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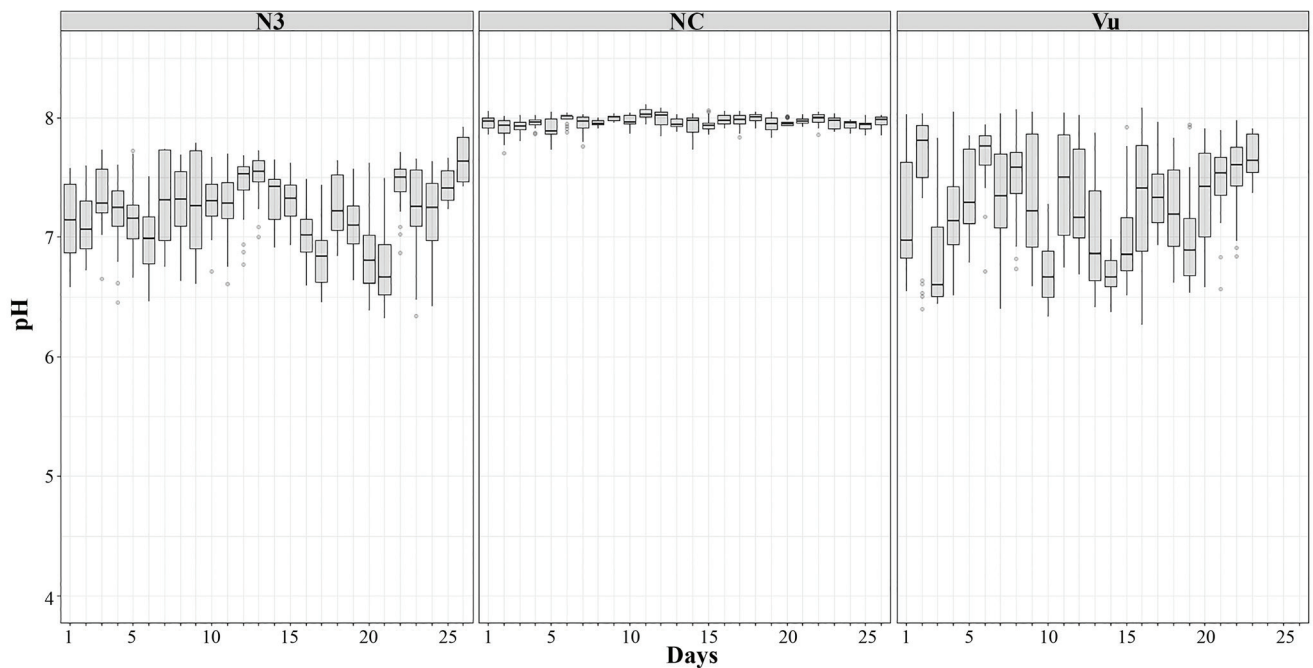


Fig. S1: Trend in time of the pH (measured with hourly acquisition of SeaFet instruments, see Kroeker *et al.*, 2011 for technical details) in the studied stations. At N3 and NC boxplots were measured in May 2010 and graphically modified from Kroeker *et al.* (2011). At Vu (twenty-three days SeaFet deployment) data were acquired in April 2016 at 6 m depth (Vu6) and partially integrated with observation in Gambi *et al.* (2019).

