Table S1. Concentrations of nutrients (orthophosphates − PO_4, nitrates − NO_3, nitrites − NO_2, ammonia − NH_4 and silicates − SiO_4), chlorophyll *a* (Chl *a*) and prokaryotic abundances (PA) in the water column of Saline Bay

Sampling date	PO_4 µM	NO_3 µM	NO_2 µM	NH_4 µM	SiO_4 µM	Chl*a* μgL^{-1}	PA $\cdot 10^5$cells mL^{-1}
July 2017	0.015	1.132	0.046	0.480	2.046	0.30	6.7
August 2017	0.045	1.374	0.077	1.195	1.583	0.31	7.8
September 2017	0.176	6.242	0.142	1.885	9.824	0.89	7.9
October 2017	0.030	0.743	0.063	0.505	2.470	0.63	4.7
November 2017	0.020	1.120	0.060	0.820	2.640	0.61	2.6
December 2017	0.020	0.570	0.050	0.460	2.350	0.40	4.3
February 2018	0.080	2.150	0.110	1.140	2.273	0.31	4.0
March 2018	0.000	1.667	0.136	0.542	3.199	0.30	3.9
April 2018	0.000	1.004	0.029	0.616	3.805	0.55	6.6
May 2018	0.000	0.855	0.010	0.314	1.341	0.47	8.3
June 2018	0.000	1.650	0.037	0.702	1.901	0.31	9.8
July 2018	0.010	1.162	0.025	1.152	1.254	0.43	11.3
August 2018	0.025	0.652	0.043	0.906	1.853	0.39	6.7
September 2018	0.000	0.487	0.048	0.487	3.522	0.39	5.7
October 2018	0.195	0.855	0.043	0.721	0.769	0.55	4.4

Table S2. Fatty acid markers assigned to organic sources and fatty acid pools: SAT – saturated fatty acids, PUFA – polyunsaturated fatty acids

Fatty acids	Source	Pool
C15:0i, ai; C15:0; C16:0i; C17:0i, ai; C17:0Δ; C17:0; C18:1(n-7)	Bacteria / Detritus	SAT
C20:5(n-3), C20:4(n-3)	Phytoplankton / Seston Macroalgae; Rhodophyta, Ochrophyta	PUFA
C18:3(n-3); C18:2(n-6)	Macroalgae; Chlorophyta *C. nodosa*	PUFA
C ≥ 24 (C24:0, C26:0, C28:0)	Vascular plants; terrestrial / seston Detritus (*C. nodosa*)	SAT
C16:0, C18:0	Common to all sources	SAT

Table S3. F-ratios, ranges (min and max), means and standard deviations (sd) of fatty acids proportions and ratios for groups of *C. nodosa* leaves obtained by K-means procedure. SAT – saturated fatty acids, MUFA – monounsaturated fatty acids, PUFA – polyunsaturated fatty acids, UND – unsaturation degree, BACT – bacterial fatty acids.

