

**Title:** Seagrass (*Posidonia oceanica*) seedlings in a high-CO<sub>2</sub> world: from physiology to herbivory.

**Running head:** Performance of seagrass seedlings under high CO<sub>2</sub> availability.

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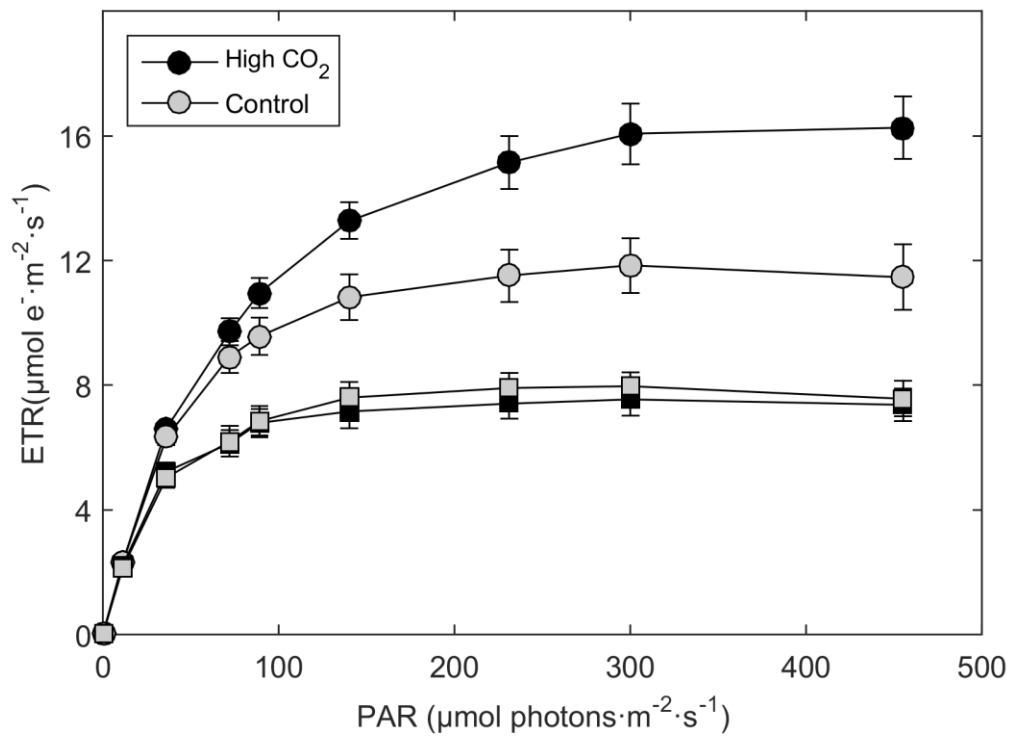
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## Supplementary Material

**Table S1. Experimental conditions.** Average ( $\pm$  SE) water conditions and carbonate system parameters of experimental aquaria (with seedlings,  $n = 7$ ) and reference aquarium (without seedlings,  $n = 1$ ) during incubations of seedlings of *P. oceanica* exposed to control and high CO<sub>2</sub> conditions for 90 days.

| <b>Variable</b>                                | <b>Control CO<sub>2</sub></b> | <b>High CO<sub>2</sub></b> |
|--|-------------------------------|----------------------------|
| Temperature (°C)                               | 16.36 $\pm$ 0.53              | 16.19 $\pm$ 0.75           |
| Light ( $\mu\text{mol s}^{-1} \text{m}^{-2}$ ) | 71.07 $\pm$ 5.32              | 73.59 $\pm$ 5.69           |
| pH <sub>T</sub> (17°C)                         | 8.06 $\pm$ 0.02               | 7.61 $\pm$ 0.02            |
| A <sub>T</sub> (mmol/kgSW)                     | 2984 $\pm$ 29                 | 2971 $\pm$ 40              |
| pCO <sub>2</sub> ( $\mu\text{atm}$ )           | 535 $\pm$ 21                  | 1574 $\pm$ 47              |
| [CO <sub>3</sub> <sup>2-</sup> ] (mmol/kgSW)   | 233 $\pm$ 7                   | 97 $\pm$ 5                 |
| [HCO <sub>3</sub> <sup>-</sup> ] (mmol/kgSW)   | 2337 $\pm$ 41                 | 2743 $\pm$ 29              |
| $\Omega_{\text{aragonite}}$                    | 3.54 $\pm$ 0.11               | 1.47 $\pm$ 0.07            |
| $\Omega_{\text{calcite}}$                      | 5.48 $\pm$ 0.17               | 2.27 $\pm$ 0.10            |



**Figure S1. ETR-light curves.** Electron transport rate estimated from Rapid Light Curves performed in seedlings growing under high CO<sub>2</sub> (black) or control (grey) conditions after 60 (circles) and 90 (squares) days of experiment. Error bars indicate standard error.