

# Simultaneous analysis of $\delta^{13}\text{C}$ , $\delta^{15}\text{N}$ and $\delta^{34}\text{S}$ ratios uncovers food web relationships and the trophic importance of epiphytes in an eelgrass *Zostera marina* community

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## Supplement

Table S1.  $\delta^{13}\text{C}$ ,  $\delta^{15}\text{N}$  and  $\delta^{34}\text{S}$  values (mean  $\pm$  standard deviation), C:N and S:N ratios of primary producers and consumers collected in an eelgrass *Zostera marina* bed in the Kiel Bight, March to September 2011

Sample	n	$\delta^{15}\text{N}$	$\delta^{13}\text{C}$	$\delta^{34}\text{S}$	C:N ratio
<b>Primary Producers</b>					
Seston	9	7.43 $\pm$ 1.13	-20.98 $\pm$ 3.45	11.94 $\pm$ 3.23	13.51 $\pm$ 2.56
Epiphytes	6	4.27 $\pm$ 1.51	-14.08 $\pm$ 1.8	14.22 $\pm$ 1.59	10.36 $\pm$ 2.51
<i>Zostera marina</i> (leaves)	20	7.37 $\pm$ 1.06	-11.59 $\pm$ 1.82	5.58 $\pm$ 2.3	25.88 $\pm$ 6.81
<i>Zostera marina</i> (rhizom)	18	6.87 $\pm$ 0.67	-11.67 $\pm$ 0.96	-0.44 $\pm$ 4.2	37.99 $\pm$ 7.56
<b>Invertebrates</b>					
Anopla					
<i>Lineus ruber</i>	2	12.44 $\pm$ 1.29	-20.25 $\pm$ 0.73	12.89 $\pm$ 2.78	4.86 $\pm$ 1.18
Anthozoa					
<i>Actinia equina</i>	1	7.56	-26.06	16.41	5.65
<i>Edwardsia longicornis</i>	5	8.16 $\pm$ 0.65	-22.01 $\pm$ 0.89	10.36 $\pm$ 1.85	4.48 $\pm$ 0.3
<i>Urticina felina</i>	1	7.89	-15.89	14.48	8.64
Ascidiacea					
<i>Ascidia aspersa</i>	1	10.34	-20.29	18.31	6.69
<i>Ciona intestinalis</i>	7	8.1 $\pm$ 0.6	-20.95 $\pm$ 0.48	17.83 $\pm$ 0.88	5.96 $\pm$ 0.61
Asteroidea					
<i>Asterias rubens</i>	15	8.12 $\pm$ 0.98	-21.82 $\pm$ 1.92	15.21 $\pm$ 0.92	6.6 $\pm$ 1.4
Bivalvia					
<i>Abra prismatica</i>	4	9.77 $\pm$ 1.64	-19.89 $\pm$ 1.25	15.14 $\pm$ 0.31	4.98 $\pm$ 0.69
<i>Cerastoderma edule</i>	30	8.04 $\pm$ 0.73	-20.97 $\pm$ 0.94	15.56 $\pm$ 1.27	5.51 $\pm$ 0.82
<i>Mya</i> sp.	5	7.33 $\pm$ 0.51	-21.66 $\pm$ 0.45	11.35 $\pm$ 3.63	4.83 $\pm$ 0.38
<i>Mytilus</i> spp.	45	8.00 $\pm$ 1.39	-21.43 $\pm$ 2.66	15.31 $\pm$ 1.15	4.88 $\pm$ 0.62
Demospongiae					
<i>Chalinula limbata</i>	1	7.47	-21.74	16.72	5.22
<i>Halichondria panicea</i>	7	9.31 $\pm$ 1.44	-21.34 $\pm$ 1.81	16.08 $\pm$ 1.08	6.53 $\pm$ 0.67
<i>Suberites ficus</i>	2	6.43 $\pm$ 0.29	-24.67	14.72	5.8 $\pm$ 0.08
Gastropoda					
<i>Akera bullata</i>	1	8.53	-19.29	17.74	6.38
<i>Buccinum undatum</i>	2	12.39 $\pm$ 0.32	-18.63 $\pm$ 0.7	15.64 $\pm$ 1.76	5.43 $\pm$ 0.41
<i>Facelina bostoniensis</i>	1	12.32	-19.59	15.60	4.72
<i>Lacuna vincta</i>	1	6.58	-18.39	12.99	5.25
<i>Littorina littorea</i>	19	9.77 $\pm$ 1.31	-17.52 $\pm$ 1.82	16.85 $\pm$ 1.73	4.84 $\pm$ 0.42
Malacostraca					
<i>Carcinus maenas</i>	3	10.76 $\pm$ 1.03	-18.43 $\pm$ 0.23	14.03 $\pm$ 2.25	5.99 $\pm$ 0.35

