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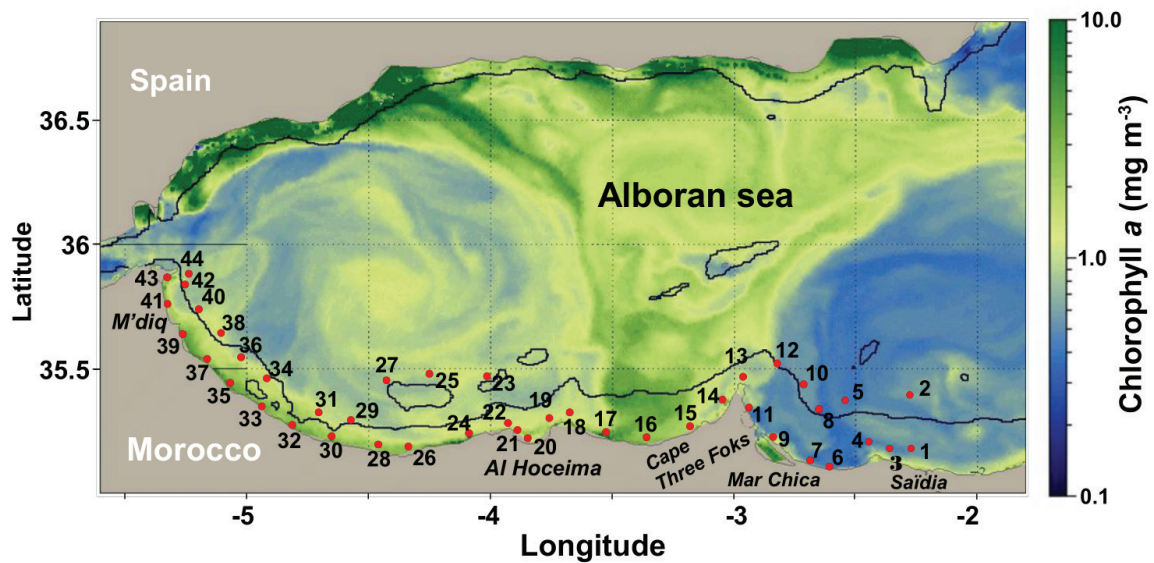
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## Patterns of microphytoplankton biomass and diversity in the southern Alboran Sea

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**Fig. S1:** Chlorophyll a concentration (logarithmic scale) from the MODIS sensor on 17 April 2018. The 200 m isobath is superimposed.

**Table S1.** Information on sampling stations during the cruise. Chlorophyll and phytoplankton data were collected and analysed at all stations.

