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Warming enhances carbon dioxide and methane fluxes from Red Sea seagrass (*Halophila stipulacea*) sediments

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Supplementary

TABLES

Table S1: Mean ± SE CO_2 fluxes measured in vegetated and bare sediments exposed to warming from 25 - 37 ˚C and maintained at 25 ˚C. Days indicate the time since the onset of the experiment.

	CO_2 production rate (µmol CO_2 m^{-2} d^{-1})					
	Warming, 25 - 37 ˚C			Constant temperature, 25 ˚C		
Days	Temperature (˚C)	Vegetated sediments	Bare sediments	Temperature (˚C)	Vegetated sediments	Bare sediments
2	25	747.62 ± 590.24	73.76 ± 391.54	25	527.18 ± 605.17	175.72 ± 307.19
5	27	1798.24 ± 1762.62	184.16 ± 206.54	25	-229.02 ± 498.39	-331.73 ± 44.79
8	29	1024.33 ± 477.27	315.07 ± 213.32	25	-233.58 ± 393.44	-250.91 ± 129.42
11	31	1341.18 ± 278.32	734.41 ± 372.15	25	-820.06 ± 175.14	-382.96 ± 164.46
14	33	1341.88 ± 405.25	1426.84 ± 255.33	25	-871.44 ± 281.91	-5.91 ± 114.24
17	35	6058.69 ± 3141.78	1298.08 ± 183.1	25	-804.09 ± 179.12	89.49 ± 212.86
20	37	10422.18 ± 2570.12	1718.8 ± 402.69	25	-941.7 ± 208.15	-130.98 ± 214.6

Table S2: Mean ± SE CH_4 fluxes measured in vegetated and bare sediments exposed to warming from 25 - 37 ˚C and maintained at 25 ˚C. Days indicate the time since the onset of experiment.

	CH_4 production rate (µmol CH_4 m^{-2} d^{-1})					
	Warming, 25 - 37 ˚C			Constant temperature, 25 ˚C		
Days	Temperature (˚C)	Vegetated sediments	Bare sediments	Temperature (˚C)	Vegetated sediments	Bare sediments
2	25	54.1 ± 23.21	4.82 ± 4.14	25	59.67 ± 15.82	7.95 ± 4.56
5	27	57.33 ± 18.78	13.14 ± 5.92	25	82.2 ± 16.41	6.4 ± 2.09
8	29	48.79 ± 20.37	3.69 ± 1.51	25	49.01 ± 8.42	3.52 ± 1.75
11	31	47.94 ± 19.85	4.81 ± 1.72	25	41.21 ± 8.99	1.84 ± 0.76
14	33	19.65 ± 4.96	4.78 ± 1.69	25	26.69 ± 3.46	1.57 ± 0.35
17	35	68.65 ± 39.48	3.73 ± 0.93	25	28.43 ± 4.0	2.76 ± 1.21
20	37	88.11 ± 15.19	27.18 ± 19.62	25	18.45 ± 7.35	0.73 ± 0.22

Table S3: Mean ± SE CO_2 fluxes measured in vegetated and bare sediments exposed to darkness at 25 ˚C. Days indicate the time since the onset of experiment.

CO_2 production rate (μmol CO_2 m^{-2} d^{-1})			
Days	Temperature (˚C)	Vegetated sediments	Bare sediments
2	25	-1120.63 ± 280.14	-372.77 ± 93.55
9	25	308.70 ± 476.30	-638.34 ± 168.80
12	25	1452.53 ± 518.04	-319.12 ± 236.70
15	25	1441.06 ± 343.63	-153.57 ± 125.23
18	25	1809.12 ± 463.59	26.46 ± 227.48
21	25	1049.19 ± 427.39	-282.71 ± 159.16

Table S4: Mean ± SE CH_4 fluxes measured in vegetated and bare sediments exposed to darkness at 25 ˚C. Days indicate the time since the onset of experiment.

CH_4 production rate (μmol CH_4 m^{-2} d^{-1})			
Days	Temperature (˚C)	Vegetated sediments	Bare sediments
2	25	39.11 ± 12.33	6.64 ± 2.81
9	25	27.164 ± 4.38	11.05 ± 4.84
12	25	22.57 ± 5.84	8.64 ± 3.04
15	25	18.13 ± 5.21	7.25 ± 1.43
18	25	16.13 ± 3.41	7.40 ± 1.21
21	25	7.79 ± 2.54	4.74 ± 1.04