

## Revisions manuscript bg-2021-100

Please find below the comments of the reviewers (in black), as well as a description of how these comments were addressed in the revised manuscript (in blue).

### Anonymous Referee #1 : nominated 29 Nov 2021, accepted 04 Dec 2021, report 16 Dec 2021

#### Report #1

I went through the revised MS carefully and according to me, the revised draft of the MS has improved a lot in terms of many scientific and technical aspects; however, authors should think about few minor issues before finalizing it.

In the first draft, the language used in the text was a major concern (another reviewer has also mentioned about the same). For this revised MS also, the polishing of language is still very essential to bring more clarity in the text. For example, the modified title of the MS itself (ie., Phosphorus natural background estimation in the Scheldt river using tidal marsh sediment cores) is not very clear and it is better to modify it. It would sound better if it is simply rearranged as: "Evaluation of natural background of phosphorus in the .....". Similarly, in the main text also the meanings of some statements are not very clear and for common reader it would be difficult to get the actual concept of the topic. Author should go for simple sentences; instead of many complex or compound statements. For such corrections /changes in the main text, a native English speaker could provide necessary helps. In the text there are number of abbreviated terms has been used without actual full forms (e.g. IMIS, OMES, MARSED etc). Provide the extended forms of each of those abbreviated terms at least once (probably at the first appearance).

Ln 35: "Eutrophication by excess nutrients, including P and nitrogen (N), can lead to....." In this sentence instead of P and N; use phosphate and nitrate/nitrite as nutrients.  
Ln 62-63: Before that, large scale agriculture dates back to the middle ages and the Roman period. .... This sentence looks incomplete. Change it to bring out the actual meaning.

The authors thank the reviewer for acknowledging the improvement of the article after the revisions and pointing out the language concerns.

The manuscript's language was again revised by two persons , who are experienced with writing English academic publications. In addition, the introduction was shortened by 15% to improve the text's readability and flow and coherence.

Complex and compound statements have been adjusted and clarified in the main text. This was done by simplifying longer statements, and using a writing assistant. Overall, the average number of words per sentence is 19 situated between 18 and 25 words. Paragraphs contain about nine sentences within the average range for academic texts.

The title was adjusted according to the suggestions of the reviewer: "Estimation of Phosphorus natural background estimation in the Scheldt river using tidal marsh sediment cores"

The abbreviations were described in full forms. IMIS was described in full at line 168. The full description of OMES was added to line 170: "Research program environmental effects Sigmaplan".

The abbreviation MARSED was described in full form at line 220: "time-stepping marsh sedimentation model (MARSED)"

In line 32 reference to the nutrients was adjusted as phosphate ( $\text{PO}_4$ ), however, the authors considered that referring to nitrogen (N) covers the whole load as nitrate, nitrite, ammonium and organic components add to the nutrient.

In line 62 the sentence was not taken up in the final manuscript after editing the introduction.