

Reply to referee 1:

Technical corrections:

Line 8 - Suggest re-wording; Sediments don't "protect the seabed" from disturbance (I believe the authors had planned to change this previously from their response).

Reply: This was an oversight on our behalf.

Action: We replaced "e.g., by protecting the seafloor against human-induced disturbance" with "e.g., by storing organic carbon if left undisturbed from anthropogenic activity."

Line 141 – OC "content" rather than concentration if reported as weight %.

Reply: Agreed.

Action: As suggested.

Line 315 – Suggest "as follows" instead of "in the following"?

Reply: Agreed.

Action: As suggested.

Line 322 - 326 – Could the authors make clearer within the text that the marine stocks calculated for the different countries are lower because they only partially cover the full extent of the EEZs? Maybe this could be done by somehow merging lines 322 and 325? E.g. only 0.5% of France's EEZ falls within the extent of this study. Or perhaps, this could just be made clearer in Table 2: Caption – e.g. "Topsoil OC stocks refer to the entire area of the respective country bordering on the North Sea and Skagerrak while marine OC stocks refer to the proportion of the EEZ that falls within our study area"?

Reply: Agreed.

Action: A sentence was added: "Note that topsoil OC stocks refer to the entire area of the respective country, while marine OC stocks refer to the proportion of the EEZ that falls within our study area."

Additionally, the table caption was altered as suggested by the reviewer.

Figure 1A – Could the authors briefly explain the choice of numeric and colour scale for the Folk classes? For instance, what is the relevance of '20' and '110' having the same colour?

Reply: Classes '20' and '110' accidentally got the same colour. This was not intended. The numbers are internal codes for sediment classes.

Action: The colour of class '20' was changed to make it distinct from class '110'.

Reply to associate editor:

- Sedimentation rate is sometimes used for deposition (of particles) rate and sometimes for sediment accumulation rate. You have used it in the latter meaning. Please mention once that you use the term sedimentation rate as short-hand for sediment accumulation rate

Reply: Agreed.

Action: First sentence in chapter 3.1.1 changed to "Linear sedimentation rate (ω), measured in (cm yr⁻¹), is used here synonymously with sediment accumulation rate."

- Sometimes you use Tg y-1, sometimes Tg C y-1. Please be consistent and use Tg C all through

Reply: Agreed.

Action: Changes made throughout, also in the case of stocks now reported as Tg C or Pg C. One exception was, however, made when the unit Tg was followed by "of OC" (first sentence in chapter 6.1).

-line 49: replace on the other hand with however, because there is no on the one hand.

Reply: Agreed.

Action: As suggested.