1378.51	76	0.99	5.41
Yargyap	-1000	PF 15% release	2.03	1376.69	1377.28	59	1.73	3.97
Yargyap	-1100.*	PF 15% release	2.03	1370.62	1371.2	58	1.7	4.16
Yargyap	-1200.*	PF 15% release	2.03	1364.55	1365.11	56	1.68	4.36
Yargyap	-1300.*	PF 15% release	2.03	1358.49	1359.02	53	1.65	4.6
Yargyap	-1400.*	PF 15% release	2.03	1352.42	1352.93	51	1.61	4.91
Yargyap	-1500	PF 15% release	2.03	1346.35	1346.84	49	1.58	5.26
Average						60.87	1.22	6.01

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	2.7	1384.2	1384.93	73	0.84	8.85
Yargyap	-100.*	PF 20% release	2.7	1383.76	1384.49	73	0.84	8.84
Yargyap	-200.*	PF 20% release	2.7	1383.32	1384.05	73	0.83	8.91
Yargyap	-300.*	PF 20% release	2.7	1382.88	1383.6	72	0.86	8.78
Yargyap	-400.*	PF 20% release	2.7	1382.44	1383.2	76	0.77	9.27
Yargyap	-500	PF 20% release	2.7	1382	1382.64	64	1.07	7.9
Yargyap	-600.*	PF 20% release	2.7	1380.94	1381.58	64	1.31	6.4
Yargyap	-700.*	PF 20% release	2.7	1379.88	1380.62	74	1.12	6.44
Yargyap	-800.*	PF 20% release	2.7	1378.81	1379.49	68	1.5	5.28
Yargyap	-900.*	PF 20% release	2.7	1377.75	1378.59	84	1.08	6
Yargyap	-1000	PF 20% release	2.7	1376.69	1377.35	66	1.83	4.47
Yargyap	-1100.*	PF 20% release	2.7	1370.62	1371.27	65	1.8	4.66
Yargyap	-1200.*	PF 20% release	2.7	1364.55	1365.18	63	1.77	4.9
Yargyap	-1300.*	PF 20% release	2.7	1358.49	1359.09	60	1.74	5.17
Yargyap	-1400.*	PF 20% release	2.7	1352.42	1352.99	57	1.71	5.49
Yargyap	-1500	PF 20% release	2.7	1346.35	1346.9	55	1.66	5.92
Average						67.94	1.30	6.71

River	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	3.38	1384.2	1384.99	79	0.89	9.62
Yargyap	-100.*	PF 25% release	3.38	1383.76	1384.55	79	0.89	9.63
Yargyap	-200.*	PF 25% release	3.38	1383.32	1384.11	79	0.88	9.69
Yargyap	-300.*	PF 25% release	3.38	1382.88	1383.66	78	0.9	9.57
Yargyap	-400.*	PF 25% release	3.38	1382.44	1383.26	82	0.82	10.07
Yargyap	-500	PF 25% release	3.38	1382	1382.7	70	1.13	8.57
Yargyap	-600.*	PF 25% release	3.38	1380.94	1381.64	70	1.37	7
Yargyap	-700.*	PF 25% release	3.38	1379.88	1380.69	81	1.19	6.98
Yargyap	-800.*	PF 25% release	3.38	1378.81	1379.56	75	1.57	5.79
Yargyap	-900.*	PF 25% release	3.38	1377.75	1378.66	91	1.15	6.51

Yargyap	-1000	PF 25% release	3.38	1376.69	1377.41	72	1.91	4.88
Yargyap	-1100.*	PF 25% release	3.38	1370.62	1371.33	71	1.89	5.1
Yargyap	-1200.*	PF 25% release	3.38	1364.55	1365.24	69	1.86	5.35
Yargyap	-1300.*	PF 25% release	3.38	1358.49	1359.14	65	1.82	5.64
Yargyap	-1400.*	PF 25% release	3.38	1352.42	1353.05	63	1.77	6.04
Yargyap	-1500	PF 25% release	3.38	1346.35	1346.95	60	1.73	6.47
Average						74.00	1.36	7.31

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	4.05	1384.2	1385.05	85	0.93	10.29
Yargyap	-100.*	PF 30% release	4.05	1383.76	1384.61	85	0.93	10.3
Yargyap	-200.*	PF 30% release	4.05	1383.32	1384.17	85	0.92	10.36
Yargyap	-300.*	PF 30% release	4.05	1382.88	1383.72	84	0.94	10.27
Yargyap	-400.*	PF 30% release	4.05	1382.44	1383.32	88	0.86	10.77
Yargyap	-500	PF 30% release	4.05	1382	1382.74	74	1.19	9.16
Yargyap	-600.*	PF 30% release	4.05	1380.94	1381.7	76	1.42	7.53
Yargyap	-700.*	PF 30% release	4.05	1379.88	1380.74	86	1.26	7.45
Yargyap	-800.*	PF 30% release	4.05	1378.81	1379.62	81	1.62	6.23
Yargyap	-900.*	PF 30% release	4.05	1377.75	1378.72	97	1.21	6.94
Yargyap	-1000	PF 30% release	4.05	1376.69	1377.47	78	1.98	5.25
Yargyap	-1100.*	PF 30% release	4.05	1370.62	1371.38	76	1.95	5.49
Yargyap	-1200.*	PF 30% release	4.05	1364.55	1365.29	74	1.91	5.77
Yargyap	-1300.*	PF 30% release	4.05	1358.49	1359.2	71	1.88	6.09
Yargyap	-1400.*	PF 30% release	4.05	1352.42	1353.1	68	1.84	6.48
Yargyap	-1500	PF 30% release	4.05	1346.35	1347	65	1.79	6.97
Average						79.56	1.41	7.83

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	5.4	1384.2	1385.14	94	1	11.46
Yargyap	-100.*	PF 40% release	5.4	1383.76	1384.7	94	1	11.48
Yargyap	-200.*	PF 40% release	5.4	1383.32	1384.26	94	0.99	11.53
Yargyap	-300.*	PF 40% release	5.4	1382.88	1383.82	94	1.01	11.46
Yargyap	-400.*	PF 40% release	5.4	1382.44	1383.41	97	0.93	11.95
Yargyap	-500	PF 40% release	5.4	1382	1382.83	83	1.28	10.18
Yargyap	-600.*	PF 40% release	5.4	1380.94	1381.79	85	1.5	8.44
Yargyap	-700.*	PF 40% release	5.4	1379.88	1380.84	96	1.36	8.27
Yargyap	-800.*	PF 40% release	5.4	1378.81	1379.72	91	1.71	7
Yargyap	-900.*	PF 40% release	5.4	1377.75	1378.83	108	1.31	7.7
Yargyap	-1000	PF 40% release	5.4	1376.69	1377.57	88	2.09	5.9
Yargyap	-1100.*	PF 40% release	5.4	1370.62	1371.47	85	2.06	6.16
Yargyap	-1200.*	PF 40% release	5.4	1364.55	1365.38	83	2.03	6.47
Yargyap	-1300.*	PF 40% release	5.4	1358.49	1359.28	79	1.99	6.82
Yargyap	-1400.*	PF 40% release	5.4	1352.42	1353.18	76	1.96	7.24

Yargyap	-1500	PF 40% release	5.4	1346.35	1347.08	73	1.9	7.81
Average						88.75	1.51	8.74

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	6.75	1384.2	1385.23	103	1.05	12.48
Yargyap	-100.*	PF 50% release	6.75	1383.76	1384.79	103	1.05	12.49
Yargyap	-200.*	PF 50% release	6.75	1383.32	1384.35	103	1.05	12.53
Yargyap	-300.*	PF 50% release	6.75	1382.88	1383.9	102	1.06	12.48
Yargyap	-400.*	PF 50% release	6.75	1382.44	1383.5	106	0.99	12.96
Yargyap	-500	PF 50% release	6.75	1382	1382.9	90	1.36	11.05
Yargyap	-600.*	PF 50% release	6.75	1380.94	1381.87	93	1.57	9.23
Yargyap	-700.*	PF 50% release	6.75	1379.88	1380.92	104	1.45	8.95
Yargyap	-800.*	PF 50% release	6.75	1378.81	1379.8	99	1.78	7.67
Yargyap	-900.*	PF 50% release	6.75	1377.75	1378.91	116	1.39	8.34
Yargyap	-1000	PF 50% release	6.75	1376.69	1377.65	96	2.17	6.47
Yargyap	-1100.*	PF 50% release	6.75	1370.62	1371.56	94	2.14	6.76
Yargyap	-1200.*	PF 50% release	6.75	1364.55	1365.45	90	2.13	7.06
Yargyap	-1300.*	PF 50% release	6.75	1358.49	1359.36	87	2.08	7.47
Yargyap	-1400.*	PF 50% release	6.75	1352.42	1353.25	83	2.05	7.93
Yargyap	-1500	PF 50% release	6.75	1346.35	1347.14	79	1.99	8.53
Average						96.75	1.58	9.53

River	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	13.5	1384.2	1385.53	133	1.25	16.17
Yargyap	-100.*	PF 100% release	13.5	1383.76	1385.09	133	1.25	16.28
Yargyap	-200.*	PF 100% release	13.5	1383.32	1384.65	133	1.24	16.44
Yargyap	-300.*	PF 100% release	13.5	1382.88	1384.21	133	1.24	16.59
Yargyap	-400.*	PF 100% release	13.5	1382.44	1383.8	136	1.18	17.22
Yargyap	-500	PF 100% release	13.5	1382	1383.17	117	1.61	14.54
Yargyap	-600.*	PF 100% release	13.5	1380.94	1382.16	122	1.82	12.12
Yargyap	-700.*	PF 100% release	13.5	1379.88	1381.21	133	1.75	11.52
Yargyap	-800.*	PF 100% release	13.5	1378.81	1380.12	131	2.05	10.11
Yargyap	-900.*	PF 100% release	13.5	1377.75	1379.25	150	1.68	10.75
Yargyap	-1000	PF 100% release	13.5	1376.69	1377.95	126	2.51	8.51
Yargyap	-1100.*	PF 100% release	13.5	1370.62	1371.85	123	2.46	8.92
Yargyap	-1200.*	PF 100% release	13.5	1364.55	1365.75	120	2.42	9.35
Yargyap	-1300.*	PF 100% release	13.5	1358.49	1359.64	115	2.38	9.88
Yargyap	-1400.*	PF 100% release	13.5	1352.42	1353.52	110	2.33	10.51
Yargyap	-1500	PF 100% release	13.5	1346.35	1347.4	105	2.27	11.3
Average						126.25	1.84	12.51

Monsoon

Heo HEP-June to Sept

Note: River sta -100 denotes location along river reach 100 m d/s of Heo dam axis

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	13.27	1384.2	1385.52	132	1.25	16.07
Yargyap	-100.*	PF 10% release	13.27	1383.76	1385.08	132	1.25	16.17
Yargyap	-200.*	PF 10% release	13.27	1383.32	1384.64	132	1.24	16.33
Yargyap	-300.*	PF 10% release	13.27	1382.88	1384.2	132	1.24	16.47
Yargyap	-400.*	PF 10% release	13.27	1382.44	1383.79	135	1.18	17.09
Yargyap	-500	PF 10% release	13.27	1382	1383.16	116	1.61	14.42
Yargyap	-600.*	PF 10% release	13.27	1380.94	1382.15	121	1.82	12.04
Yargyap	-700.*	PF 10% release	13.27	1379.88	1381.21	133	1.74	11.45
Yargyap	-800.*	PF 10% release	13.27	1378.81	1380.11	130	2.04	10.04
Yargyap	-900.*	PF 10% release	13.27	1377.75	1379.24	149	1.67	10.67
Yargyap	-1000	PF 10% release	13.27	1376.69	1377.95	126	2.49	8.48
Yargyap	-1100.*	PF 10% release	13.27	1370.62	1371.84	122	2.45	8.86
Yargyap	-1200.*	PF 10% release	13.27	1364.55	1365.74	119	2.41	9.29
Yargyap	-1300.*	PF 10% release	13.27	1358.49	1359.62	113	2.39	9.77
Yargyap	-1400.*	PF 10% release	13.27	1352.42	1353.51	109	2.34	10.4
Yargyap	-1500	PF 10% release	13.27	1346.35	1347.39	104	2.28	11.2
Average						125.31	1.84	12.42

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	19.9	1384.2	1385.74	154	1.38	18.69
Yargyap	-100.*	PF 15% release	19.9	1383.76	1385.3	154	1.38	18.91
Yargyap	-200.*	PF 15% release	19.9	1383.32	1384.86	154	1.37	19.15
Yargyap	-300.*	PF 15% release	19.9	1382.88	1384.42	154	1.36	19.47
Yargyap	-400.*	PF 15% release	19.9	1382.44	1384	156	1.31	20.14
Yargyap	-500	PF 15% release	19.9	1382	1383.35	135	1.75	17.39
Yargyap	-600.*	PF 15% release	19.9	1380.94	1382.36	142	1.98	14.12
Yargyap	-700.*	PF 15% release	19.9	1379.88	1381.42	154	1.94	13.27
Yargyap	-800.*	PF 15% release	19.9	1378.81	1380.33	152	2.22	11.8
Yargyap	-900.*	PF 15% release	19.9	1377.75	1379.47	172	1.87	12.35
Yargyap	-1000	PF 15% release	19.9	1376.69	1378.17	148	2.7	9.98
Yargyap	-1100.*	PF 15% release	19.9	1370.62	1372.06	144	2.66	10.42
Yargyap	-1200.*	PF 15% release	19.9	1364.55	1365.95	140	2.62	10.93
Yargyap	-1300.*	PF 15% release	19.9	1358.49	1359.82	133	2.59	11.5
Yargyap	-1400.*	PF 15% release	19.9	1352.42	1353.71	129	2.52	12.27
Yargyap	-1500	PF 15% release	19.9	1346.35	1347.57	122	2.48	13.15
Average						146.44	2.01	14.60

Reach	Ch d/s of Heo	Profile	Q Total	Bed	Water surface	Water	Flow	Flow Top

	HEP			Elevation	Elevation	depth	Velocity	Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	26.53	1384.2	1385.91	171	1.49	20.81
Yargyap	-100.*	PF 20% release	26.53	1383.76	1385.47	171	1.48	21.1
Yargyap	-200.*	PF 20% release	26.53	1383.32	1385.03	171	1.47	21.43
Yargyap	-300.*	PF 20% release	26.53	1382.88	1384.59	171	1.46	21.83
Yargyap	-400.*	PF 20% release	26.53	1382.44	1384.17	173	1.41	22.55
Yargyap	-500	PF 20% release	26.53	1382	1383.51	151	1.86	19.77
Yargyap	-600.*	PF 20% release	26.53	1380.94	1382.53	159	2.11	15.81
Yargyap	-700.*	PF 20% release	26.53	1379.88	1381.59	171	2.1	14.76
Yargyap	-800.*	PF 20% release	26.53	1378.81	1380.52	171	2.35	13.23
Yargyap	-900.*	PF 20% release	26.53	1377.75	1379.66	191	2.02	13.73
Yargyap	-1000	PF 20% release	26.53	1376.69	1378.35	166	2.86	11.19
Yargyap	-1100.*	PF 20% release	26.53	1370.62	1372.23	161	2.82	11.69
Yargyap	-1200.*	PF 20% release	26.53	1364.55	1366.11	156	2.79	12.22
Yargyap	-1300.*	PF 20% release	26.53	1358.49	1359.99	150	2.74	12.9
Yargyap	-1400.*	PF 20% release	26.53	1352.42	1353.86	144	2.67	13.76
Yargyap	-1500	PF 20% release	26.53	1346.35	1347.72	137	2.62	14.76
Average						163.37	2.14	16.35

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	33.17	1384.2	1386.06	186	1.57	22.62
Yargyap	-100.*	PF 25% release	33.17	1383.76	1385.62	186	1.56	22.97
Yargyap	-200.*	PF 25% release	33.17	1383.32	1385.18	186	1.55	23.37
Yargyap	-300.*	PF 25% release	33.17	1382.88	1384.74	186	1.54	23.83
Yargyap	-400.*	PF 25% release	33.17	1382.44	1384.31	187	1.50	24.57
Yargyap	-500	PF 25% release	33.17	1382	1383.65	165	1.94	21.84
Yargyap	-600.*	PF 25% release	33.17	1380.94	1382.68	174	2.21	17.41
Yargyap	-700.*	PF 25% release	33.17	1379.88	1381.74	186	2.22	16.05
Yargyap	-800.*	PF 25% release	33.17	1378.81	1380.67	186	2.47	14.43
Yargyap	-900.*	PF 25% release	33.17	1377.75	1379.83	208	2.14	14.93
Yargyap	-1000	PF 25% release	33.17	1376.69	1378.5	181	3.01	12.20
Yargyap	-1100.*	PF 25% release	33.17	1370.62	1372.38	176	2.95	12.76
Yargyap	-1200.*	PF 25% release	33.17	1364.55	1366.26	171	2.90	13.39
Yargyap	-1300.*	PF 25% release	33.17	1358.49	1360.13	164	2.85	14.15
Yargyap	-1400.*	PF 25% release	33.17	1352.42	1354	158	2.79	15.05
Yargyap	-1500	PF 25% release	33.17	1346.35	1347.86	151	2.72	16.18
Average						178.19	2.25	17.86

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	39.8	1384.2	1386.19	199	1.65	24.21
Yargyap	-100.*	PF 30% release	39.8	1383.76	1385.75	199	1.64	24.57
Yargyap	-200.*	PF 30% release	39.8	1383.32	1385.31	199	1.63	25.01
Yargyap	-300.*	PF 30% release	39.8	1382.88	1384.87	199	1.61	25.51

Yargyap	-400.*	PF 30% release	39.8	1382.44	1384.43	199	1.58	26.25
Yargyap	-500	PF 30% release	39.8	1382	1383.77	177	2.01	23.64
Yargyap	-600.*	PF 30% release	39.8	1380.94	1382.81	187	2.29	18.82
Yargyap	-700.*	PF 30% release	39.8	1379.88	1381.87	199	2.32	17.18
Yargyap	-800.*	PF 30% release	39.8	1378.81	1380.81	200	2.56	15.53
Yargyap	-900.*	PF 30% release	39.8	1377.75	1379.97	222	2.25	15.9
Yargyap	-1000	PF 30% release	39.8	1376.69	1378.64	195	3.1	13.16
Yargyap	-1100.*	PF 30% release	39.8	1370.62	1372.51	189	3.07	13.7
Yargyap	-1200.*	PF 30% release	39.8	1364.55	1366.39	184	3.01	14.42
Yargyap	-1300.*	PF 30% release	39.8	1358.49	1360.26	177	2.95	15.22
Yargyap	-1400.*	PF 30% release	39.8	1352.42	1354.12	170	2.9	16.18
Yargyap	-1500	PF 30% release	39.8	1346.35	1347.97	162	2.84	17.37
Average						191.06	2.34	19.17

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	53.07	1384.2	1386.42	222	1.78	26.94
Yargyap	-100.*	PF 40% release	53.07	1383.76	1385.97	221	1.77	27.32
Yargyap	-200.*	PF 40% release	53.07	1383.32	1385.53	221	1.75	27.8
Yargyap	-300.*	PF 40% release	53.07	1382.88	1385.08	220	1.74	28.35
Yargyap	-400.*	PF 40% release	53.07	1382.44	1384.64	220	1.72	29.07
Yargyap	-500	PF 40% release	53.07	1382	1383.97	197	2.12	26.7
Yargyap	-600.*	PF 40% release	53.07	1380.94	1383.03	209	2.43	21.16
Yargyap	-700.*	PF 40% release	53.07	1379.88	1382.1	222	2.5	19.06
Yargyap	-800.*	PF 40% release	53.07	1378.81	1381.05	224	2.73	17.31
Yargyap	-900.*	PF 40% release	53.07	1377.75	1380.22	247	2.43	17.63
Yargyap	-1000	PF 40% release	53.07	1376.69	1378.88	219	3.28	14.77
Yargyap	-1100.*	PF 40% release	53.07	1370.62	1372.75	213	3.24	15.42
Yargyap	-1200.*	PF 40% release	53.07	1364.55	1366.62	207	3.18	16.18
Yargyap	-1300.*	PF 40% release	53.07	1358.49	1360.47	198	3.13	17.08
Yargyap	-1400.*	PF 40% release	53.07	1352.42	1354.33	191	3.06	18.18
Yargyap	-1500	PF 40% release	53.07	1346.35	1348.16	181	3.01	19.09
Average						213.25	2.49	21.38

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	66.33	1384.2	1386.61	241	1.88	29.26
Yargyap	-100.*	PF 50% release	66.33	1383.76	1386.16	240	1.87	29.66
Yargyap	-200.*	PF 50% release	66.33	1383.32	1385.71	239	1.86	30.15
Yargyap	-300.*	PF 50% release	66.33	1382.88	1385.27	239	1.85	30.74
Yargyap	-400.*	PF 50% release	66.33	1382.44	1384.82	238	1.83	31.46
Yargyap	-500	PF 50% release	66.33	1382	1384.15	215	2.22	29.19
Yargyap	-600.*	PF 50% release	66.33	1380.94	1383.22	228	2.54	23.09
Yargyap	-700.*	PF 50% release	66.33	1379.88	1382.29	241	2.64	20.7
Yargyap	-800.*	PF 50% release	66.33	1378.81	1381.26	245	2.86	18.83
Yargyap	-900.*	PF 50% release	66.33	1377.75	1380.43	268	2.58	19.1

Yargyap	-1000	PF 50% release	66.33	1376.69	1379.09	240	3.43	16.15
Yargyap	-1100.*	PF 50% release	66.33	1370.62	1372.95	233	3.38	16.86
Yargyap	-1200.*	PF 50% release	66.33	1364.55	1366.81	226	3.33	17.68
Yargyap	-1300.*	PF 50% release	66.33	1358.49	1360.65	216	3.29	18.62
Yargyap	-1400.*	PF 50% release	66.33	1352.42	1354.5	208	3.22	19.61
Yargyap	-1500	PF 50% release	66.33	1346.35	1348.33	198	3.18	20.37
Average						232.19	2.62	23.22

River	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	132.67	1384.2	1387.35	315	2.19	40.71
Yargyap	-100.*	PF 100% release	132.67	1383.76	1386.89	313	2.19	41.16
Yargyap	-200.*	PF 100% release	132.67	1383.32	1386.42	310	2.19	41.41
Yargyap	-300.*	PF 100% release	132.67	1382.88	1385.95	307	2.19	41.49
Yargyap	-400.*	PF 100% release	132.67	1382.44	1385.47	303	2.21	41.34
Yargyap	-500	PF 100% release	132.67	1382	1384.82	282	2.52	38.74
Yargyap	-600.*	PF 100% release	132.67	1380.94	1383.94	300	2.93	30.33
Yargyap	-700.*	PF 100% release	132.67	1379.88	1383.03	315	3.12	26.87
Yargyap	-800.*	PF 100% release	132.67	1378.81	1382.03	322	3.33	24.6
Yargyap	-900.*	PF 100% release	132.67	1377.75	1381.21	346	3.1	24.61
Yargyap	-1000	PF 100% release	132.67	1376.69	1379.85	316	3.95	21.29
Yargyap	-1100.*	PF 100% release	132.67	1370.62	1373.68	306	3.92	22.08
Yargyap	-1200.*	PF 100% release	132.67	1364.55	1367.52	297	3.86	22.96
Yargyap	-1300.*	PF 100% release	132.67	1358.49	1361.34	285	3.81	23.8
Yargyap	-1400.*	PF 100% release	132.67	1352.42	1355.16	274	3.76	24.61
Yargyap	-1500	PF 100% release	132.67	1346.35	1348.97	262	3.72	25.39
Average						303.31	3.06	30.71

Other 4 Months

Heo HEP-Oct-Nov-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Heo dam axis

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	5.85	1384.2	1385.18	98	1.01	11.83
Yargyap	-100.*	PF 10% release	5.85	1383.76	1384.73	97	1.02	11.83
Yargyap	-200.*	PF 10% release	5.85	1383.32	1384.29	97	1.01	11.88
Yargyap	-300.*	PF 10% release	5.85	1382.88	1383.84	96	1.03	11.81
Yargyap	-400.*	PF 10% release	5.85	1382.44	1383.44	100	0.95	12.3
Yargyap	-500	PF 10% release	5.85	1382	1382.85	85	1.31	10.48
Yargyap	-600.*	PF 10% release	5.85	1380.94	1381.82	88	1.53	8.71
Yargyap	-700.*	PF 10% release	5.85	1379.88	1380.86	98	1.39	8.51
Yargyap	-800.*	PF 10% release	5.85	1378.81	1379.74	93	1.74	7.22
Yargyap	-900.*	PF 10% release	5.85	1377.75	1378.86	111	1.33	7.94
Yargyap	-1000	PF 10% release	5.85	1376.69	1377.59	90	2.13	6.09
Yargyap	-1100.*	PF 10% release	5.85	1370.62	1371.5	88	2.1	6.36
Yargyap	-1200.*	PF 10% release	5.85	1364.55	1365.4	85	2.07	6.66

Yargyap	-1300.*	PF 10% release	5.85	1358.49	1359.31	82	2.03	7.04
Yargyap	-1400.*	PF 10% release	5.85	1352.42	1353.21	79	1.97	7.52
Yargyap	-1500	PF 10% release	5.85	1346.35	1347.1	75	1.94	8.06
Average						91.37	1.54	9.02

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	8.78	1384.2	1385.33	113	1.13	13.75
Yargyap	-100.*	PF 15% release	8.78	1383.76	1384.89	113	1.12	13.79
Yargyap	-200.*	PF 15% release	8.78	1383.32	1384.45	113	1.13	13.8
Yargyap	-300.*	PF 15% release	8.78	1382.88	1384.01	113	1.13	13.8
Yargyap	-400.*	PF 15% release	8.78	1382.44	1383.6	116	1.06	14.36
Yargyap	-500	PF 15% release	8.78	1382	1382.99	99	1.46	12.18
Yargyap	-600.*	PF 15% release	8.78	1380.94	1381.97	103	1.66	10.24
Yargyap	-700.*	PF 15% release	8.78	1379.88	1381.02	114	1.56	9.84
Yargyap	-800.*	PF 15% release	8.78	1378.81	1379.91	110	1.88	8.52
Yargyap	-900.*	PF 15% release	8.78	1377.75	1379.03	128	1.5	9.18
Yargyap	-1000	PF 15% release	8.78	1376.69	1377.76	107	2.29	7.19
Yargyap	-1100.*	PF 15% release	8.78	1370.62	1371.66	104	2.26	7.51
Yargyap	-1200.*	PF 15% release	8.78	1364.55	1365.56	101	2.22	7.88
Yargyap	-1300.*	PF 15% release	8.78	1358.49	1359.45	96	2.18	8.32
Yargyap	-1400.*	PF 15% release	8.78	1352.42	1353.35	93	2.14	8.84
Yargyap	-1500	PF 15% release	8.78	1346.35	1347.24	89	2.09	9.52
Average						107.00	1.68	10.55

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	11.7	1384.2	1385.46	126	1.21	15.32
Yargyap	-100.*	PF 20% release	11.7	1383.76	1385.02	126	1.21	15.39
Yargyap	-200.*	PF 20% release	11.7	1383.32	1384.58	126	1.2	15.52
Yargyap	-300.*	PF 20% release	11.7	1382.88	1384.14	126	1.2	15.62
Yargyap	-400.*	PF 20% release	11.7	1382.44	1383.73	129	1.14	16.22
Yargyap	-500	PF 20% release	11.7	1382	1383.1	110	1.57	13.57
Yargyap	-600.*	PF 20% release	11.7	1380.94	1382.09	115	1.77	11.45
Yargyap	-700.*	PF 20% release	11.7	1379.88	1381.15	127	1.68	10.94
Yargyap	-800.*	PF 20% release	11.7	1378.81	1380.04	123	2	9.54
Yargyap	-900.*	PF 20% release	11.7	1377.75	1379.17	142	1.61	10.21
Yargyap	-1000	PF 20% release	11.7	1376.69	1377.88	119	2.44	8.03
Yargyap	-1100.*	PF 20% release	11.7	1370.62	1371.78	116	2.39	8.42
Yargyap	-1200.*	PF 20% release	11.7	1364.55	1365.68	113	2.35	8.84
Yargyap	-1300.*	PF 20% release	11.7	1358.49	1359.57	108	2.33	9.29
Yargyap	-1400.*	PF 20% release	11.7	1352.42	1353.46	104	2.28	9.89
Yargyap	-1500	PF 20% release	11.7	1346.35	1347.34	99	2.22	10.64
Average						119.31	1.79	11.81

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	14.63	1384.2	1385.57	137	1.28	16.66
Yargyap	-100.*	PF 25% release	14.63	1383.76	1385.13	137	1.28	16.8
Yargyap	-200.*	PF 25% release	14.63	1383.32	1384.69	137	1.27	16.97
Yargyap	-300.*	PF 25% release	14.63	1382.88	1384.25	137	1.26	17.16
Yargyap	-400.*	PF 25% release	14.63	1382.44	1383.84	140	1.21	17.8
Yargyap	-500	PF 25% release	14.63	1382	1383.2	120	1.64	15.1
Yargyap	-600.*	PF 25% release	14.63	1380.94	1382.2	126	1.85	12.51
Yargyap	-700.*	PF 25% release	14.63	1379.88	1381.25	137	1.79	11.86
Yargyap	-800.*	PF 25% release	14.63	1378.81	1380.16	135	2.09	10.43
Yargyap	-900.*	PF 25% release	14.63	1377.75	1379.29	154	1.71	11.07
Yargyap	-1000	PF 25% release	14.63	1376.69	1378	131	2.55	8.8
Yargyap	-1100.*	PF 25% release	14.63	1370.62	1371.89	127	2.5	9.21
Yargyap	-1200.*	PF 25% release	14.63	1364.55	1365.79	124	2.46	9.66
Yargyap	-1300.*	PF 25% release	14.63	1358.49	1359.67	118	2.43	10.17
Yargyap	-1400.*	PF 25% release	14.63	1352.42	1353.56	114	2.36	10.86
Yargyap	-1500	PF 25% release	14.63	1346.35	1347.43	108	2.32	11.64
Average						130.13	1.88	12.92

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	17.55	1384.2	1385.67	147	1.34	17.83
Yargyap	-100.*	PF 30% release	17.55	1383.76	1385.23	147	1.33	18.02
Yargyap	-200.*	PF 30% release	17.55	1383.32	1384.79	147	1.33	18.24
Yargyap	-300.*	PF 30% release	17.55	1382.88	1384.35	147	1.32	18.49
Yargyap	-400.*	PF 30% release	17.55	1382.44	1383.93	149	1.27	19.15
Yargyap	-500	PF 30% release	17.55	1382	1383.29	129	1.7	16.43
Yargyap	-600.*	PF 30% release	17.55	1380.94	1382.29	135	1.93	13.44
Yargyap	-700.*	PF 30% release	17.55	1379.88	1381.35	147	1.88	12.68
Yargyap	-800.*	PF 30% release	17.55	1378.81	1380.26	145	2.17	11.22
Yargyap	-900.*	PF 30% release	17.55	1377.75	1379.4	165	1.8	11.83
Yargyap	-1000	PF 30% release	17.55	1376.69	1378.09	140	2.65	9.45
Yargyap	-1100.*	PF 30% release	17.55	1370.62	1371.99	137	2.59	9.9
Yargyap	-1200.*	PF 30% release	17.55	1364.55	1365.87	132	2.57	10.36
Yargyap	-1300.*	PF 30% release	17.55	1358.49	1359.76	127	2.52	10.93
Yargyap	-1400.*	PF 30% release	17.55	1352.42	1353.64	122	2.47	11.63
Yargyap	-1500	PF 30% release	17.55	1346.35	1347.52	117	2.4	12.55
Average						139.56	1.95	13.88

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	23.4	1384.2	1385.84	164	1.44	19.86
Yargyap	-100.*	PF 40% release	23.4	1383.76	1385.4	164	1.43	20.12
Yargyap	-200.*	PF 40% release	23.4	1383.32	1384.95	163	1.42	20.41

Yargyap	-300.*	PF 40% release	23.4	1382.88	1384.52	164	1.41	20.77
Yargyap	-400.*	PF 40% release	23.4	1382.44	1384.1	166	1.37	21.47
Yargyap	-500	PF 40% release	23.4	1382	1383.44	144	1.81	18.69
Yargyap	-600.*	PF 40% release	23.4	1380.94	1382.45	151	2.05	15.04
Yargyap	-700.*	PF 40% release	23.4	1379.88	1381.51	163	2.03	14.1
Yargyap	-800.*	PF 40% release	23.4	1378.81	1380.43	162	2.3	12.58
Yargyap	-900.*	PF 40% release	23.4	1377.75	1379.58	183	1.95	13.11
Yargyap	-1000	PF 40% release	23.4	1376.69	1378.27	158	2.79	10.64
Yargyap	-1100.*	PF 40% release	23.4	1370.62	1372.15	153	2.76	11.08
Yargyap	-1200.*	PF 40% release	23.4	1364.55	1366.03	148	2.73	11.6
Yargyap	-1300.*	PF 40% release	23.4	1358.49	1359.91	142	2.68	12.26
Yargyap	-1400.*	PF 40% release	23.4	1352.42	1353.79	137	2.6	13.08
Yargyap	-1500	PF 40% release	23.4	1346.35	1347.65	130	2.56	14.02
Average						155.75	2.08	15.55

Reach	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	29.25	1384.2	1385.98	178	1.52	21.59
Yargyap	-100.*	PF 50% release	29.25	1383.76	1385.54	178	1.52	21.9
Yargyap	-200.*	PF 50% release	29.25	1383.32	1385.1	178	1.51	22.26
Yargyap	-300.*	PF 50% release	29.25	1382.88	1384.66	178	1.49	22.68
Yargyap	-400.*	PF 50% release	29.25	1382.44	1384.23	179	1.45	23.41
Yargyap	-500	PF 50% release	29.25	1382	1383.57	157	1.89	20.66
Yargyap	-600.*	PF 50% release	29.25	1380.94	1382.59	165	2.15	16.49
Yargyap	-700.*	PF 50% release	29.25	1379.88	1381.66	178	2.14	15.33
Yargyap	-800.*	PF 50% release	29.25	1378.81	1380.58	177	2.41	13.73
Yargyap	-900.*	PF 50% release	29.25	1377.75	1379.74	199	2.06	14.27
Yargyap	-1000	PF 50% release	29.25	1376.69	1378.41	172	2.94	11.59
Yargyap	-1100.*	PF 50% release	29.25	1370.62	1372.29	167	2.89	12.11
Yargyap	-1200.*	PF 50% release	29.25	1364.55	1366.17	162	2.84	12.71
Yargyap	-1300.*	PF 50% release	29.25	1358.49	1360.05	156	2.8	13.41
Yargyap	-1400.*	PF 50% release	29.25	1352.42	1353.92	150	2.74	14.26
Yargyap	-1500	PF 50% release	29.25	1346.35	1347.78	143	2.67	15.35
Average						169.81	2.19	16.98

River	Ch d/s of Heo HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	58.5	1384.2	1386.5	230	1.82	27.93
Yargyap	-100.*	PF 100% release	58.5	1383.76	1386.05	229	1.81	28.32
Yargyap	-200.*	PF 100% release	58.5	1383.32	1385.61	229	1.8	28.8
Yargyap	-300.*	PF 100% release	58.5	1382.88	1385.16	228	1.79	29.37
Yargyap	-400.*	PF 100% release	58.5	1382.44	1384.71	227	1.77	30.09
Yargyap	-500	PF 100% release	58.5	1382	1384.04	204	2.17	27.76
Yargyap	-600.*	PF 100% release	58.5	1380.94	1383.11	217	2.48	21.97
Yargyap	-700.*	PF 100% release	58.5	1379.88	1382.18	230	2.56	19.76

Yargyap	-800.*	PF 100% release	58.5	1378.81	1381.14	233	2.79	17.96
Yargyap	-900.*	PF 100% release	58.5	1377.75	1380.31	256	2.5	18.26
Yargyap	-1000	PF 100% release	58.5	1376.69	1378.97	228	3.35	15.35
Yargyap	-1100.*	PF 100% release	58.5	1370.62	1372.83	221	3.3	16.04
Yargyap	-1200.*	PF 100% release	58.5	1364.55	1366.7	215	3.24	16.83
Yargyap	-1300.*	PF 100% release	58.5	1358.49	1360.55	206	3.19	17.76
Yargyap	-1400.*	PF 100% release	58.5	1352.42	1354.4	198	3.13	18.86
Yargyap	-1500	PF 100% release	58.5	1346.35	1348.23	188	3.08	19.64
Average						221.19	2.55	22.17

Tato-I HEP - Water depth, flow velocity and flow top width for different release conditions Lean

Tato-I HEP-Dec to March

Note: River sta -684 denotes location along river reach 684 m d/s of Tato-I dam axis

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	1.46	1176.56	1176.99	43	0.84	8.05
Yargyap	-97.714*	PF 10% release	1.46	1175.58	1175.99	41	0.95	7.43
Yargyap	-195.42*	PF 10% release	1.46	1174.6	1175.04	44	0.83	7.87
Yargyap	-293.14*	PF 10% release	1.46	1173.61	1174.02	41	0.99	7.21
Yargyap	-390.85*	PF 10% release	1.46	1172.63	1173.09	46	0.80	8.03
Yargyap	-488.57*	PF 10% release	1.46	1171.65	1172.05	40	1.04	7.10
Yargyap	-586.28*	PF 10% release	1.46	1170.67	1171.13	46	0.76	8.45
Yargyap	-684	PF 10% release	1.46	1169.69	1170.06	37	1.13	7.02
Yargyap	-778.*	PF 10% release	1.46	1167.51	1167.94	43	1.41	4.78
Yargyap	-872.*	PF 10% release	1.46	1165.33	1165.81	48	1.38	4.36
Yargyap	-966.*	PF 10% release	1.46	1163.14	1163.64	50	1.53	3.87
Yargyap	-1060	PF 10% release	1.46	1160.96	1161.5	54	1.44	3.75
Yargyap	-1160.*	PF 10% release	1.46	1158.54	1159.12	58	1.69	3.00
Yargyap	-1260.*	PF 10% release	1.46	1156.13	1156.78	65	1.60	2.80
Yargyap	-1360.*	PF 10% release	1.46	1153.71	1154.37	66	1.80	2.48
Yargyap	-1460.*	PF 10% release	1.46	1151.3	1152.01	71	1.65	2.49
Yargyap	-1560	PF 10% release	1.46	1148.88	1149.56	68	1.84	2.33
Yargyap	-1660.*	PF 10% release	1.46	1146.18	1146.88	70	1.80	2.33
Yargyap	-1760.*	PF 10% release	1.46	1143.48	1144.18	70	1.85	2.27
Yargyap	-1860.*	PF 10% release	1.46	1140.79	1141.49	70	1.81	2.28
Average						53.55	1.36	4.90

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	2.19	1176.56	1177.06	50	0.93	9.34
Yargyap	-97.714*	PF 15% release	2.19	1175.58	1176.06	48	1.04	8.69
Yargyap	-195.42*	PF 15% release	2.19	1174.6	1175.11	51	0.93	9.14
Yargyap	-293.14*	PF 15% release	2.19	1173.61	1174.09	48	1.08	8.43
Yargyap	-390.85*	PF 15% release	2.19	1172.63	1173.16	53	0.89	9.33
Yargyap	-488.57*	PF 15% release	2.19	1171.65	1172.11	46	1.15	8.29

Yargyap	-586.28*	PF 15% release	2.19	1170.67	1171.2	53	0.84	9.84
Yargyap	-684	PF 15% release	2.19	1169.69	1170.12	43	1.26	8.14
Yargyap	-778.*	PF 15% release	2.19	1167.51	1168.02	51	1.54	5.61
Yargyap	-872.*	PF 15% release	2.19	1165.33	1165.89	56	1.54	5.05
Yargyap	-966.*	PF 15% release	2.19	1163.14	1163.72	58	1.66	4.54
Yargyap	-1060	PF 15% release	2.19	1160.96	1161.58	62	1.62	4.34
Yargyap	-1160.*	PF 15% release	2.19	1158.54	1159.22	68	1.84	3.52
Yargyap	-1260.*	PF 15% release	2.19	1156.13	1156.88	75	1.80	3.24
Yargyap	-1360.*	PF 15% release	2.19	1153.71	1154.48	77	1.96	2.91
Yargyap	-1460.*	PF 15% release	2.19	1151.3	1152.12	82	1.86	2.88
Yargyap	-1560	PF 15% release	2.19	1148.88	1149.68	80	2.00	2.73
Yargyap	-1660.*	PF 15% release	2.19	1146.18	1146.99	81	2.00	2.71
Yargyap	-1760.*	PF 15% release	2.19	1143.48	1144.3	82	2.00	2.68
Yargyap	-1860.*	PF 15% release	2.19	1140.79	1141.61	82	2.02	2.64
Average						62.30	1.50	5.70

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	2.92	1176.56	1177.12	56	1.01	10.38
Yargyap	-97.714*	PF 20% release	2.92	1175.58	1176.12	54	1.11	9.71
Yargyap	-195.42*	PF 20% release	2.92	1174.6	1175.17	57	1.00	10.15
Yargyap	-293.14*	PF 20% release	2.92	1173.61	1174.15	54	1.16	9.41
Yargyap	-390.85*	PF 20% release	2.92	1172.63	1173.22	59	0.96	10.37
Yargyap	-488.57*	PF 20% release	2.92	1171.65	1172.17	52	1.23	9.24
Yargyap	-586.28*	PF 20% release	2.92	1170.67	1171.26	59	0.90	10.90
Yargyap	-684	PF 20% release	2.92	1169.69	1170.16	47	1.37	9.03
Yargyap	-778.*	PF 20% release	2.92	1167.51	1168.08	57	1.63	6.30
Yargyap	-872.*	PF 20% release	2.92	1165.33	1165.95	62	1.67	5.59
Yargyap	-966.*	PF 20% release	2.92	1163.14	1163.79	65	1.76	5.10
Yargyap	-1060	PF 20% release	2.92	1160.96	1161.65	69	1.76	4.80
Yargyap	-1160.*	PF 20% release	2.92	1158.54	1159.31	77	1.93	3.97
Yargyap	-1260.*	PF 20% release	2.92	1156.13	1156.96	83	1.96	3.58
Yargyap	-1360.*	PF 20% release	2.92	1153.71	1154.58	87	2.06	3.28
Yargyap	-1460.*	PF 20% release	2.92	1151.3	1152.2	90	2.03	3.18
Yargyap	-1560	PF 20% release	2.92	1148.88	1149.78	90	2.11	3.07
Yargyap	-1660.*	PF 20% release	2.92	1146.18	1147.09	91	2.14	3.02
Yargyap	-1760.*	PF 20% release	2.92	1143.48	1144.4	92	2.12	3.00
Yargyap	-1860.*	PF 20% release	2.92	1140.79	1141.71	92	2.14	2.96
Average						69.95	1.60	6.35

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	3.65	1176.56	1177.16	60	1.07	11.27
Yargyap	-97.714*	PF 25% release	3.65	1175.58	1176.17	59	1.17	10.58
Yargyap	-195.42*	PF 25% release	3.65	1174.6	1175.22	62	1.06	11.02
Yargyap	-293.14*	PF 25% release	3.65	1173.61	1174.2	59	1.22	10.26

Yargyap	-390.85*	PF 25% release	3.65	1172.63	1173.27	64	1.02	11.28
Yargyap	-488.57*	PF 25% release	3.65	1171.65	1172.21	56	1.30	10.04
Yargyap	-586.28*	PF 25% release	3.65	1170.67	1171.32	65	0.95	11.69
Yargyap	-684	PF 25% release	3.65	1169.69	1170.2	51	1.45	9.79
Yargyap	-778.*	PF 25% release	3.65	1167.51	1168.13	62	1.70	6.89
Yargyap	-872.*	PF 25% release	3.65	1165.33	1166	67	1.79	6.05
Yargyap	-966.*	PF 25% release	3.65	1163.14	1163.85	71	1.84	5.57
Yargyap	-1060	PF 25% release	3.65	1160.96	1161.71	75	1.88	5.20
Yargyap	-1160.*	PF 25% release	3.65	1158.54	1159.38	84	2.02	4.34
Yargyap	-1260.*	PF 25% release	3.65	1156.13	1157.03	90	2.09	3.87
Yargyap	-1360.*	PF 25% release	3.65	1153.71	1154.66	95	2.16	3.58
Yargyap	-1460.*	PF 25% release	3.65	1151.3	1152.28	98	2.17	3.44
Yargyap	-1560	PF 25% release	3.65	1148.88	1149.87	99	2.20	3.36
Yargyap	-1660.*	PF 25% release	3.65	1146.18	1147.18	100	2.21	3.32
Yargyap	-1760.*	PF 25% release	3.65	1143.48	1144.49	101	2.22	3.28
Yargyap	-1860.*	PF 25% release	3.65	1140.79	1141.8	101	2.23	3.25
Average						75.95	1.69	6.90

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	4.38	1176.56	1177.21	65	1.12	12.05
Yargyap	-97.714*	PF 30% release	4.38	1175.58	1176.21	63	1.22	11.34
Yargyap	-195.42*	PF 30% release	4.38	1174.6	1175.26	66	1.11	11.78
Yargyap	-293.14*	PF 30% release	4.38	1173.61	1174.24	63	1.27	11.00
Yargyap	-390.85*	PF 30% release	4.38	1172.63	1173.31	68	1.07	11.92
Yargyap	-488.57*	PF 30% release	4.38	1171.65	1172.25	60	1.35	10.79
Yargyap	-586.28*	PF 30% release	4.38	1170.67	1171.36	69	1.01	12.35
Yargyap	-684	PF 30% release	4.38	1169.69	1170.24	55	1.51	10.53
Yargyap	-778.*	PF 30% release	4.38	1167.51	1168.17	66	1.79	7.36
Yargyap	-872.*	PF 30% release	4.38	1165.33	1166.05	72	1.86	6.50
Yargyap	-966.*	PF 30% release	4.38	1163.14	1163.9	76	1.93	5.96
Yargyap	-1060	PF 30% release	4.38	1160.96	1161.76	80	1.96	5.58
Yargyap	-1160.*	PF 30% release	4.38	1158.54	1159.44	90	2.12	4.64
Yargyap	-1260.*	PF 30% release	4.38	1156.13	1157.09	96	2.18	4.16
Yargyap	-1360.*	PF 30% release	4.38	1153.71	1154.73	102	2.24	3.85
Yargyap	-1460.*	PF 30% release	4.38	1151.3	1152.34	104	2.27	3.68
Yargyap	-1560	PF 30% release	4.38	1148.88	1149.94	106	2.28	3.62
Yargyap	-1660.*	PF 30% release	4.38	1146.18	1147.25	107	2.29	3.57
Yargyap	-1760.*	PF 30% release	4.38	1143.48	1144.56	108	2.32	3.52
Yargyap	-1860.*	PF 30% release	4.38	1140.79	1141.87	108	2.33	3.48
Average						81.20	1.76	7.38

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	5.83	1176.56	1177.28	72	1.21	13.37

Yargyap	-97.714*	PF 40% release	5.83	1175.58	1176.28	70	1.30	12.67
Yargyap	-195.42*	PF 40% release	5.83	1174.6	1175.34	74	1.20	13.07
Yargyap	-293.14*	PF 40% release	5.83	1173.61	1174.31	70	1.36	12.30
Yargyap	-390.85*	PF 40% release	5.83	1172.63	1173.38	75	1.18	12.82
Yargyap	-488.57*	PF 40% release	5.83	1171.65	1172.32	67	1.45	11.81
Yargyap	-586.28*	PF 40% release	5.83	1170.67	1171.44	77	1.09	13.51
Yargyap	-684	PF 40% release	5.83	1169.69	1170.31	62	1.61	11.74
Yargyap	-778.*	PF 40% release	5.83	1167.51	1168.25	74	1.91	8.20
Yargyap	-872.*	PF 40% release	5.83	1165.33	1166.13	80	1.99	7.25
Yargyap	-966.*	PF 40% release	5.83	1163.14	1163.99	85	2.06	6.66
Yargyap	-1060	PF 40% release	5.83	1160.96	1161.85	89	2.12	6.19
Yargyap	-1160.*	PF 40% release	5.83	1158.54	1159.54	100	2.25	5.20
Yargyap	-1260.*	PF 40% release	5.83	1156.13	1157.21	108	2.33	4.64
Yargyap	-1360.*	PF 40% release	5.83	1153.71	1154.85	114	2.37	4.32
Yargyap	-1460.*	PF 40% release	5.83	1151.3	1152.47	117	2.40	4.13
Yargyap	-1560	PF 40% release	5.83	1148.88	1150.06	118	2.44	4.04
Yargyap	-1660.*	PF 40% release	5.83	1146.18	1147.38	120	2.43	4.01
Yargyap	-1760.*	PF 40% release	5.83	1143.48	1144.69	121	2.46	3.94
Yargyap	-1860.*	PF 40% release	5.83	1140.79	1142	121	2.47	3.90
Average						90.70	1.88	8.19

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	7.29	1176.56	1177.34	78	1.28	14.53
Yargyap	-97.714*	PF 50% release	7.29	1175.58	1176.35	77	1.37	13.80
Yargyap	-195.42*	PF 50% release	7.29	1174.6	1175.4	80	1.29	13.82
Yargyap	-293.14*	PF 50% release	7.29	1173.61	1174.37	76	1.44	13.06
Yargyap	-390.85*	PF 50% release	7.29	1172.63	1173.44	81	1.26	13.61
Yargyap	-488.57*	PF 50% release	7.29	1171.65	1172.38	73	1.54	12.62
Yargyap	-586.28*	PF 50% release	7.29	1170.67	1171.5	83	1.16	14.54
Yargyap	-684	PF 50% release	7.29	1169.69	1170.36	67	1.71	12.76
Yargyap	-778.*	PF 50% release	7.29	1167.51	1168.32	81	2.00	8.97
Yargyap	-872.*	PF 50% release	7.29	1165.33	1166.2	87	2.10	7.89
Yargyap	-966.*	PF 50% release	7.29	1163.14	1164.07	93	2.16	7.28
Yargyap	-1060	PF 50% release	7.29	1160.96	1161.94	98	2.19	6.80
Yargyap	-1160.*	PF 50% release	7.29	1158.54	1159.64	110	2.33	5.72
Yargyap	-1260.*	PF 50% release	7.29	1156.13	1157.31	118	2.42	5.10
Yargyap	-1360.*	PF 50% release	7.29	1153.71	1154.96	125	2.48	4.72
Yargyap	-1460.*	PF 50% release	7.29	1151.3	1152.58	128	2.54	4.49
Yargyap	-1560	PF 50% release	7.29	1148.88	1150.18	130	2.55	4.41
Yargyap	-1660.*	PF 50% release	7.29	1146.18	1147.49	131	2.56	4.36
Yargyap	-1760.*	PF 50% release	7.29	1143.48	1144.81	133	2.55	4.33
Yargyap	-1860.*	PF 50% release	7.29	1140.79	1142.12	133	2.56	4.28
Average						90.10	1.97	8.85

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	14.58	1176.56	1177.55	99	1.6	16.91
Yargyap	-97.714*	PF 100% release	14.58	1175.58	1176.57	99	1.65	16.78
Yargyap	-195.42*	PF 100% release	14.58	1174.6	1175.62	102	1.6	16.63
Yargyap	-293.14*	PF 100% release	14.58	1173.61	1174.61	100	1.73	15.93
Yargyap	-390.85*	PF 100% release	14.58	1172.63	1173.68	105	1.55	16.65
Yargyap	-488.57*	PF 100% release	14.58	1171.65	1172.61	96	1.83	15.7
Yargyap	-586.28*	PF 100% release	14.58	1170.67	1171.75	108	1.4	18.4
Yargyap	-684	PF 100% release	14.58	1169.69	1170.55	86	2.06	16.44
Yargyap	-778.*	PF 100% release	14.58	1167.51	1168.58	107	2.3	11.84
Yargyap	-872.*	PF 100% release	14.58	1165.33	1166.49	116	2.39	10.46
Yargyap	-966.*	PF 100% release	14.58	1163.14	1164.37	123	2.46	9.65
Yargyap	-1060	PF 100% release	14.58	1160.96	1162.25	129	2.54	8.94
Yargyap	-1160.*	PF 100% release	14.58	1158.54	1159.99	145	2.67	7.54
Yargyap	-1260.*	PF 100% release	14.58	1156.13	1157.69	156	2.78	6.72
Yargyap	-1360.*	PF 100% release	14.58	1153.71	1155.36	165	2.84	6.23
Yargyap	-1460.*	PF 100% release	14.58	1151.3	1152.99	169	2.89	5.95
Yargyap	-1560	PF 100% release	14.58	1148.88	1150.6	172	2.9	5.85
Yargyap	-1660.*	PF 100% release	14.58	1146.18	1147.91	173	2.92	5.78
Yargyap	-1760.*	PF 100% release	14.58	1143.48	1145.23	175	2.93	5.71
Yargyap	-1860.*	PF 100% release	14.58	1140.79	1142.54	175	2.94	5.65
Average						130.00	2.30	11.19

Monsoon

Tato-I HEP-June to September

Note: River sta -684 denotes location along river reach 684 m d/s of Tato-I dam axis

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	14.38	1176.56	1177.55	99	1.59	16.87
Yargyap	-97.714*	PF 10% release	14.38	1175.58	1176.57	99	1.65	16.71
Yargyap	-195.42*	PF 10% release	14.38	1174.6	1175.62	102	1.59	16.56
Yargyap	-293.14*	PF 10% release	14.38	1173.61	1174.6	99	1.72	15.86
Yargyap	-390.85*	PF 10% release	14.38	1172.63	1173.68	105	1.55	16.58
Yargyap	-488.57*	PF 10% release	14.38	1171.65	1172.6	95	1.83	15.63
Yargyap	-586.28*	PF 10% release	14.38	1170.67	1171.75	108	1.39	18.31
Yargyap	-684	PF 10% release	14.38	1169.69	1170.55	86	2.05	16.36
Yargyap	-778.*	PF 10% release	14.38	1167.51	1168.57	106	2.29	11.77
Yargyap	-872.*	PF 10% release	14.38	1165.33	1166.48	115	2.39	10.4
Yargyap	-966.*	PF 10% release	14.38	1163.14	1164.36	122	2.47	9.56
Yargyap	-1060	PF 10% release	14.38	1160.96	1162.24	128	2.51	8.93
Yargyap	-1160.*	PF 10% release	14.38	1158.54	1159.98	144	2.68	7.47
Yargyap	-1260.*	PF 10% release	14.38	1156.13	1157.68	155	2.77	6.69
Yargyap	-1360.*	PF 10% release	14.38	1153.71	1155.35	164	2.84	6.2
Yargyap	-1460.*	PF 10% release	14.38	1151.3	1152.98	168	2.88	5.92

Yargyap	-1560	PF 10% release	14.38	1148.88	1150.59	171	2.9	5.82
Yargyap	-1660.*	PF 10% release	14.38	1146.18	1147.9	172	2.91	5.75
Yargyap	-1760.*	PF 10% release	14.38	1143.48	1145.22	174	2.92	5.68
Yargyap	-1860.*	PF 10% release	14.38	1140.79	1142.53	174	2.93	5.62
Average						129.30	2.29	11.13

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	21.58	1176.56	1177.71	115	1.83	18.16
Yargyap	-97.714*	PF 15% release	21.58	1175.58	1176.74	116	1.85	18.29
Yargyap	-195.42*	PF 15% release	21.58	1174.6	1175.79	119	1.8	18.64
Yargyap	-293.14*	PF 15% release	21.58	1173.61	1174.78	117	1.91	18.02
Yargyap	-390.85*	PF 15% release	21.58	1172.63	1173.85	122	1.75	18.77
Yargyap	-488.57*	PF 15% release	21.58	1171.65	1172.77	112	2.01	17.95
Yargyap	-586.28*	PF 15% release	21.58	1170.67	1171.92	125	1.57	21
Yargyap	-684	PF 15% release	21.58	1169.69	1170.69	100	2.25	19.15
Yargyap	-778.*	PF 15% release	21.58	1167.51	1168.76	125	2.48	13.85
Yargyap	-872.*	PF 15% release	21.58	1165.33	1166.69	136	2.59	12.23
Yargyap	-966.*	PF 15% release	21.58	1163.14	1164.58	144	2.66	11.29
Yargyap	-1060	PF 15% release	21.58	1160.96	1162.47	151	2.72	10.5
Yargyap	-1160.*	PF 15% release	21.58	1158.54	1160.24	170	2.9	8.81
Yargyap	-1260.*	PF 15% release	21.58	1156.13	1157.96	183	3	7.86
Yargyap	-1360.*	PF 15% release	21.58	1153.71	1155.64	193	3.08	7.29
Yargyap	-1460.*	PF 15% release	21.58	1151.3	1153.28	198	3.12	6.97
Yargyap	-1560	PF 15% release	21.58	1148.88	1150.89	201	3.14	6.84
Yargyap	-1660.*	PF 15% release	21.58	1146.18	1148.21	203	3.15	6.76
Yargyap	-1760.*	PF 15% release	21.58	1143.48	1145.52	204	3.17	6.68
Yargyap	-1860.*	PF 15% release	21.58	1140.79	1142.84	205	3.18	6.61
Average						151.95	2.51	12.78

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	28.77	1176.56	1177.84	128	2.01	19.25
Yargyap	-97.714*	PF 20% release	28.77	1175.58	1176.87	129	2.02	19.48
Yargyap	-195.42*	PF 20% release	28.77	1174.6	1175.92	132	1.97	19.92
Yargyap	-293.14*	PF 20% release	28.77	1173.61	1174.92	131	2.05	19.8
Yargyap	-390.85*	PF 20% release	28.77	1172.63	1173.99	136	1.91	20.54
Yargyap	-488.57*	PF 20% release	28.77	1171.65	1172.92	127	2.14	19.89
Yargyap	-586.28*	PF 20% release	28.77	1170.67	1172.06	139	1.71	23.1
Yargyap	-684	PF 20% release	28.77	1169.69	1170.82	113	2.36	21.55
Yargyap	-778.*	PF 20% release	28.77	1167.51	1168.92	141	2.63	15.54
Yargyap	-872.*	PF 20% release	28.77	1165.33	1166.85	152	2.74	13.72
Yargyap	-966.*	PF 20% release	28.77	1163.14	1164.76	162	2.82	12.66
Yargyap	-1060	PF 20% release	28.77	1160.96	1162.65	169	2.89	11.77
Yargyap	-1160.*	PF 20% release	28.77	1158.54	1160.44	190	3.06	9.89

Yargyap	-1260.*	PF 20% release	28.77	1156.13	1158.18	205	3.18	8.82
Yargyap	-1360.*	PF 20% release	28.77	1153.71	1155.86	215	3.28	8.15
Yargyap	-1460.*	PF 20% release	28.77	1151.3	1153.52	222	3.32	7.8
Yargyap	-1560	PF 20% release	28.77	1148.88	1151.13	225	3.33	7.68
Yargyap	-1660.*	PF 20% release	28.77	1146.18	1148.45	227	3.36	7.57
Yargyap	-1760.*	PF 20% release	28.77	1143.48	1145.77	229	3.36	7.5
Yargyap	-1860.*	PF 20% release	28.77	1140.79	1143.09	230	3.38	7.41
Average						170.10	2.68	14.10

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	35.96	1176.56	1177.96	140	2.16	20.22
Yargyap	-97.714*	PF 25% release	35.96	1175.58	1176.99	141	2.16	20.52
Yargyap	-195.42*	PF 25% release	35.96	1174.6	1176.04	144	2.11	21.03
Yargyap	-293.14*	PF 25% release	35.96	1173.61	1175.04	143	2.17	21.18
Yargyap	-390.85*	PF 25% release	35.96	1172.63	1174.11	148	2.04	22.07
Yargyap	-488.57*	PF 25% release	35.96	1171.65	1173.04	139	2.25	21.56
Yargyap	-586.28*	PF 25% release	35.96	1170.67	1172.18	151	1.84	24.88
Yargyap	-684	PF 25% release	35.96	1169.69	1170.93	124	2.47	23.58
Yargyap	-778.*	PF 25% release	35.96	1167.51	1169.05	154	2.75	16.98
Yargyap	-872.*	PF 25% release	35.96	1165.33	1167	167	2.87	14.98
Yargyap	-966.*	PF 25% release	35.96	1163.14	1164.91	177	2.95	13.84
Yargyap	-1060	PF 25% release	35.96	1160.96	1162.8	184	3.04	12.84
Yargyap	-1160.*	PF 25% release	35.96	1158.54	1160.61	207	3.22	10.78
Yargyap	-1260.*	PF 25% release	35.96	1156.13	1158.36	223	3.35	9.62
Yargyap	-1360.*	PF 25% release	35.96	1153.71	1156.07	236	3.43	8.91
Yargyap	-1460.*	PF 25% release	35.96	1151.3	1153.73	243	3.46	8.54
Yargyap	-1560	PF 25% release	35.96	1148.88	1151.34	246	3.48	8.39
Yargyap	-1660.*	PF 25% release	35.96	1146.18	1148.66	248	3.5	8.29
Yargyap	-1760.*	PF 25% release	35.96	1143.48	1145.98	250	3.52	8.18
Yargyap	-1860.*	PF 25% release	35.96	1140.79	1143.3	251	3.52	8.11
Average						185.80	2.81	15.23

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	43.15	1176.56	1178.07	151	2.28	21.09
Yargyap	-97.714*	PF 30% release	43.15	1175.58	1177.1	152	2.28	21.47
Yargyap	-195.42*	PF 30% release	43.15	1174.6	1176.15	155	2.24	22.02
Yargyap	-293.14*	PF 30% release	43.15	1173.61	1175.15	154	2.28	22.29
Yargyap	-390.85*	PF 30% release	43.15	1172.63	1174.22	159	2.15	23.34
Yargyap	-488.57*	PF 30% release	43.15	1171.65	1173.15	150	2.34	23.04
Yargyap	-586.28*	PF 30% release	43.15	1170.67	1172.28	161	1.94	26.45
Yargyap	-684	PF 30% release	43.15	1169.69	1171.02	133	2.56	25.37
Yargyap	-778.*	PF 30% release	43.15	1167.51	1169.16	165	2.85	18.27
Yargyap	-872.*	PF 30% release	43.15	1165.33	1167.12	179	2.97	16.14

Yargyap	-966.*	PF 30% release	43.15	1163.14	1165.03	189	3.08	14.83
Yargyap	-1060	PF 30% release	43.15	1160.96	1162.95	199	3.13	13.86
Yargyap	-1160.*	PF 30% release	43.15	1158.54	1160.78	224	3.31	11.65
Yargyap	-1260.*	PF 30% release	43.15	1156.13	1158.54	241	3.44	10.38
Yargyap	-1360.*	PF 30% release	43.15	1153.71	1156.25	254	3.53	9.62
Yargyap	-1460.*	PF 30% release	43.15	1151.3	1153.91	261	3.6	9.18
Yargyap	-1560	PF 30% release	43.15	1148.88	1151.52	264	3.63	9
Yargyap	-1660.*	PF 30% release	43.15	1146.18	1148.85	267	3.63	8.91
Yargyap	-1760.*	PF 30% release	43.15	1143.48	1146.17	269	3.65	8.81
Yargyap	-1860.*	PF 30% release	43.15	1140.79	1143.49	270	3.66	8.72
Average						199.85	2.93	16.22

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	57.53	1176.56	1178.26	170	2.49	22.65
Yargyap	-97.714*	PF 40% release	57.53	1175.58	1177.29	171	2.48	23.14
Yargyap	-195.42*	PF 40% release	57.53	1174.6	1176.33	173	2.44	23.78
Yargyap	-293.14*	PF 40% release	57.53	1173.61	1175.34	173	2.47	24.2
Yargyap	-390.85*	PF 40% release	57.53	1172.63	1174.4	177	2.35	25.4
Yargyap	-488.57*	PF 40% release	57.53	1171.65	1173.33	168	2.51	25.55
Yargyap	-586.28*	PF 40% release	57.53	1170.67	1172.46	179	2.12	29.15
Yargyap	-684	PF 40% release	57.53	1169.69	1171.18	149	2.71	28.47
Yargyap	-778.*	PF 40% release	57.53	1167.51	1169.37	186	3.02	20.5
Yargyap	-872.*	PF 40% release	57.53	1165.33	1167.34	201	3.15	18.09
Yargyap	-966.*	PF 40% release	57.53	1163.14	1165.27	213	3.24	16.7
Yargyap	-1060	PF 40% release	57.53	1160.96	1163.19	223	3.31	15.55
Yargyap	-1160.*	PF 40% release	57.53	1158.54	1161.05	251	3.52	13.05
Yargyap	-1260.*	PF 40% release	57.53	1156.13	1158.83	270	3.66	11.63
Yargyap	-1360.*	PF 40% release	57.53	1153.71	1156.55	284	3.77	10.75
Yargyap	-1460.*	PF 40% release	57.53	1151.3	1154.23	293	3.82	10.29
Yargyap	-1560	PF 40% release	57.53	1148.88	1151.85	297	3.83	10.12
Yargyap	-1660.*	PF 40% release	57.53	1146.18	1149.17	299	3.86	9.98
Yargyap	-1760.*	PF 40% release	57.53	1143.48	1146.5	302	3.86	9.88
Yargyap	-1860.*	PF 40% release	57.53	1140.79	1143.82	303	3.88	9.78
Average						224.10	3.12	17.93

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	71.92	1176.56	1178.43	187	2.66	24.01
Yargyap	-97.714*	PF 50% release	71.92	1175.58	1177.46	188	2.65	24.6
Yargyap	-195.42*	PF 50% release	71.92	1174.6	1176.5	190	2.61	25.31
Yargyap	-293.14*	PF 50% release	71.92	1173.61	1175.5	189	2.62	25.88
Yargyap	-390.85*	PF 50% release	71.92	1172.63	1174.56	193	2.51	27.18
Yargyap	-488.57*	PF 50% release	71.92	1171.65	1173.49	184	2.65	27.57
Yargyap	-586.28*	PF 50% release	71.92	1170.67	1172.61	194	2.27	31.43
Yargyap	-684	PF 50% release	71.92	1169.69	1171.32	163	2.84	31.07

Yargyap	-778.*	PF 50% release	71.92	1167.51	1169.54	203	3.17	22.39
Yargyap	-872.*	PF 50% release	71.92	1165.33	1167.53	220	3.3	19.77
Yargyap	-966.*	PF 50% release	71.92	1163.14	1165.47	233	3.38	18.26
Yargyap	-1060	PF 50% release	71.92	1160.96	1163.4	244	3.46	17
Yargyap	-1160.*	PF 50% release	71.92	1158.54	1161.28	274	3.68	14.26
Yargyap	-1260.*	PF 50% release	71.92	1156.13	1159.08	295	3.83	12.72
Yargyap	-1360.*	PF 50% release	71.92	1153.71	1156.82	311	3.92	11.79
Yargyap	-1460.*	PF 50% release	71.92	1151.3	1154.5	320	3.98	11.26
Yargyap	-1560	PF 50% release	71.92	1148.88	1152.13	325	4.01	11.06
Yargyap	-1660.*	PF 50% release	71.92	1146.18	1149.45	327	4.02	10.93
Yargyap	-1760.*	PF 50% release	71.92	1143.48	1146.78	330	4.04	10.8
Yargyap	-1860.*	PF 50% release	71.92	1140.79	1144.1	331	4.06	10.69
Average						245.05	3.28	19.40

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	143.83	1176.56	1179.07	251	3.26	29.23
Yargyap	-97.714*	PF 100% release	143.83	1175.58	1178.1	252	3.23	30.14
Yargyap	-195.42*	PF 100% release	143.83	1174.6	1177.12	252	3.19	31.16
Yargyap	-293.14*	PF 100% release	143.83	1173.61	1176.12	251	3.17	32.2
Yargyap	-390.85*	PF 100% release	143.83	1172.63	1175.15	252	3.08	33.84
Yargyap	-488.57*	PF 100% release	143.83	1171.65	1174.08	243	3.16	35.05
Yargyap	-586.28*	PF 100% release	143.83	1170.67	1173.14	247	2.84	39.4
Yargyap	-684	PF 100% release	143.83	1169.69	1171.84	215	3.25	41.07
Yargyap	-778.*	PF 100% release	143.83	1167.51	1170.19	268	3.63	29.56
Yargyap	-872.*	PF 100% release	143.83	1165.33	1168.23	290	3.79	26.09
Yargyap	-966.*	PF 100% release	143.83	1163.14	1166.21	307	3.9	24.06
Yargyap	-1060	PF 100% release	143.83	1160.96	1164.18	322	3.99	22.41
Yargyap	-1160.*	PF 100% release	143.83	1158.54	1162.16	362	4.23	18.82
Yargyap	-1260.*	PF 100% release	143.83	1156.13	1160.03	390	4.39	16.78
Yargyap	-1360.*	PF 100% release	143.83	1153.71	1157.82	411	4.51	15.55
Yargyap	-1460.*	PF 100% release	143.83	1151.3	1155.53	423	4.57	14.87
Yargyap	-1560	PF 100% release	143.83	1148.88	1153.16	428	4.61	14.59
Yargyap	-1660.*	PF 100% release	143.83	1146.18	1150.49	431	4.63	14.41
Yargyap	-1760.*	PF 100% release	143.83	1143.48	1147.83	435	4.65	14.25
Yargyap	-1860.*	PF 100% release	143.83	1140.79	1145.17	438	4.66	14.1
Average						323.40	3.84	24.88

Other 4 Months

Tato-I HEP-Oct-Nov-Apr-May

Note: River sta -684 denotes location along river reach 684 m d/s of Tato-I dam axis

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 10% release	6.33	1176.56	1177.3	74	1.24	13.79
Yargyap	-97.714*	PF 10% release	6.33	1175.58	1176.31	73	1.33	13.07
Yargyap	-195.42*	PF 10% release	6.33	1174.6	1175.36	76	1.24	13.35

Yargyap	-293.14*	PF 10% release	6.33	1173.61	1174.34	73	1.39	12.58
Yargyap	-390.85*	PF 10% release	6.33	1172.63	1173.41	78	1.21	13.11
Yargyap	-488.57*	PF 10% release	6.33	1171.65	1172.34	69	1.48	12.1
Yargyap	-586.28*	PF 10% release	6.33	1170.67	1171.46	79	1.12	13.89
Yargyap	-684	PF 10% release	6.33	1169.69	1170.32	63	1.65	12.1
Yargyap	-778.*	PF 10% release	6.33	1167.51	1168.28	77	1.94	8.48
Yargyap	-872.*	PF 10% release	6.33	1165.33	1166.16	83	2.04	7.45
Yargyap	-966.*	PF 10% release	6.33	1163.14	1164.02	88	2.08	6.91
Yargyap	-1060	PF 10% release	6.33	1160.96	1161.88	92	2.15	6.41
Yargyap	-1160.*	PF 10% release	6.33	1158.54	1159.58	104	2.27	5.39
Yargyap	-1260.*	PF 10% release	6.33	1156.13	1157.25	112	2.36	4.81
Yargyap	-1360.*	PF 10% release	6.33	1153.71	1154.89	118	2.42	4.45
Yargyap	-1460.*	PF 10% release	6.33	1151.3	1152.51	121	2.45	4.26
Yargyap	-1560	PF 10% release	6.33	1148.88	1150.11	123	2.46	4.19
Yargyap	-1660.*	PF 10% release	6.33	1146.18	1147.42	124	2.47	4.14
Yargyap	-1760.*	PF 10% release	6.33	1143.48	1144.73	125	2.5	4.08
Yargyap	-1860.*	PF 10% release	6.33	1140.79	1142.04	125	2.49	4.05
Average						93.85	1.91	8.43

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 15% release	9.49	1176.56	1177.42	86	1.38	15.8
Yargyap	-97.714*	PF 15% release	9.49	1175.58	1176.42	84	1.47	14.88
Yargyap	-195.42*	PF 15% release	9.49	1174.6	1175.47	87	1.4	14.79
Yargyap	-293.14*	PF 15% release	9.49	1173.61	1174.45	84	1.55	14.03
Yargyap	-390.85*	PF 15% release	9.49	1172.63	1173.53	90	1.37	14.67
Yargyap	-488.57*	PF 15% release	9.49	1171.65	1172.46	81	1.65	13.67
Yargyap	-586.28*	PF 15% release	9.49	1170.67	1171.59	92	1.25	15.89
Yargyap	-684	PF 15% release	9.49	1169.69	1170.43	74	1.84	14.04
Yargyap	-778.*	PF 15% release	9.49	1167.51	1168.41	90	2.11	9.96
Yargyap	-872.*	PF 15% release	9.49	1165.33	1166.3	97	2.22	8.77
Yargyap	-966.*	PF 15% release	9.49	1163.14	1164.18	104	2.26	8.13
Yargyap	-1060	PF 15% release	9.49	1160.96	1162.04	108	2.33	7.54
Yargyap	-1160.*	PF 15% release	9.49	1158.54	1159.76	122	2.47	6.33
Yargyap	-1260.*	PF 15% release	9.49	1156.13	1157.44	131	2.56	5.64
Yargyap	-1360.*	PF 15% release	9.49	1153.71	1155.09	138	2.63	5.23
Yargyap	-1460.*	PF 15% release	9.49	1151.3	1152.72	142	2.65	5.01
Yargyap	-1560	PF 15% release	9.49	1148.88	1150.33	145	2.67	4.93
Yargyap	-1660.*	PF 15% release	9.49	1146.18	1147.64	146	2.68	4.86
Yargyap	-1760.*	PF 15% release	9.49	1143.48	1144.95	147	2.7	4.8
Yargyap	-1860.*	PF 15% release	9.49	1140.79	1142.26	147	2.7	4.76
Average						109.75	2.09	9.69

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 20% release	12.65	1176.56	1177.51	95	1.53	16.51
Yargyap	-97.714*	PF 20% release	12.65	1175.58	1176.52	94	1.59	16.11
Yargyap	-195.42*	PF 20% release	12.65	1174.6	1175.57	97	1.53	15.97
Yargyap	-293.14*	PF 20% release	12.65	1173.61	1174.55	94	1.66	15.27
Yargyap	-390.85*	PF 20% release	12.65	1172.63	1173.63	100	1.49	15.93
Yargyap	-488.57*	PF 20% release	12.65	1171.65	1172.56	91	1.76	15.01
Yargyap	-586.28*	PF 20% release	12.65	1170.67	1171.69	102	1.35	17.48
Yargyap	-684	PF 20% release	12.65	1169.69	1170.51	82	1.96	15.68
Yargyap	-778.*	PF 20% release	12.65	1167.51	1168.52	101	2.25	11.13
Yargyap	-872.*	PF 20% release	12.65	1165.33	1166.42	109	2.35	9.83
Yargyap	-966.*	PF 20% release	12.65	1163.14	1164.3	116	2.39	9.11
Yargyap	-1060	PF 20% release	12.65	1160.96	1162.18	122	2.45	8.49
Yargyap	-1160.*	PF 20% release	12.65	1158.54	1159.91	137	2.59	7.13
Yargyap	-1260.*	PF 20% release	12.65	1156.13	1157.61	148	2.69	6.36
Yargyap	-1360.*	PF 20% release	12.65	1153.71	1155.27	156	2.76	5.89
Yargyap	-1460.*	PF 20% release	12.65	1151.3	1152.9	160	2.81	5.63
Yargyap	-1560	PF 20% release	12.65	1148.88	1150.5	162	2.82	5.53
Yargyap	-1660.*	PF 20% release	12.65	1146.18	1147.82	164	2.83	5.46
Yargyap	-1760.*	PF 20% release	12.65	1143.48	1145.13	165	2.85	5.4
Yargyap	-1860.*	PF 20% release	12.65	1140.79	1142.44	165	2.86	5.34
Average						123.00	2.23	10.66

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 25% release	15.81	1176.56	1177.58	102	1.65	17.15
Yargyap	-97.714*	PF 25% release	15.81	1175.58	1176.61	103	1.69	17.16
Yargyap	-195.42*	PF 25% release	15.81	1174.6	1175.66	106	1.64	17.02
Yargyap	-293.14*	PF 25% release	15.81	1173.61	1174.64	103	1.76	16.33
Yargyap	-390.85*	PF 25% release	15.81	1172.63	1173.72	109	1.59	17.05
Yargyap	-488.57*	PF 25% release	15.81	1171.65	1172.64	99	1.86	16.14
Yargyap	-586.28*	PF 25% release	15.81	1170.67	1171.79	112	1.44	18.89
Yargyap	-684	PF 25% release	15.81	1169.69	1170.58	89	2.09	17
Yargyap	-778.*	PF 25% release	15.81	1167.51	1168.61	110	2.34	12.22
Yargyap	-872.*	PF 25% release	15.81	1165.33	1166.53	120	2.43	10.8
Yargyap	-966.*	PF 25% release	15.81	1163.14	1164.41	127	2.5	9.97
Yargyap	-1060	PF 25% release	15.81	1160.96	1162.29	133	2.56	9.28
Yargyap	-1160.*	PF 25% release	15.81	1158.54	1160.04	150	2.71	7.79
Yargyap	-1260.*	PF 25% release	15.81	1156.13	1157.74	161	2.82	6.95
Yargyap	-1360.*	PF 25% release	15.81	1153.71	1155.41	170	2.89	6.44
Yargyap	-1460.*	PF 25% release	15.81	1151.3	1153.05	175	2.94	6.15
Yargyap	-1560	PF 25% release	15.81	1148.88	1150.65	177	2.95	6.04
Yargyap	-1660.*	PF 25% release	15.81	1146.18	1147.96	178	2.99	5.95
Yargyap	-1760.*	PF 25% release	15.81	1143.48	1145.28	180	2.98	5.9
Yargyap	-1860.*	PF 25% release	15.81	1140.79	1142.6	181	2.99	5.84

Average					134.25	2.34	11.50

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 30% release	18.98	1176.56	1177.65	109	1.75	17.72
Yargyap	-97.714*	PF 30% release	18.98	1175.58	1176.68	110	1.78	17.81
Yargyap	-195.42*	PF 30% release	18.98	1174.6	1175.73	113	1.73	17.93
Yargyap	-293.14*	PF 30% release	18.98	1173.61	1174.72	111	1.85	17.29
Yargyap	-390.85*	PF 30% release	18.98	1172.63	1173.79	116	1.68	18.04
Yargyap	-488.57*	PF 30% release	18.98	1171.65	1172.72	107	1.95	17.16
Yargyap	-586.28*	PF 30% release	18.98	1170.67	1171.87	120	1.51	20.13
Yargyap	-684	PF 30% release	18.98	1169.69	1170.64	95	2.19	18.18
Yargyap	-778.*	PF 30% release	18.98	1167.51	1168.7	119	2.42	13.15
Yargyap	-872.*	PF 30% release	18.98	1165.33	1166.62	129	2.52	11.62
Yargyap	-966.*	PF 30% release	18.98	1163.14	1164.51	137	2.59	10.72
Yargyap	-1060	PF 30% release	18.98	1160.96	1162.39	143	2.65	9.98
Yargyap	-1160.*	PF 30% release	18.98	1158.54	1160.15	161	2.81	8.38
Yargyap	-1260.*	PF 30% release	18.98	1156.13	1157.87	174	2.92	7.48
Yargyap	-1360.*	PF 30% release	18.98	1153.71	1155.54	183	3	6.93
Yargyap	-1460.*	PF 30% release	18.98	1151.3	1153.18	188	3.04	6.62
Yargyap	-1560	PF 30% release	18.98	1148.88	1150.79	191	3.06	6.5
Yargyap	-1660.*	PF 30% release	18.98	1146.18	1148.11	193	3.07	6.42
Yargyap	-1760.*	PF 30% release	18.98	1143.48	1145.42	194	3.09	6.35
Yargyap	-1860.*	PF 30% release	18.98	1140.79	1142.74	195	3.1	6.28
Average						144.40	2.44	12.23

