

**Supplementary Table S2.** List of original series of plankton taxa along with mean, sd and trends. The number used to identify the series in the text and figures is also indicated. S and Z: statistics of the Mann-Kendall trend test. Significant ( $p < 0.05$ ) values were marked with a yellow background.

series	series no.	variable	units	mean	se	Mann-Kendall test			Content
						S	Z	p	
Phytoplankton	85	Bact-deli	cell mL <sup>-1</sup>	0.39	0.30	-29	0.898	0.369	<i>Bacteriastrum delicatulum</i> , Cleve, 1897
	86	Cerl-pela	cell mL <sup>-1</sup>	1.75	0.94	-16	0.453	0.651	<i>Cerataulina pelagica</i> , (Cleve) Hendey, 1937
	87	Chae-affi	cell mL <sup>-1</sup>	17.37	5.42	18	0.513	0.608	<i>Chaetoceros affinis</i> , Lauder, 1864
	88	Chae-comp	cell mL <sup>-1</sup>	4.31	1.04	-2	0.030	0.976	<i>Chaetoceros compressus</i> , Lauder, 1864
	89	Chae-debi	cell mL <sup>-1</sup>	0.24	0.07	-24	0.739	0.460	<i>Chaetoceros debilis</i> , Cleve, 1894
	90	Chae-didy	cell mL <sup>-1</sup>	3.28	0.76	2	0.030	0.976	<i>Chaetoceros didymus</i> , Ehrenberg, 1845
	91	Chae-grac	cell mL <sup>-1</sup>	2.72	1.20	-18	0.529	0.597	<i>Chaetoceros gracilis</i> , Pantocsek, 1892
	92	Chae-soci	cell mL <sup>-1</sup>	171.92	33.99	-4	0.091	0.928	<i>Chaetoceros socialis</i> , H.S.Lauder, 1864
	93	Dact-frag	cell mL <sup>-1</sup>	3.35	1.45	11	0.302	0.763	<i>Dactyliosolen fragilissimus</i> , (Bergon) Hasle apud G.R.Hasle & Syvertsen, 1996
	94	Dist-spec	cell mL <sup>-1</sup>	0.28	0.06	-4	0.091	0.928	<i>Octactis speculum</i> , (Ehrenberg) F.H.Chang, J.M.Grieve & J.E.Sutherland, 2017
	95	Eutl-spp	cell mL <sup>-1</sup>	0.20	0.03	-33	0.967	0.334	<i>Eutreptiella</i> spp, A.da Cunha, 1914
	96	Guin-stri	cell mL <sup>-1</sup>	1.86	0.81	-22	0.634	0.526	<i>Guinardia striata</i> , (Stolterfoth) Hasle, 1997
	97	Laud-annu	cell mL <sup>-1</sup>	2.09	0.68	-46	1.359	0.174	<i>Lauderia annulata</i> , Cleve, 1873
	98	Neoc-line	cell mL <sup>-1</sup>	0.46	0.39	1	0.000	1.000	<i>Triplos lineatus</i> , (Ehrenberg) F.Gómez, 2013
	99	Para-sulc	cell mL <sup>-1</sup>	0.08	0.02	-31	0.907	0.364	<i>Paralia sulcata</i> , (Ehrenberg) Cleve, 1873
	100	Rhiz-imbr	cell mL <sup>-1</sup>	0.38	0.05	-6	0.151	0.880	<i>Rhizosolenia imbricata</i> , Brightwell, 1858
	101	Skel-cost	cell mL <sup>-1</sup>	16.32	9.23	-84	2.506	0.012	<i>Skeletonema costatum</i> , (Greville) Cleve, 1873

series	series no.	variable	units	mean	se	Mann-Kendall test			Content
						S	Z	p	
Phytoplankton	102	Thal-anta	cell mL <sup>-1</sup>	2.52	0.85	-26	0.755	0.450	<i>Thalassiosira antarctica</i> , Comber, 1896
	103	Asto-glac	cell mL <sup>-1</sup>	6.45	2.63	18	0.513	0.608	<i>Asterionellopsis glacialis</i> , (Castracane) Round, 1990
