

Cost-benefit of three different methods for studying Mediterranean rocky benthic assemblages

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Supplementary material

Table S1. – Species total biomass (g of dry weight) estimated with the collection method (2 replicates of 400 cm²). Depth is expressed in meters.

Collection method Biomass (g DW/ 800 cm ²)	Depth Season	0			4			12			25			50				
		winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer	fall	
ALGAE																		
<i>Acrodiscus viduicicii</i>	Acrod	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Acrosorium venulosum</i>	Acro	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Aglaohammon</i> sp.	Agla	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Aglaohammon tenuissimum</i>	Agte	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Aglaohammon tripinnatum</i>	Agtr	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Aglaozonia chilosa</i> -stadium	Azch	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Aglaozonia parvula</i> -stadium	Azsp	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Amphiroa cryptarthroidea</i>	Ac	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Amphiroa rigida</i>	Ar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Amphiroa</i> sp.	Asp	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Anadyomene stellata</i>	As	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Anthammon cruciatum</i>	Anc	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Anthammon decipiens</i>	Ano	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Anthammon</i> sp.	Anti	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Apoglossum ruscifolium</i>	Apr	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Balliella cladoderma</i>	Bacl	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Boergesienella fruticulosa</i>	Polf	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Botryocladia borgeseni</i>	Bb	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Botryocladia botryoides</i>	Bbt	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Bryopsis duplex</i>	Bryp	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Bryopsis plumosa</i>	Bryp	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Callithammiae</i> unidentified	Call	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Callithammion corymbosum</i>	Calc	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Ceramium bertholdii</i>	Cebe	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Ceramium ciliatum</i>	Ceci	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Ceramium circinatum</i>	Cecir	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Ceramium codii</i>	Ceco	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Ceramium diaphanum</i>	Cedi	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Champia parvula</i>	Cham	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Chondria</i> sp.	Chia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Choristocarpus tenellus</i>	Chorte	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Cladophora coelothrix</i>	Cladc	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Cladophora pellicida</i>	Cp	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Cladophora prolifera</i>	Cladp	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Cladophora rupestris</i>	Cladr	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Codium vermillara</i>	Cove	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Compothammon thuyoides</i>	Comty	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Conarinia peyssonnetiaeformis</i>	Cope	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Crustose corallinales unidentified	Corin	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Crustose corallines unidentified-2	Mel	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Crustose red algae unidentified	Rii	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Corallina elongata</i>	Ce	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Crouania attenuata</i>	Croat	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Cruoria rosea</i> v. <i>purpurea</i>	Cruro	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Cryptonemia lomation</i>	Cryl	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Cryptonemia tunaeformis</i>	Cryt	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Cutleria monoica</i>	Cumo	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Cystoseira balearica</i>	Cb	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Cystoseira compressa</i>	Ccom	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Cystoseira stricta</i>	Cs	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
<i>Dasys bailloniana</i>	Dab	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .

Collection method Biomass (g DW/ 800 cm ²)	0			4			12			25			50				
	Depth Season	winter	spring	summer	fall	winter	spring	summer	fall	winter	spring	summer	fall	winter	spring	summer	fall
<i>Dasya corymbifera</i>	Dac		0.013			0.010											
<i>Dasya hutchinsiae</i>	Dah	0.048	0.040			0.665											
<i>Dasya rigidula</i>	Dar		0.055														
<i>Dasya</i> sp.	Dasp			0.052			0.010	0.001								0.086	
<i>Derbestia tenuissima</i>	Dete																
Dicyotales unidentified (young)	Dj				3.112	1.030	0.900	0.731							0.005		
<i>Dicyoptera ploypodioidea</i>	Dm			0.872	0.104	0.023	1.129	0.015	1.312	0.610	1.017	5.846	8.181	0.004	0.053	0.018	0.001
<i>Dicyota dichotoma</i>	Dd			0.131	0.010	0.012	0.015	0.005	0.010	0.013	0.013	0.034	0.139	0.034	0.139	0.026	0.052
<i>Dicyota dichotoma</i> v. <i>intricata</i>	Ddi				0.008	0.036	0.426	6.073								0.144	0.032
<i>Dicyota fasciola</i>	Df	0.004		0.895	0.319	0.605	0.081	0.489									
Ectocarpaceae unidentified	Eci	0.033			0.100												
<i>ErythroGLOSSUM sandrianum</i>	Eryt													0.058		0.001	
<i>Eupogon planus</i>	Eupog											0.014	0.029	0.007	0.001		
<i>Eupogon spinellus</i>	Eupogs											0.003	0.020	0.027			
<i>Falkenbergia</i> sp.-stadium	Fr	0.459	0.063	0.087	0.259	0.698	0.282	0.437	0.154	1.545	0.214	0.553	0.166	0.064	1.314	0.225	0.055
<i>Feldmannophycus rayssiae</i>	Feg										0.002			0.040			
<i>Flabellia petiolata</i>	Fera											0.001		0.829	2.637	1.409	0.522
<i>Gastroclonium clavatum</i>	Fp											0.147	0.076	0.132	0.145		
<i>Geliella</i> sp.	Gac	0.010															
<i>Geliidium bipectinatum</i>	Gella	0.001															0.023
<i>Gelidium pusillum</i>	Gepu										0.162	0.009					
<i>Gloiocladia furcata</i>	Gf																
<i>Griffithsia schousboei</i>	Grsch																
<i>Griffithsia</i> sp.	Grif																
<i>Halimeda tuna</i>	Ht	0.481		0.219	0.683	0.097				0.085				0.042		0.101	
<i>Halipiton virgatum</i>	Hv	8.833	2.586	2.433	8.019	1.240	9.134	6.728	16.928	6.308	3.046	10.252	8.248	0.300	0.651	0.448	0.103
<i>Halodictyon mirabile</i>	Hami																0.009
<i>Halopteris filicina</i>	Hf									0.237	2.155	2.155		2.015	1.441	1.869	2.131
<i>Halopteris scoparia</i>	Hs	0.002				0.258	2.993	0.352	0.276	7.964	2.216	0.180	6.860				
<i>Herposiphonia secunda</i> f. <i>secunda</i>	Hes	0.802	0.005		0.022	0.045		0.001	0.022								
<i>Herposiphonia secunda</i> f. <i>tenella</i>	Het			0.015	0.572									0.015		0.011	
<i>Heterosiphonia crispella</i>	Hec	0.005			0.034									0.001		0.001	
<i>Hildenbrandia</i> sp.	Hild	0.033															
<i>Hydroclathrus clathratus</i>	Hycl																
<i>Hydrocoleum</i> sp.	Hydr	0.030															
<i>Hydroolithon farinosum</i>	Hyfa																
<i>Hypoglossum hypoglossoides</i>	Hyhy																
<i>Isactis plana</i>	Isp													0.001			0.033
<i>Jania adhaerens</i>	Ja								0.432					1.330	0.611		
<i>Jania corniculata</i>	Jc					0.212											
<i>Jania rubens</i>	Jr		0.160	2.132	1.463												
<i>Kallymenia requienii</i>	Kal																
<i>Kallymenia</i> sp.	Kal															0.012	
<i>Laurencia</i> gr. <i>obtusa</i>	Lo	2.937	0.150	0.501	0.490											0.018	0.011
<i>Leathesia mucosa</i>	Lem															0.010	
<i>Leptofaucheia coralligena</i>	Ra				0.229	0.002	0.291	0.010	0.010	0.010	0.270	0.489	1.872	0.484	0.122	0.328	0.167
<i>Lithophyllum incrustans</i>	Li					0.800	0.800						3.200	5.250	3.000	58.000	
<i>Lobophora variegata</i>	Lv	0.458	0.830	0.010	0.056	2.516	0.085	0.307	1.517	1.104	0.541	0.216	1.084	0.238	0.018	0.053	
<i>Lomentaria subichotoma</i>	Lomc																0.001
<i>Lomentaria subichotoma</i>	Lomis															0.008	0.092
<i>Lyngbya</i> cf. <i>aestuarii</i>	Lya										0.005						
<i>Lyngbya sordida</i>	Lys									0.182						0.001	0.001