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 40% release	25.3	1176.56	1177.78	122	1.93	18.74
Yargyap	-97.714*	PF 40% release	25.3	1175.58	1176.81	123	1.94	18.93
Yargyap	-195.42*	PF 40% release	25.3	1174.6	1175.86	126	1.89	19.33
Yargyap	-293.14*	PF 40% release	25.3	1173.61	1174.86	125	1.98	18.98
Yargyap	-390.85*	PF 40% release	25.3	1172.63	1173.93	130	1.84	19.72
Yargyap	-488.57*	PF 40% release	25.3	1171.65	1172.85	120	2.08	19.01
Yargyap	-586.28*	PF 40% release	25.3	1170.67	1172	133	1.65	22.11
Yargyap	-684	PF 40% release	25.3	1169.69	1170.76	107	2.3	20.49
Yargyap	-778.*	PF 40% release	25.3	1167.51	1168.84	133	2.57	14.75
Yargyap	-872.*	PF 40% release	25.3	1165.33	1166.78	145	2.67	13.03
Yargyap	-966.*	PF 40% release	25.3	1163.14	1164.68	154	2.75	12.02
Yargyap	-1060	PF 40% release	25.3	1160.96	1162.57	161	2.82	11.19
Yargyap	-1160.*	PF 40% release	25.3	1158.54	1160.35	181	2.99	9.39
Yargyap	-1260.*	PF 40% release	25.3	1156.13	1158.08	195	3.1	8.38
Yargyap	-1360.*	PF 40% release	25.3	1153.71	1155.76	205	3.18	7.77
Yargyap	-1460.*	PF 40% release	25.3	1151.3	1153.41	211	3.22	7.42
Yargyap	-1560	PF 40% release	25.3	1148.88	1151.02	214	3.24	7.29
Yargyap	-1660.*	PF 40% release	25.3	1146.18	1148.34	216	3.25	7.21

Yargyap	-1760.*	PF 40% release	25.3	1143.48	1145.65	217	3.28	7.11
Yargyap	-1860.*	PF 40% release	25.3	1140.79	1142.97	218	3.28	7.05
Average						161.80	2.60	13.50

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 50% release	31.63	1176.56	1177.89	133	2.07	19.66
Yargyap	-97.714*	PF 50% release	31.63	1175.58	1176.92	134	2.08	19.9
Yargyap	-195.42*	PF 50% release	31.63	1174.6	1175.97	137	2.03	20.38
Yargyap	-293.14*	PF 50% release	31.63	1173.61	1174.97	136	2.1	20.43
Yargyap	-390.85*	PF 50% release	31.63	1172.63	1174.04	141	1.96	21.19
Yargyap	-488.57*	PF 50% release	31.63	1171.65	1172.97	132	2.19	20.56
Yargyap	-586.28*	PF 50% release	31.63	1170.67	1172.11	144	1.76	23.87
Yargyap	-684	PF 50% release	31.63	1169.69	1170.86	117	2.42	22.33
Yargyap	-778.*	PF 50% release	31.63	1167.51	1168.97	146	2.68	16.14
Yargyap	-872.*	PF 50% release	31.63	1165.33	1166.91	158	2.8	14.24
Yargyap	-966.*	PF 50% release	31.63	1163.14	1164.81	167	2.89	13.1
Yargyap	-1060	PF 50% release	31.63	1160.96	1162.72	176	2.94	12.24
Yargyap	-1160.*	PF 50% release	31.63	1158.54	1160.52	198	3.12	10.28
Yargyap	-1260.*	PF 50% release	31.63	1156.13	1158.26	213	3.24	9.17
Yargyap	-1360.*	PF 50% release	31.63	1153.71	1155.96	225	3.32	8.5
Yargyap	-1460.*	PF 50% release	31.63	1151.3	1153.6	230	3.38	8.1
Yargyap	-1560	PF 50% release	31.63	1148.88	1151.22	234	3.4	7.96
Yargyap	-1660.*	PF 50% release	31.63	1146.18	1148.54	236	3.41	7.87
Yargyap	-1760.*	PF 50% release	31.63	1143.48	1145.86	238	3.42	7.78
Yargyap	-1860.*	PF 50% release	31.63	1140.79	1143.17	238	3.46	7.68
Average						176.65	2.73	14.57

River	Ch d/s of Tato-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yargyap	0	PF 100% release	63.25	1176.56	1178.33	177	2.56	23.21
Yargyap	-97.714*	PF 100% release	63.25	1175.58	1177.36	178	2.55	23.74
Yargyap	-195.42*	PF 100% release	63.25	1174.6	1176.4	180	2.51	24.41
Yargyap	-293.14*	PF 100% release	63.25	1173.61	1175.41	180	2.53	24.9
Yargyap	-390.85*	PF 100% release	63.25	1172.63	1174.46	183	2.41	26.14
Yargyap	-488.57*	PF 100% release	63.25	1171.65	1173.4	175	2.57	26.4
Yargyap	-586.28*	PF 100% release	63.25	1170.67	1172.52	185	2.19	30.11
Yargyap	-684	PF 100% release	63.25	1169.69	1171.24	155	2.76	29.57
Yargyap	-778.*	PF 100% release	63.25	1167.51	1169.43	192	3.1	21.22
Yargyap	-872.*	PF 100% release	63.25	1165.33	1167.42	209	3.21	18.81
Yargyap	-966.*	PF 100% release	63.25	1163.14	1165.35	221	3.32	17.28
Yargyap	-1060	PF 100% release	63.25	1160.96	1163.28	232	3.38	16.15
Yargyap	-1160.*	PF 100% release	63.25	1158.54	1161.15	261	3.58	13.57
Yargyap	-1260.*	PF 100% release	63.25	1156.13	1158.94	281	3.73	12.08
Yargyap	-1360.*	PF 100% release	63.25	1153.71	1156.67	296	3.83	11.2
Yargyap	-1460.*	PF 100% release	63.25	1151.3	1154.34	304	3.88	10.69

Yargyap	-1560	PF 100% release	63.25	1148.88	1151.96	308	3.91	10.5
Yargyap	-1660.*	PF 100% release	63.25	1146.18	1149.29	311	3.92	10.38
Yargyap	-1760.*	PF 100% release	63.25	1143.48	1146.62	314	3.94	10.26
Yargyap	-1860.*	PF 100% release	63.25	1140.79	1143.94	315	3.95	10.15
Average						232.85	3.19	18.54

Tato-II HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Tato-II HEP-Nov to Feb

Note: River sta -200 denotes location along river reach 200 m d/s of Tato-II dam axis

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 10% release	5.32	892	892.79	79	1.98	6.79
Siyom	-100	PF 10% release	5.32	889.19	889.99	80	1.99	6.75
Siyom	-200	PF 10% release	5.32	886.39	887.36	97	1.34	8.24
Siyom	-300	PF 10% release	5.32	885.59	886.48	89	1.41	8.49
Siyom	-400	PF 10% release	5.32	884.79	885.7	91	1.2	9.77
Siyom	-500	PF 10% release	5.32	883.99	884.76	77	1.46	9.52
Siyom	-600	PF 10% release	5.32	883.19	884.05	86	1	12.49
Siyom	-700	PF 10% release	5.32	882.4	882.98	58	1.72	10.49
Siyom	-800	PF 10% release	5.32	879.59	880.19	60	1.74	10.2
Siyom	-900	PF 10% release	5.32	876.79	877.4	61	1.75	10.05
Average						77.8	1.559	9.279

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 15% release	7.98	892	892.93	93	2.14	7.99
Siyom	-100	PF 15% release	7.98	889.19	890.13	94	2.14	7.98
Siyom	-200	PF 15% release	7.98	886.39	887.51	112	1.49	9.55
Siyom	-300	PF 15% release	7.98	885.59	886.63	104	1.55	9.92
Siyom	-400	PF 15% release	7.98	884.79	885.84	105	1.35	11.28
Siyom	-500	PF 15% release	7.98	883.99	884.89	90	1.59	11.18
Siyom	-600	PF 15% release	7.98	883.19	884.18	99	1.13	14.41
Siyom	-700	PF 15% release	7.98	882.4	883.09	69	1.87	12.35
Siyom	-800	PF 15% release	7.98	879.59	880.3	71	1.89	12
Siyom	-900	PF 15% release	7.98	876.79	877.5	71	1.9	11.83
Average						90.8	1.705	10.849

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 20% release	10.64	892	893.05	105	2.27	8.96
Siyom	-100	PF 20% release	10.64	889.19	890.24	105	2.27	8.95
Siyom	-200	PF 20% release	10.64	886.39	887.63	124	1.62	10.59
Siyom	-300	PF 20% release	10.64	885.59	886.75	116	1.65	11.08

Siyom	-400	PF 20% release	10.64	884.79	885.95	116	1.48	12.48
Siyom	-500	PF 20% release	10.64	883.99	885	101	1.69	12.53
Siyom	-600	PF 20% release	10.64	883.19	884.28	109	1.22	15.95
Siyom	-700	PF 20% release	10.64	882.4	883.17	77	1.98	13.85
Siyom	-800	PF 20% release	10.64	879.59	880.38	79	2	13.47
Siyom	-900	PF 20% release	10.64	876.79	877.59	80	2.01	13.25
Average						101.2	1.819	12.111

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 25% release	13.3	892	893.14	114	2.39	9.76
Siyom	-100	PF 25% release	13.3	889.19	890.34	115	2.39	9.75
Siyom	-200	PF 25% release	13.3	886.39	887.74	135	1.72	11.48
Siyom	-300	PF 25% release	13.3	885.59	886.86	127	1.74	12.06
Siyom	-400	PF 25% release	13.3	884.79	886.04	125	1.57	13.51
Siyom	-500	PF 25% release	13.3	883.99	885.09	110	1.77	13.67
Siyom	-600	PF 25% release	13.3	883.19	884.37	118	1.31	17.23
Siyom	-700	PF 25% release	13.3	882.4	883.24	84	2.06	15.16
Siyom	-800	PF 25% release	13.3	879.59	880.46	87	2.09	14.66
Siyom	-900	PF 25% release	13.3	876.79	877.66	87	2.10	14.38
Average						110.2	1.91	13.17

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 30% release	15.96	892	893.23	123	2.46	10.54
Siyom	-100	PF 30% release	15.96	889.19	890.43	124	2.46	10.53
Siyom	-200	PF 30% release	15.96	886.39	887.83	144	1.81	12.27
Siyom	-300	PF 30% release	15.96	885.59	886.95	136	1.82	12.93
Siyom	-400	PF 30% release	15.96	884.79	886.13	134	1.66	14.4
Siyom	-500	PF 30% release	15.96	883.99	885.18	119	1.84	14.7
Siyom	-600	PF 30% release	15.96	883.19	884.45	126	1.39	18.32
Siyom	-700	PF 30% release	15.96	882.4	883.31	91	2.13	16.31
Siyom	-800	PF 30% release	15.96	879.59	880.53	94	2.15	15.74
Siyom	-900	PF 30% release	15.96	876.79	877.73	94	2.17	15.47
Average						118.5	1.989	14.121

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 40% release	21.28	892	893.38	138	2.61	11.81
Siyom	-100	PF 40% release	21.28	889.19	890.58	139	2.61	11.8
Siyom	-200	PF 40% release	21.28	886.39	887.99	160	1.96	13.61
Siyom	-300	PF 40% release	21.28	885.59	887.1	151	1.95	14.41
Siyom	-400	PF 40% release	21.28	884.79	886.27	148	1.8	16
Siyom	-500	PF 40% release	21.28	883.99	885.32	133	1.96	16.46
Siyom	-600	PF 40% release	21.28	883.19	884.58	139	1.51	20.27
Siyom	-700	PF 40% release	21.28	882.4	883.42	102	2.28	18.06
Siyom	-800	PF 40% release	21.28	879.59	880.64	105	2.31	17.43

Siyom	-900	PF 40% release	21.28	876.79	877.85	106	2.3	17.23
Average						132.1	2.129	15.708

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 50% release	26.6	892	893.51	151	2.73	12.93
Siyom	-100	PF 50% release	26.6	889.19	890.71	152	2.73	12.91
Siyom	-200	PF 50% release	26.6	886.39	888.12	173	2.08	14.78
Siyom	-300	PF 50% release	26.6	885.59	887.24	165	2.07	15.69
Siyom	-400	PF 50% release	26.6	884.79	886.4	161	1.92	17.47
Siyom	-500	PF 50% release	26.6	883.99	885.44	145	2.05	18.03
Siyom	-600	PF 50% release	26.6	883.19	884.69	150	1.62	21.86
Siyom	-700	PF 50% release	26.6	882.4	883.52	112	2.37	19.69
Siyom	-800	PF 50% release	26.6	879.59	880.74	115	2.39	19.05
Siyom	-900	PF 50% release	26.6	876.79	877.95	116	2.41	18.78
Average						144	2.237	17.119

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 100% release	53.21	892	893.99	199	3.14	17.31
Siyom	-100	PF 100% release	53.21	889.19	891.19	200	3.12	17.33
Siyom	-200	PF 100% release	53.21	886.39	888.63	224	2.47	19.74
Siyom	-300	PF 100% release	53.21	885.59	887.72	213	2.44	20.96
Siyom	-400	PF 100% release	53.21	884.79	886.85	206	2.31	22.8
Siyom	-500	PF 100% release	53.21	883.99	885.87	188	2.42	23.67
Siyom	-600	PF 100% release	53.21	883.19	885.11	192	1.98	27.89
Siyom	-700	PF 100% release	53.21	882.4	883.88	148	2.75	25.52
Siyom	-800	PF 100% release	53.21	879.59	881.1	151	2.79	24.48
Siyom	-900	PF 100% release	53.21	876.79	878.32	153	2.8	24.36
Average						187.4	2.622	22.406

Monsoon

Tata-II HEP-June to September

Note: River sta -200 denotes location along river reach 200 m d/s of Tat0-II dam axis

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 10% release	34	892	893.67	167	2.86	14.26
Siyom	-100	PF 10% release	34	889.19	890.86	167	2.86	14.25
Siyom	-200	PF 10% release	34	886.39	888.29	190	2.21	16.34
Siyom	-300	PF 10% release	34	885.59	887.4	181	2.19	17.44
Siyom	-400	PF 10% release	34	884.79	886.54	175	2.05	19.21
Siyom	-500	PF 10% release	34	883.99	885.58	159	2.17	19.87
Siyom	-600	PF 10% release	34	883.19	884.83	164	1.74	23.82
Siyom	-700	PF 10% release	34	882.4	883.64	124	2.49	21.59
Siyom	-800	PF 10% release	34	879.59	880.86	127	2.52	20.9
Siyom	-900	PF 10% release	34	876.79	878.07	128	2.53	20.63
Average						158.2	2.362	18.831

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 15% release	51	892	893.96	196	3.11	16.97
Siyom	-100	PF 15% release	51	889.19	891.15	196	3.11	16.96
Siyom	-200	PF 15% release	51	886.39	888.6	221	2.44	19.4
Siyom	-300	PF 15% release	51	885.59	887.69	210	2.41	20.61
Siyom	-400	PF 15% release	51	884.79	886.82	203	2.29	22.43
Siyom	-500	PF 15% release	51	883.99	885.84	185	2.39	23.29
Siyom	-600	PF 15% release	51	883.19	885.08	189	1.96	27.48
Siyom	-700	PF 15% release	51	882.4	883.85	145	2.73	25.11
Siyom	-800	PF 15% release	51	879.59	881.08	149	2.76	24.13
Siyom	-900	PF 15% release	51	876.79	878.29	150	2.77	24.01
Average						184.4	2.597	22.039

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 20% release	68	892	894.2	220	3.25	19.44
Siyom	-100	PF 20% release	68	889.19	891.4	221	3.25	19.42
Siyom	-200	PF 20% release	68	886.39	888.84	245	2.63	21.81
Siyom	-300	PF 20% release	68	885.59	887.92	233	2.59	23.13
Siyom	-400	PF 20% release	68	884.79	887.03	224	2.48	24.99
Siyom	-500	PF 20% release	68	883.99	886.05	206	2.56	26.04
Siyom	-600	PF 20% release	68	883.19	885.28	209	2.14	30.33
Siyom	-700	PF 20% release	68	882.4	884.04	164	2.87	28.15
Siyom	-800	PF 20% release	68	879.59	881.27	168	2.92	26.91
Siyom	-900	PF 20% release	68	876.79	878.48	169	2.93	26.69
Average						205.9	2.762	24.691

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 25% release	85	892	894.41	241.00	3.39	21.48
Siyom	-100	PF 25% release	85	889.19	891.61	242.00	3.39	21.46
Siyom	-200	PF 25% release	85	886.39	889.04	265.00	2.78	23.85
Siyom	-300	PF 25% release	85	885.59	888.12	253.00	2.74	25.25
Siyom	-400	PF 25% release	85	884.79	887.22	243.00	2.64	27.17
Siyom	-500	PF 25% release	85	883.99	886.23	224.00	2.70	28.38
Siyom	-600	PF 25% release	85	883.19	885.45	226.00	2.29	32.77
Siyom	-700	PF 25% release	85	882.4	884.2	180.00	3.01	30.71
Siyom	-800	PF 25% release	85	879.59	881.43	184.00	3.06	29.26
Siyom	-900	PF 25% release	85	876.79	878.64	185.00	3.07	28.96
Average						224.30	2.91	26.93

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 30% release	102	892	894.58	258	3.52	23.22

Siyom	-100	PF 30% release	102	889.19	891.78	259	3.52	23.21
Siyom	-200	PF 30% release	102	886.39	889.22	283	2.92	25.62
Siyom	-300	PF 30% release	102	885.59	888.29	270	2.87	27.11
Siyom	-400	PF 30% release	102	884.79	887.38	259	2.77	29.07
Siyom	-500	PF 30% release	102	883.99	886.39	240	2.83	30.42
Siyom	-600	PF 30% release	102	883.19	885.6	241	2.42	34.92
Siyom	-700	PF 30% release	102	882.4	884.33	193	3.12	32.96
Siyom	-800	PF 30% release	102	879.59	881.57	198	3.17	31.35
Siyom	-900	PF 30% release	102	876.79	878.79	200	3.19	30.98
Average						240.1	3.033	28.886

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 40% release	136	892	894.89	289	3.72	26.28
Siyom	-100	PF 40% release	136	889.19	892.09	290	3.72	26.27
Siyom	-200	PF 40% release	136	886.39	889.53	314	3.15	28.66
Siyom	-300	PF 40% release	136	885.59	888.59	300	3.1	30.28
Siyom	-400	PF 40% release	136	884.79	887.66	287	3	32.34
Siyom	-500	PF 40% release	136	883.99	886.66	267	3.04	33.92
Siyom	-600	PF 40% release	136	883.19	885.85	266	2.64	38.59
Siyom	-700	PF 40% release	136	882.4	884.58	218	3.31	36.89
Siyom	-800	PF 40% release	136	879.59	881.82	223	3.37	34.99
Siyom	-900	PF 40% release	136	876.79	879.04	225	3.38	34.51
Average						267.9	3.243	32.273

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 50% release	170	892	895.15	315	3.88	28.9
Siyom	-100	PF 50% release	170	889.19	892.35	316	3.88	28.88
Siyom	-200	PF 50% release	170	886.39	889.78	339	3.34	31.23
Siyom	-300	PF 50% release	170	885.59	888.83	324	3.28	32.96
Siyom	-400	PF 50% release	170	884.79	887.89	310	3.19	35.12
Siyom	-500	PF 50% release	170	883.99	886.89	290	3.22	36.89
Siyom	-600	PF 50% release	170	883.19	886.07	288	2.83	41.74
Siyom	-700	PF 50% release	170	882.4	884.78	238	3.46	40.27
Siyom	-800	PF 50% release	170	879.59	882.03	244	3.54	38.06
Siyom	-900	PF 50% release	170	876.79	879.25	246	3.55	37.54
Average						291	3.42	35.16

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 100% release	340	892	896.12	412	4.44	38.57
Siyom	-100	PF 100% release	340	889.19	893.32	413	4.44	38.55
Siyom	-200	PF 100% release	340	886.39	890.72	433	4.01	40.58
Siyom	-300	PF 100% release	340	885.59	889.74	415	3.95	42.83

Siyom	-400	PF 100% release	340	884.79	888.76	397	3.86	45.58
Siyom	-500	PF 100% release	340	883.99	887.73	374	3.84	48.32
Siyom	-600	PF 100% release	340	883.19	886.86	367	3.47	54.29
Siyom	-700	PF 100% release	340	882.4	885.56	316	3.95	54.49
Siyom	-800	PF 100% release	340	879.59	882.84	325	4.07	49.89
Siyom	-900	PF 100% release	340	876.79	880.06	327	4.09	49
Average						377.9	4.012	46.21

Other 4 months

Tato-II HEP-Mar-Nov-Apr-May

Note: River sta -200 denotes location along river reach 200 m d/s of Tato-II dam axis

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 10% release	20.25	892	893.35	135	2.58	11.59
Siyom	-100	PF 10% release	20.25	889.19	890.55	136	2.58	11.57
Siyom	-200	PF 10% release	20.25	886.39	887.96	157	1.93	13.37
Siyom	-300	PF 10% release	20.25	885.59	887.08	149	1.93	14.14
Siyom	-400	PF 10% release	20.25	884.79	886.25	146	1.78	15.68
Siyom	-500	PF 10% release	20.25	883.99	885.29	130	1.94	16.14
Siyom	-600	PF 10% release	20.25	883.19	884.56	137	1.49	19.89
Siyom	-700	PF 10% release	20.25	882.4	883.4	100	2.24	17.79
Siyom	-800	PF 10% release	20.25	879.59	880.62	103	2.25	17.22
Siyom	-900	PF 10% release	20.25	876.79	877.83	104	2.28	16.92
Average						129.7	2.1	15.431

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 15% release	30.37	892	893.59	159	2.8	13.63
Siyom	-100	PF 15% release	30.37	889.19	890.79	160	2.8	13.61
Siyom	-200	PF 15% release	30.37	886.39	888.21	182	2.15	15.56
Siyom	-300	PF 15% release	30.37	885.59	887.32	173	2.13	16.62
Siyom	-400	PF 15% release	30.37	884.79	886.48	169	1.99	18.4
Siyom	-500	PF 15% release	30.37	883.99	885.51	152	2.12	19
Siyom	-600	PF 15% release	30.37	883.19	884.77	158	1.68	22.91
Siyom	-700	PF 15% release	30.37	882.4	883.58	118	2.44	20.69
Siyom	-800	PF 15% release	30.37	879.59	880.8	121	2.46	20.03
Siyom	-900	PF 15% release	30.37	876.79	878.01	122	2.47	19.75
Average						151.4	2.304	18.02

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 20% release	40.5	892	893.78	178	2.99	15.23
Siyom	-100	PF 20% release	40.5	889.19	890.98	179	2.99	15.21
Siyom	-200	PF 20% release	40.5	886.39	888.42	203	2.31	17.62
Siyom	-300	PF 20% release	40.5	885.59	887.52	193	2.28	18.76
Siyom	-400	PF 20% release	40.5	884.79	886.66	187	2.15	20.55
Siyom	-500	PF 20% release	40.5	883.99	885.69	170	2.26	21.29

Siyom	-600	PF 20% release	40.5	883.19	884.94	175	1.83	25.36
Siyom	-700	PF 20% release	40.5	882.4	883.72	132	2.6	22.99
Siyom	-800	PF 20% release	40.5	879.59	880.95	136	2.64	22.17
Siyom	-900	PF 20% release	40.5	876.79	878.16	137	2.64	22
Average						169	2.469	20.118

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 25% release	50.62	892	893.95	195	3.1	16.94
Siyom	-100	PF 25% release	50.62	889.19	891.15	196	3.11	16.9
Siyom	-200	PF 25% release	50.62	886.39	888.59	220	2.44	19.34
Siyom	-300	PF 25% release	50.62	885.59	887.68	209	2.41	20.55
Siyom	-400	PF 25% release	50.62	884.79	886.81	202	2.28	22.37
Siyom	-500	PF 25% release	50.62	883.99	885.84	185	2.39	23.22
Siyom	-600	PF 25% release	50.62	883.19	885.08	189	1.95	27.41
Siyom	-700	PF 25% release	50.62	882.4	883.85	145	2.73	25.04
Siyom	-800	PF 25% release	50.62	879.59	881.07	148	2.76	24.06
Siyom	-900	PF 25% release	50.62	876.79	878.29	150	2.76	23.94
Average						183.90	2.59	21.98

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 30% release	60.75	892	894.11	211	3.19	18.48
Siyom	-100	PF 30% release	60.75	889.19	891.3	211	3.19	18.46
Siyom	-200	PF 30% release	60.75	886.39	888.74	235	2.56	20.83
Siyom	-300	PF 30% release	60.75	885.59	887.83	224	2.52	22.11
Siyom	-400	PF 30% release	60.75	884.79	886.95	216	2.4	23.96
Siyom	-500	PF 30% release	60.75	883.99	885.97	198	2.49	24.93
Siyom	-600	PF 30% release	60.75	883.19	885.2	201	2.07	29.16
Siyom	-700	PF 30% release	60.75	882.4	883.96	156	2.81	26.94
Siyom	-800	PF 30% release	60.75	879.59	881.19	160	2.85	25.8
Siyom	-900	PF 30% release	60.75	876.79	878.41	162	2.86	25.62
Average						197.4	2.694	23.629

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 40% release	81	892	894.36	236	3.36	21.02
Siyom	-100	PF 40% release	81	889.19	891.56	237	3.36	21
Siyom	-200	PF 40% release	81	886.39	889	261	2.75	23.39
Siyom	-300	PF 40% release	81	885.59	888.08	249	2.71	24.78
Siyom	-400	PF 40% release	81	884.79	887.18	239	2.6	26.68
Siyom	-500	PF 40% release	81	883.99	886.19	220	2.67	27.85
Siyom	-600	PF 40% release	81	883.19	885.41	222	2.25	32.27
Siyom	-700	PF 40% release	81	882.4	884.16	176	3	30.05
Siyom	-800	PF 40% release	81	879.59	881.39	180	3.03	28.73

Siyom	-900	PF 40% release	81	876.79	878.6	181	3.06	28.35
Average						220.1	2.879	26.412

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 50% release	101.24	892	894.58	258	3.51	23.15
Siyom	-100	PF 50% release	101.24	889.19	891.77	258	3.51	23.13
Siyom	-200	PF 50% release	101.24	886.39	889.21	282	2.91	25.55
Siyom	-300	PF 50% release	101.24	885.59	888.29	270	2.87	27.03
Siyom	-400	PF 50% release	101.24	884.79	887.37	258	2.77	28.99
Siyom	-500	PF 50% release	101.24	883.99	886.38	239	2.82	30.33
Siyom	-600	PF 50% release	101.24	883.19	885.59	240	2.42	34.83
Siyom	-700	PF 50% release	101.24	882.4	884.33	193	3.12	32.87
Siyom	-800	PF 50% release	101.24	879.59	881.57	198	3.17	31.26
Siyom	-900	PF 50% release	101.24	876.79	878.78	199	3.18	30.9
Average						239.5	3.028	28.804

Reach	Ch d/s of Tato-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 100% release	202.48	892	895.37	337	4.01	31.1
Siyom	-100	PF 100% release	202.48	889.19	892.57	338	4.01	31.08
Siyom	-200	PF 100% release	202.48	886.39	890	361	3.5	33.38
Siyom	-300	PF 100% release	202.48	885.59	889.04	345	3.44	35.21
Siyom	-400	PF 100% release	202.48	884.79	888.09	330	3.35	37.44
Siyom	-500	PF 100% release	202.48	883.99	887.08	309	3.36	39.4
Siyom	-600	PF 100% release	202.48	883.19	886.25	306	2.97	44.68
Siyom	-700	PF 100% release	202.48	882.4	884.96	256	3.59	43.15
Siyom	-800	PF 100% release	202.48	879.59	882.21	262	3.67	40.73
Siyom	-900	PF 100% release	202.48	876.79	879.43	264	3.68	40.11
Average						310.8	3.56	37.63

Hirong HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Hirong Nov to Feb

Note: River sta -200 denotes location along river reach 200 m d/s of Hirong dam axis

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 10% release	2.25	1224.81	1225.57	76	1.2	4.95
Siyom	-100	PF 10% release	2.25	1223.46	1224.06	60	1.73	4.34
Siyom	-200	PF 10% release	2.25	1222.11	1222.48	37	0.59	20.84
Siyom	-300	PF 10% release	2.25	1221.21	1221.74	53	1	8.49
Siyom	-400	PF 10% release	2.25	1220.31	1220.84	53	0.95	8.88
Siyom	-500	PF 10% release	2.25	1218.89	1219.38	49	1.57	5.92
Siyom	-600	PF 10% release	2.25	1217.47	1218.2	73	0.57	10.76
Siyom	-700	PF 10% release	2.25	1217.16	1217.97	81	0.68	8.1
Siyom	-800	PF 10% release	2.25	1216.84	1217.54	70	1.01	6.32
Siyom	-900	PF 10% release	2.25	1216.19	1216.81	62	1.01	7.16

Siyom	-1000	PF 10% release	2.25	1215.53	1216.09	56	0.86	9.3
Siyom	-1100	PF 10% release	2.25	1214.37	1214.83	46	1.51	6.44
Siyom	-1200	PF 10% release	2.25	1213.21	1213.77	56	0.21	31.01
Siyom	-1300	PF 10% release	2.25	1212.96	1213.7	74	0.53	11.4
Average						60.43	0.96	10.28

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 15% release	3.38	1224.81	1225.68	87	1.36	5.72
Siyom	-100	PF 15% release	3.38	1223.46	1224.17	71	1.87	5.12
Siyom	-200	PF 15% release	3.38	1222.11	1222.54	43	0.63	24.64
Siyom	-300	PF 15% release	3.38	1221.21	1221.83	62	1.1	9.9
Siyom	-400	PF 15% release	3.38	1220.31	1220.93	62	1.06	10.3
Siyom	-500	PF 15% release	3.38	1218.89	1219.46	57	1.7	6.97
Siyom	-600	PF 15% release	3.38	1217.47	1218.33	86	0.62	12.66
Siyom	-700	PF 15% release	3.38	1217.16	1218.1	94	0.76	9.39
Siyom	-800	PF 15% release	3.38	1216.84	1217.66	82	1.13	7.34
Siyom	-900	PF 15% release	3.38	1216.19	1216.91	72	1.13	8.31
Siyom	-1000	PF 15% release	3.38	1215.53	1216.18	65	0.96	10.8
Siyom	-1100	PF 15% release	3.38	1214.37	1214.91	54	1.65	7.55
Siyom	-1200	PF 15% release	3.38	1213.21	1213.89	68	0.23	31.78
Siyom	-1300	PF 15% release	3.38	1212.96	1213.83	87	0.59	13.32
Average						70.71	1.06	11.70

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 20% release	4.5	1224.81	1225.78	97	1.47	6.32
Siyom	-100	PF 20% release	4.5	1223.46	1224.25	79	1.97	5.75
Siyom	-200	PF 20% release	4.5	1222.11	1222.6	49	0.67	27.72
Siyom	-300	PF 20% release	4.5	1221.21	1221.9	69	1.18	11.05
Siyom	-400	PF 20% release	4.5	1220.31	1221	69	1.14	11.45
Siyom	-500	PF 20% release	4.5	1218.89	1219.53	64	1.8	7.81
Siyom	-600	PF 20% release	4.5	1217.47	1218.44	97	0.66	14.19
Siyom	-700	PF 20% release	4.5	1217.16	1218.2	104	0.83	10.42
Siyom	-800	PF 20% release	4.5	1216.84	1217.75	91	1.22	8.14
Siyom	-900	PF 20% release	4.5	1216.19	1216.99	80	1.22	9.23
Siyom	-1000	PF 20% release	4.5	1215.53	1216.25	72	1.04	11.98
Siyom	-1100	PF 20% release	4.5	1214.37	1214.98	61	1.74	8.48
Siyom	-1200	PF 20% release	4.5	1213.21	1213.99	78	0.25	32.42
Siyom	-1300	PF 20% release	4.5	1212.96	1213.93	97	0.63	14.88
Average						79.07	1.13	12.85

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 25% release	5.63	1224.81	1225.86	105	1.57	6.86
Siyom	-100	PF 25% release	5.63	1223.46	1224.32	86	2.08	6.27
Siyom	-200	PF 25% release	5.63	1222.11	1222.64	53	0.70	29.63
Siyom	-300	PF 25% release	5.63	1221.21	1221.96	75	1.25	12.03

Siyom	-400	PF 25% release	5.63	1220.31	1221.06	75	1.21	12.43
Siyom	-500	PF 25% release	5.63	1218.89	1219.59	70	1.88	8.54
Siyom	-600	PF 25% release	5.63	1217.47	1218.53	106	0.69	15.51
Siyom	-700	PF 25% release	5.63	1217.16	1218.29	113	0.88	11.30
Siyom	-800	PF 25% release	5.63	1216.84	1217.82	98	1.30	8.84
Siyom	-900	PF 25% release	5.63	1216.19	1217.05	86	1.30	10.01
Siyom	-1000	PF 25% release	5.63	1215.53	1216.31	78	1.10	13.03
Siyom	-1100	PF 25% release	5.63	1214.37	1215.03	66	1.83	9.26
Siyom	-1200	PF 25% release	5.63	1213.21	1214.08	87	0.27	32.98
Siyom	-1300	PF 25% release	5.63	1212.96	1214.01	105	0.66	16.21
Average						85.93	1.19	13.78

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 30% release	6.75	1224.81	1225.93	112	1.66	7.31
Siyom	-100	PF 30% release	6.75	1223.46	1224.39	93	2.14	6.77
Siyom	-200	PF 30% release	6.75	1222.11	1222.68	57	0.74	29.83
Siyom	-300	PF 30% release	6.75	1221.21	1222.02	81	1.3	12.89
Siyom	-400	PF 30% release	6.75	1220.31	1221.11	80	1.27	13.28
Siyom	-500	PF 30% release	6.75	1218.89	1219.65	76	1.94	9.21
Siyom	-600	PF 30% release	6.75	1217.47	1218.61	114	0.71	16.66
Siyom	-700	PF 30% release	6.75	1217.16	1218.37	121	0.92	12.07
Siyom	-800	PF 30% release	6.75	1216.84	1217.89	105	1.36	9.44
Siyom	-900	PF 30% release	6.75	1216.19	1217.11	92	1.36	10.7
Siyom	-1000	PF 30% release	6.75	1215.53	1216.37	84	1.16	13.92
Siyom	-1100	PF 30% release	6.75	1214.37	1215.08	71	1.9	9.96
Siyom	-1200	PF 30% release	6.75	1213.21	1214.16	95	0.29	33.47
Siyom	-1300	PF 30% release	6.75	1212.96	1214.09	113	0.69	17.38
Average						92.43	1.25	14.49

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 40% release	9	1224.81	1226.05	124	1.79	8.12
Siyom	-100	PF 40% release	9	1223.46	1224.5	104	2.29	7.56
Siyom	-200	PF 40% release	9	1222.11	1222.75	64	0.8	30.2
Siyom	-300	PF 40% release	9	1221.21	1222.11	90	1.4	14.36
Siyom	-400	PF 40% release	9	1220.31	1221.2	89	1.37	14.77
Siyom	-500	PF 40% release	9	1218.89	1219.74	85	2.06	10.33
Siyom	-600	PF 40% release	9	1217.47	1218.74	127	0.76	18.65
Siyom	-700	PF 40% release	9	1217.16	1218.5	134	1	13.39
Siyom	-800	PF 40% release	9	1216.84	1218.01	117	1.47	10.48
Siyom	-900	PF 40% release	9	1216.19	1217.22	103	1.47	11.88
Siyom	-1000	PF 40% release	9	1215.53	1216.46	93	1.26	15.43
Siyom	-1100	PF 40% release	9	1214.37	1215.18	81	1.99	11.23
Siyom	-1200	PF 40% release	9	1213.21	1214.29	108	0.32	34.32
Siyom	-1300	PF 40% release	9	1212.96	1214.22	126	0.74	19.41
Average						103.21	1.34	15.72

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 50% release	11.25	1224.81	1226.15	134	1.92	8.77
Siyom	-100	PF 50% release	11.25	1223.46	1224.6	114	2.38	8.29
Siyom	-200	PF 50% release	11.25	1222.11	1222.81	70	0.85	30.53
Siyom	-300	PF 50% release	11.25	1221.21	1222.19	98	1.48	15.61
Siyom	-400	PF 50% release	11.25	1220.31	1221.28	97	1.45	16.06
Siyom	-500	PF 50% release	11.25	1218.89	1219.82	93	2.16	11.28
Siyom	-600	PF 50% release	11.25	1217.47	1218.86	139	0.8	20.36
Siyom	-700	PF 50% release	11.25	1217.16	1218.61	145	1.06	14.52
Siyom	-800	PF 50% release	11.25	1216.84	1218.11	127	1.57	11.37
Siyom	-900	PF 50% release	11.25	1216.19	1217.3	111	1.56	12.88
Siyom	-1000	PF 50% release	11.25	1215.53	1216.54	101	1.33	16.73
Siyom	-1100	PF 50% release	11.25	1214.37	1215.25	88	2.08	12.28
Siyom	-1200	PF 50% release	11.25	1213.21	1214.41	120	0.35	35.06
Siyom	-1300	PF 50% release	11.25	1212.96	1214.33	137	0.77	21.15
Average						112.43	1.41	16.78
River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 100% release	22.5	1224.81	1226.52	171	2.36	11.18
Siyom	-100	PF 100% release	22.5	1223.46	1224.97	151	2.72	10.95
Siyom	-200	PF 100% release	22.5	1222.11	1223.08	97	1.05	31.94
Siyom	-300	PF 100% release	22.5	1221.21	1222.48	127	1.76	20.25
Siyom	-400	PF 100% release	22.5	1220.31	1221.56	125	1.74	20.74
Siyom	-500	PF 100% release	22.5	1218.89	1220.12	123	2.46	14.95
Siyom	-600	PF 100% release	22.5	1217.47	1219.29	182	0.93	26.68
Siyom	-700	PF 100% release	22.5	1217.16	1219.03	187	1.29	18.67
Siyom	-800	PF 100% release	22.5	1216.84	1218.47	163	1.89	14.63
Siyom	-900	PF 100% release	22.5	1216.19	1217.62	143	1.91	16.49
Siyom	-1000	PF 100% release	22.5	1215.53	1216.83	130	1.6	21.61
Siyom	-1100	PF 100% release	22.5	1214.37	1215.53	116	2.39	16.2
Siyom	-1200	PF 100% release	22.5	1213.21	1214.84	163	0.47	37.8
Siyom	-1300	PF 100% release	22.5	1212.96	1214.75	179	0.91	27.6
Average						146.93	1.68	20.69

Monsoon

Hirong June to September

Note: River sta -200 denotes location along river reach 200 m d/s of Hirong dam axis

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 10% release	14.38	1224.81	1226.27	146	2.07	9.55
Siyom	-100	PF 10% release	14.38	1223.46	1224.72	126	2.49	9.16
Siyom	-200	PF 10% release	14.38	1222.11	1222.9	79	0.92	30.97
Siyom	-300	PF 10% release	14.38	1221.21	1222.28	107	1.58	17.08
Siyom	-400	PF 10% release	14.38	1220.31	1221.37	106	1.54	17.61

Siyom	-500	PF 10% release	14.38	1218.89	1219.91	102	2.27	12.44
Siyom	-600	PF 10% release	14.38	1217.47	1219	153	0.84	22.41
Siyom	-700	PF 10% release	14.38	1217.16	1218.75	159	1.14	15.87
Siyom	-800	PF 10% release	14.38	1216.84	1218.22	138	1.67	12.43
Siyom	-900	PF 10% release	14.38	1216.19	1217.41	122	1.67	14.07
Siyom	-1000	PF 10% release	14.38	1215.53	1216.63	110	1.42	18.31
Siyom	-1100	PF 10% release	14.38	1214.37	1215.34	97	2.18	13.55
Siyom	-1200	PF 10% release	14.38	1213.21	1214.55	134	0.39	35.94
Siyom	-1300	PF 10% release	14.38	1212.96	1214.47	151	0.82	23.24
Average						123.57	1.50	18.05

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 15% release	21.57	1224.81	1226.49	168	2.33	11.02
Siyom	-100	PF 15% release	21.57	1223.46	1224.94	148	2.7	10.77
Siyom	-200	PF 15% release	21.57	1222.11	1223.06	95	1.04	31.83
Siyom	-300	PF 15% release	21.57	1221.21	1222.45	124	1.74	19.91
Siyom	-400	PF 15% release	21.57	1220.31	1221.54	123	1.71	20.47
Siyom	-500	PF 15% release	21.57	1218.89	1220.09	120	2.45	14.65
Siyom	-600	PF 15% release	21.57	1217.47	1219.26	179	0.92	26.24
Siyom	-700	PF 15% release	21.57	1217.16	1219	184	1.27	18.39
Siyom	-800	PF 15% release	21.57	1216.84	1218.44	160	1.87	14.4
Siyom	-900	PF 15% release	21.57	1216.19	1217.6	141	1.88	16.26
Siyom	-1000	PF 15% release	21.57	1215.53	1216.81	128	1.58	21.27
Siyom	-1100	PF 15% release	21.57	1214.37	1215.51	114	2.37	15.93
Siyom	-1200	PF 15% release	21.57	1213.21	1214.81	160	0.46	37.61
Siyom	-1300	PF 15% release	21.57	1212.96	1214.72	176	0.9	27.16
Average						144.29	1.66	20.42

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 20% release	28.76	1224.81	1226.67	186	2.54	12.19
Siyom	-100	PF 20% release	28.76	1223.46	1225.12	166	2.86	12.08
Siyom	-200	PF 20% release	28.76	1222.11	1223.2	109	1.13	32.58
Siyom	-300	PF 20% release	28.76	1221.21	1222.6	139	1.87	22.19
Siyom	-400	PF 20% release	28.76	1220.31	1221.68	137	1.85	22.74
Siyom	-500	PF 20% release	28.76	1218.89	1220.24	135	2.58	16.5
Siyom	-600	PF 20% release	28.76	1217.47	1219.47	200	0.98	29.34
Siyom	-700	PF 20% release	28.76	1217.16	1219.21	205	1.38	20.41
Siyom	-800	PF 20% release	28.76	1216.84	1218.62	178	2.02	15.98
Siyom	-900	PF 20% release	28.76	1216.19	1217.75	156	2.05	18
Siyom	-1000	PF 20% release	28.76	1215.53	1216.96	143	1.71	23.66
Siyom	-1100	PF 20% release	28.76	1214.37	1215.65	128	2.51	17.88
Siyom	-1200	PF 20% release	28.76	1213.21	1215.02	181	0.53	38.95
Siyom	-1300	PF 20% release	28.76	1212.96	1214.93	197	0.96	30.33
Average						161.43	1.78	22.35

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 25% release	35.95	1224.81	1226.82	201	2.72	13.18
Siyom	-100	PF 25% release	35.95	1223.46	1225.28	182	2.99	13.21
Siyom	-200	PF 25% release	35.95	1222.11	1223.32	121	1.22	33.24
Siyom	-300	PF 25% release	35.95	1221.21	1222.72	151	1.98	24.10
Siyom	-400	PF 25% release	35.95	1220.31	1221.8	149	1.95	24.76
Siyom	-500	PF 25% release	35.95	1218.89	1220.37	148	2.70	18.03
Siyom	-600	PF 25% release	35.95	1217.47	1219.65	218	1.03	31.99
Siyom	-700	PF 25% release	35.95	1217.16	1219.38	222	1.46	22.13
Siyom	-800	PF 25% release	35.95	1216.84	1218.77	193	2.15	17.32
Siyom	-900	PF 25% release	35.95	1216.19	1217.87	168	2.19	19.47
Siyom	-1000	PF 25% release	35.95	1215.53	1217.08	155	1.81	25.70
Siyom	-1100	PF 25% release	35.95	1214.37	1215.77	140	2.62	19.54
Siyom	-1200	PF 25% release	35.95	1213.21	1215.2	199	0.58	40.11
Siyom	-1300	PF 25% release	35.95	1212.96	1215.11	215	1.01	33.04
Average						175.86	1.89	23.99

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 30% release	43.14	1224.81	1226.95	214	2.87	14.04
Siyom	-100	PF 30% release	43.14	1223.46	1225.42	196	3.1	14.21
Siyom	-200	PF 30% release	43.14	1222.11	1223.44	133	1.3	33.85
Siyom	-300	PF 30% release	43.14	1221.21	1222.82	161	2.08	25.74
Siyom	-400	PF 30% release	43.14	1220.31	1221.91	160	2.03	26.6
Siyom	-500	PF 30% release	43.14	1218.89	1220.47	158	2.82	19.32
Siyom	-600	PF 30% release	43.14	1217.47	1219.81	234	1.08	33.44
Siyom	-700	PF 30% release	43.14	1217.16	1219.53	237	1.54	23.65
Siyom	-800	PF 30% release	43.14	1216.84	1218.9	206	2.27	18.5
Siyom	-900	PF 30% release	43.14	1216.19	1217.99	180	2.31	20.75
Siyom	-1000	PF 30% release	43.14	1215.53	1217.19	166	1.89	27.51
Siyom	-1100	PF 30% release	43.14	1214.37	1215.88	151	2.72	21.02
Siyom	-1200	PF 30% release	43.14	1213.21	1215.36	215	0.63	41.12
Siyom	-1300	PF 30% release	43.14	1212.96	1215.26	230	1.06	35.44
Average						188.64	1.98	25.37

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 40% release	57.52	1224.81	1227.18	237	3.14	15.5
Siyom	-100	PF 40% release	57.52	1223.46	1225.66	220	3.29	15.95
Siyom	-200	PF 40% release	57.52	1222.11	1223.64	153	1.43	34.91
Siyom	-300	PF 40% release	57.52	1221.21	1223	179	2.24	28.64
Siyom	-400	PF 40% release	57.52	1220.31	1222.1	179	2.17	29.7
Siyom	-500	PF 40% release	57.52	1218.89	1220.67	178	2.98	21.69
Siyom	-600	PF 40% release	57.52	1217.47	1220.07	260	1.17	34.39
Siyom	-700	PF 40% release	57.52	1217.16	1219.79	263	1.66	26.26
Siyom	-800	PF 40% release	57.52	1216.84	1219.12	228	2.45	20.53
Siyom	-900	PF 40% release	57.52	1216.19	1218.18	199	2.52	22.94

Siyom	-1000	PF 40% release	57.52	1215.53	1217.38	185	2.04	30.63
Siyom	-1100	PF 40% release	57.52	1214.37	1216.06	169	2.89	23.58
Siyom	-1200	PF 40% release	57.52	1213.21	1215.64	243	0.72	42.86
Siyom	-1300	PF 40% release	57.52	1212.96	1215.53	257	1.13	38.88
Average						210.71	2.13	27.60

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 50% release	71.9	1224.81	1227.37	256	3.35	16.76
Siyom	-100	PF 50% release	71.9	1223.46	1225.86	240	3.45	17.4
Siyom	-200	PF 50% release	71.9	1222.11	1223.81	170	1.56	35.82
Siyom	-300	PF 50% release	71.9	1221.21	1223.16	195	2.38	31.12
Siyom	-400	PF 50% release	71.9	1220.31	1222.25	194	2.29	32.29
Siyom	-500	PF 50% release	71.9	1218.89	1220.84	195	3.1	23.81
Siyom	-600	PF 50% release	71.9	1217.47	1220.3	283	1.26	35.21
Siyom	-700	PF 50% release	71.9	1217.16	1220.02	286	1.77	28.48
Siyom	-800	PF 50% release	71.9	1216.84	1219.32	248	2.61	22.26
Siyom	-900	PF 50% release	71.9	1216.19	1218.33	214	2.71	24.75
Siyom	-1000	PF 50% release	71.9	1215.53	1217.54	201	2.14	33.37
Siyom	-1100	PF 50% release	71.9	1214.37	1216.21	184	3.04	25.69
Siyom	-1200	PF 50% release	71.9	1213.21	1215.87	266	0.8	44.33
Siyom	-1300	PF 50% release	71.9	1212.96	1215.75	279	1.2	40.7
Average						229.36	2.26	29.43

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 100% release	143.8	1224.81	1228.11	330	4.04	21.61
Siyom	-100	PF 100% release	143.8	1223.46	1226.62	316	3.96	22.97
Siyom	-200	PF 100% release	143.8	1222.11	1224.45	234	2.04	39.26
Siyom	-300	PF 100% release	143.8	1221.21	1223.7	249	2.93	37.24
Siyom	-400	PF 100% release	143.8	1220.31	1222.86	255	2.66	42.42
Siyom	-500	PF 100% release	143.8	1218.89	1221.46	257	3.57	31.36
Siyom	-600	PF 100% release	143.8	1217.47	1221.16	369	1.63	38.27
Siyom	-700	PF 100% release	143.8	1217.16	1220.84	368	2.13	36.69
Siyom	-800	PF 100% release	143.8	1216.84	1220.04	320	3.13	28.73
Siyom	-900	PF 100% release	143.8	1216.19	1218.89	270	3.42	31.14
Siyom	-1000	PF 100% release	143.8	1215.53	1218.12	259	2.6	40.67
Siyom	-1100	PF 100% release	143.8	1214.37	1216.8	243	3.49	33.9
Siyom	-1200	PF 100% release	143.8	1213.21	1216.74	353	1.1	49.83
Siyom	-1300	PF 100% release	143.8	1212.96	1216.6	364	1.49	47.16
Average						299.07	2.73	35.80

Other 4 months

Hirong Oct-Mar-Apr-May

Note: River sta -200 denotes location along river reach 200 m d/s of Hirong dam axis

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 10% release	8.56	1224.81	1226.03	122	1.76	7.97
Siyom	-100	PF 10% release	8.56	1223.46	1224.48	102	2.27	7.41
Siyom	-200	PF 10% release	8.56	1222.11	1222.74	63	0.79	30.13
Siyom	-300	PF 10% release	8.56	1221.21	1222.09	88	1.38	14.12
Siyom	-400	PF 10% release	8.56	1220.31	1221.18	87	1.36	14.47
Siyom	-500	PF 10% release	8.56	1218.89	1219.72	83	2.02	10.16
Siyom	-600	PF 10% release	8.56	1217.47	1218.72	125	0.75	18.29
Siyom	-700	PF 10% release	8.56	1217.16	1218.48	132	0.99	13.16
Siyom	-800	PF 10% release	8.56	1216.84	1217.99	115	1.45	10.3
Siyom	-900	PF 10% release	8.56	1216.19	1217.2	101	1.46	11.65
Siyom	-1000	PF 10% release	8.56	1215.53	1216.44	91	1.23	15.18
Siyom	-1100	PF 10% release	8.56	1214.37	1215.16	79	1.99	10.96
Siyom	-1200	PF 10% release	8.56	1213.21	1214.27	106	0.32	34.17
Siyom	-1300	PF 10% release	8.56	1212.96	1214.2	124	0.73	19.04
Average						101.29	1.32	15.50

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 15% release	12.85	1224.81	1226.22	141	1.99	9.21
Siyom	-100	PF 15% release	12.85	1223.46	1224.66	120	2.46	8.72
Siyom	-200	PF 15% release	12.85	1222.11	1222.86	75	0.89	30.76
Siyom	-300	PF 15% release	12.85	1221.21	1222.24	103	1.52	16.43
Siyom	-400	PF 15% release	12.85	1220.31	1221.32	101	1.51	16.83
Siyom	-500	PF 15% release	12.85	1218.89	1219.87	98	2.19	11.95
Siyom	-600	PF 15% release	12.85	1217.47	1218.93	146	0.82	21.45
Siyom	-700	PF 15% release	12.85	1217.16	1218.69	153	1.1	15.24
Siyom	-800	PF 15% release	12.85	1216.84	1218.17	133	1.62	11.93
Siyom	-900	PF 15% release	12.85	1216.19	1217.36	117	1.62	13.52
Siyom	-1000	PF 15% release	12.85	1215.53	1216.59	106	1.39	17.55
Siyom	-1100	PF 15% release	12.85	1214.37	1215.3	93	2.13	12.98
Siyom	-1200	PF 15% release	12.85	1213.21	1214.48	127	0.37	35.53
Siyom	-1300	PF 15% release	12.85	1212.96	1214.41	145	0.8	22.26
Average						118.43	1.46	17.45

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 20% release	17.13	1224.81	1226.36	155	2.17	10.17
Siyom	-100	PF 20% release	17.13	1223.46	1224.81	135	2.59	9.81
Siyom	-200	PF 20% release	17.13	1222.11	1222.96	85	0.97	31.31
Siyom	-300	PF 20% release	17.13	1221.21	1222.35	114	1.64	18.28

Siyom	-400	PF 20% release	17.13	1220.31	1221.44	113	1.62	18.73
Siyom	-500	PF 20% release	17.13	1218.89	1219.99	110	2.32	13.41
Siyom	-600	PF 20% release	17.13	1217.47	1219.11	164	0.87	23.99
Siyom	-700	PF 20% release	17.13	1217.16	1218.85	169	1.19	16.91
Siyom	-800	PF 20% release	17.13	1216.84	1218.31	147	1.76	13.25
Siyom	-900	PF 20% release	17.13	1216.19	1217.48	129	1.76	14.97
Siyom	-1000	PF 20% release	17.13	1215.53	1216.71	118	1.49	19.56
Siyom	-1100	PF 20% release	17.13	1214.37	1215.41	104	2.28	14.49
Siyom	-1200	PF 20% release	17.13	1213.21	1214.66	145	0.42	36.63
Siyom	-1300	PF 20% release	17.13	1212.96	1214.57	161	0.85	24.85
Average						132.07	1.57	19.03

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 25% release	21.41	1224.81	1226.49	168	2.32	10.99
Siyom	-100	PF 25% release	21.41	1223.46	1224.94	148	2.7	10.74
Siyom	-200	PF 25% release	21.41	1222.11	1223.05	94	1.03	31.82
Siyom	-300	PF 25% release	21.41	1221.21	1222.45	124	1.73	19.88
Siyom	-400	PF 25% release	21.41	1220.31	1221.54	123	1.72	20.35
Siyom	-500	PF 25% release	21.41	1218.89	1220.09	120	2.43	14.66
Siyom	-600	PF 25% release	21.41	1217.47	1219.25	178	0.92	26.17
Siyom	-700	PF 25% release	21.41	1217.16	1219	184	1.27	18.34
Siyom	-800	PF 25% release	21.41	1216.84	1218.44	160	1.87	14.36
Siyom	-900	PF 25% release	21.41	1216.19	1217.59	140	1.88	16.22
Siyom	-1000	PF 25% release	21.41	1215.53	1216.81	128	1.58	21.21
Siyom	-1100	PF 25% release	21.41	1214.37	1215.51	114	2.37	15.89
Siyom	-1200	PF 25% release	21.41	1213.21	1214.81	160	0.46	37.57
Siyom	-1300	PF 25% release	21.41	1212.96	1214.72	176	0.9	27.08
Average						144.07	1.66	20.38

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 30% release	25.69	1224.81	1226.6	179	2.45	11.72
Siyom	-100	PF 30% release	25.69	1223.46	1225.05	159	2.8	11.55
Siyom	-200	PF 30% release	25.69	1222.11	1223.14	103	1.09	32.28
Siyom	-300	PF 30% release	25.69	1221.21	1222.54	133	1.82	21.28
Siyom	-400	PF 30% release	25.69	1220.31	1221.62	131	1.8	21.79
Siyom	-500	PF 30% release	25.69	1218.89	1220.18	129	2.52	15.77
Siyom	-600	PF 30% release	25.69	1217.47	1219.38	191	0.96	28.09
Siyom	-700	PF 30% release	25.69	1217.16	1219.12	196	1.33	19.59
Siyom	-800	PF 30% release	25.69	1216.84	1218.55	171	1.96	15.35
Siyom	-900	PF 30% release	25.69	1216.19	1217.68	149	1.99	17.27
Siyom	-1000	PF 30% release	25.69	1215.53	1216.9	137	1.65	22.73
Siyom	-1100	PF 30% release	25.69	1214.37	1215.59	122	2.47	17.02
Siyom	-1200	PF 30% release	25.69	1213.21	1214.94	173	0.5	38.41
Siyom	-1300	PF 30% release	25.69	1212.96	1214.85	189	0.94	29.04
Average						154.43	1.73	21.56

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 40% release	34.26	1224.81	1226.79	198	2.68	12.96
Siyom	-100	PF 40% release	34.26	1223.46	1225.25	179	2.96	12.96
Siyom	-200	PF 40% release	34.26	1222.11	1223.29	118	1.2	33.09
Siyom	-300	PF 40% release	34.26	1221.21	1222.69	148	1.96	23.67
Siyom	-400	PF 40% release	34.26	1220.31	1221.77	146	1.93	24.31
Siyom	-500	PF 40% release	34.26	1218.89	1220.34	145	2.67	17.69
Siyom	-600	PF 40% release	34.26	1217.47	1219.61	214	1.02	31.4
Siyom	-700	PF 40% release	34.26	1217.16	1219.34	218	1.44	21.75
Siyom	-800	PF 40% release	34.26	1216.84	1218.73	189	2.13	17.02
Siyom	-900	PF 40% release	34.26	1216.19	1217.85	166	2.16	19.14
Siyom	-1000	PF 40% release	34.26	1215.53	1217.05	152	1.79	25.25
Siyom	-1100	PF 40% release	34.26	1214.37	1215.75	138	2.6	19.17
Siyom	-1200	PF 40% release	34.26	1213.21	1215.16	195	0.57	39.85
Siyom	-1300	PF 40% release	34.26	1212.96	1215.07	211	1	32.43
Average						172.64	1.87	23.62

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 50% release	42.82	1224.81	1226.95	214	2.86	14.01
Siyom	-100	PF 50% release	42.82	1223.46	1225.41	195	3.1	14.16
Siyom	-200	PF 50% release	42.82	1222.11	1223.43	132	1.29	33.82
Siyom	-300	PF 50% release	42.82	1221.21	1222.81	160	2.08	25.67
Siyom	-400	PF 50% release	42.82	1220.31	1221.91	160	2.02	26.53
Siyom	-500	PF 50% release	42.82	1218.89	1220.47	158	2.81	19.27
Siyom	-600	PF 50% release	42.82	1217.47	1219.8	233	1.08	33.41
Siyom	-700	PF 50% release	42.82	1217.16	1219.52	236	1.53	23.58
Siyom	-800	PF 50% release	42.82	1216.84	1218.89	205	2.26	18.45
Siyom	-900	PF 50% release	42.82	1216.19	1217.98	179	2.3	20.7
Siyom	-1000	PF 50% release	42.82	1215.53	1217.18	165	1.89	27.43
Siyom	-1100	PF 50% release	42.82	1214.37	1215.87	150	2.72	20.96
Siyom	-1200	PF 50% release	42.82	1213.21	1215.36	215	0.63	41.08
Siyom	-1300	PF 50% release	42.82	1212.96	1215.26	230.00	1.06	35.34
Average						188.00	1.97	25.32

River	Ch d/s of Hirong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0 (dam site)	PF 100% release	85.64	1224.81	1227.52	271	3.56	17.77
Siyom	-100	PF 100% release	85.64	1223.46	1226.03	257	3.57	18.67
Siyom	-200	PF 100% release	85.64	1222.11	1223.96	185	1.66	36.61
Siyom	-300	PF 100% release	85.64	1221.21	1223.28	207	2.49	33.16
Siyom	-400	PF 100% release	85.64	1220.31	1222.4	209	2.37	34.67
Siyom	-500	PF 100% release	85.64	1218.89	1220.97	208	3.23	25.42
Siyom	-600	PF 100% release	85.64	1217.47	1220.5	303	1.34	35.91

Siyom	-700	PF 100% release	85.64	1217.16	1220.2	304	1.85	30.35
Siyom	-800	PF 100% release	85.64	1216.84	1219.48	264	2.74	23.71
Siyom	-900	PF 100% release	85.64	1216.19	1218.47	228	2.85	26.3
Siyom	-1000	PF 100% release	85.64	1215.53	1217.67	214	2.25	35.57
Siyom	-1100	PF 100% release	85.64	1214.37	1216.35	198	3.12	27.65
Siyom	-1200	PF 100% release	85.64	1213.21	1216.07	286	0.87	45.58
Siyom	-1300	PF 100% release	85.64	1212.96	1215.95	299	1.27	42.24
Average						245.21	2.37	30.97

Naying HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Naying HEP-Nov to Feb

Note: River sta -200 denotes location along river reach 200 m d/s of Naying dam axis

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 10% release	5.65	698.59	699.02	43	1.3	20.04
Siyom	-100	PF 10% release	5.65	696.08	696.69	61	1.77	10.32
Siyom	-200	PF 10% release	5.65	693.56	694.31	75	1.94	7.73
Siyom	-300	PF 10% release	5.65	691.38	692.17	79	1.89	7.65
Siyom	-400	PF 10% release	5.65	689.21	689.99	78	1.98	7.34
Siyom	-500	PF 10% release	5.65	686.56	687.17	61	1.76	10.46
Siyom	-600	PF 10% release	5.65	683.91	684.27	36	1	31.51
Siyom	-700	PF 10% release	5.65	681.8	682.08	28	1.21	32.28
Siyom	-800	PF 10% release	5.65	679.68	679.87	19	0.95	36.69
Siyom	-900	PF 10% release	5.65	677.12	677.78	66	1.83	9.33
Siyom	-1000	PF 10% release	5.65	674.55	675.4	85	2.05	6.47
Siyom	-1100	PF 10% release	5.65	672	672.73	73	1.92	8.04
Siyom	-1200	PF 10% release	5.65	669.44	669.94	50	1.51	14.87
Siyom	-1300	PF 10% release	5.65	666.98	667.46	48	1.57	14.72
Siyom	-1400	PF 10% release	5.65	664.51	665.14	63	0.85	21.19
Siyom	-1500	PF 10% release	5.65	663.01	663.99	98	2.08	5.53
Siyom	-1600	PF 10% release	5.65	661.51	662.16	65	1.58	11.04
Siyom	-1700	PF 10% release	5.65	659.37	659.99	62	1.77	10.36
Average						60.56	1.61	14.75

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 15% release	8.48	698.59	699.09	50	1.45	23.31
Siyom	-100	PF 15% release	8.48	696.08	696.8	72	1.92	12.13
Siyom	-200	PF 15% release	8.48	693.56	694.45	89	2.09	9.12
Siyom	-300	PF 15% release	8.48	691.38	692.29	91	2.12	8.84
Siyom	-400	PF 15% release	8.48	689.21	690.13	92	2.13	8.68
Siyom	-500	PF 15% release	8.48	686.56	687.29	73	1.89	12.36
Siyom	-600	PF 15% release	8.48	683.91	684.32	41	1.13	36.43
Siyom	-700	PF 15% release	8.48	681.8	682.13	33	1.34	36.01
Siyom	-800	PF 15% release	8.48	679.68	679.92	24	1.08	38.95

Siyom	-900	PF 15% release	8.48	677.12	677.9	78	1.98	10.98
Siyom	-1000	PF 15% release	8.48	674.55	675.55	100	2.22	7.61
Siyom	-1100	PF 15% release	8.48	672	672.86	86	2.06	9.5
Siyom	-1200	PF 15% release	8.48	669.44	670.02	58	1.71	17.15
Siyom	-1300	PF 15% release	8.48	666.98	667.55	57	1.7	17.33
Siyom	-1400	PF 15% release	8.48	664.51	665.26	75	0.89	25.42
Siyom	-1500	PF 15% release	8.48	663.01	664.15	114	2.33	6.41
Siyom	-1600	PF 15% release	8.48	661.51	662.26	75	1.78	12.74
Siyom	-1700	PF 15% release	8.48	659.37	660.1	73	1.91	12.2
Average						71.17	1.76	16.95

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 20% release	11.31	698.59	699.15	56	1.56	25.94
Siyom	-100	PF 20% release	11.31	696.08	696.89	81	2.03	13.62
Siyom	-200	PF 20% release	11.31	693.56	694.55	99	2.23	10.19
Siyom	-300	PF 20% release	11.31	691.38	692.4	102	2.24	9.94
Siyom	-400	PF 20% release	11.31	689.21	690.24	103	2.25	9.74
Siyom	-500	PF 20% release	11.31	686.56	687.37	81	2	13.87
Siyom	-600	PF 20% release	11.31	683.91	684.37	46	1.23	40.27
Siyom	-700	PF 20% release	11.31	681.8	682.17	37	1.45	37.75
Siyom	-800	PF 20% release	11.31	679.68	679.96	28	1.18	40.89
Siyom	-900	PF 20% release	11.31	677.12	677.99	87	2.09	12.33
Siyom	-1000	PF 20% release	11.31	674.55	675.67	112	2.36	8.54
Siyom	-1100	PF 20% release	11.31	672	672.97	97	2.18	10.66
Siyom	-1200	PF 20% release	11.31	669.44	670.09	65	1.81	19.23
Siyom	-1300	PF 20% release	11.31	666.98	667.62	64	1.8	19.43
Siyom	-1400	PF 20% release	11.31	664.51	665.37	86	0.91	28.98
Siyom	-1500	PF 20% release	11.31	663.01	664.28	127	2.5	7.15
Siyom	-1600	PF 20% release	11.31	661.51	662.33	82	1.96	14.03
Siyom	-1700	PF 20% release	11.31	659.37	660.19	82	2.01	13.75
Average						79.72	1.88	18.68

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 25% release	14.14	698.59	699.2	61	1.65	28.15
Siyom	-100	PF 25% release	14.14	696.08	696.97	89	2.12	14.92
Siyom	-200	PF 25% release	14.14	693.56	694.65	109	2.32	11.19
Siyom	-300	PF 25% release	14.14	691.38	692.49	111	2.36	10.83
Siyom	-400	PF 25% release	14.14	689.21	690.34	113	2.36	10.65
Siyom	-500	PF 25% release	14.14	686.56	687.45	89	2.11	15.09
Siyom	-600	PF 25% release	14.14	683.91	684.4	49	1.32	43.40
Siyom	-700	PF 25% release	14.14	681.8	682.21	41	1.53	39.37
Siyom	-800	PF 25% release	14.14	679.68	680	32	1.25	42.71
Siyom	-900	PF 25% release	14.14	677.12	678.07	95	2.19	13.47
Siyom	-1000	PF 25% release	14.14	674.55	675.78	123	2.46	9.35

Siyom	-1100	PF 25% release	14.14	672	673.05	105	2.30	11.61
Siyom	-1200	PF 25% release	14.14	669.44	670.15	71	1.89	21.06
Siyom	-1300	PF 25% release	14.14	666.98	667.68	70	1.89	21.25
Siyom	-1400	PF 25% release	14.14	664.51	665.45	94	0.95	30.07
Siyom	-1500	PF 25% release	14.14	663.01	664.4	139	2.61	7.82
Siyom	-1600	PF 25% release	14.14	661.51	662.4	89	2.08	15.23
Siyom	-1700	PF 25% release	14.14	659.37	660.26	89	2.12	14.98
Average						87.17	1.97	20.06

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 30% release	16.96	698.59	699.24	65	1.72	30.2
Siyom	-100	PF 30% release	16.96	696.08	697.04	96	2.2	16.03
Siyom	-200	PF 30% release	16.96	693.56	694.73	117	2.42	11.98
Siyom	-300	PF 30% release	16.96	691.38	692.58	120	2.43	11.69
Siyom	-400	PF 30% release	16.96	689.21	690.42	121	2.46	11.41
Siyom	-500	PF 30% release	16.96	686.56	687.51	95	2.19	16.23
Siyom	-600	PF 30% release	16.96	683.91	684.43	52	1.4	46.25
Siyom	-700	PF 30% release	16.96	681.8	682.24	44	1.61	40.8
Siyom	-800	PF 30% release	16.96	679.68	680.04	36	1.32	44.28
Siyom	-900	PF 30% release	16.96	677.12	678.15	103	2.26	14.55
Siyom	-1000	PF 30% release	16.96	674.55	675.87	132	2.56	10.04
Siyom	-1100	PF 30% release	16.96	672	673.14	114	2.37	12.53
Siyom	-1200	PF 30% release	16.96	669.44	670.2	76	1.96	22.62
Siyom	-1300	PF 30% release	16.96	666.98	667.73	75	1.96	22.86
Siyom	-1400	PF 30% release	16.96	664.51	665.52	101	0.99	30.4
Siyom	-1500	PF 30% release	16.96	663.01	664.5	149	2.71	8.41
Siyom	-1600	PF 30% release	16.96	661.51	662.47	96	2.17	16.34
Siyom	-1700	PF 30% release	16.96	659.37	660.33	96	2.18	16.18
Average						93.78	2.05	21.27

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 40% release	22.62	698.59	699.31	72	1.86	33.54
Siyom	-100	PF 40% release	22.62	696.08	697.16	108	2.31	18.07
Siyom	-200	PF 40% release	22.62	693.56	694.88	132	2.55	13.49
Siyom	-300	PF 40% release	22.62	691.38	692.73	135	2.57	13.12
Siyom	-400	PF 40% release	22.62	689.21	690.57	136	2.61	12.81
Siyom	-500	PF 40% release	22.62	686.56	687.63	107	2.32	18.22
Siyom	-600	PF 40% release	22.62	683.91	684.49	58	1.52	51.15
Siyom	-700	PF 40% release	22.62	681.8	682.3	50	1.74	43.38
Siyom	-800	PF 40% release	22.62	679.68	680.11	43	1.42	47.36
Siyom	-900	PF 40% release	22.62	677.12	678.27	115	2.4	16.28
Siyom	-1000	PF 40% release	22.62	674.55	676.04	149	2.7	11.28
Siyom	-1100	PF 40% release	22.62	672	673.27	127	2.53	14.01
Siyom	-1200	PF 40% release	22.62	669.44	670.3	86	2.06	25.51

Siyom	-1300	PF 40% release	22.62	666.98	667.83	85	2.07	25.66
Siyom	-1400	PF 40% release	22.62	664.51	665.67	116	1.05	31.03
Siyom	-1500	PF 40% release	22.62	663.01	664.68	167	2.87	9.43
Siyom	-1600	PF 40% release	22.62	661.51	662.58	107	2.3	18.32
Siyom	-1700	PF 40% release	22.62	659.37	660.45	108	2.31	18.15
Average						105.61	2.18	23.38

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 50% release	28.27	698.59	699.38	79	1.94	36.72
Siyom	-100	PF 50% release	28.27	696.08	697.26	118	2.43	19.67
Siyom	-200	PF 50% release	28.27	693.56	695	144	2.66	14.76
Siyom	-300	PF 50% release	28.27	691.38	692.85	147	2.69	14.35
Siyom	-400	PF 50% release	28.27	689.21	690.7	149	2.7	14.05
Siyom	-500	PF 50% release	28.27	686.56	687.74	118	2.4	20.01
Siyom	-600	PF 50% release	28.27	683.91	684.54	63	1.63	54.98
Siyom	-700	PF 50% release	28.27	681.8	682.35	55	1.84	45.66
Siyom	-800	PF 50% release	28.27	679.68	680.16	48	1.5	49.98
Siyom	-900	PF 50% release	28.27	677.12	678.38	126	2.5	17.85
Siyom	-1000	PF 50% release	28.27	674.55	676.17	162	2.83	12.32
Siyom	-1100	PF 50% release	28.27	672	673.4	140	2.62	15.38
Siyom	-1200	PF 50% release	28.27	669.44	670.38	94	2.15	27.89
Siyom	-1300	PF 50% release	28.27	666.98	667.91	93	2.16	28.08
Siyom	-1400	PF 50% release	28.27	664.51	665.81	130	1.09	31.62
Siyom	-1500	PF 50% release	28.27	663.01	664.84	183	3	10.31
Siyom	-1600	PF 50% release	28.27	661.51	662.68	117	2.42	19.96
Siyom	-1700	PF 50% release	28.27	659.37	660.55	118	2.43	19.76
Average						115.78	2.28	25.19

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 100% release	56.54	698.59	699.62	103	2.29	46.31
Siyom	-100	PF 100% release	56.54	696.08	697.64	156	2.77	26.07
Siyom	-200	PF 100% release	56.54	693.56	695.46	190	3.06	19.47
Siyom	-300	PF 100% release	56.54	691.38	693.31	193	3.11	18.85
Siyom	-400	PF 100% release	56.54	689.21	691.17	196	3.11	18.55
Siyom	-500	PF 100% release	56.54	686.56	688.11	155	2.77	26.38
Siyom	-600	PF 100% release	56.54	683.91	684.7	79	2.11	60.5
Siyom	-700	PF 100% release	56.54	681.8	682.56	76	2.19	53.95
Siyom	-800	PF 100% release	56.54	679.68	680.42	74	1.72	61.35
Siyom	-900	PF 100% release	56.54	677.12	678.79	167	2.87	23.55
Siyom	-1000	PF 100% release	56.54	674.55	676.69	214	3.25	16.26
Siyom	-1100	PF 100% release	56.54	672	673.84	184	3.02	20.28
Siyom	-1200	PF 100% release	56.54	669.44	670.68	124	2.49	35.39
Siyom	-1300	PF 100% release	56.54	666.98	668.2	122	2.56	33.34
Siyom	-1400	PF 100% release	56.54	664.51	666.4	189	1.25	34.16

Siyom	-1500	PF 100% release	56.54	663.01	665.42	241	3.45	13.6
Siyom	-1600	PF 100% release	56.54	661.51	663.06	155	2.76	26.44
Siyom	-1700	PF 100% release	56.54	659.37	660.93	156	2.77	26.19
Average						154.11	2.64	31.15

Monsoon

Naying HEP-June to September

Note: River sta -200 denotes location along river reach 200 m d/s of Naying dam axis

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 10% release	36.13	698.59	699.46	87	2.07	40.26
Siyom	-100	PF 10% release	36.13	696.08	697.38	130	2.54	21.78
Siyom	-200	PF 10% release	36.13	693.56	695.15	159	2.8	16.28
Siyom	-300	PF 10% release	36.13	691.38	693	162	2.82	15.82
Siyom	-400	PF 10% release	36.13	689.21	690.85	164	2.86	15.45
Siyom	-500	PF 10% release	36.13	686.56	687.85	129	2.54	21.98
Siyom	-600	PF 10% release	36.13	683.91	684.59	68	1.78	57.66
Siyom	-700	PF 10% release	36.13	681.8	682.42	62	1.96	48.26
Siyom	-800	PF 10% release	36.13	679.68	680.24	56	1.58	53.46
Siyom	-900	PF 10% release	36.13	677.12	678.51	139	2.62	19.69
Siyom	-1000	PF 10% release	36.13	674.55	676.34	179	2.97	13.6
Siyom	-1100	PF 10% release	36.13	672	673.54	154	2.76	16.96
Siyom	-1200	PF 10% release	36.13	669.44	670.48	104	2.26	30.76
Siyom	-1300	PF 10% release	36.13	666.98	668	102	2.28	30.14
Siyom	-1400	PF 10% release	36.13	664.51	665.99	148	1.14	32.39
Siyom	-1500	PF 10% release	36.13	663.01	665.02	201	3.16	11.36
Siyom	-1600	PF 10% release	36.13	661.51	662.81	130	2.52	22.11
Siyom	-1700	PF 10% release	36.13	659.37	660.67	130	2.53	21.89
Average						128.00	2.40	27.21

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 15% release	54.2	698.59	699.6	101	2.28	45.91
Siyom	-100	PF 15% release	54.2	696.08	697.61	153	2.75	25.63
Siyom	-200	PF 15% release	54.2	693.56	695.43	187	3.03	19.15
Siyom	-300	PF 15% release	54.2	691.38	693.28	190	3.08	18.54
Siyom	-400	PF 15% release	54.2	689.21	691.14	193	3.09	18.2
Siyom	-500	PF 15% release	54.2	686.56	688.08	152	2.74	25.94
Siyom	-600	PF 15% release	54.2	683.91	684.69	78	2.07	60.27
Siyom	-700	PF 15% release	54.2	681.8	682.55	75	2.17	53.34
Siyom	-800	PF 15% release	54.2	679.68	680.4	72	1.7	60.51
Siyom	-900	PF 15% release	54.2	677.12	678.76	164	2.84	23.16
Siyom	-1000	PF 15% release	54.2	674.55	676.65	210	3.24	15.94
Siyom	-1100	PF 15% release	54.2	672	673.81	181	2.99	19.95
Siyom	-1200	PF 15% release	54.2	669.44	670.65	121	2.5	34.91
Siyom	-1300	PF 15% release	54.2	666.98	668.18	120	2.54	33.2

Siyom	-1400	PF 15% release	54.2	664.51	666.35	184	1.24	33.97
Siyom	-1500	PF 15% release	54.2	663.01	665.38	237	3.42	13.36
Siyom	-1600	PF 15% release	54.2	661.51	663.03	152	2.74	26
Siyom	-1700	PF 15% release	54.2	659.37	660.9	153	2.75	25.75
Average						151.28	2.62	30.76

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 20% release	72.26	698.59	699.72	113	2.47	48.39
Siyom	-100	PF 20% release	72.26	696.08	697.8	172	2.91	28.75
Siyom	-200	PF 20% release	72.26	693.56	695.65	209	3.22	21.45
Siyom	-300	PF 20% release	72.26	691.38	693.52	214	3.24	20.88
Siyom	-400	PF 20% release	72.26	689.21	691.38	217	3.26	20.46
Siyom	-500	PF 20% release	72.26	686.56	688.27	171	2.9	29.12
Siyom	-600	PF 20% release	72.26	683.91	684.79	88	2.25	62.75
Siyom	-700	PF 20% release	72.26	681.8	682.66	86	2.32	57.72
Siyom	-800	PF 20% release	72.26	679.68	680.54	86	1.78	66.71
Siyom	-900	PF 20% release	72.26	677.12	678.96	184	3.01	25.99
Siyom	-1000	PF 20% release	72.26	674.55	676.91	236	3.42	17.92
Siyom	-1100	PF 20% release	72.26	672	674.03	203	3.17	22.37
Siyom	-1200	PF 20% release	72.26	669.44	670.79	135	2.69	37.26
Siyom	-1300	PF 20% release	72.26	666.98	668.32	134	2.77	34.16
Siyom	-1400	PF 20% release	72.26	664.51	666.67	216	1.32	35.35
Siyom	-1500	PF 20% release	72.26	663.01	665.67	266	3.63	14.98
Siyom	-1600	PF 20% release	72.26	661.51	663.22	171	2.9	29.19
Siyom	-1700	PF 20% release	72.26	659.37	661.09	172	2.91	28.9
Average						170.72	2.79	33.46