		Group 1				Group 2				Group 3				August
Fatty acid	F- ratio	min	mean	max	sd	min	mean	max	sd	min	mean	max	sd	2018
C14:0	8,431	0,68	0,93	1,25	0,21	0,62	0,90	1,17	0,23	0,85	1,57	2,92	1,02	2,92
C16:1(n-7)	0,507	1,14	2,15	4,79	1,47	0,68	1,36	2,08	0,61	0,47	2,29	4,10	2,57	3,10
C16:0	6,014	15,11	19,87	25,18	3,53	19,87	21,07	22,94	1,44	26,51	27,99	29,46	2,09	28,63
C18:2(n-6)	9,921	21,27	23,36	27,00	2,79	21,75	27,11	32,92	5,22	16,20	17,56	18,92	1,92	5,96
C18:3(n-3)	33,576	24,75	31,41	34,96	3,72	21,67	24,34	26,28	1,95	8,67	12,22	15,77	5,02	0,00
C18:1(n-9)	1,214	3,93	4,94	5,43	0,60	3,56	6,11	8,04	2,22	4,65	6,21	7,76	2,20	7,52
C18:0	5,571	2,13	2,56	3,29	0,43	2,33	2,83	3,61	0,61	2,33	2,95	3,56	0,87	5,02
C20:0	0,713	0,43	0,70	1,26	0,31	0,54	0,70	0,86	0,18	0,41	0,42	0,42	0,01	0,69
C22:0	0,570	1,54	2,43	4,40	1,09	2,47	2,90	3,40	0,43	1,69	2,02	2,34	0,46	2,88
≥ C24	147,894	0,79	2,22	3,15	0,83	3,07	3,92	4,80	0,89	13,26	14,82	16,37	2,20	22,35
SAT	103,457	29,14	31,79	33,99	2,02	33,02	36,01	40,11	3,43	53,89	57,24	60,59	4,74	78,26
MUFA	2,717	8,65	9,83	11,75	1,30	9,76	10,46	10,96	0,50	10,57	11,87	13,16	1,83	12,74
PUFA	123,611	55,11	58,08	59,47	1,71	49,22	53,23	56,70	3,36	26,17	30,43	34,68	6,02	5,96
UND	89,096	4,85	5,16	5,37	0,23	3,49	4,14	4,58	0,51	1,42	1,61	1,79	0,26	0,34
BACT	2,362	1,76	3,16	5,15	1,20	1,72	3,07	4,63	1,19	2,96	4,81	6,66	2,62	13,14

Group 1: July-October 2017, February-March 2018

Group 2: November-December 2017, April-May 2018

Group 3: June-July 2018

Table S4. F-ratios, ranges (min and max), means and standard deviations (sd) of fatty acids proportions and ratios for groups of *C. nodosa* rhizomes and roots obtained by K-means procedure. SAT – saturated fatty acids, MUFA – monounsaturated fatty acids, PUFA – polyunsaturated fatty acids, UND – unsaturation degree, BACT – bacterial fatty acids.

		Group 1				Group 2				Group 3			
Fatty acid	F-ratio	min	mean	max	sd	min	mean	max	sd	min	mean	max	sd
C14:0	2,243	0,50	1,09	1,71	0,51	1,12	1,35	1,74	0,27	1,77	1,99	2,38	0,24
C16:1(n-7)	1,894	1,12	2,12	4,24	1,12	1,40	2,21	2,52	0,54	1,79	4,11	8,86	2,82
C16:0	2,517	17,72	23,11	30,15	5,05	18,35	22,82	25,60	3,39	18,96	24,69	27,42	3,33
C18:2(n-6)	36,160	21,06	27,91	33,29	4,62	21,28	23,26	26,28	2,22	13,34	15,53	17,30	1,75
C18:3(n-3)	3,504	3,12	4,60	8,95	2,96	4,02	4,53	5,59	0,72	3,17	4,26	5,15	0,74
C18:1(n-9)	11,067	12,15	13,39	14,65	1,09	11,73	12,55	12,91	0,56	6,41	7,48	8,89	0,92
C18:0	2,640	3,42	4,76	7,15	1,40	4,10	4,65	5,27	0,50	3,40	4,28	5,49	0,96
C20:0	0,618	0,85	0,99	1,59	0,32	0,62	0,82	1,02	0,23	0,42	0,70	1,04	0,27
C22:0	0,328	1,37	2,55	6,00	1,73	1,71	2,10	2,49	0,44	1,26	2,40	4,65	1,41
≥C24	9,814	4,75	7,35	13,08	3,08	9,90	13,61	20,45	4,78	9,20	22,54	34,46	9,15
SAT	59,790	36,90	45,14	56,75	7,46	49,44	51,49	54,00	2,36	59,83	65,20	67,96	3,44
MUFA	4,420	17,19	20,78	28,56	4,23	17,10	18,59	20,78	1,58	11,35	13,68	18,50	2,82
PUFA	39,164	24,15	33,92	43,66	7,36	27,33	29,59	33,46	2,76	19,85	21,12	22,62	1,11
UND	18,765	1,21	2,06	2,77	0,61	1,38	1,55	1,76	0,20	0,78	0,90	1,17	0,16
BACT	1,625	5,10	6,24	8,35	1,17	5,49	7,34	8,71	1,34	6,72	9,09	10,91	2,45