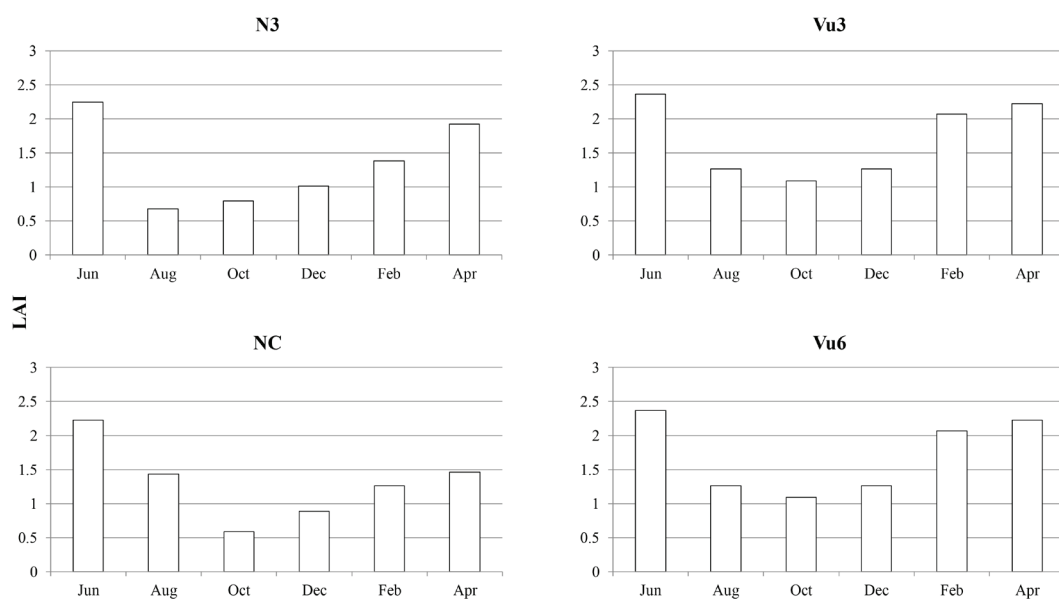


Fig. S2: Leaf Area Index (LAI) calculated at the four sampling stations from June 2016 to April 2017.

Table S1. Summary of all the parameters taken into account in the present study: date indicate when measurements were acquired.

Parameters	NC	N3	Vu3	Vu6
pH	since 2011	since 2011	since 2014	since 2014
<i>P. oceanica</i> shoot density	since 1977	since 1977	2016	2016
Number of leaves				
Leaf biometry				
Leaf Erosion		June 2016 April 2017		
Type of grazing pressure on leaves				
Leaf Area Index (LAI)				
Epiphytic assemblage	June 2016 - October 2017			

Table S2. Results of the SIMPER analyses, showing dominant taxonomical categories mostly responsible for the dissimilarity among stations.

	Taxonomical categories	Average	SD	AvA	AvB	Contr. %	Cum. %
N3 - NC	Enc. Red Algae	0.31	0.15	0.01	3.81	40.14	40.14
	Enc. Brown Algae	0.16	0.12	2.30	1.17	20.46	60.60
	Erect Algae	0.13	0.14	1.80	0.07	16.45	77.05
	Hydrozoans	0.08	0.06	1.07	1.05	11.14	88.19
	Foraminifera and spirorbids	0.04	0.02	0.03	0.53	5.77	93.96
	Bryozoans	0.04	0.03	0.23	0.49	5.40	99.36
	Tunicates	0.01	0.02	0.05	0.01	0.64	100.00
NC - Vu3	Enc. Red Algae	0.29	0.12	3.81	0.00	42.25	42.25
	Enc. Brown Algae	0.12	0.09	1.17	2.17	17.06	59.31
	Erect Algae	0.09	0.09	0.07	1.20	13.66	72.97
	Hydrozoans	0.07	0.06	1.05	0.98	11.11	84.08
	Bryozoans	0.05	0.06	0.49	0.69	8.26	92.34
	Foraminifera and spirorbids	0.04	0.02	0.53	0.02	6.00	98.34
	Tunicates	0.01	0.04	0.01	0.12	1.66	100.00
NC - Vu6	Enc. Red Algae	0.27	0.12	3.81	0.00	37.51	37.51
	Enc. Brown Algae	0.16	0.11	0.07	2.10	22.24	59.75
	Erect Algae	0.13	0.10	1.17	2.34	17.77	77.52
	Hydrozoans	0.06	0.04	1.05	1.17	9.00	86.52
	Bryozoans	0.05	0.05	0.49	0.46	6.87	93.39
	Foraminifera and spirorbids	0.03	0.02	0.53	0.03	5.11	98.50
	Tunicates	0.01	0.02	0.01	0.10	1.50	100.00