

SUPPLEMENT

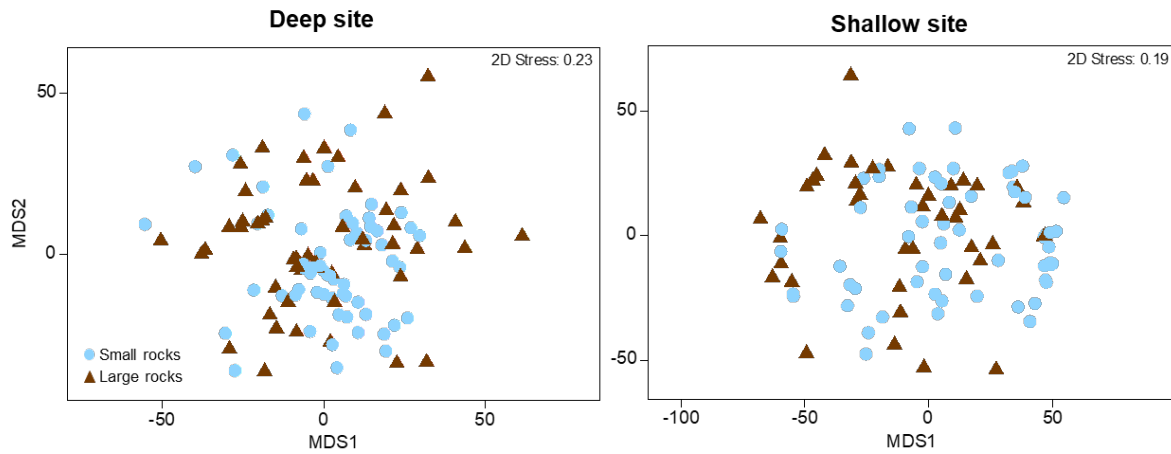


Figure S1. mMDS plots showing the benthic assemblages (fourth-root transformation) on small and large rocks at the two sites. Data for all survey dates are shown.

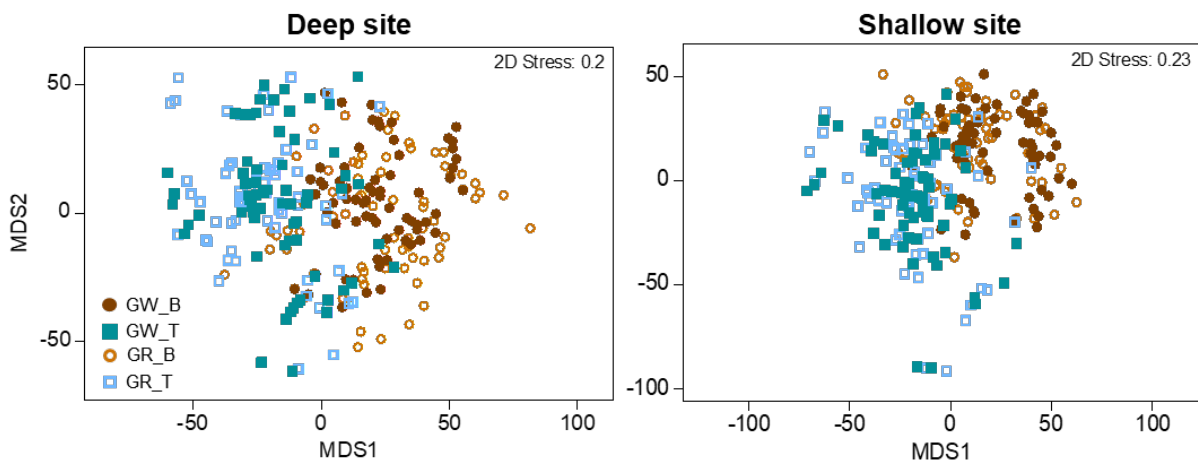


Figure S2. mMDS plots showing benthic assemblages on the top (T) or bottom (B) of greywacke (GW) or granite (GR) rocks at the two sites. Data for all survey dates are shown.

Table S1. Mean percent cover of taxa found on (a) large and small rocks and (b) the top and bottom of small granite (GR) and greywacke (GW) boulders at both sites. Average shown for all survey dates. Comp. = compound.

		a) Rock size				b) Rock type & orientation							
		Deep		Shallow		Deep				Shallow			
		Small	Large	Small	Large	Bottom		Top		Bottom		Top	
Group	Taxon	Small	Large	Small	Large	GR	GW	GR	GW	GR	GW	GR	GW
Sessile	Anemones					0.16						0.05	
	Ascidians (comp.)	0.20	0.27		0.18	0.53	0.22	0.21		0.75	0.48		
	Ascidians (solitary)		0.33	0.07	1.87	0.8	0.11	0.16	0.59	0.05			
	Barnacles	0.13	1.07			2.45	3.51	0.64	1.14	1.44	1.71	0.8	1.23
	Bryozoans					6.13	6.49	0.37	0.49	3.15	3.31	0.21	0.11
	Hard coral					0.21	0.16						
	Hydroids	0.13									0.05	0.11	0.05
	Sabellid worms	0.07	0.07	0.20		17.17	14.43	1.39	0.92	14.45	16.8	0.85	1.12
	Sponges (erect)	0.27	0.07		0.09			0.05	0.05				
	Sponges (encrusting)	0.87	0.40	1.07	0.98	5.55	4.49	0.16	1.14	1.49	1.33		0.37
Mobile	Bivalves					0.16	0.05	0.05			0.05	0.11	
	Gastropods	0.07					0.27			0.16	0.21		
	Sea stars					0.05	0.16						
	Sea urchins					0.53			0.27				
Green algae	<i>Halimeda</i> spp.											0.05	0.05
	<i>Ulva</i> spp.		0.07			0.05	0.16	0.21	0.27	0.11	0.11	0.96	0.85
	Other green algae		0.13										0.05

