An upscaling framework for methane emissions in an ombrotrophic peat bog in Ohio

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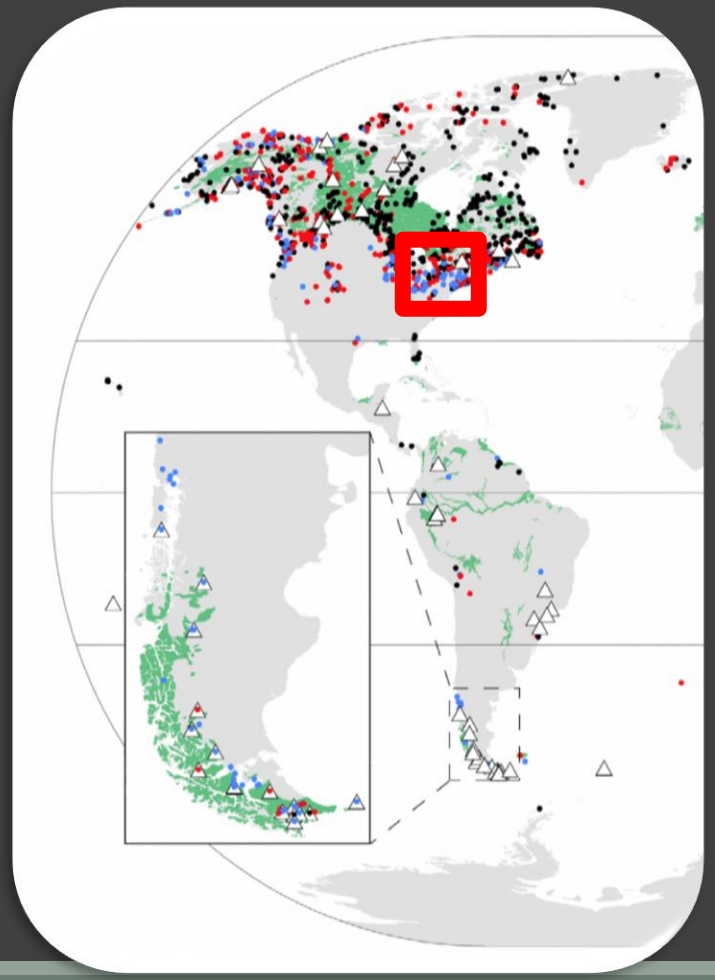
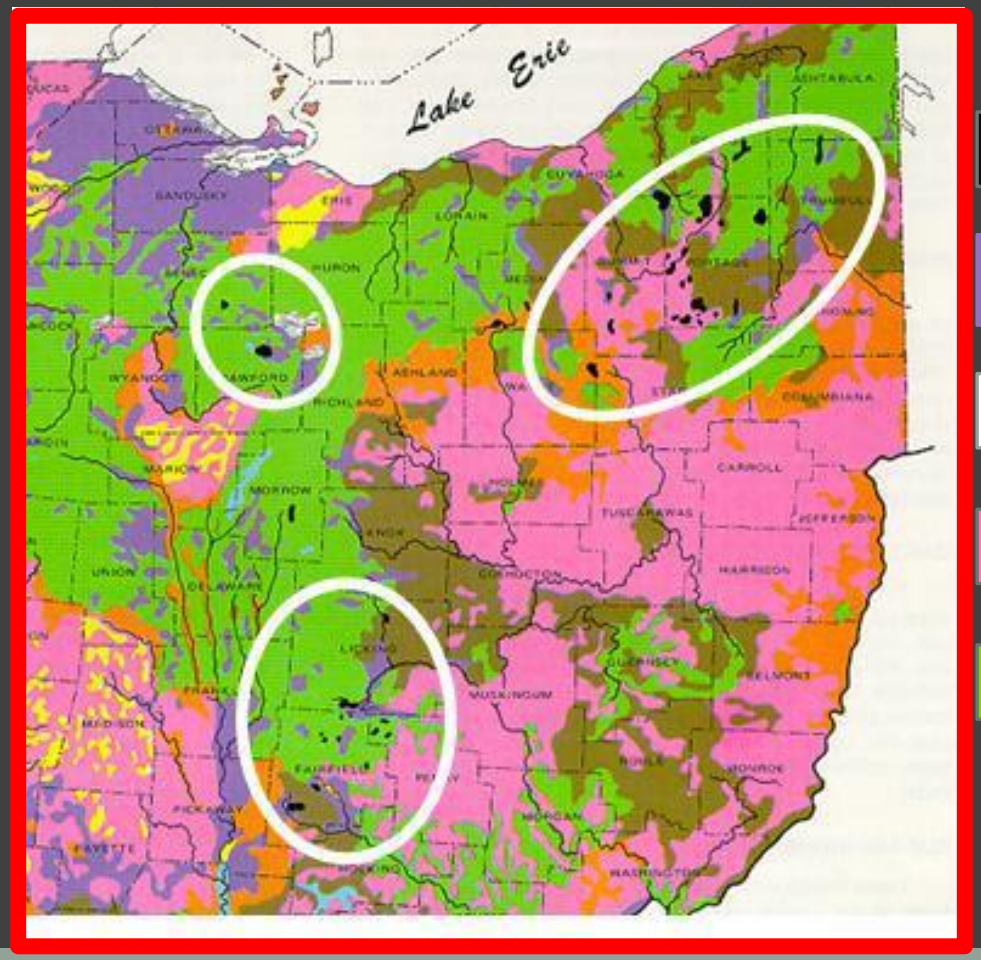
Estimated 2% of peat bogs remaining in Ohio



