

Online material

Appendix I. Systematic list and abundance data of algae, protozoa, meiofauna, macroinvertebrates in bryophytic communities at sampling sites JS and JW. Values represent the mean \pm SD, $N_{JS,JW} = 27$ (9 months \times 3 replicates per site).

ALGAE	JS (ind.cm ⁻²)	JW (ind.cm ⁻²)	ALGAE + PROTOZOA	JS (ind.cm ⁻²)	JW (ind.cm ⁻²)
CYANOBACTERIA					
<i>Chroococcus</i> sp.		236 773 \pm 708 515			535 \pm 1605
<i>Lyngbya</i> sp.		744 092 \pm 1 510 407			178 \pm 535
<i>Nostoc</i> sp.	38 640 \pm 56 906				62 \pm 185
<i>Oscillatoria princeps</i> Vaucher ex Gomont, 1892	98 405 \pm 215 138				
<i>Oscillatoria irrigua</i> Kützing ex Gomont, 1892		521 900 \pm 770 259		2049 \pm 6146	2561 \pm 7683
<i>Phormidium</i> spp.	8062 \pm 24 186	499 125 \pm 1 227 953			9105 \pm 27 316
<i>Scytonema</i> sp.		8346 \pm 25 039			2713 \pm 7792
<i>Spirulina</i> sp.		144 \pm 290		114 \pm 341	
EUGLENOPHYTA					
<i>Euglena acus</i> (Müller) Ehrenberg, 1830		2153 \pm 3997			4219 \pm 11 990
<i>Euglena</i> sp.		29 \pm 86			4742 \pm 14 227
<i>Lepocinclis spirogyroides</i> Marin & Melkonian, 2003		34 \pm 103			
<i>Phacus</i> sp.		1072 \pm 3120			2 \pm 6
<i>Strombomonas</i> sp.		91 \pm 271			92 \pm 90
<i>Trachelomonas</i> sp.		503 \pm 1414			137 \pm 134
CHRYSOPHYTA					
<i>Dinobryon bavaricum</i> Imhof, 1890		1138 \pm 3414			7 \pm 21
<i>Dinobryon divergens</i> Imhof, 1887		165 \pm 494			16 \pm 35
<i>Tribonema</i> sp.		113 070 \pm 327 439			129 \pm 140
<i>Vaucheria</i> sp.		190 \pm 379			29 \pm 37
<i>Mallomonas</i> sp.		1166 \pm 3187			8 \pm 12
BACILLARIOPHYCEAE (DIATOMAEAE)					
<i>Achnanthyidium</i> spp.		600 167 \pm 824 884			32 \pm 69
<i>Amphipleura pellucida</i> (Kützing) Kützing, 1844		996 \pm 2988			9 \pm 17
<i>Amphora perpusilla</i> Grunow, 1884		455 \pm 5584			5 \pm 8
<i>Amphora</i> spp.		3583 \pm 1366			3 \pm 7
<i>Cocconeis pediculus</i> Ehrenberg, 1838	26 729 \pm 25 264				9 \pm 11
<i>Cocconeis placentula</i> Ehrenberg, 1838					2 \pm 6
<i>Cyclotella</i> sp.		78 675 \pm 40 021			4 \pm 9
<i>Cymbella affinis</i> Kützing, 1844		202 \pm 605			24 \pm 50
<i>Cymbella cymbiformis</i> Agardh, 1830		2217 \pm 6651			4 \pm 13
<i>Cymbella</i> sp.					18 \pm 55
<i>Denticula tenuis</i> Kützing, 1844					23 \pm 36
<i>Diatoma mesodon</i> (Ehrenberg) Kützing, 1844		45 346 \pm 74 285			15 \pm 28
<i>Diatoma vulgare</i> Bory de Saint-Vincent, 1824		3892 \pm 7447			8 \pm 12
<i>Encyonema ventricosa</i> Kützing, 1844					2 \pm 6
<i>Encyonopsis microcephala</i> (Grunow) Krammer, 1997					4 \pm 9
<i>Fragilaria capucina</i> Desmazières, 1825					3 \pm 9
<i>Fragilaria crotoneensis</i> Kütton, 1869					2 \pm 5
<i>Fragilaria</i> sp.					49 \pm 52
<i>Geisleria</i> sp.					5 \pm 7
<i>Gomphonema parvulum</i> (Kützing) Kützing, 1849					2 \pm 5
					2 \pm 5
					17 \pm 52
					4 \pm 7

