

Patterns of landscape and assemblage structure along a latitudinal gradient in ocean climate

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Supplement. Patterns of abundance of organisms

Table S1. Biomasses (g wet wt per 0.25 m², mean, SD, n = 30) of macroalgal taxa at each region across continental Portugal. Epiphytes growing on kelps are indicated with asterisks. Viana do C.: Viana do Castelo

Taxa	Viana do C.		Peniche		Sines	
	Mean	SD	Mean	SD	Mean	SD
‘Warm-water’ Lusitanian species						
<i>Anotrichium furcellatum</i> ^a	0	0	0	0	0.003	0.015
<i>Asparagopsis armata tetrasporophyte</i> :						
<i>Falkenbergia rufolanosa</i> phase ^a	0	0	4.384	12.119	2.939	9.603
<i>Carpomitra costata</i>	0	0	0.325	1.488	0	0
<i>Cladophora pellucida</i>	0	0	0.007	0.030	0.076	0.241
<i>Codium adhaerens</i>	0	0	0	0	0.623	2.505
<i>Cryptonemia lomation</i>	7.038	22.632	0	0	0	0
<i>C. lomation</i> *	2.121	8.135	0	0	0	0
<i>Cystoseira nodicaulis</i>	0	0	0	0	0.659	1.525
<i>Cystoseira tamariscifolia</i>	0	0	0.257	1.006	0	0
<i>Dictyopteris polypodioides</i>	0.673	2.463	0.063	0.325	0.051	0.144
<i>Gigartina pistillata</i>	1.257	6.356	0	0	0	0
<i>Gymnogongrus crenulatus</i>	1.581	6.406	0	0	0	0
<i>Halopteris filicina</i>	0	0	2.128	5.025	26.622	45.802
<i>Jania rubens</i> var. <i>corniculata</i>	0	0	0	0	0.066	0.169
<i>Laminaria ochroleuca</i>	0	0	0.545	2.983	0	0
<i>Liagora viscida</i>	0	0	0	0	0.002	0.011

<i>Osmundea pinnatifida</i>	0	0	0	0	0.010	0.036
<i>Phyllariopsis brevipes</i>	0	0	0	0	0.133	0.487
<i>Pterosiphonia complanata</i>	0.001	0.004	10.911	10.460	0.220	0.510
<i>Pterothamnion crispum</i>	0	0	0	0	0	0.002
<i>Rhodymenia holmesii</i>	0.838	2.127	0.675	2.152	0.218	0.498
<i>R. holmesii</i> *	0.155	0.847	0	0	0	0
'Cold-water' Atlantic-boreal species						
<i>Calliblepharis ciliata</i>	3.596	6.857	0	0	0	0
<i>C. ciliata</i> *	0.597	1.827	0	0	0	0
<i>Ceramium virgatum</i>	0.019	0.097	0	0	0	0
<i>Chondrus crispus</i>	16.319	45.168	0	0	0	0
<i>C. crispus</i> *	2.568	14.066	0	0	0	0
<i>Cordylecladia erecta</i>	0.238	0.699	0	0	0	0
<i>Delesseria sanguinea</i>	0.081	0.265	0	0	0	0
<i>D. sanguinea</i> *	0.045	0.223	0	0	0	0
<i>Desmarestia ligulata</i>	0.199	1.090	0	0	0	0
<i>Dilsea carnosa</i>	41.546	75.136	0	0	0	0
<i>D. carnosa</i> *	15.868	52.040	0	0	0	0
<i>Gelidium corneum</i>	0.559	2.046	0.307	1.683	0	0
<i>G. corneum</i> *	0.140	0.718	0	0	0	0
<i>Heterosiphonia plumosa</i>	1.805	9.888	1.048	2.327	0.025	0.116
<i>Laminaria hyperborea</i>	94.354	110.799	0	0	0	0
<i>Palmaria palmata</i>	0.356	1.952	0	0	0	0
<i>P. palmata</i> *	1.098	3.867	0	0	0	0
<i>Phyllophora crispa</i>	39.236	56.728	0.185	0.773	0.015	0.084
<i>Polysiphonia fucoides</i>	0.010	0.057	0	0	0	0
<i>Pterosiphonia ardreana</i>	0.003	0.015	0	0	0	0
<i>Pterothamnion plumula</i>	1.985	9.057	0	0	0	0
<i>P. plumula</i> *	0.005	0.026	0	0	0	0
<i>Saccorhiza polyschides</i>	19.719	60.055	0	0	0	0
'Widely distributed' species						
<i>Apoglossum ruscifolium</i>	0	0	0.003	0.013	0.007	0.027
<i>Bonnemaisonia asparagoides</i>	0	0	0.782	2.137	0.011	0.022
<i>Ceramium ciliatum</i>	0	0	0.026	0.102	0	0
<i>Ceramium flaccidum</i>	0	0	0.003	0.014	0	0
<i>Champia parvula</i>	0	0	0.036	0.153	0.128	0.196
<i>Chondracanthus acicularis</i>	0	0	0.203	0.565	0.183	0.325
<i>Chondracanthus teedei</i>	3.097	6.223	0	0	0	0
<i>C. teedei</i> *	0.087	0.251	0	0	0	0

