# Effects of Long-term Fertilization on Methane Dynamics in a Minnesota Peatland. (S10-keller111039-Poster)

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## Abstract:

We investigated the effects of long-term (6 year) nitrogen and phosphorus fertilization, along with liming, on methane dynamics in a fen peatland system from northern Minnesota. Our study site consisted of plots in an intermediate fen that have been fertilized since 1995 following a full factorial design of 2 nitrogen levels and 2 phosphorus levels. Liming and control treatments were also included. We measured net fluxes of carbon dioxide and methane from 30 cm deep cores. While liming reduced the net flux of carbon dioxide, there were no nutrient effects on carbon dioxide or methane fluxes, and liming had no effect on the flux of methane. Cores were sectioned anaerobically into 3 depths (above, near, and below the water table) which were used to measure short-term rates of methane production and consumption. Rates of methane production increased with depth and rates of methane consumption where higher in shallower sections. However, nutrient and liming treatments had no effect on the rates of methane production or consumption. Thus, in this experiment, it appears that long-term fertilization with nitrogen or phosphorus has no effect on methane dynamics.

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