	104	Chae-cost	cell mL <sup>-1</sup>	0.41	0.16	-8	0.218	0.827	<i>Chaetoceros costatus</i> , Pavillard, 1911
	105	Chae-curv	cell mL <sup>-1</sup>	3.54	2.16	69	2.054	0.040	<i>Chaetoceros curvisetus</i> , Cleve, 1889
	106	Chae-deci	cell mL <sup>-1</sup>	0.58	0.16	-65	1.934	0.053	<i>Chaetoceros decipiens</i> , Cleve, 1873
	107	Chae-simp	cell mL <sup>-1</sup>	1.82	1.40	16	0.521	0.602	<i>Chaetoceros simplex</i> , Ostensfeld, 1902
	108	Chae-spp	cell mL <sup>-1</sup>	22.36	4.82	88	2.627	0.009	<i>Chaetoceros</i> spp, Ehrenberg, 1844
	109	Deto-pumi	cell mL <sup>-1</sup>	7.14	1.72	-64	1.902	0.057	<i>Detonula pumila</i> , (Castracane) Gran, 1900
	110	Dict-fibu	cell mL <sup>-1</sup>	0.12	0.03	64	1.902	0.057	<i>Dictyocha fibula</i> , Ehrenberg, 1839
	111	Dino-acum	cell mL <sup>-1</sup>	0.10	0.03	34	0.997	0.319	<i>Dinophysis acuminata</i> , Claparède & Lachmann, 1859
	112	Guin-deli	cell mL <sup>-1</sup>	8.42	2.13	-6	0.151	0.880	<i>Guinardia delicatula</i> , (Cleve) Hasle, 1997
	113	Kato-glau	cell mL <sup>-1</sup>	1.27	0.67	72	2.144	0.032	<i>Katodinium glaucum</i> , (Lebour) Loeblich III, 1965
	114	Lept-dani	cell mL <sup>-1</sup>	81.96	35.67	-5.0	0.121	0.904	<i>Leptocylindrus danicus</i> , Cleve, 1889
	115	Lept-mini	cell mL <sup>-1</sup>	4.44	1.25	50.0	1.480	0.139	<i>Leptocylindrus minimus</i> , Gran, 1915
	116	Navi-tran	cell mL <sup>-1</sup>	0.66	0.07	124.0	3.714	0.000	<i>Navicula transitans</i> , Cleve, 1883
	117	Neoc-furc	cell mL <sup>-1</sup>	0.07	0.01	6.0	0.151	0.880	<i>Tripos furca</i> , (Ehrenberg) F.Gómez, 2013
	118	Neoc-fusu	cell mL <sup>-1</sup>	0.05	0.01	-22.0	0.634	0.526	<i>Tripos fusus</i> , (Ehrenberg) F.Gómez, 2013
	119	Nitz-long	cell mL <sup>-1</sup>	13.61	4.98	54	1.600	0.110	<i>Nitzschia longissima</i> , (Brébisson) Ralfs, 1861
	120	Nitz-spp	cell mL <sup>-1</sup>	0.98	0.24	28	0.819	0.413	<i>Nitzschia</i> spp, Hassall, 1845
	121	Phae-pouc	cell mL <sup>-1</sup>	9.52	2.95	-12	0.332	0.740	<i>Phaeocystis pouchetii</i> , (M.P. Hariot, 1892) G. Lagerheim, 1896

series	series no.	variable	units	mean	se	Mann-Kendall test			Content
						S	Z	p	
Phytoplankton	122	Prob-alat	cell mL <sup>-1</sup>	1.66	0.42	58	1.721	0.085	<i>Proboscia alata</i> , (Brightwell) Sundström, 1986
	123	Pror-balt	cell mL <sup>-1</sup>	3.32	1.46	66	1.963	0.050	<i>Prorocentrum balticum</i> , (Lohmann, 1908) Loeblich, 1970 [Krakhmalny & Terenko, (2002)]
	124	Pror-mica	cell mL <sup>-1</sup>	0.97	0.68	38	1.117	0.264	<i>Prorocentrum micans</i> , Ehrenberg, 1834
	125	Prot-bipe	cell mL <sup>-1</sup>	0.16	0.02	44	1.299	0.194	<i>Protoperidinium bipes</i> , (Paulsen, 1904) Balech, 1974
	126	Psen-deli	cell mL <sup>-1</sup>	9.62	2.65	80	2.386	0.017	<i>Pseudo-nitzschia delicatissima</i> , (P.T. Cleve, 1897) Heiden, 1928