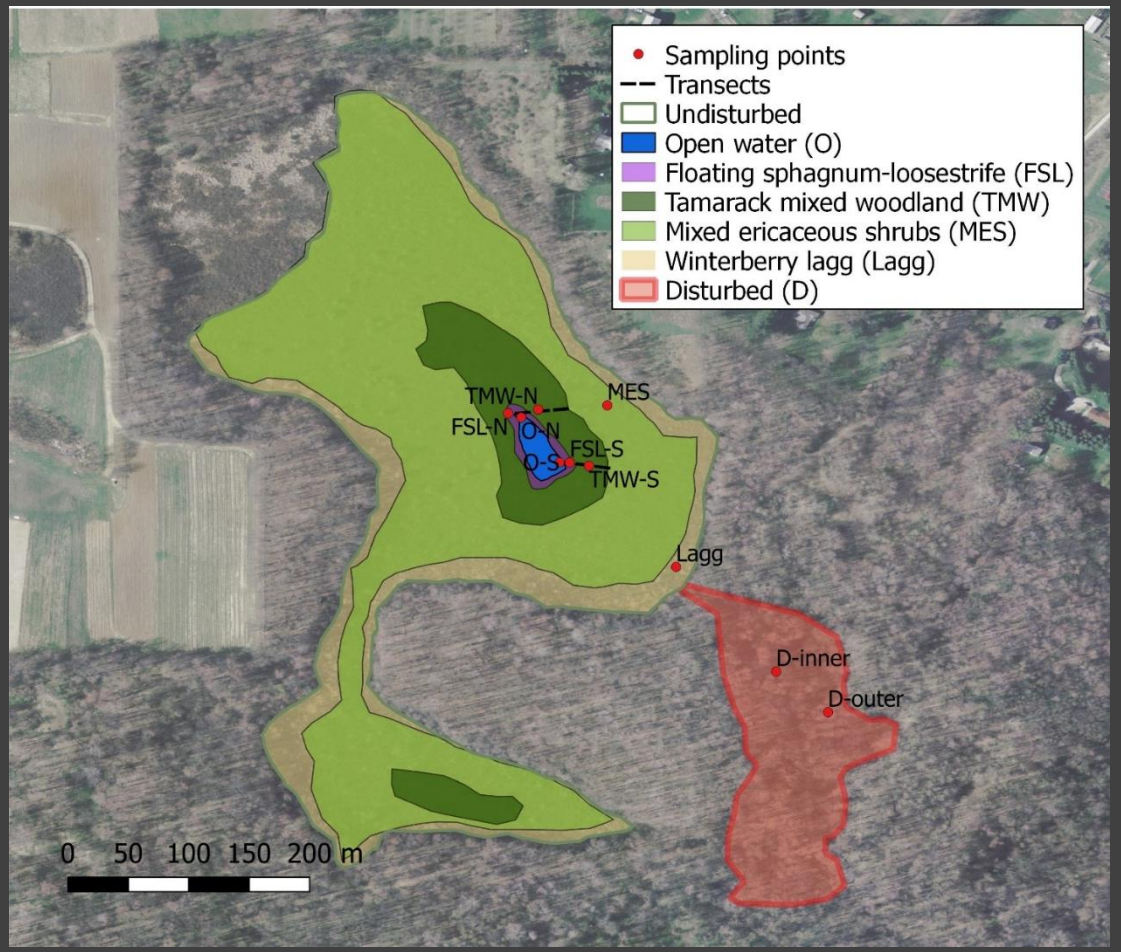
From: Yu et al (2010)



