

## ***Interactive comment on “Hypersaline tidal flats as important “Blue Carbon” systems: A case study from three ecosystems” by Dylan R. Brown et al.***

**Dylan R. Brown et al.**

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This manuscript presented an important contribution of Blue carbon from the hypersaline tidal flats widely distributed in the arid and semi-arid regions near mangrove supratidal zones, caused by microphytobenthos. The experiments are well designed and documented. I suggest acceptance of the manuscript after minor revision. Response: We appreciate these constructive comments, below we respond to specific comments individually.

Major comments: Microphytobenthos also exist in the arid or semi-arid area near saltmarshes, as well as in the lower intertidal flats inundated daily, with much larger area than the hypersaline tidal flats in this study. Thus they also contribute to the blue car-

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bon. This can be discussed as a potential for further studies as well. Response: We agree, and have added this topic to the Discussion, line 260: “Furthermore, microphytobenthos also exist in the arid or semi-arid areas near saltmarshes, as well as in the lower intertidal flats inundated daily, which are often areas greater than vegetated areas and may contribute to blue carbon burial”

The number of sites in this study is only 3 (2 in australia and 1 in brazil). Thus extrapolation of the result to the global scale still needs more studies, in addition to the estimation of hypersaline tidal flats area. This can be discussed as well. Response: We have the following sentence addressing this comment, Line 257: “To improve these estimates, there is clearly a need for determining carbon and nutrient accumulation rates from additional coastal HTFs and assess their areal cover in Australia, Brazil and elsewhere.”

Minor corrections: Page 2, line 65: "these microphytobenthos and are ...", remove "and". Page 3, line 77: "extent" should be "extend". Page 4, line 137: "A total 6..." should be "a total of 6..." Page 9, line 297: delete "in" at the end of this line. Page 10, line 326: "polices" should be "policies". Response: Changes made as suggested.

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