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 25% release	90.33	698.59	699.83	124	2.60	50.77
Siyom	-100	PF 25% release	90.33	696.08	697.96	188	3.05	31.42
Siyom	-200	PF 25% release	90.33	693.56	695.84	228	3.38	23.41
Siyom	-300	PF 25% release	90.33	691.38	693.72	234	3.39	22.84
Siyom	-400	PF 25% release	90.33	689.21	691.58	237	3.41	22.36
Siyom	-500	PF 25% release	90.33	686.56	688.43	187	3.03	31.84
Siyom	-600	PF 25% release	90.33	683.91	684.87	96	2.40	64.94
Siyom	-700	PF 25% release	90.33	681.8	682.76	96	2.44	61.63
Siyom	-800	PF 25% release	90.33	679.68	680.67	99	1.82	72.44
Siyom	-900	PF 25% release	90.33	677.12	679.13	201	3.16	28.37
Siyom	-1000	PF 25% release	90.33	674.55	677.13	258	3.57	19.60
Siyom	-1100	PF 25% release	90.33	672	674.22	222	3.32	24.42
Siyom	-1200	PF 25% release	90.33	669.44	670.93	149	2.82	39.42
Siyom	-1300	PF 25% release	90.33	666.98	668.45	147	2.94	35.09
Siyom	-1400	PF 25% release	90.33	664.51	666.96	245	1.39	36.57
Siyom	-1500	PF 25% release	90.33	663.01	665.92	291	3.79	16.39

Siyom	-1600	PF 25% release	90.33	661.51	663.37	186	3.07	31.04
Siyom	-1700	PF 25% release	90.33	659.37	661.24	187	3.08	30.58
Average						187.50	2.93	35.73

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 30% release	108.39	698.59	699.93	134	2.72	52.84
Siyom	-100	PF 30% release	108.39	696.08	698.1	202	3.17	33.77
Siyom	-200	PF 30% release	108.39	693.56	696.02	246	3.48	25.27
Siyom	-300	PF 30% release	108.39	691.38	693.89	251	3.52	24.53
Siyom	-400	PF 30% release	108.39	689.21	691.75	254	3.54	24.04
Siyom	-500	PF 30% release	108.39	686.56	688.57	201	3.16	34.18
Siyom	-600	PF 30% release	108.39	683.91	684.96	105	2.51	67.09
Siyom	-700	PF 30% release	108.39	681.8	682.84	104	2.55	64.22
Siyom	-800	PF 30% release	108.39	679.68	680.78	110	1.86	77.68
Siyom	-900	PF 30% release	108.39	677.12	679.29	217	3.27	30.56
Siyom	-1000	PF 30% release	108.39	674.55	677.32	277	3.73	21.03
Siyom	-1100	PF 30% release	108.39	672	674.39	239	3.43	26.32
Siyom	-1200	PF 30% release	108.39	669.44	671.04	160	2.98	41.21
Siyom	-1300	PF 30% release	108.39	666.98	668.56	158	3.11	35.88
Siyom	-1400	PF 30% release	108.39	664.51	667.21	270	1.45	37.67
Siyom	-1500	PF 30% release	108.39	663.01	666.14	313	3.93	17.63
Siyom	-1600	PF 30% release	108.39	661.51	663.5	199	3.24	31.73
Siyom	-1700	PF 30% release	108.39	659.37	661.37	200	3.26	31.58
Average						202.22	3.05	37.62

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 40% release	144.52	698.59	700.1	151	2.93	56.58
Siyom	-100	PF 40% release	144.52	696.08	698.35	227	3.36	37.85
Siyom	-200	PF 40% release	144.52	693.56	696.32	276	3.7	28.32
Siyom	-300	PF 40% release	144.52	691.38	694.2	282	3.73	27.52
Siyom	-400	PF 40% release	144.52	689.21	692.06	285	3.76	26.96
Siyom	-500	PF 40% release	144.52	686.56	688.81	225	3.34	38.36
Siyom	-600	PF 40% release	144.52	683.91	685.1	119	2.73	70.75
Siyom	-700	PF 40% release	144.52	681.8	682.99	119	2.76	67.23
Siyom	-800	PF 40% release	144.52	679.68	680.99	131	1.91	85.2
Siyom	-900	PF 40% release	144.52	677.12	679.55	243	3.46	34.28
Siyom	-1000	PF 40% release	144.52	674.55	677.66	311	3.93	23.65
Siyom	-1100	PF 40% release	144.52	672	674.69	269	3.64	29.51
Siyom	-1200	PF 40% release	144.52	669.44	671.25	181	3.17	44.69
Siyom	-1300	PF 40% release	144.52	666.98	668.79	181	3.36	37.42
Siyom	-1400	PF 40% release	144.52	664.51	667.67	316	1.57	39.62
Siyom	-1500	PF 40% release	144.52	663.01	666.52	351	4.17	19.78
Siyom	-1600	PF 40% release	144.52	661.51	663.74	223	3.5	33.05
Siyom	-1700	PF 40% release	144.52	659.37	661.62	225	3.49	33.29
Average						228.61	3.25	40.78

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 50% release	180.65	698.59	700.26	167	3.1	59.9
Siyom	-100	PF 50% release	180.65	696.08	698.56	248	3.5	41.47
Siyom	-200	PF 50% release	180.65	693.56	696.58	302	3.87	30.97
Siyom	-300	PF 50% release	180.65	691.38	694.46	308	3.9	30.08
Siyom	-400	PF 50% release	180.65	689.21	692.33	312	3.93	29.47
Siyom	-500	PF 50% release	180.65	686.56	689.03	247	3.49	42
Siyom	-600	PF 50% release	180.65	683.91	685.23	132	2.9	74.08
Siyom	-700	PF 50% release	180.65	681.8	683.13	133	2.94	69.94
Siyom	-800	PF 50% release	180.65	679.68	681.18	150	1.96	89.82
Siyom	-900	PF 50% release	180.65	677.12	679.78	266	3.62	37.48
Siyom	-1000	PF 50% release	180.65	674.55	677.95	340	4.11	25.86
Siyom	-1100	PF 50% release	180.65	672	674.93	293	3.82	32.22
Siyom	-1200	PF 50% release	180.65	669.44	671.44	200	3.34	47.67
Siyom	-1300	PF 50% release	180.65	666.98	668.99	201	3.58	38.78
Siyom	-1400	PF 50% release	180.65	664.51	668.06	355	1.67	41.3
Siyom	-1500	PF 50% release	180.65	663.01	666.84	383	4.36	21.63
Siyom	-1600	PF 50% release	180.65	661.51	663.95	244	3.73	34.2
Siyom	-1700	PF 50% release	180.65	659.37	661.83	246	3.71	34.74
Average						251.50	3.42	43.42

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 100% release	361.3	698.59	700.85	226	3.8	64.15
Siyom	-100	PF 100% release	361.3	696.08	699.34	326	4.14	50.33
Siyom	-200	PF 100% release	361.3	693.56	697.54	398	4.44	40.87
Siyom	-300	PF 100% release	361.3	691.38	695.44	406	4.48	39.69
Siyom	-400	PF 100% release	361.3	689.21	693.33	412	4.51	38.89
Siyom	-500	PF 100% release	361.3	686.56	689.81	325	4.02	54.95
Siyom	-600	PF 100% release	361.3	683.91	685.76	185	3.43	87.68
Siyom	-700	PF 100% release	361.3	681.8	683.67	187	3.54	80.64
Siyom	-800	PF 100% release	361.3	679.68	681.98	230	2.14	102.3
Siyom	-900	PF 100% release	361.3	677.12	680.62	350	4.18	49.3
Siyom	-1000	PF 100% release	361.3	674.55	679.05	450	4.7	34.17
Siyom	-1100	PF 100% release	361.3	672	675.87	387	4.38	42.55
Siyom	-1200	PF 100% release	361.3	669.44	672.14	270	3.94	59.11
Siyom	-1300	PF 100% release	361.3	666.98	669.79	281	4.31	44.3
Siyom	-1400	PF 100% release	361.3	664.51	669.53	502	2.08	47.65
Siyom	-1500	PF 100% release	361.3	663.01	668.07	506	5.01	28.52
Siyom	-1600	PF 100% release	361.3	661.51	664.81	330	4.51	38.92
Siyom	-1700	PF 100% release	361.3	659.37	662.69	332	4.45	40.58
Average						339.06	4.00	52.48

Other 4 months

Naying HEP-Mar-Nov-Apr-May

Note: River sta -200 denotes location along river reach 200 m d/s of Naying dam axis

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 10% release	21.52	698.59	699.3	71	1.82	33.07
Siyom	-100	PF 10% release	21.52	696.08	697.13	105	2.31	17.63
Siyom	-200	PF 10% release	21.52	693.56	694.85	129	2.52	13.24
Siyom	-300	PF 10% release	21.52	691.38	692.7	132	2.54	12.86
Siyom	-400	PF 10% release	21.52	689.21	690.54	133	2.56	12.6
Siyom	-500	PF 10% release	21.52	686.56	687.61	105	2.28	17.93
Siyom	-600	PF 10% release	21.52	683.91	684.48	57	1.5	50.22
Siyom	-700	PF 10% release	21.52	681.8	682.29	49	1.71	42.92
Siyom	-800	PF 10% release	21.52	679.68	680.09	41	1.4	46.81
Siyom	-900	PF 10% release	21.52	677.12	678.25	113	2.38	15.94
Siyom	-1000	PF 10% release	21.52	674.55	676.01	146	2.68	11.06
Siyom	-1100	PF 10% release	21.52	672	673.25	125	2.5	13.73
Siyom	-1200	PF 10% release	21.52	669.44	670.28	84	2.04	25.03
Siyom	-1300	PF 10% release	21.52	666.98	667.81	83	2.03	25.27
Siyom	-1400	PF 10% release	21.52	664.51	665.64	113	1.04	30.91
Siyom	-1500	PF 10% release	21.52	663.01	664.65	164	2.84	9.25
Siyom	-1600	PF 10% release	21.52	661.51	662.56	105	2.29	17.9
Siyom	-1700	PF 10% release	21.52	659.37	660.43	106	2.29	17.77
Average						103.39	2.15	23.01

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 15% release	32.28	698.59	699.42	83	2.02	38.49
Siyom	-100	PF 15% release	32.28	696.08	697.33	125	2.48	20.82
Siyom	-200	PF 15% release	32.28	693.56	695.08	152	2.73	15.57
Siyom	-300	PF 15% release	32.28	691.38	692.93	155	2.76	15.12
Siyom	-400	PF 15% release	32.28	689.21	690.78	157	2.78	14.81
Siyom	-500	PF 15% release	32.28	686.56	687.8	124	2.47	21.09
Siyom	-600	PF 15% release	32.28	683.91	684.56	65	1.71	56.41
Siyom	-700	PF 15% release	32.28	681.8	682.39	59	1.91	47
Siyom	-800	PF 15% release	32.28	679.68	680.2	52	1.55	51.81
Siyom	-900	PF 15% release	32.28	677.12	678.45	133	2.57	18.82
Siyom	-1000	PF 15% release	32.28	674.55	676.26	171	2.9	13
Siyom	-1100	PF 15% release	32.28	672	673.47	147	2.72	16.15
Siyom	-1200	PF 15% release	32.28	669.44	670.43	99	2.21	29.43
Siyom	-1300	PF 15% release	32.28	666.98	667.96	98	2.21	29.33
Siyom	-1400	PF 15% release	32.28	664.51	665.9	139	1.12	32.02
Siyom	-1500	PF 15% release	32.28	663.01	664.94	193	3.08	10.88
Siyom	-1600	PF 15% release	32.28	661.51	662.75	124	2.47	21.13
Siyom	-1700	PF 15% release	32.28	659.37	660.62	125	2.47	20.93
Average						122.28	2.34	26.27

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 20% release	43.04	698.59	699.52	93	2.15	43.12
Siyom	-100	PF 20% release	43.04	696.08	697.48	140	2.63	23.37
Siyom	-200	PF 20% release	43.04	693.56	695.26	170	2.89	17.47
Siyom	-300	PF 20% release	43.04	691.38	693.11	173	2.94	16.91
Siyom	-400	PF 20% release	43.04	689.21	690.97	176	2.94	16.63
Siyom	-500	PF 20% release	43.04	686.56	687.95	139	2.62	23.66
Siyom	-600	PF 20% release	43.04	683.91	684.63	72	1.91	58.68
Siyom	-700	PF 20% release	43.04	681.8	682.47	67	2.05	50.3
Siyom	-800	PF 20% release	43.04	679.68	680.31	63	1.64	56.29
Siyom	-900	PF 20% release	43.04	677.12	678.62	150	2.72	21.12
Siyom	-1000	PF 20% release	43.04	674.55	676.47	192	3.08	14.58
Siyom	-1100	PF 20% release	43.04	672	673.65	165	2.85	18.19
Siyom	-1200	PF 20% release	43.04	669.44	670.55	111	2.34	33
Siyom	-1300	PF 20% release	43.04	666.98	668.07	109	2.38	31.48
Siyom	-1400	PF 20% release	43.04	664.51	666.13	162	1.18	33.02
Siyom	-1500	PF 20% release	43.04	663.01	665.17	216	3.26	12.21
Siyom	-1600	PF 20% release	43.04	661.51	662.9	139	2.62	23.7
Siyom	-1700	PF 20% release	43.04	659.37	660.77	140	2.62	23.48
Average						137.61	2.49	28.73

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 25% release	53.79	698.59	699.6	101	2.27	45.85
Siyom	-100	PF 25% release	53.79	696.08	697.61	153	2.75	25.55
Siyom	-200	PF 25% release	53.79	693.56	695.42	186	3.03	19.09
Siyom	-300	PF 25% release	53.79	691.38	693.28	190	3.07	18.5
Siyom	-400	PF 25% release	53.79	689.21	691.13	192	3.08	18.17
Siyom	-500	PF 25% release	53.79	686.56	688.08	152	2.74	25.87
Siyom	-600	PF 25% release	53.79	683.91	684.69	78	2.08	60.14
Siyom	-700	PF 25% release	53.79	681.8	682.55	75	2.16	53.26
Siyom	-800	PF 25% release	53.79	679.68	680.4	72	1.7	60.36
Siyom	-900	PF 25% release	53.79	677.12	678.76	164	2.84	23.09
Siyom	-1000	PF 25% release	53.79	674.55	676.64	209	3.24	15.89
Siyom	-1100	PF 25% release	53.79	672	673.81	181	2.98	19.89
Siyom	-1200	PF 25% release	53.79	669.44	670.65	121	2.5	34.86
Siyom	-1300	PF 25% release	53.79	666.98	668.17	119	2.53	33.17
Siyom	-1400	PF 25% release	53.79	664.51	666.35	184	1.23	33.94
Siyom	-1500	PF 25% release	53.79	663.01	665.37	236	3.42	13.32
Siyom	-1600	PF 25% release	53.79	661.51	663.03	152	2.73	25.92
Siyom	-1700	PF 25% release	53.79	659.37	660.9	153	2.74	25.67
Average						151.00	2.62	30.70

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 30% release	64.55	698.59	699.67	108	2.39	47.37
Siyom	-100	PF 30% release	64.55	696.08	697.72	164	2.85	27.47
Siyom	-200	PF 30% release	64.55	693.56	695.56	200	3.15	20.51
Siyom	-300	PF 30% release	64.55	691.38	693.43	205	3.17	19.96
Siyom	-400	PF 30% release	64.55	689.21	691.28	207	3.19	19.56
Siyom	-500	PF 30% release	64.55	686.56	688.2	164	2.84	27.83
Siyom	-600	PF 30% release	64.55	683.91	684.74	83	2.19	61.64
Siyom	-700	PF 30% release	64.55	681.8	682.61	81	2.26	55.94
Siyom	-800	PF 30% release	64.55	679.68	680.48	80	1.74	64.28
Siyom	-900	PF 30% release	64.55	677.12	678.87	175	2.97	24.75
Siyom	-1000	PF 30% release	64.55	674.55	676.8	225	3.34	17.13
Siyom	-1100	PF 30% release	64.55	672	673.94	194	3.1	21.39
Siyom	-1200	PF 30% release	64.55	669.44	670.74	130	2.59	36.39
Siyom	-1300	PF 30% release	64.55	666.98	668.26	128	2.66	33.78
Siyom	-1400	PF 30% release	64.55	664.51	666.54	203	1.28	34.78
Siyom	-1500	PF 30% release	64.55	663.01	665.55	254	3.55	14.33
Siyom	-1600	PF 30% release	64.55	661.51	663.14	163	2.84	27.87
Siyom	-1700	PF 30% release	64.55	659.37	661.01	164	2.85	27.6
Average						162.67	2.72	32.37

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 40% release	86.07	698.59	699.81	122	2.56	50.27
Siyom	-100	PF 40% release	86.07	696.08	697.93	185	3.02	30.83
Siyom	-200	PF 40% release	86.07	693.56	695.8	224	3.34	23
Siyom	-300	PF 40% release	86.07	691.38	693.67	229	3.36	22.39
Siyom	-400	PF 40% release	86.07	689.21	691.53	232	3.38	21.94
Siyom	-500	PF 40% release	86.07	686.56	688.39	183	3.01	31.22
Siyom	-600	PF 40% release	86.07	683.91	684.85	94	2.38	64.39
Siyom	-700	PF 40% release	86.07	681.8	682.73	93	2.42	60.72
Siyom	-800	PF 40% release	86.07	679.68	680.64	96	1.81	71.25
Siyom	-900	PF 40% release	86.07	677.12	679.09	197	3.15	27.75
Siyom	-1000	PF 40% release	86.07	674.55	677.08	253	3.54	19.23
Siyom	-1100	PF 40% release	86.07	672	674.18	218	3.28	23.99
Siyom	-1200	PF 40% release	86.07	669.44	670.9	146	2.79	38.94
Siyom	-1300	PF 40% release	86.07	666.98	668.42	144	2.89	34.89
Siyom	-1400	PF 40% release	86.07	664.51	666.89	238	1.37	36.29
Siyom	-1500	PF 40% release	86.07	663.01	665.86	285	3.76	16.08
Siyom	-1600	PF 40% release	86.07	661.51	663.34	183	3.02	30.87
Siyom	-1700	PF 40% release	86.07	659.37	661.21	184	3.04	30.32
Average						183.67	2.90	35.24

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 50% release	107.59	698.59	699.92	133	2.74	52.65
Siyom	-100	PF 50% release	107.59	696.08	698.1	202	3.16	33.68
Siyom	-200	PF 50% release	107.59	693.56	696.02	246	3.48	25.2
Siyom	-300	PF 50% release	107.59	691.38	693.89	251	3.52	24.45
Siyom	-400	PF 50% release	107.59	689.21	691.75	254	3.54	23.96
Siyom	-500	PF 50% release	107.59	686.56	688.56	200	3.15	34.07
Siyom	-600	PF 50% release	107.59	683.91	684.95	104	2.51	67
Siyom	-700	PF 50% release	107.59	681.8	682.84	104	2.55	64.14
Siyom	-800	PF 50% release	107.59	679.68	680.78	110	1.86	77.45
Siyom	-900	PF 50% release	107.59	677.12	679.28	216	3.26	30.47
Siyom	-1000	PF 50% release	107.59	674.55	677.31	276	3.72	20.96
Siyom	-1100	PF 50% release	107.59	672	674.38	238	3.44	26.2
Siyom	-1200	PF 50% release	107.59	669.44	671.03	159	2.97	41.12
Siyom	-1300	PF 50% release	107.59	666.98	668.56	158	3.11	35.84
Siyom	-1400	PF 50% release	107.59	664.51	667.2	269	1.45	37.63
Siyom	-1500	PF 50% release	107.59	663.01	666.13	312	3.93	17.58
Siyom	-1600	PF 50% release	107.59	661.51	663.49	198	3.23	31.71
Siyom	-1700	PF 50% release	107.59	659.37	661.37	200	3.24	31.56
Average						201.67	3.05	37.54

Reach	Ch d/s of Naying HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Siyom	0	PF 100% release	215.18	698.59	700.38	179	3.26	61.08
Siyom	-100	PF 100% release	215.18	696.08	698.73	265	3.66	43.58
Siyom	-200	PF 100% release	215.18	693.56	696.8	324	4.01	33.2
Siyom	-300	PF 100% release	215.18	691.38	694.69	331	4.04	32.28
Siyom	-400	PF 100% release	215.18	689.21	692.56	335	4.07	31.61
Siyom	-500	PF 100% release	215.18	686.56	689.2	264	3.64	44.87
Siyom	-600	PF 100% release	215.18	683.91	685.34	143	3.03	76.98
Siyom	-700	PF 100% release	215.18	681.8	683.24	144	3.09	72.25
Siyom	-800	PF 100% release	215.18	679.68	681.35	167	2	92.43
Siyom	-900	PF 100% release	215.18	677.12	679.97	285	3.76	40.14
Siyom	-1000	PF 100% release	215.18	674.55	678.2	365	4.25	27.73
Siyom	-1100	PF 100% release	215.18	672	675.15	315	3.95	34.57
Siyom	-1200	PF 100% release	215.18	669.44	671.59	215	3.48	50.24
Siyom	-1300	PF 100% release	215.18	666.98	669.16	218	3.76	39.97
Siyom	-1400	PF 100% release	215.18	664.51	668.39	388	1.76	42.74
Siyom	-1500	PF 100% release	215.18	663.01	667.12	411	4.51	23.19
Siyom	-1600	PF 100% release	215.18	661.51	664.13	262	3.92	35.22
Siyom	-1700	PF 100% release	215.18	659.37	662.02	265	3.9	36
Average						270.89	3.56	45.45

Gameng HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Gameng Nov to Feb

Note: River sta -200 denotes location along river reach 200 m d/s of Gameng dam axis

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 10% release	0.9	626.4	626.62	22	1.02	7.98
Sike	-100	PF 10% release	0.9	623.03	623.27	24	1.06	7.2
Sike	-200	PF 10% release	0.9	619.66	619.87	21	1.02	8.44
Sike	-300	PF 10% release	0.9	615.9	616.16	26	1.15	5.93
Sike	-400	PF 10% release	0.9	612.13	612.28	15	0.67	17.76
Sike	-500	PF 10% release	0.9	610.44	610.71	27	0.71	9.43
Sike	-600	PF 10% release	0.9	608.74	609.02	28	1.06	5.96
Sike	-700	PF 10% release	0.9	607.01	607.39	38	0.88	5.3
Sike	-800	PF 10% release	0.9	605.28	605.58	30	1.23	4.87
Sike	-900	PF 10% release	0.9	603.32	603.62	30	0.84	7
Sike	-1000	PF 10% release	0.9	601.35	601.57	22	1.02	8.19
Sike	-1100	PF 10% release	0.9	599.58	599.83	25	0.66	10.89
Sike	-1200	PF 10% release	0.9	597.8	597.94	14	0.84	15.06
Average						24.77	0.94	8.77

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 15% release	1.35	626.4	626.66	26	1.14	9.26
Sike	-100	PF 15% release	1.35	623.03	623.3	27	1.18	8.36
Sike	-200	PF 15% release	1.35	619.66	619.9	24	1.11	9.92
Sike	-300	PF 15% release	1.35	615.9	616.21	31	1.23	7.04
Sike	-400	PF 15% release	1.35	612.13	612.33	20	0.6	22.94
Sike	-500	PF 15% release	1.35	610.44	610.72	28	0.95	9.95
Sike	-600	PF 15% release	1.35	608.74	609.11	37	0.93	7.81
Sike	-700	PF 15% release	1.35	607.01	607.41	40	1.23	5.51
Sike	-800	PF 15% release	1.35	605.28	605.68	40	1.03	6.51
Sike	-900	PF 15% release	1.35	603.32	603.62	30	1.25	7.05
Sike	-1000	PF 15% release	1.35	601.35	601.65	30	0.77	11.55
Sike	-1100	PF 15% release	1.35	599.58	599.81	23	1.09	10.39
Sike	-1200	PF 15% release	1.35	597.8	597.97	17	0.91	17.72
Average						28.69	1.03	10.31

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 20% release	1.79	626.4	626.69	29	1.2	10.39
Sike	-100	PF 20% release	1.79	623.03	623.34	31	1.25	9.35
Sike	-200	PF 20% release	1.79	619.66	619.94	28	1.15	11.21
Sike	-300	PF 20% release	1.79	615.9	616.24	34	1.32	7.81
Sike	-400	PF 20% release	1.79	612.13	612.33	20	0.76	23.53
Sike	-500	PF 20% release	1.79	610.44	610.78	34	0.86	12.07

Sike	-600	PF 20% release	1.79	608.74	609.12	38	1.21	7.89
Sike	-700	PF 20% release	1.79	607.01	607.5	49	1.07	6.78
Sike	-800	PF 20% release	1.79	605.28	605.68	40	1.41	6.4
Sike	-900	PF 20% release	1.79	603.32	603.7	38	1.03	8.93
Sike	-1000	PF 20% release	1.79	601.35	601.63	28	1.17	10.78
Sike	-1100	PF 20% release	1.79	599.58	599.9	32	0.8	13.94
Sike	-1200	PF 20% release	1.79	597.8	597.99	19	0.97	19.74
Average						32.31	1.09	11.45

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 25% release	2.24	626.4	626.71	31	1.26	11.32
Sike	-100	PF 25% release	2.24	623.03	623.37	34	1.29	10.29
Sike	-200	PF 25% release	2.24	619.66	619.96	30	1.20	12.28
Sike	-300	PF 25% release	2.24	615.9	616.27	37	1.38	8.54
Sike	-400	PF 25% release	2.24	612.13	612.35	22	0.79	25.84
Sike	-500	PF 25% release	2.24	610.44	610.81	37	0.92	13.07
Sike	-600	PF 25% release	2.24	608.74	609.15	41	1.26	8.65
Sike	-700	PF 25% release	2.24	607.01	607.54	53	1.15	7.34
Sike	-800	PF 25% release	2.24	605.28	605.71	43	1.47	7.02
Sike	-900	PF 25% release	2.24	603.32	603.74	42	1.10	9.65
Sike	-1000	PF 25% release	2.24	601.35	601.66	31	1.21	11.83
Sike	-1100	PF 25% release	2.24	599.58	599.92	34	0.86	15.07
Sike	-1200	PF 25% release	2.24	597.8	598	20	1.01	21.65
Average						35.00	1.15	12.50

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 30% release	2.69	626.4	626.74	34	1.3	12.22
Sike	-100	PF 30% release	2.69	623.03	623.39	36	1.35	11.02
Sike	-200	PF 30% release	2.69	619.66	619.98	32	1.28	13.07
Sike	-300	PF 30% release	2.69	615.9	616.3	40	1.42	9.23
Sike	-400	PF 30% release	2.69	612.13	612.37	24	0.81	27.94
Sike	-500	PF 30% release	2.69	610.44	610.83	39	0.97	13.92
Sike	-600	PF 30% release	2.69	608.74	609.19	45	1.29	9.35
Sike	-700	PF 30% release	2.69	607.01	607.58	57	1.22	7.81
Sike	-800	PF 30% release	2.69	605.28	605.75	47	1.51	7.58
Sike	-900	PF 30% release	2.69	603.32	603.76	44	1.17	10.26
Sike	-1000	PF 30% release	2.69	601.35	601.69	34	1.25	12.78
Sike	-1100	PF 30% release	2.69	599.58	599.95	37	0.91	16.05
Sike	-1200	PF 30% release	2.69	597.8	598.02	22	1.04	23.35
Average						37.77	1.19	13.43

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 40% release	3.59	626.4	626.78	38	1.38	13.73

Sike	-100	PF 40% release	3.59	623.03	623.44	41	1.43	12.35
Sike	-200	PF 40% release	3.59	619.66	620.02	36	1.35	14.67
Sike	-300	PF 40% release	3.59	615.9	616.35	45	1.52	10.33
Sike	-400	PF 40% release	3.59	612.13	612.39	26	0.88	29.41
Sike	-500	PF 40% release	3.59	610.44	610.88	44	1.05	15.46
Sike	-600	PF 40% release	3.59	608.74	609.24	50	1.37	10.49
Sike	-700	PF 40% release	3.59	607.01	607.64	63	1.32	8.67
Sike	-800	PF 40% release	3.59	605.28	605.81	53	1.61	8.49
Sike	-900	PF 40% release	3.59	603.32	603.81	49	1.28	11.37
Sike	-1000	PF 40% release	3.59	601.35	601.73	38	1.33	14.31
Sike	-1100	PF 40% release	3.59	599.58	599.99	41	0.98	17.82
Sike	-1200	PF 40% release	3.59	597.8	598.05	25	1.12	26.08
Average						42.23	1.28	14.86

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 50% release	4.48	626.4	626.81	41	1.45	14.95
Sike	-100	PF 50% release	4.48	623.03	623.47	44	1.49	13.52
Sike	-200	PF 50% release	4.48	619.66	620.06	40	1.4	16.09
Sike	-300	PF 50% release	4.48	615.9	616.4	50	1.59	11.27
Sike	-400	PF 50% release	4.48	612.13	612.42	29	0.94	29.54
Sike	-500	PF 50% release	4.48	610.44	610.91	47	1.12	16.73
Sike	-600	PF 50% release	4.48	608.74	609.29	55	1.42	11.49
Sike	-700	PF 50% release	4.48	607.01	607.69	68	1.41	9.37
Sike	-800	PF 50% release	4.48	605.28	605.85	57	1.68	9.29
Sike	-900	PF 50% release	4.48	603.32	603.85	53	1.37	12.26
Sike	-1000	PF 50% release	4.48	601.35	601.76	41	1.39	15.66
Sike	-1100	PF 50% release	4.48	599.58	600.02	44	1.05	19.26
Sike	-1200	PF 50% release	4.48	597.8	598.07	27	1.17	28.49
Average						45.85	1.34	15.99

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 100% release	8.97	626.4	626.95	55	1.66	19.74
Sike	-100	PF 100% release	8.97	623.03	623.62	59	1.72	17.83
Sike	-200	PF 100% release	8.97	619.66	620.18	52	1.62	21.2
Sike	-300	PF 100% release	8.97	615.9	616.56	66	1.83	14.87
Sike	-400	PF 100% release	8.97	612.13	612.51	38	1.18	30.06
Sike	-500	PF 100% release	8.97	610.44	611.05	61	1.37	21.42
Sike	-600	PF 100% release	8.97	608.74	609.47	73	1.61	15.31
Sike	-700	PF 100% release	8.97	607.01	607.88	87	1.73	11.95
Sike	-800	PF 100% release	8.97	605.28	606.04	76	1.92	12.28
Sike	-900	PF 100% release	8.97	603.32	603.99	67	1.71	15.53
Sike	-1000	PF 100% release	8.97	601.35	601.9	55	1.58	20.78
Sike	-1100	PF 100% release	8.97	599.58	600.14	56	1.3	24.49

Sike	-1200	PF 100% release	8.97	597.8	598.15	35	1.4	33.43
Average						60.00	1.59	19.91

Monsoon

Gameng June to September

Note: River sta -200 denotes location along river reach 200 m d/s of Gameng dam axis

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 10% release	5.73	626.4	626.86	46	1.52	16.5
Sike	-100	PF 10% release	5.73	623.03	623.52	49	1.57	14.91
Sike	-200	PF 10% release	5.73	619.66	620.1	44	1.48	17.73
Sike	-300	PF 10% release	5.73	615.9	616.45	55	1.66	12.46
Sike	-400	PF 10% release	5.73	612.13	612.45	32	1.02	29.7
Sike	-500	PF 10% release	5.73	610.44	610.96	52	1.2	18.27
Sike	-600	PF 10% release	5.73	608.74	609.35	61	1.48	12.73
Sike	-700	PF 10% release	5.73	607.01	607.75	74	1.52	10.2
Sike	-800	PF 10% release	5.73	605.28	605.92	64	1.76	10.26
Sike	-900	PF 10% release	5.73	603.32	603.9	58	1.48	13.33
Sike	-1000	PF 10% release	5.73	601.35	601.81	46	1.45	17.33
Sike	-1100	PF 10% release	5.73	599.58	600.06	48	1.13	20.95
Sike	-1200	PF 10% release	5.73	597.8	598.1	30	1.22	31.53
Average						50.69	1.42	17.38

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 15% release	8.6	626.4	626.94	54	1.65	19.41
Sike	-100	PF 15% release	8.6	623.03	623.61	58	1.71	17.52
Sike	-200	PF 15% release	8.6	619.66	620.17	51	1.61	20.84
Sike	-300	PF 15% release	8.6	615.9	616.54	64	1.81	14.63
Sike	-400	PF 15% release	8.6	612.13	612.5	37	1.17	30.02
Sike	-500	PF 15% release	8.6	610.44	611.04	60	1.35	21.11
Sike	-600	PF 15% release	8.6	608.74	609.46	72	1.6	15.03
Sike	-700	PF 15% release	8.6	607.01	607.86	85	1.71	11.78
Sike	-800	PF 15% release	8.6	605.28	606.03	75	1.91	12.07
Sike	-900	PF 15% release	8.6	603.32	603.98	66	1.68	15.32
Sike	-1000	PF 15% release	8.6	601.35	601.89	54	1.57	20.41
Sike	-1100	PF 15% release	8.6	599.58	600.13	55	1.28	24.15
Sike	-1200	PF 15% release	8.6	597.8	598.14	34	1.38	33.34
Average						58.85	1.57	19.66

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 20% release	11.46	626.4	627	60	1.74	21.79
Sike	-100	PF 20% release	11.46	623.03	623.68	65	1.81	19.66
Sike	-200	PF 20% release	11.46	619.66	620.24	58	1.71	23.34
Sike	-300	PF 20% release	11.46	615.9	616.62	72	1.92	16.41
Sike	-400	PF 20% release	11.46	612.13	612.56	43	1.28	30.31

Sike	-500	PF 20% release	11.46	610.44	611.1	66	1.47	23.33
Sike	-600	PF 20% release	11.46	608.74	609.55	81	1.67	16.97
Sike	-700	PF 20% release	11.46	607.01	607.95	94	1.87	12.99
Sike	-800	PF 20% release	11.46	605.28	606.12	84	2.01	13.58
Sike	-900	PF 20% release	11.46	603.32	604.05	73	1.86	16.84
Sike	-1000	PF 20% release	11.46	601.35	601.96	61	1.64	23
Sike	-1100	PF 20% release	11.46	599.58	600.19	61	1.41	26.59
Sike	-1200	PF 20% release	11.46	597.8	598.19	39	1.51	34.02
Average						65.92	1.68	21.45

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 25% release	14.33	626.4	627.06	66	1.82	23.83
Sike	-100	PF 25% release	14.33	623.03	623.74	71	1.89	21.51
Sike	-200	PF 25% release	14.33	619.66	620.29	63	1.78	25.52
Sike	-300	PF 25% release	14.33	615.9	616.69	79	2.00	17.95
Sike	-400	PF 25% release	14.33	612.13	612.6	47	1.39	30.57
Sike	-500	PF 25% release	14.33	610.44	611.16	72	1.56	25.33
Sike	-600	PF 25% release	14.33	608.74	609.62	88	1.75	18.56
Sike	-700	PF 25% release	14.33	607.01	608.03	102	1.99	14.09
Sike	-800	PF 25% release	14.33	605.28	606.19	91	2.12	14.78
Sike	-900	PF 25% release	14.33	603.32	604.11	79	1.98	18.25
Sike	-1000	PF 25% release	14.33	601.35	602.02	67	1.71	25.22
Sike	-1100	PF 25% release	14.33	599.58	600.24	66	1.51	28.66
Sike	-1200	PF 25% release	14.33	597.8	598.22	42	1.61	34.65
Average						71.77	1.78	22.99

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 30% release	17.19	626.4	627.11	71	1.87	25.75
Sike	-100	PF 30% release	17.19	623.03	623.79	76	1.95	23.18
Sike	-200	PF 30% release	17.19	619.66	620.34	68	1.85	27.45
Sike	-300	PF 30% release	17.19	615.9	616.75	85	2.08	19.3
Sike	-400	PF 30% release	17.19	612.13	612.65	52	1.48	30.8
Sike	-500	PF 30% release	17.19	610.44	611.21	77	1.64	27.03
Sike	-600	PF 30% release	17.19	608.74	609.69	95	1.8	20.02
Sike	-700	PF 30% release	17.19	607.01	608.1	109	2.1	15.02
Sike	-800	PF 30% release	17.19	605.28	606.26	98	2.2	15.9
Sike	-900	PF 30% release	17.19	603.32	604.17	85	2.05	19.63
Sike	-1000	PF 30% release	17.19	601.35	602.07	72	1.77	27.16
Sike	-1100	PF 30% release	17.19	599.58	600.28	70	1.61	30.46
Sike	-1200	PF 30% release	17.19	597.8	598.26	46	1.7	35.22
Average						77.23	1.85	24.38

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 40% release	22.92	626.4	627.2	80	1.98	28.89
Sike	-100	PF 40% release	22.92	623.03	623.89	86	2.05	26.09
Sike	-200	PF 40% release	22.92	619.66	620.42	76	1.96	30.8
Sike	-300	PF 40% release	22.92	615.9	616.86	96	2.2	21.67
Sike	-400	PF 40% release	22.92	612.13	612.72	59	1.64	31.22
Sike	-500	PF 40% release	22.92	610.44	611.3	86	1.74	30.95
Sike	-600	PF 40% release	22.92	608.74	609.86	112	1.71	29.35
Sike	-700	PF 40% release	22.92	607.01	608.21	120	2.3	16.6
Sike	-800	PF 40% release	22.92	605.28	606.38	110	2.33	17.83
Sike	-900	PF 40% release	22.92	603.32	604.27	95	2.19	21.91
Sike	-1000	PF 40% release	22.92	601.35	602.16	81	1.86	30.55
Sike	-1100	PF 40% release	22.92	599.58	600.35	77	1.77	33.55
Sike	-1200	PF 40% release	22.92	597.8	598.32	52	1.85	36.28
Average						86.92	1.97	27.36

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 50% release	28.65	626.4	627.27	87	2.09	31.47
Sike	-100	PF 50% release	28.65	623.03	623.97	94	2.14	28.53
Sike	-200	PF 50% release	28.65	619.66	620.5	84	2.03	33.86
Sike	-300	PF 50% release	28.65	615.9	616.95	105	2.28	23.79
Sike	-400	PF 50% release	28.65	612.13	612.79	66	1.78	31.6
Sike	-500	PF 50% release	28.65	610.44	611.36	92	1.91	31.35
Sike	-600	PF 50% release	28.65	608.74	609.99	125	1.57	42.98
Sike	-700	PF 50% release	28.65	607.01	608.31	130	2.46	17.93
Sike	-800	PF 50% release	28.65	605.28	606.49	121	2.44	19.48
Sike	-900	PF 50% release	28.65	603.32	604.36	104	2.27	24.07
Sike	-1000	PF 50% release	28.65	601.35	602.23	88	1.94	33.48
Sike	-1100	PF 50% release	28.65	599.58	600.41	83	1.9	36.14
Sike	-1200	PF 50% release	28.65	597.8	598.38	58	1.97	37.25
Average						95.15	2.06	30.15

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 100% release	57.31	626.4	627.56	116	2.37	41.75
Sike	-100	PF 100% release	57.31	623.03	624.27	124	2.47	37.63
Sike	-200	PF 100% release	57.31	619.66	620.75	109	2.43	39.38
Sike	-300	PF 100% release	57.31	615.9	617.29	139	2.62	31.41
Sike	-400	PF 100% release	57.31	612.13	613.09	96	2.22	33.26
Sike	-500	PF 100% release	57.31	610.44	611.59	115	2.58	32.91
Sike	-600	PF 100% release	57.31	608.74	610.29	155	1.66	61.69
Sike	-700	PF 100% release	57.31	607.01	608.71	170	2.89	23.4
Sike	-800	PF 100% release	57.31	605.28	606.87	159	2.8	25.74
Sike	-900	PF 100% release	57.31	603.32	604.7	138	2.61	31.75

Sike	-1000	PF 100% release	57.31	601.35	602.48	113	2.41	38.06
Sike	-1100	PF 100% release	57.31	599.58	600.63	105	2.4	41.92
Sike	-1200	PF 100% release	57.31	597.8	598.62	82	2.41	41.17
Average						124.69	2.45	36.93

Other 4 months

Gameng Oct-Mar-Apr-May

Note: River sta -200 denotes location along river reach 200 m d/s of Gameng dam axis

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 10% release	3.41	626.4	626.77	37	1.37	13.41
Sike	-100	PF 10% release	3.41	623.03	623.43	40	1.41	12.12
Sike	-200	PF 10% release	3.41	619.66	620.01	35	1.34	14.37
Sike	-300	PF 10% release	3.41	615.9	616.34	44	1.5	10.11
Sike	-400	PF 10% release	3.41	612.13	612.39	26	0.86	29.39
Sike	-500	PF 10% release	3.41	610.44	610.87	43	1.03	15.18
Sike	-600	PF 10% release	3.41	608.74	609.23	49	1.36	10.28
Sike	-700	PF 10% release	3.41	607.01	607.63	62	1.3	8.51
Sike	-800	PF 10% release	3.41	605.28	605.79	51	1.6	8.31
Sike	-900	PF 10% release	3.41	603.32	603.8	48	1.26	11.17
Sike	-1000	PF 10% release	3.41	601.35	601.72	37	1.32	14.01
Sike	-1100	PF 10% release	3.41	599.58	599.98	40	0.97	17.5
Sike	-1200	PF 10% release	3.41	597.8	598.04	24	1.1	25.56
Average						41.23	1.26	14.61

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 15% release	5.12	626.4	626.84	44	1.48	15.79
Sike	-100	PF 15% release	5.12	623.03	623.5	47	1.54	14.24
Sike	-200	PF 15% release	5.12	619.66	620.08	42	1.45	16.91
Sike	-300	PF 15% release	5.12	615.9	616.42	52	1.63	11.89
Sike	-400	PF 15% release	5.12	612.13	612.43	30	0.98	29.62
Sike	-500	PF 15% release	5.12	610.44	610.94	50	1.16	17.54
Sike	-600	PF 15% release	5.12	608.74	609.32	58	1.46	12.15
Sike	-700	PF 15% release	5.12	607.01	607.72	71	1.47	9.81
Sike	-800	PF 15% release	5.12	605.28	605.89	61	1.72	9.82
Sike	-900	PF 15% release	5.12	603.32	603.87	55	1.43	12.82
Sike	-1000	PF 15% release	5.12	601.35	601.79	44	1.42	16.56
Sike	-1100	PF 15% release	5.12	599.58	600.04	46	1.09	20.14
Sike	-1200	PF 15% release	5.12	597.8	598.09	29	1.19	30.15
Average						48.38	1.39	16.73

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 20% release	6.83	626.4	626.89	49	1.57	17.71
Sike	-100	PF 20% release	6.83	623.03	623.56	53	1.63	16

Sike	-200	PF 20% release	6.83	619.66	620.13	47	1.54	18.97
Sike	-300	PF 20% release	6.83	615.9	616.49	59	1.73	13.34
Sike	-400	PF 20% release	6.83	612.13	612.47	34	1.09	29.82
Sike	-500	PF 20% release	6.83	610.44	610.99	55	1.26	19.46
Sike	-600	PF 20% release	6.83	608.74	609.39	65	1.54	13.66
Sike	-700	PF 20% release	6.83	607.01	607.8	79	1.6	10.86
Sike	-800	PF 20% release	6.83	605.28	605.96	68	1.83	11
Sike	-900	PF 20% release	6.83	603.32	603.93	61	1.56	14.17
Sike	-1000	PF 20% release	6.83	601.35	601.84	49	1.5	18.58
Sike	-1100	PF 20% release	6.83	599.58	600.09	51	1.19	22.3
Sike	-1200	PF 20% release	6.83	597.8	598.12	32	1.28	32.9
Average						54.00	1.49	18.37

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 25% release	8.53	626.4	626.94	54	1.64	19.35
Sike	-100	PF 25% release	8.53	623.03	623.6	57	1.7	17.47
Sike	-200	PF 25% release	8.53	619.66	620.17	51	1.6	20.77
Sike	-300	PF 25% release	8.53	615.9	616.54	64	1.8	14.6
Sike	-400	PF 25% release	8.53	612.13	612.5	37	1.16	30.02
Sike	-500	PF 25% release	8.53	610.44	611.04	60	1.35	21.03
Sike	-600	PF 25% release	8.53	608.74	609.45	71	1.59	15
Sike	-700	PF 25% release	8.53	607.01	607.86	85	1.71	11.73
Sike	-800	PF 25% release	8.53	605.28	606.03	75	1.9	12.05
Sike	-900	PF 25% release	8.53	603.32	603.98	66	1.68	15.26
Sike	-1000	PF 25% release	8.53	601.35	601.89	54	1.56	20.37
Sike	-1100	PF 25% release	8.53	599.58	600.13	55	1.28	24.05
Sike	-1200	PF 25% release	8.53	597.8	598.14	34	1.37	33.33
Average						58.69	1.56	19.62

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 30% release	10.24	626.4	626.98	58	1.71	20.81
Sike	-100	PF 30% release	10.24	623.03	623.65	62	1.77	18.8
Sike	-200	PF 30% release	10.24	619.66	620.21	55	1.67	22.32
Sike	-300	PF 30% release	10.24	615.9	616.59	69	1.87	15.69
Sike	-400	PF 30% release	10.24	612.13	612.54	41	1.23	30.19
Sike	-500	PF 30% release	10.24	610.44	611.08	64	1.42	22.41
Sike	-600	PF 30% release	10.24	608.74	609.51	77	1.64	16.2
Sike	-700	PF 30% release	10.24	607.01	607.92	91	1.81	12.49
Sike	-800	PF 30% release	10.24	605.28	606.08	80	1.97	12.98
Sike	-900	PF 30% release	10.24	603.32	604.02	70	1.79	16.21
Sike	-1000	PF 30% release	10.24	601.35	601.93	58	1.61	21.97
Sike	-1100	PF 30% release	10.24	599.58	600.16	58	1.36	25.57
Sike	-1200	PF 30% release	10.24	597.8	598.17	37	1.45	33.75
Average						63.08	1.64	20.72

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 40% release	13.65	626.4	627.05	65	1.8	23.43
Sike	-100	PF 40% release	13.65	623.03	623.72	69	1.86	21.15
Sike	-200	PF 40% release	13.65	619.66	620.28	62	1.76	25.06
Sike	-300	PF 40% release	13.65	615.9	616.68	78	1.96	17.69
Sike	-400	PF 40% release	13.65	612.13	612.59	46	1.36	30.51
Sike	-500	PF 40% release	13.65	610.44	611.15	71	1.55	24.8
Sike	-600	PF 40% release	13.65	608.74	609.61	87	1.71	18.28
Sike	-700	PF 40% release	13.65	607.01	608.01	100	1.98	13.78
Sike	-800	PF 40% release	13.65	605.28	606.18	90	2.07	14.58
Sike	-900	PF 40% release	13.65	603.32	604.09	77	1.97	17.83
Sike	-1000	PF 40% release	13.65	601.35	602	65	1.7	24.71
Sike	-1100	PF 40% release	13.65	599.58	600.23	65	1.49	28.2
Sike	-1200	PF 40% release	13.65	597.8	598.21	41	1.59	34.5
Average						70.46	1.75	22.66

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 50% release	17.06	626.4	627.11	71	1.89	25.54
Sike	-100	PF 50% release	17.06	623.03	623.79	76	1.95	23.1
Sike	-200	PF 50% release	17.06	619.66	620.34	68	1.85	27.37
Sike	-300	PF 50% release	17.06	615.9	616.75	85	2.07	19.25
Sike	-400	PF 50% release	17.06	612.13	612.64	51	1.47	30.79
Sike	-500	PF 50% release	17.06	610.44	611.21	77	1.64	26.96
Sike	-600	PF 50% release	17.06	608.74	609.69	95	1.8	19.95
Sike	-700	PF 50% release	17.06	607.01	608.1	109	2.1	14.98
Sike	-800	PF 50% release	17.06	605.28	606.26	98	2.2	15.85
Sike	-900	PF 50% release	17.06	603.32	604.17	85	2.05	19.56
Sike	-1000	PF 50% release	17.06	601.35	602.06	71	1.76	27.1
Sike	-1100	PF 50% release	17.06	599.58	600.28	70	1.6	30.37
Sike	-1200	PF 50% release	17.06	597.8	598.26	46	1.7	35.2
Average						77.08	1.85	24.31

River	Ch d/s of Gameng HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Sike	0 (dam site)	PF 100% release	34.13	626.4	627.34	94	2.16	33.76
Sike	-100	PF 100% release	34.13	623.03	624.03	100	2.22	30.6
Sike	-200	PF 100% release	34.13	619.66	620.55	89	2.11	36.22
Sike	-300	PF 100% release	34.13	615.9	617.03	113	2.36	25.53
Sike	-400	PF 100% release	34.13	612.13	612.86	73	1.87	31.98
Sike	-500	PF 100% release	34.13	610.44	611.4	96	2.09	31.66
Sike	-600	PF 100% release	34.13	608.74	610.08	134	1.53	51.8
Sike	-700	PF 100% release	34.13	607.01	608.39	138	2.6	19.03
Sike	-800	PF 100% release	34.13	605.28	606.57	129	2.52	20.92

Sike	-900	PF 100% release	34.13	603.32	604.43	111	2.37	25.71
Sike	-1000	PF 100% release	34.13	601.35	602.3	95	2.01	35.91
Sike	-1100	PF 100% release	34.13	599.58	600.46	88	2.02	37.72
Sike	-1200	PF 100% release	34.13	597.8	598.43	63	2.07	38.09
Average						101.77	2.15	32.23

Hirit Korong HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Hirit Korong Nov to Feb

Note: River sta -200 denotes location along river reach 200 m d/s of Hirit Korong dam axis

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 10% release	0.42	737.91	738.29	38	1.37	1.63
Hirit	-100	PF 10% release	0.42	733.48	733.86	38	1.39	1.6
Hirit	-200	PF 10% release	0.42	729.05	729.45	40	1.15	1.83
Hirit	-300	PF 10% release	0.42	727.48	727.95	47	0.95	1.86
Hirit	-400	PF 10% release	0.42	725.9	726.32	42	1.25	1.6
Hirit	-500	PF 10% release	0.42	724.7	725.18	48	0.77	2.26
Hirit	-600	PF 10% release	0.42	723.5	723.83	33	1.29	1.97
Hirit	-700	PF 10% release	0.42	718.42	718.77	35	1.32	1.82
Hirit	-800	PF 10% release	0.42	713.35	713.71	36	1.32	1.77
Hirit	-900	PF 10% release	0.42	710.33	710.69	36	1.29	1.82
Hirit	-1000	PF 10% release	0.42	707.32	707.67	35	1.31	1.85
Hirit	-1100	PF 10% release	0.42	704.57	704.93	36	1.2	1.93
Hirit	-1200	PF 10% release	0.42	701.82	702.16	34	1.31	1.87
Average						38.31	1.22	1.83

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 15% release	0.63	737.91	738.35	44	1.49	1.91
Hirit	-100	PF 15% release	0.63	733.48	733.92	44	1.5	1.89
Hirit	-200	PF 15% release	0.63	729.05	729.52	47	1.25	2.15
Hirit	-300	PF 15% release	0.63	727.48	728.02	54	1.07	2.15
Hirit	-400	PF 15% release	0.63	725.9	726.39	49	1.35	1.89
Hirit	-500	PF 15% release	0.63	724.7	725.26	56	0.86	2.61
Hirit	-600	PF 15% release	0.63	723.5	723.89	39	1.4	2.32
Hirit	-700	PF 15% release	0.63	718.42	718.83	41	1.44	2.14
Hirit	-800	PF 15% release	0.63	713.35	713.77	42	1.44	2.08
Hirit	-900	PF 15% release	0.63	710.33	710.75	42	1.45	2.1
Hirit	-1000	PF 15% release	0.63	707.32	707.73	41	1.42	2.17
Hirit	-1100	PF 15% release	0.63	704.57	704.99	42	1.35	2.23
Hirit	-1200	PF 15% release	0.63	701.82	702.22	40	1.42	2.2
Average						44.69	1.34	2.14

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 20% release	0.84	737.91	738.4	49	1.58	2.15
Hirit	-100	PF 20% release	0.84	733.48	733.98	50	1.59	2.12
Hirit	-200	PF 20% release	0.84	729.05	729.58	53	1.32	2.42
Hirit	-300	PF 20% release	0.84	727.48	728.08	60	1.16	2.38
Hirit	-400	PF 20% release	0.84	725.9	726.46	56	1.42	2.12
Hirit	-500	PF 20% release	0.84	724.7	725.32	62	0.94	2.89
Hirit	-600	PF 20% release	0.84	723.5	723.94	44	1.48	2.61
Hirit	-700	PF 20% release	0.84	718.42	718.88	46	1.52	2.4
Hirit	-800	PF 20% release	0.84	713.35	713.82	47	1.54	2.32
Hirit	-900	PF 20% release	0.84	710.33	710.8	47	1.53	2.36
Hirit	-1000	PF 20% release	0.84	707.32	707.78	46	1.51	2.43
Hirit	-1100	PF 20% release	0.84	704.57	705.04	47	1.46	2.47
Hirit	-1200	PF 20% release	0.84	701.82	702.27	45	1.51	2.46
Average						50.15	1.43	2.39

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 25% release	1.05	737.91	738.45	54	1.65	2.35
Hirit	-100	PF 25% release	1.05	733.48	734.03	55	1.66	2.31
Hirit	-200	PF 25% release	1.05	729.05	729.62	57	1.38	2.65
Hirit	-300	PF 25% release	1.05	727.48	728.13	65	1.24	2.58
Hirit	-400	PF 25% release	1.05	725.9	726.51	61	1.49	2.32
Hirit	-500	PF 25% release	1.05	724.7	725.37	67	1.00	3.13
Hirit	-600	PF 25% release	1.05	723.5	723.98	48	1.55	2.85
Hirit	-700	PF 25% release	1.05	718.42	718.93	51	1.59	2.63
Hirit	-800	PF 25% release	1.05	713.35	713.86	51	1.61	2.54
Hirit	-900	PF 25% release	1.05	710.33	710.84	51	1.60	2.58
Hirit	-1000	PF 25% release	1.05	707.32	707.82	50	1.58	2.65
Hirit	-1100	PF 25% release	1.05	704.57	705.07	50	1.56	2.67
Hirit	-1200	PF 25% release	1.05	701.82	702.31	49	1.58	2.69
Average						54.54	1.50	2.61

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 30% release	1.26	737.91	738.49	58	1.71	2.53
Hirit	-100	PF 30% release	1.26	733.48	734.07	59	1.72	2.49
Hirit	-200	PF 30% release	1.26	729.05	729.67	62	1.43	2.85
Hirit	-300	PF 30% release	1.26	727.48	728.18	70	1.31	2.75
Hirit	-400	PF 30% release	1.26	725.9	726.55	65	1.54	2.5
Hirit	-500	PF 30% release	1.26	724.7	725.42	72	1.05	3.34
Hirit	-600	PF 30% release	1.26	723.5	724.01	51	1.6	3.07
Hirit	-700	PF 30% release	1.26	718.42	718.96	54	1.65	2.82

Hirit	-800	PF 30% release	1.26	713.35	713.9	55	1.67	2.72
Hirit	-900	PF 30% release	1.26	710.33	710.88	55	1.66	2.78
Hirit	-1000	PF 30% release	1.26	707.32	707.86	54	1.64	2.85
Hirit	-1100	PF 30% release	1.26	704.57	705.11	54	1.65	2.85
Hirit	-1200	PF 30% release	1.26	701.82	702.35	53	1.64	2.89
Average						58.62	1.56	2.80

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 40% release	1.68	737.91	738.56	65	1.82	2.83
Hirit	-100	PF 40% release	1.68	733.48	734.14	66	1.82	2.8
Hirit	-200	PF 40% release	1.68	729.05	729.74	69	1.52	3.19
Hirit	-300	PF 40% release	1.68	727.48	728.25	77	1.41	3.06
Hirit	-400	PF 40% release	1.68	725.9	726.63	73	1.64	2.8
Hirit	-500	PF 40% release	1.68	724.7	725.49	79	1.14	3.7
Hirit	-600	PF 40% release	1.68	723.5	724.07	57	1.7	3.44
Hirit	-700	PF 40% release	1.68	718.42	719.03	61	1.75	3.17
Hirit	-800	PF 40% release	1.68	713.35	713.97	62	1.77	3.06
Hirit	-900	PF 40% release	1.68	710.33	710.95	62	1.75	3.12
Hirit	-1000	PF 40% release	1.68	707.32	707.92	60	1.75	3.19
Hirit	-1100	PF 40% release	1.68	704.57	705.17	60	1.74	3.2
Hirit	-1200	PF 40% release	1.68	701.82	702.42	60	1.73	3.25
Average						65.46	1.66	3.14

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 50% release	2.1	737.91	738.62	71	1.9	3.1
Hirit	-100	PF 50% release	2.1	733.48	734.2	72	1.89	3.07
Hirit	-200	PF 50% release	2.1	729.05	729.81	76	1.59	3.48
Hirit	-300	PF 50% release	2.1	727.48	728.32	84	1.51	3.31
Hirit	-400	PF 50% release	2.1	725.9	726.7	80	1.71	3.06
Hirit	-500	PF 50% release	2.1	724.7	725.56	86	1.22	4.01
Hirit	-600	PF 50% release	2.1	723.5	724.13	63	1.78	3.76
Hirit	-700	PF 50% release	2.1	718.42	719.09	67	1.82	3.48
Hirit	-800	PF 50% release	2.1	713.35	714.03	68	1.85	3.34
Hirit	-900	PF 50% release	2.1	710.33	711	67	1.84	3.41
Hirit	-1000	PF 50% release	2.1	707.32	707.98	66	1.83	3.49
Hirit	-1100	PF 50% release	2.1	704.57	705.23	66	1.82	3.5
Hirit	-1200	PF 50% release	2.1	701.82	702.47	65	1.81	3.55
Average						71.62	1.74	3.43

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 100% release	4.21	737.91	738.86	95	2.16	4.12
Hirit	-100	PF 100% release	4.21	733.48	734.44	96	2.17	4.06

Hirit	-200	PF 100% release	4.21	729.05	730.05	100	1.85	4.58
Hirit	-300	PF 100% release	4.21	727.48	728.56	108	1.83	4.25
Hirit	-400	PF 100% release	4.21	725.9	726.95	105	1.99	4.02
Hirit	-500	PF 100% release	4.21	724.7	725.8	110	1.5	5.12
Hirit	-600	PF 100% release	4.21	723.5	724.33	83	2.04	4.97
Hirit	-700	PF 100% release	4.21	718.42	719.3	88	2.08	4.6
Hirit	-800	PF 100% release	4.21	713.35	714.25	90	2.1	4.44
Hirit	-900	PF 100% release	4.21	710.33	711.22	89	2.11	4.51
Hirit	-1000	PF 100% release	4.21	707.32	708.19	87	2.09	4.62
Hirit	-1100	PF 100% release	4.21	704.57	705.44	87	2.1	4.62
Hirit	-1200	PF 100% release	4.21	701.82	702.69	87	2.06	4.72
Average						94.23	2.01	4.51

Monsoon

Hirit Korong June to September

Note: River sta -200 denotes location along river reach 200 m d/s of Hirit Korong dam axis

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 10% release	2.69	737.91	738.7	79	1.97	3.44
Hirit	-100	PF 10% release	2.69	733.48	734.28	80	2	3.38
Hirit	-200	PF 10% release	2.69	729.05	729.88	83	1.68	3.84
Hirit	-300	PF 10% release	2.69	727.48	728.4	92	1.61	3.62
Hirit	-400	PF 10% release	2.69	725.9	726.78	88	1.81	3.37
Hirit	-500	PF 10% release	2.69	724.7	725.64	94	1.31	4.38
Hirit	-600	PF 10% release	2.69	723.5	724.19	69	1.87	4.15
Hirit	-700	PF 10% release	2.69	718.42	719.16	74	1.9	3.85
Hirit	-800	PF 10% release	2.69	713.35	714.1	75	1.94	3.69
Hirit	-900	PF 10% release	2.69	710.33	711.07	74	1.93	3.77
Hirit	-1000	PF 10% release	2.69	707.32	708.05	73	1.92	3.85
Hirit	-1100	PF 10% release	2.69	704.57	705.3	73	1.91	3.86
Hirit	-1200	PF 10% release	2.69	701.82	702.54	72	1.9	3.92
Average						78.92	1.83	3.78

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 15% release	4.03	737.91	738.84	93	2.14	4.04
Hirit	-100	PF 15% release	4.03	733.48	734.42	94	2.15	3.98
Hirit	-200	PF 15% release	4.03	729.05	730.03	98	1.83	4.5
Hirit	-300	PF 15% release	4.03	727.48	728.54	106	1.81	4.19
Hirit	-400	PF 15% release	4.03	725.9	726.94	104	1.97	3.96
Hirit	-500	PF 15% release	4.03	724.7	725.78	108	1.48	5.04
Hirit	-600	PF 15% release	4.03	723.5	724.32	82	2.03	4.88
Hirit	-700	PF 15% release	4.03	718.42	719.29	87	2.06	4.52
Hirit	-800	PF 15% release	4.03	713.35	714.23	88	2.1	4.35

Hirit	-900	PF 15% release	4.03	710.33	711.21	88	2.09	4.44
Hirit	-1000	PF 15% release	4.03	707.32	708.18	86	2.06	4.56
Hirit	-1100	PF 15% release	4.03	704.57	705.43	86	2.07	4.54
Hirit	-1200	PF 15% release	4.03	701.82	702.67	85	2.04	4.63
Average						92.69	1.99	4.43

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 20% release	5.38	737.91	738.95	104	2.29	4.52
Hirit	-100	PF 20% release	5.38	733.48	734.54	106	2.28	4.47
Hirit	-200	PF 20% release	5.38	729.05	730.15	110	1.94	5.05
Hirit	-300	PF 20% release	5.38	727.48	728.66	118	1.96	4.64
Hirit	-400	PF 20% release	5.38	725.9	727.06	116	2.09	4.43
Hirit	-500	PF 20% release	5.38	724.7	725.9	120	1.61	5.58
Hirit	-600	PF 20% release	5.38	723.5	724.42	92	2.14	5.48
Hirit	-700	PF 20% release	5.38	718.42	719.4	98	2.18	5.08
Hirit	-800	PF 20% release	5.38	713.35	714.34	99	2.21	4.9
Hirit	-900	PF 20% release	5.38	710.33	711.32	99	2.2	4.99
Hirit	-1000	PF 20% release	5.38	707.32	708.29	97	2.18	5.11
Hirit	-1100	PF 20% release	5.38	704.57	705.53	96	2.2	5.09
Hirit	-1200	PF 20% release	5.38	701.82	702.77	95	2.17	5.2
Average						103.85	2.11	4.96

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 25% release	6.72	737.91	739.05	114	2.37	4.96
Hirit	-100	PF 25% release	6.72	733.48	734.63	115	2.41	4.86
Hirit	-200	PF 25% release	6.72	729.05	730.25	120	2.03	5.52
Hirit	-300	PF 25% release	6.72	727.48	728.76	128	2.08	5.04
Hirit	-400	PF 25% release	6.72	725.9	727.17	127	2.20	4.83
Hirit	-500	PF 25% release	6.72	724.7	725.99	129	1.72	6.03
Hirit	-600	PF 25% release	6.72	723.5	724.5	100	2.24	5.99
Hirit	-700	PF 25% release	6.72	718.42	719.49	107	2.28	5.55
Hirit	-800	PF 25% release	6.72	713.35	714.44	109	2.31	5.35
Hirit	-900	PF 25% release	6.72	710.33	711.41	108	2.30	5.46
Hirit	-1000	PF 25% release	6.72	707.32	708.37	105	2.30	5.56
Hirit	-1100	PF 25% release	6.72	704.57	705.62	105	2.28	5.59
Hirit	-1200	PF 25% release	6.72	701.82	702.86	104	2.26	5.69
Average						113.15	2.21	5.42

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 30% release	8.07	737.91	739.14	123	2.46	5.33
Hirit	-100	PF 30% release	8.07	733.48	734.72	124	2.47	5.26
Hirit	-200	PF 30% release	8.07	729.05	730.34	129	2.11	5.93

Hirit	-300	PF 30% release	8.07	727.48	728.84	136	2.19	5.38
Hirit	-400	PF 30% release	8.07	725.9	727.26	136	2.28	5.2
Hirit	-500	PF 30% release	8.07	724.7	726.08	138	1.83	6.42
Hirit	-600	PF 30% release	8.07	723.5	724.58	108	2.31	6.47
Hirit	-700	PF 30% release	8.07	718.42	719.57	115	2.37	5.97
Hirit	-800	PF 30% release	8.07	713.35	714.52	117	2.4	5.76
Hirit	-900	PF 30% release	8.07	710.33	711.49	116	2.38	5.87
Hirit	-1000	PF 30% release	8.07	707.32	708.46	114	2.36	6.01
Hirit	-1100	PF 30% release	8.07	704.57	705.71	114	2.36	6.02
Hirit	-1200	PF 30% release	8.07	701.82	702.94	112	2.35	6.12
Average						121.69	2.30	5.83

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 40% release	10.76	737.91	739.28	137	2.63	5.96
Hirit	-100	PF 40% release	10.76	733.48	734.87	139	2.62	5.9
Hirit	-200	PF 40% release	10.76	729.05	730.49	144	2.26	6.63
Hirit	-300	PF 40% release	10.76	727.48	729	152	2.36	5.98
Hirit	-400	PF 40% release	10.76	725.9	727.42	152	2.44	5.8
Hirit	-500	PF 40% release	10.76	724.7	726.22	152	1.99	7.1
Hirit	-600	PF 40% release	10.76	723.5	724.71	121	2.46	7.24
Hirit	-700	PF 40% release	10.76	718.42	719.7	128	2.51	6.69
Hirit	-800	PF 40% release	10.76	713.35	714.66	131	2.54	6.46
Hirit	-900	PF 40% release	10.76	710.33	711.63	130	2.52	6.59
Hirit	-1000	PF 40% release	10.76	707.32	708.59	127	2.53	6.72
Hirit	-1100	PF 40% release	10.76	704.57	705.84	127	2.5	6.75
Hirit	-1200	PF 40% release	10.76	701.82	703.07	125	2.51	6.84
Average						135.77	2.45	6.51

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 50% release	13.44	737.91	739.42	151	2.72	6.55
Hirit	-100	PF 50% release	13.44	733.48	735	152	2.74	6.44
Hirit	-200	PF 50% release	13.44	729.05	730.62	157	2.36	7.25
Hirit	-300	PF 50% release	13.44	727.48	729.12	164	2.52	6.48
Hirit	-400	PF 50% release	13.44	725.9	727.56	166	2.55	6.34
Hirit	-500	PF 50% release	13.44	724.7	726.34	164	2.14	7.65
Hirit	-600	PF 50% release	13.44	723.5	724.83	133	2.55	7.94
Hirit	-700	PF 50% release	13.44	718.42	719.82	140	2.63	7.32
Hirit	-800	PF 50% release	13.44	713.35	714.78	143	2.66	7.05
Hirit	-900	PF 50% release	13.44	710.33	711.75	142	2.64	7.2
Hirit	-1000	PF 50% release	13.44	707.32	708.71	139	2.62	7.37
Hirit	-1100	PF 50% release	13.44	704.57	705.96	139	2.62	7.38
Hirit	-1200	PF 50% release	13.44	701.82	703.19	137	2.62	7.48
Average						148.23	2.57	7.11

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 100% release	26.89	737.91	739.9	199	3.13	8.64
Hirit	-100	PF 100% release	26.89	733.48	735.49	201	3.14	8.51
Hirit	-200	PF 100% release	26.89	729.05	731.12	207	2.74	9.51
Hirit	-300	PF 100% release	26.89	727.48	729.61	213	3.01	8.38
Hirit	-400	PF 100% release	26.89	725.9	728.06	216	3	8.27
Hirit	-500	PF 100% release	26.89	724.7	726.78	208	2.66	9.71
Hirit	-600	PF 100% release	26.89	723.5	725.25	175	2.93	10.47
Hirit	-700	PF 100% release	26.89	718.42	720.26	184	3.04	9.62
Hirit	-800	PF 100% release	26.89	713.35	715.24	189	3.06	9.3
Hirit	-900	PF 100% release	26.89	710.33	712.2	187	3.03	9.5
Hirit	-1000	PF 100% release	26.89	707.32	709.15	183	3.03	9.69
Hirit	-1100	PF 100% release	26.89	704.57	706.41	184	3	9.74
Hirit	-1200	PF 100% release	26.89	701.82	703.64	182	2.99	9.9
Average						194.46	2.98	9.33

Other 4 months

Hirit Korong Oct-Mar-Apr-May

Note: River sta -200 denotes location along river reach 200 m d/s of Hirit Korong dam axis

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 10% release	1.6	737.91	738.55	64	1.8	2.78
Hirit	-100	PF 10% release	1.6	733.48	734.13	65	1.8	2.74
Hirit	-200	PF 10% release	1.6	729.05	729.73	68	1.51	3.12
Hirit	-300	PF 10% release	1.6	727.48	728.24	76	1.39	3
Hirit	-400	PF 10% release	1.6	725.9	726.62	72	1.63	2.74
Hirit	-500	PF 10% release	1.6	724.7	725.48	78	1.12	3.64
Hirit	-600	PF 10% release	1.6	723.5	724.06	56	1.69	3.37
Hirit	-700	PF 10% release	1.6	718.42	719.02	60	1.73	3.11
Hirit	-800	PF 10% release	1.6	713.35	713.96	61	1.75	3
Hirit	-900	PF 10% release	1.6	710.33	710.94	61	1.74	3.06
Hirit	-1000	PF 10% release	1.6	707.32	707.91	59	1.73	3.13
Hirit	-1100	PF 10% release	1.6	704.57	705.16	59	1.73	3.13
Hirit	-1200	PF 10% release	1.6	701.82	702.4	58	1.72	3.18
Average						64.38	1.64	3.08

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 15% release	2.4	737.91	738.67	76	1.93	3.29
Hirit	-100	PF 15% release	2.4	733.48	734.24	76	1.96	3.22
Hirit	-200	PF 15% release	2.4	729.05	729.85	80	1.64	3.67
Hirit	-300	PF 15% release	2.4	727.48	728.36	88	1.56	3.48
Hirit	-400	PF 15% release	2.4	725.9	726.74	84	1.77	3.22
Hirit	-500	PF 15% release	2.4	724.7	725.6	90	1.27	4.2
Hirit	-600	PF 15% release	2.4	723.5	724.16	66	1.83	3.96

Hirit	-700	PF 15% release	2.4	718.42	719.12	70	1.88	3.65
Hirit	-800	PF 15% release	2.4	713.35	714.07	72	1.9	3.53
Hirit	-900	PF 15% release	2.4	710.33	711.04	71	1.89	3.6
Hirit	-1000	PF 15% release	2.4	707.32	708.02	70	1.88	3.68
Hirit	-1100	PF 15% release	2.4	704.57	705.26	69	1.88	3.68
Hirit	-1200	PF 15% release	2.4	701.82	702.51	69	1.86	3.75
Average						75.46	1.79	3.61

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 20% release	3.2	737.91	738.76	85	2.06	3.68
Hirit	-100	PF 20% release	3.2	733.48	734.33	85	2.07	3.62
Hirit	-200	PF 20% release	3.2	729.05	729.94	89	1.74	4.11
Hirit	-300	PF 20% release	3.2	727.48	728.46	98	1.69	3.86
Hirit	-400	PF 20% release	3.2	725.9	726.84	94	1.88	3.61
Hirit	-500	PF 20% release	3.2	724.7	725.7	100	1.38	4.65
Hirit	-600	PF 20% release	3.2	723.5	724.24	74	1.94	4.45
Hirit	-700	PF 20% release	3.2	718.42	719.21	79	1.98	4.11
Hirit	-800	PF 20% release	3.2	713.35	714.15	80	2.01	3.96
Hirit	-900	PF 20% release	3.2	710.33	711.13	80	1.99	4.05
Hirit	-1000	PF 20% release	3.2	707.32	708.1	78	1.97	4.15
Hirit	-1100	PF 20% release	3.2	704.57	705.35	78	1.98	4.14
Hirit	-1200	PF 20% release	3.2	701.82	702.59	77	1.97	4.21
Average						84.38	1.90	4.05

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 25% release	4	737.91	738.84	93	2.14	4.03
Hirit	-100	PF 25% release	4	733.48	734.42	94	2.15	3.97
Hirit	-200	PF 25% release	4	729.05	730.03	98	1.83	4.49
Hirit	-300	PF 25% release	4	727.48	728.54	106	1.8	4.18
Hirit	-400	PF 25% release	4	725.9	726.93	103	1.96	3.94
Hirit	-500	PF 25% release	4	724.7	725.78	108	1.47	5.03
Hirit	-600	PF 25% release	4	723.5	724.31	81	2.03	4.86
Hirit	-700	PF 25% release	4	718.42	719.29	87	2.06	4.51
Hirit	-800	PF 25% release	4	713.35	714.23	88	2.08	4.35
Hirit	-900	PF 25% release	4	710.33	711.2	87	2.08	4.42
Hirit	-1000	PF 25% release	4	707.32	708.18	86	2.05	4.54
Hirit	-1100	PF 25% release	4	704.57	705.42	85	2.07	4.53
Hirit	-1200	PF 25% release	4	701.82	702.66	84	2.06	4.6
Average						92.31	1.98	4.42

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 30% release	4.8	737.91	738.91	100	2.22	4.34
Hirit	-100	PF 30% release	4.8	733.48	734.49	101	2.23	4.27

Hirit	-200	PF 30% release	4.8	729.05	730.1	105	1.89	4.83
Hirit	-300	PF 30% release	4.8	727.48	728.61	113	1.91	4.45
Hirit	-400	PF 30% release	4.8	725.9	727.01	111	2.03	4.25
Hirit	-500	PF 30% release	4.8	724.7	725.85	115	1.56	5.35
Hirit	-600	PF 30% release	4.8	723.5	724.38	88	2.08	5.25
Hirit	-700	PF 30% release	4.8	718.42	719.35	93	2.15	4.83
Hirit	-800	PF 30% release	4.8	713.35	714.3	95	2.18	4.66
Hirit	-900	PF 30% release	4.8	710.33	711.27	94	2.15	4.77
Hirit	-1000	PF 30% release	4.8	707.32	708.24	92	2.15	4.86
Hirit	-1100	PF 30% release	4.8	704.57	705.49	92	2.13	4.89
Hirit	-1200	PF 30% release	4.8	701.82	702.73	91	2.12	4.97
Average						99.23	2.06	4.75

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 40% release	6.41	737.91	739.03	112	2.35	4.87
Hirit	-100	PF 40% release	6.41	733.48	734.61	113	2.36	4.8
Hirit	-200	PF 40% release	6.41	729.05	730.23	118	2.01	5.42
Hirit	-300	PF 40% release	6.41	727.48	728.73	125	2.06	4.94
Hirit	-400	PF 40% release	6.41	725.9	727.14	124	2.17	4.76
Hirit	-500	PF 40% release	6.41	724.7	725.97	127	1.71	5.92
Hirit	-600	PF 40% release	6.41	723.5	724.49	99	2.21	5.9
Hirit	-700	PF 40% release	6.41	718.42	719.47	105	2.26	5.45
Hirit	-800	PF 40% release	6.41	713.35	714.42	107	2.29	5.25
Hirit	-900	PF 40% release	6.41	710.33	711.38	105	2.29	5.34
Hirit	-1000	PF 40% release	6.41	707.32	708.36	104	2.26	5.48
Hirit	-1100	PF 40% release	6.41	704.57	705.61	104	2.26	5.49
Hirit	-1200	PF 40% release	6.41	701.82	702.84	102	2.24	5.58
Average						111.15	2.19	5.32

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 50% release	8.01	737.91	739.13	122	2.48	5.3
Hirit	-100	PF 50% release	8.01	733.48	734.72	124	2.47	5.25
Hirit	-200	PF 50% release	8.01	729.05	730.33	128	2.11	5.91
Hirit	-300	PF 50% release	8.01	727.48	728.84	136	2.19	5.36
Hirit	-400	PF 50% release	8.01	725.9	727.26	136	2.27	5.19
Hirit	-500	PF 50% release	8.01	724.7	726.07	137	1.82	6.4
Hirit	-600	PF 50% release	8.01	723.5	724.58	108	2.3	6.45
Hirit	-700	PF 50% release	8.01	718.42	719.56	114	2.37	5.95
Hirit	-800	PF 50% release	8.01	713.35	714.52	117	2.39	5.74
Hirit	-900	PF 50% release	8.01	710.33	711.49	116	2.38	5.86
Hirit	-1000	PF 50% release	8.01	707.32	708.45	113	2.36	5.99
Hirit	-1100	PF 50% release	8.01	704.57	705.7	113	2.36	6
Hirit	-1200	PF 50% release	8.01	701.82	702.94	112	2.35	6.1
Average						121.23	2.30	5.81

River	Ch d/s of Hirit Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 100% release	16.01	737.91	739.53	162	2.82	7.02
Hirit	-100	PF 100% release	16.01	733.48	735.11	163	2.83	6.92
Hirit	-200	PF 100% release	16.01	729.05	730.74	169	2.45	7.76
Hirit	-300	PF 100% release	16.01	727.48	729.24	176	2.63	6.91
Hirit	-400	PF 100% release	16.01	725.9	727.67	177	2.66	6.78
Hirit	-500	PF 100% release	16.01	724.7	726.44	174	2.26	8.14
Hirit	-600	PF 100% release	16.01	723.5	724.92	142	2.65	8.51
Hirit	-700	PF 100% release	16.01	718.42	719.93	151	2.72	7.85
Hirit	-800	PF 100% release	16.01	713.35	714.89	154	2.75	7.58
Hirit	-900	PF 100% release	16.01	710.33	711.85	152	2.73	7.72
Hirit	-1000	PF 100% release	16.01	707.32	708.81	149	2.71	7.91
Hirit	-1100	PF 100% release	16.01	704.57	706.06	149	2.71	7.92
Hirit	-1200	PF 100% release	16.01	701.82	703.3	148	2.7	8.04
Average						158.92	2.66	7.62

Siri Korong HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Siri Korong Nov to Feb

Note: River sta -200 denotes location along river reach 200 m d/s of Siri Korong dam axis