<i>Chondria coerulescens</i>	6.907	32.970	0	0	0	0
<i>Chondria dasyphylla</i>	0	0	0.169	0.483	0.229	0.426
<i>Chondria scintillans</i>	0.552	2.469	0	0	0	0
<i>C. scintillans*</i>	0.383	2.098	0	0	0	0
<i>Cladostephus spongiosus</i>	0.043	0.234	0.026	0.141	0.062	0.149
<i>Codium tomentosum</i>	0	0	1.278	4.868	0.212	0.428
<i>Corallina officinalis</i>	0.012	0.064	0.027	0.098	2.186	2.916
<i>Cryptopleura ramosa</i>	10.064	10.112	0	0	0	0
<i>C. ramosa*</i>	5.076	11.169	0	0	0	0
<i>Dasya hutchinsiae</i>	0	0	0.008	0.025	0.089	0.249
<i>Dictyota dichotoma</i>	0.196	0.553	22.114	46.715	19.270	38.310
<i>D. dichotoma*</i>	0.177	0.814	0	0	0	0
<i>Gastroclonium reflexum</i>	0	0	0.143	0.302	0.077	0.173
<i>Jania rubens</i>	0.002	0.013	0.279	0.575	0.958	1.596
<i>Halurus equisetifolius</i>	0.101	0.388	0.229	0.353	0.048	0.148
<i>Hypoglossum hypoglossoides</i>	0.451	1.068	0.006	0.020	0	0
<i>H. hypoglossoides*</i>	0.036	0.105	0	0	0	0
<i>Lithophyllum incrustans</i>	0.859	3.044	27.470	36.372	24.101	38.413
<i>Lomentaria articulata</i>	0.109	0.366	0	0	0	0
<i>Lomentaria clavellosa</i>	0	0	0.007	0.031	0.001	0.004
<i>Microcladia glandulosa</i>	0	0	0	0	0.011	0.060
<i>Monosporus pedicellatus</i>	0	0	0.010	0.040	0.004	0.022
<i>Monostroma grevillei</i>	0	0	0	0	2.040	4.364
<i>Nitophyllum punctatum</i>	0.002	0.011	0.443	0.923	0.012	0.038
<i>N. punctatum*</i>	0.609	2.294	0	0	0	0
<i>Peyssonnelia atropurpurea</i>	0.180	0.790	0.043	0.171	0	0
<i>P. atropurpurea*</i>	0.037	0.195	0	0	0	0
<i>Plocamium cartilagineum</i>	19.410	25.127	49.926	73.840	2.342	4.743
<i>Polysiphonia denudata</i>	0.022	0.099	0.972	1.311	0.174	0.164
<i>Polysiphonia nigra</i>	0	0	0.003	0.016	0	0
<i>Pterosiphonia parasitica</i>	0	0	0.143	0.226	0	0
<i>Ralfsia verrucosa</i>	0	0	0.499	1.159	3.091	6.481
<i>Rhodomenia pseudopalmata</i>	12.550	20.730	3.873	11.580	0.034	0.082
<i>R. pseudopalmata*</i>	6.687	9.993	0	0	0	0
<i>Scinaia furcellata</i>	0.153	0.695	0	0	0	0
<i>Sphaerococcus coronopifolius</i>	0	0	0	0	38.216	67.985
<i>Spondylothamnion multifidum</i>	0.956	3.153	0	0	0.002	0.009
<i>Taonia atomaria</i>	0	0	0.335	1.109	7.415	10.747
<i>Ulva clathrata</i>	0.132	0.721	0	0	0	0