(Gordon, 1966).

The Flatiron Lake Bog

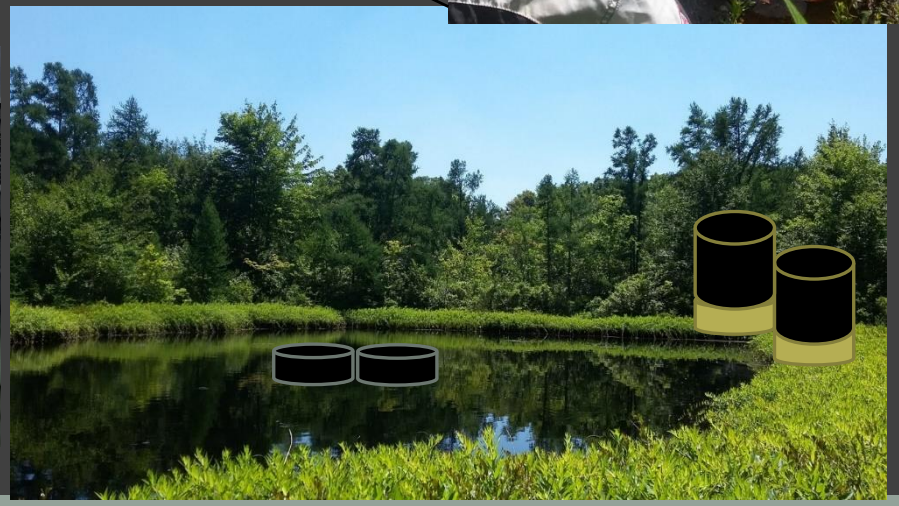
- Kettle hole peat bog
- Ombrotrophic
- Area: 15 Has
- Owned by the Nature Conservancy since 1984