<i>Corophium volutator</i>	4	8.49 ± 0.31	-20.34 ± 0.24	14.25 ± 0.39	5.08 ± 0.41
<i>Crangon crangon</i>	15	11.39 ± 0.88	-17.72 ± 1.48	11.32 ± 2.33	4.48 ± 0.47
<i>Dexamine spinosa</i>	1	9.88	-19.14	15.53	4.43
<i>Diastylis rathkei</i>	1	8.08	-18.76	16.44	6.27
<i>Gammarus locusta</i>	56	8.29 ± 1.32	-21.33 ± 1.42	11.22 ± 1.78	5.48 ± 0.4
<i>Idotea balthica</i>	58	7.9 ± 0.88	-20.05 ± 1.63	15.31 ± 1.46	6.07 ± 1.06
<i>Mysis mixta</i>	6	8.53 ± 1.32	-21.18 ± 1.28	14.16 ± 1.29	5 ± 0.69
<i>Palaemon adspersus</i>	8	10.43 ± 1.21	-18.49 ± 1.15	15.19 ± 0.53	5.34 ± 2.18
<i>Praunus flexuosus</i>	24	9.5 ± 1.79	-19.88 ± 1.11	13.54 ± 2.18	4.73 ± 0.54
<b>Maxillopoda</b>					
<i>Acartia</i> spp.	42 (317)	7.18 ± 1.71	-24.63 ± 1.62	19.02 ± 2.15	6.16 ± 1.91
<i>Amphibalanus improvisus</i>	3	8.65 ± 0.87	-19.28 ± 1.94	17.5 ± 0.09	5.95 ± 1
Cirripedia larvae	9 (875)	6.88 ± 0.61	-24.31 ± 1.57	20.19 ± 10.4	1.21 ± 0.51
<i>Oithona</i> spp.	17 (193)	7.2 ± 1.91	-25.4 ± 0.71	20.22 ± 1.62	5.35 ± 1.34
<i>Pseudocalanus</i> spp.	7 (68)	8.18 ± 1.14	-23.9 ± 2.05	18.99 ± 1.69	4.87 ± 0.54
<i>Temora</i> spp.	16 (84)	7.27 ± 1.47	-24.87 ± 1.44	19.67 ± 1.58	5.41 ± 0.84
<b>Polychaeta</b>					
<i>Arenicola marina</i>	2	11.11 ± 0.44	-17.91 ± 0.52	10.23 ± 1.37	5.24 ± 0.06
<i>Capitella capitata</i>	2	11.17 ± 0.42	-19.98 ± 0.12	7.47 ± 0.19	4.85 ± 0.13
<i>Eteone longa</i>	3	12.05 ± 0.34	-20.58 ± 1.7	10.15 ± 0.76	4.52 ± 0.2
<i>Gattyana cirrhosa</i>	7	10.52 ± 1.37	-19.71 ± 0.6	13.48 ± 1.45	3.29 ± 2.25
<i>Harmothoe imbricata</i>	1	9.53	-19.88	13.79	4.53
<i>Lepidonotus squamatus</i>	8	10.12 ± 1.83	-20.18 ± 0.92	13.89 ± 1.3	5.15 ± 1.56
<i>Neoamphitrite figulus</i>	3	10.51 ± 0.7	-21.29 ± 0.77	9.38 ± 2.13	5.11 ± 1.02
<i>Nephtys hombergii</i>	14	9.27 ± 2.15	-18.85 ± 2.72	9.84 ± 2.15	3.51 ± 2.33
<i>Hediste diversicolor</i>	34	11.97 ± 1.74	-18.04 ± 0.29	8.52 ± 1.28	4.93 ± 3.41
<i>Nereis pelagica</i>	59	9.17 ± 1.59	-17.83 ± 1.51	10.67 ± 2.38	4.29 ± 1.61
<i>Alitta virens</i>	5	11.64 ± 0.81	-19.35 ± 0.64	12.02 ± 1.43	4.86 ± 0.49
<i>Polydora ciliata</i>	1	11.81	-19.81	17.47	5.26
<b>Rhabditophora</b>					
<i>Cryptocelides loveni</i>	5	8.28 ± 0.68	-17.82 ± 0.72	17.01 ± 1.39	6.24 ± 1.14
<b>Scyphozoa</b>					
<i>Aurelia</i> spp. medusa	1	7.83	-25.56	19.30	5.41
<b>Sipunculidae</b>					
<i>Phascolion strombi</i>	2	12.37 ± 0.74	-18.82 ± 0.16	10.03 ± 1.27	4.54 ± 0.04
<b>Fish</b>					
<i>Ammodytes tobianus</i>	5	12.31 ± 0.86	-22.63 ± 0.35	16.49 ± 0.39	4.2 ± 0.18
<i>Belone belone</i>	1	12.30	-20	18.19	3.85
<i>Cyclopterus lumpus</i>	7	10.2 ± 1.04	-18.98 ± 0.8	15.11 ± 1.21	5.19 ± 0.72
<i>Gasterosteus aculeatus</i>	11	12 ± 1.18	-22.03 ± 1.41	17.17 ± 1.28	5.6 ± 1.18
Gobiidae	14	11.94 ± 1.11	-20.59 ± 1.27	15.59 ± 1.73	4.78 ± 1.63
<i>Spinachia spinachia</i>	5	11.47 ± 1.43	-17.71 ± 1.24	15.85 ± 1.01	4.23 ± 0.54
Syngnathidae	30	10.55 ± 0.99	-20.68 ± 1.82	15.16 ± 1.73	5.54 ± 1.34