Station	Day	Time	Longitude	Latitude	Bottom	CTD Profiles
1	17/04/2018	07h55	-2.26333	35.17833	58	✓
2	17/04/2018	11h40	-2.25833	35.39500	338	✓
3	17/04/2018	15H42	-2.34138	35.17805	19	✓
4	17/04/2018	17H30	-2.42277	35.20611	76	✓
5	17/04/2018	19H25	-2.49222	35.37250	313	✓
6	18/04/2018	10H25	-2.59194	35.10722	22	✓
7	18/04/2018	16H10	-2.67916	35.13333	25	✓
8	18/04/2018	18H20	-2.65000	35.33888	255	✓
9	18/04/2018	20H15	-2.83277	35.22277	25	✓
10	19/04/2018	11H56	-2.68555	35.43666	245	✓
011	19/04/2018	13H43	-2.89722	35.34277	38	
12	19/04/2018	16H46	-2.78083	35.51916	275	✓
13	19/04/2018	19H38	-2.93972	35.46583	52	✓
14	20/04/2018	07H36	-3.03950	35.36500	53	✓
15	20/04/2018	12H57	-3.17300	35.26050	25	✓
16	20/04/2018	16H13	-3.31194	35.22222	40	✓
17	20/04/2018	20H35	-3.47861	35.24333	37	✓
18	22/04/2018	07H14	-3.66277	35.32277	45	✓
19	22/04/2018	10H23	-3.74444	35.29916	55	✓
20	22/04/2018	12H52	-3.83183	35.21733	19	✓
21	22/04/2018	17H14	-3.88333	35.25194	66	✓
22	22/04/2018	16H38	-3.90972	35.28027	60	✓
23	23/04/2018	09H21	-3.99027	35.46944	385	✓
24	23/04/2018	11H31	-4.08222	35.23888	85	
25	23/04/2018	15H42	-4.21944	35.47750	550	✓
26	23/04/2018	19H31	-4.32666	35.18450	83	✓
27	23/04/2018	23H14	-4.37750	35.45250	460	✓
28	24/04/2018	09H23	-4.44305	35.19388	60	
29	24/04/2018	10H33	-4.56333	35.29166	320	
30	24/04/2018	13H46	-4.61666	35.22583	70	
31	24/04/2018	15H00	-4.66472	35.32305	315	
32	24/04/2018	16H08	-4.75750	35.27055	52	
33	24/04/2018	20H01	-4.89777	35.34944	53	
34	24/04/2018	22H15	-4.88472	35.46000	347	
35	25/04/2018	08h28	-5.03611	35.44166	28	
36	25/04/2018	09H40	-4.97972	35.54416	300	
37	25/04/2018	11H22	-5.14111	35.53722	49	
38	25/04/2018	13H37	-5.06361	35.64305	300	
39	25/04/2018	15H07	-5.20750	35.64027	22	
40	25/04/2018	17H59	-5.13972	35.74083	315	
41	25/04/2018	19H31	-5.31194	35.76111	25	
42	25/04/2018	23H42	-5.24972	35.83888	240	
43	25/04/2018	21H15	-5.30972	35.86805	27	
44	25/04/2018	22H59	-5.23111	35.88333	391	