Flatiron lake Bog

Experimental Design

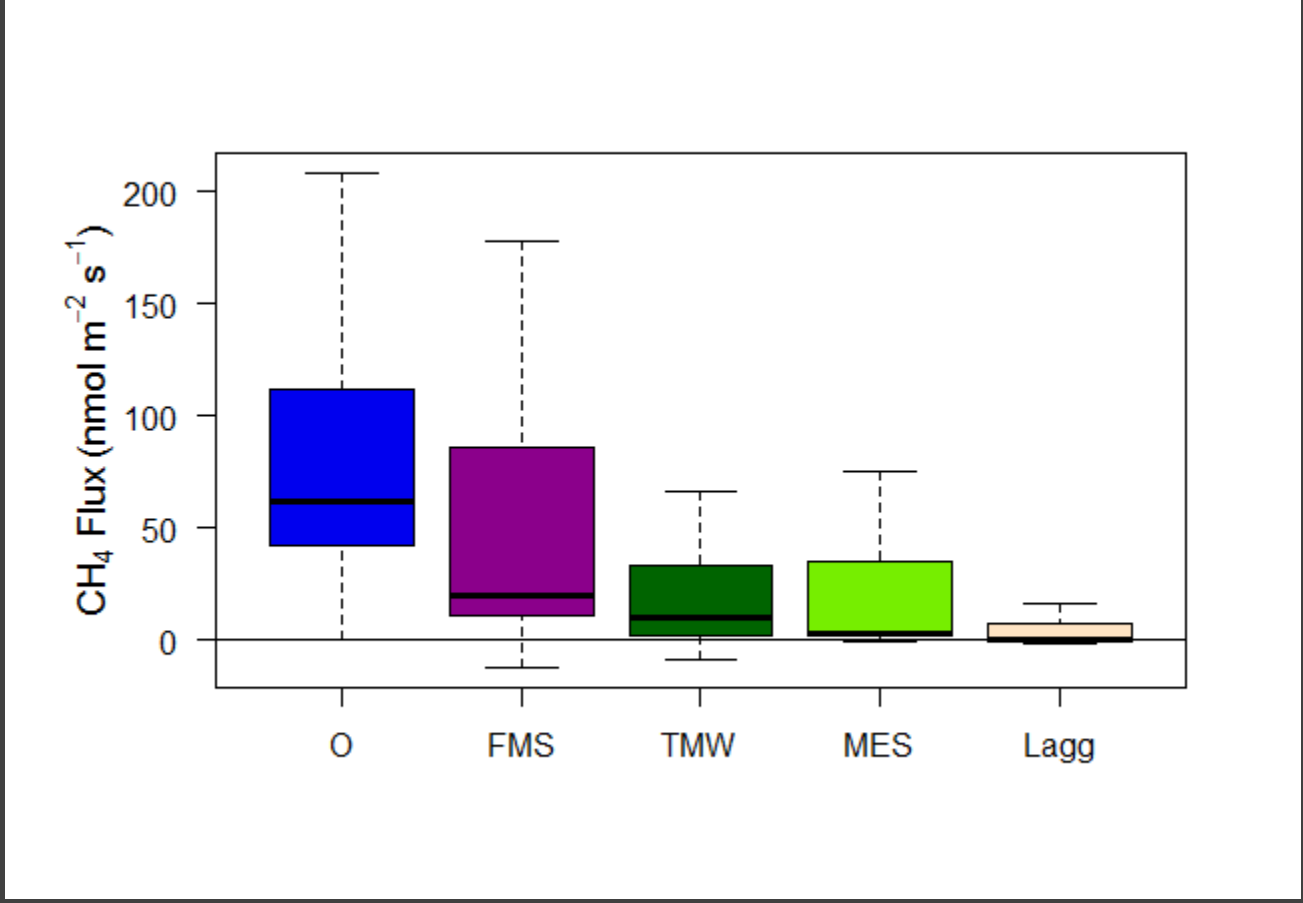
- Monthly chamber measurements
- Growing seasons 2017, 2018
- Pore-water Measurements
- Analyses of peat cores

