

## Cumulative effects of an invasive species and nutrient enrichment on rock pool communities

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**Table S1.** Functional groups of macroalgae and slow or sessile invertebrates (>1cm) found within the rockpools.

<b>Turf</b>	<b>Sub-canopy</b>	<b>Canopy</b>	<b>Green ephemeral</b>	<b>Coralline</b>
<i>Ceramium</i> spp.	<i>Chondrus crispus</i>	<i>Fucus serratus</i>	<i>Cladophora</i> sp.	<i>Mesophyllum lichenoides</i>
<i>Ectocarpus</i> sp.	<i>Codium fragile</i>	<i>Halidrys siliquosa</i>	<i>Ulva</i> sp.	<i>Corallina officinalis</i>
<i>Gelidium pusillum</i>	<i>Dictyota dichotoma</i>	<i>Laminaria digitata</i>	<i>Chaetomorpha</i> sp.	
<i>Leathesia difformis</i>	<i>Furcellaria lumbricalis</i>	<i>Sargassum muticum</i>		
<i>Lomentaria articulata</i>	<i>Gastroclonium ovatum</i>	<i>Cystoseira tamariscifolia</i>		
<i>Osmundea hybrida</i>	<i>Scytosiphon lomentaria</i>	<i>Himanthalia elongata</i>		
<i>Osmundea osmunda</i>	<i>Chylocladia verticillata</i>			
<i>Osmundea pinnatifida</i>	<i>Desmarestia ligulata</i>			
<i>Plocamium cartilagineum</i>	<i>Dictyota spiralis</i>			
<i>Polysiphonia</i> spp.	<i>Calliblepharis jubata</i>			
Unidentified turfing red	<i>Champia parva</i>			
<i>Spongomena tomentosum</i>	<i>Mastocarpus stellatus</i>			
<i>Gymnogongrus griffithsia</i>	<i>Dumontia cortata</i>			
<i>Griffithsia flocculosa</i>	<i>Eudesme virescens</i>			
<i>Membranoptera alata</i>				
<i>Plumaria plumosa</i>				
<i>Porphyra</i> spp.				
<i>Ahnfeltia plicata</i>				
<i>Acrosorium venulosum</i>				
<i>Phyllodora crista</i>				
<i>Cryptopleura ramosa</i>				

**Grazers**

*Gibbula umbilicalis*  
*Littorina littorea*  
*Patella ullyponensis*  
*Patella vulgata*  
*Gibbula cineraria*  
*Littorina obtusata*  
*Chiton*  
*Asterina gibbosa*

**Predators**

*Nucella lapillus*

**Suspension feeders**

*Actina equina*  
*Anenoma viridis*

**Detritivores**

*Pagurus bernardus*

**Table S2.** SIMPER analysis showing the taxa that contributed over 90% to dissimilarity in assemblage structure between: (a) non-invaded compared to invasion removed treatments (mean dissimilarity = 54.33%); and (b) non-invaded compared to invaded treatments (mean dissimilarity = 61.19 %). Av. abund. = mean percentage cover or abundance in non-invaded and removed treatments. Diss/SD = variation in the contribution of species to dissimilarities between samples. Contrib. % = contribution of the species to the mean dissimilarity between treatments.

