

Table S2. Details of Eukaryotic taxa including Genus-species details (where available), identified in samples from 18S rRNA sequence analysis. Taxa are grouped by higher taxonomic affinity, which was determined using databases Algaebase.org, WORMS (www.marinespecies.org/), encyclopedia of life (eol.org). Totals for major groups are listed and Cedarburg and Sapa totals are show in shaded columns. Abbreviations: unc – uncultured, unclass – unclassified, IS – incertae sedis. Blank cells mean no counts were identified.

Class	Family	Genus species	Median adjusted sequence number per sample											Taxon totals	top 25 taxon rank		
			CB1p1	CB1p2	CB1p3	CB1p4	CB5p234	Cedarburg Totals	Sp3p2	Sp3p4	Sp3p5	Sp5p23	Sp9p234			Sapa Totals	
Ciliates (Alveolata)																	
Colpodea	Colpodidae	<i>Colpoda_unc</i>							0	167					167	167	
	Cyrtolophosidida_IS	<i>Cyrtolophosidida_unc</i>				39		39	167				50	218	257		
	Cyrtolophosididae	<i>Cyrtolophosidida_unc</i>						0				39	39	39			
	Cyrtolophosididae	<i>Cyrtolophosis mucicola</i>						0			298		298	298			
	Exocolpodidae	<i>Exocolpoda augustini</i>		10	60		329	399						0	399		
	Grossglockneriidae	<i>Mykophagophrys terricola</i>	603	19	1219	63	958	2862					36	36	2898	19	
	Grossglockneriidae	<i>Pseudoplatyophyra_unc</i>			37	145		182	258		16	506	31	810	992		
	Hausmanniellidae	<i>Hausmanniella discoidea</i>		72	0	73	283	428		46				46	474		
	Woodruffiidae	<i>Rostrophrya sp. MSD-2007</i>						0			48			48	48		
	Nassophorea	Microthoracida	<i>Microthoracida_unc</i>						0		111	28			139	139	
Colpodidae		<i>Colpoda steinii</i>	12		476	70		558					18	18	577		
Oligohymenophorea	Colpodidae	<i>Colpodida_unc</i>						0	12021				838	12859	12859	12	
	Leptopharyniidae	<i>Leptopharynx costatus</i>	18	14		106		138	2042		157	208	146	2553	2690	20	
	Epistylidae	<i>Campanella umbellaria</i>					2250	2250						0	2250	23	
	Frontoniidae	<i>Apofrontonia dohrni</i>						0		533	250	10		793	793		
	Orchitophryidae	<i>Orchitophryidae_env_samp</i>	1003	959	21911	91016	4723	119613	5479	42	344	1738	46441	54044	173657	2	
	Loxocephalidae	<i>Cardiostomatella_unc</i>						0					37	37	37		
	Scuticociliatia_IS	<i>Scuticociliatia_unc</i>	22	15		161	52537	52735		66678	62242	1543	9	130472	183207	1	
	Tetrahymenidae	<i>Tetrahymena sp. NI</i>						0	19084	96	17		12	19209	19209	10	
	Uronematidae	<i>Homalogastra setosa</i>						0				8		8	8		
	Ancistridae	<i>Ancistrum_unc</i>						0			14			14	14		
Prostomatea	Cryptocaryonidae	<i>Cryptocaryon_unc</i>		8	15		50	74	6224	15169	24046	47350		92789	92863	5	
	Prorodontidae	<i>Prorodon_unc</i>						0				34		34	34		
Total Ciliates			1658	1097	23718	91675	61129	179277	45442	82675	87460	51473	47581	314631	493908		
Parasitic Apicomplexans																	
Conoidasida	Actinocephalidae	<i>Paraschneideria metamorphosa</i>							0	329				329	329		
	Eimeriidae	<i>Eimeriidae (Elev-185-1089)_unc</i>							0			19		19	19		
	Eimeriidae	<i>Eimeriidae_unc</i>							0			27		27	27		
Athropoda																	
Arachnida - mites	Bdellidae	<i>Bdellodes sp. AP-2010</i>			18				18					0	18		
	Cymbaeremaeidae	<i>Cymbaeremaeus cymba</i>							0		196			196	196		
	Eniochthoniidae	<i>Eniochthonius sp. AD1066</i>							0			263		263	263		
	Epilohmanniidae	<i>Epilohmannia sp. 1 KD-2008</i>							0		14			14	14		
	Eupodidae	<i>Eupodidae sp. AMUENV025</i>							0		112	17		13	142	142	
	Haplozetidae	<i>Rostrozetes sp. 1 IS-2008</i>				227		227						43	43	270	