	127	Psen-pung	cell mL <sup>-1</sup>	21.16	4.15	-52	1.540	0.124	<i>Pseudo-nitzschia pungens</i> , (Grunow ex P.T. Cleve, 1897) Hasle, 1993
	128	Rhiz-seti	cell mL <sup>-1</sup>	1.25	0.65	-44	1.300	0.194	<i>Rhizosolenia setigera</i> , Brightwell, 1858
	129	Scri-troc	cell mL <sup>-1</sup>	1.55	0.41	31	0.906	0.365	<i>Scrippsiella trochoidea</i> , (Stein) Balech ex Loeblich III, 1965
	130	Thal-anli	cell mL <sup>-1</sup>	0.28	0.10	12	0.333	0.739	<i>Thalassiosira anguste-lineata</i> , (A.Schmidt) G.Fryxell & Hasle, 1977
	131	Thal-anlt	cell mL <sup>-1</sup>	0.84	0.29	86	2.567	0.010	<i>Thalassiosira angulata</i> , (W.Gregory) Hasle, 1978
	132	Thal-leva	cell mL <sup>-1</sup>	13.92	10.83	90	2.688	0.007	<i>Thalassiosira levanderi</i> , van Goor, 1924
	133	Thal-oest	cell mL <sup>-1</sup>	0.99	0.40	-47	1.407	0.159	<i>Thalassiosira oestrupii</i> , (Ostenfeld) Hasle, 1972
	134	Thal-rotu	cell mL <sup>-1</sup>	1.57	0.49	-6	0.151	0.880	<i>Thalassiosira rotula</i> , Meunier, 1910
	135	Than-nitz	cell mL <sup>-1</sup>	2.17	0.49	46	1.359	0.174	<i>Thalassionema nitzschioides</i> , (Grunow) Mereschowsky, 1902
	136	Toro-robu	cell mL <sup>-1</sup>	0.40	0.05	94	2.808	0.005	<i>Torodinium robustum</i> , Kofoed & Swezy, 1921
	137	Gyro-spir	cell mL <sup>-1</sup>	0.33	0.04	80	2.386	0.017	<i>Gyrodinium spirale</i> , (Bergh, 1881) Kofoed & Swezy, 1921
	138	Hete-niei	cell mL <sup>-1</sup>	6.86	1.49	70	2.084	0.037	<i>Heterocapsa niei</i> , (Loeblich III, 1968) Morrill & Loeblich III, 1981

series	series no.	variable	units	mean	se	Mann-Kendall test			Content
						S	Z	p	
Mesozooplankton	139	Peni-avir	indiv. m <sup>-3</sup>	0.17	0.07	-90	2.130	0.033	<i>Penilia avirostris</i> , Dana, 1849
	140	Podo-inte	indiv. m <sup>-3</sup>	101.70	11.92	96	1.782	0.075	<i>Podon intermedius</i> , Lilljeborg, 1853
	141	Evad-nord	indiv. m <sup>-3</sup>	67.91	10.38	54	0.994	0.320	<i>Evadne nordmanni</i> , Lovén, 1836
	142	Evad-spin	indiv. m <sup>-3</sup>	7.82	4.14	170	3.223	0.001	<i>Evadne spinifera</i> , P.E.Müller, 1867
	143	Cent-ch_a	indiv. m <sup>-3</sup>	30.46	4.44	-94	2.172	0.030	<i>Centropages chierchiae</i> , Giesbrecht, 1889
	144	Cten-vanu	indiv. m <sup>-3</sup>	18.96	2.74	-156	3.620	0.000	<i>Ctenocalanus vanus</i> , Giesbrecht, 1888
	145	Isia-clav	indiv. m <sup>-3</sup>	1.46	0.59	-110	2.612	0.009	<i>Isias clavipes</i> , Boeck, 1865
	146	Oith-plum	indiv. m <sup>-3</sup>	30.06	5.10	-100	2.312	0.021	<i>Oithona plumifera</i> , Baird, 1843
	147	Temo-lo_a	indiv. m <sup>-3</sup>	56.23	6.47	-114	2.639	0.008	<i>Temora longicornis</i> , (Müller O.F., 1785)
	148	Temo-st_a	indiv. m <sup>-3</sup>	9.14	2.47	-115	2.663	0.008	<i>Temora stylifera</i> , (Dana, 1849)
	149	Acar-cl_a	indiv. m <sup>-3</sup>	322.98	37.58	34	0.771	0.441	<i>Acartia (Acartiura) clausi</i> , Giesbrecht, 1889