Appendix I. (Continued)

ALGAE + PROTOZOA	JS (ind.cm ⁻²)	JW (ind.cm ⁻²)	JS (ind.cm ⁻²)	JW (ind.cm ⁻²)
<i>Gomphonema</i> sp.	228 ± 683	4647 ± 12422	28 ± 43	20 ± 24
<i>Gyrosigma attenuatum</i> (Kützing) Cleve, 1894		854 ± 2561		5 ± 1
<i>Hantzschia amphioxys</i> (Ehrenberg) Grunow, 1880		474 ± 1423		13 ± 14
<i>Melosira varians</i> Agardh, 1827		6260 ± 15571		1 ± 1
<i>Meridion circulare</i> (Greville) Agardh, 1831	3904 ± 10125	31299 ± 93898		1 ± 3
<i>Navicula cryptocephala</i> Kützing, 1844		11050 ± 15452		1 ± 3
<i>Navicula radiosa</i> Kützing, 1844		104 ± 313		5 ± 11
<i>Navicula</i> sp.	19591 ± 17478			
<i>Navicula tripointata</i> (Müller) Bory de Saint-Vincent, 1822	9417 ± 10045	10923 ± 14815	22 ± 29	163 ± 443
<i>Navicula viridula</i> (Kützing) Kützing, 1844		1138 ± 3414		2 ± 6
<i>Neideum</i> sp.		5217 ± 15650		12 ± 37
<i>Nitzschia</i> sp.		5756 ± 15470		1 ± 4
<i>Pinnularia</i> sp.		474 ± 1423		1 ± 1
<i>Planolothidium lanceolatum</i> (Brébisson ex Kützing) Lange-Bertalot, 1999	82 ± 247		14 ± 41	1 ± 4
<i>Rhoicosphenia curvata</i> (Kützing) Grunow, 1860	3443 ± 6608		4 ± 12	2 ± 5
<i>Sellaphora</i> sp.		1138 ± 3414		23 ± 57
<i>Stephanodiscus</i> sp.		82 ± 246		56 ± 54
<i>Surirella</i> sp.		1222 ± 3109		9 ± 27
<i>Ulnaria acus</i> (Kützing) Aboal, 2003	670 ± 1330		1 ± 1	
<i>Ulnaria ulna</i> (Nitzsch) Compère, 2001		94029 ± 203015		
PROTOZOA + MEIOFAUNA	JS (Ind.cm⁻²)	JW (Ind.cm⁻²)	JS (Ind.m⁻²)	JW (Ind.m⁻²)
SARCODINA (continued)				
<i>Mayorella</i> sp.	25 ± 74	9 ± 23	3 ± 8	
Testacea non. det.		2 ± 7		
<i>Thecamoeba</i> sp.		11 ± 19		1 ± 3
<i>Vahlkampfia limax</i> (Vahlkampf, 1905)	7 ± 13	16 ± 40	4 ± 7	
ROTIFERA				
Bdelloidea	32 ± 38	228 ± 312	4 ± 6	
<i>Cephalodella forficula</i> (Ehrenberg, 1838)		9 ± 21	1 ± 3	144 ± 305
<i>Cephalodella hoodi</i> (Goose, 1896)	1 ± 2	2 ± 7		
<i>Cephalodella</i> spp.	3 ± 10	7 ± 13		
<i>Colurella obtuse</i> (Gosse, 1886)		39 ± 34		
<i>Colurella uncinata</i> (O.F. Müller, 1773)	1 ± 1	35 ± 35		
<i>Dicranophorus caudatus</i> (Ehrenberg, 1834)	1 ± 1	1 ± 2		
<i>Dicranophorus grandis</i> (Ehrenberg, 1832)		4 ± 12		
<i>Dicranophorus</i> sp.	3 ± 10	5 ± 10		
<i>Dissotrocha aculeata</i> (Ehrenberg, 1832)	1 ± 2			
<i>Encentrum</i> sp.	1 ± 2			
<i>Euchlanis dilatata</i> Ehrenberg, 1832		2 ± 6		
<i>Habrotrocha</i> sp.		5 ± 13		
<i>Kellicotia longispina</i> (Kellicott, 1879)	1 ± 1			
<i>Lecane closterocerca</i> (Schmarda, 1859)		2 ± 7		
MACROINVERTEBRATES				
TURBELLARIA				
<i>Stenostomum leucops</i> (Duges, 1828)				
GASTROPODA				
<i>Ancylus fluviatilis</i> Müller, 1774				
<i>Graziana papukensis</i> Radoman, 1975				
HIRUDINEA				
<i>Erpobdella octoculata</i> (Linné, 1758)				
OLIGOCHAETA				
AMPHIPODA				
<i>Gammarus fossarum</i> Koch, 1835				
COLLEMBOLA				
EPEMEROPTERA				
<i>Baetis</i> sp.				
<i>Cloeon</i> sp.				
<i>Ecdyonurus</i> sp.				
PLECOPTERA				
<i>Leuctra</i> sp.				
<i>Nemoura</i> sp.				
<i>Protonemura</i> sp.				
TRICHOPTERA				
<i>Glossosoma</i> sp.				

