(e.g., Kokfelt et al., submitted), to fully understand permafrost dynamics and the relationship with atmospheric methane concentrations over longer timescales. It is clear from paleorecords that peatland permafrost has expanded and contracted over the Holocene at different times in different places (e.g., Vardy et al., 2005; Oksanen, 2006). Although the impacts of Holocene peatland expansion on atmospheric methane are now being explored (Smith et al., 2004; Korhola et al., 2010; Beilman et al., this issue), the implications of Holocene permafrost variability on past global methane concentrations have not yet been assessed. The sparse data on contemporary methane emissions show that peatlands with and without permafrost differ significantly in their functioning. More continuous measurements are required to document ongoing changes. Modern process models of carbon dynamics linked to paleoreconstructions of permafrost could produce critical insights into long-term role and functioning of northern peatlands in the global carbon cycle.

References

Johansson, T., Malmer, N., Crill, P.M., Friborg, T., Akerman, J.H., Mastepanov, M. and Christensen, T.R., 2006: Decadal vegetation changes in a northern peatland, greenhouse gas fluxes and net radiative forcing, *Global Change Biology*, **12**: 2352-2369.

Mastepanov, M., Sigsgaard, C., Dlugokencky, E.J., Houweling, S., Strom, L., Tamstorf, M.P. and Christensen, T.R., 2008: Large tundra methane burst during onset of freezing, *Nature*, **456**: 628-U58.

McGuire A.D., Anderson L.G., Christensen T.R., Dallimore S., Guo L., Hayes D.J., Heimann M., Lorenson T.D., Macdonald R.W. and Roulet N., 2009: Sensitivity of the carbon cycle in the Arctic to climate change, *Ecological Monographs*, **79**: 523-555.

Schuur, E.A.G., Vogel, J.G., Crummer, K.G., Lee, H., Sickman, J.O. and Osterkamp, T.E., 2009: The effect of permafrost thaw on old carbon release and net carbon exchange from tundra, *Nature*, **459**: 556-559.

Walter, K.M., Edwards, M.E., Grosse, G., Zimov, S.A. and Chapin, F.S., 2007: Thermokarst lakes as a source of atmospheric CH4 during the last deglaciation, *Science*, **318**: 633-636.

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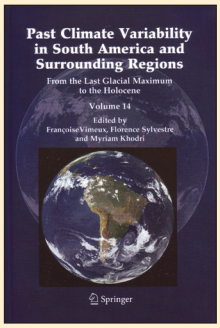

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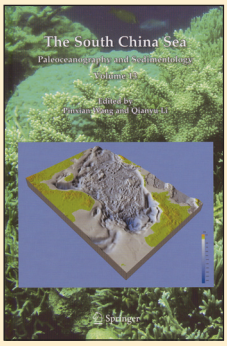

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