

## Decision for round #2 : *Revision needed*

the reviewers emphasise the quality and the clear improvement of the manuscript, for the one who had already evaluated it, but both still recommend small improvements with which I agree. I therefore recommend that the authors take these easily integrated remarks into consideration and quickly resubmit the article.

by [gudrun bornette](#), 16 Oct 2024 13:22

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version: 2

## Review by anonymous reviewer 1, 16 Oct 2024 09:55

The authors have addressed the questions and corrected the deficiencies indicated in the previous review. However, I have a few more comments. These new comments are easy to address, and from my side, another review is not necessary—just clarifying the questions related to the comments would suffice.

Minnor comments:

- L96-97. The authors state that the data loggers measured light intensity (lumens m<sup>-2</sup>), temperature (°C), and tidal water level fluctuations (cm). However, the datasets do not include the tidal water level fluctuations. If this information is available, please include it, as it could be highly relevant for comparisons with other seagrass meadows.

The tidal fluctuation file will be made available on request, but is not included in the database due to its important size.

- L157. "... the Gross Community Production as follows:  $GCP = |NCP| - |CR|$ ." Is this equation correct? I would expect it to be  $GCP = |NCP| + |CR|$ , otherwise, GCP would be lower than NCP, which doesn't seem logical.

Yes, you're right. The calculation was OK, but the formula was wrong. Corrected (l161).

- Environment and benthic fluxes data sets. You present underwater light in two different units (lumens m<sup>2</sup> and  $\mu\text{mol quanta m}^{-2} \text{ d}^{-1}$ ). It would be helpful to provide the conversion relationship between these two units to facilitate comparison and interpretation of the data.

A conversion from PPFD to lumen (or vice versa) seems possible. However, it is different for different light sources and conversion factors are given for sunlight or fluorescent lamps. In our case, these measurements are made under water (different absorption of the different wavelengths that make up PAR), so we don't think it's possible to use a correction factor. Specialists who are interested in these values for what they are will undoubtedly be able to deal with the problem.

## Review by Sara PUIJALON, 04 Oct 2024 14:16

Thanks to the authors for the submission of this revised version of the manuscript. I had reviewed the submitted version of this manuscript. The review of this revised version was not very easy because of the form of the responses to the reviewers' comments: the line numbers of the new version of the manuscript are generally not indicated, the responses to the comments are very short (or even absent) and often too succinct to appreciate precisely the changes done. Some of my comments are linked to the lack of precision in the responses to the reviewers' previous comments.

The corrections made by the authors have improved significantly certain important points that had been raised by the reviewers on the initial version of the manuscript, particularly the difficulty to follow the analyses and plots that were presented. The manuscript is in its revised form much clearer and easier to follow. However, some points still need to be discussed or addressed. (The line numbers indicated in the comments refer to the tracked change version of the manuscript).

1) There is still an issue with the units used for area, biomass and density:

For variables linked to density and biomass, the changes in figure 6 have not been made :

Figure 6: in the title of the panels and legend, replace “shoot biomass” by “shoot biomass per m<sup>2</sup>” and “shoot density per m<sup>2</sup>” should be either “shoot density” or “number of shoots per m<sup>2</sup>” .

The legend has been corrected.

L147-148: the leaf area is indicated as being in m<sup>-2</sup>: it is either in m<sup>2</sup> or dimensionless if expressed relatively to the core area. L121: Corrected, it is m<sup>2</sup>

In the table description, the variable “mean area of leaves per surface unit” is indicated in m<sup>2</sup> : if it is an area per surface unit, it is dimensionless. It was an error, surface in m<sup>2</sup> per core, (corrected).

Please check the consistency of variables and surface units in the manuscript, tables, figures and table description and correct where necessary. It seems to be all right now.

2) Regarding the comment in the initial review on the measurement of the benthic fluxes :

*“L141-143: The figure 5 shows that the cover (by algae, the 2 species of Zostera, or bare sediment) may be very diverse between sites, modalities and season. How were the benthic chambers positioned relatively to these different elements in sites with heterogeneous covers?”*

**This heterogeneity was deliberately taken into account in our sampling by randomly setting up the benthic chambers in each area. The seagrass habitat is considered in all its complexity, with its associated flora and fauna.”**

Thank you for your reply. This information should appear in the text, as it is an important point for understanding how the measurements were taken and for the re-use of the data.

L141-143: our answer was added to the paragraph to inform the reader.

3) The changes made to the figures improve their legibility and clarity (particularly, the standardized format makes them easier to read and understand). I still think that separating the bars into groups of 3 bars in Figure 5 would improve the readability of the figure.

Sorry, but as this is a relative percentage, we think this is the best way to show 100%.

4) Figure 7 : the legends of the panels of the plots seem to be wrong (should be AFDM and density) ?

You were right. The legend has been corrected.

5) It seems that the changes in the table description (“in the description of variables, put the 2 in superscript in m<sup>2</sup> and in subscript in O<sub>2</sub>”) have not been made.

Sorry for the omission. I didn't understand which table you were referring to. It has now been corrected.

6) regarding the previous comment on the measurement of the PAR and PPFD:

“L145: « PAR », do you mean active instead of « available »? If so, I think PPFD (according to the unit you present) may be more relevant”.

The term “available” has not been corrected in the Table description

And as raised by the reviewer, this is the PPFD that is measured, not the PAR.

PAR has been replaced by PPFD in the ms and in the Table Description document, correction in the original dataset is in progress.

7) L164: correct flux instead of fluxes

Does it correspond to line 158?, If yes, amended.

8) L165 : 2 new references are missing in the reference list

9) L181 : the new reference is missing in the reference list

Thank you, references have been added.