Biogeosciences

Discussions

Open Access

EGU

BGD

Interactive
comment

Interactive comment on "Organic carbon in surface sediments of the North Sea and Skagerrak" *by* Markus Diesing et al.

Peter Mitchell

peter.mitchell@cefas.co.uk

Received and published: 18 November 2020

Line 87: In the Regional setting or Data sections it would be worthwhile stating why the boundaries of the study site were selected. I presume this was due to the overlapping extent of predictor variables listed in Table 1. However, it is unusual that the focus does not cover the complete extent of any of the countries EEZ presented in this study (Table 2), because had it done so this would improve the impact of the current piece of work. As the discussion encourages further research of this kind (Section 6.4 and the publishing of R scripts), it would be worth clarifying whether similar predictor data are available, or whether these too would need to be generated first. If on the other hand it was due to available sample data or how far the authors felt they could extrapolate the models then this would also be of interest to future scientists doing similar work.

Printer-friendly version

Discussion paper

Line 190: There appears to be an error in the calculation of VE and rˆ2. While rˆ2 is also termed the coefficient of determination, it is my understanding that the VE and rˆ2 are the same metric. Therefore, I was surprised to see such different results reported in Line 226 and 233. Looking at the R Markdown code to understand how these two values have been calculated I see that calculation of VE contains the test predictions within the denominator in:

validation[i, 3] <- 1-(mse(df$test.SedRate, df$test.pred)/var(df$test.SedRate, df$test.pred))

As VE is calculated as the unexplained variation over the total variation its not clear to me why the denominator in your calculation has the test set predictions. Suggest checking your formulas to ensure the values presented are correct. Its also not clear to me whether both metrics are required or tell a story that is not captured by rˆ2. So you may wish to present rˆ2 only.

Line 253: Starting the discussion by referring to the R Markdown code and seemed a little out of place. As the results of this study are a valuable contribution to the field of Blue Carbon which is rapidly gaining interest to develop policies in various European governments, this focus on encouraging use of the scripts may be less interesting to the reader. Authors may consider moving this to section '6.4 Suggestions for future research' and instead focussing on the main findings of the study.

Line 259: Similar to above comment. Section '6.1 Relevance' starts with a recap of other research and not the findings of this current study. Authors should consider whether to lead with what this study has shown and then put that into context of other work to show the relevance.

Line 260: Does Harris et al 2014 need to be referenced here? Suggest deleting. Also, Lee et al. (2019) present maps of uncertainty for their estimates of OC. Relative to the assumptions presented in line 263-265 (total stocks vary between 12.1-24.2 Pg C), should the Lee et al. uncertainty be accounted for in this estimation, or are they at a

much smaller magnitude? As the uncertainty map in Lee et al does seem to show that uncertainty is also concentrated around the continental shelf.

Line 264: 'between 0% and 100%'. I am struggling to follow what is being said in this sentence. Are you simply stating that the OC in 5-10cm does not exceed that in 0-5cm? As that was already stated in the previous two sentences. Unless i am missing some subtle difference.

Line 284: Is this sentences stating that the shelf sediments of the European Continental Shelf are an order of magnitude greater than coastal habitats, based solely on the calculations for the North Sea/Skagerrak? Or that is the reference to 'smaller area' comparing the area covered by the North Sea/Skagerrak relative to the area covered by coastal habitats? I assume the first as no area figures have been presented for comparison of the latter. Consider rephrasing for clarity.

Interactive comment on Biogeosciences Discuss., https://doi.org/10.5194/bg-2020-352, 2020.