

Supplementary Materials

Table S1. List of testate amoebae taxa from Sphagnum samples in the thirty-seven western Iberian peatlands studied.

Testate amoebae taxa	Author	Code
<i>Alabasta longicollis</i>	Penard, 1890	ALALON
<i>Alabasta militaris</i>	Penard, 1890	ALAMIL
<i>Amphitrema wrigthianum</i>	Archer, 1869	AMPWRI
<i>Apodera vas</i>	(Certes, 1889) Loeblich & Tappan, 1961	APOVAS
<i>Arcella discoides</i>	Ehrenberg, 1830	ARCDIS
<i>Arcella haemisphaerica</i>	Perty, 1852	ARCHAE
<i>Archerella flavum</i>	(Archer, 1877) Loeblich and Tappan, 1961	ARCHFLA
<i>Arcella vulgaris</i>	Ehrenberg, 1830	ARCVUL
<i>Argynnia dentistoma</i>	(Penard, 1890)	ARGDEN
<i>Assulina muscorum</i>	Greef, 1888	ASSMUS
<i>Assulina seminulum</i>	(Ehrenberg, 1848)	ASSEM
<i>Centropyxis aculeata</i>	(Ehrenberg, 1838)	CENACU
<i>Centropyxis aerophila</i>	Deflandre, 1929	CENAER
<i>Centropyxis orbicularis</i>	Deflandre, 1929	CENORB
<i>Centropyxis constricta</i>	(Ehrenberg, 1841) Penard, 1890	CENCON
<i>Chlathrulina elegans</i> (Heliozoa)	Claus, 1874	CLAELE
<i>Corythion asperulum</i>	Schönborn, 1988	CORASP
<i>Corythion dubium</i>	Taranek, 1871	CORDUB
<i>Cryptodiffugia oviformis</i>	Penard, 1890	CRYOVI
<i>Cyphoderia ampulla</i>	(Ehrenberg, 1840)	CYPAMP
<i>Cryptodiffugia oviformis</i>	Penard, 1902	CRYOVI
<i>Diffugia acuminata</i>	Ehrenberg, 1838	DIFACU
<i>Diffugia bacillifera</i>	Penard, 1890	DIFBAC
<i>Diffugia bryophila</i>	Penard, 1902	DIFBRY
<i>Diffugia globulosa</i>	Dujardin, 1837	DIFGLO
<i>Diffugia oblonga</i>	Ehrenberg, 1838	DIFOBL
<i>Diffugia</i> sp. 1		DIFSP1
<i>Euglypha acanthophora</i>	(Ehrenberg, 1841)	EUGACA
<i>Euglypha brachiata</i>	Leidy 1878	EUGBRA
<i>Euglypha ciliata</i>	(Ehrenberg, 1848)	EUGCIL
<i>Euglypha ciliata</i> var <i>glabra</i>	(Ehrenberg, 1848)	EUGGLA
<i>Euglypha ciliata</i> var <i>heterospina</i>	(Ehrenberg, 1848)	EUGHET
<i>Euglypha compressa</i>	Carter, 1864	EUGCOM
<i>Euglypha cristata</i>	Leidy, 1874	EUGCRI
<i>Euglypha laevis</i>	(Ehrenberg, 1845)	EUGLAE
<i>Euglypha rotunda</i>	Wailes et Penard, 1911	EUGROT
<i>Euglypha</i> sp. 1		EUGSP
<i>Euglypha strigosa</i>	(Ehrenberg, 1871)	EUGSTRI
<i>Heleopera petricola</i>	Leidy, 1879	HELPET
<i>Heleopera rosea</i>	Penard, 1890	HELROS
<i>Heleopera</i> sp. 1		HELSP1
<i>Heleopera sphagnicola</i>	Leidy, 1874	HELSPH
<i>Hyalosphenia elegans</i>	Leidy, 1874	HYAELE
<i>Hyalosphenia papilio</i>	Leidy, 1874	HYAPAP
<i>Hyalosphenia subflava</i>	Cash and Hopkinson, 1909	HYASUB
<i>Lesquereusia spiralis</i>	(Ehrenberg, 1840)	LESSPI
<i>Microcorycia radiata</i>	(Brown, 1912) Hopkinson, 1919	MICRAD

