

Supplementary Tab. 1. Cumulative 10-years floristic list of phytoplankton species richness in the two lakes, with indication of taxonomical classes, morpho-functional groups. These correspond to the classification of Salmaso and Padisák, 2007.

Taxonomy	MFG	Species	Biovolume*		Biovolume % ^o		Presences % [#]	
			CS	CI	CS	CI	CS	CI
CYANO.	5e	<i>Anabaena constricta</i>	0.199	0.183	0.03	0.02	31.88	20.29
CYANO.	5e	<i>Anabaena</i> sp.	0.043	0.000	0.01	0.00	7.25	0.00
CYANO.	5d	<i>Aphanocapsa</i> sp.	0.012	0.000	0.00	0.00	10.14	0.00
CYANO.	5d	<i>Aphanothece</i> sp.	0.017	0.000	0.00	0.00	13.04	0.00
CYANO.	5d	<i>Chroococcus dispersus</i>	0.088	0.000	0.01	0.00	13.04	0.00
CYANO.	5d	<i>Chroococcus minutus</i>	2.260	0.670	0.35	0.06	10.14	24.64
CYANO.	5d	<i>Chroococcus turgidus</i>	0.933	0.466	0.15	0.04	26.09	33.33
CYANO.	5d	<i>Chroococcus</i> sp.	1.815	3.048	0.28	0.26	42.03	36.23
CYANO.	5a	<i>Lymnothryx</i> sp.	0.077	0.000	0.01	0.00	7.25	0.00
CYANO.	5d	<i>Merismopedia</i> sp.	0.004	0.017	0.00	0.00	1.45	2.90
CYANO.	5d	<i>Microcystis</i> sp.	0.065	0.307	0.01	0.03	21.74	31.88
CYANO.	5a	<i>Phormidium</i> sp.	0.071	0.000	0.01	0.00	17.39	0.00
CYANO.	5a	<i>Planktothrix</i> sp.	0.055	0.134	0.01	0.01	18.84	24.64
CYANO.	5e	<i>Pseudoanabaena</i> sp.	0.128	0.430	0.02	0.04	14.49	24.64
CYANO.	5a	<i>Spirulina</i> sp.	0.009	0.000	0.00	0.00	4.35	0.00
CYANO.	5a	<i>Tychonema tenue</i>	0.000	0.497	0.00	0.04	0.00	18.84
CHLORO.	9b	<i>Ankira ancora</i>	0.000	0.716	0.00	0.06	0.00	15.94
CHLORO.	11c	<i>Ankistrodesmus falcatus</i>	0.221	0.000	0.03	0.00	7.25	0.00
CHLORO.	11c	<i>Ankistrodesmus</i> sp.	0.054	0.253	0.01	0.02	8.70	36.23
CHLORO.	3a	<i>Chlamydomonas</i> sp.	0.465	0.278	0.07	0.02	10.14	15.94
CHLORO.	9b	<i>Chlorella</i> sp.	2.769	5.784	0.43	0.49	27.54	30.43
CHLORO.	9b	<i>Laghereimia</i> sp.	1.830	0.000	0.29	0.00	11.59	0.00
CHLORO.	9d	<i>Monoraphidium contortum</i>	0.404	0.119	0.06	0.01	34.78	13.04
CHLORO.	9d	<i>Monoraphidium griffithii</i>	0.092	0.000	0.01	0.00	8.70	0.00
CHLORO.	9d	<i>Monoraphidium</i> sp.	0.013	0.000	0.00	0.00	2.90	0.00
CHLORO.	10a	<i>Oedogonium</i> sp.	0.161	2.652	0.03	0.23	4.35	8.70
CHLORO.	11c	<i>Oocystis apiculata</i>	0.137	2.018	0.02	0.17	2.90	11.59
CHLORO.	11c	<i>Oocystis</i> sp.	23.080	7.185	3.61	0.61	44.93	44.93
CHLORO.	3b	<i>Pandorina morum</i>	7.378	0.443	1.15	0.04	33.33	2.90
CHLORO.	11a	<i>Pediastrum boryanum</i>	0.000	0.617	0.00	0.05	0.00	5.80
CHLORO.	11a	<i>Pediastrum tetras</i>	0.234	0.036	0.04	0.00	5.80	4.35
CHLORO.	11a	<i>Pediastrum</i> sp.	0.152	0.000	0.02	0.00	2.90	0.00
CHLORO.	11a	<i>Scenedesmus aculeolatus</i>	0.000	26.796	0.00	2.29	0.00	14.49
CHLORO.	11a	<i>Scenedesmus ecornis</i>	1.838	72.257	0.29	6.17	55.07	62.32
CHLORO.	11a	<i>Scenedesmus linearis</i>	0.000	8.065	0.00	0.69	0.00	47.83
CHLORO.	11a	<i>Scenedesmus quadricauda</i>	0.790	0.069	0.12	0.01	18.84	5.80
CHLORO.	11a	<i>Scenedesmus</i> sp.	0.347	1.643	0.05	0.14	36.23	31.88
CHLORO.	9b	<i>Tetraedron caudatum</i>	0.003	0.000	0.00	0.00	2.90	0.00
CHLORO.	9b	<i>Tetraedron minimum</i>	0.017	0.079	0.00	0.01	5.80	10.14
CHLORO.	9b	<i>Tetraedron</i> sp.	0.018	0.000	0.00	0.00	4.35	0.00
ZYGN.	9a	<i>Cosmarium bioculatum</i>	0.853	3.158	0.13	0.27	43.48	71.01