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		winter	spring	summer	fall	winter	spring	summer	fall	winter	spring	summer	fall	winter	spring	summer	fall
<i>Meredithia microphylla</i>	Kal	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Mesophyllum alternans</i>	Ml	.	.	.	.	.	.	1.780	.	.	.	.	.	.	.	.	.
<i>Metapeyssommelia cf. feldmannii</i>	Meta	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Microdicyon tenuius</i>	Mite	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Monosporus pedicellatus</i>	Mope	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Myriogramme</i> sp.	Mys	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Myriogramme tristromatica</i>	Myt	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Nemacystus flexuosus</i>	Nemf	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Neogoniolithon brassica-florida</i>	Sn	40.400	28.720	19.000	86.000	144.060	96.000	100.000	114.360	111.600	45.200	56.540	95.400	21.460	5.360	.	.
<i>Neogoniolithon mamillosum</i>	Sm	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Nereia filiformis</i>	Nerf	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Nitophyllum punctatum</i>	Nip	.	.	.	.	0.001	.	.	.	.	.	.	.	.	.	.	.
<i>Osmundea pelagosae</i>	Lp	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Osmundea truncata</i>	Li	.	0.160	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Padina pavonica</i>	Pp	.	0.048	0.014	.	1.190	1.598	5.870	2.334	0.022	0.460	0.234	0.083	.	.	.	.
<i>Palisada tenerima</i>	Lap	.	0.955	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Palmophyllum crassum</i>	Pc	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Parvocaulis parvulus</i>	Pop	.	.	.	.	0.001	.	0.002	0.011	.	.	0.001	.	.	.	.	.
<i>Peysommelia arnorica</i>	Peysa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Peysommelia bornetii</i>	Peysb	.	.	.	.	.	.	.	.	.	.	2.298	.	0.382	.	1.396	0.638
<i>Peysommelia dubyi</i>	Peysd	.	0.600	.	.	.	.	.	.	.	.	2.400	0.210	.	1.980	0.064	1.602
<i>Peysommelia gr. harveyana</i>	Peysg	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Peysommelia polymorpha</i>	Peysp	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Peysommelia rosa-marina</i> f. <i>saxicola</i> Prm	Prm	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Peysommelia rubra</i>	Peysr	.	0.060	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Peysommelia</i> sp.1	Peys1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Peysommelia</i> sp.2	Peys2	.	.	.	.	.	.	.	0.010	.	.	1.443	.	18.868	.	0.037	0.033
<i>Peysommelia squamaria</i>	Peys3	.	.	.	.	.	.	.	.	.	.	0.049	.	.	.	.	.
<i>Phormidium</i> sp.	Phorm	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Plocanium caritilagineum</i>	Ploc	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Polysiphonia furcellata</i>	Pofu	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Polysiphonia ornata</i>	Polo	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Polysiphonia</i> sp.	Polsp	.	.	.	.	.	.	.	.	.	.	0.001	.	.	.	.	.
<i>Polysiphonia subulifera</i>	Polsu	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Polysiphonia fosliei</i>	Pfosl	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Pseudochlorodesmis furcellata</i>	Pf	0.505	0.485	0.021	0.299	0.061	.	0.380	.	1.248	1.903	0.312	2.808	0.033	.	.	.
<i>Pseudolithoderma adriaticum</i>	Psa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Radiclingua thysanorhizans</i>	Rat	.	.	.	.	.	.	.	.	.	.	.	.	0.060	.	.	.
<i>Rhodophyllis divaricata</i>	Rhdi	.	.	.	.	.	.	.	0.005	.	.	0.001	.	.	.	.	.
<i>Rhodymenia</i> sp.	Rhds	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Rodriguezella pinnata</i>	Rodrp	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Rodriguezella sn-afforelloi</i>	Rodr	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sargassum vulgare</i>	Sar	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sphaeclaria cirrosa</i>	Spcl	.	.	.	.	.	.	.	.	0.673	0.646	1.859	1.282	0.320	1.582	1.991	0.327
<i>Sphaeclaria plumula</i>	Sppl	0.363	0.010	.	0.110	1.355	0.066	0.087	1.286	0.400	4.495	1.408	0.576	0.020	0.195	0.091	3.240
<i>Sphaerococcus coronopifolius</i>	Sco	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Spongiopsis fruticulosa</i>	Sr	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Spyridia filamentosa</i>	Spif	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Stilophora rhizodes</i>	Str	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Symploca hydroides</i>	Syhy	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Taonia atomaria</i>	Ta	.	.	.	.	.	.	.	.	0.094	1.052	0.070	.	0.012	0.072	0.014	.
<i>Titanoderma</i> sp.	Tita	.	0.015	.	.	.	.	.	0.042	.	.	.	.	.	.	.	.
<i>Trilithella intricata</i> -stadium	Trai	.	.	.	.	.	.	.	.	.	.	.	.	0.001	.	.	.

Collection method Biomass (g DW/ 800 cm ²)	Depth Season	0			4			12			25			50																								
		winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer	winter
<i>Valonia utricularis</i>	Vu	0.605	0.016	0.803	5.276	0.047	0.098	0.166	0.011	0.059	3.114	0.087	0.830	8.830	0.024																							
<i>Womersleyella setacea</i>	Pols																																					
<i>Zanardinia prototypus</i>	Zp																																					
ANIMALS																																						
<i>Aaptos aaptos</i>	Aa																																					
Actinaria unidentified	Actini																																					
<i>Adonella calveti</i>	Aca																																					
<i>Adocia</i> sp.	Ado																																					
<i>Aetea truncata</i>	Aet																																					
<i>Aglaophenia kirchenpaueri</i>	Ak	1.655	0.044	0.309	1.337	0.146	0.002	0.008	0.007	0.014	0.080	0.061	0.169																									
<i>Aiptasia diaphana</i>	Ad	0.021	0.054																																			
<i>Alcyonium acule</i>	Alca			0.341																																		
<i>Alcyonium coralloides</i>	Par																																					
<i>Annectocyna major</i>	Amaj																																					
<i>Arca noae</i>	Arno																																					
<i>Asterina gibbosa</i>	Asg																																					
<i>Axinella damicornis</i>	Adam																																					
<i>Balanophyllia europaea</i>	Bae																																					
<i>Balanus perforatus</i>	Bal																																					
<i>Bittium reticulatum</i>	Bittium																																					
<i>Bivalvia</i> unidentified	Biv	0.095		0.010	0.001	0.026	0.006	0.046	0.193	0.020	0.001	0.015	0.010																									
<i>Brachiopoda</i> unidentified	Brac																																					
<i>Bugula calathus</i>	Buc																																					
<i>Bugula plumosa</i>	Bup																																					
<i>Caberea boryi</i>	Cabo																																					
<i>Calliostoma</i> sp.	Zz																																					
<i>Caprella acanthifera</i>	Capr	0.001	0.002	0.009																																		
<i>Cardioecia watersi</i>	Caw																																					
<i>Caryophyllia inornata</i>	Cari																																					
<i>Cellepora punicosa</i>	Cepu																																					
<i>Celleporina caminata</i>	Celc																																					
<i>Celleporina</i> sp.	Cell																																					
<i>Cerithium vulgatum</i>	Cev																																					
<i>Chiltonia pyriformis</i>	Chp																																					
<i>Clavularia crassa</i>	Clav	0.047			1.115			0.035	0.899	0.760	0.500	0.173	0.148																									
<i>Cliona viridis</i>	Cv																																					
<i>Corallium rubrum</i>	Cora																																					
<i>Crambe crambe</i>	Crambe																																					
<i>Crisia</i> spp.	Cris	0.094	0.477	0.002	0.027	0.312	0.480	3.351	1.170	0.098	0.029	0.127																										
<i>Crustacea</i> unidentified	Cru	1.361			0.011																																	
<i>Decapoda</i> unidentified	Dec																																					
<i>Dercitus plicatus</i>	Dep																																					
<i>Didemnum granulosum</i>	Dg	0.347	4.874	1.122	0.990																																	
<i>Didemnum</i> spp.	Dni																																					
<i>Diodora</i> sp.	Dio																																					
<i>Entolophorecia deflexa</i>	Ende																																					
<i>Annectocyna cf. tubulosa</i>	Entu																																					
<i>Eriphia spinifrons</i>	Ers																																					
<i>Erylia euastrium</i>	Ere																																					
<i>Escharina porosa</i>	Esp																																					
<i>Eudendrium</i> sp.	Eu																																					
<i>Filicrista geniculata</i>	Fili																																					
<i>Gastropoda</i> unidentified	Gas	0.030			0.182	0.376		0.131		0.187	1.641	0.231	0.732	0.110	0.042	0.048	0.357																					