<i>Nebela barbata</i>	Leidy, 1874	NEBBAR
<i>Nebela carinata</i>	Penard, 1890	NEBCAR
<i>Nebela collaris</i>	(Ehrenberg, 1848) sensu Kosakyan et Gomaa, 2012	NEBCOL
<i>Nebela flabellulum</i>	(Leidy, 1874)	NEBFLA
<i>Nebela tincta</i>	(Ehrenberg, 1848) sensu Kosakyan et Gomaa, 2012	NEBTIN
<i>Padaungiella tubulata</i>	(Brown, 1911) Lara et Todorov, 2012	PADTUB
<i>Phryganella acropodia</i>	(Hertwig et Lesser, 1874) Hopkinson, 1909	PHRACR
<i>Planocarina marginata</i>	Penard, 1902	PLAMAR
<i>Pyxidicula operculata</i>	(Agardh, 1827) Ehrenberg, 1838	PYXOPE
<i>Quadrullella symmetrica</i>	(Wallich, 1863)	QUESYM
<i>Sphenoderia fissirostris tipo</i>	Penard, 1890	SPHFIS
<i>Sphenoderia lenta</i>	Schlumberger, 1845	SPHLEN
<i>Sphenoderia macrolepis</i>	Leidy, 1879	SPHMAC
<i>Sphenoderia minuta</i>	Deflandre, 1931	SPHMIN
<i>Sphenoderia sp. 1</i>		SPHSP1
<i>Trigonopyxis arcula</i>	(Leidy, 1879)	TRIARC
<i>Trinema complanatum</i>	Penard, 1890	TRICOM
<i>Trinema enchelys</i>	(Ehrenberg, 1838)	TRIENC
<i>Trinema lineare</i>	Penard, 1890	TRILIN
<i>Trinema penardi</i>	Thomas et Chardez, 1958	TRIPEN
<i>Wailesella eboracensis</i>	(Wailes et Penard, 1911) Deflandre, 1928	WAIEBO

Table S2. Diversity and mean relative abundances of testate amoebae from Sphagnum samples with mean abundance greater than 10 % in at least one peatland ecosystem in the thirty-seven peatlands studied in the western Iberian Peninsula.