Taxonomy	MFG	Species	Biovolume *		Biovolume % ^o		Presences % [#]	
			CS	CI	CS	CI	CS	CI
ZYGN.	8a	<i>Cosmarium margaritiferum</i>	5.091	0.000	0.80	0.00	4.35	0.00
ZYGN.	9a	<i>Cosmarium humile</i>	0.073	0.000	0.01	0.00	10.14	0.00
ZYGN.	8a	<i>Cosmarium laeve</i>	0.000	1.805	0.00	0.15	0.00	8.70
ZYGN.	9a	<i>Cosmarium</i> spp.	10.571	85.954	1.65	7.34	27.54	44.93
ZYGN.	9a	<i>Desmidium</i> sp.	0.000	0.310	0.00	0.03	0.00	4.35
ZYGN.	8a	<i>Hyalotheca dissiliens</i>	2.442	50.480	0.38	4.31	4.35	13.04
ZYGN.	9a	<i>Spondylosium planum</i>	0.829	27.849	0.13	2.38	47.83	59.42
ZYGN.	8a	<i>Staurastrum avicula</i>	2.058	3.066	0.32	0.26	8.70	10.14
ZYGN.	8a	<i>Staurastrum boreale</i>	2.213	9.548	0.35	0.81	5.80	10.14
ZYGN.	8a	<i>Staurastrum teliferum</i>	5.990	16.885	0.94	1.44	11.59	18.84
ZYGN.	8a	<i>Staurastrum tohopekaligense</i>	1.320	0.000	0.21	0.00	2.90	0.00
ZYGN.	8a	<i>Staurastrum</i> spp.	3.203	13.686	0.50	1.17	8.70	20.29
ZYGN.	8a	<i>Staurodesmus cuspidatus</i>	1.286	0.000	0.20	0.00	4.35	0.00
ZYGN.	8a	<i>Staurodesmus dejectus</i> var. <i>apiculatus</i>	25.215	14.875	3.95	1.27	46.38	30.43
ZYGN.	8a	<i>Staurodesmus</i> sp.	0.611	0.000	0.10	0.00	1.45	0.00
ZYGN.	8a	<i>Xanthidium brebissonis</i>	2.092	0.000	0.33	0.00	7.25	0.00
ZYGN.	8a	<i>Xanthidium octocorne</i> (<i>Arthrodesmus</i>)	3.140	1.292	0.49	0.11	14.49	23.19
CHRYS.	2a	<i>Bitrichia chodati</i>	2.060	1.877	0.32	0.16	44.93	50.72
CHRYS.	2a	<i>Dinobryon cylindricum</i> var. <i>alpina</i>	0.000	28.030	0.00	2.39	0.00	37.68
CHRYS.	2a	<i>Dynobryon sociale</i>	42.743	20.889	6.69	1.78	75.36	62.32
CHRYS.	2a	<i>Kephyrion</i> sp.	1.910	5.480	0.30	0.47	26.09	36.23
CHRYS.	2a	<i>Mallomonas</i> sp.	12.005	9.827	1.88	0.84	34.78	33.33
CRYPTO.	2d	<i>Cryptomonas</i> sp.	7.861	1.722	1.23	0.15	14.49	7.25
CRYPTO.	2d	<i>Plagioselmis nannoplantica</i>	0.769	0.093	0.12	0.01	40.58	1.45