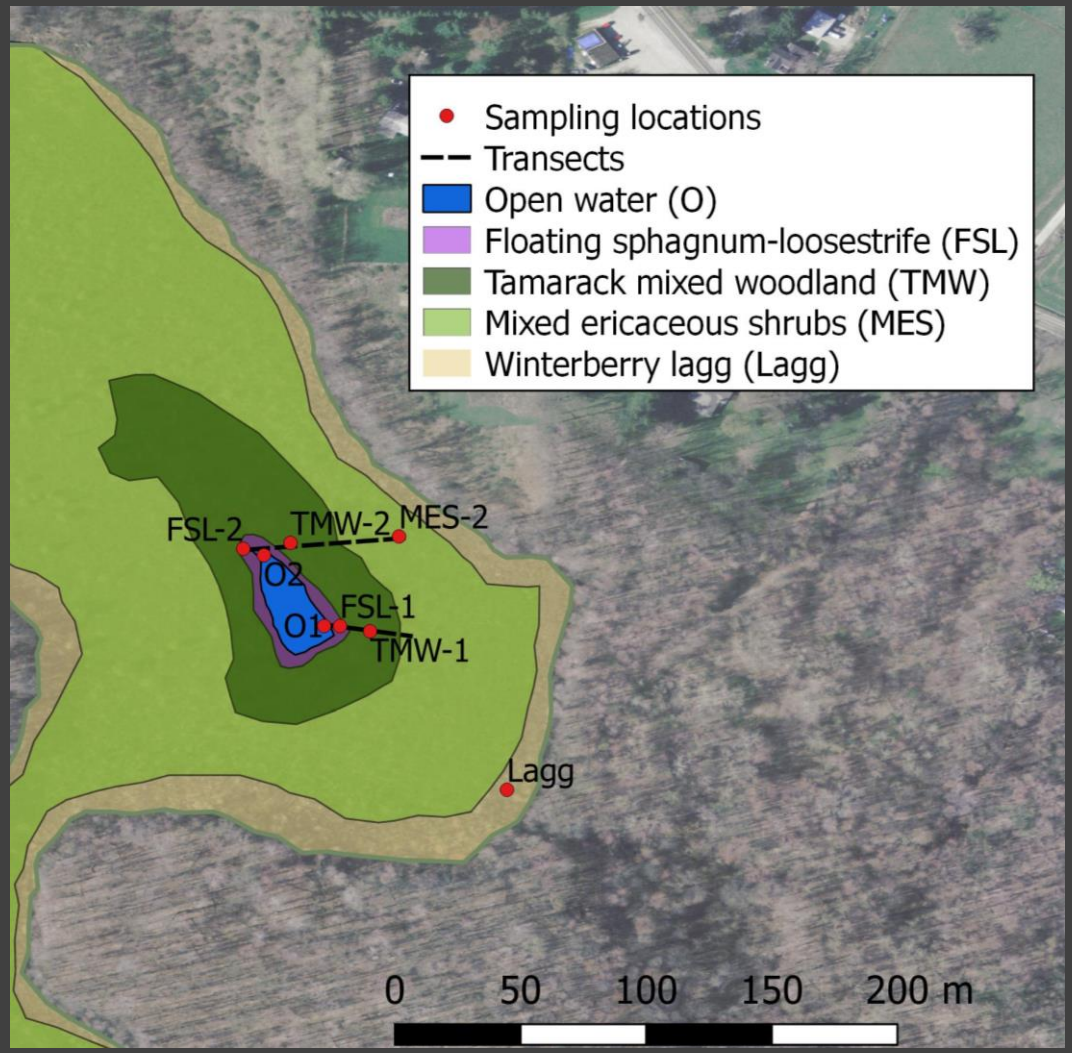


Plant flux measurements

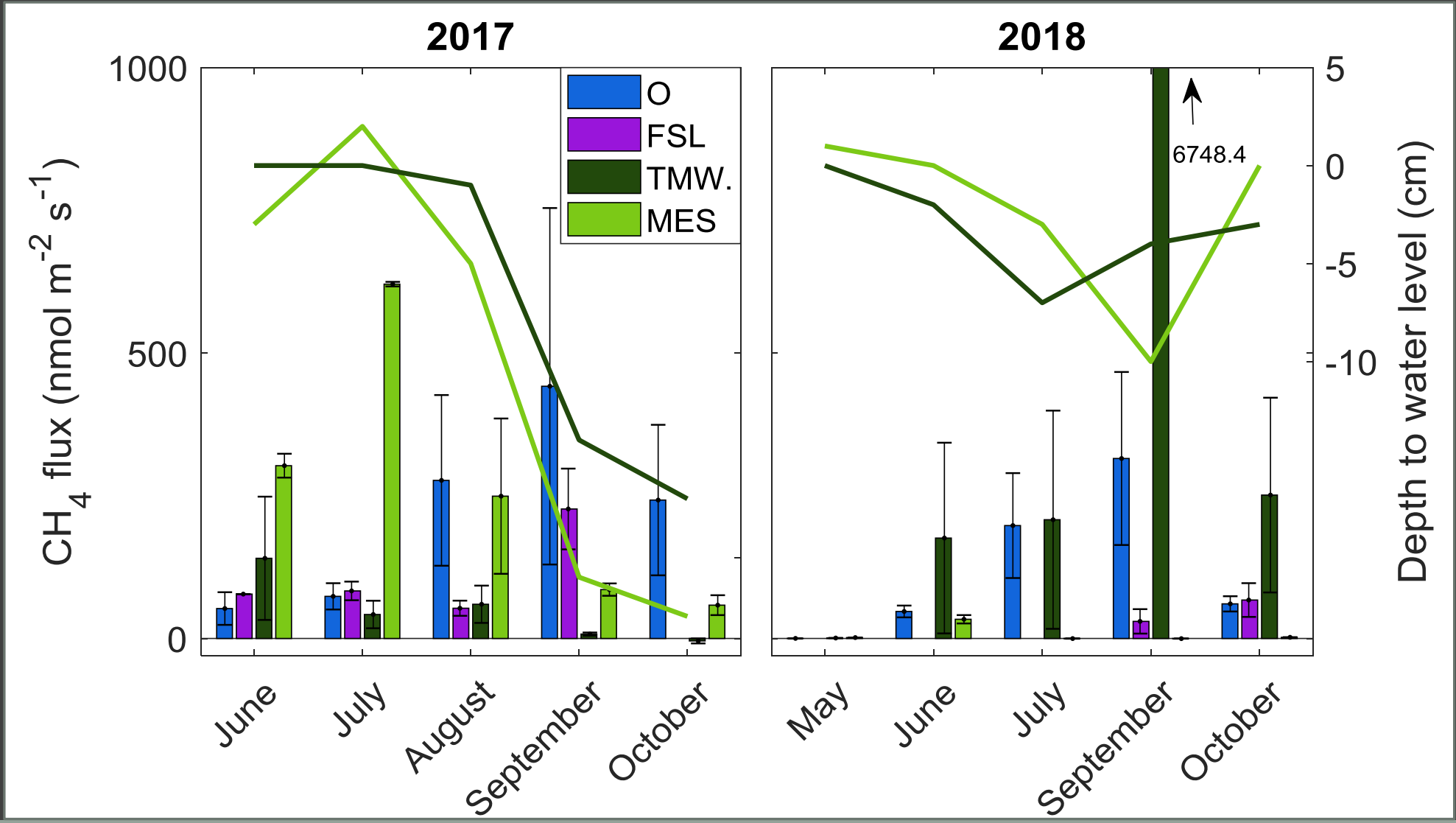