Group 1: July - October 2017, February - March 2018

Group 2: November-December 2017, April -May 2018

Group 3: June -October 2018

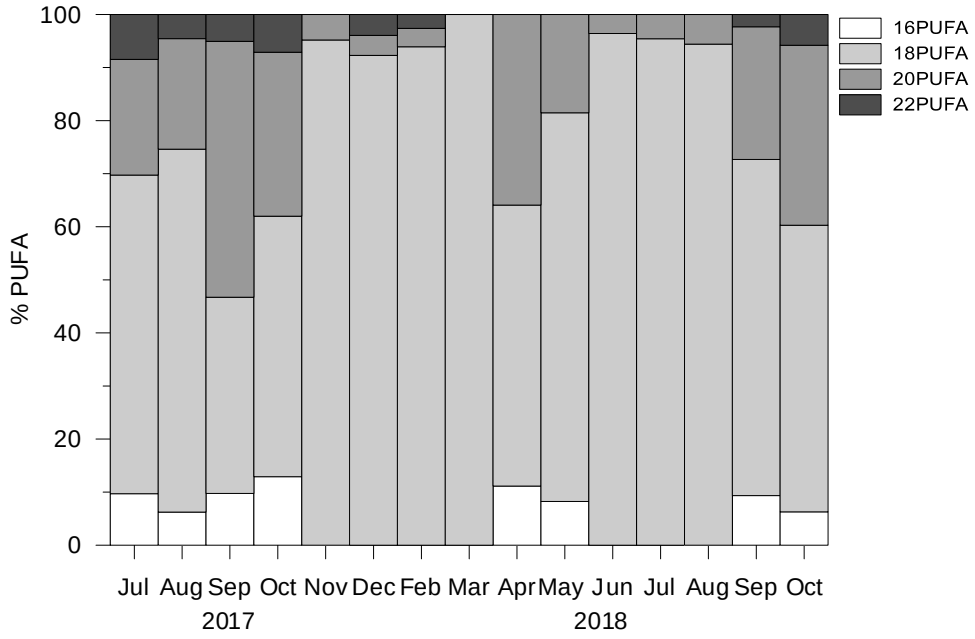

Figure S1. Contributions of PUFA with 16, 18, 20 and 22C atoms to PUFA pool of particulate matter in seawater