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 10% release	0.56	634.26	634.57	31	1.25	2.95
Hirit	-100	PF 10% release	0.56	629.39	629.67	28	1.19	3.39
Hirit	-200	PF 10% release	0.56	624.52	624.77	25	1.11	4.07
Hirit	-300	PF 10% release	0.56	616.03	616.32	29	1.21	3.24
Hirit	-400	PF 10% release	0.56	607.54	607.84	30	1.23	3.09
Hirit	-500	PF 10% release	0.56	602.16	602.47	31	1.27	2.78
Hirit	-600	PF 10% release	0.56	596.77	597.17	40	0.91	3.06
Hirit	-700	PF 10% release	0.56	594.94	595.32	38	1.37	2.19
Hirit	-800	PF 10% release	0.56	593.12	593.48	36	0.87	3.63
Average						32.00	1.16	3.16

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 15% release	0.84	634.26	634.62	36	1.35	3.47
Hirit	-100	PF 15% release	0.84	629.39	629.72	33	1.28	3.99
Hirit	-200	PF 15% release	0.84	624.52	624.81	29	1.21	4.78
Hirit	-300	PF 15% release	0.84	616.03	616.37	34	1.31	3.81
Hirit	-400	PF 15% release	0.84	607.54	607.89	35	1.33	3.64
Hirit	-500	PF 15% release	0.84	602.16	602.53	37	1.37	3.27
Hirit	-600	PF 15% release	0.84	596.77	597.24	47	1.02	3.54
Hirit	-700	PF 15% release	0.84	594.94	595.39	45	1.48	2.58
Hirit	-800	PF 15% release	0.84	593.12	593.54	42	0.95	4.24
Average						37.56	1.26	3.70

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 20% release	1.13	634.26	634.66	40	1.43	3.91
Hirit	-100	PF 20% release	1.13	629.39	629.76	37	1.36	4.49
Hirit	-200	PF 20% release	1.13	624.52	624.85	33	1.28	5.39
Hirit	-300	PF 20% release	1.13	616.03	616.41	38	1.39	4.29
Hirit	-400	PF 20% release	1.13	607.54	607.93	39	1.41	4.1
Hirit	-500	PF 20% release	1.13	602.16	602.58	42	1.46	3.68
Hirit	-600	PF 20% release	1.13	596.77	597.29	52	1.11	3.94
Hirit	-700	PF 20% release	1.13	594.94	595.44	50	1.57	2.9
Hirit	-800	PF 20% release	1.13	593.12	593.59	47	1.02	4.76
Average						42.00	1.34	4.16

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 25% release	1.41	634.26	634.7	44	1.49	4.28
Hirit	-100	PF 25% release	1.41	629.39	629.79	40	1.43	4.90
Hirit	-200	PF 25% release	1.41	624.52	624.88	36	1.34	5.87
Hirit	-300	PF 25% release	1.41	616.03	616.45	42	1.45	4.69
Hirit	-400	PF 25% release	1.41	607.54	607.97	43	1.47	4.48
Hirit	-500	PF 25% release	1.41	602.16	602.61	45	1.52	4.03
Hirit	-600	PF 25% release	1.41	596.77	597.33	56	1.17	4.28
Hirit	-700	PF 25% release	1.41	594.94	595.49	55	1.65	3.16
Hirit	-800	PF 25% release	1.41	593.12	593.63	51	1.07	5.19
Average						45.78	1.40	4.54

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 30% release	1.69	634.26	634.74	48	1.54	4.6
Hirit	-100	PF 30% release	1.69	629.39	629.82	43	1.48	5.27
Hirit	-200	PF 30% release	1.69	624.52	624.9	38	1.39	6.31
Hirit	-300	PF 30% release	1.69	616.03	616.48	45	1.5	5.04
Hirit	-400	PF 30% release	1.69	607.54	608	46	1.52	4.82
Hirit	-500	PF 30% release	1.69	602.16	602.65	49	1.58	4.33
Hirit	-600	PF 30% release	1.69	596.77	597.37	60	1.23	4.57
Hirit	-700	PF 30% release	1.69	594.94	595.53	59	1.7	3.41
Hirit	-800	PF 30% release	1.69	593.12	593.66	54	1.12	5.56
Average						49.11	1.45	4.88

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 40% release	2.25	634.26	634.79	53	1.64	5.15
Hirit	-100	PF 40% release	2.25	629.39	629.88	49	1.57	5.91
Hirit	-200	PF 40% release	2.25	624.52	624.95	43	1.48	7.07
Hirit	-300	PF 40% release	2.25	616.03	616.53	50	1.59	5.65

Hirit	-400	PF 40% release	2.25	607.54	608.06	52	1.61	5.4
Hirit	-500	PF 40% release	2.25	602.16	602.71	55	1.67	4.85
Hirit	-600	PF 40% release	2.25	596.77	597.44	67	1.33	5.08
Hirit	-700	PF 40% release	2.25	594.94	595.6	66	1.81	3.81
Hirit	-800	PF 40% release	2.25	593.12	593.73	61	1.19	6.22
Average						55.11	1.54	5.46

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 50% release	2.82	634.26	634.84	58	1.72	5.63
Hirit	-100	PF 50% release	2.82	629.39	629.92	53	1.64	6.46
Hirit	-200	PF 50% release	2.82	624.52	624.99	47	1.54	7.75
Hirit	-300	PF 50% release	2.82	616.03	616.58	55	1.66	6.18
Hirit	-400	PF 50% release	2.82	607.54	608.1	56	1.69	5.91
Hirit	-500	PF 50% release	2.82	602.16	602.76	60	1.75	5.32
Hirit	-600	PF 50% release	2.82	596.77	597.49	72	1.41	5.51
Hirit	-700	PF 50% release	2.82	594.94	595.66	72	1.9	4.17
Hirit	-800	PF 50% release	2.82	593.12	593.78	66	1.25	6.79
Average						59.89	1.62	5.97

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 100% release	5.63	634.26	635.03	77	1.96	7.45
Hirit	-100	PF 100% release	5.63	629.39	630.09	70	1.88	8.53
Hirit	-200	PF 100% release	5.63	624.52	625.14	62	1.77	10.23
Hirit	-300	PF 100% release	5.63	616.03	616.76	73	1.9	8.17
Hirit	-400	PF 100% release	5.63	607.54	608.28	74	1.94	7.79
Hirit	-500	PF 100% release	5.63	602.16	602.96	80	1.99	7.04
Hirit	-600	PF 100% release	5.63	596.77	597.7	93	1.7	7.09
Hirit	-700	PF 100% release	5.63	594.94	595.89	95	2.18	5.5
Hirit	-800	PF 100% release	5.63	593.12	593.99	87	1.45	8.89
Average						79.00	1.86	7.85

Monsoon

Siri Korong June to September

Note: River sta -200 denotes location along river reach 200 m d/s of Siri Korong dam axis

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 10% release	3.6	634.26	634.9	64	1.8	6.21
Hirit	-100	PF 10% release	3.6	629.39	629.98	59	1.72	7.13
Hirit	-200	PF 10% release	3.6	624.52	625.04	52	1.62	8.53
Hirit	-300	PF 10% release	3.6	616.03	616.63	60	1.75	6.81
Hirit	-400	PF 10% release	3.6	607.54	608.16	62	1.77	6.52
Hirit	-500	PF 10% release	3.6	602.16	602.82	66	1.84	5.86
Hirit	-600	PF 10% release	3.6	596.77	597.56	79	1.51	6.03

Hirit	-700	PF 10% release	3.6	594.94	595.73	79	1.99	4.6
Hirit	-800	PF 10% release	3.6	593.12	593.85	73	1.32	7.46
Average						66.00	1.70	6.57

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 15% release	5.4	634.26	635.02	76	1.95	7.31
Hirit	-100	PF 15% release	5.4	629.39	630.08	69	1.87	8.39
Hirit	-200	PF 15% release	5.4	624.52	625.13	61	1.76	10.05
Hirit	-300	PF 15% release	5.4	616.03	616.74	71	1.89	8.03
Hirit	-400	PF 15% release	5.4	607.54	608.27	73	1.92	7.67
Hirit	-500	PF 15% release	5.4	602.16	602.94	78	1.99	6.89
Hirit	-600	PF 15% release	5.4	596.77	597.69	92	1.7	6.96
Hirit	-700	PF 15% release	5.4	594.94	595.87	93	2.14	5.44
Hirit	-800	PF 15% release	5.4	593.12	593.98	86	1.44	8.75
Average						77.67	1.85	7.72

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 20% release	7.2	634.26	635.11	85	2.06	8.22
Hirit	-100	PF 20% release	7.2	629.39	630.16	77	1.98	9.42
Hirit	-200	PF 20% release	7.2	624.52	625.21	69	1.86	11.26
Hirit	-300	PF 20% release	7.2	616.03	616.83	80	1.99	9.04
Hirit	-400	PF 20% release	7.2	607.54	608.36	82	2.04	8.6
Hirit	-500	PF 20% release	7.2	602.16	603.04	88	2.09	7.77
Hirit	-600	PF 20% release	7.2	596.77	597.79	102	1.83	7.73
Hirit	-700	PF 20% release	7.2	594.94	595.99	105	2.26	6.1
Hirit	-800	PF 20% release	7.2	593.12	594.08	96	1.54	9.79
Average						87.11	1.96	8.66

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 25% release	9	634.26	635.19	93	2.16	8.97
Hirit	-100	PF 25% release	9	629.39	630.24	85	2.05	10.35
Hirit	-200	PF 25% release	9	624.52	625.27	75	1.95	12.32
Hirit	-300	PF 25% release	9	616.03	616.91	88	2.08	9.88
Hirit	-400	PF 25% release	9	607.54	608.44	90	2.12	9.43
Hirit	-500	PF 25% release	9	602.16	603.12	96	2.19	8.49
Hirit	-600	PF 25% release	9	596.77	597.88	111	1.93	8.42
Hirit	-700	PF 25% release	9	594.94	596.08	114	2.39	6.64
Hirit	-800	PF 25% release	9	593.12	594.17	105	1.61	10.69
Average						95.22	2.05	9.47

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 30% release	10.8	634.26	635.26	100	2.24	9.65
Hirit	-100	PF 30% release	10.8	629.39	630.3	91	2.12	11.13
Hirit	-200	PF 30% release	10.8	624.52	625.33	81	2	13.32
Hirit	-300	PF 30% release	10.8	616.03	616.97	94	2.15	10.63
Hirit	-400	PF 30% release	10.8	607.54	608.51	97	2.19	10.16
Hirit	-500	PF 30% release	10.8	602.16	603.19	103	2.29	9.1
Hirit	-600	PF 30% release	10.8	596.77	597.95	118	2.04	8.97
Hirit	-700	PF 30% release	10.8	594.94	596.17	123	2.46	7.17
Hirit	-800	PF 30% release	10.8	593.12	594.24	112	1.67	11.49
Average						102.11	2.13	10.18

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 40% release	14.39	634.26	635.38	112	2.37	10.83
Hirit	-100	PF 40% release	14.39	629.39	630.42	103	2.25	12.49
Hirit	-200	PF 40% release	14.39	624.52	625.43	91	2.13	14.9
Hirit	-300	PF 40% release	14.39	616.03	617.09	106	2.28	11.92
Hirit	-400	PF 40% release	14.39	607.54	608.63	109	2.31	11.4
Hirit	-500	PF 40% release	14.39	602.16	603.32	116	2.42	10.21
Hirit	-600	PF 40% release	14.39	596.77	598.08	131	2.2	9.98
Hirit	-700	PF 40% release	14.39	594.94	596.32	138	2.6	8.04
Hirit	-800	PF 40% release	14.39	593.12	594.38	126	1.78	12.87
Average						114.67	2.26	11.40

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 50% release	17.99	634.26	635.49	123	2.46	11.89
Hirit	-100	PF 50% release	17.99	629.39	630.51	112	2.35	13.65
Hirit	-200	PF 50% release	17.99	624.52	625.51	99	2.23	16.27
Hirit	-300	PF 50% release	17.99	616.03	617.19	116	2.39	13.04
Hirit	-400	PF 50% release	17.99	607.54	608.73	119	2.42	12.46
Hirit	-500	PF 50% release	17.99	602.16	603.43	127	2.51	11.21
Hirit	-600	PF 50% release	17.99	596.77	598.19	142	2.33	10.83
Hirit	-700	PF 50% release	17.99	594.94	596.45	151	2.72	8.8
Hirit	-800	PF 50% release	17.99	593.12	594.5	138	1.86	14.06
Average						125.22	2.36	12.47

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 100% release	35.99	634.26	635.88	162	2.83	15.69
Hirit	-100	PF 100% release	35.99	629.39	630.86	147	2.72	17.95
Hirit	-200	PF 100% release	35.99	624.52	625.83	131	2.54	21.57

Hirit	-300	PF 100% release	35.99	616.03	617.56	153	2.74	17.2
Hirit	-400	PF 100% release	35.99	607.54	609.11	157	2.79	16.42
Hirit	-500	PF 100% release	35.99	602.16	603.84	168	2.88	14.79
Hirit	-600	PF 100% release	35.99	596.77	598.62	185	2.77	14.06
Hirit	-700	PF 100% release	35.99	594.94	596.93	199	3.14	11.59
Hirit	-800	PF 100% release	35.99	593.12	594.94	182	2.14	18.56
Average						164.89	2.73	16.43

Other 4 months

Siri Korong Oct-Mar-Apr-May

Note: River sta -200 denotes location along river reach 200 m d/s of Siri Korong dam axis

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 10% release	2.14	634.26	634.78	52	1.62	5.05
Hirit	-100	PF 10% release	2.14	629.39	629.87	48	1.55	5.79
Hirit	-200	PF 10% release	2.14	624.52	624.94	42	1.46	6.95
Hirit	-300	PF 10% release	2.14	616.03	616.52	49	1.58	5.53
Hirit	-400	PF 10% release	2.14	607.54	608.05	51	1.6	5.29
Hirit	-500	PF 10% release	2.14	602.16	602.7	54	1.65	4.76
Hirit	-600	PF 10% release	2.14	596.77	597.43	66	1.31	4.99
Hirit	-700	PF 10% release	2.14	594.94	595.58	64	1.79	3.73
Hirit	-800	PF 10% release	2.14	593.12	593.72	60	1.18	6.1
Average						54.00	1.53	5.35

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 15% release	3.21	634.26	634.87	61	1.76	5.93
Hirit	-100	PF 15% release	3.21	629.39	629.95	56	1.68	6.81
Hirit	-200	PF 15% release	3.21	624.52	625.02	50	1.59	8.15
Hirit	-300	PF 15% release	3.21	616.03	616.61	58	1.71	6.51
Hirit	-400	PF 15% release	3.21	607.54	608.13	59	1.73	6.22
Hirit	-500	PF 15% release	3.21	602.16	602.79	63	1.8	5.59
Hirit	-600	PF 15% release	3.21	596.77	597.53	76	1.47	5.76
Hirit	-700	PF 15% release	3.21	594.94	595.7	76	1.93	4.42
Hirit	-800	PF 15% release	3.21	593.12	593.82	70	1.29	7.14
Average						63.22	1.66	6.28

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 20% release	4.29	634.26	634.95	69	1.85	6.7
Hirit	-100	PF 20% release	4.29	629.39	630.02	63	1.78	7.65
Hirit	-200	PF 20% release	4.29	624.52	625.08	56	1.68	9.17
Hirit	-300	PF 20% release	4.29	616.03	616.68	65	1.81	7.32
Hirit	-400	PF 20% release	4.29	607.54	608.21	67	1.84	6.98
Hirit	-500	PF 20% release	4.29	602.16	602.87	71	1.9	6.28
Hirit	-600	PF 20% release	4.29	596.77	597.61	84	1.58	6.42

Hirit	-700	PF 20% release	4.29	594.94	595.79	85	2.06	4.93
Hirit	-800	PF 20% release	4.29	593.12	593.9	78	1.37	8
Average						70.89	1.76	7.05

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 25% release	5.36	634.26	635.01	75	1.95	7.29
Hirit	-100	PF 25% release	5.36	629.39	630.08	69	1.86	8.38
Hirit	-200	PF 25% release	5.36	624.52	625.13	61	1.76	10.01
Hirit	-300	PF 25% release	5.36	616.03	616.74	71	1.88	8.01
Hirit	-400	PF 25% release	5.36	607.54	608.27	73	1.92	7.64
Hirit	-500	PF 25% release	5.36	602.16	602.94	78	1.97	6.9
Hirit	-600	PF 25% release	5.36	596.77	597.68	91	1.69	6.94
Hirit	-700	PF 25% release	5.36	594.94	595.87	93	2.13	5.42
Hirit	-800	PF 25% release	5.36	593.12	593.97	85	1.44	8.72
Average						77.33	1.84	7.70

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 30% release	6.43	634.26	635.07	81	2.01	7.86
Hirit	-100	PF 30% release	6.43	629.39	630.13	74	1.93	9.01
Hirit	-200	PF 30% release	6.43	624.52	625.18	66	1.82	10.77
Hirit	-300	PF 30% release	6.43	616.03	616.79	76	1.96	8.6
Hirit	-400	PF 30% release	6.43	607.54	608.33	79	1.99	8.22
Hirit	-500	PF 30% release	6.43	602.16	603	84	2.04	7.43
Hirit	-600	PF 30% release	6.43	596.77	597.75	98	1.76	7.45
Hirit	-700	PF 30% release	6.43	594.94	595.94	100	2.23	5.8
Hirit	-800	PF 30% release	6.43	593.12	594.04	92	1.5	9.37
Average						83.33	1.92	8.28

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 40% release	8.57	634.26	635.17	91	2.12	8.84
Hirit	-100	PF 40% release	8.57	629.39	630.22	83	2.02	10.15
Hirit	-200	PF 40% release	8.57	624.52	625.26	74	1.93	12.09
Hirit	-300	PF 40% release	8.57	616.03	616.89	86	2.07	9.66
Hirit	-400	PF 40% release	8.57	607.54	608.42	88	2.1	9.23
Hirit	-500	PF 40% release	8.57	602.16	603.11	95	2.16	8.33
Hirit	-600	PF 40% release	8.57	596.77	597.86	109	1.9	8.28
Hirit	-700	PF 40% release	8.57	594.94	596.06	112	2.37	6.51
Hirit	-800	PF 40% release	8.57	593.12	594.15	103	1.59	10.48
Average						93.44	2.03	9.29

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width

	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 50% release	10.72	634.26	635.26	100	2.24	9.62
Hirit	-100	PF 50% release	10.72	629.39	630.3	91	2.12	11.1
Hirit	-200	PF 50% release	10.72	624.52	625.33	81	2	13.28
Hirit	-300	PF 50% release	10.72	616.03	616.97	94	2.15	10.6
Hirit	-400	PF 50% release	10.72	607.54	608.51	97	2.18	10.13
Hirit	-500	PF 50% release	10.72	602.16	603.19	103	2.28	9.07
Hirit	-600	PF 50% release	10.72	596.77	597.95	118	2.04	8.95
Hirit	-700	PF 50% release	10.72	594.94	596.17	123	2.45	7.15
Hirit	-800	PF 50% release	10.72	593.12	594.24	112	1.67	11.46
Average						102.11	2.13	10.15

River	Ch d/s of Siri Korong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Hirit	0 (dam site)	PF 100% release	21.43	634.26	635.58	132	2.55	12.75
Hirit	-100	PF 100% release	21.43	629.39	630.59	120	2.43	14.64
Hirit	-200	PF 100% release	21.43	624.52	625.58	106	2.31	17.45
Hirit	-300	PF 100% release	21.43	616.03	617.27	124	2.47	13.98
Hirit	-400	PF 100% release	21.43	607.54	608.82	128	2.51	13.37
Hirit	-500	PF 100% release	21.43	602.16	603.52	136	2.62	11.97
Hirit	-600	PF 100% release	21.43	596.77	598.29	152	2.44	11.57
Hirit	-700	PF 100% release	21.43	594.94	596.56	162	2.82	9.43
Hirit	-800	PF 100% release	21.43	593.12	594.6	148	1.92	15.09
Average						134.22	2.45	13.36

Yamne Stage-I HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Yamne Stage-I Nov to Feb

Note: River sta -100 denotes location along river reach 100 m d/s of Yamne-I dam axis

River	Ch d/s of Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 10% release	1.33	688.64	689.01	37	1.17	6.21
Yamne	-100	PF 10% release	1.33	687.07	687.53	46	0.98	5.88
Yamne	-200	PF 10% release	1.33	685.5	685.88	38	1.3	5.41
Yamne	-300	PF 10% release	1.33	683.93	684.33	40	0.88	7.65
Yamne	-400	PF 10% release	1.33	682.34	682.74	40	1.29	5.16
Yamne	-500	PF 10% release	1.33	680.75	681.26	51	1.01	5.22
Yamne	-600	PF 10% release	1.33	679.16	679.6	44	1.48	4.09
Yamne	-700	PF 10% release	1.33	677.01	677.46	45	1.22	4.83
Yamne	-800	PF 10% release	1.33	674.85	675.22	37	1.36	5.27
Yamne	-900	PF 10% release	1.33	672.7	673	30	0.62	14.48
Yamne	-1000	PF 10% release	1.33	671.72	672.08	36	0.82	8.9
Yamne	-1100	PF 10% release	1.33	670.73	671.1	37	0.78	9.21
Average						40.08	1.08	6.86

River	Ch d/s of Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 15% release	1.99	688.64	689.07	43	1.27	7.27
Yamne	-100	PF 15% release	1.99	687.07	687.6	53	1.09	6.82
Yamne	-200	PF 15% release	1.99	685.5	685.94	44	1.43	6.3
Yamne	-300	PF 15% release	1.99	683.93	684.39	46	0.97	8.88
Yamne	-400	PF 15% release	1.99	682.34	682.81	47	1.41	6.05
Yamne	-500	PF 15% release	1.99	680.75	681.34	59	1.12	6.05
Yamne	-600	PF 15% release	1.99	679.16	679.68	52	1.61	4.79
Yamne	-700	PF 15% release	1.99	677.01	677.53	52	1.37	5.57
Yamne	-800	PF 15% release	1.99	674.85	675.29	44	1.48	6.19
Yamne	-900	PF 15% release	1.99	672.7	673.04	34	0.68	16.86
Yamne	-1000	PF 15% release	1.99	671.72	672.14	42	0.89	10.41
Yamne	-1100	PF 15% release	1.99	670.73	671.16	43	0.88	10.64
Average						46.58	1.18	7.99

River	Ch d/s of Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 20% release	2.66	688.64	689.12	48	1.36	8.14
Yamne	-100	PF 20% release	2.66	687.07	687.66	59	1.18	7.59
Yamne	-200	PF 20% release	2.66	685.5	685.99	49	1.53	7.05
Yamne	-300	PF 20% release	2.66	683.93	684.44	51	1.06	9.86
Yamne	-400	PF 20% release	2.66	682.34	682.87	53	1.49	6.8
Yamne	-500	PF 20% release	2.66	680.75	681.4	65	1.22	6.71
Yamne	-600	PF 20% release	2.66	679.16	679.74	58	1.71	5.39
Yamne	-700	PF 20% release	2.66	677.01	677.58	57	1.49	6.17
Yamne	-800	PF 20% release	2.66	674.85	675.34	49	1.57	6.95
Yamne	-900	PF 20% release	2.66	672.7	673.08	38	0.74	18.81
Yamne	-1000	PF 20% release	2.66	671.72	672.2	48	0.95	11.68
Yamne	-1100	PF 20% release	2.66	670.73	671.21	48	0.95	11.8
Average						51.92	1.27	8.91

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 25% release	3.32	688.64	689.17	53	1.42	8.89
Yamne	-100	PF 25% release	3.32	687.07	687.72	65	1.25	8.23
Yamne	-200	PF 25% release	3.32	685.5	686.04	54	1.61	7.68
Yamne	-300	PF 25% release	3.32	683.93	684.48	55	1.12	10.69
Yamne	-400	PF 25% release	3.32	682.34	682.91	57	1.55	7.44
Yamne	-500	PF 25% release	3.32	680.75	681.46	71	1.30	7.27
Yamne	-600	PF 25% release	3.32	679.16	679.79	63	1.78	5.89
Yamne	-700	PF 25% release	3.32	677.01	677.63	62	1.60	6.65
Yamne	-800	PF 25% release	3.32	674.85	675.39	54	1.64	7.61
Yamne	-900	PF 25% release	3.32	672.7	673.12	42	0.77	20.49
Yamne	-1000	PF 25% release	3.32	671.72	672.24	52	1.00	12.72

Yamne	-1100	PF 25% release	3.32	670.73	671.24	51	1.02	12.77
Yamne	-1200	PF 25% release	3.32	669.75	670.05	30	0.85	26.35
Average						54.54	1.30	10.98

River	Ch d/s of Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 30% release	3.98	688.64	689.2	56	1.48	9.54
Yamne	-100	PF 30% release	3.98	687.07	687.76	69	1.31	8.79
Yamne	-200	PF 30% release	3.98	685.5	686.08	58	1.68	8.23
Yamne	-300	PF 30% release	3.98	683.93	684.52	59	1.18	11.42
Yamne	-400	PF 30% release	3.98	682.34	682.96	62	1.61	8
Yamne	-500	PF 30% release	3.98	680.75	681.5	75	1.36	7.76
Yamne	-600	PF 30% release	3.98	679.16	679.84	68	1.84	6.34
Yamne	-700	PF 30% release	3.98	677.01	677.67	66	1.69	7.09
Yamne	-800	PF 30% release	3.98	674.85	675.43	58	1.7	8.18
Yamne	-900	PF 30% release	3.98	672.7	673.15	45	0.81	21.96
Yamne	-1000	PF 30% release	3.98	671.72	672.28	56	1.04	13.67
Yamne	-1100	PF 30% release	3.98	670.73	671.28	55	1.07	13.6
Average						60.58	1.40	10.38

River	Ch d/s of Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 40% release	5.31	688.64	689.27	63	1.57	10.7
Yamne	-100	PF 40% release	5.31	687.07	687.84	77	1.42	9.77
Yamne	-200	PF 40% release	5.31	685.5	686.14	64	1.79	9.2
Yamne	-300	PF 40% release	5.31	683.93	684.59	66	1.27	12.68
Yamne	-400	PF 40% release	5.31	682.34	683.04	70	1.7	9
Yamne	-500	PF 40% release	5.31	680.75	681.58	83	1.48	8.59
Yamne	-600	PF 40% release	5.31	679.16	679.93	77	1.94	7.13
Yamne	-700	PF 40% release	5.31	677.01	677.74	73	1.84	7.84
Yamne	-800	PF 40% release	5.31	674.85	675.5	65	1.8	9.17
Yamne	-900	PF 40% release	5.31	672.7	673.2	50	0.86	24.54
Yamne	-1000	PF 40% release	5.31	671.72	672.34	62	1.11	15.29
Yamne	-1100	PF 40% release	5.31	670.73	671.34	61	1.17	15.06
Average						67.58	1.50	11.58

River	Ch d/s of Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 50% release	6.64	688.64	689.33	69	1.64	11.69
Yamne	-100	PF 50% release	6.64	687.07	687.9	83	1.51	10.6
Yamne	-200	PF 50% release	6.64	685.5	686.2	70	1.89	10.03
Yamne	-300	PF 50% release	6.64	683.93	684.65	72	1.35	13.79
Yamne	-400	PF 50% release	6.64	682.34	683.1	76	1.79	9.81
Yamne	-500	PF 50% release	6.64	680.75	681.66	91	1.57	9.35
Yamne	-600	PF 50% release	6.64	679.16	679.99	83	2.05	7.76

Yamne	-700	PF 50% release	6.64	677.01	677.8	79	1.97	8.48
Yamne	-800	PF 50% release	6.64	674.85	675.56	71	1.88	10.05
Yamne	-900	PF 50% release	6.64	672.7	673.25	55	0.9	26.8
Yamne	-1000	PF 50% release	6.64	671.72	672.4	68	1.17	16.66
Yamne	-1100	PF 50% release	6.64	670.73	671.39	66	1.25	16.31
Average						73.58	1.58	12.61

River	Ch d/s of Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 100% release	13.28	688.64	689.56	92	1.85	15.57
Yamne	-100	PF 100% release	13.28	687.07	688.13	106	1.86	13.49
Yamne	-200	PF 100% release	13.28	685.5	686.43	93	2.14	13.31
Yamne	-300	PF 100% release	13.28	683.93	684.85	92	1.62	17.81
Yamne	-400	PF 100% release	13.28	682.34	683.34	100	2.05	12.96
Yamne	-500	PF 100% release	13.28	680.75	681.91	116	1.9	12
Yamne	-600	PF 100% release	13.28	679.16	680.26	110	2.35	10.25
Yamne	-700	PF 100% release	13.28	677.01	678.05	104	2.27	11.18
Yamne	-800	PF 100% release	13.28	674.85	675.79	94	2.14	13.31
Yamne	-900	PF 100% release	13.28	672.7	673.42	72	1.06	33.52
Yamne	-1000	PF 100% release	13.28	671.72	672.61	89	1.37	21.76
Yamne	-1100	PF 100% release	13.28	670.73	671.57	84	1.52	20.88
Average						96.00	1.84	16.34

Monsoon

Yamne Stage-I June to September

Note: River sta -100 denotes location along river reach 100 m d/s of Yamne-I dam axis

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 10% release	8.49	688.64	689.41	77	1.71	12.94
Yamne	-100	PF 10% release	8.49	687.07	687.98	91	1.62	11.56
Yamne	-200	PF 10% release	8.49	685.5	686.28	78	1.98	11.08
Yamne	-300	PF 10% release	8.49	683.93	684.71	78	1.44	15.07
Yamne	-400	PF 10% release	8.49	682.34	683.18	84	1.86	10.86
Yamne	-500	PF 10% release	8.49	680.75	681.74	99	1.69	10.19
Yamne	-600	PF 10% release	8.49	679.16	680.09	93	2.13	8.6
Yamne	-700	PF 10% release	8.49	677.01	677.88	87	2.09	9.32
Yamne	-800	PF 10% release	8.49	674.85	675.63	78	1.96	11.13
Yamne	-900	PF 10% release	8.49	672.7	673.3	60	0.95	29.53
Yamne	-1000	PF 10% release	8.49	671.72	672.47	75	1.23	18.32
Yamne	-1100	PF 10% release	8.49	670.73	671.45	72	1.34	17.8
Average						81.00	1.67	13.87

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 15% release	12.73	688.64	689.54	90	1.85	15.25

Yamne	-100	PF 15% release	12.73	687.07	688.12	105	1.82	13.35
Yamne	-200	PF 15% release	12.73	685.5	686.41	91	2.15	13.02
Yamne	-300	PF 15% release	12.73	683.93	684.84	91	1.6	17.52
Yamne	-400	PF 15% release	12.73	682.34	683.33	99	2.02	12.76
Yamne	-500	PF 15% release	12.73	680.75	681.9	115	1.88	11.81
Yamne	-600	PF 15% release	12.73	679.16	680.25	109	2.32	10.11
Yamne	-700	PF 15% release	12.73	677.01	678.04	103	2.25	11
Yamne	-800	PF 15% release	12.73	674.85	675.77	92	2.12	13.08
Yamne	-900	PF 15% release	12.73	672.7	673.41	71	1.05	33.44
Yamne	-1000	PF 15% release	12.73	671.72	672.6	88	1.35	21.42
Yamne	-1100	PF 15% release	12.73	670.73	671.56	83	1.51	20.55
Average						94.75	1.83	16.11

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 20% release	16.97	688.64	689.66	102	1.95	17.17
Yamne	-100	PF 20% release	16.97	687.07	688.23	116	1.99	14.75
Yamne	-200	PF 20% release	16.97	685.5	686.52	102	2.26	14.63
Yamne	-300	PF 20% release	16.97	683.93	684.94	101	1.71	19.54
Yamne	-400	PF 20% release	16.97	682.34	683.44	110	2.16	14.28
Yamne	-500	PF 20% release	16.97	680.75	682.02	127	2.03	13.13
Yamne	-600	PF 20% release	16.97	679.16	680.38	122	2.47	11.3
Yamne	-700	PF 20% release	16.97	677.01	678.16	115	2.38	12.33
Yamne	-800	PF 20% release	16.97	674.85	675.88	103	2.25	14.66
Yamne	-900	PF 20% release	16.97	672.7	673.48	78	1.15	34.02
Yamne	-1000	PF 20% release	16.97	671.72	672.7	98	1.45	23.89
Yamne	-1100	PF 20% release	16.97	670.73	671.65	92	1.63	22.81
Average						105.50	1.95	17.71

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 25% release	21.22	688.64	689.76	112	2.01	18.88
Yamne	-100	PF 25% release	21.22	687.07	688.32	125	2.14	15.91
Yamne	-200	PF 25% release	21.22	685.5	686.62	112	2.35	16.06
Yamne	-300	PF 25% release	21.22	683.93	685.03	110	1.82	21.20
Yamne	-400	PF 25% release	21.22	682.34	683.55	121	2.24	15.66
Yamne	-500	PF 25% release	21.22	680.75	682.13	138	2.17	14.19
Yamne	-600	PF 25% release	21.22	679.16	680.49	133	2.56	12.41
Yamne	-700	PF 25% release	21.22	677.01	678.27	126	2.50	13.47
Yamne	-800	PF 25% release	21.22	674.85	675.98	113	2.35	16.05
Yamne	-900	PF 25% release	21.22	672.7	673.55	85	1.23	34.54
Yamne	-1000	PF 25% release	21.22	671.72	672.79	107	1.52	26.05
Yamne	-1100	PF 25% release	21.22	670.73	671.72	99	1.74	24.65
Yamne	-1200	PF 25% release	21.22	669.75	670.33	58	1.65	33.82
Average						110.69	2.02	20.22
River	Ch d/s of	Profile	Q Total	Bed	Water surface	Water	Flow	Flow Top

	Yame-I HEP			Elevation	Elevation	depth	Velocity	Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 30% release	25.46	688.64	689.84	120	2.08	20.35
Yamne	-100	PF 30% release	25.46	687.07	688.4	133	2.26	16.96
Yamne	-200	PF 30% release	25.46	685.5	686.71	121	2.44	17.27
Yamne	-300	PF 30% release	25.46	683.93	685.11	118	1.9	22.73
Yamne	-400	PF 30% release	25.46	682.34	683.64	130	2.33	16.82
Yamne	-500	PF 30% release	25.46	680.75	682.22	147	2.28	15.18
Yamne	-600	PF 30% release	25.46	679.16	680.59	143	2.66	13.34
Yamne	-700	PF 30% release	25.46	677.01	678.37	136	2.58	14.51
Yamne	-800	PF 30% release	25.46	674.85	676.06	121	2.46	17.19
Yamne	-900	PF 30% release	25.46	672.7	673.62	92	1.31	35.01
Yamne	-1000	PF 30% release	25.46	671.72	672.87	115	1.58	28.06
Yamne	-1100	PF 30% release	25.46	670.73	671.78	105	1.86	26.12
Average						123.42	2.15	20.30

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 40% release	33.95	688.64	690	136	2.18	22.95
Yamne	-100	PF 40% release	33.95	687.07	688.54	147	2.47	18.74
Yamne	-200	PF 40% release	33.95	685.5	686.86	136	2.58	19.38
Yamne	-300	PF 40% release	33.95	683.93	685.24	131	2.04	25.35
Yamne	-400	PF 40% release	33.95	682.34	683.8	146	2.47	18.88
Yamne	-500	PF 40% release	33.95	680.75	682.38	163	2.47	16.83
Yamne	-600	PF 40% release	33.95	679.16	680.77	161	2.81	14.98
Yamne	-700	PF 40% release	33.95	677.01	678.53	152	2.74	16.27
Yamne	-800	PF 40% release	33.95	674.85	676.21	136	2.59	19.35
Yamne	-900	PF 40% release	33.95	672.7	673.73	103	1.44	35.87
Yamne	-1000	PF 40% release	33.95	671.72	673.01	129	1.67	31.46
Yamne	-1100	PF 40% release	33.95	670.73	671.88	115	2.05	28.75
Average						137.92	2.29	22.40

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 50% release	42.44	688.64	690.13	149	2.26	25.2
Yamne	-100	PF 50% release	42.44	687.07	688.66	159	2.64	20.24
Yamne	-200	PF 50% release	42.44	685.5	686.98	148	2.7	21.2
Yamne	-300	PF 50% release	42.44	683.93	685.36	143	2.15	27.6
Yamne	-400	PF 50% release	42.44	682.34	683.94	160	2.57	20.66
Yamne	-500	PF 50% release	42.44	680.75	682.52	177	2.63	18.26
Yamne	-600	PF 50% release	42.44	679.16	680.92	176	2.95	16.37
Yamne	-700	PF 50% release	42.44	677.01	678.67	166	2.86	17.79
Yamne	-800	PF 50% release	42.44	674.85	676.34	149	2.7	21.18
Yamne	-900	PF 50% release	42.44	672.7	673.84	114	1.56	36.64
Yamne	-1000	PF 50% release	42.44	671.72	673.12	140	1.76	34.26
Yamne	-1100	PF 50% release	42.44	670.73	671.98	125	2.19	31.13
Average						150.50	2.41	24.21

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 100% release	84.87	688.64	690.61	197	2.58	33.35
Yamne	-100	PF 100% release	84.87	687.07	689.12	205	3.17	26.13
Yamne	-200	PF 100% release	84.87	685.5	687.46	196	3.1	27.97
Yamne	-300	PF 100% release	84.87	683.93	685.8	187	2.51	36.67
Yamne	-400	PF 100% release	84.87	682.34	684.46	212	2.92	27.45
Yamne	-500	PF 100% release	84.87	680.75	683.03	228	3.17	23.48
Yamne	-600	PF 100% release	84.87	679.16	681.48	232	3.38	21.61
Yamne	-700	PF 100% release	84.87	677.01	679.2	219	3.31	23.41
Yamne	-800	PF 100% release	84.87	674.85	676.81	196	3.11	27.93
Yamne	-900	PF 100% release	84.87	672.7	674.24	154	1.99	39.63
Yamne	-1000	PF 100% release	84.87	671.72	673.54	182	2.1	43.94
Yamne	-1100	PF 100% release	84.87	670.73	672.34	161	2.62	40.23
Average						197.42	2.83	30.98

Other 4 months

Yamne Stage-I Oct-Mar-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Yamne-I dam axis

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 10% release	5.05	688.64	689.26	62	1.55	10.48
Yamne	-100	PF 10% release	5.05	687.07	687.82	75	1.4	9.6
Yamne	-200	PF 10% release	5.05	685.5	686.13	63	1.78	9.02
Yamne	-300	PF 10% release	5.05	683.93	684.58	65	1.25	12.46
Yamne	-400	PF 10% release	5.05	682.34	683.02	68	1.69	8.8
Yamne	-500	PF 10% release	5.05	680.75	681.57	82	1.46	8.46
Yamne	-600	PF 10% release	5.05	679.16	679.91	75	1.93	6.97
Yamne	-700	PF 10% release	5.05	677.01	677.73	72	1.81	7.71
Yamne	-800	PF 10% release	5.05	674.85	675.48	63	1.79	8.98
Yamne	-900	PF 10% release	5.05	672.7	673.19	49	0.85	24.1
Yamne	-1000	PF 10% release	5.05	671.72	672.33	61	1.1	14.97
Yamne	-1100	PF 10% release	5.05	670.73	671.33	60	1.15	14.82
Average						66.25	1.48	11.36

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 15% release	7.58	688.64	689.37	73	1.68	12.35
Yamne	-100	PF 15% release	7.58	687.07	687.94	87	1.57	11.11
Yamne	-200	PF 15% release	7.58	685.5	686.24	74	1.93	10.59
Yamne	-300	PF 15% release	7.58	683.93	684.68	75	1.4	14.46
Yamne	-400	PF 15% release	7.58	682.34	683.14	80	1.82	10.38
Yamne	-500	PF 15% release	7.58	680.75	681.7	95	1.63	9.78
Yamne	-600	PF 15% release	7.58	679.16	680.04	88	2.09	8.22
Yamne	-700	PF 15% release	7.58	677.01	677.84	83	2.03	8.93
Yamne	-800	PF 15% release	7.58	674.85	675.59	74	1.93	10.58

Yamne	-900	PF 15% release	7.58	672.7	673.28	58	0.93	28.21
Yamne	-1000	PF 15% release	7.58	671.72	672.44	72	1.2	17.56
Yamne	-1100	PF 15% release	7.58	670.73	671.42	69	1.3	17.07
Average						77.33	1.63	13.27

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 20% release	10.11	688.64	689.46	82	1.77	13.9
Yamne	-100	PF 20% release	10.11	687.07	688.03	96	1.71	12.28
Yamne	-200	PF 20% release	10.11	685.5	686.33	83	2.04	11.9
Yamne	-300	PF 20% release	10.11	683.93	684.76	83	1.51	16.08
Yamne	-400	PF 20% release	10.11	682.34	683.24	90	1.93	11.64
Yamne	-500	PF 20% release	10.11	680.75	681.8	105	1.77	10.85
Yamne	-600	PF 20% release	10.11	679.16	680.15	99	2.21	9.23
Yamne	-700	PF 20% release	10.11	677.01	677.95	94	2.15	10.03
Yamne	-800	PF 20% release	10.11	674.85	675.68	83	2.05	11.87
Yamne	-900	PF 20% release	10.11	672.7	673.35	65	0.99	31.65
Yamne	-1000	PF 20% release	10.11	671.72	672.52	80	1.28	19.6
Yamne	-1100	PF 20% release	10.11	670.73	671.49	76	1.41	18.94
Average						86.33	1.74	14.83

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 25% release	12.64	688.64	689.54	90	1.85	15.21
Yamne	-100	PF 25% release	12.64	687.07	688.11	104	1.82	13.31
Yamne	-200	PF 25% release	12.64	685.5	686.41	91	2.14	13
Yamne	-300	PF 25% release	12.64	683.93	684.84	91	1.6	17.47
Yamne	-400	PF 25% release	12.64	682.34	683.32	98	2.02	12.72
Yamne	-500	PF 25% release	12.64	680.75	681.89	114	1.88	11.77
Yamne	-600	PF 25% release	12.64	679.16	680.24	108	2.31	10.08
Yamne	-700	PF 25% release	12.64	677.01	678.03	102	2.25	10.96
Yamne	-800	PF 25% release	12.64	674.85	675.76	91	2.14	13
Yamne	-900	PF 25% release	12.64	672.7	673.4	70	1.05	33.43
Yamne	-1000	PF 25% release	12.64	671.72	672.59	87	1.35	21.37
Yamne	-1100	PF 25% release	12.64	670.73	671.55	82	1.5	20.49
Yamne	-1200	PF 25% release	12.64	669.75	670.22	47	1.34	32.9
Average						90.38	1.79	17.36

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 30% release	15.16	688.64	689.61	97	1.9	16.43
Yamne	-100	PF 30% release	15.16	687.07	688.18	111	1.94	14.13
Yamne	-200	PF 30% release	15.16	685.5	686.48	98	2.2	14.04
Yamne	-300	PF 30% release	15.16	683.93	684.9	97	1.68	18.68

Yamne	-400	PF 30% release	15.16	682.34	683.4	106	2.09	13.69
Yamne	-500	PF 30% release	15.16	680.75	681.97	122	1.98	12.56
Yamne	-600	PF 30% release	15.16	679.16	680.33	117	2.4	10.85
Yamne	-700	PF 30% release	15.16	677.01	678.11	110	2.35	11.74
Yamne	-800	PF 30% release	15.16	674.85	675.84	99	2.2	14.03
Yamne	-900	PF 30% release	15.16	672.7	673.45	75	1.11	33.78
Yamne	-1000	PF 30% release	15.16	671.72	672.66	94	1.41	22.89
Yamne	-1100	PF 30% release	15.16	670.73	671.61	88	1.58	21.9
Average						101.17	1.90	17.06

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 40% release	20.22	688.64	689.74	110	2	18.5
Yamne	-100	PF 40% release	20.22	687.07	688.3	123	2.11	15.64
Yamne	-200	PF 40% release	20.22	685.5	686.6	110	2.33	15.75
Yamne	-300	PF 40% release	20.22	683.93	685.01	108	1.8	20.82
Yamne	-400	PF 40% release	20.22	682.34	683.53	119	2.22	15.36
Yamne	-500	PF 40% release	20.22	680.75	682.1	135	2.14	13.95
Yamne	-600	PF 40% release	20.22	679.16	680.47	131	2.54	12.17
Yamne	-700	PF 40% release	20.22	677.01	678.24	123	2.49	13.17
Yamne	-800	PF 40% release	20.22	674.85	675.96	111	2.33	15.74
Yamne	-900	PF 40% release	20.22	672.7	673.54	84	1.22	34.42
Yamne	-1000	PF 40% release	20.22	671.72	672.77	105	1.5	25.61
Yamne	-1100	PF 40% release	20.22	670.73	671.7	97	1.72	24.19
Average						113.00	2.03	18.78

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 50% release	25.27	688.64	689.84	120	2.07	20.3
Yamne	-100	PF 50% release	25.27	687.07	688.4	133	2.25	16.91
Yamne	-200	PF 50% release	25.27	685.5	686.71	121	2.43	17.22
Yamne	-300	PF 50% release	25.27	683.93	685.1	117	1.9	22.66
Yamne	-400	PF 50% release	25.27	682.34	683.64	130	2.32	16.78
Yamne	-500	PF 50% release	25.27	680.75	682.22	147	2.28	15.13
Yamne	-600	PF 50% release	25.27	679.16	680.59	143	2.66	13.3
Yamne	-700	PF 50% release	25.27	677.01	678.36	135	2.58	14.46
Yamne	-800	PF 50% release	25.27	674.85	676.05	120	2.46	17.14
Yamne	-900	PF 50% release	25.27	672.7	673.62	92	1.31	35
Yamne	-1000	PF 50% release	25.27	671.72	672.86	114	1.58	27.93
Yamne	-1100	PF 50% release	25.27	670.73	671.78	105	1.85	26.12
Average						123.08	2.14	20.25

River	Ch d/s of Yame-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0 (dam site)	PF 100% release	50.55	688.64	690.24	160	2.33	27.06

Yamne	-100	PF 100% release	50.55	687.07	688.76	169	2.77	21.56
Yamne	-200	PF 100% release	50.55	685.5	687.09	159	2.81	22.66
Yamne	-300	PF 100% release	50.55	683.93	685.46	153	2.24	29.48
Yamne	-400	PF 100% release	50.55	682.34	684.05	171	2.66	22.2
Yamne	-500	PF 100% release	50.55	680.75	682.64	189	2.76	19.44
Yamne	-600	PF 100% release	50.55	679.16	681.05	189	3.05	17.57
Yamne	-700	PF 100% release	50.55	677.01	678.79	178	2.96	19.08
Yamne	-800	PF 100% release	50.55	674.85	676.44	159	2.8	22.71
Yamne	-900	PF 100% release	50.55	672.7	673.92	122	1.66	37.28
Yamne	-1000	PF 100% release	50.55	671.72	673.23	151	1.82	36.74
Yamne	-1100	PF 100% release	50.55	670.73	672.05	132	2.32	32.97
Average						161.00	2.52	25.73

Yamne Stage-II HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Yamne Stage-II -Nov to Feb

Note: River sta -100 denotes location along river reach 100 m d/s of Yamne-II dam axis

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 10% release	1.89	510.88	511.45	57	0.61	10.89
Yamne	-100	PF 10% release	1.89	510.47	511.1	63	0.7	8.6
Yamne	-200	PF 10% release	1.89	510.06	510.76	70	0.67	7.96
Yamne	-300	PF 10% release	1.89	509.65	510.25	60	1.04	6.07
Yamne	-400	PF 10% release	1.89	508.54	509.07	53	1.27	5.6
Yamne	-500	PF 10% release	1.89	507.43	508.01	58	0.97	6.75
Yamne	-600	PF 10% release	1.89	506.32	506.77	45	1.3	6.43
Yamne	-700	PF 10% release	1.89	505.3	505.82	52	0.78	9.26
Yamne	-800	PF 10% release	1.89	504.28	504.63	35	1.32	8.24
Yamne	-900	PF 10% release	1.89	503.26	503.69	43	0.56	15.91
Yamne	-1000	PF 10% release	1.89	502.76	503.17	41	0.71	13.01
Yamne	-1100	PF 10% release	1.89	502.25	502.72	47	0.54	15.08
Yamne	-1200	PF 10% release	1.89	501.75	502.08	33	0.91	12.46
Yamne	-1300	PF 10% release	1.89	500.63	501.1	47	0.81	9.9
Yamne	-1400	PF 10% release	1.89	499.5	499.95	45	1.25	6.8
Yamne	-1500	PF 10% release	1.89	498.38	498.98	60	0.87	7.31
Yamne	-1600	PF 10% release	1.89	497.8	498.39	59	0.82	7.83
Yamne	-1700	PF 10% release	1.89	497.22	497.75	53	0.87	8.28
Yamne	-1800	PF 10% release	1.89	496.64	497.09	45	0.73	11.49
Yamne	-1900	PF 10% release	1.89	496.11	496.68	57	0.59	11.21
Yamne	-2000	PF 10% release	1.89	495.59	495.91	32	1.27	9.22
Average						50.24	0.89	9.44

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 15% release	2.84	510.88	511.55	67	0.67	12.76

Yamne	-100	PF 15% release	2.84	510.47	511.21	74	0.76	10.11
Yamne	-200	PF 15% release	2.84	510.06	510.88	82	0.75	9.24
Yamne	-300	PF 15% release	2.84	509.65	510.34	69	1.17	7.02
Yamne	-400	PF 15% release	2.84	508.54	509.16	62	1.38	6.59
Yamne	-500	PF 15% release	2.84	507.43	508.1	67	1.09	7.79
Yamne	-600	PF 15% release	2.84	506.32	506.85	53	1.4	7.58
Yamne	-700	PF 15% release	2.84	505.3	505.9	60	0.88	10.71
Yamne	-800	PF 15% release	2.84	504.28	504.69	41	1.44	9.7
Yamne	-900	PF 15% release	2.84	503.26	503.75	49	0.63	18.4
Yamne	-1000	PF 15% release	2.84	502.76	503.24	48	0.77	15.33
Yamne	-1100	PF 15% release	2.84	502.25	502.79	54	0.61	17.4
Yamne	-1200	PF 15% release	2.84	501.75	502.14	39	0.98	14.73
Yamne	-1300	PF 15% release	2.84	500.63	501.17	54	0.91	11.46
Yamne	-1400	PF 15% release	2.84	499.5	500.03	53	1.35	8.02
Yamne	-1500	PF 15% release	2.84	498.38	499.07	69	0.97	8.49
Yamne	-1600	PF 15% release	2.84	497.8	498.49	69	0.9	9.18
Yamne	-1700	PF 15% release	2.84	497.22	497.82	60	1	9.47
Yamne	-1800	PF 15% release	2.84	496.64	497.18	54	0.77	13.63
Yamne	-1900	PF 15% release	2.84	496.11	496.77	66	0.67	12.93
Yamne	-2000	PF 15% release	2.84	495.59	495.97	38	1.38	10.86
Average						58.48	0.98	11.02

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 20% release	3.78	510.88	511.63	75	0.71	14.27
Yamne	-100	PF 20% release	3.78	510.47	511.3	83	0.81	11.32
Yamne	-200	PF 20% release	3.78	510.06	510.97	91	0.81	10.28
Yamne	-300	PF 20% release	3.78	509.65	510.42	77	1.27	7.77
Yamne	-400	PF 20% release	3.78	508.54	509.24	70	1.47	7.38
Yamne	-500	PF 20% release	3.78	507.43	508.17	74	1.19	8.61
Yamne	-600	PF 20% release	3.78	506.32	506.92	60	1.48	8.5
Yamne	-700	PF 20% release	3.78	505.3	505.97	67	0.96	11.85
Yamne	-800	PF 20% release	3.78	504.28	504.74	46	1.52	10.88
Yamne	-900	PF 20% release	3.78	503.26	503.81	55	0.68	20.43
Yamne	-1000	PF 20% release	3.78	502.76	503.3	54	0.81	17.2
Yamne	-1100	PF 20% release	3.78	502.25	502.84	59	0.67	19.23
Yamne	-1200	PF 20% release	3.78	501.75	502.19	44	1.03	16.54
Yamne	-1300	PF 20% release	3.78	500.63	501.24	61	0.98	12.73
Yamne	-1400	PF 20% release	3.78	499.5	500.09	59	1.43	8.99
Yamne	-1500	PF 20% release	3.78	498.38	499.15	77	1.04	9.43
Yamne	-1600	PF 20% release	3.78	497.8	498.57	77	0.96	10.24
Yamne	-1700	PF 20% release	3.78	497.22	497.88	66	1.09	10.43
Yamne	-1800	PF 20% release	3.78	496.64	497.24	60	0.82	15.32
Yamne	-1900	PF 20% release	3.78	496.11	496.84	73	0.73	14.29
Yamne	-2000	PF 20% release	3.78	495.59	496.01	42	1.46	12.17
Average						65.24	1.04	12.28

Reach	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 25% release	4.73	510.88	511.7	82	0.74	15.58
Yamne	-100	PF 25% release	4.73	510.47	511.37	90	0.85	12.37
Yamne	-200	PF 25% release	4.73	510.06	511.05	99	0.86	11.16
Yamne	-300	PF 25% release	4.73	509.65	510.48	83	1.35	8.42
Yamne	-400	PF 25% release	4.73	508.54	509.3	76	1.53	8.08
Yamne	-500	PF 25% release	4.73	507.43	508.23	80	1.27	9.32
Yamne	-600	PF 25% release	4.73	506.32	506.98	66	1.55	9.31
Yamne	-700	PF 25% release	4.73	505.3	506.02	72	1.02	12.83
Yamne	-800	PF 25% release	4.73	504.28	504.78	50	1.59	11.91
Yamne	-900	PF 25% release	4.73	503.26	503.85	59	0.72	22.18
Yamne	-1000	PF 25% release	4.73	502.76	503.35	59	0.85	18.82
Yamne	-1100	PF 25% release	4.73	502.25	502.89	64	0.71	20.80
Yamne	-1200	PF 25% release	4.73	501.75	502.23	48	1.08	18.11
Yamne	-1300	PF 25% release	4.73	500.63	501.29	66	1.04	13.82
Yamne	-1400	PF 25% release	4.73	499.5	500.15	65	1.49	9.85
Yamne	-1500	PF 25% release	4.73	498.38	499.21	83	1.11	10.25
Yamne	-1600	PF 25% release	4.73	497.8	498.64	84	1.02	11.15
Yamne	-1700	PF 25% release	4.73	497.22	497.93	71	1.18	11.23
Yamne	-1800	PF 25% release	4.73	496.64	497.3	66	0.85	16.81
Yamne	-1900	PF 25% release	4.73	496.11	496.9	79	0.78	15.45
Yamne	-2000	PF 25% release	4.73	495.59	496.05	46	1.53	13.31
Yamne	-2100	PF 25% release	4.73	495.06	495.41	35	0.54	32.39
Average						69.23	1.08	14.23

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 30% release	5.67	510.88	511.76	88	0.77	16.75
Yamne	-100	PF 30% release	5.67	510.47	511.44	97	0.88	13.29
Yamne	-200	PF 30% release	5.67	510.06	511.12	106	0.9	11.94
Yamne	-300	PF 30% release	5.67	509.65	510.54	89	1.42	8.99
Yamne	-400	PF 30% release	5.67	508.54	509.36	82	1.59	8.67
Yamne	-500	PF 30% release	5.67	507.43	508.28	85	1.34	9.94
Yamne	-600	PF 30% release	5.67	506.32	507.03	71	1.61	10
Yamne	-700	PF 30% release	5.67	505.3	506.07	77	1.08	13.68
Yamne	-800	PF 30% release	5.67	504.28	504.82	54	1.65	12.79
Yamne	-900	PF 30% release	5.67	503.26	503.89	63	0.76	23.7
Yamne	-1000	PF 30% release	5.67	502.76	503.39	63	0.88	20.2
Yamne	-1100	PF 30% release	5.67	502.25	502.93	68	0.75	22.17
Yamne	-1200	PF 30% release	5.67	501.75	502.27	52	1.11	19.51
Yamne	-1300	PF 30% release	5.67	500.63	501.33	70	1.09	14.76
Yamne	-1400	PF 30% release	5.67	499.5	500.2	70	1.54	10.59
Yamne	-1500	PF 30% release	5.67	498.38	499.27	89	1.16	10.96
Yamne	-1600	PF 30% release	5.67	497.8	498.69	89	1.06	11.95

Yamne	-1700	PF 30% release	5.67	497.22	497.98	76	1.25	11.94
Yamne	-1800	PF 30% release	5.67	496.64	497.35	71	0.88	18.11
Yamne	-1900	PF 30% release	5.67	496.11	496.95	84	0.83	16.45
Yamne	-2000	PF 30% release	5.67	495.59	496.09	50	1.58	14.33
Average						75.90	1.15	14.32

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 40% release	7.57	510.88	511.87	99	0.82	18.82
Yamne	-100	PF 40% release	7.57	510.47	511.56	109	0.93	14.92
Yamne	-200	PF 40% release	7.57	510.06	511.23	117	0.97	13.27
Yamne	-300	PF 40% release	7.57	509.65	510.64	99	1.54	9.97
Yamne	-400	PF 40% release	7.57	508.54	509.46	92	1.7	9.71
Yamne	-500	PF 40% release	7.57	507.43	508.37	94	1.46	11
Yamne	-600	PF 40% release	7.57	506.32	507.11	79	1.71	11.22
Yamne	-700	PF 40% release	7.57	505.3	506.15	85	1.17	15.15
Yamne	-800	PF 40% release	7.57	504.28	504.88	60	1.75	14.36
Yamne	-900	PF 40% release	7.57	503.26	503.97	71	0.81	26.43
Yamne	-1000	PF 40% release	7.57	502.76	503.47	71	0.94	22.62
Yamne	-1100	PF 40% release	7.57	502.25	503.01	76	0.82	24.5
Yamne	-1200	PF 40% release	7.57	501.75	502.34	59	1.17	21.97
Yamne	-1300	PF 40% release	7.57	500.63	501.41	78	1.18	16.4
Yamne	-1400	PF 40% release	7.57	499.5	500.28	78	1.63	11.91
Yamne	-1500	PF 40% release	7.57	498.38	499.37	99	1.25	12.2
Yamne	-1600	PF 40% release	7.57	497.8	498.8	100	1.14	13.32
Yamne	-1700	PF 40% release	7.57	497.22	498.06	84	1.38	13.15
Yamne	-1800	PF 40% release	7.57	496.64	497.44	80	0.92	20.38
Yamne	-1900	PF 40% release	7.57	496.11	497.03	92	0.9	18.18
Yamne	-2000	PF 40% release	7.57	495.59	496.15	56	1.68	16.06
Average						84.67	1.23	15.98

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 50% release	9.46	510.88	511.96	108	0.85	20.6
Yamne	-100	PF 50% release	9.46	510.47	511.66	119	0.98	16.28
Yamne	-200	PF 50% release	9.46	510.06	511.33	127	1.03	14.39
Yamne	-300	PF 50% release	9.46	509.65	510.72	107	1.64	10.81
Yamne	-400	PF 50% release	9.46	508.54	509.54	100	1.78	10.59
Yamne	-500	PF 50% release	9.46	507.43	508.45	102	1.55	11.91
Yamne	-600	PF 50% release	9.46	506.32	507.18	86	1.79	12.24
Yamne	-700	PF 50% release	9.46	505.3	506.22	92	1.25	16.39
Yamne	-800	PF 50% release	9.46	504.28	504.94	66	1.83	15.7
Yamne	-900	PF 50% release	9.46	503.26	504.03	77	0.86	28.72
Yamne	-1000	PF 50% release	9.46	502.76	503.53	77	0.99	24.7
Yamne	-1100	PF 50% release	9.46	502.25	503.07	82	0.88	26.47

Yamne	-1200	PF 50% release	9.46	501.75	502.4	65	1.22	24.1
Yamne	-1300	PF 50% release	9.46	500.63	501.48	85	1.25	17.8
Yamne	-1400	PF 50% release	9.46	499.5	500.35	85	1.71	13.02
Yamne	-1500	PF 50% release	9.46	498.38	499.46	108	1.32	13.26
Yamne	-1600	PF 50% release	9.46	497.8	498.88	108	1.2	14.48
Yamne	-1700	PF 50% release	9.46	497.22	498.12	90	1.48	14.18
Yamne	-1800	PF 50% release	9.46	496.64	497.52	88	0.96	22.31
Yamne	-1900	PF 50% release	9.46	496.11	497.11	100	0.97	19.63
Yamne	-2000	PF 50% release	9.46	495.59	496.2	61	1.76	17.58
Average						92.05	1.30	17.39

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 100% release	18.91	510.88	512.31	143	0.97	27.31
Yamne	-100	PF 100% release	18.91	510.47	512.03	156	1.14	21.36
Yamne	-200	PF 100% release	18.91	510.06	511.7	164	1.24	18.55
Yamne	-300	PF 100% release	18.91	509.65	511.02	137	1.99	13.88
Yamne	-400	PF 100% release	18.91	508.54	509.85	131	2.08	13.87
Yamne	-500	PF 100% release	18.91	507.43	508.73	130	1.91	15.19
Yamne	-600	PF 100% release	18.91	506.32	507.45	113	2.07	16.08
Yamne	-700	PF 100% release	18.91	505.3	506.48	118	1.54	20.88
Yamne	-800	PF 100% release	18.91	504.28	505.15	87	2.09	20.73
Yamne	-900	PF 100% release	18.91	503.26	504.26	100	1.02	37.29
Yamne	-1000	PF 100% release	18.91	502.76	503.77	101	1.15	32.35
Yamne	-1100	PF 100% release	18.91	502.25	503.28	103	1.09	33.57
Yamne	-1200	PF 100% release	18.91	501.75	502.61	86	1.37	32.07
Yamne	-1300	PF 100% release	18.91	500.63	501.73	110	1.49	23.02
Yamne	-1400	PF 100% release	18.91	499.5	500.63	113	1.95	17.24
Yamne	-1500	PF 100% release	18.91	498.38	499.78	140	1.57	17.19
Yamne	-1600	PF 100% release	18.91	497.8	499.2	140	1.44	18.73
Yamne	-1700	PF 100% release	18.91	497.22	498.36	114	1.84	17.96
Yamne	-1800	PF 100% release	18.91	496.64	497.8	116	1.1	29.5
Yamne	-1900	PF 100% release	18.91	496.11	497.37	126	1.21	24.9
Yamne	-2000	PF 100% release	18.91	495.59	496.4	81	2.02	23.18
Average						119.48	1.54	22.61

Monsoon

Yamne Stage-II June to Sept

Note: River sta -100 denotes location along river reach 100 m d/s of Yamne-II dam axis

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 10% release	12.09	510.88	512.07	119	0.89	22.76
Yamne	-100	PF 10% release	12.09	510.47	511.78	131	1.03	17.92
Yamne	-200	PF 10% release	12.09	510.06	511.45	139	1.1	15.73
Yamne	-300	PF 10% release	12.09	509.65	510.82	117	1.75	11.8
Yamne	-400	PF 10% release	12.09	508.54	509.64	110	1.88	11.66
Yamne	-500	PF 10% release	12.09	507.43	508.54	111	1.67	12.98

Yamne	-600	PF 10% release	12.09	506.32	507.27	95	1.88	13.49
Yamne	-700	PF 10% release	12.09	505.3	506.31	101	1.35	17.87
Yamne	-800	PF 10% release	12.09	504.28	505.01	73	1.92	17.32
Yamne	-900	PF 10% release	12.09	503.26	504.1	84	0.91	31.49
Yamne	-1000	PF 10% release	12.09	502.76	503.61	85	1.04	27.19
Yamne	-1100	PF 10% release	12.09	502.25	503.14	89	0.95	28.78
Yamne	-1200	PF 10% release	12.09	501.75	502.46	71	1.27	26.66
Yamne	-1300	PF 10% release	12.09	500.63	501.56	93	1.33	19.5
Yamne	-1400	PF 10% release	12.09	499.5	500.44	94	1.79	14.38
Yamne	-1500	PF 10% release	12.09	498.38	499.56	118	1.41	14.54
Yamne	-1600	PF 10% release	12.09	497.8	498.99	119	1.28	15.88
Yamne	-1700	PF 10% release	12.09	497.22	498.2	98	1.6	15.41
Yamne	-1800	PF 10% release	12.09	496.64	497.61	97	1.01	24.65
Yamne	-1900	PF 10% release	12.09	496.11	497.19	108	1.05	21.36
Yamne	-2000	PF 10% release	12.09	495.59	496.26	67	1.85	19.38
Average						100.90	1.38	19.08

Reach	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 15% release	18.13	510.88	512.29	141	0.96	26.85
Yamne	-100	PF 15% release	18.13	510.47	512	153	1.13	21.01
Yamne	-200	PF 15% release	18.13	510.06	511.68	162	1.23	18.27
Yamne	-300	PF 15% release	18.13	509.65	511	135	1.96	13.66
Yamne	-400	PF 15% release	18.13	508.54	509.83	129	2.06	13.65
Yamne	-500	PF 15% release	18.13	507.43	508.71	128	1.89	14.96
Yamne	-600	PF 15% release	18.13	506.32	507.44	112	2.05	15.83
Yamne	-700	PF 15% release	18.13	505.3	506.46	116	1.52	20.56
Yamne	-800	PF 15% release	18.13	504.28	505.14	86	2.07	20.42
Yamne	-900	PF 15% release	18.13	503.26	504.24	98	1.01	36.69
Yamne	-1000	PF 15% release	18.13	502.76	503.76	100	1.14	31.85
Yamne	-1100	PF 15% release	18.13	502.25	503.27	102	1.08	33.08
Yamne	-1200	PF 15% release	18.13	501.75	502.59	84	1.36	31.51
Yamne	-1300	PF 15% release	18.13	500.63	501.71	108	1.48	22.66
Yamne	-1400	PF 15% release	18.13	499.5	500.61	111	1.93	16.94
Yamne	-1500	PF 15% release	18.13	498.38	499.76	138	1.56	16.92
Yamne	-1600	PF 15% release	18.13	497.8	499.18	138	1.42	18.44
Yamne	-1700	PF 15% release	18.13	497.22	498.35	113	1.82	17.7
Yamne	-1800	PF 15% release	18.13	496.64	497.78	114	1.09	29.01
Yamne	-1900	PF 15% release	18.13	496.11	497.35	124	1.19	24.53
Yamne	-2000	PF 15% release	18.13	495.59	496.38	79	2	22.82
Average						117.67	1.52	22.26

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 20% release	24.17	510.88	512.46	158	1.01	30.2
Yamne	-100	PF 20% release	24.17	510.47	512.18	171	1.2	23.51

Yamne	-200	PF 20% release	24.17	510.06	511.86	180	1.33	20.3
Yamne	-300	PF 20% release	24.17	509.65	511.15	150	2.12	15.17
Yamne	-400	PF 20% release	24.17	508.54	509.98	144	2.2	15.26
Yamne	-500	PF 20% release	24.17	507.43	508.85	142	2.06	16.54
Yamne	-600	PF 20% release	24.17	506.32	507.57	125	2.18	17.72
Yamne	-700	PF 20% release	24.17	505.3	506.58	128	1.67	22.7
Yamne	-800	PF 20% release	24.17	504.28	505.25	97	2.18	22.96
Yamne	-900	PF 20% release	24.17	503.26	504.35	109	1.08	40.96
Yamne	-1000	PF 20% release	24.17	502.76	503.87	111	1.22	35.48
Yamne	-1100	PF 20% release	24.17	502.25	503.37	112	1.18	36.27
Yamne	-1200	PF 20% release	24.17	501.75	502.7	95	1.43	35.5
Yamne	-1300	PF 20% release	24.17	500.63	501.83	120	1.59	25.23
Yamne	-1400	PF 20% release	24.17	499.5	500.75	125	2.04	19.05
Yamne	-1500	PF 20% release	24.17	498.38	499.91	153	1.67	18.84
Yamne	-1600	PF 20% release	24.17	497.8	499.33	153	1.54	20.49
Yamne	-1700	PF 20% release	24.17	497.22	498.46	124	1.99	19.56
Yamne	-1800	PF 20% release	24.17	496.64	497.92	128	1.16	32.49
Yamne	-1900	PF 20% release	24.17	496.11	497.48	137	1.3	27.07
Yamne	-2000	PF 20% release	24.17	495.59	496.48	89	2.12	25.59
Average						131.00	1.63	24.80

Reach	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 25% release	30.21	510.88	512.61	173	1.05	33.09
Yamne	-100	PF 25% release	30.21	510.47	512.34	187	1.26	25.64
Yamne	-200	PF 25% release	30.21	510.06	512.01	195	1.41	22.01
Yamne	-300	PF 25% release	30.21	509.65	511.28	163	2.25	16.46
Yamne	-400	PF 25% release	30.21	508.54	510.11	157	2.31	16.61
Yamne	-500	PF 25% release	30.21	507.43	508.97	154	2.20	17.90
Yamne	-600	PF 25% release	30.21	506.32	507.68	136	2.29	19.33
Yamne	-700	PF 25% release	30.21	505.3	506.68	138	1.79	24.52
Yamne	-800	PF 25% release	30.21	504.28	505.34	106	2.28	25.11
Yamne	-900	PF 25% release	30.21	503.26	504.45	119	1.14	44.62
Yamne	-1000	PF 25% release	30.21	502.76	503.97	121	1.29	38.55
Yamne	-1100	PF 25% release	30.21	502.25	503.46	121	1.28	38.04
Yamne	-1200	PF 25% release	30.21	501.75	502.78	103	1.52	36.42
Yamne	-1300	PF 25% release	30.21	500.63	501.94	131	1.68	27.42
Yamne	-1400	PF 25% release	30.21	499.5	500.87	137	2.12	20.87
Yamne	-1500	PF 25% release	30.21	498.38	500.05	167	1.77	20.47
Yamne	-1600	PF 25% release	30.21	497.8	499.47	167	1.63	22.25
Yamne	-1700	PF 25% release	30.21	497.22	498.56	134	2.13	21.12
Yamne	-1800	PF 25% release	30.21	496.64	498.04	140	1.21	35.52
Yamne	-1900	PF 25% release	30.21	496.11	497.59	148	1.40	29.15
Yamne	-2000	PF 25% release	30.21	495.59	496.57	98	2.19	28.10
Yamne	-2100	PF 25% release	30.21	495.06	495.97	91	1.05	38.90
Average						140.27	1.69	27.37

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 30% release	36.26	510.88	512.75	187	1.09	35.12
Yamne	-100	PF 30% release	36.26	510.47	512.48	201	1.31	27.53
Yamne	-200	PF 30% release	36.26	510.06	512.14	208	1.48	23.55
Yamne	-300	PF 30% release	36.26	509.65	511.39	174	2.37	17.6
Yamne	-400	PF 30% release	36.26	508.54	510.22	168	2.42	17.81
Yamne	-500	PF 30% release	36.26	507.43	509.07	164	2.32	19.09
Yamne	-600	PF 30% release	36.26	506.32	507.78	146	2.39	20.74
Yamne	-700	PF 30% release	36.26	505.3	506.77	147	1.89	26.11
Yamne	-800	PF 30% release	36.26	504.28	505.42	114	2.36	27.02
Yamne	-900	PF 30% release	36.26	503.26	504.54	128	1.18	47.85
Yamne	-1000	PF 30% release	36.26	502.76	504.05	129	1.35	41.27
Yamne	-1100	PF 30% release	36.26	502.25	503.53	128	1.37	39.59
Yamne	-1200	PF 30% release	36.26	501.75	502.86	111	1.6	37.27
Yamne	-1300	PF 30% release	36.26	500.63	502.03	140	1.76	29.37
Yamne	-1400	PF 30% release	36.26	499.5	500.97	147	2.19	22.49
Yamne	-1500	PF 30% release	36.26	498.38	500.16	178	1.85	21.92
Yamne	-1600	PF 30% release	36.26	497.8	499.58	178	1.71	23.79
Yamne	-1700	PF 30% release	36.26	497.22	498.65	143	2.25	22.51
Yamne	-1800	PF 30% release	36.26	496.64	498.15	151	1.26	38.16
Yamne	-1900	PF 30% release	36.26	496.11	497.68	157	1.49	31.05
Yamne	-2000	PF 30% release	36.26	495.59	496.64	105	2.29	30.14
Average						152.57	1.81	28.57

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 40% release	48.34	510.88	512.97	209	1.17	36.91
Yamne	-100	PF 40% release	48.34	510.47	512.71	224	1.4	30.79
Yamne	-200	PF 40% release	48.34	510.06	512.38	232	1.59	26.18
Yamne	-300	PF 40% release	48.34	509.65	511.58	193	2.55	19.56
Yamne	-400	PF 40% release	48.34	508.54	510.42	188	2.59	19.87
Yamne	-500	PF 40% release	48.34	507.43	509.24	181	2.52	21.13
Yamne	-600	PF 40% release	48.34	506.32	507.95	163	2.55	23.17
Yamne	-700	PF 40% release	48.34	505.3	506.92	162	2.07	28.83
Yamne	-800	PF 40% release	48.34	504.28	505.55	127	2.5	30.31
Yamne	-900	PF 40% release	48.34	503.26	504.69	143	1.27	53.33
Yamne	-1000	PF 40% release	48.34	502.76	504.2	144	1.46	45.04
Yamne	-1100	PF 40% release	48.34	502.25	503.67	142	1.52	42.28
Yamne	-1200	PF 40% release	48.34	501.75	503	125	1.74	38.8
Yamne	-1300	PF 40% release	48.34	500.63	502.19	156	1.89	32.72
Yamne	-1400	PF 40% release	48.34	499.5	501.16	166	2.31	25.31
Yamne	-1500	PF 40% release	48.34	498.38	500.37	199	1.99	24.4
Yamne	-1600	PF 40% release	48.34	497.8	499.78	198	1.85	26.42
Yamne	-1700	PF 40% release	48.34	497.22	498.8	158	2.45	24.88

Yamne	-1800	PF 40% release	48.34	496.64	498.32	168	1.34	42.7
Yamne	-1900	PF 40% release	48.34	496.11	497.84	173	1.63	34.2
Yamne	-2000	PF 40% release	48.34	495.59	496.77	118	2.41	33.91
Average						169.95	1.94	31.46

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 50% release	60.43	510.88	513.17	229	1.24	38.47
Yamne	-100	PF 50% release	60.43	510.47	512.92	245	1.47	33.58
Yamne	-200	PF 50% release	60.43	510.06	512.57	251	1.69	28.42
Yamne	-300	PF 50% release	60.43	509.65	511.75	210	2.71	21.23
Yamne	-400	PF 50% release	60.43	508.54	510.59	205	2.73	21.62
Yamne	-500	PF 50% release	60.43	507.43	509.39	196	2.69	22.87
Yamne	-600	PF 50% release	60.43	506.32	508.1	178	2.69	25.22
Yamne	-700	PF 50% release	60.43	505.3	507.05	175	2.22	31.12
Yamne	-800	PF 50% release	60.43	504.28	505.67	139	2.62	33.13
Yamne	-900	PF 50% release	60.43	503.26	504.81	155	1.35	57.31
Yamne	-1000	PF 50% release	60.43	502.76	504.32	156	1.56	47.43
Yamne	-1100	PF 50% release	60.43	502.25	503.78	153	1.64	43.85
Yamne	-1200	PF 50% release	60.43	501.75	503.12	137	1.86	40.14
Yamne	-1300	PF 50% release	60.43	500.63	502.33	170	2	35
Yamne	-1400	PF 50% release	60.43	499.5	501.32	182	2.4	27.73
Yamne	-1500	PF 50% release	60.43	498.38	500.54	216	2.11	26.54
Yamne	-1600	PF 50% release	60.43	497.8	499.9	210	2.06	28
Yamne	-1700	PF 50% release	60.43	497.22	499.04	182	2.32	28.58
Yamne	-1800	PF 50% release	60.43	496.64	498.55	191	1.27	69.48
Yamne	-1900	PF 50% release	60.43	496.11	497.98	187	1.76	36.85
Yamne	-2000	PF 50% release	60.43	495.59	496.87	128	2.56	35.51
Average						185.48	2.05	34.86

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 100% release	120.86	510.88	513.91	303	1.52	44.29
Yamne	-100	PF 100% release	120.86	510.47	513.66	319	1.74	41.47
Yamne	-200	PF 100% release	120.86	510.06	513.31	325	2.03	36.73
Yamne	-300	PF 100% release	120.86	509.65	512.36	271	3.25	27.4
Yamne	-400	PF 100% release	120.86	508.54	511.2	266	3.23	28.11
Yamne	-500	PF 100% release	120.86	507.43	509.94	251	3.3	29.24
Yamne	-600	PF 100% release	120.86	506.32	508.64	232	3.18	32.84
Yamne	-700	PF 100% release	120.86	505.3	507.51	221	2.78	39.31
Yamne	-800	PF 100% release	120.86	504.28	506.12	184	3.01	43.73
Yamne	-900	PF 100% release	120.86	503.26	505.27	201	1.66	62.78
Yamne	-1000	PF 100% release	120.86	502.76	504.8	204	1.9	56.35
Yamne	-1100	PF 100% release	120.86	502.25	504.25	200	2.04	50.15
Yamne	-1200	PF 100% release	120.86	501.75	503.6	185	2.28	45.51
Yamne	-1300	PF 100% release	120.86	500.63	502.82	219	2.48	39.89

Yamne	-1400	PF 100% release	120.86	499.5	501.92	242	2.71	36.95
Yamne	-1500	PF 100% release	120.86	498.38	501.17	279	2.53	34.24
Yamne	-1600	PF 100% release	120.86	497.8	500.57	277	2.35	37.05
Yamne	-1700	PF 100% release	120.86	497.22	499.39	217	3.27	34.11
Yamne	-1800	PF 100% release	120.86	496.64	499.04	240	1.4	82.13
Yamne	-1900	PF 100% release	120.86	496.11	498.48	237	2.19	46.17
Yamne	-2000	PF 100% release	120.86	495.59	497.28	169	3.1	39.91
Average						240.10	2.47	42.30

Other 4 Months

Yamne Stage-II Oct-Mar-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Yamne-II dam axis

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 10% release	7.2	510.88	511.85	97	0.81	18.44
Yamne	-100	PF 10% release	7.2	510.47	511.53	106	0.93	14.61
Yamne	-200	PF 10% release	7.2	510.06	511.21	115	0.96	13.03
Yamne	-300	PF 10% release	7.2	509.65	510.62	97	1.52	9.78
Yamne	-400	PF 10% release	7.2	508.54	509.44	90	1.67	9.54
Yamne	-500	PF 10% release	7.2	507.43	508.36	93	1.44	10.81
Yamne	-600	PF 10% release	7.2	506.32	507.1	78	1.69	11
Yamne	-700	PF 10% release	7.2	505.3	506.14	84	1.16	14.88
Yamne	-800	PF 10% release	7.2	504.28	504.87	59	1.73	14.08
Yamne	-900	PF 10% release	7.2	503.26	503.95	69	0.8	25.94
Yamne	-1000	PF 10% release	7.2	502.76	503.45	69	0.93	22.18
Yamne	-1100	PF 10% release	7.2	502.25	502.99	74	0.81	24.07
Yamne	-1200	PF 10% release	7.2	501.75	502.33	58	1.16	21.53
Yamne	-1300	PF 10% release	7.2	500.63	501.4	77	1.16	16.1
Yamne	-1400	PF 10% release	7.2	499.5	500.27	77	1.62	11.67
Yamne	-1500	PF 10% release	7.2	498.38	499.35	97	1.23	11.97
Yamne	-1600	PF 10% release	7.2	497.8	498.78	98	1.13	13.08
Yamne	-1700	PF 10% release	7.2	497.22	498.04	82	1.36	12.92
Yamne	-1800	PF 10% release	7.2	496.64	497.43	79	0.91	19.97
Yamne	-1900	PF 10% release	7.2	496.11	497.02	91	0.89	17.87
Yamne	-2000	PF 10% release	7.2	495.59	496.14	55	1.66	15.76
Average						83.10	1.22	15.68