Collection method Biomass (g DW/ 800 cm ²)	Depth Season	0			4			12			25			50			
		winter	spring	summer	fall	winter	spring	summer	fall	winter	spring	summer	fall	winter	spring	summer	fall
<i>Halisarca dilatadonii</i>	Had	0.014	0.056	0.167	0.044	0.011	0.017	0.167	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
<i>Hinia incrassata</i>	Inia																
<i>Ircinia dendroides</i>	Id							0.112	2.644	0.132	0.132	0.132	0.132	0.132	0.132	0.132	0.132
<i>Ircinia variabilis</i>	Iv			0.056	8.070	0.006	0.005	0.002	0.001	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
Juvenile sea urchins unidentified	Gar						0.005	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
<i>Leptopsammia pruvoti</i>	Lpr						0.005	0.043	0.315	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
<i>Lichenopora radiata</i>	Lr						1.178	0.688	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
<i>Lissoclinum perforatum</i>	Lip																
<i>Lithophaga lithophaga</i>	Lli				3.165												
<i>Microporella appendiculata</i>	Mips																
<i>Mimosella gracilis</i>	Mim						0.001	0.199	0.090	0.162	0.002	0.002	0.002	0.002	0.002	0.002	0.002
<i>Mimosella verticillata</i>	Miv								0.006	0.224	0.095	0.338	0.069	0.069	0.069	0.069	0.069
<i>Miniacina miniacea</i>	Mm								0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030
<i>Monomyces pygmaea</i>	Mopi																
<i>Myriapora truncata</i>	Mt						0.001	1.335	5.873	1.185	23.690	1.679	0.863	4.578	4.700	4.700	4.700
Ophiuroidea unidentified	O		0.001	0.031	0.002		0.001	0.001	0.587	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001
<i>Ostrea edulis</i>	Oe																
<i>Pachygrapsus marmoratus</i>	Pm	0.087															0.096
<i>Pagurus anachoretus</i>	Pag																
<i>Parazoanthus axinellae</i>	P																
<i>Phorbos</i> sp.	Phc																
<i>Phorbos topsenti</i>	Phf						0.116	0.035									
Picnogonida unidentified	Pi		0.005	0.001												0.001	
<i>Pisania maculosa</i>	Pim						0.589										
<i>Platonea stoechas</i>	Pls																
Polychaeta unidentified	Poly	0.825	0.087	0.132	0.124	0.258	0.040	0.199	0.060	0.414	0.813	0.785	0.695	0.094	0.084	0.120	0.129
<i>Polycyathus muelleriae</i>	Pomu									0.112	0.112	0.273	0.273	0.273	0.273	0.273	0.273
Polychaetophora unidentified	Popl	0.005	0.003			0.037					0.046	0.018	0.001	0.089	0.129	0.002	0.002
<i>Pseudodistoma cyrusense</i>	Pcy																
<i>Pyura dara</i>	Pyu	0.043			0.087					0.028			0.102				
<i>Reptadeonella violacea</i>	Rev									0.024							
<i>Rynchozoon neapolitanum</i>	Rne										0.550			5.299			
<i>Rynchozoon pseudodigitatum</i>	Rps																
<i>Rynchozoon</i> sp.	Ryn																1.178
<i>Sarcozois fasciculatus</i>	Sf							10.927	0.597								
<i>Sarcozois spinosulus</i>	Ss							12.451	1.100								2.130
<i>Schizobrachiella sanguinea</i>	Ssan			0.223			0.192	0.115		0.516	0.389	0.030	0.126				
<i>Schizomavella cuspidata</i>	Ssch													0.034			
<i>Schizomavella hastata</i>	Schh									0.001				0.274			0.001
<i>Schizomavella mamillata</i>	Schpp													0.001			1.646
<i>Schizotheca fissa</i>	Sthe													0.001			1.007
<i>Scrapocellaria</i> spp.	Ser					0.139	0.420	0.336	0.357	0.120	0.004	0.098	0.011	0.056	0.044	0.044	0.044
<i>Sertularia</i> spp.	Seru					0.166		0.374	0.060	0.048	0.019	0.049	0.049	0.049	0.049	0.049	0.049
Sipunculida unidentified	Sip	0.134	0.168	0.156	0.046	0.034		0.194	0.041	0.268	0.060	0.049	0.213	0.101	0.483	0.017	0.174
<i>Spongia officinalis</i>	Spo														0.483	0.017	0.174
<i>Spongia virgulosa</i>	Spv														0.765		
<i>Suberites</i> cf. <i>carinosus</i>	Suc														0.134		
<i>Sycon</i> sp.	Sycon	0.759	0.958	0.360	0.600			0.022	0.018	0.013				0.010	0.038		
<i>Trididemnum cereum</i>	Tri							0.072									
<i>Turbicellepora coronopusoida</i>	Tuco																0.394
<i>Turbicellepora</i> sp.	Turb																
<i>Walkertia uva</i>	Vauv								0.004							0.005	

