

***Interactive comment on “Methanotrophic activity and diversity in different *Sphagnum magellanicum* dominated habitats in the southernmost peat bogs of Patagonia” by N. Kip et al.***

**Anonymous Referee #1**

Received and published: 3 November 2011

This is a nice paper that describes methanotroph diversity in *Sphagnum* dominated peatbogs in Patagonia. This has been achieved by studying 16S rRNA gene sequences and particulate methane monooxygenase sequences using a comprehensive *pmoA* microarray plus complementary *pmoA* clone library analysis. The work has been carefully done and the manuscript is clear and concise. The only problem I have with the work is that the authors perhaps play down the potential importance of facultative methanotrophs in this environment. There are now primer sets specific for the facultative methanotroph *Methylocella* and if these have not been used, the possibility of their

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use in the future could be mentioned. Also, the fact that *mmoX* was not detected is surprising (again there are other *mmoX* primer sets that could be tried, including for *Methylocella*) given the abundance of *Methylosinus* and *Methylocystis*, many of which have a soluble methane monooxygenase. So do some *Methylococcus* and *Methylomonas* species. This is at least worth a comment.

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Interactive comment on Biogeosciences Discuss., 8, 9357, 2011.

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