

Earth Syst. Sci. Data Discuss., community comment CC1
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Comment on **essd-2021-23**

Craig Smeaton

Community comment on "Modelling seabed sediment physical properties and organic matter content in the Firth of Clyde" by Matthew C. Pace et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2021-23-CC1>, 2021

High resolution mapping of coastal sediments and the carbon and nitrogen within is incredibly important but also difficult to achieve. This manuscript sets out a methodological approach that deals with the many issue in accurately mapping complex coastal areas and is an important contribution to the growing literature in this area and will be of use to the environmental managers in the area.

Earlier this year a full map of the carbon stored in the EEZ was published which should provide data that your results can be compared to, allowing further contextualisation.

Smeaton, C., Hunt, C.A., Turrell, W.R. and Austin, W.E., 2021. Marine Sedimentary Carbon Stocks of the United Kingdom's Exclusive Economic Zone, *Frontiers in Earth Sciences*, p.50.

The paper estimates that the surficial (top 10cm) sediments of UK EEZ 524.4 ± 68.4 Mt of OC, the sediments of Scottish Adjacent waters ($476,666 \text{ km}^2$) 356.5 ± 72.2 Mt OC and the sediments within Scottish fjords (2608 km^2) store 3.92 ± 0.6 Mt OC.

The comparison with the fjords is likely the most fruitful as these systems are recognised as "hotspots" for carbon.

This work was an continuation of the Smeaton, C., Austin, W. and Turrell, W. R.: Re-Evaluating Scotland's Sedimentary Carbon Stocks, *Scottish Mar. Freshw.Sci.*, 11(2), doi:10.7489/12267-1, 2020 and Smeaton, C. and Austin, W.E., 2019. Where's the Carbon: Exploring the Spatial Heterogeneity of Sedimentary Carbon in Mid-Latitude Fjords. *Frontiers in Earth Science*, p.269.

I hope this is of some use.

Again the is a great paper.

Craig