Table S2. – Species abundance (%) estimated with the in situ visual method (4 replicates of 625 cm²). Depth is expressed in meters. See Table S3 for the “Complex 9” composition.

In situ visual method Abundance (% in 2500 cm ²) ALGAE	0		4		12		25		50	
	winter	spring	winter	spring	winter	spring	winter	spring	winter	spring
Acrodiscus vidovichii	.	.	.	.	.	.	.	.	.	.
Aglaoniza parvula-stadium	.	.	.	.	.	.	.	.	.	.
Amphiroa cryptarthroidea	.	.	.	.	.	.	.	.	.	.
Amphiroa rigida	1	2	12	10	3	8	16	.	.	.
Anadyomene stellata	.	.	43	38	5	40	29	.	.	.
Boergeseniella fruticulosa	.	54	.	.	.	.	.	.	.	.
Botryocladia boergesenii	.	.	.	.	.	.	.	.	.	.
Botryocladia botryoides	.	.	.	.	.	.	.	.	.	.
Botryocladia chitjeana	.	.	.	.	.	.	.	.	.	.
Botryocladia unidentifed	.	.	.	.	21	.	44	.	.	.
Bougainvillidae	4	.	.	.	.	.	.	.	.	.
Bryopsis duplex	73	.	.	.	.	.	.	.	.	.
Ceramium diaphanum	1	.	7	.	.	.	.	.	.	.
Cladophora pellicida	4	.	.	.	.	.	.	.	.	.
Colpomenia sinuosa	.	.	.	.	.	.	.	.	.	.
Corallina elongata	40	.	.	.	.	4	.	.	.	.
Crounata attenuata	.	.	.	.	.	.	.	.	.	.
Cystoseira balearica	.	.	17	23	21	23	64	81	81	1
Cystoseira compressa	4	5	2	4	.	.	.	.	.	.
Cystoseira compressa v. pustulata	98	100	100	98	7	14	9	4	1	.
Cystoseira stricta	2	.	.	.	.	.	.	.	.	.
Dasia rigidula	5	.	.	.	.	.	.	.	.	.
Diclyopteris ploypodioides	5	.	.	.	3	2	9	4	25	15
Diclyyota dichotoma	.	.	88	.	13	5	58	26	9	5
Diclyyota dichotoma v. intricata	.	.	.	.	.	.	.	.	15	23
Diclyyota fasciola	1	.	2	40	79	43	17	8	1	.
Ectocarpaceae unidentified.	55	.	.	.	.	.	.	.	.	.
Falkenbergia sp.	83	3	23	65	99	.	.	.	80	.
Feldmannophycus rayssiata	1	6	.	.	.	.	.	.	.	.
Flabellia petiolata	.	.	.	.	.	.	.	.	.	.
Gloiocladia repens	.	.	.	.	.	.	.	.	.	.
Halicystis parvula	.	.	.	.	6	.	.	.	.	.
Halimeda tuna	3	2	19	25	1	4	.	.	.	.
Halipilton virgatum	100	8	96	100	78	75	72	92	89	65
Halopteris filicina	.	.	.	.	.	.	.	.	9	9
Halopteris scoparia	.	.	.	.	9	9	20	15	52	14
Herposiphonia secunda f. secunda	5	.	.	.	.	.	.	.	.	.
Hydroclathrus clathratus	94	47	70	98	.	.	.	.	1	.
Hydroolithon farinosum	2	.	.	.	.	.	.	.	.	.
Hypnea musciformis	.	.	.	.	.	.	.	.	.	.
Jania adhaerens	62	17	13	9	.	.	.	.	.	.
Laurencia gr. obtusa	.	.	.	.	.	.	.	.	.	.
Leathesia mucosa	.	.	.	.	.	.	.	.	.	.
Leptofaucheia coralligena	.	.	3	.	.	.	.	.	.	.
Lithophyllum incrustans	4	8	32	13	65	18	50	90	62	21
Lobophora variegata	.	.	.	.	.	.	.	.	.	.
Mereditia microphylla	.	64	9	.	.	.	.	.	6	62
Mesophyllum alternans	95	.	75	99	84	86	91	96	77	3
Neogoniolithon brassica-florida	.	.	.	.	.	.	.	.	.	.
Neogoniolithon mamillosum	.	.	.	.	.	.	.	.	.	.
Nereta filiformis	15	1	.	.	.	.	.	.	.	.
Osmundea truncata	.	.	.	.	.	.	.	.	.	.