a)	Non-invaded	Removed		
Taxon	Av. abund.	Av. abund.	Diss./SD	Contrib. %
<i>Fucus serratus</i>	62.72	43.36	1.51	13.73
<i>Ulva</i> spp.	16.25	19.22	1.39	7.14
<i>Lithothamium</i> spp.	14.40	8.72	1.36	6.59
<i>Cladophora rupestris</i>	7.74	12.19	1.33	5.94
<i>Chaetomorpha</i> sp.	0.85	10.67	0.88	5.91
<i>Corallina officinalis</i>	23.88	13.54	1.37	4.81
<i>Chondrus crispus</i>	4.09	4.82	1.3	4.31
<i>Gibbula umbilicalis</i>	1.57	4.50	1.59	3.21
<i>Ceramium</i> spp.	3.50	2.25	1.36	3.17
<i>Halidrys siliquosa</i>	3.36	0.56	0.88	3.12
<i>Littorina littorea</i>	0.33	2.33	0.93	2.73
<i>Furcellaria lumbricalis</i>	1.60	1.39	0.92	2.73
<i>Dictyota dichotoma</i>	2.00	0.30	0.87	2.38
<i>Chylocladia verticillata</i>	0.33	2.60	0.62	2.26
<i>Laminaria digitata</i>	2.08	0.34	0.61	2.01
<i>Ectocarpus</i> spp.	0.33	1.60	0.62	1.89
<i>Scytosiphon lomentaria</i>	0.33	1.08	0.76	1.78
<i>Littorina obtusata</i>	0.79	0.33	1.02	1.69
<i>Lomentaria articulata</i>	0.74	0.26	1.04	1.56
<i>Patella ulyssiponensis</i>	0.29	0.67	0.81	1.5
<i>Patella vulgata</i>	0.36	0.50	0.9	1.46
<i>Calliblepharis jubata</i>	1.30	0	0.59	1.41
<i>Osmundea osmunda</i>	0.78	0.39	0.71	1.4
<i>Leathesia difformis</i>	0.29	0.39	0.97	1.3
<i>Gelidium pusillum</i>	0.59	0.17	0.77	1.22
<i>Polysiphonia</i> spp.	0.48	0.17	0.83	1.22
<i>Himantalia elongata</i>	0.96	0.13	0.46	1.11
<i>Hildenbrandia</i> spp.	0.82	0.04	0.51	1.09
<i>Cryptopleura ramosa</i>	0.33	0.08	0.98	1.03
<i>Membranoptera alata</i>	0.29	0.13	0.68	0.88

b) Taxon	Non-invaded Av. abund.	Invaded Av. abund.	Diss/SD	Contrib. %
<i>Fucus serratus</i>	62.72	20.94	1.54	14.10
<i>Ulva</i> spp.	16.25	27.63	1.36	8.21
<i>Lithothamium</i> spp.	14.40	16.25	1.18	7.80
<i>Corallina officinalis</i>	23.88	10.62	1.42	7.01
<i>Cladophora rupestris</i>	7.74	7.64	1.25	5.72
<i>Chondrus crispus</i>	4.09	4.17	1.31	4.53
<i>Ceramium</i> spp.	3.50	1.04	1.30	3.28
<i>Chaetomorpha</i> sp.	0.85	2.98	1.21	3.26
<i>Halidrys siliquosa</i>	3.36	0.21	0.83	2.94
<i>Gibbula umbilicalis</i>	1.57	2.47	1.30	2.41
<i>Dictyota dichotoma</i>	2.00	0.28	0.82	2.30
<i>Scytosiphon lomentaria</i>	0.33	2.33	0.72	2.28
<i>Furcellaria lumbricalis</i>	1.60	0.31	0.93	2.25
<i>Patella ulyssiponensis</i>	0.29	1.20	1.00	2.14
<i>Chylocladia verticillata</i>	0.33	2.01	0.63	1.92
<i>Littorina obtusata</i>	0.79	0.33	0.98	1.76
<i>Laminaria digitata</i>	2.08	0.00	0.47	1.60
<i>Gelidium pusillum</i>	0.59	0.90	0.62	1.55
<i>Ectocarpus</i> sp.	0.33	0.94	0.65	1.53
<i>Osmundea osmunda</i>	0.78	0.80	0.69	1.50
<i>Calliblepharis jubata</i>	1.30	0.21	0.65	1.49
<i>Lomentaria articulata</i>	0.74	0.10	0.98	1.48
<i>Himanthalia elongata</i>	0.96	1.08	0.49	1.47
<i>Patella vulgata</i>	0.36	0.67	0.61	1.37
<i>Mastocarpus stellatus</i>	1.23	0.42	0.43	1.27
<i>Polysiphonia</i> spp.	0.48	0.13	0.76	1.14
<i>Cystoseira tamariscifolia</i>	0.56	0.94	0.37	1.13
<i>Leathesia difformis</i>	0.29	0.17	0.86	1.02
<i>Cryptopleura ramosa</i>	0.33	0.07	0.97	1.00
<i>Hildenbrandia</i> spp.	0.82	0.00	0.46	0.98