Reviewer responses

We thank Dr. Adame for the thoughtful revisions and agree with the provided comments. Our responses are below.

**Remark 1:** I agree that it is ok to use these core depths to compare surface OC stocks among sites. However, the extrapolation can bring substantial errors. For example, we measured OC stocks in marshes in North Baja California (close to your study sites, Adame et al. 2019, Biology Letters), the OC was 5% between 0-15cm in-depth, but decreased to 0.5% below 50 cm. We estimated carbon stocks of 150 tonC/ha of marsh (15 kg/m3), but if we had extrapolated from measurements at 0-20 cm, we would have come up with 364 tonC/ha, more than twice the real value.

Even the papers mentioned (e.g. Prentice et al. 2012) report C stocks only for the top 25 cm, no the whole meter (Fig. 2 and Fig. 4) and in the Abstract, they provide both, the measured stock (to 20 cm) and the extrapolated one (to 1m). Another paper used to justify the extrapolation, Calloway et al. 2012, had 50 cm-cores and used them to report C sequestration, not stocks.

My recommendation is to change the units throughout the manuscript to kg/m2 at 20 cm and use the extrapolation to 1m (kg/m3) to compare global datasets (as in your Table) and in the Abstract if you like. The trends should be the same, but the OC stocks are likely to be lower, but more accurate.

**Response:** We agree and have changed all figures and text to display carbon stocks in kg OC/m2 in the top 20 cm of sediment, rather than extrapolating trends to display 1m depth stocks in the units of kg OC/m3 (see lines 219 – 227). Specifically, Fig. 3 was updated to reflect this unit change. To correspond with this change (avoiding 1 m extrapolation), Figure 2 was also updated to display down core trends in g OC/cm3 rather than kg OC/m3. All results and text were updated to reflect these changes. As suggested, we keep the 1 m extrapolation in Table 3 to enable comparison to other studies, while defining the nature of this extrapolation in the last column to acknowledge this during comparison.

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**Remark 2:** Introduction- I suggested including the reference of Lovelock and Duarte because it explicitly defines that Blue Carbon is not only a physical property but has management connotation. Blue carbon ecosystems can be managed to provide carbon mitigation.

**Response 2:** The reference provided for the definition of Blue Carbon was added previously (line 39), and we include additional text to communicate the management context of the term "blue carbon" as suggested.

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**Remark 3:** I suggest using the word “isotope values“ not “signatures”, which implies “fixed” values, which are not (they vary with productivity, nutrient enrichment, etc)

**Response 3:** All uses of the term isotopic “signatures” have been updated to “values”.