M. Maljanen et al. present a state of the art of measurements of the greenhouse gas exchange of peatlands in the Nordic countries focusing on the effect of land-use. They summarize the present knowledge based on about 100 articles. They divided the peatlands into different classes of land-use including: unmanaged peatlands, drained peatland soils for forestry, drained peatlands for agriculture, peatlands drained for peat extraction. Also restored drained peatlands and water reservoirs and artificial lakes above previous peatland are considered. They present the range of fluxes as presented in actual research from the different land-use of peatland and also identify gaps in the actual knowledge. The article has a clear structure.

As the manuscript is the results of a literature study one of main questions is if the presented work is complete in respect to the actual state of the art. The article is focusing on the situation in the Nordic countries and gives the impression to be complete as it refers to a large number of Nordic publications. Although this is not easy to judge. It is clear that unmanaged peatlands are much more intensively studied than other land-use types and that there are many gaps in the knowledge, not only due to limited measurements over long periods, including winters.

The difficulty with this type of articles is to present the information in written form which is easy and attractive to read. It is important to present the data in figures, which give the overview of numbers presented in the text. I consider that the authors succeeded relatively well. In this respect Figure 1 should be enlarged if possible so that it is easier to read.

I would like to see a more extensive description or discussion on the definition of peatland in the introduction. Not easy, as definitions do differ, but it is important in relation to the estimated areas. For Sweden the description of peatland is taken from only two references, which describe soils with more than 20% organic matter as peatlands and that about 25% of the Swedish land area is considered as peatland. This sounds as an high estimate. Hänel is describing about 20% of the Swedish area as peatlands and wet mineral soils. Depth of the organic soil is however not given in the introduction, except for Denmark and Sweden. In eg Jan Eriksson (et al.) book on soil science (Wiklander's Marklära, ISBN 91-44-02482-7) peat-soils are described as soils with at least an organic layer of 40 cm and OM content of 40%, like the Finish definition. FAO is referring to peat soils when the depth is at least 30 cm and more than 40%. Compare also with eg 'The nature and properties of soils, Brady and Weil, Pearson International Edition, ISBN 978-0-13-513387-3, where they take up that at least 2/3 of the soil layer above rock should be organic.

Page 6281: lines 10-14: can you indicate the number of sites and how many of the annual fluxes were actually based on seasonal results.
Figure 1 is an important figure as it summarizes all values from different land-uses. I suggest that this picture is printed larger than it is now.

Check the alphabetic order in the references: at several locations the articles are not in alphabetic order given by the first author. For example: Djurhuus et al, Grelle et al, Hånell should be before Harby et al., V is before W in English alphabet.

Interactive comment on Biogeosciences Discuss., 6, 6271, 2009.