Peatland Code	Testate amoeba taxa (%)																
	CENACU	CENAER	NEBCAR	NEBCOL	NEBMIL	NEBLON	HELPET	HELROS	CORDUB	ASSMUS	ASSSEM	TRILIN	EUGROT	EUGSTRI	EUGCOM	PADTUB	MICRAD
CA_CF	9.47	2.96	1.18	5.92	2.37	1.18	4.14	2.37	1.78	2.37	6.51	13.61	2.96	8.28	1.78	0.00	0.00
CA_QUE	9.80	2.45	0.49	6.37	3.43	0.49	1.96	2.94	3.43	3.43	7.35	11.76	2.94	7.35	1.96	0.00	0.00
X_VRRT	6.58	3.29	0.66	7.89	3.29	0.00	5.26	4.61	3.29	1.97	7.24	5.26	3.29	5.26	1.32	0.00	0.00
X_TPG	4.00	4.67	0.67	4.00	4.00	0.00	5.33	3.33	4.67	1.33	4.67	3.33	4.00	4.67	0.67	0.00	0.00
X_VR	4.85	1.82	0.61	5.45	4.24	0.00	6.67	1.82	1.82	2.42	8.48	4.24	4.85	3.03	1.82	0.00	0.00
X_TR	4.04	4.17	1.16	4.17	2.09	0.00	12.51	8.34	10.04	9.54	7.73	1.04	10.43	1.04	1.04	0.00	0.00
X_CVM	2.80	2.80	0.42	5.23	4.92	0.00	7.51	2.94	12.24	2.29	2.55	1.16	4.75	3.85	1.16	0.00	0.00
X_TF	10.19	1.27	1.27	5.73	1.91	0.00	5.73	2.55	1.27	0.64	3.82	5.10	2.55	1.91	1.27	0.00	0.00
X_VT	0.00	3.11	0.62	8.70	2.48	0.00	3.11	3.73	2.48	2.48	7.45	3.73	4.35	2.48	1.86	0.00	0.00
ANC_CE1	4.80	2.13	4.27	9.60	3.73	0.00	7.47	3.20	5.87	3.73	7.47	5.33	2.67	0.00	1.07	0.00	0.00
LOR_GB	0.00	3.83	0.00	9.36	4.68	0.00	6.38	2.98	2.55	0.00	10.64	6.38	2.55	1.28	0.00	2.55	0.00
E_CC	8.53	0.00	0.78	5.43	1.55	1.55	4.65	2.33	19.38	6.20	6.20	5.43	2.33	6.20	0.00	0.00	0.00
E_CT	9.51	0.00	0.68	5.43	1.36	0.68	2.72	2.72	21.06	3.91	8.32	6.11	1.36	6.11	0.00	0.00	0.00
E_PGU	7.74	0.00	0.79	7.09	1.58	1.58	2.36	3.94	19.69	7.43	10.69	3.15	3.15	2.36	0.00	0.00	0.00
E_LS	11.20	0.00	0.55	2.76	1.10	1.65	2.76	1.65	15.44	2.76	8.82	4.41	4.96	6.62	0.00	0.00	0.00
X_CL	2.55	4.09	2.73	11.36	4.09	0.00	2.73	4.09	13.64	8.18	6.09	5.45	0.00	0.00	0.00	0.00	0.00
X_PC	2.60	2.70	2.70	11.71	3.60	0.00	1.35	3.15	14.61	7.36	8.31	6.76	0.00	0.00	0.00	0.00	0.00
TC_PG1	0.00	0.00	0.00	25.00	0.00	0.00	0.00	7.69	0.00	1.92	19.23	1.92	0.00	30.77	0.00	0.00	0.00
TC_PG3	0.00	0.00	0.00	30.84	0.00	0.00	0.00	5.61	0.00	6.54	19.63	0.00	0.00	29.63	0.00	0.00	0.00
TC_GZ	0.00	0.00	0.00	36.63	0.00	0.00	1.98	2.50	0.00	2.50	15.00	0.00	5.74	32.67	0.00	0.00	0.00
BO_B32	2.73	16.36	0.00	36.36	0.00	0.00	0.00	3.64	1.82	0.00	0.00	0.91	10.91	0.00	0.00	0.00	0.00
BO_RA31	0.00	0.00	0.00	41.96	0.00	0.00	7.14	3.57	20.54	0.00	0.00	10.71	0.00	0.00	0.00	0.00	0.00
SU_C19	3.25	9.79	11.35	9.09	4.41	0.00	14.50	2.52	0.00	18.91	3.04	1.30	1.95	0.00	3.15	0.00	0.00
SU_C21	3.73	10.45	6.83	7.45	7.45	0.00	9.32	4.35	0.00	16.15	6.94	2.48	1.24	0.00	0.62	0.00	0.00
SU_C26	2.17	8.25	10.14	15.22	1.45	0.00	17.39	1.45	0.00	12.32	2.62	3.62	2.17	0.00	1.45	0.00	0.00
SU_C32	1.73	7.67	4.62	23.70	0.00	0.00	8.36	5.20	0.00	17.92	5.36	1.16	3.47	0.00	0.00	0.00	0.00
AG_V10	0.00	19.00	0.00	23.00	0.00	0.00	0.00	0.00	0.00	21.00	5.00	0.00	8.00	16.00	0.00	0.00	0.00
LIR_VB124	0.00	0.00	0.00	29.52	0.00	0.00	23.86	8.57	22.29	6.67	2.86	0.00	1.90	0.00	0.00	0.00	0.00
LIR_VD129	1.87	0.00	0.00	42.06	10.28	0.00	0.00	2.80	20.00	6.17	5.61	0.00	0.00	0.00	0.00	0.00	0.00
LIR_VC32	0.00	13.19	0.00	12.09	1.10	0.00	8.79	2.20	15.38	9.89	3.30	0.00	0.00	16.48	0.00	0.00	0.00
BA_118.2	1.62	27.60	0.00	1.62	0.00	0.00	11.37	0.00	0.00	1.62	0.81	2.44	7.31	26.79	2.44	0.00	0.00
BA_118.3	0.76	25.18	0.00	0.76	0.00	0.00	12.97	0.00	0.00	6.87	1.53	6.87	4.58	22.89	0.76	0.00	0.00
BA_118.6	3.17	33.26	0.00	2.38	0.00	0.00	9.50	0.00	0.00	3.17	0.79	6.34	2.38	22.18	1.58	0.00	0.00
BA_118.7	4.62	15.40	0.00	1.54	0.00	0.00	11.55	0.00	0.00	5.39	0.77	4.62	8.47	22.33	5.39	0.00	0.00
CO_AIC	0.00	51.92	0.00	5.77	0.00	0.00	0.00	11.54	20.19	2.88	0.96	0.00	0.00	0.00	0.00	0.00	0.00
AG_G5	0.00	0.00	21.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	16.00	0.00	7.00	0.00	17.00	0.00	0.00
CO_PL	0.00	5.13	3.20	0.00	0.00	12.65	0.00	0.00	0.00	2.56	0.00	0.00	4.49	0.00	0.00	11.53	10.25