	Histiostomatidae	<i>Ovanoetus sp. AD678</i>	20		22			42	463			16	50	529	570		
	Liacaridae	<i>Adaristes ovatus</i>						0	55					55	55		
	Sarcoptiformes_Unclass	<i>Sarcoptiformes sp. JA-2011</i>							0				240	240	240		
	Phenopelopidae	<i>Eupelops hirtus</i>	16		35			51	471	32				1746	2250	2301	22
	Trhypochthoniidae	<i>Afronothrus sp. AP-2010</i>							0				215	215	215		
	Trhypochthoniidae	<i>Trhypochthonius silvestris europaeus</i>				2116		2116			2448			2448	4564	15	
	Trombidiidae	<i>Trombidiinae sp. AMUENV055</i>							0				10	10	10		
Arachnida - spiders	Theridiidae	<i>Enoplognatha margarita</i>							0		566			566	566		
	Eresidae	<i>Stegodyphus mimosarum</i>					1022	1022						0	1022	25	
	Linyphiidae	<i>Gnathonarium dentatum</i>			12			12						0	12		
	Sabaconidae	<i>Sabacon cavicolens</i>		8	13			21						0	21		
	Mecysmaucheniiidae	<i>Mecysmauchenius segmentatus</i>						0			16			16	16		

Diplopoda	Spirostreptidae	<i>Doratogonus sp. GG-2003</i>	11	17			28					0	28		
	Xystodesmidae	<i>Cherokia georgiana</i>	73302	75294	24	25	148645		11			11	148656	3	
Entognatha Collembola	Hypogastruridae	<i>Hypogastrura sp. CB02</i>	14				14		43			45	88	102	
	Katiannidae	<i>Sminthurinus bimaculatus</i>					0					27	27	27	
	Neanuridae	<i>Morulina verrucosa</i>					0		30				30	30	
	Sminthuridae	<i>Sminthuridae env sample</i>		20	37		57		16	251	33	52006	52306	52363	
	Sminthuridae	<i>Sminthurides aquaticus</i>					0					288	288	288	
	Entomobryidae	<i>Orchesellides sp. 9688-2 FZ-2013</i>			23		23	151	101	56			307	330	
Insecta	Cecidomyiidae	<i>Camptomyia corticalis</i>					0	1165					1165	1165	24
	Chironomidae	<i>Acricotopus lucens</i>					0	88					88	88	
	Culicidae	<i>Aedes aegypti</i>					9857	9857					0	9857	13
	Culicidae	<i>Uranotaenia lowii</i>					7	7		3	25	42	70	77	
	Culicidae	<i>Coquillettia perturbans</i>					124		335	2			337	337	
	Culicidae	<i>Ochlerotatus atropalpu</i>					8		141				141	141	
	Formicidae	<i>Notostigma carazzii</i>	22			118		260	6517	40	3	3	6823	6823	14
	Formicidae	<i>Linepithema humile</i>	11	23	27	97		14	16				30	30	
	Mycetaeidae	<i>Mycetaea subterranea</i>					0			75			75	75	
Total Arthropods			73396	75362	438	2356	11018	162570	3143	6897	3663	795	54273	68771	231341
Mollusca Gastropoda	Cochlicopidae	<i>Cochlicopa lubrica</i>						0		18315	14		18329	18329	11
	Hermaeidae	<i>Aplysiopsis minor</i>						0		52			52	52	
	Otinidae	<i>Otina ovata</i>						0		28			28	28	
Rotifer Bdelloidea	Adinetidae	<i>Adineta vaga</i>	54	56		36		146				12	12	158	
Eutardigrada	Macrobotidae	<i>Paramacrobotus richtersi sp. NG-2008</i>						0				11	11	11	
Fungi															
Ascomycota															
Ascomycota_IS	Ascomycota_IS	<i>Slimacomyces isiola</i>						0	55				55	55	
Dothideomycetes	Pleosporales Fam_IS	<i>Anguillospora furtiva</i>			11			11					0	11	
	Teratosphaeriaceae	<i>Capnobotryella sp. MA 3612</i>						0	60				60	60	
Eurotiomycetes	Herpotrichiellaceae	<i>Herpotrichiellaceae sp. F-6</i>						0	121				121	121	
Lecanoromycetes	Ochrolechiaceae	<i>Ochrolechia szatalaensis</i>						0	123				123	123	
Leotiomycetes	Cudoniaceae	<i>Spathularia velutipes</i>						0	71				71	71	
	Hemiphaciaceae	<i>Sarcotrochila macrospora</i>						0	3895				3895	3895	17
Saccharomycetes	Saccharomycetaceae	<i>Candida palmioleophila</i>	54	49	622	37		762	3040	31	47	131	3248	4010	16
	Saccharomycetaceae	<i>Saccharomyces cerevisiae</i>					315	315			13		13	328	
	Saccharomycetales_unc	<i>Saccharomycetales_unc</i>						0	82				82	82	
