

Appendix 1

Table A1.1: Results from Similarity Percentages (SIMPER) Analyses showing percentage contributions of phytoplankton, zooplankton, macroinvertebrate (in three habitat types; littoral, sublittoral, profundal) and fish to community composition in four different lake types (naturally acidic with liming, anthropogenically acidified with liming, acidified lakes without liming, and circumneutral), – means that the taxa were not contributing to community structure considering a 90% cut-off level in the analyses (i.e., only taxa are shown that explained 90% of community structure). Taxa that dominate in each lake type are highlighted in bold.

Species	Lake types			
	Naturally acidic - limed	Acidified – limed	Acidified	Circumneutral
Phytoplankton				
<i>Anabaena planctonica</i>	-	0.67	-	-
<i>Asterionella formosa</i>	0.83	1.76	-	-
<i>Aulacoseira alpigena</i>	-	5.19	-	3.83
<i>Aulacoseira distans</i>	-	3.64	-	-
<i>Aulacoseira distans</i> var. <i>tenella</i>	-	1.41	3.68	-
<i>Bicosoeca</i> sp.	-	-	1.05	-
<i>Botryococcus</i> <i>terribilis</i>	-	-	5.32	4.84

<i>Botryococcus</i> spp.	2.5	1.32	-	-
<i>Ceratium furcoides</i>	2.29	3.74	-	-
<i>Ceratium hirundinella</i>	1.94	-	-	2.63
<i>Chlamydomonas</i> spp. 5 -10 µm	0.83	-	-	-
Other unidentified Chlorococcales	1.83	2.17	3.54	2.79
<i>Chroococcus minutus</i>	0.8	-	-	1.24
<i>Chrysidiastrum</i> <i>catenatum</i>	1.52	1.53	-	-
<i>Chrysochromulina</i> <i>parva</i>	2.06	3.74	-	2.84
<i>Chrysococcus</i> sp.	1.02	0.8	-	-
<i>Cosmarium</i> spp. <10 µm	-	-	-	1.38
<i>Cryptomonas</i> <i>marssonii</i> <20 µm	1.42	1.39	-	-
<i>Cryptomonas</i> spp. <20 µm	2.41	5.32	2.53	4.60
<i>Cryptomonas</i> spp. 20-40 µm	2.6	3.19	9.14	7.73
<i>Cyclotella</i> spp. 10- 15 µm	1.51	1.66	-	1.74
<i>Cyclotella</i> spp. 15- 20 µm	-	1.28	-	-
<i>Dinobryon bavaricum</i>	0.78	-	-	1.07
<i>Dinobryon divergens</i>	-	1.07	-	-
<i>Dinobryon</i> sp.	0.83	-	-	-
<i>Gloeotila pulchra</i>	-	-	-	0.74

<i>Gonyostomum semen</i>	26.78	3.33	25.25	0.86
<i>Gymnodinium</i> spp. >30 µm	1.73	-	-	-
<i>Gymnodinium</i> <i>uberrimum</i>	-	-	4.13	2.95
<i>Katablepharis ovalis</i>	2.58	3.5	-	2.89
<i>Mallomonas allorgei</i>	-	-	-	1.49
<i>Mallomonas</i> sp.	1.05	-	-	-
<i>Mallomonas caudata</i>	-	1.47	-	1.59
<i>Merismopedia</i> <i>tenuissima</i>	-	-	3.16	3.9
Unidentified monads <3 µm	-	-	-	1.54
Unidentified monads >10 µm	1.69	1.22	-	-
Unidentified monads 3-5 µm	3.33	2.96	5.84	-
Unidentified monads 5-7 µm	3.34	4.41	3.78	-
Unidentified monads 7-10 µm	3	3.06	-	2.79
<i>Monoraphidium</i> <i>dybowskii</i>	3.21	1.11	4.63	3.47
<i>Monoraphidium</i> <i>griffithii</i>	-	-	-	1.11
<i>Monosigales</i> spp	0.94	-	2.55	1.24
<i>Oocystis</i> sp.	-	1.91	1.45	1.39
<i>Pediastrum privum</i>	1	-	-	0.91
<i>Peridinium</i>	1.54	2.56	3.49	1.94