Table S3. Mean water chemistry data, functional groups and diversity of testate amoeba of the studied Iberian peatlands.

Peatlands Code	pH	Electrical Conductivity	Calcium	Magnesium	Nitrate	Nitrite	Ammonium	DIN	Phosphates	Anthropized Area	Shannon Index	Mixotrophic	r-Strategists	K-Strategists	Indifferent	L:F ratio
		($\mu\text{S cm}^{-1}$)	(mg l^{-1})	(mg l^{-1})	(mg l^{-1})	(mg l^{-1})	(mg l^{-1})	(mg l^{-1})	(mg l^{-1})	(%)						
CA_CF	5.88	64.20	2.27	3.00	0.61	0.35	0.24	1.20	0.04	58.6	3.16	5.92	34.32	31.36	28.40	0.91
CA_QUE	6.79	66.00	3.69	3.20	1.47	0.27	0.06	1.80	0.03	47.6	3.14	6.86	35.78	31.78	25.57	0.89
X_VRRT	5.32	76.10	1.13	0.79	0.77	0.02	0.08	0.88	0.01	7.6	3.44	3.29	35.53	32.24	28.95	0.91
X_TPG	4.66	44.81	1.52	0.64	2.56	0.03	0.08	2.67	0.05	5.0	3.39	9.33	34.00	37.25	19.41	1.10
X_VR	4.44	48.00	1.17	0.73	0.47	0.04	0.06	0.58	0.06	5.0	3.45	4.24	40.00	35.76	20.00	0.89
X_TR	5.01	66.30	2.19	1.04	0.62	0.03	0.09	0.74	0.08	5.0	2.82	3.13	17.96	24.25	54.67	1.35
X_CVM	4.09	81.62	0.56	0.47	0.36	0.04	0.06	0.46	0.03	5.0	3.55	9.09	31.68	28.31	30.91	0.89
X_TF	4.38	29.80	0.16	0.28	0.03	0.04	0.05	0.13	0.01	5.0	3.40	10.19	31.85	38.79	19.17	1.22
X_VT	4.98	61.40	2.20	0.89	0.38	0.02	0.06	0.46	0.05	5.0	3.34	3.73	38.51	41.20	16.56	1.07
X_CL	3.91	72.35	0.36	0.58	0.31	0.02	0.07	0.41	0.03	5.0	2.96	11.36	30.45	40.94	17.24	1.34
X_PC	4.00	70.74	0.28	0.45	0.35	0.03	0.06	1.00	0.04	5.0	2.93	10.81	30.63	24.77	33.78	0.81
TC_PG1	3.90	75.70	4.39	0.52	0.67	0.04	0.21	0.92	0.09	15.2	1.77	2.88	34.62	36.54	25.96	1.06
TC_PG3	4.09	50.60	3.81	0.14	0.57	0.03	0.23	0.83	0.04	12.8	1.72	15.89	19.63	40.43	24.06	2.06
TC_GZ	5.60	108.72	2.32	0.82	0.10	0.03	0.15	0.28	0.06	81.4	1.28	0.00	58.42	38.56	3.03	0.66
CO_ALC	6.40	121.60	1.34	1.11	1.40	0.02	0.39	1.81	0.02	100	1.45	0.00	20.19	61.56	18.25	3.05
CO_PL	5.63	26.10	0.60	0.49	0.24	0.31	0.11	0.66	0.03	100	2.69	0.00	14.10	42.45	43.45	3.01
BO_B32	5.38	34.10	1.04	0.34	0.18	0.02	0.06	0.26	0.03	19.7	2.15	0.00	21.82	64.22	13.96	2.94
BO_RA31	5.31	23.40	0.57	0.40	0.09	0.03	0.03	0.15	0.05	26.2	1.76	0.00	39.29	45.57	15.15	1.16
BA_118.2	5.23	40.10	0.43	0.30	0.91	0.02	0.08	1.01	0.03	35.7	2.16	0.00	43.84	42.78	13.38	0.98
BA_118.3	5.20	37.70	0.46	0.41	0.18	0.03	0.20	0.41	0.05	41.3	2.22	0.00	37.39	40.73	21.88	1.09
BA_118.6	4.84	111.60	1.36	1.11	0.12	0.08	0.03	0.22	0.03	37.6	2.15	0.00	36.43	50.42	13.14	1.38