Appendix 1. (Continued)

PROTOZOA + MEIOFAUNA	JS (Ind.cm ⁻²)	JW (Ind.cm ⁻²)	MACROINVERTEBRATES	JS (Ind.m ⁻²)	JW (Ind.m ⁻²)
<i>Lepadella patella</i> (O. F. Müller, 1786)		4 ± 6	Limnephilidae	4 ± 6	
<i>Macrotrachela aculeate</i> Milne, 1886	2 ± 6	1 ± 3	<i>Lithax</i> sp.	1 ± 2	
<i>Philodina roseola</i> Ehrenberg, 1832		37 ± 42	Psychomyidae		2 ± 5
<i>Pleuretra</i> sp.	2 ± 5		<i>Tinodes</i> sp.	1 ± 2	
<i>Trichocerca porcellus</i> (Gosse, 1851)		2 ± 6	COLEOPTERA		
NEMATODA	40 ± 52	262 ± 336	<i>Elmis aenea</i> (Müller, 1806)	247 ± 346	
GASTROTRICHA			<i>Linnius volckmari</i> (Panzer, 1793)	38 ± 89	
<i>Chaetonotus hystrix</i> Metschnikoff, 1865		2 ± 4	<i>Riolus cupreus</i> (Müller, 1806)	3 ± 6	
<i>Chaetonotus macrochaetus</i> Zelinka, 1889		1 ± 3	DIPTERA		
<i>Chaetonotus maximus</i> Ehrenberg, 1831	1 ± 1	6 ± 10	Chironomidae	52 ± 75	311 ± 248
COPEPODA			Empididae	2 ± 5	
Nauplii		1 ± 2	Limoniidae		2 ± 5
			Psychodidae	39 ± 63	73 ± 219

Appendix 2. Systematic list and abundance data of algae, protozoa, meiofauna, macroinvertebrates in seston at sampling sites JS and JW. Values represent the means \pm SD, $N_{JS-JW} = 27$ (9 months \times 3 replicates per site).