<i>U. clathrata</i> *	0.033	0.106	0	0	0	0
<i>Ulva lactuca</i>	0	0	0	0	0.002	0.011
<i>Ulva rigida</i>	0.026	0.108	0	0	0	0
Additional taxa						
<i>Aglaothamnion</i> sp.	0	0	0	0	0.001	0.007
<i>Bornetia</i> spp.	0	0	0	0	0.002	0.013
Ceramiceae	0	0	0.056	0.167	1.714	2.305
<i>Cladophora</i> spp.	0	0	0.029	0.059	0.201	0.338
Delesseriaceae	0	0	7.642	5.900	0.125	0.202
<i>Gelidium</i> spp.	0	0	0.008	0.042	0	0
<i>Griffithsia</i> spp.	0	0	0.334	0.967	0.108	0.169
<i>Peyssonnelia</i> spp.	0	0	4.942	8.470	1.382	1.906
<i>Peyssonnelia</i> spp.*	9.446	23.052	0	0	0	0
<i>Plocamium</i> sp.*	7.202	27.188	0	0	0	0
<i>Pterosiphonia</i> spp.	2.161	5.597	1.066	2.255	0.017	0.041
<i>Pterothamnion</i> spp.	0	0	0.007	0.021	0.003	0.011
<i>Ulva</i> spp.	0.002	0.009	0.004	0.018	0.007	0.015
Unidentified filamentous algae	0	0	10.157	12.844	1.882	2.897

^aAlien species

Table S2. Abundances (ind. per 100 m², mean, SD, n = 25) of fish species at each region across continental Portugal. Viana do C.: Viana do Castelo

Species	Viana do C.		Peniche		Sines	
	Mean	SD	Mean	SD	Mean	SD
‘Warm-water’ Lusitanian species						
<i>Boops boops</i>	0	0	0.42	0.63	1.20	2.68
<i>Coris julis</i>	0	0	0.25	0.27	2.88	2.32
<i>Ctenolabrus rupestris</i>	0.64	1.43	1.64	1.63	0.12	0.27
<i>Diplodus cervinus</i>	0	0	0	0	0.04	0.09
<i>Diplodus sargus</i>	0.26	0.59	3.79	3.22	2.40	3.80
<i>Diplodus vulgaris</i>	0	0	18.79	3.88	6.92	4.48
<i>Labrus viridis</i>	0.12	0.11	0	0	1.14	1.17
<i>Mullus surmuletus</i>	0	0	0.04	0.09	0	0
<i>Ophioblennius</i> sp.	0	0	0.11	0.24	0	0
<i>Pagellus erythrinus</i>	0	0	0	0	0.04	0.09
<i>Pagrus pagrus</i>	0	0	0	0	0.04	0.09
<i>Parablennius gattorugine</i>	0.32	0.36	0.04	0.09	0.04	0.09
<i>Serranus cabrilla</i>	0	0	0.28	0.33	0.08	0.18
<i>Spondyliosoma cantharus</i>	0	0	0	0	0.20	0.28
<i>Symphodus bailloni</i>	0	0	0	0	0.04	0.09
<i>Symphodus cinereus</i>	0	0	0	0	0.04	0.09
<i>Symphodus melops</i>	0	0	0	0	0.04	0.09
<i>Trisopterus minutus</i>	0.12	0.18	0.20	0.45	0	0
‘Cold-water’ boreal species						
<i>Centrolabrus exoletus</i>	0.16	0.36	0	0	0.04	0.09
<i>Labrus bergylta</i>	0.84	0.95	0.67	0.19	0.04	0.09
<i>Pollachius pollachius</i>	0.20	0.35	0.08	0.11	0	0
<i>Trisopterus luscus</i>	0	0	0.16	0.26	0	0
‘Wide distributed’ species						
<i>Balistes capriscus</i>	0	0	0	0	0.08	0.18
<i>Parablennius pilicornis</i>	0	0	0	0	0.04	0.09