BA_118.7	4.77	61.00	0.58	0.54	0.22	0.02	0.03	0.26	0.03	23.8	2.41	0.00	46.20	35.87	17.93	0.78
ANC_CE1	6.11	73.67	0.76	0.63	0.21	0.03	0.06	0.30	0.05	5.0	3.20	4.80	21.34	34.76	39.11	1.63
SU_C19	4.58	34.10	0.51	0.11	0.09	0.05	0.05	0.18	0.04	14.8	2.64	2.52	13.47	43.59	40.42	3.24
SU_C21	4.52	8.82	0.41	0.05	0.06	0.02	0.06	0.14	0.05	9.6	2.74	0.00	11.18	44.83	43.99	4.01
SU_C26	4.93	22.50	0.60	0.18	0.29	0.02	0.04	0.35	0.03	7.3	2.59	0.00	12.32	46.48	41.20	3.77
SU_C32	4.92	20.80	0.47	0.17	2.80	0.09	0.03	2.92	0.03	5.0	2.46	0.00	13.87	48.14	37.99	3.47
AG_G5	5.12	47.20	1.61	0.40	0.77	0.02	0.03	0.81	0.06	86.4	1.69	9.00	24.00	51.00	16.00	2.13
AG_V10	4.66	56.40	1.37	0.53	3.98	0.02	0.10	4.10	0.04	77.3	1.83	0.00	32.00	42.00	26.00	1.31
LOR_GB	6.70	92.65	1.27	1.12	0.15	0.04	0.03	0.22	0.05	43.8	1.88	10.48	19.05	29.52	40.95	1.55
LIR_VB124	6.45	325.00	6.32	7.17	0.50	0.58	0.02	1.10	0.08	33.5	3.32	5.96	25.53	35.39	33.12	1.39
LIR_VD129	5.41	265.00	8.63	8.57	0.40	0.02	0.06	0.48	0.08	5.0	1.63	0.00	4.67	54.21	41.12	11.60
LIR_VC32	5.43	42.20	0.39	0.31	0.46	0.04	0.06	0.57	0.06	12.6	2.32	8.79	31.87	30.77	28.57	0.97
E_CC	4.97	38.20	0.36	0.27	0.05	0.02	0.03	0.10	0.03	0.0	2.83	2.33	48.84	25.58	23.26	0.52
E_CT	5.03	40.63	0.42	0.31	0.04	0.03	0.03	0.10	0.04	0.0	2.76	2.04	50.95	32.21	14.80	0.63
E_PGU	4.81	29.46	0.28	0.22	0.03	0.02	0.04	0.09	0.05	0.0	2.79	1.58	44.90	31.08	22.45	0.69
E_LS	5.12	36.21	0.40	0.35	0.05	0.03	0.05	0.13	0.03	0.0	2.85	5.88	51.28	28.85	13.99	0.56
Total ranges	3.9 – 6.79	8.82 - 325	0.16 – 8.63	0.05 – 8.57	0.03 - 3.98	0.02 - 0.58	0.02 - 0.39	0.09 - 4.10	0.01 - 0.09	0.0 -100	1.28 – 3.54					

Table S4. Spearman's correlation coefficients for the environmental variables and testate functional groups of the Western Iberian peatlands. Student's t-test was used to indicate statistically significant correlations (p-value < 0.05 * (orange); < 0.1 ** (yellow)).

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