

Interactive comment on “Water level, vegetation composition and plant productivity explain greenhouse gas fluxes in temperate cutover fens after inundation” by M. Minke et al.

Anonymous Referee #2

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This is an interesting contribution because the authors present full atmospheric GHG balances for two years from peatlands of Belarus which are rewetted cutover fens. Although there are some studies on rewetted, flooded temperate fens, this is the first study from cutover fens and the first from fens that grew under such quite continental conditions. Therefore, this contribution adds valuable data to our ever growing database on GHG exchange from peatlands.

Despite a – in my opinion rather superfluous – comparison between different modeling approaches that just results in taking the slightly better one for the finally presented data, the concepts, ideas and tools used are well established. Therefore, the conclu-

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sions are not breathtaking and super novel but they are based on a through analysis of the data. And this is fine.

The authors make full use of the established methods and in they seem to use them properly. Thus, the scientific methods and assumptions are valid. However, especially when the authors deviate from the well established and try to go off the beaten track the description of the methodology lacks clarity which impedes understanding of what they actually did. At some parts in the text, quite substantial edits are necessary to increase readability and understandability to allow their reproduction by fellow scientists.

The results are sufficient to support the interpretations and conclusions although the discussion should be restructured because in its current form the authors start discussing technical details before addressing the basic findings (GHG data from a so far unstudied ecosystem type) and setting them into the context of the literature. The love of technical detail also interferes with readability of the text in the results section. It is way too long and contains many many numbers within the text that would be better presented in tables (and for most of them is). In its current form the results section is really hard to read and therefore, should be edited substantially (For specific comments, please refer to the attached pdf which is a commented version of the discussion paper).

Generally, the language is OK but in parts the text would profit from edits focussing on more concise and clear phrasing. Has the text been checked by a native speaker? If not, I would advise to get it checked by a native speaker. Several formulations seemed odd to me, but I am no native speaker either. The mathematical formulae, symbols, abbreviations, and units are correctly defined and used.

The number and quality of references appropriate seems appropriate, I like the little review table on exchange data from other sites. The authors give proper credit to related work and clearly indicate their own new/original contribution. The title reflects the contents of the paper and the abstract provides a concise and complete summary

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although I have some technical comments to that. These, and many many more inline comments you'll find in an attached pdf. This should be of help for revising the paper.

The amount and quality of supplementary material seems to be appropriate.

Please also note the supplement to this comment:

<http://www.biogeosciences-discuss.net/12/C9168/2016/bgd-12-C9168-2016-supplement.pdf>

Interactive comment on Biogeosciences Discuss., 12, 17393, 2015.

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