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Biogeosciences Discussions

Interactive comment on "Soil CO_2, CH_4, and N_2O fluxes from an afforested lowland raised peatbog in Scotland: implications for drainage and restoration" *by* S. Yamulki et al.

Anonymous Referee #2

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The manuscript presents an interesting study about the influence of the drainage and forest in the CO2, CH4 and N2O fluxes in peatbog in Scotland. They considered restored soil and the development of the GHG fluxes in there. The issue is contingent, and it involved the three major greenhouse gases in a little time series. It's very interesting the role of the pristine soil in the CH4 contribution and the change in the dominant GWP between the soils treatments. Also, is interesting that the modeling should be useful in other peatlands in the evaluation of GHG budgets. In general the paper is well written, however sometimes is hardly to read, because the combination of the discussion with a lot of names and numbers. I suggest accepting the manuscript for publication. I have some minor comments detailed below. - Considering the coupling

between CO2 fluxes and the ambient and soil temperature, the extrapolation of fluxes in winter 2009-2010 must consider these variables. I'm not completely sure that the authors considered them. - I miss a discussion about the ecology of the soils in order to explain in a better way the CH4 and N2O production. Also, the discussion about the N2O fluxes appears extremely oversimplified. - Please specify the units and label the axis in most of the plots. - There are high standard error between replicates, mainly in N2O fluxes, which make difficult the interpretations of some pattern of seasonality or between treatments.

Interactive comment on Biogeosciences Discuss., 9, 7313, 2012.