Sordariomycetes	Ophiocordycipitaceae	<i>Ophiocordyceps robertsii</i>			15			15	55				55	70	
	Sordariomycetes_IS	<i>Verticillium alfalfae VaMs.102</i>			519			519	217				217	736	
	Stachybotryaceae	<i>Myrothecium sp. 7C50</i>		14				14					0	14	
Ascomycete sp. He1C	Ascomycete sp. He1C	<i>Ascomycete sp. He1C</i>	11			31		42					0	42	
Ascomycete_unc	Ascomycete_IS	<i>Ascomycete_unc</i>						0	1014				1014	1014	
Basidiomycota															
Agaricomycetes	Hydnaceae	<i>Sistotrema resinicystidium</i>						0	463				463	463	
Basidiomycota_unc	Basidiomycota_unc	<i>Basidiomycota_unc</i>						0	82				82	82	
Microbotryomycetes	Sporobolomycetaceae	<i>Bullera miyagiana</i>						0	455				455	455	
Moniliellomycetes	Moniliellaceae	<i>Moniliella acetoabutans</i>						0			23		23	23	
Tremellomycetes	Cuniculitremaeae	<i>Kockovaella thailandica</i>						0	112				112	112	
	Tremellaceae	<i>Cryptococcus aureus</i>						0	129				129	129	
	Tremellales_IS	<i>Tremellales_unc</i>						0	3579		19		3599	3599	18
Chytridiomycota															
Chytridiomycetes	Chytridiales_IS	<i>Chytridiales_unc</i>						0			12		12	12	
	Spizellomycetaceae	<i>Rhizophlyctis rosea</i>						0			22		22	22	
	Spizellomycetales_unc	<i>Spizellomycetales_unc</i>						0	148		633		781	781	
Chytridiomycota_unc	Chytridiomycota_unc	<i>Chytridiomycota_unc</i>			73	9610	9683	9447		17	23980		33444	43127	8
Glomeromycota															
Archaeosporomycetes	Ambisporaceae	<i>Ambispora fennica</i>						0			17		17	17	

Zygomycota																				
Entomophthoromycetes	Ancylistaceae	<i>Conidiobolus brefeldianus</i>						17						17	88			88	105	
	Ancylistaceae	<i>Conidiobolus coronatus</i>												0	252			252	252	
Cryptomycota Rozellidea	Rozellidea_LKM11_IS	<i>Rozellidea_LKM11_unc</i>												0	18051	9285	19706	47042	47042	7
Other Fungi	Fungi	<i>Other fungi</i>	29	20										49	116		9	125	173	
Total Fungi			93	64	1204	141	9925	11427	41655	31	9404	44379	131	95600	107027					
Opisthokonta Flagellates - Choanozoa																				
Choanoflagellata	Codonosigaceae	<i>Monosiga_unc</i>						173						173		14		14	188	
	Codonosigaceae	<i>Monosiga ovata</i>												0		136		136	136	
	Codonosigaceae	<i>Sphaeroeca_unc</i>						2528	2528									0	2528	21
	Salpingoecidae	<i>Salpingoecidae_unc</i>	17562	17180	136				34878									0	34878	9
	Choanoflagellata_IS	<i>Choanoflagellata_IS</i>							0								126	126	126	
Ichthyosporea	Pseudoperkinsidae	<i>Ichthyophonida LKM51_unc</i>	4331	3328	71581	3126	11198	93564	12103	330	299	5140	157	18029	111593				4	
	Pseudoperkinsidae	<i>Pseudoperkinsidae_unc</i>						173	173					786	959					
	Rhinosporideaceae	<i>Rhinosporideaceae_uc</i>						479	479					0	479					
Heterotrophic amoeba Cercozoa																				
Granofilosea	Clathrulinidae	<i>Hedriocystis_unc</i>						59	59									0	59	
Protists																				
Bigyra - Bicoecea	Bicosoecaceae	<i>uncultured bicosoecid</i>						100	100									0	100	
Cryptophyta Goniomonadaceae	Goniomonadidae	<i>Goniomonas sp. SH-3</i>										341						341	341	
Cryptophyta Cryptophyceae	Cryptomonadaceae	<i>Cryptomonas reflexa</i>								289		45						334	334	
Miozoa - Colponemea	Colponemidae	<i>Colponema sp. Vietnam</i>			20				20									0	20	
Plants and Green Algae																				
Magnoliids	Aristolochiaceae	<i>Aristolochiaceae env samp</i>							0	82								82	82	
Polypodiopsida	Dicksoniaceae	<i>Dicksoniaceae env samp</i>							0			18	4	8				30	30	
Chlorophyceae	Dunaliellaceae	<i>Polytomella</i>	4	4	52				60		14			20				34	94	