

***Interactive comment on “Comment on  
“Soil CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O fluxes from an afforested  
lowland raised peatbog in Scotland: implications  
for drainage and restoration” by Yamulki  
et al. (2013)” by R. R. E. Artz et al.***

**Anonymous Referee #1**

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General comments. This is a clear, well thought out comment on the calculations and study design of Yamulki et al.'s comparison of restored and afforested peatland GHG fluxes. It will open up a valuable discussion that is needed to clarify the calculations and conclusions of the original paper and also clarify GHG flux values for use in wider policy debates. I agree with the interpretations of the authors and can provide very few suggested changes. If space allows, my only main suggestion would be to provide a figure illustrating the various fluxes (GPP, Ra, Rh, Reco, etc.) to help illustrate the possible instances of double-counting. While this could help clarify the current discussion,

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it is also valuable for peatland GHG accounting in general and could be quite well cited.

Specific comments: Page 10275, Line 25 – can you provide your updated estimate for GHG exchange for comparison.

Page 10277, Line 20 – I would guess that the amount of this overestimation will also depend on whether or not NPP of the belowground components was included in the estimates. If this was not included, then accumulation of C as root biomass may also be excluded, increasing the underestimation.

Page 10279, Line 19 – In addition to reference to Yu et al. (2012) I suggest a reference to Frohking et al. (2006) that consider not only rates of CO<sub>2</sub> and CH<sub>4</sub> emissions but also the atmospheric lifetimes of the gases and the inappropriateness of global warming potential calculations to ecosystems. Frohking et al. 2006. Journal of Geophysical Research, 111, G01008, doi: 10.1029/2005JG00091.

Technical comments: Page 10277, Line 6 – “have been provided”. Add the word have.

Page 10278, Line 24 – “potential” not “potentially”

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