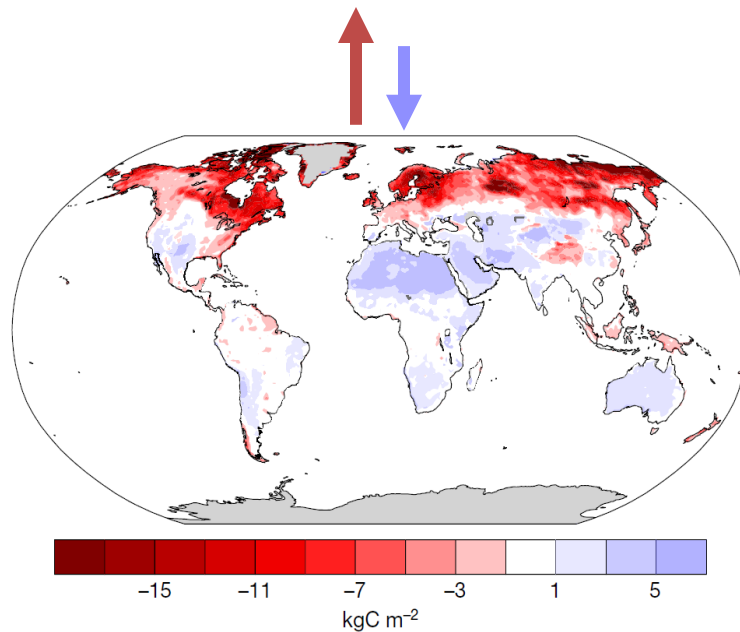


Responses of ecosystem and soil CO₂ fluxes of subarctic grasslands to warming and nitrogen addition

Lena M. Müller, Johannes Ingrisch, Kathiravan M. Meeran, Herbert A. Wachter, Niel Verbrigghe, Bjarni D. Sigurdsson, Ivan A. Janssens & Michael Bahn



Changes in soil carbon stocks by 2050

Crowther et al. (2016)

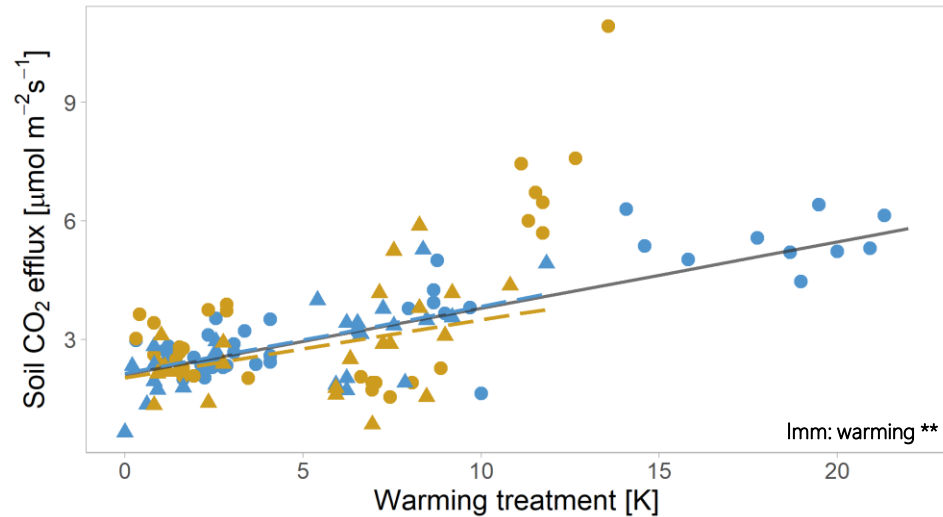
How does warming and nitrogen fertilization affect carbon uptake and carbon loss of subarctic grasslands?



Approach and Results

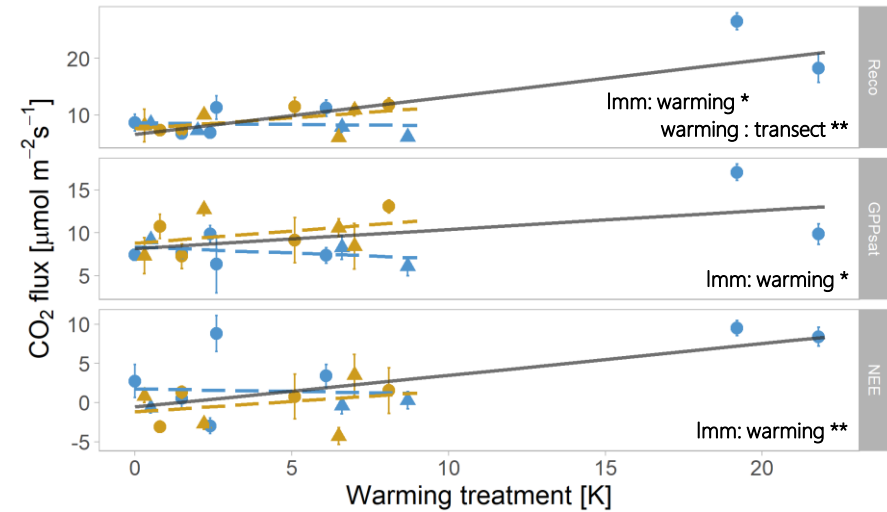


Soil CO₂ efflux



Nitrogen treatment ● control ● +50kg ha⁻¹yr⁻¹ Transect ● 1 ▲ 2

Ecosystem CO₂ fluxes



Nitrogen treatment ● control ● +50kg ha⁻¹yr⁻¹ Transect ● 1 ▲ 2

- Soil warming increased soil and ecosystem CO₂ fluxes
 - No nitrogen effect
 - Respiration responded more sensitively to warming than carbon uptake
- Warming can turn subarctic grasslands into a carbon source