Picarro Scouter

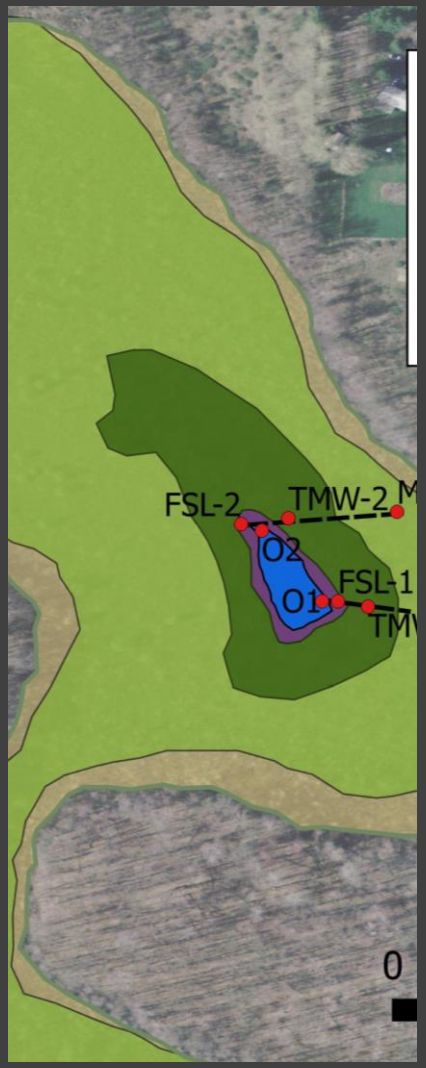
Higher fluxes towards the centric, permanently flooded area



