

Electronic supplementary material

Respiratory oxygen consumption in the seagrass *Zostera marina* varies on a diel basis and is partly affected by light

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Table ESM1. Mean values of pH, oxygen concentrations and temperature in the aquaria at the time points when samples were taken for measurements (mean $\pm$ SD). Number of replicates in brackets.

Time	03:15	06:30	10:00	13:30	17:00	20:30	00:00
pH	8.15 $\pm$ 0.00 (n=2)	8.13 $\pm$ 0.06 (n=4)	8.18 $\pm$ 0.04 (n=6)	8.19 $\pm$ 0.04 (n=9)	8.25 $\pm$ 0.03 (n=7)	8.21 $\pm$ 0.03 (n=9)	8.20 $\pm$ 0.04 (n=6)
O ₂ (mg/L ⁻¹)	10.19 $\pm$ 0.27 (n=5)	9.98 $\pm$ 0.33 (n=4)	10.04 $\pm$ 0.38 (n=4)	10.18 $\pm$ 0.76 (n=5)	10.66 $\pm$ 0.62 (n=5)	10.60 $\pm$ 0.43 (n=5)	10.50 $\pm$ 0.37 (n=5)
Temp (°C)	16.49 $\pm$ 0.48 (n=6)	16.45 $\pm$ 0.34 (n=5)	16.35 $\pm$ 0.27 (n=6)	16.71 $\pm$ 0.25 (n=7)	16.83 $\pm$ 0.19 (n=6)	16.59 $\pm$ 0.36 (n=7)	16.47 $\pm$ 0.35 (n=7)

Table ESM2. Sampling scheme of the laboratory study with consecutive days (starting at 20:30 on day 1 and terminating at day 10 at 03:15) and time points. Light grey fields indicate measurements in “light” and dark grey in “continuous darkness”. The number in brackets at each measuring occasion is the number of replicates, * is the occasions where samples were taken for gene expression analyses.

	1	2	3	4	5	6	7	8	9	10
00:00		(2) *		(2) *	(2) *		(3)	(1) *	(2) *	(1) *
03:15		(1) *	(2) *	(2) *		(2)		(2) *	(2) *	(2) *
06:30		(2) *	(2) *	(1) *			(3) *	(2) *	(2) *	
10:00		(2) *	(2) *	(2) *			(3) *	(2) *	(2) *	
13:30		(2) *	(2) *	(2) *	(2)	(3)	(3) *	(2) *	(2) *	
17:00		(2) *	(2) *	(2) *	(2)	(3)	(2) *	(2) *	(2) *	
20:30	(2)	(2) *	(2) *	(3) *	(3)		(2) *	(2) *	(1) *	

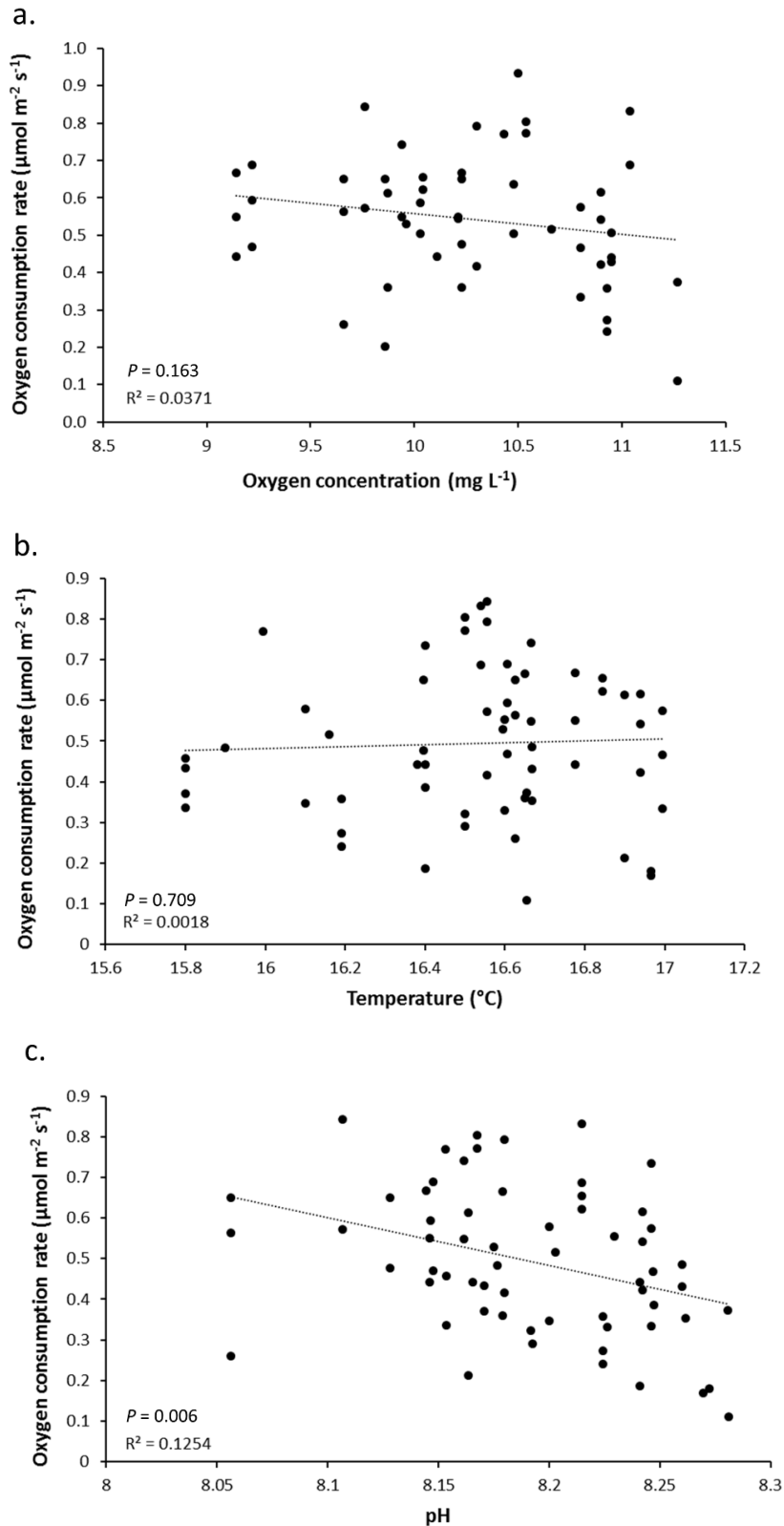


Fig. ESM1. The relationships between the oxygen consumption rate (y-axes) and oxygen concentration (a), temperature (b) and pH (c) in the experimental chambers. No relationship was observed between oxygen consumption rate and oxygen concentration or temperature. However, a clear relationship ($P < 0.01$) was present between oxygen consumption rate and pH