<i>inconspicuum</i>				
<i>Peridinium</i> sp.	-	1.29	-	-
<i>Peridinium willei</i>	-	-	3.66	-
Picoplankton cyanobacteria.	-	-	-	1.07
<i>Planktothrix mougeotii</i>	-	1.76	-	-
<i>Pseudopedinella</i> sp.	3.61	4.18	3.03	2.44
<i>Rhizosolenia longiseta</i>	-	1.01	3.11	0.82
<i>Rhodomonas lacustris</i>	2.34	6.03	-	5.51
<i>Snowella atomus</i>	0.8	-	-	-
<i>Spiniferomonas</i> sp.	1.4	1.02	1.6	1.65
<i>Stichogloea doederleinii</i>	-	-	-	1.51
<i>Synura</i> sp.	-	1.09	-	-
<i>Tabellaria flocculosa</i> var. <i>asterionelloides</i>	5.08	-	2.48	
<i>Tetraedron caudatum</i>	1.59	-	-	-
<i>Tetrastrum triangulare</i>	0.71	-	-	-
<i>Trachelomonas</i> sp.	1.38	-	-	-
<i>Uroglena</i> sp.	3.18	1.54	-	1.83
<i>Woronichinia naegeliana</i>	-	2.21	-	0.73
Zooplankton				
<i>Asplanchna priodonta</i>	27.6	21.68	33.16	2.41
<i>Ceriodaphnia quadrangula</i>	15.14	4.23	10.42	-
<i>Conochilus unicornis</i>	-	-	1.85	-

Cyclopidae	5.22	6.45	5.89	5.05
Cyclopidae nauplius stages	6.74	6.53	4.58	5.91
<i>Daphnia cristata</i>	-	8.61	-	13.87
<i>Daphnia cucullata</i>	-	-	-	2.32
<i>Daphnia galeata</i>	7.55	6.04	-	-
<i>Daphnia</i> sp.	8.11	13.27	6.64	18.4
<i>Diaphanosoma brachyurum</i>	-	3.75	4.18	6.48
<i>Eubosmina coregoni</i>	9.99	13.36	14.81	20.63
<i>Holopedium gibberum</i>	6.93	3.61	-	6.09
<i>Kellicottia bostoniensis</i>	-	-	4.21	-
<i>Keratella cochlearis</i> f. <i>typica</i>	-	-	-	1.66
<i>Limnosida frontosa</i>	-	-	-	2.44
<i>Ploesoma hudsoni</i>	-	2.24	-	-
<i>Polyarthra remata</i>	-	-	2.57	1.68
<i>Polyarthra vulgaris</i>	3.33	1.97	-	4.36
<i>Trichocerca capucina</i>	-	-	1.73	-
Littoral macroinvertebrates				
<i>Ablabesmyia longistyla</i>	2.13	-	-	-
<i>Agrypnia obsoleta</i>	-	-	1.05	-
<i>Argyroneta aquatica</i>	0.61	-	1.24	1.3
<i>Asellus aquaticus</i>	10.67	10.47	12.89	13.47
<i>Athripsodes</i> sp.	-	0.63	-	-
Bivalvia (total)	3.42	2.93	3.08	2.98