In situ visual method Abundance (% in 2500 cm ²)	Depth Season	0				4				12				25				50				
		winter	spring	summer	fall	winter	spring	summer	fall	winter	spring	summer	fall	winter	spring	summer	fall	winter	spring	summer	fall	
<i>Padina pavonica</i>	Pp	.	.	10	2	11	61	90	84	5	39	18	12	.	.	.	.	.	.	.	.	.
<i>Palisada tenerrima</i>	Lap	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Parvocaulis parvulus</i>	Plop	.	.	.	.	.	.	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Peyssonnelia dubyi</i>	Peydu	3	10	27	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Peyssonnelia gr. harveyana</i>	Peygh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Peyssonnelia rosa-marina</i> f. <i>saxicola</i>	Ppms	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Peyssonnelia</i> sp.	Ppmsp	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Phyllaropsis brevipes</i>	Phyb	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Plocamium cartilagineum</i>	Ploc	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Polysiphonia subulifera</i>	Polsu	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Polysiphonia fostlei</i>	Pfost	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Pseudochlorodesmis furcellata</i>	Pf	.	4	58	28	2	5	9	11	.	.	9	18	.	.	.	.	.	.	.	.
<i>Pseudolithoderma adriaticum</i>	Psa	.	.	.	.	.	.	9	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sargassum vulgare</i>	Sar	.	.	.	1	25	22	3	13	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sphaelaria cirrosa</i>	Spci	3	.	.	23	7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sitlophora rhizodes</i>	Str	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Taonia atomaria</i>	Ta	.	.	.	.	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Valonia utricularis</i>	Vu	9	6	54	25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Vickersia baccata</i>	Vib	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Wrangelia penicillata</i>	Wp	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Zanardinia prototypus</i>	Zp	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ANIMALS																						
<i>Acanthonyx lunulatus</i>	Alu	3	.	13	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Actinia equina</i>	Aeq	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Aglaophenia kirchenpaueri</i>	Ak	58	5	.	18	30	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Aiptasia diaphana</i>	Ad	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Arbacia lixula</i>	Al	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Axinella damicornis</i>	Adam	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Balanophyllia europaea</i>	Bae	.	.	.	.	.	.	.	3	1	1	.	.	.	.	.	.	.	.	.	.	.
<i>Balanus perforatus</i>	Bal	.	.	.	.	.	18	40	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Chondrosia reniformis</i>	Chon	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Clathrina coriacea</i>	Clco	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.
<i>Clavularia crassa</i>	Clav	9	.	20	79	1	.	9	8	25	2	5	18	.	.	.	.	.	.	.	.
<i>Cliona viridis</i>	Cv	.	.	.	16	.	.	7	.	.	.	6	.	.	.	.	.	.	.	.	.	.
<i>Corynactis viridis</i>	Cov	.	.	.	.	3	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Crambe crambe</i>	Crambe	.	.	.	.	.	.	.	.	6	4	.	4	.	.	.	.	.	.	.	.	.
<i>Cristia</i> spp.	Cris	.	11	.	.	9	.	.	.	27	.	.	.	.	.	.	.	.	.	.	.	.
<i>Didemnum granulosum</i>	Dg	47	76	60	28	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Diplosoma spongiforme</i>	Ds	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Dysidea</i> sp.	Da	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Eudendrium</i> sp.	Eu	.	.	.	.	3	.	.	.	.	.	.	.	10	.	.	.	.	.	.	.	.
<i>Filograna implexa</i>	Fim	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.
<i>Halocynthia papillosa</i>	Hapa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ircinia variabilis</i>	Iv	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Monodonta turbinata</i>	Mot	.	.	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Myriapora truncata</i>	Mt	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Oscarella lobularis</i>	Oi	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Paracentrotus lividus</i>	Pl	.	.	.	.	.	1	1	.	.	.	.	4	.	.	.	.	.	.	.	.	.
<i>Phorbastropsis</i>	Phf	.	6	19	10	.	.	.	3	9	10	8	.	.	.	.	.	.	.	.	.	.
<i>Pione vasifica</i>	Pv	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Protula</i> sp.	Puc	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Pseudodistoma cymusense</i>	Pey	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Pycnoclavella communis</i>	Nan	.	.	.	.	1	.	.	.	6	.	.	5	.	.	.	.	.	.	.	.	.