**Table S2.** Occurrence of the 106 taxa along the Moroccan Mediterranean Coast.

Group	Family	Genera/Species	Occurrence Surface	Occurrence Depth
Diatoms	Achnantheaceae	<i>Achnanthes</i> Bory, 1822	2	--
	Asterolampraceae	<i>Asterolampra</i> Ehrenberg, 1844	--	3
	Bacillariaceae	<i>Cylindrotheca closterium</i> (Ehrenberg) Reimann & J.C.Lewin 1964	36	22
		<i>Nitzschia</i> Hassall, 1845	42	42
		<i>Nitzschia longissima</i> (Brébisson) Ralfs 1861	13	4
		<i>Pseudo-nitzschia</i> H.Peragallo, 1900	41	39
		<i>Amphora</i> Ehrenberg ex Kützing, 1844	5	--
	Chaetocerotaceae	<i>Bacteriastrum</i> Shadbolt, 1854	4	8
		<i>Chaetoceros</i> Ehrenberg, 1844	19	10
	Cocconeidaceae	<i>Cocconeis</i> Ehrenberg, 1836	--	2
	Coscinodiscaceae	<i>Coscinodiscus</i> Ehrenberg, 1839	6	--
	Diploneidaceae	<i>Diploneis</i> Ehrenberg ex Cleve, 1894	7	--
		<i>Diploneis bombus</i> (Ehrenberg) Ehrenberg 1853	1	1
		<i>Diploneis crabro</i> (Ehrenberg) Ehrenberg 1854	1	--
	Hemiaulaceae	<i>Hemiaulus</i> Heiberg, 1863	1	1
	Hemidiscaceae	<i>Actinocyclus octonarius</i> Ehrenberg 1837	2	--
	Lauderiaceae	<i>Lauderia annulata</i> Cleve 1873	11	2
	Leptocylindraceae	<i>Leptocylindrus danicus</i> Cleve 1889	16	11
		<i>Leptocylindrus mediterraneus</i> (H.Peragallo) Hasle 1975	8	7
		<i>Leptocylindrus minimus</i> Gran 1915	20	10
	Licmophoraceae	<i>Licmophora</i> C.Agardh, 1827	4	5
	Lithodesmiaceae	<i>Ditylum brightwellii</i> (T.West) Grunow 1885	2	1
		<i>Lithodesmium</i> Ehrenberg, 1839	--	1
	Lyrellaceae	<i>Lyrella</i> Karajeva [Karaeva], 1978	1	--
	Mastogloiaaceae	<i>Mastogloia</i> Thwaites ex W.Smith, 1856	1	--
	Melosiraceae	<i>Melosira</i> C.Agardh, 1824	3	1
	Naviculaceae	<i>Haslea</i> Simonsen, 1974	--	1
		<i>Navicula</i> Bory, 1822	25	19
	Neidiaceae	<i>Scoliopleura</i> A.Grunow, 1860	2	1
	Odontellaceae	<i>Odontella</i> C. Agardh, 1832	1	--
		<i>Odontella mobiliensis</i> (Bailey) Grunow 1884	--	1
	Paraliaceae	<i>Paralia sulcata</i> (Ehrenberg) Cleve 1873	2	--
	Pinnulariaceae	<i>Pinnularia</i> Ehrenberg, 1843	--	1
	Plagiotropidaceae	<i>Meuniera membranacea</i> (Cleve) P.C Silva 1996	--	4
	Pleurosigmataceae	<i>Pleurosigma</i> W.Smith, 1852	1	1
	Probosciceae	<i>Proboscia alata</i> (Brightwell) Sundström 1986	26	10
		<i>Proboscia indica</i> (H.Peragallo) Hernández-Becerril 1995	4	--
	Rhizosoleniaceae	<i>Dactyliosolen fragilissimus</i> (Bergon) Hasle 1996	17	27
		<i>Dactyliosolen</i> Castracane, 1886	1	1
		<i>Guinardia flaccida</i> (Castracane) H.Peragallo 1892	1	--
<i>Guinardia striata</i> (Stolterfoth) Hasle 1996		1	6	
	<i>Guinardia</i> H.Peragallo, 1892	3	3	