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 15% release	10.8	510.88	512.02	114	0.87	21.74
Yamne	-100	PF 15% release	10.8	510.47	511.72	125	1.01	17.15
Yamne	-200	PF 15% release	10.8	510.06	511.4	134	1.07	15.11
Yamne	-300	PF 15% release	10.8	509.65	510.77	112	1.7	11.33
Yamne	-400	PF 15% release	10.8	508.54	509.6	106	1.83	11.16
Yamne	-500	PF 15% release	10.8	507.43	508.5	107	1.62	12.48

Yamne	-600	PF 15% release	10.8	506.32	507.23	91	1.84	12.9
Yamne	-700	PF 15% release	10.8	505.3	506.27	97	1.3	17.17
Yamne	-800	PF 15% release	10.8	504.28	504.98	70	1.87	16.56
Yamne	-900	PF 15% release	10.8	503.26	504.07	81	0.89	30.17
Yamne	-1000	PF 15% release	10.8	502.76	503.57	81	1.01	26.03
Yamne	-1100	PF 15% release	10.8	502.25	503.1	85	0.92	27.67
Yamne	-1200	PF 15% release	10.8	501.75	502.43	68	1.25	25.43
Yamne	-1300	PF 15% release	10.8	500.63	501.52	89	1.29	18.71
Yamne	-1400	PF 15% release	10.8	499.5	500.4	90	1.75	13.74
Yamne	-1500	PF 15% release	10.8	498.38	499.51	113	1.37	13.94
Yamne	-1600	PF 15% release	10.8	497.8	498.94	114	1.25	15.21
Yamne	-1700	PF 15% release	10.8	497.22	498.16	94	1.54	14.83
Yamne	-1800	PF 15% release	10.8	496.64	497.57	93	0.99	23.55
Yamne	-1900	PF 15% release	10.8	496.11	497.15	104	1.01	20.55
Yamne	-2000	PF 15% release	10.8	495.59	496.23	64	1.81	18.52
Average						96.76	1.34	18.28

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 20% release	14.4	510.88	512.16	128	0.92	24.42
Yamne	-100	PF 20% release	14.4	510.47	511.87	140	1.07	19.19
Yamne	-200	PF 20% release	14.4	510.06	511.54	148	1.16	16.78
Yamne	-300	PF 20% release	14.4	509.65	510.89	124	1.84	12.57
Yamne	-400	PF 20% release	14.4	508.54	509.72	118	1.96	12.48
Yamne	-500	PF 20% release	14.4	507.43	508.61	118	1.76	13.8
Yamne	-600	PF 20% release	14.4	506.32	507.34	102	1.96	14.45
Yamne	-700	PF 20% release	14.4	505.3	506.37	107	1.42	18.99
Yamne	-800	PF 20% release	14.4	504.28	505.06	78	1.98	18.59
Yamne	-900	PF 20% release	14.4	503.26	504.16	90	0.95	33.64
Yamne	-1000	PF 20% release	14.4	502.76	503.67	91	1.08	29.1
Yamne	-1100	PF 20% release	14.4	502.25	503.19	94	1	30.58
Yamne	-1200	PF 20% release	14.4	501.75	502.52	77	1.31	28.65
Yamne	-1300	PF 20% release	14.4	500.63	501.62	99	1.39	20.81
Yamne	-1400	PF 20% release	14.4	499.5	500.51	101	1.85	15.43
Yamne	-1500	PF 20% release	14.4	498.38	499.64	126	1.47	15.52
Yamne	-1600	PF 20% release	14.4	497.8	499.07	127	1.34	16.93
Yamne	-1700	PF 20% release	14.4	497.22	498.26	104	1.69	16.37
Yamne	-1800	PF 20% release	14.4	496.64	497.68	104	1.04	26.45
Yamne	-1900	PF 20% release	14.4	496.11	497.26	115	1.11	22.68
Yamne	-2000	PF 20% release	14.4	495.59	496.31	72	1.91	20.79
Average						107.76	1.44	20.39

Reach	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 25% release	17.99	510.88	512.28	140	0.96	26.76
Yamne	-100	PF 25% release	17.99	510.47	512	153	1.13	20.94

Yamne	-200	PF 25% release	17.99	510.06	511.67	161	1.23	18.22
Yamne	-300	PF 25% release	17.99	509.65	511	135	1.96	13.62
Yamne	-400	PF 25% release	17.99	508.54	509.83	129	2.05	13.61
Yamne	-500	PF 25% release	17.99	507.43	508.71	128	1.88	14.92
Yamne	-600	PF 25% release	17.99	506.32	507.43	111	2.05	15.79
Yamne	-700	PF 25% release	17.99	505.3	506.45	115	1.52	20.5
Yamne	-800	PF 25% release	17.99	504.28	505.14	86	2.06	20.36
Yamne	-900	PF 25% release	17.99	503.26	504.24	98	1.01	36.58
Yamne	-1000	PF 25% release	17.99	502.76	503.75	99	1.14	31.75
Yamne	-1100	PF 25% release	17.99	502.25	503.27	102	1.08	32.99
Yamne	-1200	PF 25% release	17.99	501.75	502.59	84	1.36	31.41
Yamne	-1300	PF 25% release	17.99	500.63	501.71	108	1.47	22.6
Yamne	-1400	PF 25% release	17.99	499.5	500.61	111	1.93	16.89
Yamne	-1500	PF 25% release	17.99	498.38	499.75	137	1.55	16.87
Yamne	-1600	PF 25% release	17.99	497.8	499.18	138	1.42	18.38
Yamne	-1700	PF 25% release	17.99	497.22	498.34	112	1.82	17.65
Yamne	-1800	PF 25% release	17.99	496.64	497.78	114	1.09	28.92
Yamne	-1900	PF 25% release	17.99	496.11	497.35	124	1.19	24.48
Yamne	-2000	PF 25% release	17.99	495.59	496.38	79	2	22.73
Yamne	-2100	PF 25% release	17.99	495.06	495.75	69	0.88	36.35
Average						115.14	1.49	22.83

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 30% release	21.59	510.88	512.39	151	0.99	28.84
Yamne	-100	PF 30% release	21.59	510.47	512.11	164	1.17	22.49
Yamne	-200	PF 30% release	21.59	510.06	511.78	172	1.29	19.48
Yamne	-300	PF 30% release	21.59	509.65	511.09	144	2.06	14.56
Yamne	-400	PF 30% release	21.59	508.54	509.92	138	2.14	14.61
Yamne	-500	PF 30% release	21.59	507.43	508.79	136	1.99	15.89
Yamne	-600	PF 30% release	21.59	506.32	507.52	120	2.13	16.97
Yamne	-700	PF 30% release	21.59	505.3	506.53	123	1.61	21.82
Yamne	-800	PF 30% release	21.59	504.28	505.2	92	2.13	21.96
Yamne	-900	PF 30% release	21.59	503.26	504.31	105	1.05	39.23
Yamne	-1000	PF 30% release	21.59	502.76	503.82	106	1.19	33.99
Yamne	-1100	PF 30% release	21.59	502.25	503.33	108	1.14	35.16
Yamne	-1200	PF 30% release	21.59	501.75	502.66	91	1.4	33.89
Yamne	-1300	PF 30% release	21.59	500.63	501.78	115	1.55	24.18
Yamne	-1400	PF 30% release	21.59	499.5	500.69	119	1.99	18.19
Yamne	-1500	PF 30% release	21.59	498.38	499.85	147	1.63	18.06
Yamne	-1600	PF 30% release	21.59	497.8	499.27	147	1.49	19.66
Yamne	-1700	PF 30% release	21.59	497.22	498.42	120	1.92	18.8
Yamne	-1800	PF 30% release	21.59	496.64	497.87	123	1.13	31.09
Yamne	-1900	PF 30% release	21.59	496.11	497.43	132	1.26	26.05
Yamne	-2000	PF 30% release	21.59	495.59	496.44	85	2.07	24.45
Average						125.62	1.59	23.78

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 40% release	28.79	510.88	512.58	170	1.04	32.45

Yamne	-100	PF 40% release	28.79	510.47	512.3	183	1.25	25.17
Yamne	-200	PF 40% release	28.79	510.06	511.97	191	1.39	21.64
Yamne	-300	PF 40% release	28.79	509.65	511.25	160	2.22	16.17
Yamne	-400	PF 40% release	28.79	508.54	510.08	154	2.29	16.31
Yamne	-500	PF 40% release	28.79	507.43	508.94	151	2.17	17.6
Yamne	-600	PF 40% release	28.79	506.32	507.66	134	2.27	18.97
Yamne	-700	PF 40% release	28.79	505.3	506.66	136	1.76	24.11
Yamne	-800	PF 40% release	28.79	504.28	505.32	104	2.26	24.63
Yamne	-900	PF 40% release	28.79	503.26	504.43	117	1.12	43.8
Yamne	-1000	PF 40% release	28.79	502.76	503.95	119	1.28	37.86
Yamne	-1100	PF 40% release	28.79	502.25	503.44	119	1.26	37.64
Yamne	-1200	PF 40% release	28.79	501.75	502.76	101	1.5	36.21
Yamne	-1300	PF 40% release	28.79	500.63	501.91	128	1.66	26.93
Yamne	-1400	PF 40% release	28.79	499.5	500.84	134	2.1	20.46
Yamne	-1500	PF 40% release	28.79	498.38	500.02	164	1.75	20.11
Yamne	-1600	PF 40% release	28.79	497.8	499.44	164	1.61	21.85
Yamne	-1700	PF 40% release	28.79	497.22	498.54	132	2.09	20.79
Yamne	-1800	PF 40% release	28.79	496.64	498.01	137	1.2	34.83
Yamne	-1900	PF 40% release	28.79	496.11	497.56	145	1.38	28.68
Yamne	-2000	PF 40% release	28.79	495.59	496.55	96	2.17	27.57
Average						139.95	1.70	26.37

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 50% release	35.99	510.88	512.74	186	1.09	35.07
Yamne	-100	PF 50% release	35.99	510.47	512.47	200	1.31	27.45
Yamne	-200	PF 50% release	35.99	510.06	512.14	208	1.48	23.48
Yamne	-300	PF 50% release	35.99	509.65	511.39	174	2.36	17.55
Yamne	-400	PF 50% release	35.99	508.54	510.22	168	2.41	17.76
Yamne	-500	PF 50% release	35.99	507.43	509.06	163	2.31	19.04
Yamne	-600	PF 50% release	35.99	506.32	507.78	146	2.39	20.68
Yamne	-700	PF 50% release	35.99	505.3	506.77	147	1.89	26.05
Yamne	-800	PF 50% release	35.99	504.28	505.41	113	2.36	26.94
Yamne	-900	PF 50% release	35.99	503.26	504.54	128	1.18	47.71
Yamne	-1000	PF 50% release	35.99	502.76	504.05	129	1.35	41.16
Yamne	-1100	PF 50% release	35.99	502.25	503.53	128	1.37	39.52
Yamne	-1200	PF 50% release	35.99	501.75	502.86	111	1.6	37.24
Yamne	-1300	PF 50% release	35.99	500.63	502.03	140	1.76	29.29
Yamne	-1400	PF 50% release	35.99	499.5	500.97	147	2.19	22.42
Yamne	-1500	PF 50% release	35.99	498.38	500.16	178	1.85	21.86
Yamne	-1600	PF 50% release	35.99	497.8	499.58	178	1.71	23.72
Yamne	-1700	PF 50% release	35.99	497.22	498.65	143	2.25	22.45
Yamne	-1800	PF 50% release	35.99	496.64	498.14	150	1.26	38.05
Yamne	-1900	PF 50% release	35.99	496.11	497.68	157	1.48	30.97
Yamne	-2000	PF 50% release	35.99	495.59	496.63	104	2.29	30.04
Average						152.29	1.80	28.50

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 100% release	71.98	510.88	513.34	246	1.3	39.8
Yamne	-100	PF 100% release	71.98	510.47	513.09	262	1.53	35.94
Yamne	-200	PF 100% release	71.98	510.06	512.74	268	1.77	30.31
Yamne	-300	PF 100% release	71.98	509.65	511.89	224	2.84	22.65
Yamne	-400	PF 100% release	71.98	508.54	510.72	218	2.85	23.09
Yamne	-500	PF 100% release	71.98	507.43	509.52	209	2.83	24.34
Yamne	-600	PF 100% release	71.98	506.32	508.22	190	2.81	26.95
Yamne	-700	PF 100% release	71.98	505.3	507.16	186	2.34	33.05
Yamne	-800	PF 100% release	71.98	504.28	505.77	149	2.72	35.5
Yamne	-900	PF 100% release	71.98	503.26	504.91	165	1.41	59.35
Yamne	-1000	PF 100% release	71.98	502.76	504.43	167	1.64	49.5
Yamne	-1100	PF 100% release	71.98	502.25	503.89	164	1.73	45.23
Yamne	-1200	PF 100% release	71.98	501.75	503.22	147	1.96	41.29
Yamne	-1300	PF 100% release	71.98	500.63	502.44	181	2.11	36.08
Yamne	-1400	PF 100% release	71.98	499.5	501.45	195	2.48	29.82
Yamne	-1500	PF 100% release	71.98	498.38	500.68	230	2.21	28.29
Yamne	-1600	PF 100% release	71.98	497.8	500.05	225	2.13	30.07
Yamne	-1700	PF 100% release	71.98	497.22	499.12	190	2.55	29.79
Yamne	-1800	PF 100% release	71.98	496.64	498.66	202	1.28	76.91
Yamne	-1900	PF 100% release	71.98	496.11	498.09	198	1.86	39.1
Yamne	-2000	PF 100% release	71.98	495.59	496.96	137	2.69	36.46
Average						197.76	2.14	36.83

Lower Yamne Stage-I HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Lower Yamne Stage-I HEP-Nov to Feb

Note: River sta -100 denotes location along river reach 100 m d/s of Lower Yamne-I dam axis

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 10% release	2.07	405.78	406.19	41	0.66	15.32
Yamne	-100	PF 10% release	2.07	405.35	405.84	49	0.48	17.59
Yamne	-200	PF 10% release	2.07	404.92	405.19	27	1.17	12.92
Yamne	-300	PF 10% release	2.07	404.49	404.93	44	0.21	34.52
Yamne	-400	PF 10% release	2.07	404.32	404.86	54	0.35	21.94
Yamne	-500	PF 10% release	2.07	404.14	404.73	59	0.42	16.69
Yamne	-600	PF 10% release	2.07	403.97	404.47	50	0.71	11.68
Yamne	-700	PF 10% release	2.07	403.43	403.93	50	0.74	11.24
Yamne	-800	PF 10% release	2.07	402.9	403.38	48	0.72	11.87
Yamne	-900	PF 10% release	2.07	402.36	402.8	44	0.71	13.24
Yamne	-1000	PF 10% release	2.07	401.72	402.16	44	0.73	12.82
Yamne	-1100	PF 10% release	2.07	401.08	401.53	45	0.72	12.69
Yamne	-1200	PF 10% release	2.07	400.44	400.89	45	0.76	12.18

Yamne	-1300	PF 10% release	2.07	399.21	399.59	38	1.38	7.92
Yamne	-1400	PF 10% release	2.07	397.99	398.48	49	0.78	10.82
Yamne	-1500	PF 10% release	2.07	396.94	397.24	30	1.23	11.28
Yamne	-1600	PF 10% release	2.07	393.89	394.23	34	1.26	9.85
Yamne	-1700	PF 10% release	2.07	391.03	391.43	40	1.42	7.31
Yamne	-1800	PF 10% release	2.07	388.16	388.86	70	0.61	9.7
Average						45.32	0.79	13.77

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 15% release	3.1	405.78	406.26	48	0.71	18.12
Yamne	-100	PF 15% release	3.1	405.35	405.92	57	0.54	20.27
Yamne	-200	PF 15% release	3.1	404.92	405.24	32	1.27	15.17
Yamne	-300	PF 15% release	3.1	404.49	405.02	53	0.24	35.73
Yamne	-400	PF 15% release	3.1	404.32	404.95	63	0.38	25.67
Yamne	-500	PF 15% release	3.1	404.14	404.82	68	0.47	19.25
Yamne	-600	PF 15% release	3.1	403.97	404.55	58	0.78	13.61
Yamne	-700	PF 15% release	3.1	403.43	404.02	59	0.81	13.09
Yamne	-800	PF 15% release	3.1	402.9	403.46	56	0.8	13.75
Yamne	-900	PF 15% release	3.1	402.36	402.87	51	0.79	15.42
Yamne	-1000	PF 15% release	3.1	401.72	402.23	51	0.82	14.87
Yamne	-1100	PF 15% release	3.1	401.08	401.61	53	0.79	14.85
Yamne	-1200	PF 15% release	3.1	400.44	400.96	52	0.85	14.05
Yamne	-1300	PF 15% release	3.1	399.21	399.66	45	1.47	9.4
Yamne	-1400	PF 15% release	3.1	397.99	398.55	56	0.88	12.47
Yamne	-1500	PF 15% release	3.1	396.94	397.29	35	1.33	13.27
Yamne	-1600	PF 15% release	3.1	393.89	394.28	39	1.4	11.42
Yamne	-1700	PF 15% release	3.1	391.03	391.5	47	1.54	8.59
Yamne	-1800	PF 15% release	3.1	388.16	388.98	82	0.67	11.3
Average						52.89	0.87	15.81

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 20% release	4.13	405.78	406.32	54	0.75	20.39
Yamne	-100	PF 20% release	4.13	405.35	405.98	63	0.59	22.41
Yamne	-200	PF 20% release	4.13	404.92	405.28	36	1.35	17.01
Yamne	-300	PF 20% release	4.13	404.49	405.09	60	0.26	36.74
Yamne	-400	PF 20% release	4.13	404.32	405.03	71	0.4	28.72
Yamne	-500	PF 20% release	4.13	404.14	404.9	76	0.51	21.34
Yamne	-600	PF 20% release	4.13	403.97	404.62	65	0.84	15.15
Yamne	-700	PF 20% release	4.13	403.43	404.08	65	0.87	14.59
Yamne	-800	PF 20% release	4.13	402.9	403.52	62	0.87	15.25
Yamne	-900	PF 20% release	4.13	402.36	402.93	57	0.84	17.23
Yamne	-1000	PF 20% release	4.13	401.72	402.29	57	0.88	16.54
Yamne	-1100	PF 20% release	4.13	401.08	401.67	59	0.84	16.59

Yamne	-1200	PF 20% release	4.13	400.44	401.01	57	0.93	15.56
Yamne	-1300	PF 20% release	4.13	399.21	399.72	51	1.54	10.59
Yamne	-1400	PF 20% release	4.13	397.99	398.62	63	0.95	13.8
Yamne	-1500	PF 20% release	4.13	396.94	397.33	39	1.41	14.89
Yamne	-1600	PF 20% release	4.13	393.89	394.33	44	1.48	12.82
Yamne	-1700	PF 20% release	4.13	391.03	391.55	52	1.63	9.64
Yamne	-1800	PF 20% release	4.13	388.16	389.07	91	0.72	12.6
Average						59.05	0.93	17.47

Reach	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 25% release	5.17	405.78	406.37	59	0.78	22.36
Yamne	-100	PF 25% release	5.17	405.35	406.03	68	0.63	24.21
Yamne	-200	PF 25% release	5.17	404.92	405.31	39	1.40	18.66
Yamne	-300	PF 25% release	5.17	404.49	405.16	67	0.28	37.60
Yamne	-400	PF 25% release	5.17	404.32	405.09	77	0.42	31.31
Yamne	-500	PF 25% release	5.17	404.14	404.96	82	0.55	23.13
Yamne	-600	PF 25% release	5.17	403.97	404.67	70	0.89	16.49
Yamne	-700	PF 25% release	5.17	403.43	404.14	71	0.92	15.87
Yamne	-800	PF 25% release	5.17	402.9	403.57	67	0.92	16.55
Yamne	-900	PF 25% release	5.17	402.36	402.98	62	0.89	18.73
Yamne	-1000	PF 25% release	5.17	401.72	402.34	62	0.93	17.99
Yamne	-1100	PF 25% release	5.17	401.08	401.72	64	0.89	18.10
Yamne	-1200	PF 25% release	5.17	400.44	401.06	62	0.99	16.86
Yamne	-1300	PF 25% release	5.17	399.21	399.77	56	1.59	11.64
Yamne	-1400	PF 25% release	5.17	397.99	398.67	68	1.02	14.93
Yamne	-1500	PF 25% release	5.17	396.94	397.37	43	1.47	16.28
Yamne	-1600	PF 25% release	5.17	393.89	394.37	48	1.55	14.03
Yamne	-1700	PF 25% release	5.17	391.03	391.6	57	1.70	10.55
Yamne	-1800	PF 25% release	5.17	388.16	389.15	99	0.76	13.71
Average						64.26	0.98	18.89

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 30% release	6.2	405.78	406.42	64	0.81	24.06
Yamne	-100	PF 30% release	6.2	405.35	406.07	72	0.66	25.8
Yamne	-200	PF 30% release	6.2	404.92	405.34	42	1.46	20.02
Yamne	-300	PF 30% release	6.2	404.49	405.21	72	0.31	38.36
Yamne	-400	PF 30% release	6.2	404.32	405.15	83	0.44	33.57
Yamne	-500	PF 30% release	6.2	404.14	405.02	88	0.57	24.69
Yamne	-600	PF 30% release	6.2	403.97	404.72	75	0.93	17.67
Yamne	-700	PF 30% release	6.2	403.43	404.19	76	0.97	16.99
Yamne	-800	PF 30% release	6.2	402.9	403.62	72	0.97	17.69
Yamne	-900	PF 30% release	6.2	402.36	403.02	66	0.93	20.05
Yamne	-1000	PF 30% release	6.2	401.72	402.38	66	0.97	19.25
Yamne	-1100	PF 30% release	6.2	401.08	401.77	69	0.92	19.41

Yamne	-1200	PF 30% release	6.2	400.44	401.1	66	1.04	18
Yamne	-1300	PF 30% release	6.2	399.21	399.81	60	1.64	12.55
Yamne	-1400	PF 30% release	6.2	397.99	398.71	72	1.07	15.92
Yamne	-1500	PF 30% release	6.2	396.94	397.4	46	1.53	17.51
Yamne	-1600	PF 30% release	6.2	393.89	394.4	51	1.61	15.07
Yamne	-1700	PF 30% release	6.2	391.03	391.65	62	1.77	11.35
Yamne	-1800	PF 30% release	6.2	388.16	389.22	106	0.79	14.68
Average						68.84	1.02	20.14

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 40% release	8.27	405.78	406.5	72	0.85	27.01
Yamne	-100	PF 40% release	8.27	405.35	406.15	80	0.73	28.52
Yamne	-200	PF 40% release	8.27	404.92	405.4	48	1.55	22.46
Yamne	-300	PF 40% release	8.27	404.49	405.31	82	0.34	39.68
Yamne	-400	PF 40% release	8.27	404.32	405.25	93	0.47	37.46
Yamne	-500	PF 40% release	8.27	404.14	405.11	97	0.63	27.33
Yamne	-600	PF 40% release	8.27	403.97	404.81	84	1	19.68
Yamne	-700	PF 40% release	8.27	403.43	404.28	85	1.04	18.93
Yamne	-800	PF 40% release	8.27	402.9	403.7	80	1.05	19.65
Yamne	-900	PF 40% release	8.27	402.36	403.1	74	1	22.34
Yamne	-1000	PF 40% release	8.27	401.72	402.46	74	1.05	21.46
Yamne	-1100	PF 40% release	8.27	401.08	401.85	77	0.99	21.65
Yamne	-1200	PF 40% release	8.27	400.44	401.18	74	1.13	19.95
Yamne	-1300	PF 40% release	8.27	399.21	399.89	68	1.73	14.14
Yamne	-1400	PF 40% release	8.27	397.99	398.79	80	1.17	17.61
Yamne	-1500	PF 40% release	8.27	396.94	397.46	52	1.62	19.64
Yamne	-1600	PF 40% release	8.27	393.89	394.47	58	1.7	16.92
Yamne	-1700	PF 40% release	8.27	391.03	391.72	69	1.87	12.74
Yamne	-1800	PF 40% release	8.27	388.16	389.35	119	0.85	16.36
Average						77.16	1.09	22.29

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 50% release	10.33	405.78	406.57	79	0.89	29.52
Yamne	-100	PF 50% release	10.33	405.35	406.21	86	0.78	30.8
Yamne	-200	PF 50% release	10.33	404.92	405.44	52	1.62	24.57
Yamne	-300	PF 50% release	10.33	404.49	405.39	90	0.38	40.79
Yamne	-400	PF 50% release	10.33	404.32	405.33	101	0.5	39.84
Yamne	-500	PF 50% release	10.33	404.14	405.19	105	0.67	29.61
Yamne	-600	PF 50% release	10.33	403.97	404.88	91	1.06	21.38
Yamne	-700	PF 50% release	10.33	403.43	404.35	92	1.1	20.55
Yamne	-800	PF 50% release	10.33	402.9	403.77	87	1.12	21.27
Yamne	-900	PF 50% release	10.33	402.36	403.16	80	1.06	24.29
Yamne	-1000	PF 50% release	10.33	401.72	402.52	80	1.1	23.35

Yamne	-1100	PF 50% release	10.33	401.08	401.92	84	1.05	23.55
Yamne	-1200	PF 50% release	10.33	400.44	401.24	80	1.2	21.59
Yamne	-1300	PF 50% release	10.33	399.21	399.96	75	1.79	15.53
Yamne	-1400	PF 50% release	10.33	397.99	398.85	86	1.26	19
Yamne	-1500	PF 50% release	10.33	396.94	397.51	57	1.69	21.49
Yamne	-1600	PF 50% release	10.33	393.89	394.52	63	1.78	18.49
Yamne	-1700	PF 50% release	10.33	391.03	391.79	76	1.95	13.93
Yamne	-1800	PF 50% release	10.33	388.16	389.45	129	0.9	17.77
Average						83.84	1.15	24.07

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 100% release	20.66	405.78	406.82	104	1.02	39.07
Yamne	-100	PF 100% release	20.66	405.35	406.37	102	1.12	36.24
Yamne	-200	PF 100% release	20.66	404.92	405.78	86	1.2	39.02
Yamne	-300	PF 100% release	20.66	404.49	405.7	121	0.51	44.91
Yamne	-400	PF 100% release	20.66	404.32	405.63	131	0.62	44.91
Yamne	-500	PF 100% release	20.66	404.14	405.49	135	0.81	38
Yamne	-600	PF 100% release	20.66	403.97	405.16	119	1.25	27.8
Yamne	-700	PF 100% release	20.66	403.43	404.62	119	1.31	26.59
Yamne	-800	PF 100% release	20.66	402.9	404.02	112	1.35	27.39
Yamne	-900	PF 100% release	20.66	402.36	403.4	104	1.26	31.47
Yamne	-1000	PF 100% release	20.66	401.72	402.76	104	1.3	30.38
Yamne	-1100	PF 100% release	20.66	401.08	402.17	109	1.24	30.61
Yamne	-1200	PF 100% release	20.66	400.44	401.46	102	1.46	27.76
Yamne	-1300	PF 100% release	20.66	399.21	400.2	99	2.02	20.67
Yamne	-1400	PF 100% release	20.66	397.99	399.09	110	1.56	24.13
Yamne	-1500	PF 100% release	20.66	396.94	397.69	75	1.94	28.34
Yamne	-1600	PF 100% release	20.66	393.89	394.72	83	2.04	24.45
Yamne	-1700	PF 100% release	20.66	391.03	392.03	100	2.24	18.4
Yamne	-1800	PF 100% release	20.66	388.16	389.83	167	1.08	22.98
Average						109.58	1.33	30.69

Monsoon

Lower Yamne Stage-I HEP-June to September

Note: River sta -100 denotes location along river reach 100 m d/s of Lower Yamne-I dam axis

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 10% release	13.2	405.78	406.65	87	0.93	32.65
Yamne	-100	PF 10% release	13.2	405.35	406.26	91	0.89	32.62
Yamne	-200	PF 10% release	13.2	404.92	405.55	63	1.42	29.68
Yamne	-300	PF 10% release	13.2	404.49	405.49	100	0.42	42.13
Yamne	-400	PF 10% release	13.2	404.32	405.43	111	0.54	42.06
Yamne	-500	PF 10% release	13.2	404.14	405.29	115	0.71	32.34
Yamne	-600	PF 10% release	13.2	403.97	404.97	100	1.12	23.47
Yamne	-700	PF 10% release	13.2	403.43	404.43	100	1.17	22.51

Yamne	-800	PF 10% release	13.2	402.9	403.85	95	1.19	23.28
Yamne	-900	PF 10% release	13.2	402.36	403.24	88	1.13	26.6
Yamne	-1000	PF 10% release	13.2	401.72	402.6	88	1.17	25.62
Yamne	-1100	PF 10% release	13.2	401.08	402	92	1.11	25.86
Yamne	-1200	PF 10% release	13.2	400.44	401.31	87	1.29	23.61
Yamne	-1300	PF 10% release	13.2	399.21	400.04	83	1.87	17.18
Yamne	-1400	PF 10% release	13.2	397.99	398.93	94	1.35	20.69
Yamne	-1500	PF 10% release	13.2	396.94	397.57	63	1.78	23.67
Yamne	-1600	PF 10% release	13.2	393.89	394.59	70	1.87	20.39
Yamne	-1700	PF 10% release	13.2	391.03	391.87	84	2.05	15.38
Yamne	-1800	PF 10% release	13.2	388.16	389.57	141	0.96	19.47
Average						92.21	1.21	26.27

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 15% release	19.81	405.78	406.8	102	1.01	38.45
Yamne	-100	PF 15% release	19.81	405.35	406.36	101	1.1	35.89
Yamne	-200	PF 15% release	19.81	404.92	405.75	83	1.21	38.5
Yamne	-300	PF 15% release	19.81	404.49	405.68	119	0.5	44.63
Yamne	-400	PF 15% release	19.81	404.32	405.61	129	0.61	44.62
Yamne	-500	PF 15% release	19.81	404.14	405.47	133	0.8	37.43
Yamne	-600	PF 15% release	19.81	403.97	405.14	117	1.24	27.36
Yamne	-700	PF 15% release	19.81	403.43	404.6	117	1.3	26.18
Yamne	-800	PF 15% release	19.81	402.9	404	110	1.33	26.98
Yamne	-900	PF 15% release	19.81	402.36	403.38	102	1.25	30.98
Yamne	-1000	PF 15% release	19.81	401.72	402.75	103	1.29	29.9
Yamne	-1100	PF 15% release	19.81	401.08	402.15	107	1.23	30.14
Yamne	-1200	PF 15% release	19.81	400.44	401.45	101	1.44	27.33
Yamne	-1300	PF 15% release	19.81	399.21	400.19	98	2	20.33
Yamne	-1400	PF 15% release	19.81	397.99	399.07	108	1.54	23.76
Yamne	-1500	PF 15% release	19.81	396.94	397.68	74	1.92	27.92
Yamne	-1600	PF 15% release	19.81	393.89	394.71	82	2.02	24.02
Yamne	-1700	PF 15% release	19.81	391.03	392.01	98	2.22	18.08
Yamne	-1800	PF 15% release	19.81	388.16	389.8	164	1.07	22.62
Average						107.79	1.32	30.27

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 20% release	26.41	405.78	406.93	115	1.07	43.07
Yamne	-100	PF 20% release	26.41	405.35	406.43	108	1.27	38.6
Yamne	-200	PF 20% release	26.41	404.92	405.91	99	1.16	41.9
Yamne	-300	PF 20% release	26.41	404.49	405.83	134	0.57	46.67
Yamne	-400	PF 20% release	26.41	404.32	405.76	144	0.67	46.7
Yamne	-500	PF 20% release	26.41	404.14	405.61	147	0.87	41.52
Yamne	-600	PF 20% release	26.41	403.97	405.27	130	1.33	30.5

Yamne	-700	PF 20% release	26.41	403.43	404.73	130	1.4	29.12
Yamne	-800	PF 20% release	26.41	402.9	404.12	122	1.44	29.94
Yamne	-900	PF 20% release	26.41	402.36	403.5	114	1.34	34.5
Yamne	-1000	PF 20% release	26.41	401.72	402.87	115	1.38	33.36
Yamne	-1100	PF 20% release	26.41	401.08	402.27	119	1.32	33.57
Yamne	-1200	PF 20% release	26.41	400.44	401.56	112	1.56	30.33
Yamne	-1300	PF 20% release	26.41	399.21	400.31	110	2.11	22.86
Yamne	-1400	PF 20% release	26.41	397.99	399.18	119	1.69	26.22
Yamne	-1500	PF 20% release	26.41	396.94	397.77	83	2.04	31.28
Yamne	-1600	PF 20% release	26.41	393.89	394.81	92	2.12	27.06
Yamne	-1700	PF 20% release	26.41	391.03	392.14	111	2.34	20.37
Yamne	-1800	PF 20% release	26.41	388.16	389.98	182	1.15	25.16
Average						120.32	1.41	33.30
Reach	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 25% release	33.01	405.78	407.03	125	1.13	46.88
Yamne	-100	PF 25% release	33.01	405.35	406.51	116	1.38	41.38
Yamne	-200	PF 25% release	33.01	404.92	406.04	112	1.16	43.89
Yamne	-300	PF 25% release	33.01	404.49	405.96	147	0.62	48.43
Yamne	-400	PF 25% release	33.01	404.32	405.88	156	0.73	48.48
Yamne	-500	PF 25% release	33.01	404.14	405.74	160	0.92	44.97
Yamne	-600	PF 25% release	33.01	403.97	405.39	142	1.41	33.18
Yamne	-700	PF 25% release	33.01	403.43	404.84	141	1.48	31.63
Yamne	-800	PF 25% release	33.01	402.9	404.22	132	1.54	32.44
Yamne	-900	PF 25% release	33.01	402.36	403.6	124	1.42	37.47
Yamne	-1000	PF 25% release	33.01	401.72	402.97	125	1.46	36.23
Yamne	-1100	PF 25% release	33.01	401.08	402.38	130	1.39	36.31
Yamne	-1200	PF 25% release	33.01	400.44	401.65	121	1.66	32.89
Yamne	-1300	PF 25% release	33.01	399.21	400.42	121	2.19	25.10
Yamne	-1400	PF 25% release	33.01	397.99	399.27	128	1.82	28.21
Yamne	-1500	PF 25% release	33.01	396.94	397.85	91	2.11	34.35
Yamne	-1600	PF 25% release	33.01	393.89	394.9	101	2.22	29.58
Yamne	-1700	PF 25% release	33.01	391.03	392.24	121	2.44	22.27
Yamne	-1800	PF 25% release	33.01	388.16	390.14	198	1.22	27.32
Average						131.11	1.49	35.84

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 30% release	39.61	405.78	407.11	133	1.18	50.16
Yamne	-100	PF 30% release	39.61	405.35	406.59	124	1.45	44.12
Yamne	-200	PF 30% release	39.61	404.92	406.16	124	1.18	45.64
Yamne	-300	PF 30% release	39.61	404.49	406.08	159	0.68	49.97
Yamne	-400	PF 30% release	39.61	404.32	405.99	167	0.78	50.03

Yamne	-500	PF 30% release	39.61	404.14	405.84	170	0.97	47.59
Yamne	-600	PF 30% release	39.61	403.97	405.49	152	1.47	35.54
Yamne	-700	PF 30% release	39.61	403.43	404.94	151	1.56	33.83
Yamne	-800	PF 30% release	39.61	402.9	404.31	141	1.62	34.61
Yamne	-900	PF 30% release	39.61	402.36	403.69	133	1.49	40
Yamne	-1000	PF 30% release	39.61	401.72	403.05	133	1.53	38.5
Yamne	-1100	PF 30% release	39.61	401.08	402.47	139	1.47	38.16
Yamne	-1200	PF 30% release	39.61	400.44	401.74	130	1.73	35.15
Yamne	-1300	PF 30% release	39.61	399.21	400.51	130	2.27	26.98
Yamne	-1400	PF 30% release	39.61	397.99	399.36	137	1.93	30.06
Yamne	-1500	PF 30% release	39.61	396.94	397.92	98	2.21	36.84
Yamne	-1600	PF 30% release	39.61	393.89	394.97	108	2.31	31.76
Yamne	-1700	PF 30% release	39.61	391.03	392.33	130	2.53	23.95
Yamne	-1800	PF 30% release	39.61	388.16	390.28	212	1.28	29.22
Average						140.58	1.56	38.01

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 40% release	52.82	405.78	407.27	149	1.27	54.95
Yamne	-100	PF 40% release	52.82	405.35	406.74	139	1.52	53.35
Yamne	-200	PF 40% release	52.82	404.92	406.36	144	1.22	48.65
Yamne	-300	PF 40% release	52.82	404.49	406.27	178	0.77	52.61
Yamne	-400	PF 40% release	52.82	404.32	406.18	186	0.88	52.69
Yamne	-500	PF 40% release	52.82	404.14	406.02	188	1.06	50.9
Yamne	-600	PF 40% release	52.82	403.97	405.66	169	1.58	39.62
Yamne	-700	PF 40% release	52.82	403.43	405.11	168	1.68	37.62
Yamne	-800	PF 40% release	52.82	402.9	404.47	157	1.75	38.39
Yamne	-900	PF 40% release	52.82	402.36	403.84	148	1.6	44.45
Yamne	-1000	PF 40% release	52.82	401.72	403.21	149	1.65	42.21
Yamne	-1100	PF 40% release	52.82	401.08	402.62	154	1.6	41.37
Yamne	-1200	PF 40% release	52.82	400.44	401.87	143	1.9	37.69
Yamne	-1300	PF 40% release	52.82	399.21	400.67	146	2.39	30.37
Yamne	-1400	PF 40% release	52.82	397.99	399.49	150	2.13	33.02
Yamne	-1500	PF 40% release	52.82	396.94	398.04	110	2.32	41.45
Yamne	-1600	PF 40% release	52.82	393.89	395.1	121	2.48	34.09
Yamne	-1700	PF 40% release	52.82	391.03	392.49	146	2.69	26.85
Yamne	-1800	PF 40% release	52.82	388.16	390.52	236	1.38	32.48
Average						156.89	1.68	41.72

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 50% release	66.02	405.78	407.4	162	1.35	59.04
Yamne	-100	PF 50% release	66.02	405.35	406.9	155	1.5	68.19
Yamne	-200	PF 50% release	66.02	404.92	406.53	161	1.28	51.24
Yamne	-300	PF 50% release	66.02	404.49	406.44	195	0.85	54.88

Yamne	-400	PF 50% release	66.02	404.32	406.34	202	0.96	54.97
Yamne	-500	PF 50% release	66.02	404.14	406.18	204	1.14	53.35
Yamne	-600	PF 50% release	66.02	403.97	405.81	184	1.66	43.11
Yamne	-700	PF 50% release	66.02	403.43	405.25	182	1.78	40.83
Yamne	-800	PF 50% release	66.02	402.9	404.6	170	1.87	41.6
Yamne	-900	PF 50% release	66.02	402.36	403.97	161	1.69	48.23
Yamne	-1000	PF 50% release	66.02	401.72	403.34	162	1.75	45.46
Yamne	-1100	PF 50% release	66.02	401.08	402.75	167	1.7	44.2
Yamne	-1200	PF 50% release	66.02	400.44	402	156	2.03	39.92
Yamne	-1300	PF 50% release	66.02	399.21	400.81	160	2.49	33.26
Yamne	-1400	PF 50% release	66.02	397.99	399.6	161	2.3	35.53
Yamne	-1500	PF 50% release	66.02	396.94	398.14	120	2.43	45.3
Yamne	-1600	PF 50% release	66.02	393.89	395.21	132	2.62	36.13
Yamne	-1700	PF 50% release	66.02	391.03	392.63	160	2.81	29.38
Yamne	-1800	PF 50% release	66.02	388.16	390.72	256	1.46	35.26
Average						171.05	1.77	45.26

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 100% release	132.05	405.78	407.84	206	1.7	70.58
Yamne	-100	PF 100% release	132.05	405.35	407.52	217	1.42	88.43
Yamne	-200	PF 100% release	132.05	404.92	407.28	236	1.19	109.31
Yamne	-300	PF 100% release	132.05	404.49	407.12	263	0.97	132.65
Yamne	-400	PF 100% release	132.05	404.32	406.94	262	1.26	62.35
Yamne	-500	PF 100% release	132.05	404.14	406.76	262	1.45	61.51
Yamne	-600	PF 100% release	132.05	403.97	406.35	238	1.99	55.65
Yamne	-700	PF 100% release	132.05	403.43	405.76	233	2.17	51.21
Yamne	-800	PF 100% release	132.05	402.9	405.06	216	2.35	48.46
Yamne	-900	PF 100% release	132.05	402.36	404.46	210	2	62.52
Yamne	-1000	PF 100% release	132.05	401.72	403.84	212	2.07	57.84
Yamne	-1100	PF 100% release	132.05	401.08	403.26	218	2.06	54.97
Yamne	-1200	PF 100% release	132.05	400.44	402.46	202	2.49	48.51
Yamne	-1300	PF 100% release	132.05	399.21	401.31	210	2.89	42.28
Yamne	-1400	PF 100% release	132.05	397.99	400.01	202	2.94	44.4
Yamne	-1500	PF 100% release	132.05	396.94	398.51	157	2.86	55.51
Yamne	-1600	PF 100% release	132.05	393.89	395.65	176	3.09	44.18
Yamne	-1700	PF 100% release	132.05	391.03	393.13	210	3.25	38.05
Yamne	-1800	PF 100% release	132.05	388.16	391.45	329	1.77	43.72
Average						224.16	2.10	61.69

Other 4 months

Lower Yamne Stage-I HEP-Oct-Mar-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Lower Yamne-I dam axis

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 10% release	7.86	405.78	406.48	70	0.84	26.47

Yamne	-100	PF 10% release	7.86	405.35	406.13	78	0.72	28.01
Yamne	-200	PF 10% release	7.86	404.92	405.39	47	1.53	22.04
Yamne	-300	PF 10% release	7.86	404.49	405.29	80	0.34	39.44
Yamne	-400	PF 10% release	7.86	404.32	405.23	91	0.47	36.76
Yamne	-500	PF 10% release	7.86	404.14	405.09	95	0.61	26.87
Yamne	-600	PF 10% release	7.86	403.97	404.79	82	0.99	19.31
Yamne	-700	PF 10% release	7.86	403.43	404.26	83	1.02	18.57
Yamne	-800	PF 10% release	7.86	402.9	403.68	78	1.03	19.29
Yamne	-900	PF 10% release	7.86	402.36	403.08	72	0.99	21.91
Yamne	-1000	PF 10% release	7.86	401.72	402.44	72	1.03	21.06
Yamne	-1100	PF 10% release	7.86	401.08	401.84	76	0.98	21.23
Yamne	-1200	PF 10% release	7.86	400.44	401.16	72	1.11	19.6
Yamne	-1300	PF 10% release	7.86	399.21	399.88	67	1.71	13.85
Yamne	-1400	PF 10% release	7.86	397.99	398.77	78	1.15	17.3
Yamne	-1500	PF 10% release	7.86	396.94	397.45	51	1.6	19.25
Yamne	-1600	PF 10% release	7.86	393.89	394.46	57	1.69	16.58
Yamne	-1700	PF 10% release	7.86	391.03	391.71	68	1.85	12.48
Yamne	-1800	PF 10% release	7.86	388.16	389.32	116	0.84	16.06
Average						75.42	1.08	21.90

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 15% release	11.8	405.78	406.61	83	0.91	31.16
Yamne	-100	PF 15% release	11.8	405.35	406.24	89	0.83	31.91
Yamne	-200	PF 15% release	11.8	404.92	405.49	57	1.54	26.92
Yamne	-300	PF 15% release	11.8	404.49	405.45	96	0.4	41.5
Yamne	-400	PF 15% release	11.8	404.32	405.38	106	0.52	41.09
Yamne	-500	PF 15% release	11.8	404.14	405.24	110	0.69	31.07
Yamne	-600	PF 15% release	11.8	403.97	404.93	96	1.09	22.48
Yamne	-700	PF 15% release	11.8	403.43	404.39	96	1.14	21.59
Yamne	-800	PF 15% release	11.8	402.9	403.81	91	1.16	22.33
Yamne	-900	PF 15% release	11.8	402.36	403.2	84	1.09	25.55
Yamne	-1000	PF 15% release	11.8	401.72	402.56	84	1.14	24.55
Yamne	-1100	PF 15% release	11.8	401.08	401.96	88	1.08	24.79
Yamne	-1200	PF 15% release	11.8	400.44	401.28	84	1.25	22.67
Yamne	-1300	PF 15% release	11.8	399.21	400	79	1.83	16.4
Yamne	-1400	PF 15% release	11.8	397.99	398.89	90	1.31	19.9
Yamne	-1500	PF 15% release	11.8	396.94	397.54	60	1.74	22.64
Yamne	-1600	PF 15% release	11.8	393.89	394.55	66	1.83	19.49
Yamne	-1700	PF 15% release	11.8	391.03	391.83	80	1.99	14.76
Yamne	-1800	PF 15% release	11.8	388.16	389.51	135	0.93	18.67
Average						88.11	1.18	25.24

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 20% release	15.73	405.78	406.71	93	0.96	35.04

Yamne	-100	PF 20% release	15.73	405.35	406.3	95	0.97	33.96
Yamne	-200	PF 20% release	15.73	404.92	405.64	72	1.3	33.86
Yamne	-300	PF 20% release	15.73	404.49	405.57	108	0.45	43.15
Yamne	-400	PF 20% release	15.73	404.32	405.5	118	0.57	43.12
Yamne	-500	PF 20% release	15.73	404.14	405.36	122	0.75	34.45
Yamne	-600	PF 20% release	15.73	403.97	405.04	107	1.17	25.08
Yamne	-700	PF 20% release	15.73	403.43	404.5	107	1.23	24.02
Yamne	-800	PF 20% release	15.73	402.9	403.91	101	1.25	24.82
Yamne	-900	PF 20% release	15.73	402.36	403.3	94	1.18	28.38
Yamne	-1000	PF 20% release	15.73	401.72	402.66	94	1.22	27.39
Yamne	-1100	PF 20% release	15.73	401.08	402.06	98	1.16	27.62
Yamne	-1200	PF 20% release	15.73	400.44	401.37	93	1.35	25.15
Yamne	-1300	PF 20% release	15.73	399.21	400.1	89	1.92	18.47
Yamne	-1400	PF 20% release	15.73	397.99	398.99	100	1.43	21.97
Yamne	-1500	PF 20% release	15.73	396.94	397.61	67	1.84	25.42
Yamne	-1600	PF 20% release	15.73	393.89	394.64	75	1.91	22.02
Yamne	-1700	PF 20% release	15.73	391.03	391.93	90	2.11	16.55
Yamne	-1800	PF 20% release	15.73	388.16	389.67	151	1.01	20.77
Average						98.63	1.25	27.96

Reach	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 25% release	19.66	405.78	406.8	102	1.01	38.34
Yamne	-100	PF 25% release	19.66	405.35	406.35	100	1.09	35.83
Yamne	-200	PF 25% release	19.66	404.92	405.75	83	1.21	38.41
Yamne	-300	PF 25% release	19.66	404.49	405.67	118	0.5	44.58
Yamne	-400	PF 25% release	19.66	404.32	405.6	128	0.61	44.57
Yamne	-500	PF 25% release	19.66	404.14	405.46	132	0.8	37.32
Yamne	-600	PF 25% release	19.66	403.97	405.13	116	1.24	27.28
Yamne	-700	PF 25% release	19.66	403.43	404.59	116	1.3	26.11
Yamne	-800	PF 25% release	19.66	402.9	404	110	1.33	26.9
Yamne	-900	PF 25% release	19.66	402.36	403.38	102	1.25	30.89
Yamne	-1000	PF 25% release	19.66	401.72	402.74	102	1.29	29.81
Yamne	-1100	PF 25% release	19.66	401.08	402.15	107	1.22	30.05
Yamne	-1200	PF 25% release	19.66	400.44	401.44	100	1.44	27.26
Yamne	-1300	PF 25% release	19.66	399.21	400.18	97	2	20.26
Yamne	-1400	PF 25% release	19.66	397.99	399.07	108	1.54	23.71
Yamne	-1500	PF 25% release	19.66	396.94	397.68	74	1.92	27.81
Yamne	-1600	PF 25% release	19.66	393.89	394.71	82	2.02	23.95
Yamne	-1700	PF 25% release	19.66	391.03	392.01	98	2.22	18.02
Yamne	-1800	PF 25% release	19.66	388.16	389.8	164	1.07	22.56
Average						107.32	1.32	30.19

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 30% release	23.59	405.78	406.88	110	1.05	41.19

Yamne	-100	PF 30% release	23.59	405.35	406.4	105	1.2	37.44
Yamne	-200	PF 30% release	23.59	404.92	405.85	93	1.17	40.72
Yamne	-300	PF 30% release	23.59	404.49	405.77	128	0.54	45.85
Yamne	-400	PF 30% release	23.59	404.32	405.7	138	0.65	45.86
Yamne	-500	PF 30% release	23.59	404.14	405.55	141	0.84	39.88
Yamne	-600	PF 30% release	23.59	403.97	405.22	125	1.29	29.22
Yamne	-700	PF 30% release	23.59	403.43	404.68	125	1.36	27.93
Yamne	-800	PF 30% release	23.59	402.9	404.07	117	1.4	28.74
Yamne	-900	PF 30% release	23.59	402.36	403.45	109	1.31	33.06
Yamne	-1000	PF 30% release	23.59	401.72	402.82	110	1.34	31.96
Yamne	-1100	PF 30% release	23.59	401.08	402.22	114	1.28	32.15
Yamne	-1200	PF 30% release	23.59	400.44	401.51	107	1.51	29.13
Yamne	-1300	PF 30% release	23.59	399.21	400.26	105	2.07	21.82
Yamne	-1400	PF 30% release	23.59	397.99	399.14	115	1.63	25.24
Yamne	-1500	PF 30% release	23.59	396.94	397.73	79	2	29.88
Yamne	-1600	PF 30% release	23.59	393.89	394.77	88	2.1	25.73
Yamne	-1700	PF 30% release	23.59	391.03	392.09	106	2.28	19.47
Yamne	-1800	PF 30% release	23.59	388.16	389.91	175	1.12	24.13
Average						115.26	1.38	32.07

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 40% release	31.46	405.78	407	122	1.12	46.04
Yamne	-100	PF 40% release	31.46	405.35	406.49	114	1.35	40.73
Yamne	-200	PF 40% release	31.46	404.92	406.01	109	1.16	43.44
Yamne	-300	PF 40% release	31.46	404.49	405.93	144	0.61	48.04
Yamne	-400	PF 40% release	31.46	404.32	405.85	153	0.72	48.08
Yamne	-500	PF 40% release	31.46	404.14	405.71	157	0.91	44.2
Yamne	-600	PF 40% release	31.46	403.97	405.36	139	1.39	32.58
Yamne	-700	PF 40% release	31.46	403.43	404.82	139	1.47	31.07
Yamne	-800	PF 40% release	31.46	402.9	404.2	130	1.52	31.88
Yamne	-900	PF 40% release	31.46	402.36	403.58	122	1.4	36.8
Yamne	-1000	PF 40% release	31.46	401.72	402.94	122	1.44	35.64
Yamne	-1100	PF 40% release	31.46	401.08	402.36	128	1.37	35.82
Yamne	-1200	PF 40% release	31.46	400.44	401.63	119	1.64	32.3
Yamne	-1300	PF 40% release	31.46	399.21	400.39	118	2.17	24.61
Yamne	-1400	PF 40% release	31.46	397.99	399.25	126	1.8	27.75
Yamne	-1500	PF 40% release	31.46	396.94	397.83	89	2.09	33.7
Yamne	-1600	PF 40% release	31.46	393.89	394.88	99	2.22	28.92
Yamne	-1700	PF 40% release	31.46	391.03	392.22	119	2.42	21.83
Yamne	-1800	PF 40% release	31.46	388.16	390.11	195	1.2	26.84
Average						128.63	1.47	35.28

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 50% release	39.32	405.78	407.11	133	1.18	50.02
Yamne	-100	PF 50% release	39.32	405.35	406.58	123	1.45	44
Yamne	-200	PF 50% release	39.32	404.92	406.16	124	1.18	45.56
Yamne	-300	PF 50% release	39.32	404.49	406.07	158	0.68	49.91
Yamne	-400	PF 50% release	39.32	404.32	405.99	167	0.78	49.97
Yamne	-500	PF 50% release	39.32	404.14	405.84	170	0.97	47.51
Yamne	-600	PF 50% release	39.32	403.97	405.48	151	1.47	35.44
Yamne	-700	PF 50% release	39.32	403.43	404.93	150	1.55	33.73
Yamne	-800	PF 50% release	39.32	402.9	404.31	141	1.61	34.56
Yamne	-900	PF 50% release	39.32	402.36	403.68	132	1.49	39.89
Yamne	-1000	PF 50% release	39.32	401.72	403.05	133	1.53	38.41
Yamne	-1100	PF 50% release	39.32	401.08	402.46	138	1.47	38.09
Yamne	-1200	PF 50% release	39.32	400.44	401.73	129	1.73	35.09
Yamne	-1300	PF 50% release	39.32	399.21	400.5	129	2.27	26.9
Yamne	-1400	PF 50% release	39.32	397.99	399.35	136	1.92	29.98
Yamne	-1500	PF 50% release	39.32	396.94	397.91	97	2.2	36.72
Yamne	-1600	PF 50% release	39.32	393.89	394.97	108	2.3	31.7
Yamne	-1700	PF 50% release	39.32	391.03	392.33	130	2.53	23.88
Yamne	-1800	PF 50% release	39.32	388.16	390.27	211	1.28	29.14
Average						140.00	1.56	37.92

River	Ch d/s of Lower Yamne-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 100% release	78.64	405.78	407.49	171	1.44	61.83
Yamne	-100	PF 100% release	78.64	405.35	407.02	167	1.5	72.8
Yamne	-200	PF 100% release	78.64	404.92	406.68	176	1.32	53.43
Yamne	-300	PF 100% release	78.64	404.49	406.58	209	0.92	56.81
Yamne	-400	PF 100% release	78.64	404.32	406.48	216	1.03	56.9
Yamne	-500	PF 100% release	78.64	404.14	406.31	217	1.21	55.31
Yamne	-600	PF 100% release	78.64	403.97	405.93	196	1.74	46.03
Yamne	-700	PF 100% release	78.64	403.43	405.37	194	1.87	43.44
Yamne	-800	PF 100% release	78.64	402.9	404.7	180	1.97	43.42
Yamne	-900	PF 100% release	78.64	402.36	404.08	172	1.77	51.46
Yamne	-1000	PF 100% release	78.64	401.72	403.45	173	1.82	48.24
Yamne	-1100	PF 100% release	78.64	401.08	402.87	179	1.79	46.61
Yamne	-1200	PF 100% release	78.64	400.44	402.1	166	2.14	41.84
Yamne	-1300	PF 100% release	78.64	399.21	400.92	171	2.58	35.69
Yamne	-1400	PF 100% release	78.64	397.99	399.7	171	2.44	37.62
Yamne	-1500	PF 100% release	78.64	396.94	398.23	129	2.52	48.6
Yamne	-1600	PF 100% release	78.64	393.89	395.31	142	2.73	37.92
Yamne	-1700	PF 100% release	78.64	391.03	392.74	171	2.93	31.37
Yamne	-1800	PF 100% release	78.64	388.16	390.89	273	1.53	37.6
Average						182.79	1.86	47.73

Lower Yamne Stage-II HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Lower Yamne Stage-II-Nov to Feb

Note: River sta -100 denotes location along river reach 100 m d/s of Lower Yamne-II dam axis

River	Ch d/s of Lower Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 10% release	2.45	294.32	294.54	22	1.04	21.36
Yamne	-100	PF 10% release	2.45	290	290.3	30	1.23	13.2
Yamne	-200	PF 10% release	2.45	285.68	286.03	35	1.32	10.74
Yamne	-300	PF 10% release	2.45	281.36	281.78	42	1.12	10.52
Yamne	-400	PF 10% release	2.45	279.42	279.82	40	1.29	9.54
Yamne	-500	PF 10% release	2.45	277.47	277.9	43	1.14	10.02
Yamne	-600	PF 10% release	2.45	275.53	275.92	39	1.3	9.65
Yamne	-700	PF 10% release	2.45	274.18	274.64	46	0.85	12.5
Yamne	-800	PF 10% release	2.45	272.84	273.17	33	1.31	11.11
Yamne	-900	PF 10% release	2.45	271.49	271.89	40	0.65	18.79
Yamne	-1000	PF 10% release	2.45	270.81	271.22	41	0.77	15.71
Yamne	-1100	PF 10% release	2.45	270.13	270.6	47	0.68	15.4
Yamne	-1200	PF 10% release	2.45	269.45	269.89	44	0.91	12.36
Yamne	-1300	PF 10% release	2.45	268	268.35	35	1.22	11.57
Yamne	-1400	PF 10% release	2.45	266.55	266.93	38	0.81	15.82
Yamne	-1500	PF 10% release	2.45	265.1	265.38	28	1.13	15.56
Yamne	-1600	PF 10% release	2.45	262.99	263.34	35	0.97	14.57
Yamne	-1700	PF 10% release	2.45	260.89	261.21	32	1.28	11.76
Yamne	-1800	PF 10% release	2.45	258.78	259.28	50	0.6	16.38
Yamne	-1900	PF 10% release	2.45	258.3	258.86	56	0.72	12.18
Yamne	-2000	PF 10% release	2.45	257.83	258.48	65	0.68	10.99
Yamne	-2100	PF 10% release	2.45	257.35	257.94	59	1.03	7.97
Yamne	-2200	PF 10% release	2.45	256.48	257.05	57	1.03	8.43
Yamne	-2300	PF 10% release	2.45	255.62	256.14	52	0.97	9.57
Yamne	-2400	PF 10% release	2.45	254.75	255.15	40	0.9	13.74
Average						41.96	1.00	12.78

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 15% release	3.67	294.32	294.58	26	1.14	24.94
Yamne	-100	PF 15% release	3.67	290	290.35	35	1.34	15.51
Yamne	-200	PF 15% release	3.67	285.68	286.09	41	1.43	12.62
Yamne	-300	PF 15% release	3.67	281.36	281.84	48	1.26	12.11
Yamne	-400	PF 15% release	3.67	279.42	279.89	47	1.39	11.24
Yamne	-500	PF 15% release	3.67	277.47	277.97	50	1.29	11.54
Yamne	-600	PF 15% release	3.67	275.53	275.99	46	1.4	11.36
Yamne	-700	PF 15% release	3.67	274.18	274.72	54	0.96	14.44
Yamne	-800	PF 15% release	3.67	272.84	273.23	39	1.42	13.06

Yamne	-900	PF 15% release	3.67	271.49	271.96	47	0.72	21.85
Yamne	-1000	PF 15% release	3.67	270.81	271.29	48	0.84	18.35
Yamne	-1100	PF 15% release	3.67	270.13	270.68	55	0.74	17.96
Yamne	-1200	PF 15% release	3.67	269.45	269.95	50	1.02	14.28
Yamne	-1300	PF 15% release	3.67	268	268.41	41	1.32	13.6
Yamne	-1400	PF 15% release	3.67	266.55	266.99	44	0.91	18.28
Yamne	-1500	PF 15% release	3.67	265.1	265.43	33	1.23	18.28
Yamne	-1600	PF 15% release	3.67	262.99	263.39	40	1.08	16.85
Yamne	-1700	PF 15% release	3.67	260.89	261.27	38	1.39	13.82
Yamne	-1800	PF 15% release	3.67	258.78	259.36	58	0.66	19.15
Yamne	-1900	PF 15% release	3.67	258.3	258.96	66	0.78	14.32
Yamne	-2000	PF 15% release	3.67	257.83	258.59	76	0.75	12.81
Yamne	-2100	PF 15% release	3.67	257.35	258.04	69	1.16	9.21
Yamne	-2200	PF 15% release	3.67	256.48	257.15	67	1.12	9.88
Yamne	-2300	PF 15% release	3.67	255.62	256.22	60	1.1	11
Yamne	-2400	PF 15% release	3.67	254.75	255.22	47	0.98	16.09
Average						49.00	1.10	14.90

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 20% release	4.9	294.32	294.61	29	1.21	28.01
Yamne	-100	PF 20% release	4.9	290	290.4	40	1.42	17.42
Yamne	-200	PF 20% release	4.9	285.68	286.14	46	1.52	14.18
Yamne	-300	PF 20% release	4.9	281.36	281.89	53	1.37	13.42
Yamne	-400	PF 20% release	4.9	279.42	279.94	52	1.48	12.61
Yamne	-500	PF 20% release	4.9	277.47	278.02	55	1.4	12.77
Yamne	-600	PF 20% release	4.9	275.53	276.05	52	1.49	12.76
Yamne	-700	PF 20% release	4.9	274.18	274.77	59	1.04	16.01
Yamne	-800	PF 20% release	4.9	272.84	273.28	44	1.5	14.66
Yamne	-900	PF 20% release	4.9	271.49	272.01	52	0.77	24.36
Yamne	-1000	PF 20% release	4.9	270.81	271.34	53	0.9	20.48
Yamne	-1100	PF 20% release	4.9	270.13	270.74	61	0.79	20.08
Yamne	-1200	PF 20% release	4.9	269.45	270.01	56	1.11	15.8
Yamne	-1300	PF 20% release	4.9	268	268.46	46	1.4	15.29
Yamne	-1400	PF 20% release	4.9	266.55	267.04	49	0.99	20.23
Yamne	-1500	PF 20% release	4.9	265.1	265.47	37	1.29	20.57
Yamne	-1600	PF 20% release	4.9	262.99	263.44	45	1.18	18.65
Yamne	-1700	PF 20% release	4.9	260.89	261.32	43	1.47	15.54
Yamne	-1800	PF 20% release	4.9	258.78	259.43	65	0.7	21.44
Yamne	-1900	PF 20% release	4.9	258.3	259.04	74	0.82	16.09
Yamne	-2000	PF 20% release	4.9	257.83	258.68	85	0.81	14.26
Yamne	-2100	PF 20% release	4.9	257.35	258.11	76	1.25	10.24
Yamne	-2200	PF 20% release	4.9	256.48	257.22	74	1.2	11.03
Yamne	-2300	PF 20% release	4.9	255.62	256.29	67	1.21	12.15
Yamne	-2400	PF 20% release	4.9	254.75	255.27	52	1.04	18.02
Average						54.60	1.17	16.64

Reach	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 25% release	6.12	294.32	294.64	32	1.26	30.71
Yamne	-100	PF 25% release	6.12	290	290.43	43	1.48	19.06
Yamne	-200	PF 25% release	6.12	285.68	286.18	50	1.59	15.49
Yamne	-300	PF 25% release	6.12	281.36	281.94	58	1.46	14.53
Yamne	-400	PF 25% release	6.12	279.42	279.99	57	1.54	13.78
Yamne	-500	PF 25% release	6.12	277.47	278.06	59	1.50	13.81
Yamne	-600	PF 25% release	6.12	275.53	276.09	56	1.55	13.94
Yamne	-700	PF 25% release	6.12	274.18	274.82	64	1.11	17.33
Yamne	-800	PF 25% release	6.12	272.84	273.32	48	1.57	16.03
Yamne	-900	PF 25% release	6.12	271.49	272.06	57	0.82	26.46
Yamne	-1000	PF 25% release	6.12	270.81	271.39	58	0.95	22.33
Yamne	-1100	PF 25% release	6.12	270.13	270.8	67	0.84	21.85
Yamne	-1200	PF 25% release	6.12	269.45	270.06	61	1.18	17.11
Yamne	-1300	PF 25% release	6.12	268	268.5	50	1.47	16.69
Yamne	-1400	PF 25% release	6.12	266.55	267.08	53	1.05	21.92
Yamne	-1500	PF 25% release	6.12	265.1	265.5	40	1.36	22.43
Yamne	-1600	PF 25% release	6.12	262.99	263.48	49	1.26	20.23
Yamne	-1700	PF 25% release	6.12	260.89	261.36	47	1.54	16.95
Yamne	-1800	PF 25% release	6.12	258.78	259.49	71	0.73	23.40
Yamne	-1900	PF 25% release	6.12	258.3	259.11	81	0.86	17.59
Yamne	-2000	PF 25% release	6.12	257.83	258.75	92	0.85	15.51
Yamne	-2100	PF 25% release	6.12	257.35	258.18	83	1.33	11.10
Yamne	-2200	PF 25% release	6.12	256.48	257.29	81	1.26	12.04
Yamne	-2300	PF 25% release	6.12	255.62	256.34	72	1.30	13.10
Yamne	-2400	PF 25% release	6.12	254.75	255.32	57	1.09	19.69
						59.44	1.24	18.12

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 30% release	7.35	294.32	294.66	34	1.33	32
Yamne	-100	PF 30% release	7.35	290	290.47	47	1.52	20.57
Yamne	-200	PF 30% release	7.35	285.68	286.22	54	1.64	16.67
Yamne	-300	PF 30% release	7.35	281.36	281.98	62	1.54	15.51
Yamne	-400	PF 30% release	7.35	279.42	280.04	62	1.61	14.82
Yamne	-500	PF 30% release	7.35	277.47	278.1	63	1.58	14.74
Yamne	-600	PF 30% release	7.35	275.53	276.14	61	1.61	14.99
Yamne	-700	PF 30% release	7.35	274.18	274.87	69	1.16	18.51
Yamne	-800	PF 30% release	7.35	272.84	273.36	52	1.63	17.24
Yamne	-900	PF 30% release	7.35	271.49	272.1	61	0.86	28.33
Yamne	-1000	PF 30% release	7.35	270.81	271.43	62	0.99	23.97
Yamne	-1100	PF 30% release	7.35	270.13	270.85	72	0.88	23.42
Yamne	-1200	PF 30% release	7.35	269.45	270.1	65	1.25	18.27

Yamne	-1300	PF 30% release	7.35	268	268.54	54	1.52	17.95
Yamne	-1400	PF 30% release	7.35	266.55	267.12	57	1.11	23.38
Yamne	-1500	PF 30% release	7.35	265.1	265.53	43	1.41	24.13
Yamne	-1600	PF 30% release	7.35	262.99	263.51	52	1.32	21.59
Yamne	-1700	PF 30% release	7.35	260.89	261.39	50	1.59	18.25
Yamne	-1800	PF 30% release	7.35	258.78	259.55	77	0.76	25.17
Yamne	-1900	PF 30% release	7.35	258.3	259.17	87	0.89	18.94
Yamne	-2000	PF 30% release	7.35	257.83	258.82	99	0.89	16.59
Yamne	-2100	PF 30% release	7.35	257.35	258.23	88	1.4	11.86
Yamne	-2200	PF 30% release	7.35	256.48	257.35	87	1.31	12.93
Yamne	-2300	PF 30% release	7.35	255.62	256.38	76	1.38	13.94
Yamne	-2400	PF 30% release	7.35	254.75	255.36	61	1.13	21.18
Average						63.80	1.29	19.40

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 40% release	9.8	294.32	294.7	38	1.44	32.47
Yamne	-100	PF 40% release	9.8	290	290.53	53	1.62	23.04
Yamne	-200	PF 40% release	9.8	285.68	286.28	60	1.74	18.7
Yamne	-300	PF 40% release	9.8	281.36	282.04	68	1.68	17.18
Yamne	-400	PF 40% release	9.8	279.42	280.11	69	1.71	16.6
Yamne	-500	PF 40% release	9.8	277.47	278.17	70	1.72	16.31
Yamne	-600	PF 40% release	9.8	275.53	276.21	68	1.71	16.81
Yamne	-700	PF 40% release	9.8	274.18	274.94	76	1.27	20.5
Yamne	-800	PF 40% release	9.8	272.84	273.43	59	1.72	19.34
Yamne	-900	PF 40% release	9.8	271.49	272.16	67	0.92	31.55
Yamne	-1000	PF 40% release	9.8	270.81	271.51	70	1.05	26.82
Yamne	-1100	PF 40% release	9.8	270.13	270.93	80	0.94	26.13
Yamne	-1200	PF 40% release	9.8	269.45	270.17	72	1.35	20.25
Yamne	-1300	PF 40% release	9.8	268	268.6	60	1.62	20.11
Yamne	-1400	PF 40% release	9.8	266.55	267.18	63	1.21	25.89
Yamne	-1500	PF 40% release	9.8	265.1	265.58	48	1.49	27.07
Yamne	-1600	PF 40% release	9.8	262.99	263.56	57	1.43	23.94
Yamne	-1700	PF 40% release	9.8	260.89	261.45	56	1.69	20.45
Yamne	-1800	PF 40% release	9.8	258.78	259.64	86	0.81	28.21
Yamne	-1900	PF 40% release	9.8	258.3	259.28	98	0.94	21.29
Yamne	-2000	PF 40% release	9.8	257.83	258.93	110	0.96	18.49
Yamne	-2100	PF 40% release	9.8	257.35	258.33	98	1.52	13.17
Yamne	-2200	PF 40% release	9.8	256.48	257.45	97	1.4	14.46
Yamne	-2300	PF 40% release	9.8	255.62	256.46	84	1.51	15.35
Yamne	-2400	PF 40% release	9.8	254.75	255.44	69	1.2	23.75
Average						71.04	1.39	21.52

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 50% release	12.25	294.32	294.73	41	1.55	32.87

Yamne	-100	PF 50% release	12.25	290	290.57	57	1.71	24.78
Yamne	-200	PF 50% release	12.25	285.68	286.34	66	1.82	20.47
Yamne	-300	PF 50% release	12.25	281.36	282.1	74	1.79	18.59
Yamne	-400	PF 50% release	12.25	279.42	280.17	75	1.79	18.14
Yamne	-500	PF 50% release	12.25	277.47	278.23	76	1.83	17.65
Yamne	-600	PF 50% release	12.25	275.53	276.27	74	1.79	18.37
Yamne	-700	PF 50% release	12.25	274.18	275	82	1.35	22.21
Yamne	-800	PF 50% release	12.25	272.84	273.48	64	1.8	21.14
Yamne	-900	PF 50% release	12.25	271.49	272.22	73	0.99	33.02
Yamne	-1000	PF 50% release	12.25	270.81	271.57	76	1.1	29.25
Yamne	-1100	PF 50% release	12.25	270.13	271	87	0.99	28.48
Yamne	-1200	PF 50% release	12.25	269.45	270.23	78	1.44	21.92
Yamne	-1300	PF 50% release	12.25	268	268.66	66	1.69	21.96
Yamne	-1400	PF 50% release	12.25	266.55	267.23	68	1.29	28.03
Yamne	-1500	PF 50% release	12.25	265.1	265.63	53	1.56	29.58
Yamne	-1600	PF 50% release	12.25	262.99	263.61	62	1.53	25.94
Yamne	-1700	PF 50% release	12.25	260.89	261.51	62	1.77	22.38
Yamne	-1800	PF 50% release	12.25	258.78	259.72	94	0.84	30.89
Yamne	-1900	PF 50% release	12.25	258.3	259.37	107	0.98	23.29
Yamne	-2000	PF 50% release	12.25	257.83	259.03	120	1.01	20.11
Yamne	-2100	PF 50% release	12.25	257.35	258.41	106	1.61	14.27
Yamne	-2200	PF 50% release	12.25	256.48	257.54	106	1.46	15.79
Yamne	-2300	PF 50% release	12.25	255.62	256.53	91	1.63	16.51
Yamne	-2400	PF 50% release	12.25	254.75	255.5	75	1.25	26
Average						77.32	1.46	23.27

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 100% release	24.49	294.32	294.87	55	1.92	34.57
Yamne	-100	PF 100% release	24.49	290	290.76	76	2	30.17
Yamne	-200	PF 100% release	24.49	285.68	286.55	87	2.09	27.01
Yamne	-300	PF 100% release	24.49	281.36	282.31	95	2.15	23.96
Yamne	-400	PF 100% release	24.49	279.42	280.41	99	2.09	23.7
Yamne	-500	PF 100% release	24.49	277.47	278.45	98	2.21	22.73
Yamne	-600	PF 100% release	24.49	275.53	276.51	98	2.06	24.25
Yamne	-700	PF 100% release	24.49	274.18	275.23	105	1.66	28.31
Yamne	-800	PF 100% release	24.49	272.84	273.69	85	2.06	27.96
Yamne	-900	PF 100% release	24.49	271.49	272.42	93	1.27	34.93
Yamne	-1000	PF 100% release	24.49	270.81	271.79	98	1.35	33.7
Yamne	-1100	PF 100% release	24.49	270.13	271.25	112	1.2	33.8
Yamne	-1200	PF 100% release	24.49	269.45	270.44	99	1.77	27.98
Yamne	-1300	PF 100% release	24.49	268	268.87	87	1.95	28.96
Yamne	-1400	PF 100% release	24.49	266.55	267.42	87	1.59	35.69
Yamne	-1500	PF 100% release	24.49	265.1	265.8	70	1.79	39.05
Yamne	-1600	PF 100% release	24.49	262.99	263.78	79	1.87	33.2
Yamne	-1700	PF 100% release	24.49	260.89	261.7	81	2.03	29.52

Yamne	-1800	PF 100% release	24.49	258.78	260.03	125	0.95	41.2
Yamne	-1900	PF 100% release	24.49	258.3	259.72	142	1.12	30.8
Yamne	-2000	PF 100% release	24.49	257.83	259.39	156	1.21	26.07
Yamne	-2100	PF 100% release	24.49	257.35	258.72	137	1.95	18.34
Yamne	-2200	PF 100% release	24.49	256.48	257.88	140	1.69	20.75
Yamne	-2300	PF 100% release	24.49	255.62	256.75	113	2.1	20.57
Yamne	-2400	PF 100% release	24.49	254.75	255.75	100	1.42	34.55
Average						100.68	1.74	29.27

Monsoon

Lower Yamne Stage-II-June to September

Note: River sta -100 denotes location along river reach 100 m d/s of Lower Yamne-II dam axis

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 10% release	15.65	294.32	294.77	45	1.68	33.38
Yamne	-100	PF 10% release	15.65	290	290.63	63	1.81	26.48
Yamne	-200	PF 10% release	15.65	285.68	286.41	73	1.91	22.55
Yamne	-300	PF 10% release	15.65	281.36	282.16	80	1.92	20.27
Yamne	-400	PF 10% release	15.65	279.42	280.25	83	1.87	20.01
Yamne	-500	PF 10% release	15.65	277.47	278.3	83	1.98	19.22
Yamne	-600	PF 10% release	15.65	275.53	276.35	82	1.88	20.26
Yamne	-700	PF 10% release	15.65	274.18	275.07	89	1.45	24.21
Yamne	-800	PF 10% release	15.65	272.84	273.55	71	1.89	23.33
Yamne	-900	PF 10% release	15.65	271.49	272.28	79	1.08	33.62
Yamne	-1000	PF 10% release	15.65	270.81	271.64	83	1.17	32.09
Yamne	-1100	PF 10% release	15.65	270.13	271.09	96	1.05	31.26
Yamne	-1200	PF 10% release	15.65	269.45	270.3	85	1.55	23.9
Yamne	-1300	PF 10% release	15.65	268	268.73	73	1.78	24.22
Yamne	-1400	PF 10% release	15.65	266.55	267.29	74	1.38	30.53
Yamne	-1500	PF 10% release	15.65	265.1	265.68	58	1.64	32.62
Yamne	-1600	PF 10% release	15.65	262.99	263.67	68	1.64	28.31
Yamne	-1700	PF 10% release	15.65	260.89	261.57	68	1.86	24.67
Yamne	-1800	PF 10% release	15.65	258.78	259.82	104	0.88	34.18
Yamne	-1900	PF 10% release	15.65	258.3	259.49	119	1.03	25.7
Yamne	-2000	PF 10% release	15.65	257.83	259.14	131	1.08	22.02
Yamne	-2100	PF 10% release	15.65	257.35	258.51	116	1.72	15.6
Yamne	-2200	PF 10% release	15.65	256.48	257.65	117	1.54	17.38
Yamne	-2300	PF 10% release	15.65	255.62	256.6	98	1.78	17.86
Yamne	-2400	PF 10% release	15.65	254.75	255.58	83	1.31	28.73
Average						84.84	1.56	25.30

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 15% release	23.48	294.32	294.86	54	1.9	34.44
Yamne	-100	PF 15% release	23.48	290	290.74	74	2	29.69

Yamne	-200	PF 15% release	23.48	285.68	286.53	85	2.07	26.54
Yamne	-300	PF 15% release	23.48	281.36	282.29	93	2.14	23.54
Yamne	-400	PF 15% release	23.48	279.42	280.39	97	2.06	23.37
Yamne	-500	PF 15% release	23.48	277.47	278.43	96	2.2	22.34
Yamne	-600	PF 15% release	23.48	275.53	276.5	97	2.04	23.83
Yamne	-700	PF 15% release	23.48	274.18	275.21	103	1.64	27.92
Yamne	-800	PF 15% release	23.48	272.84	273.67	83	2.05	27.46
Yamne	-900	PF 15% release	23.48	271.49	272.41	92	1.25	34.8
Yamne	-1000	PF 15% release	23.48	270.81	271.77	96	1.33	33.52
Yamne	-1100	PF 15% release	23.48	270.13	271.24	111	1.19	33.56
Yamne	-1200	PF 15% release	23.48	269.45	270.42	97	1.76	27.5
Yamne	-1300	PF 15% release	23.48	268	268.86	86	1.92	28.57
Yamne	-1400	PF 15% release	23.48	266.55	267.4	85	1.58	35.04
Yamne	-1500	PF 15% release	23.48	265.1	265.79	69	1.76	38.59
Yamne	-1600	PF 15% release	23.48	262.99	263.77	78	1.86	32.55
Yamne	-1700	PF 15% release	23.48	260.89	261.69	80	1.99	29.17
Yamne	-1800	PF 15% release	23.48	258.78	260.01	123	0.94	40.51
Yamne	-1900	PF 15% release	23.48	258.3	259.7	140	1.11	30.28
Yamne	-2000	PF 15% release	23.48	257.83	259.36	153	1.19	25.67
Yamne	-2100	PF 15% release	23.48	257.35	258.7	135	1.93	18.04
Yamne	-2200	PF 15% release	23.48	256.48	257.85	137	1.68	20.42
Yamne	-2300	PF 15% release	23.48	255.62	256.73	111	2.07	20.3
Yamne	-2400	PF 15% release	23.48	254.75	255.73	98	1.4	33.96
Average						98.92	1.72	28.86

