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Interactive comment on "Land-use and greenhouse gas balances of peatlands in the Nordic countries – present knowledge and gaps" *by* M. Maljanen et al.

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We thank for Anonymous Referee #2 for detailed comments. We have done the corrections according to your suggestions in most of the cases. Here are the responses to the main questions, all numerous minor comments are not listed here, but they have been carefully checked through. e.g. all units.

-The estimation of missing winter months is now done only for sites in Sweden, Finland and Norway. Data from Iceland and Denmark are discussed separately. We know that e.g. the winter time emissions for N2O are very variable, but most probably >0, therefore, some estimates for winter should be included. Also the missing discussion about

CO2 and CH4 winter emissions have been now added. Tables (2-5) now show also the original data and the original measuring period. -Unmanaged peatlands were divided to ombrotrophic and minerotrophic according to Saarnio et al. (2007) and therefore these were not changed. There was a contradiction in the accumulation of peat and the C-losses from these sites which was discussed also in Saarnio et al. (2007). Some new data from unmanaged peatlands show opposite results and therefore they have been added in the text. Furthermore, regardless of the classification, the natural peatlands can act as sinks for C and it does not change the difference between drained and undrained sites. The main focus in this paper is on managed soils. The idea of this paper was not to give totally reliable emission factors for each land use classes, but to give a range and summarize the present knowledge of the emissions in the Nordic countries. - The discussion about life cycle analysis has been removed. - The manuscript was originally corrected by a native English speaker, we have tried to improve the language now. -There were several questions about references: -Kaamanen annual EC CO2 estimates: The published Kaamanen data (6 yrs) was already included in the review by Saarnio et al. (2007). -Huttunen et al. (2002a) and von Arnold et al. (2005b) were correct references for "Unmanaged peatlands" -Huttunen et al., 2002a paper really presents data from undisturbed peatlands (Huttunen, J., Nykänen, H., Turunen, J., Nenonen, O. and Martikainen, P.J.: Fluxes of nitrous oxide on natural peatlands in Vuotos, an area projected for a hydroelectric reservoir in northern Finland. Suo, 53, 87-96, 2002a.) - Tagesson et al. has been removed -LeMer & Roger (2001) was not just randomly chosen reference, it was a review paper, I think it is acceptable here - Grelle et al. has been removed -Table 1. The area of forested peatland in Sweden was incorrect. It has been changed. In addition, the area of afforested agricultural soils in Sweden is not known and is therefore missing from the table. -GHG emissions from the drainage ditches have been reported in only two studies, therefore there is a gap in our knowledge. The chapter about drainage ditches has been improved. -Table 6: "soils" has been changed to "ecosystems"

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