	JS (Ind.L ⁻¹)	JW (Ind.L ⁻¹)	PROTOZOA + MEIOFAUNA	JS (Ind.L ⁻¹)	JW (Ind.L ⁻¹)
ALGAE					
CYANOBACTERIA					
<i>Chroococcus</i> sp.		2251 \pm 6353	<i>Chilodonella uncinata</i>		4.97 \pm 15.82
<i>Lyngbya</i> sp.		2267 \pm 6800	Ciliata non det.		28.02 \pm 71.35
<i>Oscillatoria princeps</i> Vaucher ex Gomont, 1892	79 \pm 193	327 \pm 980	<i>Coleps hirtus</i> (Mueller, 1786)		0.30 \pm 0.90
<i>Planktothrix agardhii</i> (Gomont) Anagnostidis & Komárek, 1988		8108 \pm 16861	<i>Euplotes patella</i> (Mueller, 1773)		0.45 \pm 1.36
<i>Oscillatoria</i> sp.		670 \pm 1928	<i>Frontonia acuminata</i> (Ehrenberg, 1833)		0.65 \pm 1.94
<i>Phormidium incurvatum</i> (Nägel) Gomont ex Gomont, 1892		160 \pm 480	<i>Frontonia leucas</i> (Ehrenberg, 1833)		1.00 \pm 1.90
<i>Phormidium</i> sp.		273 \pm 818	<i>Glaucoma scintillans</i> Ehrenberg, 1830		2.71 \pm 8.13
<i>Spirulina</i> sp.		2130 \pm 6389	<i>Litonotus Cygnus</i> (Mueller, 1773)		0.90 \pm 2.71
EUGLENOPHYTA					
<i>Trachelomonas</i> sp.		7 \pm 15	Oxytrichidae		1.00 \pm 1.33
<i>Phacus longicauda</i> (Ehrenberg) Dujardin, 1841	2 \pm 5		<i>Paramecium</i> sp.		1.00 \pm 1.36
<i>Peridinium cinctum</i> (Müller) Ehrenberg, 1832	1 \pm 4		<i>Stylonicilia</i> sp.		0.69 \pm 1.33
<i>Peridinium</i> sp.		2 \pm 5	<i>Tetrahymena pyriformis</i> Ehrenberg, 1830	0.79 \pm 2.37	4.97 \pm 1.36
CHRYSOPHYTA					
<i>Dinobryon divergens</i> Imhof, 1887		5 \pm 14	<i>Tintinnopsis lacustris</i> Brandt, 1906		2.00 \pm 1.03
<i>Tribonema</i> sp.		26 \pm 78	<i>Vorticella campanula</i> Ehrenberg, 1831		1.00 \pm 0.90
BACILLARIOPHYCEAE (DIATOMAEAE)					
<i>Achnanthisidium minutissimum</i> (Kützing) Czarnecki, 1994	5 \pm 14	19246 \pm 31713	<i>Vorticella microstoma</i> Ehrenberg, 1830		106.40 \pm 319.19
<i>Amphora ovalis</i> (Kützing) Kützing, 1844		2 \pm 7	<i>Actinophrys sol</i> Ehrenberg, 1830		0.47 \pm 1.32
<i>Amphora perpusilla</i> Grunow, 1884		65 \pm 196	<i>Arcella discoides</i> Ehrenberg, 1843		0.09 \pm 0.27
<i>Cocconeis pediculus</i> Ehrenberg, 1838		4556 \pm 13537	<i>Arcella gibbosa</i> Penard, 1890		0.90 \pm 2.45
<i>Cocconeis placentula</i> Ehrenberg, 1838		306 \pm 677	<i>Arcella vulgaris</i> Ehrenberg, 1830	0.01 \pm 0.02	5.27 \pm 15.77