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 20% release	31.3	294.32	294.94	62	2.07	35.38
Yamne	-100	PF 20% release	31.3	290	290.84	84	2.12	32.52
Yamne	-200	PF 20% release	31.3	285.68	286.64	96	2.2	29.1
Yamne	-300	PF 20% release	31.3	281.36	282.41	105	2.24	26.54
Yamne	-400	PF 20% release	31.3	279.42	280.49	107	2.27	25.72
Yamne	-500	PF 20% release	31.3	277.47	278.55	108	2.3	25.19
Yamne	-600	PF 20% release	31.3	275.53	276.62	109	2.15	26.79
Yamne	-700	PF 20% release	31.3	274.18	275.32	114	1.79	30.8
Yamne	-800	PF 20% release	31.3	272.84	273.78	94	2.15	30.94
Yamne	-900	PF 20% release	31.3	271.49	272.51	102	1.4	35.79
Yamne	-1000	PF 20% release	31.3	270.81	271.88	107	1.46	34.79
Yamne	-1100	PF 20% release	31.3	270.13	271.36	123	1.3	35.41
Yamne	-1200	PF 20% release	31.3	269.45	270.53	108	1.91	30.44
Yamne	-1300	PF 20% release	31.3	268	268.96	96	2.04	32.01
Yamne	-1400	PF 20% release	31.3	266.55	267.49	94	1.73	38.16
Yamne	-1500	PF 20% release	31.3	265.1	265.87	77	1.88	42.51
Yamne	-1600	PF 20% release	31.3	262.99	263.85	86	2.02	36.05
Yamne	-1700	PF 20% release	31.3	260.89	261.79	90	2.11	32.73

Yamne	-1800	PF 20% release	31.3	258.78	260.17	139	0.99	45.68
Yamne	-1900	PF 20% release	31.3	258.3	259.87	157	1.18	34.02
Yamne	-2000	PF 20% release	31.3	257.83	259.54	171	1.28	28.6
Yamne	-2100	PF 20% release	31.3	257.35	258.84	149	2.1	20.01
Yamne	-2200	PF 20% release	31.3	256.48	258.02	154	1.77	22.94
Yamne	-2300	PF 20% release	31.3	255.62	256.83	121	2.34	22.07
Yamne	-2400	PF 20% release	31.3	254.75	255.85	110	1.5	36.18
Average						110.52	1.85	31.61

Reach	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 25% release	39.13	294.32	295.01	69	2.21	36.23
Yamne	-100	PF 25% release	39.13	290	290.92	92	2.24	34.79
Yamne	-200	PF 25% release	39.13	285.68	286.72	104	2.32	30.75
Yamne	-300	PF 25% release	39.13	281.36	282.5	114	2.37	28.86
Yamne	-400	PF 25% release	39.13	279.42	280.58	116	2.40	27.98
Yamne	-500	PF 25% release	39.13	277.47	278.65	118	2.43	27.43
Yamne	-600	PF 25% release	39.13	275.53	276.71	118	2.27	29.18
Yamne	-700	PF 25% release	39.13	274.18	275.41	123	1.91	33.37
Yamne	-800	PF 25% release	39.13	272.84	273.86	102	2.26	33.84
Yamne	-900	PF 25% release	39.13	271.49	272.61	112	1.51	36.70
Yamne	-1000	PF 25% release	39.13	270.81	271.99	118	1.56	35.93
Yamne	-1100	PF 25% release	39.13	270.13	271.47	134	1.39	37.04
Yamne	-1200	PF 25% release	39.13	269.45	270.61	116	2.04	32.92
Yamne	-1300	PF 25% release	39.13	268	269.05	105	2.14	34.96
Yamne	-1400	PF 25% release	39.13	266.55	267.56	101	1.87	40.51
Yamne	-1500	PF 25% release	39.13	265.1	265.94	84	1.99	44.37
Yamne	-1600	PF 25% release	39.13	262.99	263.92	93	2.16	39.01
Yamne	-1700	PF 25% release	39.13	260.89	261.88	99	2.21	35.78
Yamne	-1800	PF 25% release	39.13	258.78	260.31	153	1.02	50.22
Yamne	-1900	PF 25% release	39.13	258.3	260.02	172	1.23	37.22
Yamne	-2000	PF 25% release	39.13	257.83	259.68	185	1.36	31.08
Yamne	-2100	PF 25% release	39.13	257.35	258.97	162	2.23	21.71
Yamne	-2200	PF 25% release	39.13	256.48	258.16	168	1.86	25.03
Yamne	-2300	PF 25% release	39.13	255.62	256.92	130	2.53	23.70
Yamne	-2400	PF 25% release	39.13	254.75	255.95	120	1.60	37.11
Average						120.32	1.96	33.83

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 30% release	46.95	294.32	295.08	76	2.33	37.02
Yamne	-100	PF 30% release	46.95	290	291	100	2.32	37.08
Yamne	-200	PF 30% release	46.95	285.68	286.8	112	2.43	32.24
Yamne	-300	PF 30% release	46.95	281.36	282.59	123	2.46	31.02
Yamne	-400	PF 30% release	46.95	279.42	280.67	125	2.49	29.96

Yamne	-500	PF 30% release	46.95	277.47	278.74	127	2.5	29.44
Yamne	-600	PF 30% release	46.95	275.53	276.8	127	2.35	31.39
Yamne	-700	PF 30% release	46.95	274.18	275.49	131	2.02	35.52
Yamne	-800	PF 30% release	46.95	272.84	273.94	110	2.33	36.58
Yamne	-900	PF 30% release	46.95	271.49	272.69	120	1.61	37.53
Yamne	-1000	PF 30% release	46.95	270.81	272.08	127	1.65	36.98
Yamne	-1100	PF 30% release	46.95	270.13	271.56	143	1.48	38.42
Yamne	-1200	PF 30% release	46.95	269.45	270.7	125	2.12	35.38
Yamne	-1300	PF 30% release	46.95	268	269.11	111	2.27	36.86
Yamne	-1400	PF 30% release	46.95	266.55	267.63	108	1.97	42.05
Yamne	-1500	PF 30% release	46.95	265.1	265.99	89	2.15	45.74
Yamne	-1600	PF 30% release	46.95	262.99	264	101	2.22	41.93
Yamne	-1700	PF 30% release	46.95	260.89	261.95	106	2.29	38.5
Yamne	-1800	PF 30% release	46.95	258.78	260.43	165	1.05	54.27
Yamne	-1900	PF 30% release	46.95	258.3	260.15	185	1.27	40.05
Yamne	-2000	PF 30% release	46.95	257.83	259.82	199	1.42	33.28
Yamne	-2100	PF 30% release	46.95	257.35	259.09	174	2.32	23.3
Yamne	-2200	PF 30% release	46.95	256.48	258.27	179	1.97	26.66
Yamne	-2300	PF 30% release	46.95	255.62	257.02	140	2.63	25.49
Yamne	-2400	PF 30% release	46.95	254.75	256.04	129	1.68	37.98
Average						129.28	2.05	35.79

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 40% release	62.6	294.32	295.2	88	2.53	38.45
Yamne	-100	PF 40% release	62.6	290	291.12	112	2.49	40.27
Yamne	-200	PF 40% release	62.6	285.68	286.94	126	2.62	34.82
Yamne	-300	PF 40% release	62.6	281.36	282.73	137	2.65	33.33
Yamne	-400	PF 40% release	62.6	279.42	280.82	140	2.67	32.37
Yamne	-500	PF 40% release	62.6	277.47	278.89	142	2.67	32.37
Yamne	-600	PF 40% release	62.6	275.53	276.96	143	2.49	35.21
Yamne	-700	PF 40% release	62.6	274.18	275.63	145	2.21	39.42
Yamne	-800	PF 40% release	62.6	272.84	274.07	123	2.52	38.27
Yamne	-900	PF 40% release	62.6	271.49	272.85	136	1.78	39.03
Yamne	-1000	PF 40% release	62.6	270.81	272.24	143	1.8	38.84
Yamne	-1100	PF 40% release	62.6	270.13	271.73	160	1.64	40.64
Yamne	-1200	PF 40% release	62.6	269.45	270.83	138	2.32	38.17
Yamne	-1300	PF 40% release	62.6	268	269.24	124	2.47	39.66
Yamne	-1400	PF 40% release	62.6	266.55	267.75	120	2.17	44.52
Yamne	-1500	PF 40% release	62.6	265.1	266.09	99	2.35	48.53
Yamne	-1600	PF 40% release	62.6	262.99	264.12	113	2.37	46.19
Yamne	-1700	PF 40% release	62.6	260.89	262.08	119	2.43	43.16
Yamne	-1800	PF 40% release	62.6	258.78	260.64	186	1.1	60
Yamne	-1900	PF 40% release	62.6	258.3	260.37	207	1.35	44.65
Yamne	-2000	PF 40% release	62.6	257.83	260.04	221	1.52	37.07
Yamne	-2100	PF 40% release	62.6	257.35	259.29	194	2.48	25.99

Yamne	-2200	PF 40% release	62.6	256.48	258.46	198	2.15	29.47
Yamne	-2300	PF 40% release	62.6	255.62	257.19	157	2.78	28.6
Yamne	-2400	PF 40% release	62.6	254.75	256.21	146	1.81	39.56
Average						144.68	2.21	38.74

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 50% release	78.25	294.32	295.31	99	2.69	39.77
Yamne	-100	PF 50% release	78.25	290	291.23	123	2.66	41.35
Yamne	-200	PF 50% release	78.25	285.68	287.07	139	2.74	37.29
Yamne	-300	PF 50% release	78.25	281.36	282.85	149	2.82	35.11
Yamne	-400	PF 50% release	78.25	279.42	280.95	153	2.81	34.55
Yamne	-500	PF 50% release	78.25	277.47	279.02	155	2.81	34.88
Yamne	-600	PF 50% release	78.25	275.53	277.09	156	2.62	38.41
Yamne	-700	PF 50% release	78.25	274.18	275.74	156	2.37	42.39
Yamne	-800	PF 50% release	78.25	272.84	274.18	134	2.69	39.6
Yamne	-900	PF 50% release	78.25	271.49	272.99	150	1.92	40.37
Yamne	-1000	PF 50% release	78.25	270.81	272.39	158	1.93	40.49
Yamne	-1100	PF 50% release	78.25	270.13	271.88	175	1.76	42.57
Yamne	-1200	PF 50% release	78.25	269.45	270.94	149	2.51	40.1
Yamne	-1300	PF 50% release	78.25	268	269.35	135	2.62	41.89
Yamne	-1400	PF 50% release	78.25	266.55	267.84	129	2.36	46.57
Yamne	-1500	PF 50% release	78.25	265.1	266.19	109	2.49	51.18
Yamne	-1600	PF 50% release	78.25	262.99	264.22	123	2.49	49.85
Yamne	-1700	PF 50% release	78.25	260.89	262.19	130	2.55	47.1
Yamne	-1800	PF 50% release	78.25	258.78	260.82	204	1.15	62.69
Yamne	-1900	PF 50% release	78.25	258.3	260.56	226	1.42	47.28
Yamne	-2000	PF 50% release	78.25	257.83	260.23	240	1.62	39.65
Yamne	-2100	PF 50% release	78.25	257.35	259.46	211	2.62	28.3
Yamne	-2200	PF 50% release	78.25	256.48	258.62	214	2.3	31.84
Yamne	-2300	PF 50% release	78.25	255.62	257.34	172	2.9	31.65
Yamne	-2400	PF 50% release	78.25	254.75	256.36	161	1.93	40.97
Average						158.00	2.35	41.03
River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 100% release	156.51	294.32	295.76	144	3.26	45.07
Yamne	-100	PF 100% release	156.51	290	291.66	166	3.23	45.84
Yamne	-200	PF 100% release	156.51	285.68	287.55	187	3.21	46.39
Yamne	-300	PF 100% release	156.51	281.36	283.36	200	3.31	42.59
Yamne	-400	PF 100% release	156.51	279.42	281.46	204	3.3	42.95
Yamne	-500	PF 100% release	156.51	277.47	279.53	206	3.25	44.87
Yamne	-600	PF 100% release	156.51	275.53	277.56	203	3.07	50.73
Yamne	-700	PF 100% release	156.51	274.18	276.16	198	3	49.15
Yamne	-800	PF 100% release	156.51	272.84	274.63	179	3.25	44.99
Yamne	-900	PF 100% release	156.51	271.49	273.55	206	2.41	45.73

Yamne	-1000	PF 100% release	156.51	270.81	272.96	215	2.39	46.72
Yamne	-1100	PF 100% release	156.51	270.13	272.45	232	2.2	50.09
Yamne	-1200	PF 100% release	156.51	269.45	271.35	190	3.19	47.45
Yamne	-1300	PF 100% release	156.51	268	269.78	178	3.13	50.25
Yamne	-1400	PF 100% release	156.51	266.55	268.2	165	3.05	54.26
Yamne	-1500	PF 100% release	156.51	265.1	266.58	148	2.92	61.96
Yamne	-1600	PF 100% release	156.51	262.99	264.62	163	2.92	61.82
Yamne	-1700	PF 100% release	156.51	260.89	262.6	171	2.97	59.66
Yamne	-1800	PF 100% release	156.51	258.78	261.53	275	1.35	73.44
Yamne	-1900	PF 100% release	156.51	258.3	261.28	298	1.68	57.69
Yamne	-2000	PF 100% release	156.51	257.83	260.95	312	1.96	48.71
Yamne	-2100	PF 100% release	156.51	257.35	260.09	274	3.1	36.79
Yamne	-2200	PF 100% release	156.51	256.48	259.19	271	2.86	40.46
Yamne	-2300	PF 100% release	156.51	255.62	257.88	226	3.31	42.82
Yamne	-2400	PF 100% release	156.51	254.75	256.98	223	2.32	46.72
Average						209.36	2.83	49.49

Other four months

Lower Yamne Stage-II-Oct-Mar-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Lower Yamne-II dam axis

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 10% release	9.32	294.32	294.69	37	1.42	32.38
Yamne	-100	PF 10% release	9.32	290	290.51	51	1.61	22.54
Yamne	-200	PF 10% release	9.32	285.68	286.27	59	1.72	18.34
Yamne	-300	PF 10% release	9.32	281.36	282.03	67	1.65	16.86
Yamne	-400	PF 10% release	9.32	279.42	280.1	68	1.69	16.28
Yamne	-500	PF 10% release	9.32	277.47	278.16	69	1.69	16.03
Yamne	-600	PF 10% release	9.32	275.53	276.2	67	1.7	16.47
Yamne	-700	PF 10% release	9.32	274.18	274.93	75	1.25	20.14
Yamne	-800	PF 10% release	9.32	272.84	273.41	57	1.71	18.95
Yamne	-900	PF 10% release	9.32	271.49	272.15	66	0.91	30.96
Yamne	-1000	PF 10% release	9.32	270.81	271.49	68	1.04	26.3
Yamne	-1100	PF 10% release	9.32	270.13	270.91	78	0.93	25.62
Yamne	-1200	PF 10% release	9.32	269.45	270.15	70	1.33	19.9
Yamne	-1300	PF 10% release	9.32	268	268.59	59	1.6	19.7
Yamne	-1400	PF 10% release	9.32	266.55	267.17	62	1.19	25.45
Yamne	-1500	PF 10% release	9.32	265.1	265.58	48	1.48	26.52
Yamne	-1600	PF 10% release	9.32	262.99	263.55	56	1.41	23.52
Yamne	-1700	PF 10% release	9.32	260.89	261.44	55	1.67	20.05
Yamne	-1800	PF 10% release	9.32	258.78	259.62	84	0.8	27.64
Yamne	-1900	PF 10% release	9.32	258.3	259.26	96	0.93	20.87
Yamne	-2000	PF 10% release	9.32	257.83	258.91	108	0.95	18.14
Yamne	-2100	PF 10% release	9.32	257.35	258.31	96	1.49	12.93
Yamne	-2200	PF 10% release	9.32	256.48	257.44	96	1.38	14.18
Yamne	-2300	PF 10% release	9.32	255.62	256.45	83	1.49	15.09

Yamne	-2400	PF 10% release	9.32	254.75	255.43	68	1.19	23.28
Average						69.72	1.37	21.13

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 15% release	13.98	294.32	294.75	43	1.62	33.13
Yamne	-100	PF 15% release	13.98	290	290.6	60	1.77	25.65
Yamne	-200	PF 15% release	13.98	285.68	286.37	69	1.87	21.55
Yamne	-300	PF 15% release	13.98	281.36	282.13	77	1.86	19.48
Yamne	-400	PF 15% release	13.98	279.42	280.21	79	1.83	19.12
Yamne	-500	PF 15% release	13.98	277.47	278.27	80	1.91	18.49
Yamne	-600	PF 15% release	13.98	275.53	276.31	78	1.84	19.36
Yamne	-700	PF 15% release	13.98	274.18	275.04	86	1.4	23.26
Yamne	-800	PF 15% release	13.98	272.84	273.52	68	1.85	22.29
Yamne	-900	PF 15% release	13.98	271.49	272.25	76	1.03	33.34
Yamne	-1000	PF 15% release	13.98	270.81	271.61	80	1.14	30.79
Yamne	-1100	PF 15% release	13.98	270.13	271.05	92	1.02	29.97
Yamne	-1200	PF 15% release	13.98	269.45	270.26	81	1.5	22.93
Yamne	-1300	PF 15% release	13.98	268	268.7	70	1.73	23.2
Yamne	-1400	PF 15% release	13.98	266.55	267.26	71	1.34	29.3
Yamne	-1500	PF 15% release	13.98	265.1	265.66	56	1.6	31.28
Yamne	-1600	PF 15% release	13.98	262.99	263.64	65	1.6	27.11
Yamne	-1700	PF 15% release	13.98	260.89	261.54	65	1.8	23.66
Yamne	-1800	PF 15% release	13.98	258.78	259.77	99	0.86	32.62
Yamne	-1900	PF 15% release	13.98	258.3	259.43	113	1.01	24.56
Yamne	-2000	PF 15% release	13.98	257.83	259.09	126	1.05	21.13
Yamne	-2100	PF 15% release	13.98	257.35	258.47	112	1.67	14.97
Yamne	-2200	PF 15% release	13.98	256.48	257.6	112	1.51	16.62
Yamne	-2300	PF 15% release	13.98	255.62	256.57	95	1.71	17.23
Yamne	-2400	PF 15% release	13.98	254.75	255.55	80	1.28	27.42
Average						81.32	1.51	24.34

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 20% release	18.64	294.32	294.81	49	1.76	33.82
Yamne	-100	PF 20% release	18.64	290	290.67	67	1.89	27.74
Yamne	-200	PF 20% release	18.64	285.68	286.46	78	1.96	24.31
Yamne	-300	PF 20% release	18.64	281.36	282.21	85	2.03	21.51
Yamne	-400	PF 20% release	18.64	279.42	280.31	89	1.93	21.5
Yamne	-500	PF 20% release	18.64	277.47	278.35	88	2.09	20.4
Yamne	-600	PF 20% release	18.64	275.53	276.41	88	1.94	21.77
Yamne	-700	PF 20% release	18.64	274.18	275.13	95	1.53	25.7
Yamne	-800	PF 20% release	18.64	272.84	273.6	76	1.95	25.09
Yamne	-900	PF 20% release	18.64	271.49	272.33	84	1.15	34.1
Yamne	-1000	PF 20% release	18.64	270.81	271.7	89	1.24	32.66
Yamne	-1100	PF 20% release	18.64	270.13	271.15	102	1.1	32.24

Yamne	-1200	PF 20% release	18.64	269.45	270.35	90	1.63	25.41
Yamne	-1300	PF 20% release	18.64	268	268.78	78	1.84	25.99
Yamne	-1400	PF 20% release	18.64	266.55	267.34	79	1.46	32.44
Yamne	-1500	PF 20% release	18.64	265.1	265.73	63	1.7	35.02
Yamne	-1600	PF 20% release	18.64	262.99	263.71	72	1.73	30.1
Yamne	-1700	PF 20% release	18.64	260.89	261.62	73	1.92	26.49
Yamne	-1800	PF 20% release	18.64	258.78	259.9	112	0.91	36.75
Yamne	-1900	PF 20% release	18.64	258.3	259.57	127	1.06	27.59
Yamne	-2000	PF 20% release	18.64	257.83	259.23	140	1.13	23.53
Yamne	-2100	PF 20% release	18.64	257.35	258.59	124	1.81	16.61
Yamne	-2200	PF 20% release	18.64	256.48	257.73	125	1.6	18.63
Yamne	-2300	PF 20% release	18.64	255.62	256.66	104	1.9	18.88
Yamne	-2400	PF 20% release	18.64	254.75	255.65	90	1.35	30.88
Average						90.68	1.62	26.77

Reach	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 25% release	23.3	294.32	294.86	54	1.9	34.42
Yamne	-100	PF 25% release	23.3	290	290.74	74	1.99	29.62
Yamne	-200	PF 25% release	23.3	285.68	286.53	85	2.07	26.46
Yamne	-300	PF 25% release	23.3	281.36	282.3	94	2.11	23.59
Yamne	-400	PF 25% release	23.3	279.42	280.38	96	2.08	23.19
Yamne	-500	PF 25% release	23.3	277.47	278.43	96	2.17	22.37
Yamne	-600	PF 25% release	23.3	275.53	276.49	96	2.04	23.75
Yamne	-700	PF 25% release	23.3	274.18	275.21	103	1.63	27.84
Yamne	-800	PF 25% release	23.3	272.84	273.67	83	2.05	27.37
Yamne	-900	PF 25% release	23.3	271.49	272.4	91	1.25	34.77
Yamne	-1000	PF 25% release	23.3	270.81	271.77	96	1.33	33.49
Yamne	-1100	PF 25% release	23.3	270.13	271.23	110	1.18	33.52
Yamne	-1200	PF 25% release	23.3	269.45	270.42	97	1.75	27.42
Yamne	-1300	PF 25% release	23.3	268	268.85	85	1.91	28.49
Yamne	-1400	PF 25% release	23.3	266.55	267.4	85	1.57	34.94
Yamne	-1500	PF 25% release	23.3	265.1	265.79	69	1.76	38.49
Yamne	-1600	PF 25% release	23.3	262.99	263.77	78	1.86	32.45
Yamne	-1700	PF 25% release	23.3	260.89	261.69	80	1.99	29.09
Yamne	-1800	PF 25% release	23.3	258.78	260.01	123	0.94	40.34
Yamne	-1900	PF 25% release	23.3	258.3	259.69	139	1.11	30.19
Yamne	-2000	PF 25% release	23.3	257.83	259.36	153	1.19	25.59
Yamne	-2100	PF 25% release	23.3	257.35	258.69	134	1.93	18
Yamne	-2200	PF 25% release	23.3	256.48	257.85	137	1.68	20.35
Yamne	-2300	PF 25% release	23.3	255.62	256.73	111	2.06	20.25
Yamne	-2400	PF 25% release	23.3	254.75	255.73	98	1.4	33.85
Average						98.68	1.72	28.79

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 30% release	27.96	294.32	294.91	59	2	34.99
Yamne	-100	PF 30% release	27.96	290	290.8	80	2.06	31.4
Yamne	-200	PF 30% release	27.96	285.68	286.6	92	2.14	28.33
Yamne	-300	PF 30% release	27.96	281.36	282.37	101	2.19	25.37

Yamne	-400	PF 30% release	27.96	279.42	280.45	103	2.19	24.72
Yamne	-500	PF 30% release	27.96	277.47	278.5	103	2.25	24.08
Yamne	-600	PF 30% release	27.96	275.53	276.56	103	2.12	25.52
Yamne	-700	PF 30% release	27.96	274.18	275.28	110	1.72	29.7
Yamne	-800	PF 30% release	27.96	272.84	273.73	89	2.12	29.43
Yamne	-900	PF 30% release	27.96	271.49	272.47	98	1.34	35.39
Yamne	-1000	PF 30% release	27.96	270.81	271.84	103	1.41	34.27
Yamne	-1100	PF 30% release	27.96	270.13	271.31	118	1.25	34.64
Yamne	-1200	PF 30% release	27.96	269.45	270.49	104	1.84	29.29
Yamne	-1300	PF 30% release	27.96	268	268.92	92	2	30.55
Yamne	-1400	PF 30% release	27.96	266.55	267.45	90	1.66	37.1
Yamne	-1500	PF 30% release	27.96	265.1	265.84	74	1.83	41.3
Yamne	-1600	PF 30% release	27.96	262.99	263.82	83	1.95	34.72
Yamne	-1700	PF 30% release	27.96	260.89	261.75	86	2.07	31.2
Yamne	-1800	PF 30% release	27.96	258.78	260.11	133	0.97	43.56
Yamne	-1900	PF 30% release	27.96	258.3	259.8	150	1.15	32.49
Yamne	-2000	PF 30% release	27.96	257.83	259.46	163	1.25	27.39
Yamne	-2100	PF 30% release	27.96	257.35	258.79	144	2.02	19.24
Yamne	-2200	PF 30% release	27.96	256.48	257.95	147	1.74	21.9
Yamne	-2300	PF 30% release	27.96	255.62	256.79	117	2.22	21.38
Yamne	-2400	PF 30% release	27.96	254.75	255.81	106	1.46	35.75
Average						105.92	1.80	30.55

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 40% release	37.28	294.32	295	68	2.18	36.03
Yamne	-100	PF 40% release	37.28	290	290.9	90	2.2	34.38
Yamne	-200	PF 40% release	37.28	285.68	286.71	103	2.29	30.38
Yamne	-300	PF 40% release	37.28	281.36	282.48	112	2.34	28.37
Yamne	-400	PF 40% release	37.28	279.42	280.56	114	2.37	27.45
Yamne	-500	PF 40% release	37.28	277.47	278.63	116	2.39	27
Yamne	-600	PF 40% release	37.28	275.53	276.69	116	2.25	28.6
Yamne	-700	PF 40% release	37.28	274.18	275.39	121	1.88	32.84
Yamne	-800	PF 40% release	37.28	272.84	273.84	100	2.24	33.11
Yamne	-900	PF 40% release	37.28	271.49	272.58	109	1.49	36.49
Yamne	-1000	PF 40% release	37.28	270.81	271.96	115	1.54	35.67
Yamne	-1100	PF 40% release	37.28	270.13	271.44	131	1.37	36.65
Yamne	-1200	PF 40% release	37.28	269.45	270.6	115	2.01	32.39
Yamne	-1300	PF 40% release	37.28	268	269.03	103	2.12	34.27
Yamne	-1400	PF 40% release	37.28	266.55	267.54	99	1.84	40.02
Yamne	-1500	PF 40% release	37.28	265.1	265.92	82	1.97	43.92
Yamne	-1600	PF 40% release	37.28	262.99	263.91	92	2.12	38.4
Yamne	-1700	PF 40% release	37.28	260.89	261.86	97	2.19	35.1
Yamne	-1800	PF 40% release	37.28	258.78	260.28	150	1.01	49.19
Yamne	-1900	PF 40% release	37.28	258.3	259.98	168	1.22	36.5
Yamne	-2000	PF 40% release	37.28	257.83	259.65	182	1.34	30.52

Yamne	-2100	PF 40% release	37.28	257.35	258.94	159	2.2	21.31
Yamne	-2200	PF 40% release	37.28	256.48	258.13	165	1.83	24.6
Yamne	-2300	PF 40% release	37.28	255.62	256.9	128	2.51	23.25
Yamne	-2400	PF 40% release	37.28	254.75	255.93	118	1.58	36.9
Average						118.12	1.94	33.33

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 50% release	46.6	294.32	295.08	76	2.33	36.98
Yamne	-100	PF 50% release	46.6	290	290.99	99	2.31	36.98
Yamne	-200	PF 50% release	46.6	285.68	286.8	112	2.43	32.17
Yamne	-300	PF 50% release	46.6	281.36	282.59	123	2.46	30.93
Yamne	-400	PF 50% release	46.6	279.42	280.67	125	2.48	29.9
Yamne	-500	PF 50% release	46.6	277.47	278.74	127	2.5	29.37
Yamne	-600	PF 50% release	46.6	275.53	276.8	127	2.35	31.3
Yamne	-700	PF 50% release	46.6	274.18	275.49	131	2.02	35.43
Yamne	-800	PF 50% release	46.6	272.84	273.94	110	2.33	36.47
Yamne	-900	PF 50% release	46.6	271.49	272.69	120	1.61	37.49
Yamne	-1000	PF 50% release	46.6	270.81	272.07	126	1.65	36.93
Yamne	-1100	PF 50% release	46.6	270.13	271.56	143	1.48	38.36
Yamne	-1200	PF 50% release	46.6	269.45	270.7	125	2.12	35.28
Yamne	-1300	PF 50% release	46.6	268	269.11	111	2.27	36.8
Yamne	-1400	PF 50% release	46.6	266.55	267.63	108	1.96	41.99
Yamne	-1500	PF 50% release	46.6	265.1	265.99	89	2.14	45.68
Yamne	-1600	PF 50% release	46.6	262.99	263.99	100	2.22	41.82
Yamne	-1700	PF 50% release	46.6	260.89	261.95	106	2.29	38.38
Yamne	-1800	PF 50% release	46.6	258.78	260.43	165	1.05	54.09
Yamne	-1900	PF 50% release	46.6	258.3	260.14	184	1.27	39.93
Yamne	-2000	PF 50% release	46.6	257.83	259.81	198	1.42	33.18
Yamne	-2100	PF 50% release	46.6	257.35	259.08	173	2.31	23.24
Yamne	-2200	PF 50% release	46.6	256.48	258.27	179	1.96	26.58
Yamne	-2300	PF 50% release	46.6	255.62	257.02	140	2.62	25.41
Yamne	-2400	PF 50% release	46.6	254.75	256.04	129	1.68	37.94
Average						129.04	2.05	35.71

River	Ch d/s of Yamne-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Yamne	0	PF 100% release	93.21	294.32	295.41	109	2.82	40.95
Yamne	-100	PF 100% release	93.21	290	291.32	132	2.79	42.32
Yamne	-200	PF 100% release	93.21	285.68	287.17	149	2.88	39.2
Yamne	-300	PF 100% release	93.21	281.36	282.97	161	2.92	36.82
Yamne	-400	PF 100% release	93.21	279.42	281.05	163	2.96	36.29
Yamne	-500	PF 100% release	93.21	277.47	279.13	166	2.93	36.98
Yamne	-600	PF 100% release	93.21	275.53	277.19	166	2.73	41.06
Yamne	-700	PF 100% release	93.21	274.18	275.83	165	2.52	43.88

Yamne	-800	PF 100% release	93.21	272.84	274.28	144	2.82	40.77
Yamne	-900	PF 100% release	93.21	271.49	273.11	162	2.04	41.54
Yamne	-1000	PF 100% release	93.21	270.81	272.52	171	2.04	41.89
Yamne	-1100	PF 100% release	93.21	270.13	272.01	188	1.86	44.27
Yamne	-1200	PF 100% release	93.21	269.45	271.03	158	2.68	41.67
Yamne	-1300	PF 100% release	93.21	268	269.44	144	2.73	43.79
Yamne	-1400	PF 100% release	93.21	266.55	267.92	137	2.53	48.21
Yamne	-1500	PF 100% release	93.21	265.1	266.28	118	2.58	53.62
Yamne	-1600	PF 100% release	93.21	262.99	264.31	132	2.6	52.91
Yamne	-1700	PF 100% release	93.21	260.89	262.29	140	2.64	50.42
Yamne	-1800	PF 100% release	93.21	258.78	260.98	220	1.2	65.04
Yamne	-1900	PF 100% release	93.21	258.3	260.72	242	1.48	49.55
Yamne	-2000	PF 100% release	93.21	257.83	260.39	256	1.7	41.71
Yamne	-2100	PF 100% release	93.21	257.35	259.61	226	2.73	30.25
Yamne	-2200	PF 100% release	93.21	256.48	258.75	227	2.43	33.81
Yamne	-2300	PF 100% release	93.21	255.62	257.47	185	2.99	34.23
Yamne	-2400	PF 100% release	93.21	254.75	256.5	175	2.02	42.24
Average						169.44	2.46	42.94

Ringong HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Ringong Nov to Feb

Note: River sta -100 denotes location along river reach 100 m d/s of Ringong dam axis

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 10% release	1.57	648.89	649.34	45	1.5	4.66
Ringong	-100	PF 10% release	1.57	631.99	632.37	38	1.37	6.21
Ringong	-200	PF 10% release	1.57	615.1	615.48	38	0.19	30.71
Ringong	-300	PF 10% release	1.57	615.06	615.44	38	0.23	29.18
Ringong	-400	PF 10% release	1.57	615.01	615.2	19	0.98	16.76
Ringong	-500	PF 10% release	1.57	598.2	598.46	26	1.14	10.56
Ringong	-600	PF 10% release	1.57	581.39	581.67	28	1.09	10.41
Ringong	-700	PF 10% release	1.57	579.4	579.78	38	0.99	8.16
Ringong	-800	PF 10% release	1.57	577.4	577.79	39	1.41	5.71
Ringong	-900	PF 10% release	1.57	567.17	567.7	53	1.63	3.63
Ringong	-1000	PF 10% release	1.57	556.95	557.4	45	1.51	4.6
Average						37.00	1.09	11.87

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 15% release	2.35	648.89	649.42	53	1.63	5.47
Ringong	-100	PF 15% release	2.35	631.99	632.43	44	1.48	7.29
Ringong	-200	PF 15% release	2.35	615.1	615.55	45	0.23	31.22
Ringong	-300	PF 15% release	2.35	615.06	615.5	44	0.28	30.06
Ringong	-400	PF 15% release	2.35	615.01	615.23	22	1.06	19.68
Ringong	-500	PF 15% release	2.35	598.2	598.51	31	1.24	12.39

Ringong	-600	PF 15% release	2.35	581.39	581.72	33	1.18	12.23
Ringong	-700	PF 15% release	2.35	579.4	579.85	45	1.11	9.44
Ringong	-800	PF 15% release	2.35	577.4	577.86	46	1.52	6.71
Ringong	-900	PF 15% release	2.35	567.17	567.8	63	1.78	4.26
Ringong	-1000	PF 15% release	2.35	556.95	557.48	53	1.64	5.4
Average						43.55	1.20	13.10

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 20% release	3.14	648.89	649.48	59	1.73	6.14
Ringong	-100	PF 20% release	3.14	631.99	632.48	49	1.57	8.19
Ringong	-200	PF 20% release	3.14	615.1	615.6	50	0.26	31.65
Ringong	-300	PF 20% release	3.14	615.06	615.55	49	0.32	30.76
Ringong	-400	PF 20% release	3.14	615.01	615.26	25	1.13	22.12
Ringong	-500	PF 20% release	3.14	598.2	598.54	34	1.31	13.97
Ringong	-600	PF 20% release	3.14	581.39	581.75	36	1.26	13.7
Ringong	-700	PF 20% release	3.14	579.4	579.9	50	1.19	10.5
Ringong	-800	PF 20% release	3.14	577.4	577.92	52	1.62	7.52
Ringong	-900	PF 20% release	3.14	567.17	567.87	70	1.88	4.78
Ringong	-1000	PF 20% release	3.14	556.95	557.55	60	1.74	6.06
Average						48.55	1.27	14.13

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 25% release	3.92	648.89	649.54	65	1.81	6.71
Ringong	-100	PF 25% release	3.92	631.99	632.53	54	1.64	8.96
Ringong	-200	PF 25% release	3.92	615.1	615.65	55	0.29	32.01
Ringong	-300	PF 25% release	3.92	615.06	615.59	53	0.35	31.39
Ringong	-400	PF 25% release	3.92	615.01	615.29	28	1.17	24.21
Ringong	-500	PF 25% release	3.92	598.2	598.57	37	1.38	15.21
Ringong	-600	PF 25% release	3.92	581.39	581.79	40	1.30	15.04
Ringong	-700	PF 25% release	3.92	579.4	579.94	54	1.28	11.35
Ringong	-800	PF 25% release	3.92	577.4	577.97	57	1.68	8.25
Ringong	-900	PF 25% release	3.92	567.17	567.94	77	1.96	5.23
Ringong	-1000	PF 25% release	3.92	556.95	557.6	65	1.81	6.63
Average						53.18	1.33	15.00

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 30% release	4.71	648.89	649.59	70	1.87	7.22
Ringong	-100	PF 30% release	4.71	631.99	632.57	58	1.71	9.62
Ringong	-200	PF 30% release	4.71	615.1	615.69	59	0.32	32.35
Ringong	-300	PF 30% release	4.71	615.06	615.62	56	0.38	31.95
Ringong	-400	PF 30% release	4.71	615.01	615.31	30	1.21	26.14
Ringong	-500	PF 30% release	4.71	598.2	598.6	40	1.42	16.41

Ringong	-600	PF 30% release	4.71	581.39	581.82	43	1.36	16.12
Ringong	-700	PF 30% release	4.71	579.4	579.98	58	1.33	12.17
Ringong	-800	PF 30% release	4.71	577.4	578.01	61	1.75	8.84
Ringong	-900	PF 30% release	4.71	567.17	568	83	2.02	5.65
Ringong	-1000	PF 30% release	4.71	556.95	557.65	70	1.88	7.13
Average						57.09	1.39	15.78

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 40% release	6.27	648.89	649.67	78	1.97	8.13
Ringong	-100	PF 40% release	6.27	631.99	632.64	65	1.8	10.81
Ringong	-200	PF 40% release	6.27	615.1	615.76	66	0.37	32.92
Ringong	-300	PF 40% release	6.27	615.06	615.69	63	0.43	32.89
Ringong	-400	PF 40% release	6.27	615.01	615.34	33	1.29	29.16
Ringong	-500	PF 40% release	6.27	598.2	598.65	45	1.51	18.37
Ringong	-600	PF 40% release	6.27	581.39	581.87	48	1.44	18.1
Ringong	-700	PF 40% release	6.27	579.4	580.04	64	1.45	13.49
Ringong	-800	PF 40% release	6.27	577.4	578.08	68	1.85	9.93
Ringong	-900	PF 40% release	6.27	567.17	568.1	93	2.14	6.34
Ringong	-1000	PF 40% release	6.27	556.95	557.74	79	1.97	8.04
Average						63.82	1.47	17.11

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 50% release	7.84	648.89	649.74	85	2.07	8.87
Ringong	-100	PF 50% release	7.84	631.99	632.7	71	1.88	11.81
Ringong	-200	PF 50% release	7.84	615.1	615.82	72	0.41	33.41
Ringong	-300	PF 50% release	7.84	615.06	615.74	68	0.48	33.71
Ringong	-400	PF 50% release	7.84	615.01	615.37	36	1.35	31.88
Ringong	-500	PF 50% release	7.84	598.2	598.69	49	1.58	20.08
Ringong	-600	PF 50% release	7.84	581.39	581.92	53	1.51	19.79
Ringong	-700	PF 50% release	7.84	579.4	580.09	69	1.53	14.64
Ringong	-800	PF 50% release	7.84	577.4	578.15	75	1.94	10.85
Ringong	-900	PF 50% release	7.84	567.17	568.19	102	2.23	6.93
Ringong	-1000	PF 50% release	7.84	556.95	557.81	86	2.08	8.75
Average						69.64	1.55	18.25

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 100% release	15.68	648.89	650.02	113	2.36	11.75
Ringong	-100	PF 100% release	15.68	631.99	632.93	94	2.16	15.6
Ringong	-200	PF 100% release	15.68	615.1	616.05	95	0.58	35.29
Ringong	-300	PF 100% release	15.68	615.06	615.95	89	0.67	36.81
Ringong	-400	PF 100% release	15.68	615.01	615.49	48	1.57	41.49
Ringong	-500	PF 100% release	15.68	598.2	598.85	65	1.82	26.5
Ringong	-600	PF 100% release	15.68	581.39	582.09	70	1.72	26.16
Ringong	-700	PF 100% release	15.68	579.4	580.29	89	1.85	18.85

Ringong	-800	PF 100% release	15.68	577.4	578.38	98	2.23	14.32
Ringong	-900	PF 100% release	15.68	567.17	568.51	134	2.59	9.11
Ringong	-1000	PF 100% release	15.68	556.95	558.09	114	2.37	11.6
Average						91.73	1.81	22.50

Monsoon

Ringong -June to September

Note: River sta -100 denotes location along river reach 100 m d/s of Ringong dam axis

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 10% release	10.02	648.89	649.84	95	2.16	9.82
Ringong	-100	PF 10% release	10.02	631.99	632.77	78	1.98	13.02
Ringong	-200	PF 10% release	10.02	615.1	615.89	79	0.46	34.02
Ringong	-300	PF 10% release	10.02	615.06	615.81	75	0.54	34.72
Ringong	-400	PF 10% release	10.02	615.01	615.41	40	1.42	35.24
Ringong	-500	PF 10% release	10.02	598.2	598.75	55	1.66	22.15
Ringong	-600	PF 10% release	10.02	581.39	581.97	58	1.58	21.84
Ringong	-700	PF 10% release	10.02	579.4	580.16	76	1.64	16
Ringong	-800	PF 10% release	10.02	577.4	578.22	82	2.04	11.97
Ringong	-900	PF 10% release	10.02	567.17	568.29	112	2.34	7.65
Ringong	-1000	PF 10% release	10.02	556.95	557.9	95	2.19	9.65
Average						76.82	1.64	19.64

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 15% release	15.03	648.89	650	111	2.34	11.55
Ringong	-100	PF 15% release	15.03	631.99	632.91	92	2.14	15.35
Ringong	-200	PF 15% release	15.03	615.1	616.04	94	0.56	35.16
Ringong	-300	PF 15% release	15.03	615.06	615.93	87	0.65	36.6
Ringong	-400	PF 15% release	15.03	615.01	615.48	47	1.55	41.25
Ringong	-500	PF 15% release	15.03	598.2	598.84	64	1.8	26.05
Ringong	-600	PF 15% release	15.03	581.39	582.07	68	1.71	25.73
Ringong	-700	PF 15% release	15.03	579.4	580.28	88	1.83	18.55
Ringong	-800	PF 15% release	15.03	577.4	578.37	97	2.2	14.09
Ringong	-900	PF 15% release	15.03	567.17	568.49	132	2.55	8.97
Ringong	-1000	PF 15% release	15.03	556.95	558.07	112	2.35	11.41
Average						90.18	1.79	22.25

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 20% release	20.04	648.89	650.14	125	2.48	12.96
Ringong	-100	PF 20% release	20.04	631.99	633.03	104	2.25	17.28
Ringong	-200	PF 20% release	20.04	615.1	616.15	105	0.65	36.1
Ringong	-300	PF 20% release	20.04	615.06	616.04	98	0.75	38.13
Ringong	-400	PF 20% release	20.04	615.01	615.53	52	1.68	42.93
Ringong	-500	PF 20% release	20.04	598.2	598.92	72	1.91	29.23

Ringong	-600	PF 20% release	20.04	581.39	582.16	77	1.8	28.9
Ringong	-700	PF 20% release	20.04	579.4	580.38	98	1.98	20.62
Ringong	-800	PF 20% release	20.04	577.4	578.49	109	2.34	15.81
Ringong	-900	PF 20% release	20.04	567.17	568.65	148	2.69	10.09
Ringong	-1000	PF 20% release	20.04	556.95	558.21	126	2.49	12.8
Average						101.27	1.91	24.08

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 25% release	25.05	648.89	650.25	136	2.61	14.11
Ringong	-100	PF 25% release	25.05	631.99	633.12	113	2.35	18.89
Ringong	-200	PF 25% release	25.05	615.1	616.25	115	0.73	36.90
Ringong	-300	PF 25% release	25.05	615.06	616.12	106	0.83	39.42
Ringong	-400	PF 25% release	25.05	615.01	615.58	57	1.79	44.46
Ringong	-500	PF 25% release	25.05	598.2	598.99	79	1.99	32.02
Ringong	-600	PF 25% release	25.05	581.39	582.23	84	1.87	31.75
Ringong	-700	PF 25% release	25.05	579.4	580.46	106	2.11	22.30
Ringong	-800	PF 25% release	25.05	577.4	578.59	119	2.42	17.36
Ringong	-900	PF 25% release	25.05	567.17	568.79	162	2.82	11.04
Ringong	-1000	PF 25% release	25.05	556.95	558.32	137	2.62	13.93
Average						110.36	2.01	25.65

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 30% release	30.07	648.89	650.36	147	2.69	15.25
Ringong	-100	PF 30% release	30.07	631.99	633.21	122	2.44	20.32
Ringong	-200	PF 30% release	30.07	615.1	616.34	124	0.8	37.61
Ringong	-300	PF 30% release	30.07	615.06	616.2	114	0.91	40.39
Ringong	-400	PF 30% release	30.07	615.01	615.63	62	1.87	45.88
Ringong	-500	PF 30% release	30.07	598.2	599.05	85	2.05	34.19
Ringong	-600	PF 30% release	30.07	581.39	582.29	90	1.96	33.28
Ringong	-700	PF 30% release	30.07	579.4	580.53	113	2.22	23.86
Ringong	-800	PF 30% release	30.07	577.4	578.68	128	2.51	18.68
Ringong	-900	PF 30% release	30.07	567.17	568.91	174	2.92	11.87
Ringong	-1000	PF 30% release	30.07	556.95	558.42	147	2.72	14.99
Average						118.73	2.10	26.94

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 40% release	40.09	648.89	650.54	165	2.85	17.1
Ringong	-100	PF 40% release	40.09	631.99	633.35	136	2.59	22.79
Ringong	-200	PF 40% release	40.09	615.1	616.49	139	0.92	38.85
Ringong	-300	PF 40% release	40.09	615.06	616.33	127	1.04	41.96
Ringong	-400	PF 40% release	40.09	615.01	615.71	70	2.03	48.41
Ringong	-500	PF 40% release	40.09	598.2	599.14	94	2.23	35.69

Ringong	-600	PF 40% release	40.09	581.39	582.39	100	2.14	34.09
Ringong	-700	PF 40% release	40.09	579.4	580.66	126	2.39	26.54
Ringong	-800	PF 40% release	40.09	577.4	578.84	144	2.66	20.96
Ringong	-900	PF 40% release	40.09	567.17	569.12	195	3.09	13.32
Ringong	-1000	PF 40% release	40.09	556.95	558.61	166	2.88	16.83
Average						132.91	2.26	28.78

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 50% release	50.11	648.89	650.68	179	3	18.61
Ringong	-100	PF 50% release	50.11	631.99	633.48	149	2.7	24.92
Ringong	-200	PF 50% release	50.11	615.1	616.63	153	1.03	39.92
Ringong	-300	PF 50% release	50.11	615.06	616.45	139	1.15	43.31
Ringong	-400	PF 50% release	50.11	615.01	615.78	77	2.15	50.67
Ringong	-500	PF 50% release	50.11	598.2	599.23	103	2.37	37.05
Ringong	-600	PF 50% release	50.11	581.39	582.48	109	2.31	34.8
Ringong	-700	PF 50% release	50.11	579.4	580.77	137	2.52	28.86
Ringong	-800	PF 50% release	50.11	577.4	578.97	157	2.78	22.9
Ringong	-900	PF 50% release	50.11	567.17	569.3	213	3.24	14.56
Ringong	-1000	PF 50% release	50.11	556.95	558.77	182	2.99	18.47
Average						145.27	2.39	30.37

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 100% release	100.22	648.89	651.27	238	3.42	24.68
Ringong	-100	PF 100% release	100.22	631.99	633.96	197	3.11	32.89
Ringong	-200	PF 100% release	100.22	615.1	617.12	202	1.44	43.93
Ringong	-300	PF 100% release	100.22	615.06	616.87	181	1.59	48.34
Ringong	-400	PF 100% release	100.22	615.01	616.07	106	2.54	59.92
Ringong	-500	PF 100% release	100.22	598.2	599.58	138	2.87	42.47
Ringong	-600	PF 100% release	100.22	581.39	582.82	143	2.95	37.56
Ringong	-700	PF 100% release	100.22	579.4	581.17	177	3.04	35.25
Ringong	-800	PF 100% release	100.22	577.4	579.48	208	3.19	30.24
Ringong	-900	PF 100% release	100.22	567.17	569.98	281	3.73	19.19
Ringong	-1000	PF 100% release	100.22	556.95	559.35	240	3.43	24.37
Average						191.91	2.85	36.26

Other 4 months

Ringong Oct-Mar-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Ringong dam axis

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 10% release	5.97	648.89	649.66	77	1.96	7.96
Ringong	-100	PF 10% release	5.97	631.99	632.63	64	1.79	10.58
Ringong	-200	PF 10% release	5.97	615.1	615.74	64	0.36	32.81

Ringong	-300	PF 10% release	5.97	615.06	615.68	62	0.43	32.72
Ringong	-400	PF 10% release	5.97	615.01	615.34	33	1.28	28.58
Ringong	-500	PF 10% release	5.97	598.2	598.64	44	1.49	18.02
Ringong	-600	PF 10% release	5.97	581.39	581.86	47	1.43	17.73
Ringong	-700	PF 10% release	5.97	579.4	580.03	63	1.42	13.26
Ringong	-800	PF 10% release	5.97	577.4	578.07	67	1.84	9.73
Ringong	-900	PF 10% release	5.97	567.17	568.08	91	2.11	6.22
Ringong	-1000	PF 10% release	5.97	556.95	557.72	77	1.97	7.84
Average						62.64	1.46	16.86

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 15% release	8.95	648.89	649.79	90	2.13	9.35
Ringong	-100	PF 15% release	8.95	631.99	632.74	75	1.92	12.51
Ringong	-200	PF 15% release	8.95	615.1	615.86	76	0.44	33.74
Ringong	-300	PF 15% release	8.95	615.06	615.78	72	0.51	34.28
Ringong	-400	PF 15% release	8.95	615.01	615.39	38	1.39	33.62
Ringong	-500	PF 15% release	8.95	598.2	598.72	52	1.62	21.17
Ringong	-600	PF 15% release	8.95	581.39	581.95	56	1.53	20.96
Ringong	-700	PF 15% release	8.95	579.4	580.12	72	1.61	15.29
Ringong	-800	PF 15% release	8.95	577.4	578.19	79	1.97	11.5
Ringong	-900	PF 15% release	8.95	567.17	568.24	107	2.29	7.31
Ringong	-1000	PF 15% release	8.95	556.95	557.86	91	2.12	9.27
Average						73.45	1.59	19.00

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 20% release	11.94	648.89	649.9	101	2.23	10.54
Ringong	-100	PF 20% release	11.94	631.99	632.83	84	2.04	14
Ringong	-200	PF 20% release	11.94	615.1	615.95	85	0.5	34.49
Ringong	-300	PF 20% release	11.94	615.06	615.86	80	0.59	35.51
Ringong	-400	PF 20% release	11.94	615.01	615.44	43	1.47	37.71
Ringong	-500	PF 20% release	11.94	598.2	598.79	59	1.72	23.76
Ringong	-600	PF 20% release	11.94	581.39	582.02	63	1.62	23.54
Ringong	-700	PF 20% release	11.94	579.4	580.21	81	1.73	16.99
Ringong	-800	PF 20% release	11.94	577.4	578.29	89	2.09	12.91
Ringong	-900	PF 20% release	11.94	567.17	568.37	120	2.45	8.17
Ringong	-1000	PF 20% release	11.94	556.95	557.97	102	2.24	10.41
Average						82.45	1.70	20.73

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 25% release	14.92	648.89	650	111	2.34	11.52
Ringong	-100	PF 25% release	14.92	631.99	632.91	92	2.14	15.3
Ringong	-200	PF 25% release	14.92	615.1	616.03	93	0.56	35.14

Ringong	-300	PF 25% release	14.92	615.06	615.93	87	0.65	36.57
Ringong	-400	PF 25% release	14.92	615.01	615.48	47	1.54	41.17
Ringong	-500	PF 25% release	14.92	598.2	598.84	64	1.8	25.97
Ringong	-600	PF 25% release	14.92	581.39	582.07	68	1.71	25.65
Ringong	-700	PF 25% release	14.92	579.4	580.28	88	1.83	18.5
Ringong	-800	PF 25% release	14.92	577.4	578.36	96	2.2	14.05
Ringong	-900	PF 25% release	14.92	567.17	568.48	131	2.55	8.94
Ringong	-1000	PF 25% release	14.92	556.95	558.07	112	2.35	11.37
Average						89.91	1.79	22.20

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 30% release	17.91	648.89	650.08	119	2.42	12.39
Ringong	-100	PF 30% release	17.91	631.99	632.98	99	2.2	16.51
Ringong	-200	PF 30% release	17.91	615.1	616.11	101	0.62	35.72
Ringong	-300	PF 30% release	17.91	615.06	615.99	93	0.71	37.52
Ringong	-400	PF 30% release	17.91	615.01	615.51	50	1.63	42.23
Ringong	-500	PF 30% release	17.91	598.2	598.89	69	1.85	28.05
Ringong	-600	PF 30% release	17.91	581.39	582.13	74	1.75	27.73
Ringong	-700	PF 30% release	17.91	579.4	580.33	93	1.93	19.71
Ringong	-800	PF 30% release	17.91	577.4	578.44	104	2.26	15.18
Ringong	-900	PF 30% release	17.91	567.17	568.58	141	2.63	9.65
Ringong	-1000	PF 30% release	17.91	556.95	558.15	120	2.43	12.24
Average						96.64	1.86	23.36

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 40% release	23.87	648.89	650.23	134	2.57	13.89
Ringong	-100	PF 40% release	23.87	631.99	633.1	111	2.34	18.47
Ringong	-200	PF 40% release	23.87	615.1	616.23	113	0.71	36.72
Ringong	-300	PF 40% release	23.87	615.06	616.1	104	0.81	39.14
Ringong	-400	PF 40% release	23.87	615.01	615.57	56	1.76	44.12
Ringong	-500	PF 40% release	23.87	598.2	598.97	77	1.97	31.38
Ringong	-600	PF 40% release	23.87	581.39	582.22	83	1.85	31.14
Ringong	-700	PF 40% release	23.87	579.4	580.44	104	2.09	21.91
Ringong	-800	PF 40% release	23.87	577.4	578.57	117	2.4	17.03
Ringong	-900	PF 40% release	23.87	567.17	568.76	159	2.79	10.82
Ringong	-1000	PF 40% release	23.87	556.95	558.3	135	2.58	13.72
Average						108.45	1.99	25.30

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 50% release	29.84	648.89	650.35	146	2.68	15.2
Ringong	-100	PF 50% release	29.84	631.99	633.2	121	2.44	20.26
Ringong	-200	PF 50% release	29.84	615.1	616.34	124	0.8	37.58

Ringong	-300	PF 50% release	29.84	615.06	616.19	113	0.9	40.34
Ringong	-400	PF 50% release	29.84	615.01	615.63	62	1.86	45.87
Ringong	-500	PF 50% release	29.84	598.2	599.05	85	2.05	34.15
Ringong	-600	PF 50% release	29.84	581.39	582.29	90	1.95	33.27
Ringong	-700	PF 50% release	29.84	579.4	580.53	113	2.21	23.79
Ringong	-800	PF 50% release	29.84	577.4	578.68	128	2.51	18.62
Ringong	-900	PF 50% release	29.84	567.17	568.9	173	2.92	11.84
Ringong	-1000	PF 50% release	29.84	556.95	558.42	147	2.72	14.94
Average						118.36	2.09	26.90

River	Ch d/s of Ringong HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
	(m)		(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Ringong	0 (dam site)	PF 100% release	59.69	648.89	650.82	193.00	3.08	20.05
Ringong	-100	PF 100% release	59.69	631.99	633.59	160.00	2.8	26.72
Ringong	-200	PF 100% release	59.69	615.1	616.74	164.00	1.12	40.83
Ringong	-300	PF 100% release	59.69	615.06	616.54	148.00	1.25	44.47
Ringong	-400	PF 100% release	59.69	615.01	615.84	83.00	2.25	52.65
Ringong	-500	PF 100% release	59.69	598.2	599.31	111.00	2.49	38.24
Ringong	-600	PF 100% release	59.69	581.39	582.56	117.00	2.44	35.43
Ringong	-700	PF 100% release	59.69	579.4	580.86	146.00	2.64	30.79
Ringong	-800	PF 100% release	59.69	577.4	579.09	169.00	2.88	24.59
Ringong	-900	PF 100% release	59.69	567.17	569.45	228.00	3.36	15.6
Ringong	-1000	PF 100% release	59.69	556.95	558.89	194.00	3.12	19.72
Average						155.73	2.49	31.74

Pango HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Pango HEP-Nov to Feb

Note: River sta -100 denotes location along river reach 100 m d/s of Pango dam axis

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 10% release	1.34	971.27	971.58	31	1.26	6.82
Singong	-100	PF 10% release	1.34	966.14	966.49	35	1.31	5.83
Singong	-200	PF 10% release	1.34	961.01	961.31	30	1.22	7.35
Singong	-300	PF 10% release	1.34	955.68	956.03	35	1.33	5.72
Singong	-400	PF 10% release	1.34	950.35	950.72	37	1.36	5.38
Singong	-500	PF 10% release	1.34	945.56	945.88	32	1.25	6.86
Singong	-600	PF 10% release	1.34	940.78	941.02	24	0.98	11.24
Singong	-700	PF 10% release	1.34	938.61	938.97	36	1.03	7.28
Singong	-800	PF 10% release	1.34	936.44	936.8	36	1.32	5.67
Singong	-900	PF 10% release	1.34	934.77	935.15	38	0.87	8.07
Singong	-1000	PF 10% release	1.34	933.1	933.28	18	0.96	15.25
Singong	-1100	PF 10% release	1.34	929.33	929.68	35	1.33	5.7
Singong	-1200	PF 10% release	1.34	925.56	926.03	47	1.24	4.6
Singong	-1300	PF 10% release	1.34	924.18	924.69	51	1.04	5.05
Singong	-1400	PF 10% release	1.34	922.79	923.24	45	1.26	4.7

Singong	-1500	PF 10% release	1.34	921.67	922.15	48	0.83	6.81
Singong	-1600	PF 10% release	1.34	920.55	920.85	30	1.13	7.89
Singong	-1700	PF 10% release	1.34	919.36	919.67	31	0.61	13.93
Average						35.50	1.13	7.45

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 15% release	2.01	971.27	971.64	37	1.35	8.05
Singong	-100	PF 15% release	2.01	966.14	966.55	41	1.43	6.85
Singong	-200	PF 15% release	2.01	961.01	961.36	35	1.33	8.63
Singong	-300	PF 15% release	2.01	955.68	956.09	41	1.44	6.73
Singong	-400	PF 15% release	2.01	950.35	950.78	43	1.47	6.33
Singong	-500	PF 15% release	2.01	945.56	945.93	37	1.36	8.07
Singong	-600	PF 15% release	2.01	940.78	941.07	29	1.05	13.29
Singong	-700	PF 15% release	2.01	938.61	939.02	41	1.16	8.4
Singong	-800	PF 15% release	2.01	936.44	936.86	42	1.42	6.69
Singong	-900	PF 15% release	2.01	934.77	935.21	44	0.99	9.3
Singong	-1000	PF 15% release	2.01	933.1	933.31	21	1.04	17.94
Singong	-1100	PF 15% release	2.01	929.33	929.75	42	1.44	6.72
Singong	-1200	PF 15% release	2.01	925.56	926.12	56	1.33	5.44
Singong	-1300	PF 15% release	2.01	924.18	924.76	58	1.18	5.8
Singong	-1400	PF 15% release	2.01	922.79	923.33	54	1.35	5.57
Singong	-1500	PF 15% release	2.01	921.67	922.22	55	0.94	7.81
Singong	-1600	PF 15% release	2.01	920.55	920.91	36	1.2	9.37
Singong	-1700	PF 15% release	2.01	919.36	919.72	36	0.7	15.99
Average						41.56	1.23	8.72

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 20% release	2.68	971.27	971.68	41	1.44	8.99
Singong	-100	PF 20% release	2.68	966.14	966.6	46	1.52	7.66
Singong	-200	PF 20% release	2.68	961.01	961.4	39	1.41	9.69
Singong	-300	PF 20% release	2.68	955.68	956.14	46	1.53	7.55
Singong	-400	PF 20% release	2.68	950.35	950.83	48	1.56	7.1
Singong	-500	PF 20% release	2.68	945.56	945.98	42	1.44	9.05
Singong	-600	PF 20% release	2.68	940.78	941.1	32	1.1	15
Singong	-700	PF 20% release	2.68	938.61	939.07	46	1.27	9.27
Singong	-800	PF 20% release	2.68	936.44	936.92	48	1.49	7.54
Singong	-900	PF 20% release	2.68	934.77	935.25	48	1.08	10.25
Singong	-1000	PF 20% release	2.68	933.1	933.34	24	1.1	20.2
Singong	-1100	PF 20% release	2.68	929.33	929.8	47	1.53	7.53
Singong	-1200	PF 20% release	2.68	925.56	926.18	62	1.43	6.06
Singong	-1300	PF 20% release	2.68	924.18	924.83	65	1.27	6.46
Singong	-1400	PF 20% release	2.68	922.79	923.39	60	1.45	6.21
Singong	-1500	PF 20% release	2.68	921.67	922.28	61	1.02	8.69
Singong	-1600	PF 20% release	2.68	920.55	920.95	40	1.3	10.39

Singong	-1700	PF 20% release	2.68	919.36	919.76	40	0.75	17.84
Average						46.39	1.32	9.75

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 25% release	3.35	971.27	971.72	45	1.51	9.83
Singong	-100	PF 25% release	3.35	966.14	966.64	50	1.59	8.39
Singong	-200	PF 25% release	3.35	961.01	961.44	43	1.47	10.60
Singong	-300	PF 25% release	3.35	955.68	956.19	51	1.60	8.26
Singong	-400	PF 25% release	3.35	950.35	950.88	53	1.63	7.75
Singong	-500	PF 25% release	3.35	945.56	946.02	46	1.50	9.90
Singong	-600	PF 25% release	3.35	940.78	941.14	36	1.14	16.46
Singong	-700	PF 25% release	3.35	938.61	939.1	49	1.36	10.01
Singong	-800	PF 25% release	3.35	936.44	936.96	52	1.55	8.26
Singong	-900	PF 25% release	3.35	934.77	935.29	52	1.16	11.08
Singong	-1000	PF 25% release	3.35	933.1	933.36	26	1.15	22.07
Singong	-1100	PF 25% release	3.35	929.33	929.84	51	1.60	8.23
Singong	-1200	PF 25% release	3.35	925.56	926.24	68	1.49	6.62
Singong	-1300	PF 25% release	3.35	924.18	924.88	70	1.36	6.98
Singong	-1400	PF 25% release	3.35	922.79	923.44	65	1.51	6.79
Singong	-1500	PF 25% release	3.35	921.67	922.33	66	1.09	9.38
Singong	-1600	PF 25% release	3.35	920.55	920.99	44	1.35	11.38
Singong	-1700	PF 25% release	3.35	919.36	919.79	43	0.80	19.28
Average						50.56	1.38	10.63

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 30% release	4.02	971.27	971.76	49	1.57	10.58
Singong	-100	PF 30% release	4.02	966.14	966.68	54	1.65	9.02
Singong	-200	PF 30% release	4.02	961.01	961.47	46	1.53	11.39
Singong	-300	PF 30% release	4.02	955.68	956.23	55	1.66	8.88
Singong	-400	PF 30% release	4.02	950.35	950.92	57	1.69	8.35
Singong	-500	PF 30% release	4.02	945.56	946.05	49	1.56	10.64
Singong	-600	PF 30% release	4.02	940.78	941.16	38	1.19	17.7
Singong	-700	PF 30% release	4.02	938.61	939.14	53	1.43	10.7
Singong	-800	PF 30% release	4.02	936.44	937	56	1.61	8.88
Singong	-900	PF 30% release	4.02	934.77	935.33	56	1.22	11.81
Singong	-1000	PF 30% release	4.02	933.1	933.38	28	1.2	23.7
Singong	-1100	PF 30% release	4.02	929.33	929.88	55	1.66	8.86
Singong	-1200	PF 30% release	4.02	925.56	926.29	73	1.55	7.12
Singong	-1300	PF 30% release	4.02	924.18	924.93	75	1.44	7.44
Singong	-1400	PF 30% release	4.02	922.79	923.49	70	1.56	7.32
Singong	-1500	PF 30% release	4.02	921.67	922.37	70	1.16	9.96
Singong	-1600	PF 30% release	4.02	920.55	921.02	47	1.39	12.28
Singong	-1700	PF 30% release	4.02	919.36	919.82	46	0.85	20.49
Average						54.28	1.44	11.40

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 40% release	5.36	971.27	971.81	54	1.66	11.86
Singong	-100	PF 40% release	5.36	966.14	966.75	61	1.74	10.15
Singong	-200	PF 40% release	5.36	961.01	961.53	52	1.62	12.78
Singong	-300	PF 40% release	5.36	955.68	956.29	61	1.76	9.95
Singong	-400	PF 40% release	5.36	950.35	950.99	64	1.79	9.36
Singong	-500	PF 40% release	5.36	945.56	946.11	55	1.66	11.93
Singong	-600	PF 40% release	5.36	940.78	941.21	43	1.25	19.9
Singong	-700	PF 40% release	5.36	938.61	939.19	58	1.55	11.85
Singong	-800	PF 40% release	5.36	936.44	937.07	63	1.7	9.98
Singong	-900	PF 40% release	5.36	934.77	935.38	61	1.34	13.04
Singong	-1000	PF 40% release	5.36	933.1	933.42	32	1.27	26.58
Singong	-1100	PF 40% release	5.36	929.33	929.94	61	1.76	9.93
Singong	-1200	PF 40% release	5.36	925.56	926.38	82	1.65	7.98
Singong	-1300	PF 40% release	5.36	924.18	925.01	83	1.56	8.24
Singong	-1400	PF 40% release	5.36	922.79	923.58	79	1.65	8.21
Singong	-1500	PF 40% release	5.36	921.67	922.44	77	1.27	11
Singong	-1600	PF 40% release	5.36	920.55	921.08	53	1.47	13.81
Singong	-1700	PF 40% release	5.36	919.36	919.87	51	0.93	22.63
Average						60.56	1.54	12.73

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 50% release	6.7	971.27	971.87	60	1.73	12.99
Singong	-100	PF 50% release	6.7	966.14	966.8	66	1.82	11.08
Singong	-200	PF 50% release	6.7	961.01	961.58	57	1.68	14.01
Singong	-300	PF 50% release	6.7	955.68	956.35	67	1.83	10.91
Singong	-400	PF 50% release	6.7	950.35	951.05	70	1.86	10.28
Singong	-500	PF 50% release	6.7	945.56	946.16	60	1.73	13.05
Singong	-600	PF 50% release	6.7	940.78	941.25	47	1.29	21.91
Singong	-700	PF 50% release	6.7	938.61	939.24	63	1.67	12.76
Singong	-800	PF 50% release	6.7	936.44	937.13	69	1.76	10.96
Singong	-900	PF 50% release	6.7	934.77	935.43	66	1.45	14.03
Singong	-1000	PF 50% release	6.7	933.1	933.45	35	1.31	29.19
Singong	-1100	PF 50% release	6.7	929.33	930	67	1.84	10.86
Singong	-1200	PF 50% release	6.7	925.56	926.45	89	1.72	8.72
Singong	-1300	PF 50% release	6.7	924.18	925.08	90	1.67	8.9
Singong	-1400	PF 50% release	6.7	922.79	923.65	86	1.72	8.99
Singong	-1500	PF 50% release	6.7	921.67	922.5	83	1.37	11.83
Singong	-1600	PF 50% release	6.7	920.55	921.13	58	1.52	15.16
Singong	-1700	PF 50% release	6.7	919.36	919.9	54	1	24.34
Average						65.94	1.61	13.89

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 100% release	13.4	971.27	972.06	79	1.97	17.22
Singong	-100	PF 100% release	13.4	966.14	967.02	88	2.09	14.63
Singong	-200	PF 100% release	13.4	961.01	961.76	75	1.93	18.49
Singong	-300	PF 100% release	13.4	955.68	956.56	88	2.1	14.39
Singong	-400	PF 100% release	13.4	950.35	951.28	93	2.13	13.57
Singong	-500	PF 100% release	13.4	945.56	946.35	79	1.97	17.31
Singong	-600	PF 100% release	13.4	940.78	941.41	63	1.47	28.99
Singong	-700	PF 100% release	13.4	938.61	939.42	81	2.02	16.42
Singong	-800	PF 100% release	13.4	936.44	937.36	92	2.01	14.54
Singong	-900	PF 100% release	13.4	934.77	935.6	83	1.83	17.65
Singong	-1000	PF 100% release	13.4	933.1	933.55	45	1.63	31.04
Singong	-1100	PF 100% release	13.4	929.33	930.22	89	2.09	14.4
Singong	-1200	PF 100% release	13.4	925.56	926.73	117	2.02	11.4
Singong	-1300	PF 100% release	13.4	924.18	925.33	115	2.03	11.42
Singong	-1400	PF 100% release	13.4	922.79	923.92	113	2.01	11.78
Singong	-1500	PF 100% release	13.4	921.67	922.72	105	1.7	15.01
Singong	-1600	PF 100% release	13.4	920.55	921.31	76	1.77	19.91
Singong	-1700	PF 100% release	13.4	919.36	920.05	69	1.24	30.97
Average						86.11	1.89	17.73

Monsoon

Pango HEP-June to September

Note: River sta -100 denotes location along river reach 100 m d/s of Pango dam axis

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 10% release	8.56	971.27	971.93	66	1.81	14.36
Singong	-100	PF 10% release	8.56	966.14	966.87	73	1.9	12.27
Singong	-200	PF 10% release	8.56	961.01	961.64	63	1.77	15.43
Singong	-300	PF 10% release	8.56	955.68	956.42	74	1.91	12.07
Singong	-400	PF 10% release	8.56	950.35	951.12	77	1.97	11.28
Singong	-500	PF 10% release	8.56	945.56	946.22	66	1.8	14.46
Singong	-600	PF 10% release	8.56	940.78	941.31	53	1.34	24.29
Singong	-700	PF 10% release	8.56	938.61	939.29	68	1.8	13.89
Singong	-800	PF 10% release	8.56	936.44	937.21	77	1.84	12.12
Singong	-900	PF 10% release	8.56	934.77	935.49	72	1.57	15.21
Singong	-1000	PF 10% release	8.56	933.1	933.48	38	1.41	30.32
Singong	-1100	PF 10% release	8.56	929.33	930.07	74	1.92	12.01
Singong	-1200	PF 10% release	8.56	925.56	926.54	98	1.82	9.59
Singong	-1300	PF 10% release	8.56	924.18	925.16	98	1.79	9.72
Singong	-1400	PF 10% release	8.56	922.79	923.74	95	1.82	9.89
Singong	-1500	PF 10% release	8.56	921.67	922.57	90	1.47	12.89
Singong	-1600	PF 10% release	8.56	920.55	921.19	64	1.61	16.68
Singong	-1700	PF 10% release	8.56	919.36	919.95	59	1.08	26.55
Average						72.50	1.70	15.17

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 15% release	12.84	971.27	972.04	77	1.98	16.83
Singong	-100	PF 15% release	12.84	966.14	967	86	2.07	14.38
Singong	-200	PF 15% release	12.84	961.01	961.75	74	1.92	18.14
Singong	-300	PF 15% release	12.84	955.68	956.55	87	2.07	14.2
Singong	-400	PF 15% release	12.84	950.35	951.26	91	2.13	13.28
Singong	-500	PF 15% release	12.84	945.56	946.34	78	1.95	17.01
Singong	-600	PF 15% release	12.84	940.78	941.39	61	1.47	28.42
Singong	-700	PF 15% release	12.84	938.61	939.41	80	1.98	16.22
Singong	-800	PF 15% release	12.84	936.44	937.34	90	1.98	14.31
Singong	-900	PF 15% release	12.84	934.77	935.59	82	1.8	17.38
Singong	-1000	PF 15% release	12.84	933.1	933.54	44	1.61	30.97
Singong	-1100	PF 15% release	12.84	929.33	930.2	87	2.09	14.09
Singong	-1200	PF 15% release	12.84	925.56	926.71	115	2	11.21
Singong	-1300	PF 15% release	12.84	924.18	925.31	113	2.01	11.25
Singong	-1400	PF 15% release	12.84	922.79	923.9	111	1.99	11.59
Singong	-1500	PF 15% release	12.84	921.67	922.71	104	1.68	14.79
Singong	-1600	PF 15% release	12.84	920.55	921.3	75	1.75	19.59
Singong	-1700	PF 15% release	12.84	919.36	920.04	68	1.22	30.5
Average						84.61	1.87	17.45

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 20% release	17.12	971.27	972.14	87	2.08	18.95
Singong	-100	PF 20% release	17.12	966.14	967.11	97	2.18	16.18
Singong	-200	PF 20% release	17.12	961.01	961.84	83	2.02	20.45
Singong	-300	PF 20% release	17.12	955.68	956.66	98	2.2	15.91
Singong	-400	PF 20% release	17.12	950.35	951.37	102	2.26	14.9
Singong	-500	PF 20% release	17.12	945.56	946.43	87	2.07	19.09
Singong	-600	PF 20% release	17.12	940.78	941.46	68	1.58	31.65
Singong	-700	PF 20% release	17.12	938.61	939.51	90	2.1	18.2
Singong	-800	PF 20% release	17.12	936.44	937.46	102	2.09	16.08
Singong	-900	PF 20% release	17.12	934.77	935.67	90	1.99	19.1
Singong	-1000	PF 20% release	17.12	933.1	933.6	50	1.76	31.54
Singong	-1100	PF 20% release	17.12	929.33	930.31	98	2.21	15.83
Singong	-1200	PF 20% release	17.12	925.56	926.84	128	2.13	12.54
Singong	-1300	PF 20% release	17.12	924.18	925.44	126	2.18	12.47
Singong	-1400	PF 20% release	17.12	922.79	924.04	125	2.12	12.96
Singong	-1500	PF 20% release	17.12	921.67	922.81	114	1.84	16.3
Singong	-1600	PF 20% release	17.12	920.55	921.39	84	1.86	21.95
Singong	-1700	PF 20% release	17.12	919.36	920.11	75	1.35	33.31
Average						94.67	2.00	19.30

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 25% release	21.4	971.27	972.22	95	2.16	20.77
Singong	-100	PF 25% release	21.4	966.14	967.2	106	2.28	17.7
Singong	-200	PF 25% release	21.4	961.01	961.92	91	2.11	22.36
Singong	-300	PF 25% release	21.4	955.68	956.75	107	2.29	17.42
Singong	-400	PF 25% release	21.4	950.35	951.47	112	2.34	16.36
Singong	-500	PF 25% release	21.4	945.56	946.51	95	2.16	20.86
Singong	-600	PF 25% release	21.4	940.78	941.53	75	1.66	34.56
Singong	-700	PF 25% release	21.4	938.61	939.59	98	2.21	19.83
Singong	-800	PF 25% release	21.4	936.44	937.55	111	2.18	17.61
Singong	-900	PF 25% release	21.4	934.77	935.74	97	2.16	20.52
Singong	-1000	PF 25% release	21.4	933.1	933.65	55	1.89	32.06
Singong	-1100	PF 25% release	21.4	929.33	930.4	107	2.3	17.37
Singong	-1200	PF 25% release	21.4	925.56	926.95	139	2.25	13.64
Singong	-1300	PF 25% release	21.4	924.18	925.55	137	2.3	13.56
Singong	-1400	PF 25% release	21.4	922.79	924.15	136	2.24	14.09
Singong	-1500	PF 25% release	21.4	921.67	922.9	123	1.97	17.64
Singong	-1600	PF 25% release	21.4	920.55	921.46	91	1.97	23.84
Singong	-1700	PF 25% release	21.4	919.36	920.17	81	1.47	33.95
Average						103.11	2.11	20.79

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 30% release	25.68	971.27	972.29	102	2.25	22.31
Singong	-100	PF 30% release	25.68	966.14	967.28	114	2.37	19.03
Singong	-200	PF 30% release	25.68	961.01	961.99	98	2.19	24.05
Singong	-300	PF 30% release	25.68	955.68	956.83	115	2.4	18.65
Singong	-400	PF 30% release	25.68	950.35	951.55	120	2.43	17.61
Singong	-500	PF 30% release	25.68	945.56	946.58	102	2.26	22.38
Singong	-600	PF 30% release	25.68	940.78	941.57	79	1.77	35.12
Singong	-700	PF 30% release	25.68	938.61	939.66	105	2.28	21.41
Singong	-800	PF 30% release	25.68	936.44	937.63	119	2.29	18.82
Singong	-900	PF 30% release	25.68	934.77	935.81	104	2.26	21.98
Singong	-1000	PF 30% release	25.68	933.1	933.7	60	2	32.55
Singong	-1100	PF 30% release	25.68	929.33	930.48	115	2.38	18.67
Singong	-1200	PF 30% release	25.68	925.56	927.05	149	2.35	14.61
Singong	-1300	PF 30% release	25.68	924.18	925.64	146	2.41	14.51
Singong	-1400	PF 30% release	25.68	922.79	924.24	145	2.35	15.09
Singong	-1500	PF 30% release	25.68	921.67	922.99	132	2.07	18.81
Singong	-1600	PF 30% release	25.68	920.55	921.53	98	2.06	25.51
Singong	-1700	PF 30% release	25.68	919.36	920.22	86	1.58	34.53
Average						110.50	2.21	21.98

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 40% release	34.24	971.27	972.42	115	2.38	25.06
Singong	-100	PF 40% release	34.24	966.14	967.42	128	2.51	21.36
Singong	-200	PF 40% release	34.24	961.01	962.1	109	2.32	26.97
Singong	-300	PF 40% release	34.24	955.68	956.97	129	2.53	20.99
Singong	-400	PF 40% release	34.24	950.35	951.7	135	2.57	19.75
Singong	-500	PF 40% release	34.24	945.56	946.71	115	2.37	25.19
Singong	-600	PF 40% release	34.24	940.78	941.66	88	1.96	36.03
Singong	-700	PF 40% release	34.24	938.61	939.79	118	2.41	24.01
Singong	-800	PF 40% release	34.24	936.44	937.75	131	2.51	20.77
Singong	-900	PF 40% release	34.24	934.77	935.93	116	2.39	24.66
Singong	-1000	PF 40% release	34.24	933.1	933.79	69	2.16	33.47
Singong	-1100	PF 40% release	34.24	929.33	930.62	129	2.52	20.96
Singong	-1200	PF 40% release	34.24	925.56	927.23	167	2.52	16.29
Singong	-1300	PF 40% release	34.24	924.18	925.81	163	2.6	16.13
Singong	-1400	PF 40% release	34.24	922.79	924.41	162	2.51	16.84
Singong	-1500	PF 40% release	34.24	921.67	923.12	145	2.28	20.74
Singong	-1600	PF 40% release	34.24	920.55	921.64	109	2.2	28.53
Singong	-1700	PF 40% release	34.24	919.36	920.3	94	1.78	35.53
Average						123.44	2.36	24.07