In situ visual method Abundance (% in 2500 cm ²)	0		4		12		25		50	
	winter	spring	winter	spring	winter	spring	winter	spring	winter	spring
<i>Reptadeonella violacea</i>	.	.	.	.	.	11	.	.	.	.
<i>Reteporella</i> sp.	.	.	.	.	.	.	.	.	.	.
<i>Sarcotragus fasciculatus</i>	.	.	5	5	7	.	.	.	.	4
<i>Sarcotragus spinosulus</i>	.	.	2	15	13	.	.	.	.	.
<i>Schizobrachiella sanguinea</i>	.	.	7	2	.	.	.	.	.	.
<i>Schizomavella mamillata</i>	.	.	.	.	.	12	.	5	.	2
<i>Scrupocellaria</i> spp.	.	.	.	.	.	.	.	.	4	.
<i>Sertularia</i> spp.	.	.	22	.	2	.	.	.	.	.
<i>Stramonita haemastoma</i>	1	.	.	.	.	.	.	.	.	.
<i>Trididemnum cereum</i>	63	63	33	32	.	.	.	.	.	.
"COMPLEX"	.	.	.	.	.	.	.	.	.	.
Complex 9	.	.	.	.	.	.	31	12	60	85
X9	.	.	.	.	.	.	.	.	.	100
										34

Photoquadrat method Cover (cm ² / 2480 cm ²)	0			4			12			25			50		
	winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer
<i>Padina pavonica</i>		72.51	22.63	12.46	1.26	152.67	823.42	208.54	1.80	72.78	163.18	7.87		3.95	0.61
<i>Palisada tenerima</i>															
<i>Palmophyllum crassum</i>															
<i>Parvocaulis parvulus</i>						2.34	0.95							0.21	
<i>Peyssonnelia armorica</i>															
<i>Peyssonnelia gr. harveyana</i>										8.48		5.66			
<i>Peyssonnelia rosa-marina</i> f. <i>saxicola</i>															
<i>Peyssonnelia rubra</i>															
<i>Peyssonnelia</i> sp.															
<i>Peyssonnelia squamaria</i>															
<i>Plocanium caritilagineum</i>															
<i>Polysiphonia subulifera</i>															
<i>Polysiphonia foxtiei</i>															
<i>Pseudochlorodesmis furcellata</i>															
<i>Rhodophyllis divaricata</i>															
<i>Rhodophyllis pinnata</i>															
<i>Rodriguezella streptocellata</i>															
<i>Rodriguezella streptocellata</i>															
<i>Sargassum vulgare</i>															
<i>Sphacelaria plumula</i>															
<i>Sphacelaria</i> sp.															
<i>Symploca hydroides</i>															
<i>Taonia atomaria</i>															
<i>Valonia utricularis</i>															
<i>Womersleyella setacea</i>															
<i>Wrangelia penicillata</i>															
<i>Zanardinia prototypus</i>															
ANIMALS															
Actiniari															
Ak		3.35													
<i>Aglaophenia kirchenpaueri</i>															
ap			0.54												
<i>Aiptasia diaphana</i>															
Ad															
par															
<i>Annectocyna major</i>															
ama															
<i>Aplidium pseudolobatum</i>															
ata															
adam															
bal															
<i>Axinella damicornis</i>															
<i>Balanus perforatus</i>															
Bittium															
<i>Bittium reticulatum</i>															
brio															
Bryozoa - flat form unidentified															
brioplac															
cabo															
<i>Caberea boryi</i>															
cm															
<i>Cacospongia mollior</i>															
zz															
<i>Calliostoma</i> sp.															
<i>Cellepora pumicosa</i>															
cepu															
<i>Celleporina caminata</i>															
celc															
<i>Chlidonia pyriformis</i>															
chp															
<i>Chondrosia reniformis</i>															
chon															
<i>Chlidonia lepadiformis</i>															
clale															
<i>Clavularia crassa</i>															
Clav															
<i>Cliona viridis</i>															
Cv															
<i>Clavelina lepadiformis</i>															
clav															
<i>Corynactis viridis</i>															
Cov															
<i>Crambe crambe</i>															
Cram															
<i>Crista</i> spp.															
Cris															
<i>Didemnidae</i> unidentified															
dni															

Photoquadrat method Cover (cm ² / 2480 cm ²)	0			4			12			25			50		
	winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer	winter	spring	summer
<i>Didemnum granulosum</i>															
<i>Diplosoma spongiforme</i>															
<i>Dysidea avara</i>															
<i>Eudendrium</i> sp.															
<i>Eudistoma banyulense</i>															
<i>Eurypon</i> sp.															
Gastropoda unidentified.															
Hydrozoans unidentified															
<i>Ircinia variabilis</i>															
<i>Leptopsammia pruvoti</i>															
<i>Leucosolenia variabilis</i>															
<i>Lichenopora radiata</i>															
<i>Limaria hians</i>															
<i>Lissoclinum perforatum</i>															
<i>Maasella edwardsi</i>															
<i>Mimosella gracilis</i>															
<i>Miniacina miniacea</i>															
<i>Myriapora truncata</i>															
<i>Myxocola aesthetica</i>															
<i>Paracentrotus lividus</i>															
<i>Parazoanthus axinellae</i>															
<i>Phorbos topsenti</i>															
Polychaeta unidentified															
Porifera 1 unidentified															
Porifera 2 unidentified															
<i>Pseudodistoma cyrnusense</i>															
<i>Pycnoclavella communis</i>															
<i>Pyura dura</i>															
<i>Raspaciona aculeata</i>															
<i>Salmacina dysteri</i>															
<i>Sarcodictyon roseum</i>															
<i>Sarcotragus fasciculatus</i>															
<i>Sarcotragus spinosulus</i>															
<i>Savignyiella lafonti</i>															
<i>Schizobrachiella sanguinea</i>															
<i>Schizonavella mamillata</i>															
<i>Scrupocellaria</i> spp.															
<i>Serpula vermicularis</i>															
<i>Serularella</i> spp.															
<i>Sertularia perpusilla</i>															
<i>Sycon raphanus</i>															
<i>Thylacodes arenarius</i>															
<i>Trididemnum cereum</i>															
Tunicate unidentified															
Tunicate 2 unidentified															
"COMPLEX" and others															
Complex 1															
Complex 2															
Complex 3															
Complex 4															
Complex 5															
Complex 6															
Complex 7															