<i>Craticula cuspidate</i> (Kützing) Mann, 1990	12 \pm 14	4 \pm 13	<i>Centropyxis aculeata</i> (Ehrenberg, 1830)		5.43 \pm 16.09
<i>Cyclotella</i> sp.		123 \pm 225	<i>Cyphoderia ampulla</i> (Ehrenberg, 1840)		5.26 \pm 15.78
<i>Cymbella affinis</i> Kützing, 1844		82 \pm 128	<i>Euglypha acanthophora</i> (Ehrenberg, 1841)		0.18 \pm 0.55
<i>Cymbella lanceolata</i> Kirchner, 1878		24 \pm 51	ROTIFERA		
<i>Cymbella</i> sp.	1 \pm 3	18 \pm 54	<i>Ascomorpha saltans</i> Bartsch, 1870		0.01 \pm 0.03
<i>Denticula tenuis</i> Kützing, 1844		476 \pm 1295	<i>Asplanchna brightwelli</i> (Goose, 1850)		0.02 \pm 0.05
<i>Diatoma vulgare</i> Bory de Saint-Vincent, 1824		33 \pm 98	<i>Asplanchnopus hyalinus</i> Harring, 1913	0.01 \pm 0.03	
<i>Encyonema ventricosa</i> Kützing, 1844		41397 \pm 118874	Bdelloidea	1.00 \pm 2.35	
<i>Encyonopsis microcephala</i> (Grunow) Krammer, 1997		29 \pm 72	<i>Brachionus diversicornis</i> (Daday, 1883)		3.00 \pm 2.06
<i>Eucoconeis flexella</i> (Kützing) Meister, 1912		65 \pm 196	<i>Cephalodella gibba</i> (Ehrenberg, 1832)		0.01 \pm 0.02
<i>Fragilaria capucina</i> Desmazières, 1825		84 \pm 168	<i>Colurella obtuse</i> (Gosse, 1886)	0.03 \pm 0.08	0.07 \pm 0.10
<i>Fragilaria crotonensis</i> Kitton, 1869		33 \pm 98	<i>Colurella uncinata</i> (O.F. Müller, 1773)	0.01 \pm 0.01	5.00 \pm 10.08
<i>Gomphonema gracile</i> Ehrenberg, 1838		645 \pm 1936	<i>Cyrtonia tuba</i> (Ehrenberg, 1834)		1.92 \pm 2.58
<i>Gomphonema olivaceum</i> (Hornemann) Kützing, 1844		6453 \pm 19360	<i>Dissoirocha aculeata</i> (Ehrenberg, 1832)		0.09 \pm 0.16
<i>Gomphonema parvulum</i> (Kützing) Kützing, 1849		49 \pm 146	<i>Euchlanis dilatata</i> Ehrenberg, 1832		0.30 \pm 0.90
<i>Gomphonema</i> sp.		164 \pm 490	<i>Keratella cochlearis</i> (Gosse, 1851)	0.16 \pm 0.19	0.04 \pm 0.09
<i>Gomphonema truncatum</i> Ehrenberg, 1832		2581 \pm 7744	<i>Keratella quadrata</i> (O. F. Müller, 1786)	0.05 \pm 0.12	0.52 \pm 0.86
<i>Gyrosigma spencerii</i> (Bailey ex Quekett) Griffith & Henfrey, 1856		5 \pm 14	<i>Lecane closteroerca</i> (Schmarda, 1859)		0.21 \pm 0.50
			<i>Lecane luna</i> (Müller, 1776)	0.02 \pm 0.07	1.54 \pm 2.58
			<i>Lecane lunaris</i> (Ehrenberg, 1832)		0.26 \pm 0.26
					1.41 \pm 2.53