DINOPH.	1b	<i>Ceratium hirundinella</i>	1.778	8.296	0.28	0.71	1.45	7.25
DINOPH.	1b	<i>Glenodinium</i> sp.	54.043	67.616	8.46	5.77	28.99	40.58
DINOPH.	1b	<i>Peridinium cintum</i> (<i>volzii</i>)	16.377	30.356	2.56	2.59	17.39	14.49
DINOPH.	1b	<i>Peridinium goslaviense</i> (<i>umbonatum</i>)	97.531	250.454	15.26	21.37	62.32	69.57
DINOPH.	1b	<i>Peridinium</i> spp.	133.085	135.715	20.83	11.58	57.97	50.72
DIATO.	7b	<i>Achnantes minutissima</i>	0.781	0.959	0.12	0.08	69.57	62.32
DIATO.	7b	<i>Achnantes</i> spp.	0.319	0.486	0.05	0.04	17.39	23.19
DIATO.	6b	<i>Amphora ovalis</i>	1.263	2.863	0.20	0.24	13.04	23.19
DIATO.	6b	<i>Amphora</i> spp.	0.169	0.000	0.03	0.00	4.35	0.00
DIATO.	7b	<i>Anomoeoneis</i> spp. (<i>Brachysira</i> sp.)	0.572	0.265	0.09	0.02	14.49	8.70
DIATO.	7b	<i>Caloneis</i> sp.	1.286	0.475	0.20	0.04	11.59	5.80
DIATO.	6b	<i>Caloneis silicula</i>	0.000	3.401	0.00	0.29	0.00	11.59
DIATO.	7b	<i>Cocconeis placentula</i>	1.708	1.045	0.27	0.09	14.49	31.88
DIATO.	7b	<i>Cocconeis</i> sp.	0.946	0.337	0.15	0.03	23.19	27.54
DIATO.	7a	<i>Cyclotella comensis</i>	0.296	5.652	0.05	0.48	7.25	73.91
DIATO.	7a	<i>Cyclotella</i> spp.	12.133	0.199	1.90	0.02	65.22	5.80
DIATO.	6b	<i>Cymbella ehrenbergii</i>	12.937	4.847	2.02	0.41	11.59	8.70
DIATO.	6b	<i>Cymbella helvetica</i>	8.864	9.713	1.39	0.83	31.88	53.62
DIATO.	7b	<i>Cymbella</i> spp.	5.073	4.739	0.79	0.40	46.38	15.94
DIATO.	7b	<i>Cymbella prostrata</i>	0.000	0.868	0.00	0.07	0.00	26.09
DIATO.	7b	<i>Cymbella silesiaca</i>	0.000	3.511	0.00	0.30	0.00	52.17
DIATO.	7b	<i>Diatoma anceps</i>	0.000	0.016	0.00	0.00	0.00	1.45
DIATO.	7b	<i>Diatoma hyemalis</i>	0.910	1.293	0.14	0.11	14.49	18.84
DIATO.	7b	<i>Diatoma mesodon</i>	0.008	0.465	0.00	0.04	4.35	27.54
DIATO.	7b	<i>Diatoma vulgaris</i> Bory	0.181	0.000	0.03	0.00	8.70	0.00
DIATO.	7b	<i>Diatoma</i> spp.	1.100	0.775	0.17	0.07	34.78	33.33