Continued

Table S2 continued

Group	Family	Genera/Species	Occurrence Surface	Occurrence Depth
		<i>Rhizosolenia curvata</i> Zacharias 1905	1	1
		<i>Rhizosolenia setigera f. pungens</i> (A.Cleve) Brunel 1962	1	2
		<i>Rhizosolenia setigera</i> Brightwell 1858	2	1
		<i>Rhizosolenia</i> Ehrenberg, 1843	1	1
	Streptothecaceae	<i>Helicotheca tamesis</i> (Shrubsole) M Ricard 1987	13	7
	Surirellaceae	<i>Surirella</i> Turpin, 1828	--	1
	Tabellariaceae	<i>Tabellaria</i> Ehrenberg ex Kützing, 1844	1	1
	Thalassionemataceae	<i>Thalassionema nitzschioides</i> (Grunow) Mereschkowsky 1902	1	1
	Thalassiosiraceae	<i>Detonula</i> F.Schütt ex De Toni, 1894	--	1
		<i>Planktoniella</i> F.Schütt, 1892	--	1
		<i>Thalassiosira</i> Cleve, 1873	33	29
	Triceratiaceae	<i>Triceratium</i> Ehrenberg, 1839	--	1
	Trigoniaceae	<i>Trigonium</i> Cleve, 1867	1	--
Dinoflagellates	Actiniscaceae	<i>Actiniscus pentasterias</i> (Ehrenberg) Ehrenberg 1844	1	--
	Amphidiniaceae	<i>Amphidinium</i> Claparède & Lachmann, 1859	2	1
	Brachidiniaceae	<i>Karenia</i> Gert Hansen & Moestrup, 2000	1	4
		<i>Torodinium</i> Kofoid & Swezy, 1921	3	1
	Ceratiaceae	<i>Tripes candelabrum</i> (Ehrenberg) F.Gómez 2013	2	--
		<i>Tripes furca</i> (Ehrenberg) F.Gómez 2013	19	8
		<i>Tripes fusus</i> (Ehrenberg) F.Gómez 2013	9	4
		<i>Tripes lineatus</i> (Ehrenberg) F.Gómez 2013	16	3
		<i>Tripes muelleri</i> Bory 1827	3	--
		<i>Tripes symmetricus</i> (Pavillard) F.Gómez 2013	1	1
		<i>Tripes</i> Bory, 1823	1	2
	Dinophysaceae	<i>Dinophysis acuminata</i> Claparède & Lachmann 1859	6	2
		<i>Dinophysis acuta</i> Ehrenberg 1839	1	--
		<i>Dinophysis caudata</i> W.S.Kent 1881	3	1
	Gonyaulacaceae	<i>Gonyaulax</i> Diesing, 1866	2	--
		<i>Lingulodinium</i> D.Wall, 1967	5	--
	Gymnodiniaceae	<i>Cochlodinium</i> F.Schütt, 1896	6	1
		<i>Gymnodinium catenatum</i> H.W.Graham 1943	--	2
		<i>Gymnodinium</i> F.Stein, 1878	32	17
	Gyrodiniaceae	<i>Gyrodinium fusus</i> (Meunier) Akselman 1985	5	1
		<i>Gyrodinium spirale</i> (Bergh) Kofoid & Swezy 1921	19	8
	Heterocapsaceae	<i>Heterocapsa</i> F.Stein, 1883	10	1
	Kolkwitziellaceae	<i>Diplopsalis</i> R.S.Bergh, 1881	26	22
	Noctilucaceae	<i>Noctiluca scintillans</i> (Macartney) Kofoid & Swezy 1921	9	2
	Ostreopsidaceae	<i>Alexandrium</i> Halim, 1960	10	5
		<i>Coolia monotis</i> Meunier 1919	2	1
		<i>Gambierdiscus</i> R.Adachi & Y.Fukuyo, 1979	3	1
		<i>Ostreopsis ovata</i> Y.Fukuyo 1981	8	1
	Oxyphysaceae	<i>Phalacroma rotundatum</i> (Claparède & Lachmann) Kofoid & J.R.Michener 1911	1	2
		<i>Oxyphysis</i> Kofoid, 1926	1	--

Continued

Table S2 continued

Group	Family	Genera/Species	Occurrence	Occurrence
			Surface	Depth
	Oxytoxaceae	<i>Oxytoxum</i> Stein, 1883	12	4
	Prorocentraceae	<i>Prorocentrum gracile</i> F.Schütt 1895	--	1
		<i>Prorocentrum lima</i> (Ehrenberg) F.Stein 1878	1	--
		<i>Prorocentrum micans</i> Ehrenberg 1834	17	5
		<i>Prorocentrum rostratum</i> F.Stein 1883	1	--
		<i>Prorocentrum</i> Ehrenberg, 1834	2	1
		Protopteridiniaceae	<i>Protopteridinium depressum</i> (Bailey) Balech 1974	6
	<i>Protopteridinium diabolus</i> (Cleve) Balech 1974		1	1
	<i>Protopteridinium divergens</i> (Ehrenberg) Balech 1974		2	--
	<i>Protopteridinium quinquecorne</i> (Abé) Balech 1974		1	--
	<i>Protopteridinium steinii</i> (Jørgensen) Balech 1974		3	2
	<i>Protopteridinium</i> Bergh, 1881		14	2
	Pyrophacaceae	<i>Pyrophacus horologium</i> F.Stein 1883	--	1
		<i>Pyrophacus</i> F.Stein, 1883	3	1
	Thoracosphaeraceae	<i>Pentapharsodinium</i> Indelicato & Loeblich III, 1986	5	--
		<i>Scrippsiella</i> Balech ex A.R.Loeblich III, 1965	26	10
	Tovelliaceae	<i>Katodinium</i> B.Fott, 1957	7	3
Other	Chattonellaceae	<i>Chattonella</i> B.Biecheler, 1936	25	14
	Coccolithaceae	<i>Coccolithus</i> E.H.L.Schwarz, 1894	17	16
	Dictyochaceae	<i>Dictyocha fibula</i> Ehrenberg 1839	2	1
	Euglenaceae	<i>Euglena</i> Ehrenberg, 1830	40	17