Red algae	<i>Amphiroa anceps</i>	47.80	57.00	8.13	7.02	6.61	6.7	45.55	38.11	1.87	0.96	10.83	7.31
	CCA	1.87	0.33	3.47	0.18	10.08	4.38	4.53	4.05	4.05	5.65	2.35	2.29
	<i>Corallina officinalis</i>	0.47	0.60		0.62	0.11		1.28	0.54		0.05	0.48	0.11
	<i>Kallymenia</i> spp.											0.21	0.05
	<i>Plocamium</i> spp.									0.05			
	Other red algae		0.07			0.11	0.05	0.11	0.43	0.59	0.21	1.17	0.43
Brown algae	<i>Colpomenia</i> spp.			1.73	0.36			0.05				0.43	0.16
	<i>Dictyota</i> spp.		0.07	1.27	0.27					0.16			0.05
	<i>Ecklonia radiata</i>	1.07	1.60	1.00	3.11				0.16	0.05		0.32	0.27
	Encrusting brown							0.05					0.11
	<i>Lobophora</i> spp.						0.05		0.05				
	<i>Padina crassa</i>	0.07	0.27	1.20	2.04	0.05						0.05	0.11
	<i>Sargassum</i> spp.	3.73	5.80	26.73	48.18		0.05	0.85	0.49	0.16	0.05	0.53	2.56
	<i>Zonaria</i> spp.	0.07	0.33	2.67	2.04	0.05		0.11	0.97	0.16	0.16	0.91	1.12
	Other brown algae	0.73	0.53	0.33	0.27			0.05	0.27	0.21	0.05	0.27	0.37
Turf	Turf	26.80	21.13	31.67	22.93	25.76	24.43	32.32	32.16	14.24	9.01	53.81	50.24
Other	Bare substrata	14.73	9.87	19.40	9.42	23.31	34.05	11.84	17.78	56.96	59.15	25.55	30.88
	Egg structures					0.05					0.05		
	Unknown	0.93		1.07	0.44	0.05	0.22		0.11	0.05	0.37		0.11

Table S2. SIMPER results showing taxa that contributed most to the differences between rock sizes at each site. Position of taxon indicates higher mean abundance. SUB = substrata, SAR = *Sargassum* spp., TUR = turf algae, AMP = *Amphiroa anceps*, CCA = crustose coralline algae, SPO = encrusting sponges, UNK = unknown, ZON = *Zonaria* sp.. Average dissimilarity between groups shown in brackets.

Deep site (34.16%)			Shallow site (55.59%)		
Small	Large	Contribution %	Small	Large	Contribution %
SUB		18.49		SAR	17.43
	SAR	14.90	TUR		16.70
TUR		13.18	SUB		14.12
	AMP	8.06		AMP	12.24
CCA		8.01	CCA		6.67
SPO		5.25	ZON		5.82
UNK		5.01			

Table S3. Results of pairwise comparisons (PERMANOVA) testing for the effect of orientation (bottom, top) within levels of factor time (1 – 5) on assemblages, species richness and diversity at the two study sites. Significant values in bold.

	Deep site		Shallow site	
	Bottom versus Top		Bottom versus Top	
	t	p	t	p
<i>Assemblages</i>				
1 (Aug)	5.497	0.001	10.786	0.001
2 (Nov)	3.106	0.001	3.914	0.001
3 (Mar)	6.385	0.001	4.601	0.001
4 (Jun)	5.569	0.001	6.916	0.001
5 (Oct)	4.459	0.001	4.557	0.001

<i>Species richness</i>				
1 (Aug)	2.373	0.022	3.126	0.002
2 (Nov)	2.983	0.005	1.801	0.080
3 (Mar)	6.659	0.001	4.649	0.001
4 (Jun)	5.045	0.001	2.778	0.010
5 (Oct)	5.036	0.001	2.838	0.006
<i>Species diversity</i>				
1 (Aug)			4.595	0.001
2 (Nov)			3.046	0.004
3 (Mar)			5.353	0.001
4 (Jun)			2.186	0.037
5 (Oct)			4.249	0.001

Table S4. SIMPER results showing taxa that contributed most to the differences between orientation of rocks. Position of taxon indicates higher mean abundance. AMP = *Amphiroa anceps*, SAB = sabellid worms, TUR = turf algae, SUB = substrata, CCA = crustose coralline algae, BRY = bryozoans. Average dissimilarity between groups in brackets.

Deep site (56.78%)			Shallow site (56.81%)		
Bottom	Top	Contribution %	Bottom	Top	Contribution %
	AMP	17.86		TUR	22.08
SAB		15.82	SAB		15.07
	TUR	12.63	SUB		11.75
SUB		11.40	CCA		10.29
CCA		10.06		AMP	8.18
BRY		8.10	BRY		6.31