Taxonomy	MFG	Species	Biovolume*		Biovolume % [°]		Presences % [#]	
			CS	CI	CS	CI	CS	CI
DIATO.	7b	<i>Diploneis ovalis</i>	0.283	0.688	0.04	0.06	4.35	18.84
DIATO.	7b	<i>Diploneis</i> sp.	0.024	0.000	0.00	0.00	4.35	0.00
DIATO.	7b	<i>Ephitemia sorex</i>	0.435	1.654	0.07	0.14	10.14	23.19
DIATO.	7b	<i>Ephitemia</i> sp.	0.273	0.000	0.04	0.00	10.14	0.00
DIATO.	7b	<i>Eunotia bilunaris</i>	0.207	0.640	0.03	0.05	27.54	30.43
DIATO.	7b	<i>Eunotia exigua</i>	0.007	0.019	0.00	0.00	5.80	8.70
DIATO.	7b	<i>Eunotia</i> spp.	0.697	0.672	0.11	0.06	11.59	18.84
DIATO.	7b	<i>Fragilaria capucina</i>	7.518	42.381	1.18	3.62	39.13	60.87
DIATO.	7b	<i>Fragilaria crotonensis</i>	24.761	20.374	3.87	1.74	52.17	59.42
DIATO.	7b	<i>Fragilaria pinnata</i>	0.672	0.000	0.11	0.00	28.99	0.00
DIATO.	7b	<i>Fragilaria tenera/ulna</i>	8.090	7.285	1.27	0.62	65.22	60.87
DIATO.	7b	<i>Fragilaria</i> sp.	0.350	0.423	0.05	0.04	13.04	15.94
DIATO.	7b	<i>Gomphonema truncatum</i>	1.989	3.297	0.31	0.28	13.04	15.94
DIATO.	7b	<i>Gomphonema</i> sp.	1.178	2.343	0.18	0.20	21.74	26.09
DIATO.	7a	<i>Melosira</i> sp.	1.187	0.504	0.19	0.04	14.49	11.59
DIATO.	7b	<i>Navicula cryptocephala</i>	3.806	9.461	0.60	0.81	33.33	46.38
DIATO.	7b	<i>Navicula lanceolata</i>	1.644	0.000	0.26	0.00	20.29	0.00
DIATO.	7b	<i>Navicula pupula</i>	0.230	2.729	0.04	0.23	8.70	24.64
DIATO.	6b	<i>Navicula radiosa</i>	5.724	12.162	0.90	1.04	34.78	43.48
DIATO.	6b	<i>Navicula</i> spp.	18.483	32.716	2.89	2.79	65.22	56.52
DIATO.	7b	<i>Neidium</i> sp.	0.249	0.538	0.04	0.05	7.25	4.35
DIATO.	7b	<i>Nitzschia recta</i>	0.206	0.154	0.03	0.01	5.80	11.59
DIATO.	7b	<i>Nitzschia</i> spp.	2.124	0.490	0.33	0.04	24.64	17.39
DIATO.	7b	<i>Pinnularia interrupta (mesolepta)</i>	1.901	1.952	0.30	0.17	27.54	14.49
DIATO.	6b	<i>Pinnularia major</i>	0.000	27.108	0.00	2.31	0.00	20.29
DIATO.	6b	<i>Pinnularia sudetica</i>	0.000	20.860	0.00	1.78	0.00	40.58
DIATO.	6b	<i>Pinnularia viridis</i>	8.181	0.000	1.28	0.00	20.29	0.00
DIATO.	7b	<i>Pinnularia</i> sp.	2.154	1.203	0.34	0.10	27.54	18.84
DIATO.	7b	<i>Stauroneis anceps</i>	0.000	0.675	0.00	0.06	0.00	30.43
DIATO.	7b	<i>Stauroneis</i> spp.	1.264	1.164	0.20	0.10	55.07	46.38
DIATO.	6b	<i>Surirella</i> spp.	0.129	0.000	0.02	0.00	2.90	0.00
DIATO.	6b	<i>Surirella brebissonii</i>	0.000	1.844	0.00	0.16	0.00	10.14
DIATO.	7b	<i>Tabellaria flocculosa</i>	3.177	5.271	0.50	0.45	65.22	53.62
DIATO.	7b	<i>Tabellaria</i> spp.	0.000	0.345	0.00	0.03	0.00	11.59
DIATO.	7b	<i>Bacillariophyceae</i> spp.	0.741	1.837	0.12	0.16	14.49	14.49
EUGLEN.	2c	<i>Euglena</i> sp.	5.005	1.345	0.78	0.11	27.54	21.74
EUGLEN.	2c	<i>Trachelomonas</i> sp.	4.842	3.707	0.76	0.32	15.94	14.49

MFG, Morpho-functional group; CS, Colbricon Superiore; CI, Colbricon Inferiore. *Mean biovolumes 1998-2007 (mm³/m³); °percentage of each taxon's mean biovolume over the total biovolume; #percentage at which each taxon occurred over the 69 samplings carried out during the 10 years of the study. C.S., Colbricon Superiore; C.I., Colbricon Inferiore; CYANO., Cyanophyceae; CHLORO., Chlorophyceae; DIATO., Bacillariophyceae; DINOPH., Dinophyceae; CHRYS., Chrysophyceae; CRYPTO., Cryptophyceae; ZYGN., Zygnematophyceae; EUGLEN., Euglenophyceae.

Supplementary Fig. 1. Results of the Cluster Analysis based on species biovolumes.

Mean water column temperature

- < 10°C
- Between 10°C and 15°C
- Between 15°C and 18°C
- > 18°C