	150	Aeti-arma	indiv. m <sup>-3</sup>	0.35	0.18	-23	0.583	0.560	<i>Aetideus armatus</i> , Boeck, 1872
	151	Cala-he_a	indiv. m <sup>-3</sup>	20.12	2.93	49	1.121	0.262	<i>Calanus helgolandicus</i> , Claus, 1863
	152	Cald-ca_a	indiv. m <sup>-3</sup>	20.29	3.17	-20	0.444	0.657	<i>Calanoides carinatus</i> , Krøyer, 1849
	153	Calo-styl	indiv. m <sup>-3</sup>	10.38	2.67	-56	1.285	0.199	<i>Calocalanus styliremis</i> , Giesbrecht, 1888
	154	Cand-arma	indiv. m <sup>-3</sup>	3.65	0.53	54	1.238	0.216	<i>Candacia armata</i> , Boeck, 1872
	155	Clau-spp	indiv. m <sup>-3</sup>	93.12	10.79	-58	1.331	0.183	<i>Clausocalanus</i> spp, Giesbrecht, 1888
	156	Clyt-rost	indiv. m <sup>-3</sup>	1.30	0.27	21	0.467	0.640	<i>Goniopsyllus rostratus</i> , Brady, 1883
	157	Diai-pygm	indiv. m <sup>-3</sup>	4.99	1.79	-28	0.631	0.528	<i>Diaxis pygmaea</i> , Corral-Estrada, 1972
	158	Ditr-angl	indiv. m <sup>-3</sup>	5.51	1.27	-59	1.357	0.175	<i>Ditrichocorycaeus anglicus</i> , (Lubbock, 1857)
	159	Eute-acut	indiv. m <sup>-3</sup>	11.31	2.03	-4	0.070	0.944	<i>Euterpina acutifrons</i> , (Dana, 1847)
	160	Mecy-tenu	indiv. m <sup>-3</sup>	0.37	0.09	-36	0.847	0.397	<i>Calocalanus tenuis</i> , Farran, 1926
	161	Meso-te_a	indiv. m <sup>-3</sup>	2.36	0.49	-54	1.239	0.216	<i>Mesocalanus tenuicornis</i> , Dana, 1849

series	series no.	variable	units	mean	se	Mann-Kendall test			Content
						S	Z	p	
Meso zooplankton	162	Metr-luce	indiv. m <sup>-3</sup>	3.25	0.41	-56	1.285	0.199	<i>Metridia lucens</i> , Boeck, 1865
	163	Mise-rose	indiv. m <sup>-3</sup>	1.03	0.31	30	0.683	0.495	<i>Microsetella rosea</i> , (Dana, 1848)
	164	Onca-medi	indiv. m <sup>-3</sup>	374.48	77.78	4	0.070	0.944	<i>Oncaea media</i> , Giesbrecht, 1891
	165	Paca-pa_a	indiv. m <sup>-3</sup>	240.05	22.83	-12	0.257	0.797	<i>Paracalanus parvus</i> , (Claus, 1863)
	166	Paeu-heb_a	indiv. m <sup>-3</sup>	15.18	3.18	-80	1.845	0.065	<i>Paraeuchaeta hebes</i> , Giesbrecht, 1888
	167	Pleu-grac	indiv. m <sup>-3</sup>	0.36	0.06	-35	0.795	0.426	<i>Pleuromamma gracilis</i> , (Claus, 1863)
	168	Pseu-elon	indiv. m <sup>-3</sup>	146.78	28.44	26	0.584	0.559	<i>Pseudocalanus elongatus</i> , (Boeck, 1865)
	169	Sube-cras	indiv. m <sup>-3</sup>	1.70	0.41	-46	1.054	0.292	<i>Subeucalanus crassus</i> , (Giesbrecht, 1888)
	170	Cent-typi	indiv. m <sup>-3</sup>	7.19	1.72	130	3.017	0.003	<i>Centropages typicus</i> , Krøyer, 1849
	171	Cory-spp	indiv. m <sup>-3</sup>	0.84	0.34	107	2.808	0.005	<i>Corycaeus</i> spp, Dana, 1845
	172	Oith-nana	indiv. m <sup>-3</sup>	21.63	4.60	89	2.056	0.040	<i>Oithona nana</i> , Giesbrecht, 1893
	173	Oith-simi	indiv. m <sup>-3</sup>	101.37	13.63	146	3.387	0.001	<i>Oithona similis</i> , (Claus, 1863)

