

Interactive comment on “Effect of reed canary grass cultivation on greenhouse gas emission from peat soil at controlled rewetting” by S. Karki et al.

Anonymous Referee #2

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Rewetting of peatlands is receiving increasing attention not only as a way of mitigating greenhouse gas emissions but also as a means of restoring ecosystem services. In this paper the authors use a mesocosm study to investigate the impact of Reed Canary Grass cultivation on the GHG balance of rewetted peat soil compared to bare soil. This paper will make a useful and interesting contribution to the literature. However I think it can be improved and my suggestions are as follows:

1. I would like to see some detail in the introduction about the cultivation of RCG. For example, how are crops established, managed and harvested?
2. Why is bare soil the control? Why not use the vegetation that would grow naturally

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following rewetting?

3. P13313 L24 Why is there not a control with no fertiliser? How were the application rates decided?
4. What is RVI? If this is a new method it should be addressed in the introduction.
5. P13326 L14 Given that biomass yields were similar what is the implication for fertiliser application? Is it necessary?
6. P13326 L16 Is this uptake of 6.2 kg CO₂/m² an actual CO₂ sink? Will part of this not be removed when the crop is harvested? What proportion of this might be belowground sequestration or how could it be estimated?

Minor comments P13312 L21-22 Change to '...60-70 cm early in the 20th century and since then has been used for agricultural purposes.' P13313 L1 Insert 'the' before 'mesocosm'

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