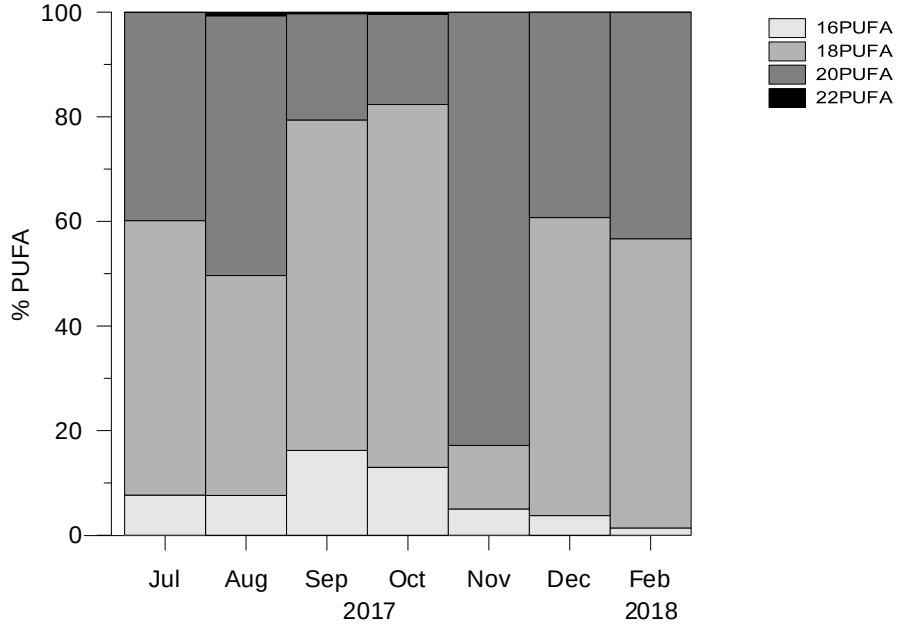

Figure S2. Contributions of PUFA with 16, 18, 20 and 22C atoms to PUFA pool of epiphytic macroalgae mix during their notable presence in a *C. nodosa* meadow

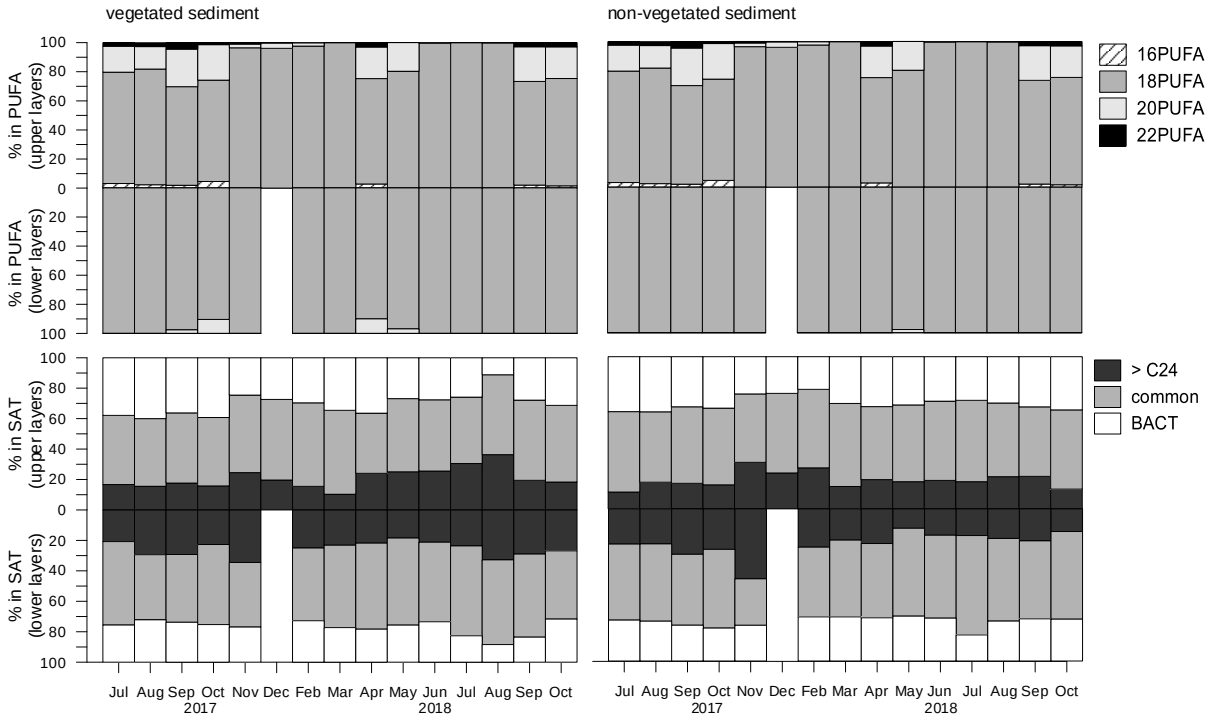

Figure S3. Contributions of PUFA with 16, 18, 20 and 22C atoms to PUFA pool and contributions of bacterial (BACT), common and long chain fatty acids ($C \geq 24$) to SAT pool in the upper (0 - 4 cm) and lower (5 - 8 cm) layers of vegetated and non-vegetated sediments.