<i>Caenis horaria</i>	5.59	4.66	-	4.08
<i>Caenis luctuosa</i>	13.02	6.79	-	7.51
<i>Centroptilum luteolum</i>	1.53	2.84	-	1.1
Ceratopogonidae	3.32	2.96	2.74	2.42
<i>Heterotanytarsus apicalis</i>	0.84	-	-	-
<i>Holocentropus sp.</i>	-	-	0.98	-
Hydracarina	2.29	2.19	2.83	2.58
<i>Hydroptila sp.</i>	-	0.84	-	-
<i>Kageronia fuscogrisea</i>	4.15	3.89	2.83	1.63
<i>Lauterborniella agrayloides</i>	-	-	2.28	1.8
<i>Lepidostoma hirtum</i>	-	0.68	-	1.08
<i>Leptophlebia marginata</i>	3.32	4.9	1.35	2.24
<i>Leptophlebia vespertina</i>	5.63	15.91	17.96	9.57
Libellulidae	-	-	0.87	-
<i>Limnephilus sp.</i>	-	-	1.58	-
<i>Marstoniopsis scholtzi</i>	-	-	-	0.85
<i>Micronecta sp.</i>	-	-	-	1.96
<i>Microtendipes sp.</i>	1.03	-	-	-
<i>Molannodes tinctus</i>	-	-	1.02	-
<i>Molanna angustata</i>	-	-	-	0.75
<i>Mystacides azurea</i>	1.56	0.82	-	1.87
<i>Mystacides longicornis/nigra</i>	1.6	1.28	1.37	2.02
<i>Nebrioporus depressus</i>	0.63	-	-	-

<i>Nemoura avicularis</i>	-	1.63	-	2.12
<i>Oecetis testacea</i>	2.26	0.99	-	-
<i>Oulimnius</i> sp.	0.8	-	-	-
<i>Oulimnius troglodytes-tuberculatus</i>	1.75	1.18	-	1.18
<i>Oxyethira</i> sp.	-	-	1.44	2.32
<i>Pagastiella orophila</i>	2.3	3.98	-	1.14
<i>Paramerina</i> sp.	-	-	2.89	1.12
<i>Phaenopsectra</i> sp.	-	2.45	1.12	-
<i>Pisidium</i> sp.	3.42	1.82	3.08	2.92
<i>Platycnemis penn.-Pyrrhosoma</i> nymph.	2.41	-	1.82	
<i>Polycentropus flavomaculatus</i>	1	-	-	-
<i>Polypedilum brevia antennatum</i> group	1.8	-	0.99	-
<i>Procladius</i> sp.	3.8	3.43	4.16	1.25
<i>Psectrocladius</i> sp.	2.01	0.92	8.45	3.47
<i>Pseudochironomus prasinatus</i>	-	1.17	2	1.77
<i>Sialis lutaria</i>	0.93	0.78	2.28	0.78
<i>Stenochironomus</i> sp.	-	-	1.44	-
<i>Tanytarsus</i> sp.	5.52	0.9	3.7	4.26
<i>Thienemannimyia</i> group	1.66	0.63	1.61	0.74
<i>Tinodes waeneri</i>	0.85	-	-	1.28
Turbellaria	-	-	-	1.41

Zygoptera	0.72	-	-	2.41
Sublittoral macroinvertebrates				
Anisoptera	5.43	12.61	-	-
<i>Athripsodes</i> sp.	5.49	10.65	-	8.05
Ceratopogonidae	18.31	5.83	14.02	8.55
<i>Chaoborus flavicans</i>	13.66	22.58	30.56	20.84
<i>Coenagrion</i> sp.	3.53	-	-	-
<i>Ephemera</i> sp.	4.91	-	-	5.3
<i>Molanna albicans</i>	2.99	-	-	-
<i>Physa fontinalis</i>	5.49	10.65	-	8.05
<i>Sialis fuliginosa</i>	-	-	6.86	8.8
<i>Valvata piscinalis</i>	33.09	33.22	39.45	31.7
Profundal macroinvertebrates				
Bivalvia (total)	-	10.24	-	-
<i>Chaoborus flavicans</i>	80.52	30.45	78.6	61.76
Chironomidae (total)	14.61	28.55	20.9	14.72
Oligochaeta (total)	-	14.49	-	23.52
<i>Pisidium</i> sp.	-	10.24	-	-
Fish				
<i>Perca fluviatilis</i>	36.61	38.13	44.77	30.3
<i>Leuciscus rutilus</i>	31.4	26.54	29.53	21.03
<i>Salvelinus alpinus</i>	22.22	-	-	-
<i>Esox lucius</i>	-	11.87	14.94	15.22
<i>Abramis brama</i>	-	9.41	6.84	11.68
<i>Tinca tinca</i>	-	-	-	6.84
<i>Coregonus lavaretus</i>	-	7	-	5.63