Appendix 2. (Continued)

ALGAE	JS (Ind.L ⁻¹)	JW (Ind.L ⁻¹)	PROTOZOA + MEIOFAUNA	JS (Ind.L ⁻¹)	JW (Ind.L ⁻¹)
<i>Navicula</i> sp.		1779 ± 3757	<i>Lepadella patella</i> (O. F. Müller, 1786)	0.01 ± 0.03	11.03 ± 31.37
<i>Navicula tripunctata</i> (Müller) Bory de Saint-Vincent, 1822		109 ± 230	<i>Mytilina ventralis</i> (Ehrenberg, 1832)		0.01 ± 0.02
<i>Navicula viridula</i> (Kützing) Kützing, 1844		23 426 ± 48 830	<i>Notholca acuminata</i> (Ehrenberg, 1832)		0.09 ± 0.21
<i>Nitzschia palea</i> (Kützing) W. Smith, 1856		49 ± 145	<i>Notommata aurita</i> (Müller, 1786)		0.01 ± 0.02
<i>Nitzschia</i> sp.		2179 ± 6370	<i>Notommata</i> sp.		0.30 ± 0.90
<i>Planolthidium</i> sp.		24 ± 70	<i>Synchaeta oblonga</i> Ehrenberg, 1831		0.06 ± 0.18
<i>Sellaphora pupula</i> (Kützing) Mereschkovskiy, 1902		103 ± 290	<i>Synchaeta pectinata</i> Ehrenberg, 1832		0.08 ± 0.17
<i>Stephanodiscus</i> sp.		2 ± 6	<i>Testudinella patina</i> (Hermann, 1783)		0.02 ± 0.05
<i>Surirella minuta</i> Brébisson in Kützing, 1849		645 ± 1936	<i>Trichocerca bicristata</i> (Gosse, 1887)		0.06 ± 0.06
<i>Synedra</i> sp.	1 ± 2		<i>Trichocerca brachyura</i> (Gosse, 1851)		0.04 ± 0.08
<i>Ulnaria ulna</i> (Nitzsch) Compère, 2001		1633 ± 3200	<i>Trichocerca capucina</i> (Wierzejski & Zacharias, 1893)		0.30 ± 0.90
CHLOROPHYTA					
<i>Ankyra judayi</i> (Smith) Fott, 1957	2 ± 5		<i>Trichocerca longiseta</i> (Schränk, 1802)	0.01 ± 0.01	0.03 ± 0.06
<i>Closterium</i> sp.	2 ± 5	33 ± 3852	<i>Trichocerca porcellus</i> (Gosse, 1851)		0.15 ± 0.27
<i>Cosmarium</i> sp.		2 ± 98	<i>Trichocerca vernalis</i> (Hauer, 1936)		0.05 ± 0.16
<i>Oedogonium</i> sp.		21 431 ± 7	NEMATODA	0.02 ± 0.05	6.29 ± 16.59
<i>Pediastrum duplex</i> Meyen, 1829		150 ± 61 700	GASTROTRICHA		
<i>Spirogyra</i> sp.		39 ± 451	<i>Chaetomonotus hystrix</i> Metschnikoff, 1865		0.72 ± 1.84
<i>Staurastrum tetracerum</i> Ralfs ex Ralfs, 1848	1 ± 4		<i>Chaetomonotus maximus</i> Ehrenberg, 1831		0.01 ± 0.03
<i>Staurastrum</i> sp.	1 ± 4		CLADOCERA		
<i>Trochiscia granulata</i> (Reinsch) Hansgirg, 1888		1355 ± 97	<i>Alona guttata</i> Sars, 1862		1.00 ± 0.06
<i>Ulothrix</i> sp.		1090 ± 3270	<i>Bosmina longirostris</i> (O. F. Müller, 1776)	0.40 ± 1.19	
			<i>Chydorus ovalis</i> Kurz, 1875		0.02 ± 0.05

Appendix 2. (Continued)

MEIOFAUNA + MACROINVERTEBRATES	JS (Ind.L ⁻¹)	JW (Ind.L ⁻¹)
CLADOCERA continued		
<i>Chydorus piger</i> Sars, 1862	0.01 ± 0.02	
<i>Daphnia pulex</i> Leydig, 1860	0.40 ± 1.19	
<i>Pleuroxus uncinatus</i> Baird, 1850		0.01 ± 0.02
<i>Simocephalus vetulus</i> (O. F. Müller, 1776)		0.06 ± 0.17
COPEPODA		
<i>Eucyclops serrulatus</i> (Fischer, 1851)		0.01 ± 0.02
<i>Macrocyclus fuscus</i> (Jurine, 1820)	0.01 ± 0.04	0.09 ± 0.16
<i>Macrocyclus</i> sp.		0.01 ± 0.04
Nauplius	0.02 ± 0.04	0.21 ± 0.24
		0.02 ± 0.05
OSTRACODA		
HYDRACHNIDIA	0.01 ± 0.03	
TARDIGRADA	±	
<i>Macrobotis</i> sp.	0.01 ± 0.02	
TURBELLARIA		
<i>Stenostomum leucops</i> (Duges, 1828)		0.30 ± 0.90
OLIGOCHAETA		0.10 ± 0.13
EPHEMEROPTERA		
<i>Cloeon</i> sp.		0.01 ± 0.03
PLECOPTERA		
<i>Protonemura</i> sp.	0.05 ± 0.14	0.46 ± 1.35
DIPTERA		
Chironomidae	0.38 ± 1.15	0.05 ± 0.11