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 50% release	42.8	971.27	972.53	126	2.49	27.37
Singong	-100	PF 50% release	42.8	966.14	967.53	139	2.65	23.25
Singong	-200	PF 50% release	42.8	961.01	962.21	120	2.42	29.51
Singong	-300	PF 50% release	42.8	955.68	957.09	141	2.64	22.98
Singong	-400	PF 50% release	42.8	950.35	951.82	147	2.69	21.6
Singong	-500	PF 50% release	42.8	945.56	946.82	126	2.48	27.54
Singong	-600	PF 50% release	42.8	940.78	941.73	95	2.12	36.85
Singong	-700	PF 50% release	42.8	938.61	939.9	129	2.53	26.23
Singong	-800	PF 50% release	42.8	936.44	937.86	142	2.67	22.52
Singong	-900	PF 50% release	42.8	934.77	936.04	127	2.5	26.94
Singong	-1000	PF 50% release	42.8	933.1	933.87	77	2.32	34.27
Singong	-1100	PF 50% release	42.8	929.33	930.75	142	2.64	22.92
Singong	-1200	PF 50% release	42.8	925.56	927.37	181	2.66	17.74
Singong	-1300	PF 50% release	42.8	924.18	925.95	177	2.76	17.52
Singong	-1400	PF 50% release	42.8	922.79	924.55	176	2.65	18.32
Singong	-1500	PF 50% release	42.8	921.67	923.24	157	2.44	22.37
Singong	-1600	PF 50% release	42.8	920.55	921.74	119	2.32	31.08
Singong	-1700	PF 50% release	42.8	919.36	920.38	102	1.94	36.44
Average						134.61	2.50	25.86

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 100% release	85.61	971.27	972.91	164	2.93	33.66
Singong	-100	PF 100% release	85.61	966.14	967.99	185	3.01	30.81
Singong	-200	PF 100% release	85.61	961.01	962.59	158	2.79	38.92
Singong	-300	PF 100% release	85.61	955.68	957.54	186	3.03	30.29
Singong	-400	PF 100% release	85.61	950.35	952.29	194	3.12	28.38
Singong	-500	PF 100% release	85.61	945.56	947.22	166	2.85	36.34
Singong	-600	PF 100% release	85.61	940.78	942.03	125	2.72	40.08
Singong	-700	PF 100% release	85.61	938.61	940.32	171	2.9	34.64
Singong	-800	PF 100% release	85.61	936.44	938.33	189	3.04	29.83
Singong	-900	PF 100% release	85.61	934.77	936.44	167	2.88	35.56
Singong	-1000	PF 100% release	85.61	933.1	934.2	110	2.82	37.69
Singong	-1100	PF 100% release	85.61	929.33	931.2	187	3.03	30.23
Singong	-1200	PF 100% release	85.61	925.56	927.93	237	3.13	23.14
Singong	-1300	PF 100% release	85.61	924.18	926.46	228	3.32	22.58
Singong	-1400	PF 100% release	85.61	922.79	925.09	230	3.12	23.88
Singong	-1500	PF 100% release	85.61	921.67	923.63	196	3.11	28.05
Singong	-1600	PF 100% release	85.61	920.55	922.1	155	2.76	37.3
Singong	-1700	PF 100% release	85.61	919.36	920.67	131	2.57	39.87
Average						176.61	2.95	32.29

Other 4 months

Pango HEP-Oct-Mar-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Pango dam axis

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 10% release	5.1	971.27	971.8	53	1.64	11.65
Singong	-100	PF 10% release	5.1	966.14	966.73	59	1.73	9.93
Singong	-200	PF 10% release	5.1	961.01	961.52	51	1.6	12.54
Singong	-300	PF 10% release	5.1	955.68	956.28	60	1.74	9.75
Singong	-400	PF 10% release	5.1	950.35	950.98	63	1.78	9.17
Singong	-500	PF 10% release	5.1	945.56	946.1	54	1.64	11.71
Singong	-600	PF 10% release	5.1	940.78	941.2	42	1.24	19.53
Singong	-700	PF 10% release	5.1	938.61	939.18	57	1.53	11.63
Singong	-800	PF 10% release	5.1	936.44	937.06	62	1.69	9.78
Singong	-900	PF 10% release	5.1	934.77	935.37	60	1.32	12.82
Singong	-1000	PF 10% release	5.1	933.1	933.41	31	1.26	26.04
Singong	-1100	PF 10% release	5.1	929.33	929.93	60	1.74	9.73
Singong	-1200	PF 10% release	5.1	925.56	926.36	80	1.63	7.82
Singong	-1300	PF 10% release	5.1	924.18	924.99	81	1.54	8.1
Singong	-1400	PF 10% release	5.1	922.79	923.56	77	1.64	8.04
Singong	-1500	PF 10% release	5.1	921.67	922.43	76	1.24	10.82
Singong	-1600	PF 10% release	5.1	920.55	921.07	52	1.46	13.52
Singong	-1700	PF 10% release	5.1	919.36	919.86	50	0.91	22.27
Average						59.33	1.52	12.49

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 15% release	7.65	971.27	971.9	63	1.78	13.69
Singong	-100	PF 15% release	7.65	966.14	966.84	70	1.88	11.67
Singong	-200	PF 15% release	7.65	961.01	961.61	60	1.73	14.75
Singong	-300	PF 15% release	7.65	955.68	956.39	71	1.89	11.47
Singong	-400	PF 15% release	7.65	950.35	951.09	74	1.93	10.79
Singong	-500	PF 15% release	7.65	945.56	946.19	63	1.78	13.75
Singong	-600	PF 15% release	7.65	940.78	941.28	50	1.33	23.07
Singong	-700	PF 15% release	7.65	938.61	939.27	66	1.72	13.43
Singong	-800	PF 15% release	7.65	936.44	937.17	73	1.82	11.52
Singong	-900	PF 15% release	7.65	934.77	935.46	69	1.5	14.73
Singong	-1000	PF 15% release	7.65	933.1	933.47	37	1.37	30.15
Singong	-1100	PF 15% release	7.65	929.33	930.04	71	1.89	11.45
Singong	-1200	PF 15% release	7.65	925.56	926.5	94	1.77	9.2
Singong	-1300	PF 15% release	7.65	924.18	925.12	94	1.75	9.31
Singong	-1400	PF 15% release	7.65	922.79	923.7	91	1.76	9.5
Singong	-1500	PF 15% release	7.65	921.67	922.53	86	1.44	12.34
Singong	-1600	PF 15% release	7.65	920.55	921.16	61	1.55	16.05
Singong	-1700	PF 15% release	7.65	919.36	919.93	57	1.05	25.39
Average						69.44	1.66	14.57

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 20% release	10.2	971.27	971.97	70	1.89	15.35
Singong	-100	PF 20% release	10.2	966.14	966.92	78	1.99	13.1
Singong	-200	PF 20% release	10.2	961.01	961.68	67	1.84	16.55
Singong	-300	PF 20% release	10.2	955.68	956.47	79	2	12.89
Singong	-400	PF 20% release	10.2	950.35	951.18	83	2.04	12.12
Singong	-500	PF 20% release	10.2	945.56	946.27	71	1.88	15.43
Singong	-600	PF 20% release	10.2	940.78	941.34	56	1.39	26.09
Singong	-700	PF 20% release	10.2	938.61	939.34	73	1.89	14.79
Singong	-800	PF 20% release	10.2	936.44	937.26	82	1.91	12.99
Singong	-900	PF 20% release	10.2	934.77	935.53	76	1.66	16.17
Singong	-1000	PF 20% release	10.2	933.1	933.5	40	1.5	30.56
Singong	-1100	PF 20% release	10.2	929.33	930.13	80	1.98	12.91
Singong	-1200	PF 20% release	10.2	925.56	926.61	105	1.89	10.26
Singong	-1300	PF 20% release	10.2	924.18	925.22	104	1.88	10.35
Singong	-1400	PF 20% release	10.2	922.79	923.81	102	1.89	10.59
Singong	-1500	PF 20% release	10.2	921.67	922.63	96	1.56	13.67
Singong	-1600	PF 20% release	10.2	920.55	921.23	68	1.66	17.89
Singong	-1700	PF 20% release	10.2	919.36	919.99	63	1.14	28.19
Average						77.39	1.78	16.11

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 25% release	12.75	971.27	972.04	77	1.97	16.8
Singong	-100	PF 25% release	12.75	966.14	967	86	2.07	14.34
Singong	-200	PF 25% release	12.75	961.01	961.74	73	1.92	18.09
Singong	-300	PF 25% release	12.75	955.68	956.55	87	2.08	14.11
Singong	-400	PF 25% release	12.75	950.35	951.25	90	2.13	13.25
Singong	-500	PF 25% release	12.75	945.56	946.34	78	1.95	16.97
Singong	-600	PF 25% release	12.75	940.78	941.39	61	1.47	28.33
Singong	-700	PF 25% release	12.75	938.61	939.41	80	1.98	16.18
Singong	-800	PF 25% release	12.75	936.44	937.34	90	1.98	14.27
Singong	-900	PF 25% release	12.75	934.77	935.59	82	1.8	17.34
Singong	-1000	PF 25% release	12.75	933.1	933.54	44	1.6	30.96
Singong	-1100	PF 25% release	12.75	929.33	930.2	87	2.09	14.05
Singong	-1200	PF 25% release	12.75	925.56	926.7	114	1.99	11.18
Singong	-1300	PF 25% release	12.75	924.18	925.31	113	2	11.22
Singong	-1400	PF 25% release	12.75	922.79	923.9	111	1.98	11.56
Singong	-1500	PF 25% release	12.75	921.67	922.7	103	1.67	14.75
Singong	-1600	PF 25% release	12.75	920.55	921.3	75	1.74	19.55
Singong	-1700	PF 25% release	12.75	919.36	920.04	68	1.22	30.42
Average						84.39	1.87	17.41

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 30% release	15.29	971.27	972.1	83	2.05	18.05
Singong	-100	PF 30% release	15.29	966.14	967.07	93	2.13	15.47
Singong	-200	PF 30% release	15.29	961.01	961.8	79	1.99	19.44
Singong	-300	PF 30% release	15.29	955.68	956.62	94	2.15	15.21
Singong	-400	PF 30% release	15.29	950.35	951.32	97	2.21	14.25
Singong	-500	PF 30% release	15.29	945.56	946.39	83	2.02	18.24
Singong	-600	PF 30% release	15.29	940.78	941.44	66	1.52	30.46
Singong	-700	PF 30% release	15.29	938.61	939.46	85	2.07	17.32
Singong	-800	PF 30% release	15.29	936.44	937.41	97	2.05	15.36
Singong	-900	PF 30% release	15.29	934.77	935.64	87	1.92	18.41
Singong	-1000	PF 30% release	15.29	933.1	933.58	48	1.7	31.3
Singong	-1100	PF 30% release	15.29	929.33	930.27	94	2.15	15.18
Singong	-1200	PF 30% release	15.29	925.56	926.79	123	2.08	12
Singong	-1300	PF 30% release	15.29	924.18	925.39	121	2.11	11.98
Singong	-1400	PF 30% release	15.29	922.79	923.98	119	2.07	12.4
Singong	-1500	PF 30% release	15.29	921.67	922.77	110	1.77	15.7
Singong	-1600	PF 30% release	15.29	920.55	921.35	80	1.81	20.98
Singong	-1700	PF 30% release	15.29	919.36	920.09	73	1.29	32.4
Average						90.67	1.95	18.56

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 40% release	20.39	971.27	972.2	93	2.14	20.37
Singong	-100	PF 40% release	20.39	966.14	967.18	104	2.26	17.36
Singong	-200	PF 40% release	20.39	961.01	961.9	89	2.09	21.92
Singong	-300	PF 40% release	20.39	955.68	956.73	105	2.27	17.08
Singong	-400	PF 40% release	20.39	950.35	951.44	109	2.32	16.05
Singong	-500	PF 40% release	20.39	945.56	946.49	93	2.15	20.42
Singong	-600	PF 40% release	20.39	940.78	941.51	73	1.65	33.82
Singong	-700	PF 40% release	20.39	938.61	939.57	96	2.17	19.52
Singong	-800	PF 40% release	20.39	936.44	937.53	109	2.16	17.28
Singong	-900	PF 40% release	20.39	934.77	935.72	95	2.12	20.19
Singong	-1000	PF 40% release	20.39	933.1	933.64	54	1.86	31.94
Singong	-1100	PF 40% release	20.39	929.33	930.38	105	2.28	17.03
Singong	-1200	PF 40% release	20.39	925.56	926.93	137	2.22	13.39
Singong	-1300	PF 40% release	20.39	924.18	925.52	134	2.27	13.31
Singong	-1400	PF 40% release	20.39	922.79	924.12	133	2.22	13.83
Singong	-1500	PF 40% release	20.39	921.67	922.88	121	1.94	17.35
Singong	-1600	PF 40% release	20.39	920.55	921.45	90	1.95	23.4
Singong	-1700	PF 40% release	20.39	919.36	920.16	80	1.44	33.81
Average						101.11	2.08	20.45

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 50% release	25.49	971.27	972.29	102	2.24	22.26
Singong	-100	PF 50% release	25.49	966.14	967.28	114	2.37	18.97
Singong	-200	PF 50% release	25.49	961.01	961.98	97	2.19	23.98
Singong	-300	PF 50% release	25.49	955.68	956.82	114	2.4	18.59
Singong	-400	PF 50% release	25.49	950.35	951.55	120	2.43	17.55
Singong	-500	PF 50% release	25.49	945.56	946.58	102	2.25	22.31
Singong	-600	PF 50% release	25.49	940.78	941.57	79	1.77	35.1
Singong	-700	PF 50% release	25.49	938.61	939.66	105	2.27	21.34
Singong	-800	PF 50% release	25.49	936.44	937.63	119	2.29	18.78
Singong	-900	PF 50% release	25.49	934.77	935.8	103	2.26	21.91
Singong	-1000	PF 50% release	25.49	933.1	933.7	60	1.99	32.54
Singong	-1100	PF 50% release	25.49	929.33	930.48	115	2.38	18.62
Singong	-1200	PF 50% release	25.49	925.56	927.05	149	2.35	14.58
Singong	-1300	PF 50% release	25.49	924.18	925.64	146	2.41	14.46
Singong	-1400	PF 50% release	25.49	922.79	924.24	145	2.34	15.06
Singong	-1500	PF 50% release	25.49	921.67	922.98	131	2.08	18.73
Singong	-1600	PF 50% release	25.49	920.55	921.53	98	2.05	25.51
Singong	-1700	PF 50% release	25.49	919.36	920.21	85	1.58	34.48
Average						110.22	2.20	21.93

River	Ch d/s of Pango HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 100% release	50.98	971.27	972.62	135	2.58	29.38
Singong	-100	PF 100% release	50.98	966.14	967.64	150	2.71	25.04
Singong	-200	PF 100% release	50.98	961.01	962.29	128	2.53	31.51
Singong	-300	PF 100% release	50.98	955.68	957.2	152	2.73	24.64
Singong	-400	PF 100% release	50.98	950.35	951.93	158	2.79	23.15
Singong	-500	PF 100% release	50.98	945.56	946.91	135	2.57	29.54
Singong	-600	PF 100% release	50.98	940.78	941.79	101	2.26	37.55
Singong	-700	PF 100% release	50.98	938.61	940	139	2.61	28.15
Singong	-800	PF 100% release	50.98	936.44	937.97	153	2.74	24.24
Singong	-900	PF 100% release	50.98	934.77	936.13	136	2.59	28.92
Singong	-1000	PF 100% release	50.98	933.1	933.93	83	2.44	34.99
Singong	-1100	PF 100% release	50.98	929.33	930.84	151	2.76	24.47
Singong	-1200	PF 100% release	50.98	925.56	927.5	194	2.77	18.96
Singong	-1300	PF 100% release	50.98	924.18	926.06	188	2.89	18.68
Singong	-1400	PF 100% release	50.98	922.79	924.67	188	2.76	19.59
Singong	-1500	PF 100% release	50.98	921.67	923.33	166	2.59	23.7
Singong	-1600	PF 100% release	50.98	920.55	921.82	127	2.4	33.3
Singong	-1700	PF 100% release	50.98	919.36	920.44	108	2.09	37.19
Average						144.00	2.60	27.39

Mirak HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Mirak HEP-Nov to Feb

Note: River sta -100 denotes location along river reach 100 m d/s of Mirak dam axis

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 10% release	1.81	590.42	590.73	31	1.25	9.43
Singong	-100	PF 10% release	1.81	586.11	586.52	41	1.44	6.07
Singong	-200	PF 10% release	1.81	581.8	582.22	42	1.45	6.02
Singong	-300	PF 10% release	1.81	576.2	576.54	34	1.3	8.25
Singong	-400	PF 10% release	1.81	570.6	570.82	22	0.92	18.21
Singong	-500	PF 10% release	1.81	567.63	568	37	1.37	7.13
Singong	-600	PF 10% release	1.81	564.65	565.14	49	1.38	5.36
Singong	-700	PF 10% release	1.81	562.34	562.78	44	1.49	5.5
Singong	-800	PF 10% release	1.81	560.03	560.47	44	1.05	7.81
Singong	-900	PF 10% release	1.81	558.7	559.15	45	1.03	7.87
Singong	-1000	PF 10% release	1.81	557.37	557.81	44	1.06	7.75
Average						39.36	1.25	8.13

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 15% release	2.71	590.42	590.78	36	1.35	11.11
Singong	-100	PF 15% release	2.71	586.11	586.6	49	1.57	7.13

Singong	-200	PF 15% release	2.71	581.8	582.29	49	1.56	7.11
Singong	-300	PF 15% release	2.71	576.2	576.6	40	1.41	9.69
Singong	-400	PF 15% release	2.71	570.6	570.85	25	1.03	21.1
Singong	-500	PF 15% release	2.71	567.63	568.06	43	1.48	8.38
Singong	-600	PF 15% release	2.71	564.65	565.22	57	1.55	6.18
Singong	-700	PF 15% release	2.71	562.34	562.86	52	1.61	6.46
Singong	-800	PF 15% release	2.71	560.03	560.54	51	1.17	9.08
Singong	-900	PF 15% release	2.71	558.7	559.22	52	1.14	9.16
Singong	-1000	PF 15% release	2.71	557.37	557.88	51	1.17	9.01
Average						45.91	1.37	9.49

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 20% release	3.61	590.42	590.83	41	1.43	12.43
Singong	-100	PF 20% release	3.61	586.11	586.65	54	1.66	8
Singong	-200	PF 20% release	3.61	581.8	582.35	55	1.65	7.96
Singong	-300	PF 20% release	3.61	576.2	576.64	44	1.5	10.86
Singong	-400	PF 20% release	3.61	570.6	570.88	28	1.12	23.4
Singong	-500	PF 20% release	3.61	567.63	568.11	48	1.57	9.4
Singong	-600	PF 20% release	3.61	564.65	565.28	63	1.69	6.84
Singong	-700	PF 20% release	3.61	562.34	562.92	58	1.71	7.23
Singong	-800	PF 20% release	3.61	560.03	560.6	57	1.26	10.1
Singong	-900	PF 20% release	3.61	558.7	559.28	58	1.23	10.2
Singong	-1000	PF 20% release	3.61	557.37	557.94	57	1.26	10.04
Average						51.18	1.46	10.59

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 25% release	4.52	590.42	590.86	44	1.49	13.64
Singong	-100	PF 25% release	4.52	586.11	586.71	60	1.73	8.76
Singong	-200	PF 25% release	4.52	581.8	582.4	60	1.74	8.69
Singong	-300	PF 25% release	4.52	576.2	576.69	49	1.56	11.89
Singong	-400	PF 25% release	4.52	570.6	570.9	30	1.18	25.41
Singong	-500	PF 25% release	4.52	567.63	568.16	53	1.64	10.28
Singong	-600	PF 25% release	4.52	564.65	565.33	68	1.81	7.39
Singong	-700	PF 25% release	4.52	562.34	562.98	64	1.79	7.91
Singong	-800	PF 25% release	4.52	560.03	560.65	62	1.32	11.00
Singong	-900	PF 25% release	4.52	558.7	559.33	63	1.30	11.08
Singong	-1000	PF 25% release	4.52	557.37	557.99	62	1.33	10.93
Average						55.91	1.54	11.54

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 30% release	5.42	590.42	590.9	48	1.55	14.64
Singong	-100	PF 30% release	5.42	586.11	586.75	64	1.79	9.43

Singong	-200	PF 30% release	5.42	581.8	582.44	64	1.8	9.36
Singong	-300	PF 30% release	5.42	576.2	576.72	52	1.62	12.78
Singong	-400	PF 30% release	5.42	570.6	570.92	32	1.25	27.14
Singong	-500	PF 30% release	5.42	567.63	568.2	57	1.7	11.07
Singong	-600	PF 30% release	5.42	564.65	565.37	72	1.91	7.88
Singong	-700	PF 30% release	5.42	562.34	563.03	69	1.86	8.51
Singong	-800	PF 30% release	5.42	560.03	560.69	66	1.39	11.75
Singong	-900	PF 30% release	5.42	558.7	559.37	67	1.35	11.89
Singong	-1000	PF 30% release	5.42	557.37	558.03	66	1.4	11.67
Average						59.73	1.60	12.37

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 40% release	7.23	590.42	590.96	54	1.64	16.43
Singong	-100	PF 40% release	7.23	586.11	586.83	72	1.91	10.56
Singong	-200	PF 40% release	7.23	581.8	582.52	72	1.91	10.48
Singong	-300	PF 40% release	7.23	576.2	576.79	59	1.71	14.37
Singong	-400	PF 40% release	7.23	570.6	570.96	36	1.34	30.2
Singong	-500	PF 40% release	7.23	567.63	568.27	64	1.8	12.44
Singong	-600	PF 40% release	7.23	564.65	565.46	81	2	8.89
Singong	-700	PF 40% release	7.23	562.34	563.11	77	1.97	9.55
Singong	-800	PF 40% release	7.23	560.03	560.77	74	1.49	13.1
Singong	-900	PF 40% release	7.23	558.7	559.45	75	1.46	13.24
Singong	-1000	PF 40% release	7.23	557.37	558.11	74	1.5	13.03
Average						67.09	1.70	13.84

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 50% release	9.04	590.42	591.01	59	1.72	17.94
Singong	-100	PF 50% release	9.04	586.11	586.9	79	1.97	11.61
Singong	-200	PF 50% release	9.04	581.8	582.59	79	1.98	11.52
Singong	-300	PF 50% release	9.04	576.2	576.84	64	1.79	15.71
Singong	-400	PF 50% release	9.04	570.6	570.99	39	1.4	33.04
Singong	-500	PF 50% release	9.04	567.63	568.33	70	1.88	13.6
Singong	-600	PF 50% release	9.04	564.65	565.54	89	2.09	9.72
Singong	-700	PF 50% release	9.04	562.34	563.18	84	2.06	10.44
Singong	-800	PF 50% release	9.04	560.03	560.84	81	1.57	14.28
Singong	-900	PF 50% release	9.04	558.7	559.51	81	1.55	14.36
Singong	-1000	PF 50% release	9.04	557.37	558.18	81	1.58	14.2
Average						73.27	1.78	15.13

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 100% release	18.07	590.42	591.19	77	1.97	23.7
Singong	-100	PF 100% release	18.07	586.11	587.15	104	2.26	15.32

Singong	-200	PF 100% release	18.07	581.8	582.85	105	2.27	15.2
Singong	-300	PF 100% release	18.07	576.2	577.05	85	2.04	20.8
Singong	-400	PF 100% release	18.07	570.6	571.11	51	1.68	38.76
Singong	-500	PF 100% release	18.07	567.63	568.56	93	2.15	18
Singong	-600	PF 100% release	18.07	564.65	565.82	117	2.42	12.77
Singong	-700	PF 100% release	18.07	562.34	563.46	112	2.34	13.85
Singong	-800	PF 100% release	18.07	560.03	561.09	106	1.83	18.71
Singong	-900	PF 100% release	18.07	558.7	559.74	104	1.89	18.38
Singong	-1000	PF 100% release	18.07	557.37	558.43	106	1.81	18.72
Average						96.36	2.06	19.47

Monsoon

Mirak HEP-June to September

Note: River sta -100 denotes location along river reach 100 m d/s of Mirak dam axis

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 10% release	11.55	590.42	591.07	65	1.8	19.82
Singong	-100	PF 10% release	11.55	586.11	586.98	87	2.07	12.81
Singong	-200	PF 10% release	11.55	581.8	582.68	88	2.08	12.71
Singong	-300	PF 10% release	11.55	576.2	576.91	71	1.89	17.3
Singong	-400	PF 10% release	11.55	570.6	571.03	43	1.47	36.45
Singong	-500	PF 10% release	11.55	567.63	568.41	78	1.96	15.06
Singong	-600	PF 10% release	11.55	564.65	565.63	98	2.2	10.72
Singong	-700	PF 10% release	11.55	562.34	563.27	93	2.14	11.58
Singong	-800	PF 10% release	11.55	560.03	560.92	89	1.66	15.69
Singong	-900	PF 10% release	11.55	558.7	559.59	89	1.66	15.69
Singong	-1000	PF 10% release	11.55	557.37	558.26	89	1.66	15.63
Average						80.91	1.87	16.68

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 15% release	17.32	590.42	591.18	76	1.96	23.3
Singong	-100	PF 15% release	17.32	586.11	587.13	102	2.24	15.06
Singong	-200	PF 15% release	17.32	581.8	582.83	103	2.25	14.95
Singong	-300	PF 15% release	17.32	576.2	577.04	84	2.03	20.45
Singong	-400	PF 15% release	17.32	570.6	571.1	50	1.66	38.57
Singong	-500	PF 15% release	17.32	567.63	568.55	92	2.13	17.7
Singong	-600	PF 15% release	17.32	564.65	565.8	115	2.38	12.6
Singong	-700	PF 15% release	17.32	562.34	563.44	110	2.32	13.61
Singong	-800	PF 15% release	17.32	560.03	561.07	104	1.81	18.41
Singong	-900	PF 15% release	17.32	558.7	559.73	103	1.87	18.1
Singong	-1000	PF 15% release	17.32	557.37	558.42	105	1.8	18.42
Average						94.91	2.04	19.20

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 20% release	23.1	590.42	591.27	85	2.07	26.16
Singong	-100	PF 20% release	23.1	586.11	587.26	115	2.4	16.83
Singong	-200	PF 20% release	23.1	581.8	582.96	116	2.39	16.76
Singong	-300	PF 20% release	23.1	576.2	577.14	94	2.15	22.95
Singong	-400	PF 20% release	23.1	570.6	571.16	56	1.8	39.93
Singong	-500	PF 20% release	23.1	567.63	568.66	103	2.25	19.87
Singong	-600	PF 20% release	23.1	564.65	565.94	129	2.53	14.13
Singong	-700	PF 20% release	23.1	562.34	563.57	123	2.46	15.26
Singong	-800	PF 20% release	23.1	560.03	561.19	116	1.93	20.58
Singong	-900	PF 20% release	23.1	558.7	559.84	114	2.02	20.09
Singong	-1000	PF 20% release	23.1	557.37	558.54	117	1.91	20.62
Average						106.18	2.17	21.20

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 25% release	28.87	590.42	591.35	93	2.16	28.62
Singong	-100	PF 25% release	28.87	586.11	587.36	125	2.51	18.39
Singong	-200	PF 25% release	28.87	581.8	583.06	126	2.50	18.32
Singong	-300	PF 25% release	28.87	576.2	577.23	103	2.25	25.09
Singong	-400	PF 25% release	28.87	570.6	571.22	62	1.92	41.18
Singong	-500	PF 25% release	28.87	567.63	568.75	112	2.36	21.71
Singong	-600	PF 25% release	28.87	564.65	566.06	141	2.64	15.46
Singong	-700	PF 25% release	28.87	562.34	563.68	134	2.59	16.64
Singong	-800	PF 25% release	28.87	560.03	561.3	127	2.02	22.48
Singong	-900	PF 25% release	28.87	558.7	559.93	123	2.16	21.70
Singong	-1000	PF 25% release	28.87	557.37	558.66	129	1.98	22.62
Average						115.91	2.28	22.93

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 30% release	34.65	590.42	591.45	103	2.11	36.28
Singong	-100	PF 30% release	34.65	586.11	587.46	135	2.58	19.86
Singong	-200	PF 30% release	34.65	581.8	583.16	136	2.59	19.72
Singong	-300	PF 30% release	34.65	576.2	577.3	110	2.33	26.99
Singong	-400	PF 30% release	34.65	570.6	571.27	67	2.01	42.35
Singong	-500	PF 30% release	34.65	567.63	568.84	121	2.44	23.36
Singong	-600	PF 30% release	34.65	564.65	566.17	152	2.74	16.63
Singong	-700	PF 30% release	34.65	562.34	563.78	144	2.67	17.94
Singong	-800	PF 30% release	34.65	560.03	561.39	136	2.1	24.2
Singong	-900	PF 30% release	34.65	558.7	560.01	131	2.29	23.11
Singong	-1000	PF 30% release	34.65	557.37	558.76	139	2.04	24.41
Average						124.91	2.35	24.99

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 40% release	46.2	590.42	591.59	117	2.02	55.48
Singong	-100	PF 40% release	46.2	586.11	587.62	151	2.75	22.21
Singong	-200	PF 40% release	46.2	581.8	583.32	152	2.74	22.12
Singong	-300	PF 40% release	46.2	576.2	577.44	124	2.47	30.28
Singong	-400	PF 40% release	46.2	570.6	571.36	76	2.18	44.38
Singong	-500	PF 40% release	46.2	567.63	568.99	136	2.59	26.21
Singong	-600	PF 40% release	46.2	564.65	566.36	171	2.9	18.67
Singong	-700	PF 40% release	46.2	562.34	563.96	162	2.82	20.16
Singong	-800	PF 40% release	46.2	560.03	561.56	153	2.22	27.19
Singong	-900	PF 40% release	46.2	558.7	560.14	144	2.52	25.46
Singong	-1000	PF 40% release	46.2	557.37	558.94	157	2.13	27.61
Average						140.27	2.49	29.07

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 50% release	57.75	590.42	591.66	124	2.13	59.54
Singong	-100	PF 50% release	57.75	586.11	587.77	166	2.86	24.39
Singong	-200	PF 50% release	57.75	581.8	583.47	167	2.86	24.2
Singong	-300	PF 50% release	57.75	576.2	577.55	135	2.58	33.07
Singong	-400	PF 50% release	57.75	570.6	571.44	84	2.32	46.21
Singong	-500	PF 50% release	57.75	567.63	569.11	148	2.71	28.62
Singong	-600	PF 50% release	57.75	564.65	566.51	186	3.04	20.37
Singong	-700	PF 50% release	57.75	562.34	564.11	177	2.97	21.97
Singong	-800	PF 50% release	57.75	560.03	561.71	168	2.31	29.79
Singong	-900	PF 50% release	57.75	558.7	560.25	155	2.71	27.41
Singong	-1000	PF 50% release	57.75	557.37	559.1	173	2.19	30.44
Average						153.00	2.61	31.46

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 100% release	115.49	590.42	591.94	152	2.66	60.99
Singong	-100	PF 100% release	115.49	586.11	588.3	219	3.28	32.17
Singong	-200	PF 100% release	115.49	581.8	583.99	219	3.31	31.8
Singong	-300	PF 100% release	115.49	576.2	577.98	178	2.98	42.81
Singong	-400	PF 100% release	115.49	570.6	571.78	118	2.76	53.83
Singong	-500	PF 100% release	115.49	567.63	569.59	196	3.11	37.8
Singong	-600	PF 100% release	115.49	564.65	567.11	246	3.49	26.91
Singong	-700	PF 100% release	115.49	562.34	564.68	234	3.39	29.08
Singong	-800	PF 100% release	115.49	560.03	562.2	217	2.77	38.36
Singong	-900	PF 100% release	115.49	558.7	560.71	201	3.27	32.63
Singong	-1000	PF 100% release	115.49	557.37	559.7	233	2.51	34.72
Average						201.18	3.05	38.28

Other 4 months

Mirak HEP-Oct-Mar-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Mirak dam axis

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 10% release	6.88	590.42	590.95	53	1.63	16.1
Singong	-100	PF 10% release	6.88	586.11	586.81	70	1.89	10.35
Singong	-200	PF 10% release	6.88	581.8	582.51	71	1.89	10.28
Singong	-300	PF 10% release	6.88	576.2	576.78	58	1.69	14.11
Singong	-400	PF 10% release	6.88	570.6	570.95	35	1.33	29.6
Singong	-500	PF 10% release	6.88	567.63	568.26	63	1.77	12.22
Singong	-600	PF 10% release	6.88	564.65	565.45	80	1.99	8.69
Singong	-700	PF 10% release	6.88	562.34	563.09	75	1.95	9.37
Singong	-800	PF 10% release	6.88	560.03	560.76	73	1.47	12.87
Singong	-900	PF 10% release	6.88	558.7	559.44	74	1.44	12.99
Singong	-1000	PF 10% release	6.88	557.37	558.1	73	1.48	12.78
Average						65.91	1.68	13.58

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 15% release	10.32	590.42	591.04	62	1.77	18.93
Singong	-100	PF 15% release	10.32	586.11	586.94	83	2.02	12.24
Singong	-200	PF 15% release	10.32	581.8	582.64	84	2.03	12.15
Singong	-300	PF 15% release	10.32	576.2	576.88	68	1.85	16.54
Singong	-400	PF 15% release	10.32	570.6	571.01	41	1.44	34.83
Singong	-500	PF 15% release	10.32	567.63	568.37	74	1.94	14.32
Singong	-600	PF 15% release	10.32	564.65	565.58	93	2.17	10.2
Singong	-700	PF 15% release	10.32	562.34	563.23	89	2.11	11.03
Singong	-800	PF 15% release	10.32	560.03	560.88	85	1.62	15.02
Singong	-900	PF 15% release	10.32	558.7	559.55	85	1.61	15.07
Singong	-1000	PF 15% release	10.32	557.37	558.22	85	1.62	14.95
Average						77.18	1.83	15.93

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 20% release	13.76	590.42	591.11	69	1.87	21.23
Singong	-100	PF 20% release	13.76	586.11	587.04	93	2.14	13.74
Singong	-200	PF 20% release	13.76	581.8	582.74	94	2.15	13.63
Singong	-300	PF 20% release	13.76	576.2	576.96	76	1.95	18.57
Singong	-400	PF 20% release	13.76	570.6	571.06	46	1.55	37.65
Singong	-500	PF 20% release	13.76	567.63	568.46	83	2.05	16.08
Singong	-600	PF 20% release	13.76	564.65	565.7	105	2.27	11.5
Singong	-700	PF 20% release	13.76	562.34	563.34	100	2.22	12.42
Singong	-800	PF 20% release	13.76	560.03	560.98	95	1.73	16.78
Singong	-900	PF 20% release	13.76	558.7	559.65	95	1.74	16.72
Singong	-1000	PF 20% release	13.76	557.37	558.32	95	1.73	16.71
Average						86.45	1.95	17.73

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 25% release	17.2	590.42	591.18	76	1.95	23.24
Singong	-100	PF 25% release	17.2	586.11	587.13	102	2.24	15.02
Singong	-200	PF 25% release	17.2	581.8	582.83	103	2.25	14.9
Singong	-300	PF 25% release	17.2	576.2	577.03	83	2.02	20.4
Singong	-400	PF 25% release	17.2	570.6	571.1	50	1.66	38.54
Singong	-500	PF 25% release	17.2	567.63	568.54	91	2.12	17.65
Singong	-600	PF 25% release	17.2	564.65	565.8	115	2.38	12.57
Singong	-700	PF 25% release	17.2	562.34	563.43	109	2.32	13.57
Singong	-800	PF 25% release	17.2	560.03	561.07	104	1.81	18.36
Singong	-900	PF 25% release	17.2	558.7	559.72	102	1.86	18.05
Singong	-1000	PF 25% release	17.2	557.37	558.41	104	1.79	18.37
Average						94.45	2.04	19.15

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 30% release	20.64	590.42	591.24	82	2.01	25.12
Singong	-100	PF 30% release	20.64	586.11	587.21	110	2.32	16.16
Singong	-200	PF 30% release	20.64	581.8	582.9	110	2.34	15.99
Singong	-300	PF 30% release	20.64	576.2	577.1	90	2.1	21.93
Singong	-400	PF 30% release	20.64	570.6	571.14	54	1.74	39.38
Singong	-500	PF 30% release	20.64	567.63	568.61	98	2.2	18.98
Singong	-600	PF 30% release	20.64	564.65	565.89	124	2.47	13.52
Singong	-700	PF 30% release	20.64	562.34	563.52	118	2.4	14.6
Singong	-800	PF 30% release	20.64	560.03	561.14	111	1.89	19.69
Singong	-900	PF 30% release	20.64	558.7	559.79	109	1.96	19.29
Singong	-1000	PF 30% release	20.64	557.37	558.49	112	1.87	19.71
Average						101.64	2.12	20.40

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 40% release	27.51	590.42	591.33	91	2.15	28.01
Singong	-100	PF 40% release	27.51	586.11	587.34	123	2.46	18.12
Singong	-200	PF 40% release	27.51	581.8	583.04	124	2.47	17.98
Singong	-300	PF 40% release	27.51	576.2	577.21	101	2.22	24.61
Singong	-400	PF 40% release	27.51	570.6	571.2	60	1.89	40.88
Singong	-500	PF 40% release	27.51	567.63	568.73	110	2.33	21.3
Singong	-600	PF 40% release	27.51	564.65	566.04	139	2.62	15.15
Singong	-700	PF 40% release	27.51	562.34	563.65	131	2.57	16.31
Singong	-800	PF 40% release	27.51	560.03	561.28	125	2	22.1
Singong	-900	PF 40% release	27.51	558.7	559.91	121	2.14	21.3
Singong	-1000	PF 40% release	27.51	557.37	558.63	126	1.96	22.23
Average						113.73	2.26	22.54

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 50% release	34.39	590.42	591.45	103	2.11	35.55
Singong	-100	PF 50% release	34.39	586.11	587.46	135	2.58	19.8
Singong	-200	PF 50% release	34.39	581.8	583.16	136	2.58	19.67
Singong	-300	PF 50% release	34.39	576.2	577.3	110	2.32	26.91
Singong	-400	PF 50% release	34.39	570.6	571.27	67	2	42.31
Singong	-500	PF 50% release	34.39	567.63	568.84	121	2.44	23.29
Singong	-600	PF 50% release	34.39	564.65	566.17	152	2.74	16.58
Singong	-700	PF 50% release	34.39	562.34	563.78	144	2.67	17.89
Singong	-800	PF 50% release	34.39	560.03	561.39	136	2.1	24.13
Singong	-900	PF 50% release	34.39	558.7	560.01	131	2.29	23.05
Singong	-1000	PF 50% release	34.39	557.37	558.75	138	2.04	24.34
Average						124.82	2.35	24.87

River	Ch d/s of Mirak HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Singong	0	PF 100% release	68.78	590.42	591.72	130	2.25	59.85
Singong	-100	PF 100% release	68.78	586.11	587.89	178	2.96	26.14
Singong	-200	PF 100% release	68.78	581.8	583.59	179	2.97	25.94
Singong	-300	PF 100% release	68.78	576.2	577.65	145	2.67	35.5
Singong	-400	PF 100% release	68.78	570.6	571.52	92	2.41	47.95
Singong	-500	PF 100% release	68.78	567.63	569.22	159	2.8	30.73
Singong	-600	PF 100% release	68.78	564.65	566.65	200	3.14	21.89
Singong	-700	PF 100% release	68.78	562.34	564.24	190	3.06	23.64
Singong	-800	PF 100% release	68.78	560.03	561.83	180	2.4	31.88
Singong	-900	PF 100% release	68.78	558.7	560.35	165	2.85	29.19
Singong	-1000	PF 100% release	68.78	557.37	559.23	186	2.26	32.01
Average						164.00	2.71	33.16

Palsi HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Palsi HEP-Nov to Feb

Note: River sta -100 denotes location along river reach 100 m d/s of Palsi dam axis

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 10% release	0.18	938.6	938.76	16	0.82	2.8
Palsi	-100	PF 10% release	0.18	915.8	915.97	17	0.92	2.26
Palsi	-200	PF 10% release	0.18	892.99	893.15	16	0.89	2.57
Palsi	-300	PF 10% release	0.18	882.15	882.29	14	0.84	3.02
Palsi	-400	PF 10% release	0.18	871.31	871.42	11	0.73	4.54
Palsi	-500	PF 10% release	0.18	854.34	854.46	12	0.8	3.52
Palsi	-600	PF 10% release	0.18	837.36	837.5	14	0.85	3
Palsi	-700	PF 10% release	0.18	827.5	827.69	19	0.98	1.95

Palsi	-800	PF 10% release	0.18	817.64	817.86	22	1.06	1.53
Palsi	-900	PF 10% release	0.18	811.43	811.69	26	1.15	1.19
Palsi	-1000	PF 10% release	0.18	805.22	805.5	28	1.2	1.06
Palsi	-1100	PF 10% release	0.18	799.57	799.83	26	1.14	1.22
Average						18.42	0.95	2.39

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 15% release	0.26	938.6	938.78	18	0.93	3.17
Palsi	-100	PF 15% release	0.26	915.8	915.99	19	1	2.59
Palsi	-200	PF 15% release	0.26	892.99	893.17	18	0.95	2.99
Palsi	-300	PF 15% release	0.26	882.15	882.31	16	0.9	3.5
Palsi	-400	PF 15% release	0.26	871.31	871.44	13	0.8	5.21
Palsi	-500	PF 15% release	0.26	854.34	854.48	14	0.85	4.1
Palsi	-600	PF 15% release	0.26	837.36	837.52	16	0.91	3.48
Palsi	-700	PF 15% release	0.26	827.5	827.72	22	1.05	2.27
Palsi	-800	PF 15% release	0.26	817.64	817.9	26	1.14	1.78
Palsi	-900	PF 15% release	0.26	811.43	811.73	30	1.24	1.38
Palsi	-1000	PF 15% release	0.26	805.22	805.55	33	1.29	1.23
Palsi	-1100	PF 15% release	0.26	799.57	799.87	30	1.23	1.41
Average						21.25	1.02	2.76

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 20% release	0.35	938.6	938.8	20	0.99	3.56
Palsi	-100	PF 20% release	0.35	915.8	916.02	22	1.06	2.92
Palsi	-200	PF 20% release	0.35	892.99	893.19	20	1.02	3.36
Palsi	-300	PF 20% release	0.35	882.15	882.34	19	0.96	3.94
Palsi	-400	PF 20% release	0.35	871.31	871.45	14	0.83	5.91
Palsi	-500	PF 20% release	0.35	854.34	854.5	16	0.91	4.6
Palsi	-600	PF 20% release	0.35	837.36	837.55	19	0.96	3.93
Palsi	-700	PF 20% release	0.35	827.5	827.75	25	1.12	2.55
Palsi	-800	PF 20% release	0.35	817.64	817.93	29	1.21	2
Palsi	-900	PF 20% release	0.35	811.43	811.77	34	1.31	1.56
Palsi	-1000	PF 20% release	0.35	805.22	805.59	37	1.36	1.38
Palsi	-1100	PF 20% release	0.35	799.57	799.91	34	1.3	1.59
Average						24.08	1.09	3.11

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 25% release	0.44	938.6	938.82	22	1.04	3.89
Palsi	-100	PF 25% release	0.44	915.8	916.04	24	1.11	3.21
Palsi	-200	PF 25% release	0.44	892.99	893.22	23	1.04	3.72
Palsi	-300	PF 25% release	0.44	882.15	882.35	20	1.02	4.29
Palsi	-400	PF 25% release	0.44	871.31	871.47	16	0.88	6.45
Palsi	-500	PF 25% release	0.44	854.34	854.52	18	0.96	5.03

Palsi	-600	PF 25% release	0.44	837.36	837.56	20	1.01	4.30
Palsi	-700	PF 25% release	0.44	827.5	827.77	27	1.17	2.79
Palsi	-800	PF 25% release	0.44	817.64	817.96	32	1.26	2.19
Palsi	-900	PF 25% release	0.44	811.43	811.81	38	1.37	1.71
Palsi	-1000	PF 25% release	0.44	805.22	805.63	41	1.43	1.51
Palsi	-1100	PF 25% release	0.44	799.57	799.94	37	1.35	1.75
Average						26.50	1.14	3.40

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 30% release	0.53	938.6	938.83	23	1.07	4.22
Palsi	-100	PF 30% release	0.53	915.8	916.06	26	1.16	3.45
Palsi	-200	PF 30% release	0.53	892.99	893.23	24	1.1	3.97
Palsi	-300	PF 30% release	0.53	882.15	882.37	22	1.05	4.64
Palsi	-400	PF 30% release	0.53	871.31	871.48	17	0.91	6.95
Palsi	-500	PF 30% release	0.53	854.34	854.53	19	0.99	5.43
Palsi	-600	PF 30% release	0.53	837.36	837.58	22	1.04	4.65
Palsi	-700	PF 30% release	0.53	827.5	827.79	29	1.2	3.03
Palsi	-800	PF 30% release	0.53	817.64	817.98	34	1.32	2.35
Palsi	-900	PF 30% release	0.53	811.43	811.83	40	1.43	1.84
Palsi	-1000	PF 30% release	0.53	805.22	805.66	44	1.48	1.63
Palsi	-1100	PF 30% release	0.53	799.57	799.97	40	1.42	1.87
Average						28.33	1.18	3.67

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 40% release	0.7	938.6	938.86	26	1.14	4.7
Palsi	-100	PF 40% release	0.7	915.8	916.09	29	1.23	3.85
Palsi	-200	PF 40% release	0.7	892.99	893.26	27	1.17	4.42
Palsi	-300	PF 40% release	0.7	882.15	882.39	24	1.11	5.19
Palsi	-400	PF 40% release	0.7	871.31	871.5	19	0.97	7.76
Palsi	-500	PF 40% release	0.7	854.34	854.55	21	1.05	6.05
Palsi	-600	PF 40% release	0.7	837.36	837.6	24	1.11	5.16
Palsi	-700	PF 40% release	0.7	827.5	827.83	33	1.27	3.38
Palsi	-800	PF 40% release	0.7	817.64	818.02	38	1.39	2.63
Palsi	-900	PF 40% release	0.7	811.43	811.88	45	1.51	2.05
Palsi	-1000	PF 40% release	0.7	805.22	805.71	49	1.57	1.82
Palsi	-1100	PF 40% release	0.7	799.57	800.02	45	1.5	2.09
Average						31.67	1.25	4.09

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 50% release	0.88	938.6	938.89	29	1.2	5.13
Palsi	-100	PF 50% release	0.88	915.8	916.12	32	1.28	4.23
Palsi	-200	PF 50% release	0.88	892.99	893.29	30	1.22	4.86

Palsi	-300	PF 50% release	0.88	882.15	882.42	27	1.16	5.68
Palsi	-400	PF 50% release	0.88	871.31	871.51	20	1.01	8.52
Palsi	-500	PF 50% release	0.88	854.34	854.58	24	1.1	6.64
Palsi	-600	PF 50% release	0.88	837.36	837.63	27	1.16	5.67
Palsi	-700	PF 50% release	0.88	827.5	827.86	36	1.34	3.69
Palsi	-800	PF 50% release	0.88	817.64	818.06	42	1.45	2.89
Palsi	-900	PF 50% release	0.88	811.43	811.92	49	1.58	2.25
Palsi	-1000	PF 50% release	0.88	805.22	805.76	54	1.64	2
Palsi	-1100	PF 50% release	0.88	799.57	800.06	49	1.57	2.29
Average						34.92	1.31	4.49

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 100% release	1.76	938.6	938.98	38	1.38	6.76
Palsi	-100	PF 100% release	1.76	915.8	916.22	42	1.47	5.57
Palsi	-200	PF 100% release	1.76	892.99	893.38	39	1.41	6.4
Palsi	-300	PF 100% release	1.76	882.15	882.5	35	1.34	7.48
Palsi	-400	PF 100% release	1.76	871.31	871.58	27	1.16	11.22
Palsi	-500	PF 100% release	1.76	854.34	854.65	31	1.26	8.77
Palsi	-600	PF 100% release	1.76	837.36	837.71	35	1.33	7.49
Palsi	-700	PF 100% release	1.76	827.5	827.97	47	1.54	4.87
Palsi	-800	PF 100% release	1.76	817.64	818.19	55	1.67	3.81
Palsi	-900	PF 100% release	1.76	811.43	812.08	65	1.81	2.97
Palsi	-1000	PF 100% release	1.76	805.22	805.93	71	1.89	2.63
Palsi	-1100	PF 100% release	1.76	799.57	800.22	65	1.8	3.03
Average						45.83	1.51	5.92

Monsoon

Palsi HEP-June to September

Note: River sta -100 denotes location along river reach 100 m d/s of Palsi dam axis

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 10% release	1.12	938.6	938.91	31	1.26	5.65
Palsi	-100	PF 10% release	1.12	915.8	916.15	35	1.34	4.65
Palsi	-200	PF 10% release	1.12	892.99	893.32	33	1.28	5.35
Palsi	-300	PF 10% release	1.12	882.15	882.44	29	1.22	6.25
Palsi	-400	PF 10% release	1.12	871.31	871.53	22	1.07	9.35
Palsi	-500	PF 10% release	1.12	854.34	854.6	26	1.16	7.31
Palsi	-600	PF 10% release	1.12	837.36	837.65	29	1.22	6.25
Palsi	-700	PF 10% release	1.12	827.5	827.89	39	1.4	4.07
Palsi	-800	PF 10% release	1.12	817.64	818.1	46	1.51	3.19
Palsi	-900	PF 10% release	1.12	811.43	811.97	54	1.66	2.48
Palsi	-1000	PF 10% release	1.12	805.22	805.81	59	1.73	2.19
Palsi	-1100	PF 10% release	1.12	799.57	800.11	54	1.65	2.52
Average						38.08	1.38	4.94

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 15% release	1.69	938.6	938.97	37	1.36	6.67
Palsi	-100	PF 15% release	1.69	915.8	916.22	42	1.46	5.49
Palsi	-200	PF 15% release	1.69	892.99	893.37	38	1.4	6.3
Palsi	-300	PF 15% release	1.69	882.15	882.5	35	1.32	7.37
Palsi	-400	PF 15% release	1.69	871.31	871.58	27	1.16	11.03
Palsi	-500	PF 15% release	1.69	854.34	854.65	31	1.26	8.61
Palsi	-600	PF 15% release	1.69	837.36	837.71	35	1.33	7.35
Palsi	-700	PF 15% release	1.69	827.5	827.96	46	1.53	4.79
Palsi	-800	PF 15% release	1.69	817.64	818.18	54	1.65	3.75
Palsi	-900	PF 15% release	1.69	811.43	812.07	64	1.79	2.93
Palsi	-1000	PF 15% release	1.69	805.22	805.92	70	1.87	2.59
Palsi	-1100	PF 15% release	1.69	799.57	800.2	63	1.79	2.97
Average						45.17	1.49	5.82

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 20% release	2.25	938.6	939.02	42	1.45	7.47
Palsi	-100	PF 20% release	2.25	915.8	916.27	47	1.54	6.16
Palsi	-200	PF 20% release	2.25	892.99	893.42	43	1.48	7.07
Palsi	-300	PF 20% release	2.25	882.15	882.54	39	1.4	8.26
Palsi	-400	PF 20% release	2.25	871.31	871.61	30	1.22	12.38
Palsi	-500	PF 20% release	2.25	854.34	854.69	35	1.33	9.67
Palsi	-600	PF 20% release	2.25	837.36	837.75	39	1.4	8.25
Palsi	-700	PF 20% release	2.25	827.5	828.02	52	1.62	5.37
Palsi	-800	PF 20% release	2.25	817.64	818.25	61	1.75	4.2
Palsi	-900	PF 20% release	2.25	811.43	812.15	72	1.91	3.28
Palsi	-1000	PF 20% release	2.25	805.22	806	78	1.98	2.91
Palsi	-1100	PF 20% release	2.25	799.57	800.28	71	1.89	3.34
Average						50.75	1.58	6.53

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 25% release	2.81	938.6	939.06	46	1.5	8.2
Palsi	-100	PF 25% release	2.81	915.8	916.31	51	1.62	6.72
Palsi	-200	PF 25% release	2.81	892.99	893.46	47	1.55	7.72
Palsi	-300	PF 25% release	2.81	882.15	882.57	42	1.47	9.02
Palsi	-400	PF 25% release	2.81	871.31	871.64	33	1.27	13.55
Palsi	-500	PF 25% release	2.81	854.34	854.72	38	1.39	10.57
Palsi	-600	PF 25% release	2.81	837.36	837.79	43	1.46	9.03
Palsi	-700	PF 25% release	2.81	827.5	828.07	57	1.68	5.89
Palsi	-800	PF 25% release	2.81	817.64	818.31	67	1.83	4.59
Palsi	-900	PF 25% release	2.81	811.43	812.22	79	1.97	3.6
Palsi	-1000	PF 25% release	2.81	805.22	806.08	86	2.06	3.19

Palsi	-1100	PF 25% release	2.81	799.57	800.35	78	1.98	3.65
Average						55.58	1.65	7.14

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 30% release	3.37	938.6	939.09	49	1.57	8.77
Palsi	-100	PF 30% release	3.37	915.8	916.35	55	1.67	7.24
Palsi	-200	PF 30% release	3.37	892.99	893.5	51	1.59	8.34
Palsi	-300	PF 30% release	3.37	882.15	882.61	46	1.51	9.75
Palsi	-400	PF 30% release	3.37	871.31	871.66	35	1.32	14.59
Palsi	-500	PF 30% release	3.37	854.34	854.75	41	1.44	11.37
Palsi	-600	PF 30% release	3.37	837.36	837.82	46	1.52	9.69
Palsi	-700	PF 30% release	3.37	827.5	828.11	61	1.75	6.31
Palsi	-800	PF 30% release	3.37	817.64	818.36	72	1.9	4.94
Palsi	-900	PF 30% release	3.37	811.43	812.28	85	2.05	3.87
Palsi	-1000	PF 30% release	3.37	805.22	806.14	92	2.13	3.43
Palsi	-1100	PF 30% release	3.37	799.57	800.41	84	2.05	3.92
Average						59.75	1.71	7.69

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 40% release	4.5	938.6	939.15	55	1.67	9.84
Palsi	-100	PF 40% release	4.5	915.8	916.42	62	1.78	8.12
Palsi	-200	PF 40% release	4.5	892.99	893.56	57	1.7	9.32
Palsi	-300	PF 40% release	4.5	882.15	882.66	51	1.6	10.92
Palsi	-400	PF 40% release	4.5	871.31	871.7	39	1.4	16.35
Palsi	-500	PF 40% release	4.5	854.34	854.8	46	1.53	12.76
Palsi	-600	PF 40% release	4.5	837.36	837.87	51	1.61	10.88
Palsi	-700	PF 40% release	4.5	827.5	828.18	68	1.86	7.09
Palsi	-800	PF 40% release	4.5	817.64	818.45	81	1.99	5.57
Palsi	-900	PF 40% release	4.5	811.43	812.38	95	2.18	4.33
Palsi	-1000	PF 40% release	4.5	805.22	806.26	104	2.26	3.85
Palsi	-1100	PF 40% release	4.5	799.57	800.51	94	2.15	4.43
Average						66.92	1.81	8.62

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 50% release	5.62	938.6	939.2	60	1.74	10.77
Palsi	-100	PF 50% release	5.62	915.8	916.48	68	1.86	8.87
Palsi	-200	PF 50% release	5.62	892.99	893.61	62	1.77	10.19
Palsi	-300	PF 50% release	5.62	882.15	882.71	56	1.68	11.92
Palsi	-400	PF 50% release	5.62	871.31	871.74	43	1.48	17.81
Palsi	-500	PF 50% release	5.62	854.34	854.84	50	1.59	13.97
Palsi	-600	PF 50% release	5.62	837.36	837.92	56	1.69	11.88
Palsi	-700	PF 50% release	5.62	827.5	828.25	75	1.93	7.76

Palsi	-800	PF 50% release	5.62	817.64	818.52	88	2.08	6.09
Palsi	-900	PF 50% release	5.62	811.43	812.47	104	2.27	4.75
Palsi	-1000	PF 50% release	5.62	805.22	806.35	113	2.36	4.21
Palsi	-1100	PF 50% release	5.62	799.57	800.6	103	2.25	4.83
Average						73.17	1.89	9.42

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 100% release	11.24	938.6	939.39	79	1.99	14.27
Palsi	-100	PF 100% release	11.24	915.8	916.7	90	2.11	11.76
Palsi	-200	PF 100% release	11.24	892.99	893.81	82	2.03	13.47
Palsi	-300	PF 100% release	11.24	882.15	882.89	74	1.93	15.74
Palsi	-400	PF 100% release	11.24	871.31	871.88	57	1.69	23.53
Palsi	-500	PF 100% release	11.24	854.34	855	66	1.83	18.43
Palsi	-600	PF 100% release	11.24	837.36	838.1	74	1.93	15.72
Palsi	-700	PF 100% release	11.24	827.5	828.49	99	2.21	10.28
Palsi	-800	PF 100% release	11.24	817.64	818.81	117	2.4	8.04
Palsi	-900	PF 100% release	11.24	811.43	812.81	138	2.6	6.27
Palsi	-1000	PF 100% release	11.24	805.22	806.71	149	2.73	5.53
Palsi	-1100	PF 100% release	11.24	799.57	800.93	136	2.59	6.38
Average						96.75	2.17	12.45

Other 4 months

Palsi HEP-Oct-Mar-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Palsi dam axis

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 10% release	0.67	938.6	938.86	26	1.14	4.61
Palsi	-100	PF 10% release	0.67	915.8	916.09	29	1.22	3.78
Palsi	-200	PF 10% release	0.67	892.99	893.26	27	1.15	4.36
Palsi	-300	PF 10% release	0.67	882.15	882.39	24	1.1	5.08
Palsi	-400	PF 10% release	0.67	871.31	871.49	18	0.95	7.66
Palsi	-500	PF 10% release	0.67	854.34	854.55	21	1.04	5.97
Palsi	-600	PF 10% release	0.67	837.36	837.6	24	1.1	5.08
Palsi	-700	PF 10% release	0.67	827.5	827.82	32	1.26	3.32
Palsi	-800	PF 10% release	0.67	817.64	818.02	38	1.38	2.59
Palsi	-900	PF 10% release	0.67	811.43	811.87	44	1.49	2.02
Palsi	-1000	PF 10% release	0.67	805.22	805.7	48	1.56	1.79
Palsi	-1100	PF 10% release	0.67	799.57	800.01	44	1.48	2.06
Average						31.25	1.24	4.03

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 15% release	1	938.6	938.9	30	1.23	5.4
Palsi	-100	PF 15% release	1	915.8	916.14	34	1.32	4.44
Palsi	-200	PF 15% release	1	892.99	893.3	31	1.25	5.11

Palsi	-300	PF 15% release	1	882.15	882.43	28	1.19	5.98
Palsi	-400	PF 15% release	1	871.31	871.52	21	1.04	8.94
Palsi	-500	PF 15% release	1	854.34	854.59	25	1.13	7
Palsi	-600	PF 15% release	1	837.36	837.64	28	1.19	5.96
Palsi	-700	PF 15% release	1	827.5	827.88	38	1.37	3.89
Palsi	-800	PF 15% release	1	817.64	818.08	44	1.5	3.03
Palsi	-900	PF 15% release	1	811.43	811.95	52	1.62	2.37
Palsi	-1000	PF 15% release	1	805.22	805.78	56	1.69	2.1
Palsi	-1100	PF 15% release	1	799.57	800.08	51	1.61	2.41
Average						36.50	1.35	4.72

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 20% release	1.34	938.6	938.94	34	1.31	6.06
Palsi	-100	PF 20% release	1.34	915.8	916.18	38	1.39	5
Palsi	-200	PF 20% release	1.34	892.99	893.34	35	1.33	5.74
Palsi	-300	PF 20% release	1.34	882.15	882.47	32	1.26	6.72
Palsi	-400	PF 20% release	1.34	871.31	871.55	24	1.1	10.05
Palsi	-500	PF 20% release	1.34	854.34	854.62	28	1.19	7.89
Palsi	-600	PF 20% release	1.34	837.36	837.68	32	1.27	6.7
Palsi	-700	PF 20% release	1.34	827.5	827.92	42	1.46	4.36
Palsi	-800	PF 20% release	1.34	817.64	818.14	50	1.58	3.41
Palsi	-900	PF 20% release	1.34	811.43	812.02	59	1.72	2.67
Palsi	-1000	PF 20% release	1.34	805.22	805.85	63	1.79	2.36
Palsi	-1100	PF 20% release	1.34	799.57	800.15	58	1.71	2.71
Average						41.25	1.43	5.31

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 25% release	1.67	938.6	938.97	37	1.36	6.64
Palsi	-100	PF 25% release	1.67	915.8	916.22	42	1.45	5.46
Palsi	-200	PF 25% release	1.67	892.99	893.37	38	1.39	6.28
Palsi	-300	PF 25% release	1.67	882.15	882.5	35	1.32	7.34
Palsi	-400	PF 25% release	1.67	871.31	871.57	26	1.15	10.97
Palsi	-500	PF 25% release	1.67	854.34	854.65	31	1.25	8.57
Palsi	-600	PF 25% release	1.67	837.36	837.71	35	1.32	7.32
Palsi	-700	PF 25% release	1.67	827.5	827.96	46	1.52	4.77
Palsi	-800	PF 25% release	1.67	817.64	818.18	54	1.65	3.73
Palsi	-900	PF 25% release	1.67	811.43	812.07	64	1.78	2.92
Palsi	-1000	PF 25% release	1.67	805.22	805.91	69	1.87	2.58
Palsi	-1100	PF 25% release	1.67	799.57	800.2	63	1.78	2.96
Average						45.00	1.49	5.80

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 30% release	2.01	938.6	939	40	1.39	7.2

Palsi	-100	PF 30% release	2.01	915.8	916.25	45	1.51	5.88
Palsi	-200	PF 30% release	2.01	892.99	893.4	41	1.45	6.74
Palsi	-300	PF 30% release	2.01	882.15	882.52	37	1.37	7.91
Palsi	-400	PF 30% release	2.01	871.31	871.59	28	1.2	11.82
Palsi	-500	PF 30% release	2.01	854.34	854.67	33	1.29	9.28
Palsi	-600	PF 30% release	2.01	837.36	837.73	37	1.36	7.93
Palsi	-700	PF 30% release	2.01	827.5	827.99	49	1.58	5.13
Palsi	-800	PF 30% release	2.01	817.64	818.22	58	1.72	4.01
Palsi	-900	PF 30% release	2.01	811.43	812.12	69	1.87	3.13
Palsi	-1000	PF 30% release	2.01	805.22	805.97	75	1.94	2.78
Palsi	-1100	PF 30% release	2.01	799.57	800.25	68	1.86	3.19
Average						48.33	1.55	6.25

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 40% release	2.68	938.6	939.05	45	1.49	8.03
Palsi	-100	PF 40% release	2.68	915.8	916.3	50	1.6	6.59
Palsi	-200	PF 40% release	2.68	892.99	893.45	46	1.53	7.58
Palsi	-300	PF 40% release	2.68	882.15	882.57	42	1.45	8.88
Palsi	-400	PF 40% release	2.68	871.31	871.63	32	1.27	13.28
Palsi	-500	PF 40% release	2.68	854.34	854.71	37	1.37	10.38
Palsi	-600	PF 40% release	2.68	837.36	837.78	42	1.45	8.85
Palsi	-700	PF 40% release	2.68	827.5	828.06	56	1.67	5.76
Palsi	-800	PF 40% release	2.68	817.64	818.29	65	1.82	4.5
Palsi	-900	PF 40% release	2.68	811.43	812.2	77	1.97	3.52
Palsi	-1000	PF 40% release	2.68	805.22	806.06	84	2.05	3.12
Palsi	-1100	PF 40% release	2.68	799.57	800.33	76	1.96	3.58
Average						54.33	1.64	7.01

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 50% release	3.35	938.6	939.09	49	1.57	8.75
Palsi	-100	PF 50% release	3.35	915.8	916.35	55	1.67	7.22
Palsi	-200	PF 50% release	3.35	892.99	893.5	51	1.59	8.3
Palsi	-300	PF 50% release	3.35	882.15	882.61	46	1.5	9.74
Palsi	-400	PF 50% release	3.35	871.31	871.66	35	1.32	14.55
Palsi	-500	PF 50% release	3.35	854.34	854.75	41	1.44	11.33
Palsi	-600	PF 50% release	3.35	837.36	837.82	46	1.52	9.68
Palsi	-700	PF 50% release	3.35	827.5	828.11	61	1.75	6.3
Palsi	-800	PF 50% release	3.35	817.64	818.36	72	1.88	4.95
Palsi	-900	PF 50% release	3.35	811.43	812.28	85	2.04	3.86
Palsi	-1000	PF 50% release	3.35	805.22	806.14	92	2.13	3.42
Palsi	-1100	PF 50% release	3.35	799.57	800.41	84	2.05	3.91
Average						59.75	1.71	7.67

River	Ch d/s of Palsi HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Palsi	0	PF 100% release	6.7	938.6	939.24	64	1.8	11.56
Palsi	-100	PF 100% release	6.7	915.8	916.53	73	1.92	9.52
Palsi	-200	PF 100% release	6.7	892.99	893.66	67	1.83	10.94
Palsi	-300	PF 100% release	6.7	882.15	882.75	60	1.74	12.8
Palsi	-400	PF 100% release	6.7	871.31	871.77	46	1.52	19.17
Palsi	-500	PF 100% release	6.7	854.34	854.88	54	1.65	14.96
Palsi	-600	PF 100% release	6.7	837.36	837.96	60	1.74	12.77
Palsi	-700	PF 100% release	6.7	827.5	828.3	80	2	8.33
Palsi	-800	PF 100% release	6.7	817.64	818.59	95	2.18	6.51
Palsi	-900	PF 100% release	6.7	811.43	812.55	112	2.37	5.08
Palsi	-1000	PF 100% release	6.7	805.22	806.43	121	2.44	4.52
Palsi	-1100	PF 100% release	6.7	799.57	800.68	111	2.33	5.19
Average						78.58	1.96	10.11

Simang I HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Simang-I HEP-Nov to Feb

Note: River sta -100 denotes location along river reach 100 m d/s of Simang dam axis

Profile: At 10% Release from barrage: 1.44 (m³/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF10%Release	1.44	322.54	322.91	36.60	0.74	8.32
Simang	600	PF10%Release	1.44	316.01	316.41	39.70	1.07	7.36
Simang	1610	PF10%Release	1.44	304.11	304.51	40.20	0.98	9.19
Simang	2020	PF10%Release	1.44	298.27	298.69	42.80	1.11	8.74
Average						39.82	0.97	8.40

Profile: At 15% Release from barrage: 2.16 (m³/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF15%Release	2.16	322.54	322.98	43.50	0.84	9.50
Simang	600	PF15%Release	2.16	316.01	316.47	46.20	1.12	8.53
Simang	1610	PF15%Release	2.16	304.11	304.56	45.20	1.07	9.87
Simang	2020	PF15%Release	2.16	298.27	298.74	47.80	1.19	9.43
Average						45.68	1.06	9.33

Profile: At 20% Release from barrage: 2.88 (m³/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF20%Release	2.88	322.54	323.04	49.50	0.93	10.53
Simang	600	PF20%Release	2.88	316.01	316.53	51.80	1.18	9.47
Simang	1610	PF20%Release	2.88	304.11	304.61	49.70	1.16	10.46
Simang	2020	PF20%Release	2.88	298.27	298.79	52.70	1.25	10.12
Average						50.92	1.13	10.14

Profile: At 25%Release from barrage: 3.60 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF25%Release	3.60	322.54	323.09	54.90	1.01	11.45
Simang	600	PF25%Release	3.60	316.01	316.58	56.80	1.24	10.32
Simang	1610	PF25%Release	3.60	304.11	304.65	53.70	1.24	11.00
Simang	2020	PF25%Release	3.60	298.27	298.84	57.30	1.29	10.76
Average						55.67	1.19	10.88

Profile: At 30% Release from barrage: 4.32 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF30%Release	4.32	322.54	323.14	59.40	1.07	12.07
Simang	600	PF30%Release	4.32	316.01	316.62	61.20	1.29	11.06
Simang	1610	PF30%Release	4.32	304.11	304.68	57.10	1.29	11.46
Simang	2020	PF30%Release	4.32	298.27	298.87	60.50	1.35	11.21
Average						59.55	1.25	11.45

Profile: At 40% Release from barrage: 5.76 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF40%Release	5.76	322.54	323.20	65.60	1.16	12.45
Simang	600	PF40%Release	5.76	316.01	316.69	68.00	1.37	12.21
Simang	1610	PF40%Release	5.76	304.11	304.74	63.10	1.38	12.27
Simang	2020	PF40%Release	5.76	298.27	298.93	66.80	1.45	12.10
Average						65.87	1.34	12.26

Profile: At 50% Release from barrage: 7.21 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF50%Release	7.21	322.54	323.26	71.30	1.24	12.80
Simang	600	PF50%Release	7.21	316.01	316.76	74.30	1.45	13.27
Simang	1610	PF50%Release	7.21	304.11	304.80	68.60	1.48	13.00
Simang	2020	PF50%Release	7.21	298.27	299.00	73.30	1.51	13.00
Average						71.87	1.42	13.02

Profile: At 100% Release from barrage: 14.41 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF100%Release	14.41	322.54	323.49	94.90	1.56	14.24
Simang	600	PF100%Release	14.41	316.01	316.98	97.10	1.72	16.56
Simang	1610	PF100%Release	14.41	304.11	305.02	90.30	1.75	17.88
Simang	2020	PF100%Release	14.41	298.27	299.21	94.80	1.81	15.65
Average						94.28	1.71	16.08

Monsoon

Simang-I HEP-June to September

Note: River sta -100 denotes location along river reach 100 m d/s of Simang dam axis

Profile: At 10% Release from barrage: 8.89 (m³/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF10%Release	8.89	322.54	323.42	87.60	1.31	13.21
Simang	600	PF10%Release	8.89	316.01	316.89	87.60	1.65	13.84
Simang	1610	PF10%Release	8.89	304.11	304.99	87.60	1.69	16.91
Simang	2020	PF10%Release	8.89	298.27	299.26	99.30	1.82	14.97
Average						90.52	1.61	14.73

Profile: At 15% Release from barrage: 13.34 (m³/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF15%Release	13.34	322.54	323.45	91.00	1.50	14.08
Simang	600	PF15%Release	13.34	316.01	316.92	90.60	1.78	16.01
Simang	1610	PF15%Release	13.34	304.11	305.08	96.60	1.81	19.82
Simang	2020	PF15%Release	13.34	298.27	299.26	99.50	1.94	16.38
Average						94.42	1.76	16.57

Profile: At 20% Release from barrage: 17.78 (m³/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF20%Release	17.78	322.54	323.59	104.70	1.66	14.83
Simang	600	PF20%Release	17.78	316.01	317.04	102.90	1.89	16.91
Simang	1610	PF20%Release	17.78	304.11	305.18	106.50	1.90	21.64
Simang	2020	PF20%Release	17.78	298.27	299.37	110.40	2.06	17.56
Average						106.13	1.88	17.73

Profile: At 25%Release from barrage: 22.23 (m³/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF25%Release	22.23	322.54	323.70	115.90	1.80	15.52
Simang	600	PF25%Release	22.23	316.01	317.14	112.50	2.00	17.47
Simang	1610	PF25%Release	22.23	304.11	305.26	114.30	1.98	23.56
Simang	2020	PF25%Release	22.23	298.27	299.46	119.20	2.15	18.65
Average						115.47	1.98	18.80

Profile: At 30% Release from barrage: 26.67 (m³/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF30%Release	26.67	322.54	323.81	126.20	1.93	16.15
Simang	600	PF30%Release	26.67	316.01	317.23	121.40	2.11	17.99
Simang	1610	PF30%Release	26.67	304.11	305.33	121.50	2.05	25.46
Simang	2020	PF30%Release	26.67	298.27	299.54	127.00	2.24	19.61
Average						124.03	2.08	19.80

Profile: At 40% Release from barrage: 35.56 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF40%Release	35.56	322.54	323.99	144.90	2.14	17.29
Simang	600	PF40%Release	35.56	316.01	317.39	137.30	2.29	18.90
Simang	1610	PF40%Release	35.56	304.11	305.45	133.40	2.15	29.50
Simang	2020	PF40%Release	35.56	298.27	299.67	140.80	2.39	21.01
Average						139.10	2.24	21.67

Profile: At 50% Release from barrage: 44.46 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF50%Release	44.46	322.54	324.14	159.50	2.30	18.39
Simang	600	PF50%Release	44.46	316.01	317.52	150.70	2.44	19.65
Simang	1610	PF50%Release	44.46	304.11	305.56	144.40	2.24	32.96
Simang	2020	PF50%Release	44.46	298.27	299.80	153.20	2.52	22.15
Average						151.95	2.37	23.29

Profile: At 100% Release from barrage: 88.91 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF100%Release	88.91	322.54	324.71	217.00	2.84	22.80
Simang	600	PF100%Release	88.91	316.01	318.05	203.50	3.04	22.57
Simang	1610	PF100%Release	88.91	304.11	305.95	183.60	2.58	39.47
Simang	2020	PF100%Release	88.91	298.27	300.27	200.80	3.01	26.57
Average						201.23	2.87	27.85

Other 4 Months

Simang-I HEP- Oct-Mar-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Simang dam axis

Profile: At 10% Release from barrage: 4.00 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF10%Release	4.00	322.54	323.12	58.10	1.04	12.00
Simang	600	PF10%Release	4.00	316.01	316.59	57.70	1.35	10.46
Simang	1610	PF10%Release	4.00	304.11	304.73	61.90	1.35	12.11
Simang	2020	PF10%Release	4.00	298.27	298.91	64.20	1.46	11.73
Average						60.47	1.30	11.57

Profile: At 15% Release from barrage: 6.00 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF15%Release	6.00	322.54	323.21	66.90	1.17	12.53
Simang	600	PF15%Release	6.00	316.01	316.71	70.00	1.45	12.13
Simang	1610	PF15%Release	6.00	304.81	305.54	73.10	1.47	13.13

Simang	2020	PF15%Release	6.00	298.27	299.00	73.30	1.55	12.97
Average						70.82	1.41	12.69

Profile: At 20% Release from barrage: 8.00 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF20%Release	8.00	322.54	323.41	86.80	1.27	13.00
Simang	600	PF20%Release	8.00	316.01	316.89	88.00	1.54	13.55
Simang	1610	PF20%Release	8.00	304.11	305.01	89.90	1.58	14.09
Simang	2020	PF20%Release	8.00	298.27	299.16	89.32	1.65	13.78
Average						88.51	1.51	13.61

Profile: At 25%Release from barrage: 10.00 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF25%Release	10.00	322.54	323.43	88.70	1.37	13.43
Simang	600	PF25%Release	10.00	316.01	316.94	92.30	1.62	14.66
Simang	1610	PF25%Release	10.00	304.11	305.03	92.00	1.65	15.60
Simang	2020	PF25%Release	10.00	298.27	299.21	94.60	1.72	14.58
Average						91.90	1.59	14.57

Profile: At 30% Release from barrage: 11.99 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF30%Release	11.99	322.54	323.45	91.00	1.46	13.82
Simang	600	PF30%Release	11.99	316.01	316.93	92.20	1.68	15.61
Simang	1610	PF30%Release	11.99	304.11	305.02	90.70	1.71	17.16
Simang	2020	PF30%Release	11.99	298.27	299.24	97.60	1.79	15.25
Average						92.87	1.66	15.46

Profile: At 40% Release from barrage: 15.99 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF40%Release	15.99	322.54	323.54	99.60	1.61	14.52
Simang	600	PF40%Release	15.99	316.01	317.01	100.00	1.80	16.73
Simang	1610	PF40%Release	15.99	304.11	305.09	97.50	1.82	19.78
Simang	2020	PF40%Release	15.99	298.27	299.28	101.90	1.91	16.51
Average						99.75	1.78	16.89

Profile: At 50% Release from barrage: 19.99 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF50%Release	19.99	322.54	323.64	110.10	1.74	15.16
Simang	600	PF50%Release	19.99	316.01	317.10	109.10	1.90	17.27

Simang	1610	PF50%Release	19.99	304.11	305.17	105.40	1.90	21.38
Simang	2020	PF50%Release	19.99	298.27	299.37	110.30	2.02	17.55
Average						108.73	1.89	17.84

Profile: At 100% Release from barrage: 39.98 (m3/s)

Reach	Ch d/s of Simang-I HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF100%Release	39.98	322.54	324.07	152.20	2.23	17.83
Simang	600	PF100%Release	39.98	316.01	317.46	145.00	2.34	19.33
Simang	1610	PF100%Release	39.98	304.11	305.47	135.60	2.17	30.22
Simang	2020	PF100%Release	39.98	298.27	299.71	144.10	2.40	21.31
Average						144.23	2.28	22.17

Simang-II HEP - Water depth, flow velocity and flow top width for different release conditions

Lean

Simang- II HEP-Nov to Feb

Note: River sta -100 denotes location along river reach 100 m d/s of Simang dam axis

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF10%Release	1.23	440.500	440.859	35.86	0.75	8.56
Simang	-92.5*	PF10%Release	1.23	439.250	439.617	36.74	0.71	8.67
Simang	-185.*	PF10%Release	1.23	438.000	438.359	35.86	0.77	8.31
Simang	-277.5*	PF10%Release	1.23	436.760	437.127	36.74	0.71	8.54
Simang	-370.*	PF10%Release	1.23	435.510	435.860	34.99	0.80	8.03
Simang	-462.5*	PF10%Release	1.23	434.260	434.636	37.61	0.70	8.46
Simang	-555.*	PF10%Release	1.23	433.010	433.360	34.99	0.81	7.79
Simang	-647.5*	PF10%Release	1.23	431.760	432.145	38.49	0.69	8.42
Simang	-740.*	PF10%Release	1.23	430.520	430.852	33.24	0.85	7.58
Simang	-832.5*	PF10%Release	1.23	429.270	429.655	38.49	0.66	8.46
Simang	-925	PF10%Release	1.23	428.020	428.344	32.36	0.92	7.33
Simang	-995.5*	PF10%Release	1.23	426.890	427.266	37.61	0.69	8.69
Simang	-1066	PF10%Release	1.23	425.770	426.067	29.74	0.98	7.46
Simang	-1159.4*	PF10%Release	1.23	423.000	423.306	30.62	0.99	7.34
Simang	-1252.8*	PF10%Release	1.23	420.240	420.546	30.62	0.99	7.27
Simang	-1346.2*	PF10%Release	1.23	417.470	417.785	31.49	1.00	7.20
Simang	-1439.6*	PF10%Release	1.23	414.710	415.025	31.49	0.99	7.21
Simang	-1533.*	PF10%Release	1.23	411.940	412.255	31.49	1.00	7.21
Simang	-1626.4*	PF10%Release	1.23	409.180	409.504	32.36	0.98	7.35
Simang	-1719.8*	PF10%Release	1.23	406.410	406.734	32.36	0.98	7.49
Simang	-1813.2*	PF10%Release	1.23	403.650	403.974	32.36	0.95	7.97
Simang	-1906.6*	PF10%Release	1.23	400.880	401.212	33.24	0.94	8.36
Simang	-2000	PF10%Release	1.23	398.110	398.442	33.24	0.92	8.46
Average						34.00	0.86	7.92