Table S3. Relative abundances of the 17 highly abundant taxa of microphytoplankton in surface and deep layers along the Mediterranean coast of Morocco in April 2018.

Group	Species	Relative abundance	
		Surface	Depth
Diatoms	<i>Nitzschia</i> spp.	34.8	29.4
	<i>Pseudonitzschia</i> spp.	31.7	21.2
	<i>Cylindrotheca closterium</i>	5.1	4.0
	<i>Chaetoceros</i> spp.	4.9	9.9
	<i>Thalassiosira</i> spp.	4.4	6.3
	<i>Dactyliosolen fragilissimus</i>	3.5	5.8
	<i>Leptocylindrus minimus</i>	3.1	6.4
	<i>Leptocylindrus danicus</i>	2.1	4.7
Dinoflagellates	<i>Scrippsiella</i> spp.	19.9	6.3
	<i>Gymnodinium</i> spp.	15.3	14.6
	<i>Diplopsalis</i> spp.	11.3	15.1
	<i>Prorocentrum micans</i>	8.9	--
	<i>Tripes furca</i>	5.8	--
	<i>Gyrodinium spirale</i>	5.5	5.9
Other	<i>Euglena</i> spp.	61.8	35.8
	<i>Chattonella</i> spp.	18.7	26.0
	<i>Coccolithus</i> spp.	18.7	37.4

**Table S4.** Longitudinal comparison of the relative abundances of the main dominant taxa. Taxa were selected on the basis of relative abundances that were higher than 4 % and occurred simultaneously in both regions separated by Cape Three Forks and in both depth layer.

Taxon	Dominance	Surface			Deep		
		West	East	E/W	West	East	E/W
<i>Leptocylindrus mediterraneus</i>	E	0.2	4.3	21.5	1.8	2.1	1.2
<i>Chaetoceros spp.</i>	E	2.6	10.9	4.2	2.6	16.9	6.5
<i>Leptocylindrus minimus</i>	E	1.9	6.2	3.3	2.3	10.1	4.4
<i>Cylindrotheca closterium</i>	E	3.6	6.7	1.9	1.3	6.4	4.9
<i>Dactyliosolen fragilissimus</i>	E	2.1	6.7	3.2	3.9	6.3	1.6
<i>Nitzschia spp.</i>	W	30.2	18.0	0.5	33.3	11.2	0.3
<i>Pseudonitzschia spp.</i>	W	28.2	12.5	0.4	20.5	13.6	0.6
<i>Thalassiosira spp.</i>	W	3.4	4.7	1.3	6.7	3.1	0.4

**Table S5.** Statistical summary of stepwise multiple regression analyses for diversity variables.

SHANNON DIVERSITY			
Term	Estimate	Std Error	p-value
Intercept	5.544	0.802	<.0001
Longitude	0.177	0.062	0.0060
Depth*	-0.228	0.110	0.0423
Microphytoplankton*†	0.700	0.203	0.0010
MLD*	-1.034	0.576	0.0770

Observations: 72; Adjusted R<sup>2</sup>: 0.29; p <.0001

RICHNESS			
Term	Estimate	Std Error	p-value
Intercept	31.378	1.334	<.0001
Depth*	-3.457	0.805	<.0001
Microphytoplankton*†	12.888	9.390	<.0001

Observations: 72; Adjusted R<sup>2</sup>: 0.69; p <.0001

\* Parameters were previously log<sub>10</sub> transformed.

† Microphytoplankton biomass