Photoquadrat method Cover (cm ² / 2480 cm ²)	Depth Season	0			4			12			25			50					
		winter	spring	summer	fall	winter	spring	summer	fall	winter	spring	summer	fall	winter	spring	summer	fall		
Complex 8	x8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Complex 9	x9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Dark patches	N	10.37	.	.	11.34	1.97	37.76	83.42	19.65	15.43	14.60	16.11	12.70	17.89	4.20	8.31	36.80	48.55	12.63
Unidentified patches	unid	.	.	.	.	0.09	0.67	0.26	.	2.00	0.52	0.70	.	.	.	.	.	.	.
Bare rock patches	R	.	.	.	35.53	12.19	.	213.45	152.69	26.20	37.32	23.92	7.47	24.03	12.34	76.38	6.42	10.69	26.36

“COMPLEX” COMPOSITION:

- x1: Dictyotales and *Haliptilon virgatum*
- x2: Filamentous red algae and *Haliptilon virgatum*
- x3: *Haliptilon virgatum*, *Falkenbergia* sp.-stadium, Bryozoa (mainly *Crisia* spp., *Scrupocellaria* spp. and *Chlidonia pyriformis*)
- x4: *Sphacelaria* sp., *Falkenbergia* sp.-stadium, *Haliptilon virgatum* and young dictyotales
- x5: = x3 + x4
- x6: *Sphacelaria* sp., *Leptofaucha coralligena*, *Halopteris filicina*, *Haliptilon virgatum* and *Mimosella gracilis*
- x7: *Sphacelaria* sp. and small red algae
- x8: *Peyssonnelia rosa-marina*, *Peyssonnelia* sp., other crustose corallinales, *Haliptilon virgatum*, small red algae, *Sphacelaria* sp., small bryozoans, *Alcyonium coralloides*
- x9: *Womersteyella setacea*, *Polysiphonia subulifera* and small bryozoans (*Crisia* spp., *Scrupocellaria* spp., among others)

Table S4. – Number of species (N) and species diversity (H') for each depth, season and sampling method. CV is the seasonal coefficient of variation.

Depth	Season	N			H'		
		Collection	In situ visual	Photoquadrat	Collection	In situ visual	Photoquadrat
0 m	spring	42.0	22.0	5.0	2.16	3.46	0.33
	summer	35.0	27.0	5.0	1.82	4.13	0.17
	fall	35.0	24.0	14.0	2.17	3.90	1.43
	winter	46.0	34.0	12.0	2.54	4.04	0.39
	%CV	13.7	19.8	52.2	13.5	7.6	99.3
	mean±sd	39.5±5.4	26.8±5.3	9.0±4.7	2.2±0.3	3.9±0.3	0.6±0.6
4 m	spring	23.0	17.0	36.0	1.64	3.28	2.89
	summer	35.0	24.0	35.0	1.35	3.82	3.18
	fall	44.0	19.0	43.0	1.57	3.28	3.14
	winter	42.0	29.0	40.0	1.08	3.77	3.76
	%CV	26.4	24.2	9.6	17.9	8.4	11.4
	mean±sd	36.0±9.5	22.3±5.4	38.5±3.7	1.4±0.3	3.5±0.3	3.2±0.4
12 m	spring	33.0	21.0	41.0	2.60	3.42	3.27
	summer	53.0	20.0	41.0	2.87	3.51	3.02
	fall	47.0	20.0	45.0	1.96	3.48	3.01
	winter	45.0	27.0	50.0	1.83	3.93	4.19
	%CV	18.8	15.3	9.7	21.6	6.5	16.5
	mean±sd	44.5±8.4	22.0±3.4	44.3±4.3	2.3±0.5	3.6±0.2	3.4±0.6
25 m	spring	53.0	17.0	30.0	2.07	3.27	2.26
	summer	45.0	23.0	33.0	3.49	3.63	1.98
	fall	56.0	21.0	45.0	3.34	3.44	2.84
	winter	59.0	24.0	64.0	3.03	3.87	3.93
	%CV	11.3	14.6	35.9	21.4	7.2	31.4
	mean±sd	53.3±6.0	21.3±3.1	43.0±15.4	3.0±0.6	3.6±0.3	2.8±0.9
50 m	spring	74.0	10.0	55.0	2.38	2.18	3.04
	summer	67.0	19.0	44.0	2.63	2.77	2.79
	fall	80.0	21.0	52.0	2.32	3.07	2.72
	winter	77.0	20.0	75.0	3.06	2.96	3.32
	%CV	7.5	28.9	23.3	12.9	14.4	9.2
	mean±sd	74.5±5.6	17.5±5.1	56.5±13.2	2.6±0.3	2.8±0.4	3.0±0.3