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF15%Release	1.85	440.500	440.905	40.46	0.86	9.01
Simang	-92.5*	PF15%Release	1.85	439.250	439.672	42.18	0.83	9.15
Simang	-185.*	PF15%Release	1.85	438.000	438.413	41.32	0.88	8.94
Simang	-277.5*	PF15%Release	1.85	436.760	437.182	42.18	0.82	9.10
Simang	-370.*	PF15%Release	1.85	435.510	435.915	40.46	0.89	8.85
Simang	-462.5*	PF15%Release	1.85	434.260	434.690	43.04	0.81	9.12
Simang	-555.*	PF15%Release	1.85	433.010	433.415	40.46	0.92	8.67
Simang	-647.5*	PF15%Release	1.85	431.760	432.199	43.90	0.79	9.16
Simang	-740.*	PF15%Release	1.85	430.520	430.907	38.74	0.96	8.43
Simang	-832.5*	PF15%Release	1.85	429.270	429.709	43.90	0.76	9.22
Simang	-925	PF15%Release	1.85	428.020	428.399	37.88	1.04	8.06
Simang	-995.5*	PF15%Release	1.85	426.890	427.320	43.04	0.78	9.44
Simang	-1066	PF15%Release	1.85	425.770	426.114	34.43	1.10	8.25
Simang	-1159.4*	PF15%Release	1.85	423.000	423.353	35.29	1.12	8.09
Simang	-1252.8*	PF15%Release	1.85	420.240	420.593	35.29	1.11	8.05
Simang	-1346.2*	PF15%Release	1.85	417.470	417.832	36.16	1.12	7.97
Simang	-1439.6*	PF15%Release	1.85	414.710	415.072	36.16	1.11	8.01
Simang	-1533.*	PF15%Release	1.85	411.940	412.310	37.02	1.12	8.04
Simang	-1626.4*	PF15%Release	1.85	409.180	409.550	37.02	1.10	8.25
Simang	-1719.8*	PF15%Release	1.85	406.410	406.780	37.02	1.10	8.50
Simang	-1813.2*	PF15%Release	1.85	403.650	404.020	37.02	1.07	8.80
Simang	-1906.6*	PF15%Release	1.85	400.880	401.250	37.02	1.08	8.82
Simang	-2000	PF15%Release	1.85	398.110	398.480	37.02	1.07	8.85
Average						39.00	0.98	8.64

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF20%Release	2.46	440.500	440.963	46.28	0.94	9.44
Simang	-92.5*	PF20%Release	2.46	439.250	439.722	47.15	0.90	9.63
Simang	-185.*	PF20%Release	2.46	438.000	438.463	46.28	0.95	9.48
Simang	-277.5*	PF20%Release	2.46	436.760	437.232	47.15	0.90	9.63
Simang	-370.*	PF20%Release	2.46	435.510	435.964	45.40	0.97	9.30
Simang	-462.5*	PF20%Release	2.46	434.260	434.740	48.02	0.89	9.58
Simang	-555.*	PF20%Release	2.46	433.010	433.464	45.40	0.99	9.20
Simang	-647.5*	PF20%Release	2.46	431.760	432.258	49.77	0.86	9.65
Simang	-740.*	PF20%Release	2.46	430.520	430.957	43.66	1.04	9.01
Simang	-832.5*	PF20%Release	2.46	429.270	429.768	49.77	0.83	9.78
Simang	-925	PF20%Release	2.46	428.020	428.448	42.79	1.12	8.69
Simang	-995.5*	PF20%Release	2.46	426.890	427.379	48.90	0.85	10.04
Simang	-1066	PF20%Release	2.46	425.770	426.163	39.29	1.19	8.90
Simang	-1159.4*	PF20%Release	2.46	423.000	423.402	40.17	1.21	8.74
Simang	-1252.8*	PF20%Release	2.46	420.240	420.642	40.17	1.20	8.70

Simang	-1346.2*	PF20%Release	2.46	417.470	417.880	41.04	1.21	8.63
Simang	-1439.6*	PF20%Release	2.46	414.710	415.120	41.04	1.20	8.69
Simang	-1533.*	PF20%Release	2.46	411.940	412.350	41.04	1.21	8.73
Simang	-1626.4*	PF20%Release	2.46	409.180	409.599	41.91	1.18	9.00
Simang	-1719.8*	PF20%Release	2.46	406.410	406.829	41.91	1.19	9.19
Simang	-1813.2*	PF20%Release	2.46	403.650	404.069	41.91	1.16	9.32
Simang	-1906.6*	PF20%Release	2.46	400.880	401.290	41.04	1.18	9.25
Simang	-2000	PF20%Release	2.46	398.110	398.529	41.91	1.17	9.24
Average						44.00	1.06	9.21

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF25%Release	3.08	440.500	441.007	50.70	1.01	9.83
Simang	-92.5*	PF25%Release	3.08	439.250	439.766	51.57	0.97	10.07
Simang	-185.*	PF25%Release	3.08	438.000	438.507	50.70	1.01	9.98
Simang	-277.5*	PF25%Release	3.08	436.760	437.276	51.57	0.96	10.17
Simang	-370.*	PF25%Release	3.08	435.510	436.008	49.82	1.02	9.81
Simang	-462.5*	PF25%Release	3.08	434.260	434.784	52.45	0.95	10.01
Simang	-555.*	PF25%Release	3.08	433.010	433.508	49.82	1.05	9.62
Simang	-647.5*	PF25%Release	3.08	431.760	432.293	53.32	0.93	10.08
Simang	-740.*	PF25%Release	3.08	430.520	431.001	48.08	1.10	9.45
Simang	-832.5*	PF25%Release	3.08	429.270	429.821	55.07	0.89	10.25
Simang	-925	PF25%Release	3.08	428.020	428.483	46.33	1.18	9.12
Simang	-995.5*	PF25%Release	3.08	426.890	427.423	53.32	0.91	10.56
Simang	-1066	PF25%Release	3.08	425.770	426.198	42.83	1.26	9.48
Simang	-1159.4*	PF25%Release	3.08	423.000	423.437	43.71	1.28	9.31
Simang	-1252.8*	PF25%Release	3.08	420.240	420.677	43.71	1.27	9.26
Simang	-1346.2*	PF25%Release	3.08	417.470	417.916	44.58	1.29	9.20
Simang	-1439.6*	PF25%Release	3.08	414.710	415.156	44.58	1.27	9.27
Simang	-1533.*	PF25%Release	3.08	411.940	412.395	45.45	1.28	9.34
Simang	-1626.4*	PF25%Release	3.08	409.180	409.635	45.45	1.25	9.70
Simang	-1719.8*	PF25%Release	3.08	406.410	406.865	45.45	1.26	9.74
Simang	-1813.2*	PF25%Release	3.08	403.650	404.105	45.45	1.24	9.78
Simang	-1906.6*	PF25%Release	3.08	400.880	401.326	44.58	1.27	9.65
Simang	-2000	PF25%Release	3.08	398.110	398.565	45.45	1.25	9.60
Average						48.00	1.13	9.71

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF30%Release	3.69	440.500	441.048	54.77	1.06	10.18
Simang	-92.5*	PF30%Release	3.69	439.250	439.806	55.65	1.03	10.44
Simang	-185.*	PF30%Release	3.69	438.000	438.556	55.65	1.05	10.43
Simang	-277.5*	PF30%Release	3.69	436.760	437.316	55.65	1.01	10.65
Simang	-370.*	PF30%Release	3.69	435.510	436.058	54.77	1.07	10.37
Simang	-462.5*	PF30%Release	3.69	434.260	434.834	57.42	1.00	10.63

Simang	-555.*	PF30%Release	3.69	433.010	433.549	53.88	1.10	10.00
Simang	-647.5*	PF30%Release	3.69	431.760	432.343	58.30	0.98	10.46
Simang	-740.*	PF30%Release	3.69	430.520	431.050	53.00	1.15	9.85
Simang	-832.5*	PF30%Release	3.69	429.270	429.862	59.18	0.94	10.66
Simang	-925	PF30%Release	3.69	428.020	428.523	50.35	1.25	9.51
Simang	-995.5*	PF30%Release	3.69	426.890	427.464	57.42	0.96	11.11
Simang	-1066	PF30%Release	3.69	425.770	426.238	46.82	1.33	9.99
Simang	-1159.4*	PF30%Release	3.69	423.000	423.477	47.70	1.35	9.83
Simang	-1252.8*	PF30%Release	3.69	420.240	420.717	47.70	1.34	9.77
Simang	-1346.2*	PF30%Release	3.69	417.470	417.947	47.70	1.36	9.68
Simang	-1439.6*	PF30%Release	3.69	414.710	415.196	48.58	1.34	9.78
Simang	-1533.*	PF30%Release	3.69	411.940	412.426	48.58	1.35	10.00
Simang	-1626.4*	PF30%Release	3.69	409.180	409.666	48.58	1.31	10.32
Simang	-1719.8*	PF30%Release	3.69	406.410	406.896	48.58	1.33	10.22
Simang	-1813.2*	PF30%Release	3.69	403.650	404.136	48.58	1.32	10.19
Simang	-1906.6*	PF30%Release	3.69	400.880	401.366	48.58	1.35	10.00
Simang	-2000	PF30%Release	3.69	398.110	398.596	48.58	1.33	9.92
Average						52.00	1.19	10.17

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF40%Release	4.93	440.500	441.124	62.37	1.16	10.67
Simang	-92.5*	PF40%Release	4.93	439.250	439.883	63.26	1.13	10.95
Simang	-185.*	PF40%Release	4.93	438.000	438.633	63.26	1.15	11.04
Simang	-277.5*	PF40%Release	4.93	436.760	437.393	63.26	1.11	11.32
Simang	-370.*	PF40%Release	4.93	435.510	436.134	62.37	1.15	11.19
Simang	-462.5*	PF40%Release	4.93	434.260	434.910	65.04	1.09	11.52
Simang	-555.*	PF40%Release	4.93	433.010	433.634	62.37	1.18	10.98
Simang	-647.5*	PF40%Release	4.93	431.760	432.419	65.93	1.07	11.53
Simang	-740.*	PF40%Release	4.93	430.520	431.117	59.70	1.24	10.39
Simang	-832.5*	PF40%Release	4.93	429.270	429.938	66.83	1.03	11.40
Simang	-925	PF40%Release	4.93	428.020	428.599	57.92	1.36	10.04
Simang	-995.5*	PF40%Release	4.93	426.890	427.549	65.93	1.04	11.98
Simang	-1066	PF40%Release	4.93	425.770	426.305	53.46	1.38	12.13
Simang	-1159.4*	PF40%Release	4.93	423.000	423.535	53.46	1.47	10.61
Simang	-1252.8*	PF40%Release	4.93	420.240	420.775	53.46	1.46	10.60
Simang	-1346.2*	PF40%Release	4.93	417.470	418.014	54.35	1.47	10.54
Simang	-1439.6*	PF40%Release	4.93	414.710	415.262	55.24	1.40	11.65
Simang	-1533.*	PF40%Release	4.93	411.940	412.492	55.24	1.44	11.37
Simang	-1626.4*	PF40%Release	4.93	409.180	409.732	55.24	1.43	11.20
Simang	-1719.8*	PF40%Release	4.93	406.410	406.962	55.24	1.46	10.91
Simang	-1813.2*	PF40%Release	4.93	403.650	404.194	54.35	1.45	10.75
Simang	-1906.6*	PF40%Release	4.93	400.880	401.424	54.35	1.48	10.49
Simang	-2000	PF40%Release	4.93	398.110	398.654	54.35	1.47	10.35
Average						59.00	1.29	11.03

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF50%Release	6.16	440.500	441.185	68.52	1.27	10.56
Simang	-92.5*	PF50%Release	6.16	439.250	439.935	68.52	1.25	10.88
Simang	-185.*	PF50%Release	6.16	438.000	438.685	68.52	1.25	11.04
Simang	-277.5*	PF50%Release	6.16	436.760	437.454	69.41	1.22	11.34
Simang	-370.*	PF50%Release	6.16	435.510	436.195	68.52	1.25	11.31
Simang	-462.5*	PF50%Release	6.16	434.260	434.963	70.30	1.19	11.68
Simang	-555.*	PF50%Release	6.16	433.010	433.695	68.52	1.27	11.32
Simang	-647.5*	PF50%Release	6.16	431.760	432.481	72.08	1.16	11.90
Simang	-740.*	PF50%Release	6.16	430.520	431.187	66.74	1.34	10.77
Simang	-832.5*	PF50%Release	6.16	429.270	430.009	73.86	1.11	12.13
Simang	-925	PF50%Release	6.16	428.020	428.652	63.18	1.49	9.99
Simang	-995.5*	PF50%Release	6.16	426.890	427.602	71.19	1.15	11.93
Simang	-1066	PF50%Release	6.16	425.770	426.411	64.07	1.11	26.47
Simang	-1159.4*	PF50%Release	6.16	423.000	423.614	61.40	1.42	14.67
Simang	-1252.8*	PF50%Release	6.16	420.240	420.854	61.40	1.42	14.19
Simang	-1346.2*	PF50%Release	6.16	417.470	418.084	61.40	1.47	13.34
Simang	-1439.6*	PF50%Release	6.16	414.710	415.315	60.51	1.48	12.78
Simang	-1533.*	PF50%Release	6.16	411.940	412.545	60.51	1.53	12.02
Simang	-1626.4*	PF50%Release	6.16	409.180	409.776	59.62	1.55	11.55
Simang	-1719.8*	PF50%Release	6.16	406.410	407.006	59.62	1.59	10.99
Simang	-1813.2*	PF50%Release	6.16	403.650	404.237	58.73	1.59	10.72
Simang	-1906.6*	PF50%Release	6.16	400.880	401.467	58.73	1.63	10.40
Simang	-2000	PF50%Release	6.16	398.110	398.706	59.62	1.62	10.23
Average						65.00	1.36	12.27

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF100%Release	12.32	440.500	441.423	92.28	1.54	15.37
Simang	-92.5*	PF100%Release	12.32	439.250	440.173	92.28	1.51	15.91
Simang	-185.*	PF100%Release	12.32	438.000	438.923	92.28	1.50	16.38
Simang	-277.5*	PF100%Release	12.32	436.760	437.683	92.28	1.47	16.93
Simang	-370.*	PF100%Release	12.32	435.510	436.424	91.37	1.47	17.34
Simang	-462.5*	PF100%Release	12.32	434.260	435.192	93.18	1.42	17.94
Simang	-555.*	PF100%Release	12.32	433.010	433.933	92.28	1.46	18.16
Simang	-647.5*	PF100%Release	12.32	431.760	432.719	95.89	1.37	18.96
Simang	-740.*	PF100%Release	12.32	430.520	431.434	91.37	1.47	18.74
Simang	-832.5*	PF100%Release	12.32	429.270	430.247	97.70	1.30	20.07
Simang	-925	PF100%Release	12.32	428.020	428.907	88.66	1.60	18.08
Simang	-995.5*	PF100%Release	12.32	426.890	427.822	93.18	1.31	22.71
Simang	-1066	PF100%Release	12.32	425.770	426.530	75.99	1.26	44.95
Simang	-1159.4*	PF100%Release	12.32	423.000	423.778	77.80	1.50	29.25
Simang	-1252.8*	PF100%Release	12.32	420.240	421.027	78.71	1.58	26.04
Simang	-1346.2*	PF100%Release	12.32	417.470	418.266	79.61	1.64	23.90

Simang	-1439.6*	PF100%Release	12.32	414.710	415.506	79.61	1.67	22.38
Simang	-1533.*	PF100%Release	12.32	411.940	412.736	79.61	1.74	20.71
Simang	-1626.4*	PF100%Release	12.32	409.180	409.976	79.61	1.77	19.46
Simang	-1719.8*	PF100%Release	12.32	406.410	407.206	79.61	1.82	18.32
Simang	-1813.2*	PF100%Release	12.32	403.650	404.437	78.71	1.83	17.61
Simang	-1906.6*	PF100%Release	12.32	400.880	401.667	78.71	1.88	16.83
Simang	-2000	PF100%Release	12.32	398.110	398.906	79.61	1.88	16.39
Average						86.10	1.57	20.54

Monsoon

Simang-II HEP-June to September

Note: River sta -100 denotes location along river reach 100 m d/s of Simang dam axis

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF10%Release	7.6	440.5	441.33	83.00	1.30	12.11
Simang	-92.5*	PF10%Release	7.6	439.25	440.09	84.00	1.27	12.55
Simang	-185.*	PF10%Release	7.6	438	438.84	84.00	1.27	12.85
Simang	-277.5*	PF10%Release	7.6	436.76	437.6	84.00	1.24	13.20
Simang	-370.*	PF10%Release	7.6	435.51	436.35	84.00	1.26	13.32
Simang	-462.5*	PF10%Release	7.6	434.26	435.12	86.00	1.21	13.71
Simang	-555.*	PF10%Release	7.6	433.01	433.85	84.00	1.27	13.53
Simang	-647.5*	PF10%Release	7.6	431.76	432.64	88.00	1.18	14.15
Simang	-740.*	PF10%Release	7.6	430.52	431.35	83.00	1.31	13.28
Simang	-832.5*	PF10%Release	7.6	429.27	430.17	90.00	1.13	14.53
Simang	-925	PF10%Release	7.6	428.02	428.81	79.00	1.46	11.87
Simang	-995.5*	PF10%Release	7.6	426.89	427.78	89.00	1.09	17.18
Simang	-1066	PF10%Release	7.6	425.77	426.53	76.00	1.06	35.52
Simang	-1159.4*	PF10%Release	7.6	423	423.75	75.00	1.32	21.07
Simang	-1252.8*	PF10%Release	7.6	420.24	420.99	75.00	1.39	18.29
Simang	-1346.2*	PF10%Release	7.6	417.47	418.21	74.00	1.48	15.88
Simang	-1439.6*	PF10%Release	7.6	414.71	415.44	73.00	1.50	14.99
Simang	-1533.*	PF10%Release	7.6	411.94	412.68	74.00	1.54	14.32
Simang	-1626.4*	PF10%Release	7.6	409.18	409.91	73.00	1.55	13.79
Simang	-1719.8*	PF10%Release	7.6	406.41	407.14	73.00	1.60	13.13
Simang	-1813.2*	PF10%Release	7.6	403.65	404.37	72.00	1.60	12.67
Simang	-1906.6*	PF10%Release	7.6	400.88	401.6	72.00	1.65	12.04
Simang	-2000	PF10%Release	7.6	398.11	398.83	72.00	1.65	11.79
Average						79.43	1.36	15.03

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF15%Release	11.39	440.5	441.48	98.00	1.47	13.29
Simang	-92.5*	PF15%Release	11.39	439.25	440.24	99.00	1.44	13.76
Simang	-185.*	PF15%Release	11.39	438	438.99	99.00	1.43	14.17
Simang	-277.5*	PF15%Release	11.39	436.76	437.75	99.00	1.40	14.65
Simang	-370.*	PF15%Release	11.39	435.51	436.49	98.00	1.41	14.99

Simang	-462.5*	PF15%Release	11.39	434.26	435.26	100.00	1.36	15.52
Simang	-555.*	PF15%Release	11.39	433.01	434	99.00	1.40	15.71
Simang	-647.5*	PF15%Release	11.39	431.76	432.79	103.00	1.31	16.40
Simang	-740.*	PF15%Release	11.39	430.52	431.5	98.00	1.42	15.98
Simang	-832.5*	PF15%Release	11.39	429.27	430.32	105.00	1.24	17.35
Simang	-925	PF15%Release	11.39	428.02	428.97	95.00	1.54	15.31
Simang	-995.5*	PF15%Release	11.39	426.89	427.9	101.00	1.25	19.53
Simang	-1066	PF15%Release	11.39	425.77	426.6	83.00	1.20	38.88
Simang	-1159.4*	PF15%Release	11.39	423	423.84	84.00	1.45	24.95
Simang	-1252.8*	PF15%Release	11.39	420.24	421.09	85.00	1.50	22.34
Simang	-1346.2*	PF15%Release	11.39	417.47	418.32	85.00	1.57	20.48
Simang	-1439.6*	PF15%Release	11.39	414.71	415.57	86.00	1.60	19.10
Simang	-1533.*	PF15%Release	11.39	411.94	412.79	85.00	1.67	17.47
Simang	-1626.4*	PF15%Release	11.39	409.18	410.03	85.00	1.70	16.49
Simang	-1719.8*	PF15%Release	11.39	406.41	407.26	85.00	1.75	15.52
Simang	-1813.2*	PF15%Release	11.39	403.65	404.5	85.00	1.76	14.99
Simang	-1906.6*	PF15%Release	11.39	400.88	401.72	84.00	1.81	14.37
Simang	-2000	PF15%Release	11.39	398.11	398.96	85.00	1.81	13.96
Average						92.43	1.50	17.62

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF20%Release	15.19	440.5	441.61	111.00	1.59	14.47
Simang	-92.5*	PF20%Release	15.19	439.25	440.36	111.00	1.57	14.78
Simang	-185.*	PF20%Release	15.19	438	439.11	111.00	1.56	15.21
Simang	-277.5*	PF20%Release	15.19	436.76	437.86	110.00	1.53	15.71
Simang	-370.*	PF20%Release	15.19	435.51	436.61	110.00	1.53	16.09
Simang	-462.5*	PF20%Release	15.19	434.26	435.38	112.00	1.49	16.64
Simang	-555.*	PF20%Release	15.19	433.01	434.11	110.00	1.52	16.88
Simang	-647.5*	PF20%Release	15.19	431.76	432.9	114.00	1.43	17.61
Simang	-740.*	PF20%Release	15.19	430.52	431.61	109.00	1.53	17.52
Simang	-832.5*	PF20%Release	15.19	429.27	430.44	117.00	1.35	18.69
Simang	-925	PF20%Release	15.19	428.02	429.09	107.00	1.62	17.68
Simang	-995.5*	PF20%Release	15.19	426.89	427.99	110.00	1.38	21.04
Simang	-1066	PF20%Release	15.19	425.77	426.65	88.00	1.30	41.76
Simang	-1159.4*	PF20%Release	15.19	423	423.93	93.00	1.45	33.34
Simang	-1252.8*	PF20%Release	15.19	420.24	421.16	92.00	1.62	24.71
Simang	-1346.2*	PF20%Release	15.19	417.47	418.4	93.00	1.69	22.55
Simang	-1439.6*	PF20%Release	15.19	414.71	415.65	94.00	1.73	21.09
Simang	-1533.*	PF20%Release	15.19	411.94	412.89	95.00	1.78	19.86
Simang	-1626.4*	PF20%Release	15.19	409.18	410.13	95.00	1.80	19.02
Simang	-1719.8*	PF20%Release	15.19	406.41	407.36	95.00	1.86	17.83
Simang	-1813.2*	PF20%Release	15.19	403.65	404.6	95.00	1.88	17.05
Simang	-1906.6*	PF20%Release	15.19	400.88	401.83	95.00	1.93	16.22
Simang	-2000	PF20%Release	15.19	398.11	399.07	96.00	1.94	15.74
Average						102.74	1.61	19.63

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF25%Release	18.99	440.5	441.75	125	1.63	17.28
Simang	-92.5*	PF25%Release	18.99	439.25	440.48	123.00	1.64	16.70
Simang	-185.*	PF25%Release	18.99	438	439.22	122.00	1.65	16.71
Simang	-277.5*	PF25%Release	18.99	436.76	437.97	121.00	1.63	17.00
Simang	-370.*	PF25%Release	18.99	435.51	436.72	121.00	1.63	17.27
Simang	-462.5*	PF25%Release	18.99	434.26	435.48	122.00	1.59	17.77
Simang	-555.*	PF25%Release	18.99	433.01	434.21	120.00	1.61	18.00
Simang	-647.5*	PF25%Release	18.99	431.76	433	124.00	1.54	18.72
Simang	-740.*	PF25%Release	18.99	430.52	431.71	119.00	1.62	18.64
Simang	-832.5*	PF25%Release	18.99	429.27	430.53	126.00	1.45	19.86
Simang	-925	PF25%Release	18.99	428.02	429.18	116.00	1.71	18.92
Simang	-995.5*	PF25%Release	18.99	426.89	428.07	118.00	1.50	22.20
Simang	-1066	PF25%Release	18.99	425.77	426.69	92.00	1.41	42.94
Simang	-1159.4*	PF25%Release	18.99	423	423.98	98.00	1.54	35.07
Simang	-1252.8*	PF25%Release	18.99	420.24	421.23	99.00	1.70	27.20
Simang	-1346.2*	PF25%Release	18.99	417.47	418.47	100.00	1.79	24.28
Simang	-1439.6*	PF25%Release	18.99	414.71	415.72	101.00	1.83	22.65
Simang	-1533.*	PF25%Release	18.99	411.94	412.96	102.00	1.90	21.18
Simang	-1626.4*	PF25%Release	18.99	409.18	410.2	102.00	1.92	20.25
Simang	-1719.8*	PF25%Release	18.99	406.41	407.44	103.00	1.97	19.42
Simang	-1813.2*	PF25%Release	18.99	403.65	404.68	103.00	1.97	18.80
Simang	-1906.6*	PF25%Release	18.99	400.88	401.91	103.00	2.04	17.82
Simang	-2000	PF25%Release	18.99	398.11	399.16	105.00	2.04	17.22
Average						110.91	1.71	21.30

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF30%Release	22.79	440.5	441.85	135.00	1.68	18.86
Simang	-92.5*	PF30%Release	22.79	439.25	440.59	134.00	1.70	18.49
Simang	-185.*	PF30%Release	22.79	438	439.32	132.00	1.72	18.06
Simang	-277.5*	PF30%Release	22.79	436.76	438.07	131.00	1.71	18.18
Simang	-370.*	PF30%Release	22.79	435.51	436.81	130.00	1.71	18.39
Simang	-462.5*	PF30%Release	22.79	434.26	435.57	131.00	1.68	18.81
Simang	-555.*	PF30%Release	22.79	433.01	434.31	130.00	1.69	19.04
Simang	-647.5*	PF30%Release	22.79	431.76	433.08	132.00	1.62	19.72
Simang	-740.*	PF30%Release	22.79	430.52	431.8	128.00	1.70	19.69
Simang	-832.5*	PF30%Release	22.79	429.27	430.62	135.00	1.54	20.90
Simang	-925	PF30%Release	22.79	428.02	429.27	125.00	1.79	19.98
Simang	-995.5*	PF30%Release	22.79	426.89	428.14	125.00	1.60	23.26
Simang	-1066	PF30%Release	22.79	425.77	426.73	96.00	1.51	43.82
Simang	-1159.4*	PF30%Release	22.79	423	424.03	103.00	1.63	36.63
Simang	-1252.8*	PF30%Release	22.79	420.24	421.3	106.00	1.72	31.95
Simang	-1346.2*	PF30%Release	22.79	417.47	418.53	106.00	1.88	25.83

Simang	-1439.6*	PF30%Release	22.79	414.71	415.78	107.00	1.93	24.02
Simang	-1533.*	PF30%Release	22.79	411.94	413.02	108.00	1.99	22.45
Simang	-1626.4*	PF30%Release	22.79	409.18	410.27	109.00	2.02	21.27
Simang	-1719.8*	PF30%Release	22.79	406.41	407.51	110.00	2.07	20.33
Simang	-1813.2*	PF30%Release	22.79	403.65	404.75	110.00	2.08	19.69
Simang	-1906.6*	PF30%Release	22.79	400.88	401.99	111.00	2.13	19.07
Simang	-2000	PF30%Release	22.79	398.11	399.23	112.00	2.13	18.52
Average						119.39	1.79	22.48

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF40%Release	30.38	440.5	442.02	152.00	1.79	21.56
Simang	-92.5*	PF40%Release	30.38	439.25	440.76	151.00	1.80	21.41
Simang	-185.*	PF40%Release	30.38	438	439.5	150.00	1.80	21.23
Simang	-277.5*	PF40%Release	30.38	436.76	438.24	148.00	1.82	20.78
Simang	-370.*	PF40%Release	30.38	435.51	436.98	147.00	1.83	20.45
Simang	-462.5*	PF40%Release	30.38	434.26	435.73	147.00	1.82	20.62
Simang	-555.*	PF40%Release	30.38	433.01	434.47	146.00	1.83	20.86
Simang	-647.5*	PF40%Release	30.38	431.76	433.24	148.00	1.77	21.49
Simang	-740.*	PF40%Release	30.38	430.52	431.95	143.00	1.83	21.52
Simang	-832.5*	PF40%Release	30.38	429.27	430.77	150.00	1.68	22.71
Simang	-925	PF40%Release	30.38	428.02	429.41	139.00	1.92	21.83
Simang	-995.5*	PF40%Release	30.38	426.89	428.26	137.00	1.77	25.37
Simang	-1066	PF40%Release	30.38	425.77	426.8	103.00	1.65	45.47
Simang	-1159.4*	PF40%Release	30.38	423	424.11	111.00	1.78	39.35
Simang	-1252.8*	PF40%Release	30.38	420.24	421.4	116.00	1.86	34.57
Simang	-1346.2*	PF40%Release	30.38	417.47	418.64	117.00	2.01	29.40
Simang	-1439.6*	PF40%Release	30.38	414.71	415.89	118.00	2.08	26.46
Simang	-1533.*	PF40%Release	30.38	411.94	413.14	120.00	2.16	24.66
Simang	-1626.4*	PF40%Release	30.38	409.18	410.39	121.00	2.18	23.38
Simang	-1719.8*	PF40%Release	30.38	406.41	407.62	121.00	2.26	22.00
Simang	-1813.2*	PF40%Release	30.38	403.65	404.87	122.00	2.27	21.15
Simang	-1906.6*	PF40%Release	30.38	400.88	402.11	123.00	2.33	20.37
Simang	-2000	PF40%Release	30.38	398.11	399.36	125.00	2.33	19.85
Average						132.83	1.94	24.63

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF50%Release	37.98	440.5	442.16	166.00	1.88	23.78
Simang	-92.5*	PF50%Release	37.98	439.25	440.91	166.00	1.89	23.66
Simang	-185.*	PF50%Release	37.98	438	439.65	165.00	1.89	23.54
Simang	-277.5*	PF50%Release	37.98	436.76	438.39	163.00	1.89	23.52
Simang	-370.*	PF50%Release	37.98	435.51	437.13	162.00	1.90	23.38
Simang	-462.5*	PF50%Release	37.98	434.26	435.88	162.00	1.90	23.19
Simang	-555.*	PF50%Release	37.98	433.01	434.61	160.00	1.92	22.95

Simang	-647.5*	PF50%Release	37.98	431.76	433.37	161.00	1.88	23.33
Simang	-740.*	PF50%Release	37.98	430.52	432.09	157.00	1.94	23.20
Simang	-832.5*	PF50%Release	37.98	429.27	430.9	163.00	1.79	24.41
Simang	-925	PF50%Release	37.98	428.02	429.54	152.00	2.03	23.43
Simang	-995.5*	PF50%Release	37.98	426.89	428.36	147.00	1.91	27.16
Simang	-1066	PF50%Release	37.98	425.77	426.87	110.00	1.79	46.91
Simang	-1159.4*	PF50%Release	37.98	423	424.19	119.00	1.86	43.97
Simang	-1252.8*	PF50%Release	37.98	420.24	421.48	124.00	1.99	36.59
Simang	-1346.2*	PF50%Release	37.98	417.47	418.74	127.00	2.09	32.89
Simang	-1439.6*	PF50%Release	37.98	414.71	415.99	128.00	2.19	28.98
Simang	-1533.*	PF50%Release	37.98	411.94	413.23	129.00	2.29	26.59
Simang	-1626.4*	PF50%Release	37.98	409.18	410.49	131.00	2.31	25.23
Simang	-1719.8*	PF50%Release	37.98	406.41	407.73	132.00	2.39	23.79
Simang	-1813.2*	PF50%Release	37.98	403.65	404.98	133.00	2.41	22.72
Simang	-1906.6*	PF50%Release	37.98	400.88	402.21	133.00	2.49	21.52
Simang	-2000	PF50%Release	37.98	398.11	399.46	135.00	2.49	20.91
Average						144.57	2.05	26.77

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF100%Release	75.96	440.5	442.65	215.00	2.28	29.41
Simang	-92.5*	PF100%Release	75.96	439.25	441.4	215.00	2.27	29.66
Simang	-185.*	PF100%Release	75.96	438	440.14	214.00	2.27	29.65
Simang	-277.5*	PF100%Release	75.96	436.76	438.89	213.00	2.27	29.82
Simang	-370.*	PF100%Release	75.96	435.51	437.63	212.00	2.27	29.88
Simang	-462.5*	PF100%Release	75.96	434.26	436.38	212.00	2.26	30.01
Simang	-555.*	PF100%Release	75.96	433.01	435.12	211.00	2.27	30.12
Simang	-647.5*	PF100%Release	75.96	431.76	433.88	212.00	2.24	30.47
Simang	-740.*	PF100%Release	75.96	430.52	432.6	208.00	2.28	30.47
Simang	-832.5*	PF100%Release	75.96	429.27	431.4	213.00	2.15	31.36
Simang	-925	PF100%Release	75.96	428.02	430.02	200.00	2.42	29.90
Simang	-995.5*	PF100%Release	75.96	426.89	428.73	184.00	2.43	33.53
Simang	-1066	PF100%Release	75.96	425.77	427.14	137.00	2.12	61.19
Simang	-1159.4*	PF100%Release	75.96	423	424.47	147.00	2.21	56.19
Simang	-1252.8*	PF100%Release	75.96	420.24	421.81	157.00	2.28	51.68
Simang	-1346.2*	PF100%Release	75.96	417.47	419.07	160.00	2.48	42.50
Simang	-1439.6*	PF100%Release	75.96	414.71	416.35	164.00	2.57	38.56
Simang	-1533.*	PF100%Release	75.96	411.94	413.62	168.00	2.68	35.29
Simang	-1626.4*	PF100%Release	75.96	409.18	410.88	170.00	2.75	32.64
Simang	-1719.8*	PF100%Release	75.96	406.41	408.13	172.00	2.84	30.65
Simang	-1813.2*	PF100%Release	75.96	403.65	405.39	174.00	2.87	29.31
Simang	-1906.6*	PF100%Release	75.96	400.88	402.64	176.00	2.95	27.94
Simang	-2000	PF100%Release	75.96	398.11	399.9	179.00	2.97	26.90
Average						187.52	2.44	34.66

Other 4 months

Simang II HEP-Oct-Mar-Apr-May

Note: River sta -100 denotes location along river reach 100 m d/s of Simang dam axis

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF10%Release	3.41	440.50	441.10	60.00	1.03	9.78
Simang	-92.5*	PF10%Release	3.41	439.25	439.86	61.00	1.00	10.02
Simang	-185.*	PF10%Release	3.41	438.00	438.61	61.00	1.03	9.97
Simang	-277.5*	PF10%Release	3.41	436.76	437.38	62.00	0.99	10.18
Simang	-370.*	PF10%Release	3.41	435.51	436.11	60.00	1.05	9.87
Simang	-462.5*	PF10%Release	3.41	434.26	434.89	63.00	0.98	10.11
Simang	-555.*	PF10%Release	3.41	433.01	433.60	59.00	1.08	9.59
Simang	-647.5*	PF10%Release	3.41	431.76	432.40	64.00	0.96	10.04
Simang	-740.*	PF10%Release	3.41	430.52	431.10	58.00	1.12	9.43
Simang	-832.5*	PF10%Release	3.41	429.27	429.92	65.00	0.92	10.22
Simang	-925	PF10%Release	3.41	428.02	428.58	56.00	1.22	9.11
Simang	-995.5*	PF10%Release	3.41	426.89	427.52	63.00	0.94	10.58
Simang	-1066	PF10%Release	3.41	425.77	426.28	51.00	1.31	9.52
Simang	-1159.4*	PF10%Release	3.41	423.00	423.52	52.00	1.32	9.35
Simang	-1252.8*	PF10%Release	3.41	420.24	420.76	52.00	1.32	9.31
Simang	-1346.2*	PF10%Release	3.41	417.47	418.00	53.00	1.33	9.24
Simang	-1439.6*	PF10%Release	3.41	414.71	415.24	53.00	1.32	9.32
Simang	-1533.*	PF10%Release	3.41	411.94	412.48	54.00	1.32	9.40
Simang	-1626.4*	PF10%Release	3.41	409.18	409.72	54.00	1.29	9.79
Simang	-1719.8*	PF10%Release	3.41	406.41	406.95	54.00	1.31	9.77
Simang	-1813.2*	PF10%Release	3.41	403.65	404.18	53.00	1.29	9.76
Simang	-1906.6*	PF10%Release	3.41	400.88	401.41	53.00	1.32	9.60
Simang	-2000	PF10%Release	3.41	398.11	398.65	54.00	1.30	9.54
Average						57.17	1.16	9.72

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF15%Release	5.11	440.50	441.21	71.00	1.16	10.90
Simang	-92.5*	PF15%Release	5.11	439.25	439.97	72.00	1.13	11.20
Simang	-185.*	PF15%Release	5.11	438.00	438.72	72.00	1.15	11.30
Simang	-277.5*	PF15%Release	5.11	436.76	437.48	72.00	1.11	11.58
Simang	-370.*	PF15%Release	5.11	435.51	436.22	71.00	1.15	11.47
Simang	-462.5*	PF15%Release	5.11	434.26	435.00	74.00	1.09	11.81
Simang	-555.*	PF15%Release	5.11	433.01	433.72	71.00	1.17	11.30
Simang	-647.5*	PF15%Release	5.11	431.76	432.51	75.00	1.07	11.86
Simang	-740.*	PF15%Release	5.11	430.52	431.20	68.00	1.25	10.63
Simang	-832.5*	PF15%Release	5.11	429.27	430.04	77.00	1.02	11.80
Simang	-925	PF15%Release	5.11	428.02	428.68	66.00	1.36	10.26
Simang	-995.5*	PF15%Release	5.11	426.89	427.64	75.00	1.04	12.29
Simang	-1066	PF15%Release	5.11	425.77	426.39	62.00	1.34	13.56

Simang	-1159.4*	PF15%Release	5.11	423.00	423.61	61.00	1.46	10.88
Simang	-1252.8*	PF15%Release	5.11	420.24	420.85	61.00	1.46	10.86
Simang	-1346.2*	PF15%Release	5.11	417.47	418.09	62.00	1.47	10.82
Simang	-1439.6*	PF15%Release	5.11	414.71	415.34	63.00	1.39	12.16
Simang	-1533.*	PF15%Release	5.11	411.94	412.57	63.00	1.42	11.76
Simang	-1626.4*	PF15%Release	5.11	409.18	409.81	63.00	1.42	11.48
Simang	-1719.8*	PF15%Release	5.11	406.41	407.03	62.00	1.45	11.18
Simang	-1813.2*	PF15%Release	5.11	403.65	404.27	62.00	1.45	11.00
Simang	-1906.6*	PF15%Release	5.11	400.88	401.50	62.00	1.48	10.72
Simang	-2000	PF15%Release	5.11	398.11	398.73	62.00	1.47	10.57
Average						67.26	1.28	11.36

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF20%Release	6.82	440.50	441.30	80.00	1.25	11.84
Simang	-92.5*	PF20%Release	6.82	439.25	440.06	81.00	1.23	12.18
Simang	-185.*	PF20%Release	6.82	438.00	438.81	81.00	1.23	12.41
Simang	-277.5*	PF20%Release	6.82	436.76	437.57	81.00	1.21	12.73
Simang	-370.*	PF20%Release	6.82	435.51	436.31	80.00	1.23	12.79
Simang	-462.5*	PF20%Release	6.82	434.26	435.08	82.00	1.18	13.16
Simang	-555.*	PF20%Release	6.82	433.01	433.82	81.00	1.24	12.91
Simang	-647.5*	PF20%Release	6.82	431.76	432.60	84.00	1.15	13.47
Simang	-740.*	PF20%Release	6.82	430.52	431.31	79.00	1.28	12.53
Simang	-832.5*	PF20%Release	6.82	429.27	430.13	86.00	1.10	13.76
Simang	-925	PF20%Release	6.82	428.02	428.77	75.00	1.42	11.38
Simang	-995.5*	PF20%Release	6.82	426.89	427.75	86.00	1.05	16.61
Simang	-1066	PF20%Release	6.82	425.77	426.51	74.00	1.05	33.26
Simang	-1159.4*	PF20%Release	6.82	423.00	423.73	73.00	1.29	19.86
Simang	-1252.8*	PF20%Release	6.82	420.24	420.96	72.00	1.38	16.52
Simang	-1346.2*	PF20%Release	6.82	417.47	418.18	71.00	1.45	15.05
Simang	-1439.6*	PF20%Release	6.82	414.71	415.42	71.00	1.46	14.44
Simang	-1533.*	PF20%Release	6.82	411.94	412.65	71.00	1.50	13.73
Simang	-1626.4*	PF20%Release	6.82	409.18	409.88	70.00	1.51	13.17
Simang	-1719.8*	PF20%Release	6.82	406.41	407.11	70.00	1.56	12.49
Simang	-1813.2*	PF20%Release	6.82	403.65	404.34	69.00	1.56	12.08
Simang	-1906.6*	PF20%Release	6.82	400.88	401.57	69.00	1.61	11.64
Simang	-2000	PF20%Release	6.82	398.11	398.80	69.00	1.60	11.44
Average						76.30	1.33	14.32

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m3/s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF25%Release	8.52	440.5	441.37	87.00	1.34	12.42
Simang	-92.5*	PF25%Release	8.52	439.25	440.13	88.00	1.32	12.88
Simang	-185.*	PF25%Release	8.52	438.00	438.88	88.00	1.31	13.26
Simang	-277.5*	PF25%Release	8.52	436.76	437.64	88.00	1.28	13.71

Simang	-370.*	PF25%Release	8.52	435.51	436.39	88.00	1.29	13.89
Simang	-462.5*	PF25%Release	8.52	434.26	435.16	90.00	1.25	14.31
Simang	-555.*	PF25%Release	8.52	433.01	433.89	88.00	1.30	14.20
Simang	-647.5*	PF25%Release	8.52	431.76	432.68	92.00	1.21	14.81
Simang	-740.*	PF25%Release	8.52	430.52	431.39	87.00	1.33	14.09
Simang	-832.5*	PF25%Release	8.52	429.27	430.21	94.00	1.16	15.30
Simang	-925	PF25%Release	8.52	428.02	428.85	83.00	1.48	12.90
Simang	-995.5*	PF25%Release	8.52	426.89	427.81	92.00	1.13	17.82
Simang	-1066	PF25%Release	8.52	425.77	426.55	78.00	1.10	36.34
Simang	-1159.4*	PF25%Release	8.52	423.00	423.78	78.00	1.35	22.13
Simang	-1252.8*	PF25%Release	8.52	420.24	421.02	78.00	1.40	20.02
Simang	-1346.2*	PF25%Release	8.52	417.47	418.24	77.00	1.49	17.39
Simang	-1439.6*	PF25%Release	8.52	414.71	415.48	77.00	1.54	15.90
Simang	-1533.*	PF25%Release	8.52	411.94	412.71	77.00	1.59	14.93
Simang	-1626.4*	PF25%Release	8.52	409.18	409.94	76.00	1.60	14.42
Simang	-1719.8*	PF25%Release	8.52	406.41	407.17	76.00	1.64	13.77
Simang	-1813.2*	PF25%Release	8.52	403.65	404.41	76.00	1.64	13.32
Simang	-1906.6*	PF25%Release	8.52	400.88	401.63	75.00	1.70	12.67
Simang	-2000	PF25%Release	8.52	398.11	398.87	76.00	1.70	12.26
Average						83.00	1.40	15.77

Reach	Ch d/s of Simang-II HEP	Profile	Q Total (m3/s)	Bed Elevation (m)	Water surface Elevation (m)	Water depth (cm)	Flow Velocity (m/s)	Flow Top Width (m)
Simang	0	PF30%Release	10.22	440.50	441.44	94.00	1.42	12.95
Simang	-92.5*	PF30%Release	10.22	439.25	440.20	95.00	1.40	13.42
Simang	-185.*	PF30%Release	10.22	438.00	438.95	95.00	1.39	13.82
Simang	-277.5*	PF30%Release	10.22	436.76	437.71	95.00	1.36	14.29
Simang	-370.*	PF30%Release	10.22	435.51	436.45	94.00	1.36	14.62
Simang	-462.5*	PF30%Release	10.22	434.26	435.22	96.00	1.32	15.13
Simang	-555.*	PF30%Release	10.22	433.01	433.96	95.00	1.36	15.20
Simang	-647.5*	PF30%Release	10.22	431.76	432.75	99.00	1.27	15.88
Simang	-740.*	PF30%Release	10.22	430.52	431.46	94.00	1.39	15.26
Simang	-832.5*	PF30%Release	10.22	429.27	430.28	101.00	1.21	16.58
Simang	-925	PF30%Release	10.22	428.02	428.93	91.00	1.51	14.46
Simang	-995.5*	PF30%Release	10.22	426.89	427.86	97.00	1.20	18.86
Simang	-1066	PF30%Release	10.22	425.77	426.58	81.00	1.16	37.89
Simang	-1159.4*	PF30%Release	10.22	423.00	423.82	82.00	1.41	23.87
Simang	-1252.8*	PF30%Release	10.22	420.24	421.06	82.00	1.46	21.50
Simang	-1346.2*	PF30%Release	10.22	417.47	418.30	83.00	1.52	19.70
Simang	-1439.6*	PF30%Release	10.22	414.71	415.53	82.00	1.58	17.89
Simang	-1533.*	PF30%Release	10.22	411.94	412.76	82.00	1.64	16.44
Simang	-1626.4*	PF30%Release	10.22	409.18	410.00	82.00	1.67	15.56
Simang	-1719.8*	PF30%Release	10.22	406.41	407.22	81.00	1.71	14.79
Simang	-1813.2*	PF30%Release	10.22	403.65	404.46	81.00	1.72	14.35
Simang	-1906.6*	PF30%Release	10.22	400.88	401.69	81.00	1.76	13.72
Simang	-2000	PF30%Release	10.22	398.11	398.93	82.00	1.77	13.31
Average						88.91	1.46	16.93

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF40%Release	13.63	440.50	441.56	106.00	1.55	13.90
Simang	-92.5*	PF40%Release	13.63	439.25	440.31	106.00	1.52	14.37
Simang	-185.*	PF40%Release	13.63	438.00	439.06	106.00	1.51	14.81
Simang	-277.5*	PF40%Release	13.63	436.76	437.82	106.00	1.48	15.29
Simang	-370.*	PF40%Release	13.63	435.51	436.56	105.00	1.49	15.66
Simang	-462.5*	PF40%Release	13.63	434.26	435.33	107.00	1.44	16.20
Simang	-555.*	PF40%Release	13.63	433.01	434.07	106.00	1.47	16.42
Simang	-647.5*	PF40%Release	13.63	431.76	432.85	109.00	1.38	17.13
Simang	-740.*	PF40%Release	13.63	430.52	431.57	105.00	1.48	17.03
Simang	-832.5*	PF40%Release	13.63	429.27	430.39	112.00	1.31	18.16
Simang	-925	PF40%Release	13.63	428.02	429.04	102.00	1.59	16.76
Simang	-995.5*	PF40%Release	13.63	426.89	427.95	106.00	1.33	20.53
Simang	-1066	PF40%Release	13.63	425.77	426.63	86.00	1.26	40.64
Simang	-1159.4*	PF40%Release	13.63	423.00	423.91	91.00	1.40	32.58
Simang	-1252.8*	PF40%Release	13.63	420.24	421.13	89.00	1.58	23.78
Simang	-1346.2*	PF40%Release	13.63	417.47	418.37	90.00	1.64	21.78
Simang	-1439.6*	PF40%Release	13.63	414.71	415.62	91.00	1.68	20.37
Simang	-1533.*	PF40%Release	13.63	411.94	412.85	91.00	1.73	19.23
Simang	-1626.4*	PF40%Release	13.63	409.18	410.09	91.00	1.76	18.05
Simang	-1719.8*	PF40%Release	13.63	406.41	407.32	91.00	1.82	16.95
Simang	-1813.2*	PF40%Release	13.63	403.65	404.56	91.00	1.83	16.25
Simang	-1906.6*	PF40%Release	13.63	400.88	401.79	91.00	1.89	15.49
Simang	-2000	PF40%Release	13.63	398.11	399.03	92.00	1.89	15.06
Average						98.70	1.57	18.98

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF50%Release	17.04	440.50	441.68	118.00	1.61	15.93
Simang	-92.5*	PF50%Release	17.04	439.25	440.42	117.00	1.61	15.75
Simang	-185.*	PF50%Release	17.04	438.00	439.17	117.00	1.60	15.95
Simang	-277.5*	PF50%Release	17.04	436.76	437.92	116.00	1.58	16.33
Simang	-370.*	PF50%Release	17.04	435.51	436.66	115.00	1.58	16.66
Simang	-462.5*	PF50%Release	17.04	434.26	435.43	117.00	1.54	17.19
Simang	-555.*	PF50%Release	17.04	433.01	434.16	115.00	1.57	17.42
Simang	-647.5*	PF50%Release	17.04	431.76	432.95	119.00	1.49	18.16
Simang	-740.*	PF50%Release	17.04	430.52	431.66	114.00	1.58	18.07
Simang	-832.5*	PF50%Release	17.04	429.27	430.48	121.00	1.40	19.28
Simang	-925	PF50%Release	17.04	428.02	429.14	112.00	1.66	18.35
Simang	-995.5*	PF50%Release	17.04	426.89	428.03	114.00	1.44	21.62
Simang	-1066	PF50%Release	17.04	425.77	426.67	90.00	1.35	42.46
Simang	-1159.4*	PF50%Release	17.04	423.00	423.96	96.00	1.49	34.21
Simang	-1252.8*	PF50%Release	17.04	420.24	421.20	96.00	1.67	25.74
Simang	-1346.2*	PF50%Release	17.04	417.47	418.44	97.00	1.74	23.42

Simang	-1439.6*	PF50%Release	17.04	414.71	415.69	98.00	1.78	21.88
Simang	-1533.*	PF50%Release	17.04	411.94	412.92	98.00	1.84	20.52
Simang	-1626.4*	PF50%Release	17.04	409.18	410.17	99.00	1.86	19.68
Simang	-1719.8*	PF50%Release	17.04	406.41	407.40	99.00	1.91	18.79
Simang	-1813.2*	PF50%Release	17.04	403.65	404.64	99.00	1.93	17.93
Simang	-1906.6*	PF50%Release	17.04	400.88	401.87	99.00	1.98	17.03
Simang	-2000	PF50%Release	17.04	398.11	399.11	100.00	1.99	16.49
Average						107.22	1.66	20.39

Reach	Ch d/s of Simang-II HEP	Profile	Q Total	Bed Elevation	Water surface Elevation	Water depth	Flow Velocity	Flow Top Width
			(m ³ /s)	(m)	(m)	(cm)	(m/s)	(m)
Simang	0	PF100%Release	34.08	440.50	442.09	159.00	1.84	22.69
Simang	-92.5*	PF100%Release	34.08	439.25	440.84	159.00	1.84	22.57
Simang	-185.*	PF100%Release	34.08	438.00	439.58	158.00	1.85	22.48
Simang	-277.5*	PF100%Release	34.08	436.76	438.32	156.00	1.85	22.38
Simang	-370.*	PF100%Release	34.08	435.51	437.06	155.00	1.87	21.95
Simang	-462.5*	PF100%Release	34.08	434.26	435.80	154.00	1.86	21.84
Simang	-555.*	PF100%Release	34.08	433.01	434.54	153.00	1.88	21.81
Simang	-647.5*	PF100%Release	34.08	431.76	433.30	154.00	1.83	22.34
Simang	-740.*	PF100%Release	34.08	430.52	432.02	150.00	1.89	22.31
Simang	-832.5*	PF100%Release	34.08	429.27	430.83	156.00	1.74	23.53
Simang	-925	PF100%Release	34.08	428.02	429.48	146.00	1.98	22.64
Simang	-995.5*	PF100%Release	34.08	426.89	428.31	142.00	1.84	26.27
Simang	-1066	PF100%Release	34.08	425.77	426.83	106.00	1.72	46.19
Simang	-1159.4*	PF100%Release	34.08	423.00	424.15	115.00	1.82	41.70
Simang	-1252.8*	PF100%Release	34.08	420.24	421.44	120.00	1.92	35.59
Simang	-1346.2*	PF100%Release	34.08	417.47	418.69	122.00	2.05	31.18
Simang	-1439.6*	PF100%Release	34.08	414.71	415.94	123.00	2.14	27.65
Simang	-1533.*	PF100%Release	34.08	411.94	413.19	125.00	2.22	25.63
Simang	-1626.4*	PF100%Release	34.08	409.18	410.44	126.00	2.25	24.31
Simang	-1719.8*	PF100%Release	34.08	406.41	407.68	127.00	2.32	22.90
Simang	-1813.2*	PF100%Release	34.08	403.65	404.93	128.00	2.35	21.84
Simang	-1906.6*	PF100%Release	34.08	400.88	402.16	128.00	2.41	20.94
Simang	-2000	PF100%Release	34.08	398.11	399.41	130.00	2.41	20.38
Average						138.78	1.99	25.70

DOWNSTREAM IMPACT SCENARIO - RUNNING OF ONE UNIT CONTINUOUSLY BY SIYOM MIDDLE HEP AND SIANG LOWER HEPs

1.0 Flow simulation for continuous run of one turbine of Siang Lower HE Project without Siang Upper HE Projects in place

For the present case the daily release of Siyom HE Project during the non-monsoon has been converted in to equivalent volume and added in to the daily water requirement of Siang Lower HE Project. From the volumetric computations it has been estimated that if one turbine of Siang Lower HE Project runs continuously during non-monsoon period discharging about 522.3 cumec, then the peaking from Siang Lower HE Project shall be possible for about 3 hours only. Hence for flow simulation a release of 522.3 cumec for 21 hours and 4970.3 cumec for 3 hours from Siang Lower HE Project has been considered. The water level and discharge fluctuations have been estimated at D'Ering wildlife sanctuary and Dibrugarh. It has been found in other simulations that the impact of peaking of projects in Siang basin is almost NIL after Dibrugarh, hence, study has been carried out till Dibrugarh only.

1.1 Flow simulation results at D'Ering wildlife sanctuary for peaking release from Siang Lower HE Project without Siang Upper HE Projects in place

The plot of release from Siang Lower and resulting stabilized discharge/water level series in Siang river near D'Ering wildlife sanctuary as obtained from MIKE11 simulation is shown in Figure 1. The dates given on X-axis of the plots are the arbitrary dates used for hydro dynamic simulation. In the plot Q-SL-522-without-SU represents the release from Siang Lower HEP. The discharge series shown at Siang-Brahmaputra ch 29175 (representing the discharge pattern between ch 20140m to 33260m) is the resulting discharge series in Siang river at D'Ering wildlife sanctuary.

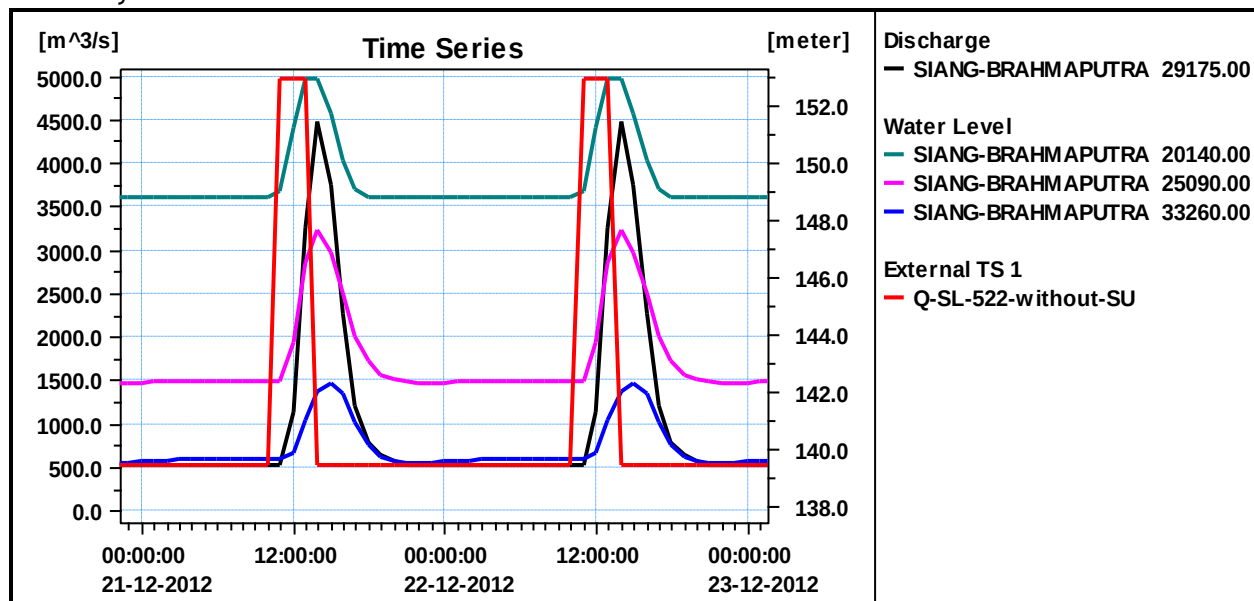


Figure1: Plot of release from Siang Lower HE Project and resulting discharge/water level series at D'Ering wildlife sanctuary without Siang Upper HE projects is place

For 24 hour duration, release from Siang Lower HEP along with the stabilized discharge series at D'Ering wildlife sanctuary is given in Table1. The corresponding stabilized water level pattern is given in Table2. From Table1 and Table 2 it can be seen that variation in discharge in Siang river during 24 hour at D'Ering wildlife sanctuary is from 520 cumec to about 4480 cumec. The consequent fluctuation in water level at ch 20140 m of Siang river near D'EringWLS is from EL 148.72 m to 152.92 m (4.2 m). The same at ch 25090 m and ch 33260 m is from EL 142.28 m to 147.59 m (5.3 m) and EL 139.47 m to 142.28 m (2.8 m), respectively.

Table1: Release from Siang Lower HE Project along with stabilised flow pattern at D'Ering Wildlife sanctuary without Siang Upper HE projects in place

Time	Non-monsoon release from Siang Lower HE Project	Stabilized discharge series of Siang river at D'EringWLS (starting segment)	Stabilized discharge series of Siang river at D'EringWLS (Middle segment)	Stabilized discharge series of Siang river at D'EringWLS (End segment)
[hr]	[cumec]	[cumec]	[cumec]	[cumec]
1	522.3	522.34	518.48	496.64
2	522.3	522.42	518.52	497.29
3	522.3	522.43	519.38	502.71
4	522.3	522.39	520.44	510.39
5	522.3	522.35	521.35	517.38
6	522.3	522.32	521.99	521.98
7	522.3	522.31	522.34	523.97
8	522.3	522.30	522.46	524.13
9	522.3	522.30	522.43	523.37
10	522.3	522.30	522.35	522.44
11	522.3	522.30	522.27	521.75
12	4970.3	547.11	524.44	521.51
13	4970.3	2302.87	1135.70	604.74
14	4970.3	4586.68	3252.99	1454.91
15	522.3	4593.80	4480.14	2829.09
16	522.3	2924.21	3740.64	3931.23
17	522.3	1432.92	2257.62	3909.73
18	522.3	652.87	1203.94	2542.56
19	522.3	543.80	782.78	1333.18
20	522.3	517.77	630.83	836.03
21	522.3	518.93	565.25	626.58
22	522.3	521.87	535.53	541.46
23	522.3	522.36	525.01	517.04
24	522.3	522.27	520.25	502.83

Table 2: Water level pattern of Siang river at different locations along D'Ering wildlife sanctuary without Siang Upper HE projects in place

Time	Stabilized water level pattern at ch 20140 m of Siang river near D'EringWLS with river bed level at EL 145.67 m	Stabilized water level pattern at ch 25090 m of Siang river near D'EringWLS with river bed level at EL 138.19 m	Stabilized water level pattern at ch 33260 m of Siang river near D'EringWLS with river bed level at EL 137.66 m
[hr]	[cumec]	[cumec]	[cumec]
1	148.76	142.29	139.52
2	148.76	142.3	139.55

3	148.76	142.31	139.58
4	148.76	142.31	139.6
5	148.75	142.32	139.6
6	148.75	142.32	139.61
7	148.75	142.32	139.61
8	148.75	142.32	139.6
9	148.75	142.32	139.6
10	148.75	142.32	139.6
11	148.75	142.32	139.6
12	148.95	142.33	139.6
13	151.22	143.69	139.8
14	152.91	146.44	140.98
15	152.92	147.59	142
16	151.7	146.86	142.28
17	150.05	145.41	141.89
18	149.06	143.91	140.93
19	148.79	143.01	140.09
20	148.72	142.58	139.68
21	148.74	142.37	139.51
22	148.76	142.3	139.47
23	148.76	142.28	139.47
24	148.76	142.28	139.49

1.2 Flow simulation results at Brahmaputra river near Dibrugarh for peaking release from Siang Lower HE Project without Siang Upper HE Project in place

The plot of release from Siang Lower HE Projects and resulting discharge/ water level series in Brahmaputra near Dibrugarh as obtained from MIKE11 simulation is shown in **Figure 2**. The dates given on X-axis of the plot are the dates used for hydro dynamic simulation set up and the same are indicative only. In the plot Q-SL-522-without-SU represents the release from Siang Lower HEP. Discharge SIANG-BRAHMAPUTRA 977794.16 represents the resulting discharge series in Brahmaputra river near Dibrugarh, while water level SIANG-BRAHMAPUTRA 102020.00 represents consequent water level series in Brahmaputra near Dibrugarh.

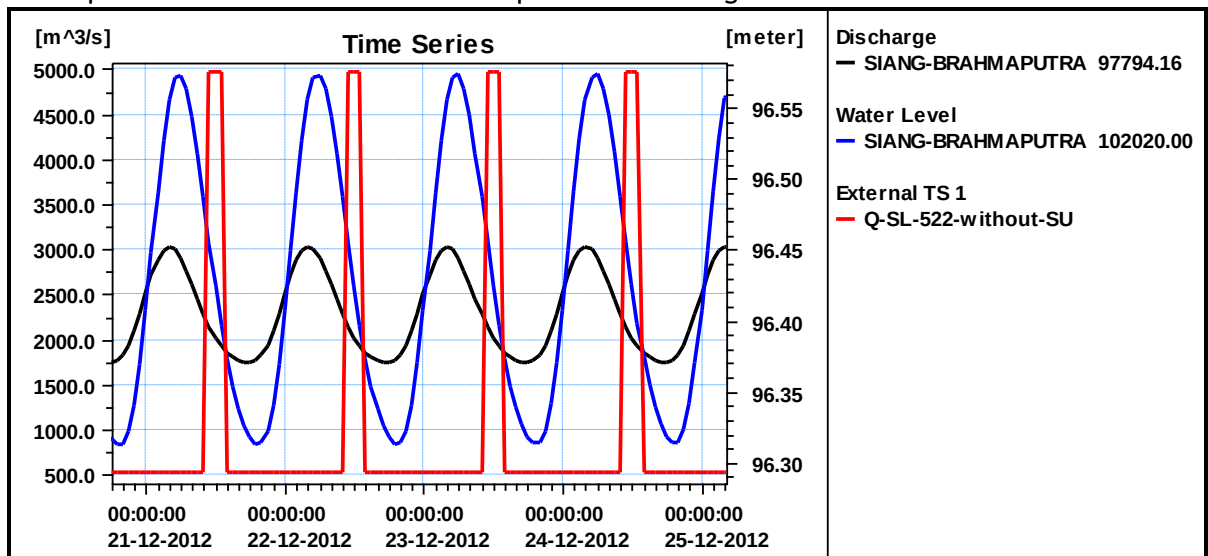


Figure 2: Plot of release from Siang Lower HE Project and resulting discharge/water level series in Brahmaputra near Dibrugarh

It may be noted that in MIKE11 the water level series are computed at h-point which is the location of river cross section while the discharge series are computed between two river cross sections. Hence the discharge computation and water level computations obtained for Brahmaputra river near Dibrugarh and also at other salient locations will be at two different chainage. For 24 hour duration, release from Siang Lower HE Project and resulting discharge/water level series in Brahmaputra near Dibrugarh is given in Table3. From Table3, it can be seen that the simulated discharge series near Dibrugarh varies from 1746 cumec to 3048 cumec, while fluctuation in daily water level is from EL 96.11 m to 96.41 m, about 30 cm. The average non-monsoon discharge and corresponding water level at Dibrugarh is natural condition of river as obtained by MIKE11 simulation is about 2641 cumec and 96.68 m respectively.

Table3: Release from Siang Lower HE Project without Siang Upper HE projects in place and resulting discharge/water level series in Brahmaputra near Dibrugarh

Time	Non-monsoon release from Siang Lower HE Project	Stabilized discharge series in Brahmaputra river near Dibrugarh	Stabilized water level series in Brahmaputra river near Dibrugarh with river bed level at EL 92.38 m
[hr]	[cumec]	[cumec]	[m]
1	522.3	2491.99	96.2
2	522.3	2697.12	96.25
3	522.3	2872.69	96.3
4	522.3	3002.27	96.35
5	522.3	3048.07	96.39
6	522.3	3010.66	96.41
7	522.3	2903.38	96.41
8	522.3	2769.79	96.4
9	522.3	2612.66	96.38
10	522.3	2445.7	96.35
11	522.3	2283.38	96.32
12	4970.3	2140.55	96.28
13	4970.3	2021.32	96.24
14	4970.3	1926.12	96.21
15	522.3	1853.68	96.18
16	522.3	1801.55	96.16
17	522.3	1766.9	96.14
18	522.3	1747.96	96.13
19	522.3	1746.02	96.12
20	522.3	1766.57	96.11
21	522.3	1817.78	96.11
22	522.3	1920.06	96.12
23	522.3	2078.61	96.14
24	522.3	2278.01	96.18

2.0 Flow simulation for continuous run of one turbine of Siang Lower HEProject with Siang Upper HE Projects in place

For the present case the daily release of Siyom HE Project, Siang upper HE Projects during the non-monsoon has been converted in to equivalent volume and added in to the daily water requirement of Siang Lower HE Project. From the volumetric computations it has been estimated that if one turbine of Siang Lower HE Project runs continuously during non-monsoon period discharging about 522.3 cumec, then the peaking from Siang Lower HE Project shall be possible

for about 5 hours. Hence for flow simulation a release of 522.3 cumec for 19 hours and 4970.3 cumec for 5 hours from Siang Lower HE Project has been considered. The water level and discharge fluctuations have been estimated at D'Ering wildlife sanctuary and Dibrugarh. It has been found in other simulations that the impact of peaking of projects in Siang basin is almost NIL after Dibrugarh, hence, study has been carried out till Dibrugarh only.

2.1 Flow simulation results at D'Ering wildlife sanctuary for peaking release from Siang Lower HE Project with Siang Upper HE Project in place

The plot of release from Siang Lower and resulting stabilized discharge/water level series in Siang river near D'Ering wildlife sanctuary as obtained from MIKE11 simulation is shown in Figure 3. The dates given on X-axis of the plots are the arbitrary dates used for hydro dynamic simulation. In the plot Q-SL-522-With-SU represents the release from Siang Lower HEP. The discharge series shown at Siang-Brahmaputra ch 29175 (representing the discharge pattern between ch 20140m to 33260m) is the resulting discharge series in Siang river at D'Ering wildlife sanctuary.

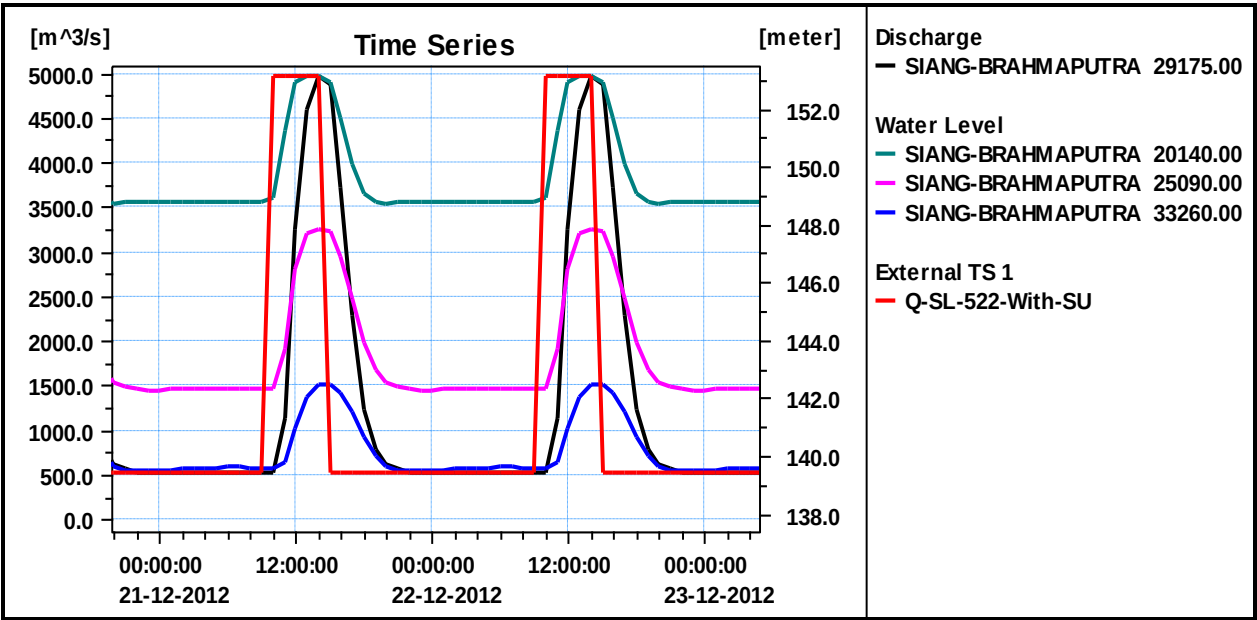


Figure 3: Plot of release from Siyom, Siang Lower and resulting discharge/water level series at D'Ering wildlife sanctuary with Siang Upper HE project in place

For 24 hour duration, release from Siang Lower HE Project along with the stabilized discharge series at D'Ering wildlife sanctuary is given in Table 4. The corresponding stabilized water level pattern is given in Table 5. From Table 4 and Table 5 it can be seen that variation in discharge in Siang river during 24 hour at D'Ering wildlife sanctuary is from 520 cumec to about 4970 cumec. The consequent fluctuation in water level at ch 20140 m of Siang river near D'EringWLS is from EL 148.72 m to 153.14 m (4.4m). The same at ch 25090 m and ch 33260 m is from EL 142.28 m to 147.83 m (5.6 m) and EL 139.49 m to 142.48 m (3.0m) respectively.

Table4: Release from Siang Lower along with stabilized flow pattern at D'Ering wildlife sanctuary with Siang Upper HE project in place

Time	Non-monsoon release from Siang Lower HE Project	Stabilized discharge series of Siang river at D'EringWLS (starting segment)	Stabilized discharge series of Siang river at D'EringWLS (Middle segment)	Stabilized discharge series of Siang river at D'EringWLS (End segment)
[hr]	[cumec]	[cumec]	[cumec]	[cumec]
1	522.3	522.27	520.51	503.2
2	522.3	522.33	518.9	498.1
3	522.3	522.41	518.98	499.5
4	522.3	522.41	519.79	505.23
5	522.3	522.38	520.74	512.43
6	522.3	522.34	521.54	518.49
7	522.3	522.32	522.06	522.16
8	522.3	522.31	522.33	523.56
9	522.3	522.3	522.4	523.52
10	522.3	522.3	522.38	522.87
11	4970.3	547.11	524.53	522.28
12	4970.3	2302.88	1135.62	605.05
13	4970.3	4586.65	3253.07	1454.85
14	4970.3	4949.96	4578.9	2841.84
15	4970.3	4968.38	4967.43	4256.91
16	522.3	4614.76	4874.26	5249.31
17	522.3	2926.04	3715.13	5055.22
18	522.3	1433.16	2277.4	3786.88
19	522.3	653.1	1227.31	2180.36
20	522.3	543.69	785.16	1214.76
21	522.3	517.79	627.67	800.18
22	522.3	519.01	562.14	614.03
23	522.3	521.93	535.1	543.13
24	522.3	522.38	525.1	517.37

Table5: Water level pattern of Siang river at different locations along D'Ering wildlife sanctuary with Siang Upper HE projects in place

Time	Stabilized water level pattern at ch 20140 m of Siang river near D'EringWLS with river bed level at EL 145.67 m	Stabilized water level pattern at ch 25090 m of Siang river near D'EringWLS with river bed level at EL 138.19 m	Stabilized water level pattern at ch 33260 m of Siang river near D'EringWLS with river bed level at EL 137.66 m
[hr]	[cumec]	[cumec]	[cumec]
1	148.76	142.28	139.5
2	148.76	142.29	139.53
3	148.76	142.3	139.56
4	148.76	142.31	139.58
5	148.76	142.31	139.6
6	148.75	142.32	139.61
7	148.75	142.32	139.61
8	148.75	142.32	139.61
9	148.75	142.32	139.6
10	148.75	142.32	139.6

11	148.95	142.33	139.6
12	151.22	143.69	139.8
13	152.91	146.44	140.98
14	153.12	147.66	142.01
15	153.14	147.83	142.43
16	152.93	147.74	142.48
17	151.7	146.87	142.19
18	150.05	145.45	141.55
19	149.06	143.92	140.66
20	148.79	143	140.01
21	148.72	142.57	139.66
22	148.74	142.37	139.52
23	148.76	142.3	139.49
24	148.76	142.28	139.49

2.2 Flow simulation results at Brahmaputra river near Dibrugarh for peaking release from Siang Lower HE Project with Siang Upper HE Projects in place

The plot of release from Siang Lower HE Projects and resulting discharge/ water level series in Brahmaputra near Dibrugarh as obtained from MIKE11 simulation is shown in **Figure 4**. The dates given on X-axis of the plot are the dates used for hydro dynamic simulation set up and the same are indicative only. In the plot Q-SL-522-With-SU represents the release from Siang Lower HEP. Discharge SIANG-BRAHMAPUTRA 977794.16 represents the resulting discharge series in Brahmaputra river near Dibrugarh, while water level SIANG-BRAHMAPUTRA 102020.00 represents consequent water level series in Brahmaputra near Dibrugarh.

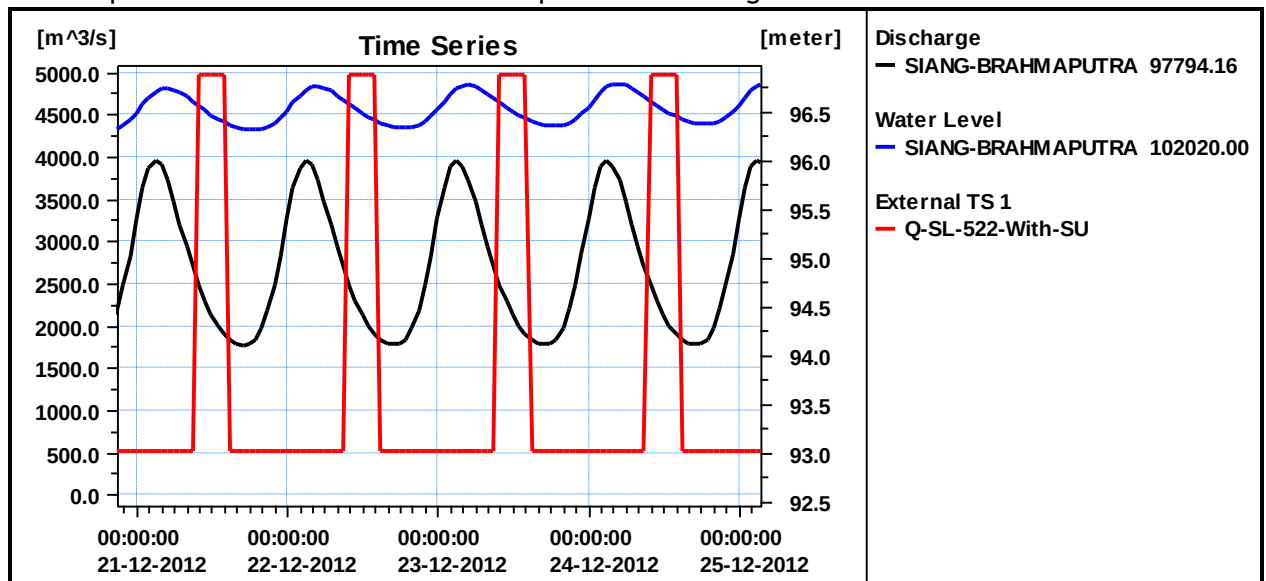


Figure 4: Plot of release from Siang Lower HEP and resulting discharge/water level series in Brahmaputra near Dibrugarh

For 24 hour duration, release from Siang Lower and Siyom HE Projects and resulting discharge/water level series in Brahmaputra near Dibrugarh is given in **Table 6**. From **Table 6**, it can be seen that the simulated discharge series near Dibrugarh varies from 1770 cumec to

3960cumec, while fluctuation in daily water level is from EL 96.31 m to 96.74 m, about 43 cm. The average non-monsoon discharge and corresponding water level at Dibrugarh is natural condition of river as obtained by MIKE11 simulation is about 2641 cumec and 96.68 m respectively.

Table 6: Release from Siang Lower HE Project with Siang Upper HE projects in place and resulting discharge/water level series in Brahmaputra near Dibrugarh

Time	Non-monsoon release from Siang Lower HE Project	Stabilized discharge series in Brahmaputra river near Dibrugarh	Stabilized water level series in Brahmaputra river near Dibrugarh with river bed level at EL 92.38 m
[hr]	[cumec]	[cumec]	[m]
1	522.3	3255.69	96.49
2	522.3	3627.39	96.57
3	522.3	3868.4	96.65
4	522.3	3957.65	96.7
5	522.3	3895.95	96.74
6	522.3	3718.57	96.74
7	522.3	3475.98	96.73
8	522.3	3199.85	96.7
9	522.3	2927.18	96.65
10	522.3	2697.91	96.61
11	4970.3	2481.59	96.56
12	4970.3	2287.95	96.51
13	4970.3	2127.67	96.47
14	4970.3	2000.48	96.43
15	4970.3	1903.85	96.39
16	522.3	1834.49	96.37
17	522.3	1789.81	96.34
18	522.3	1770.31	96.33
19	522.3	1781.64	96.31
20	522.3	1836.76	96.31
21	522.3	1967.3	96.32
22	522.3	2183.99	96.34
23	522.3	2477.92	96.38
24	522.3	2829.64	96.44