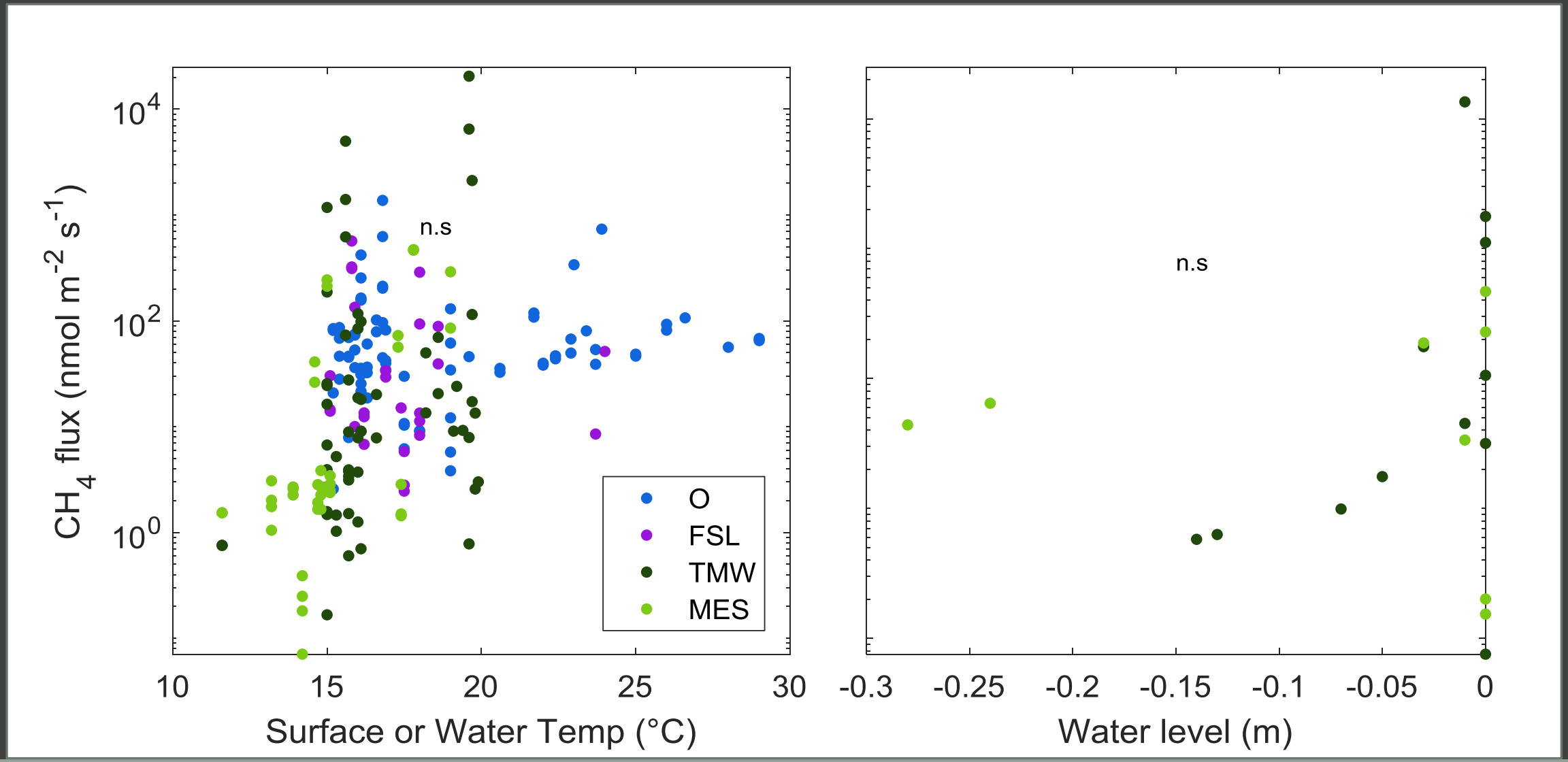


High spatial and temporal variability in methane fluxes

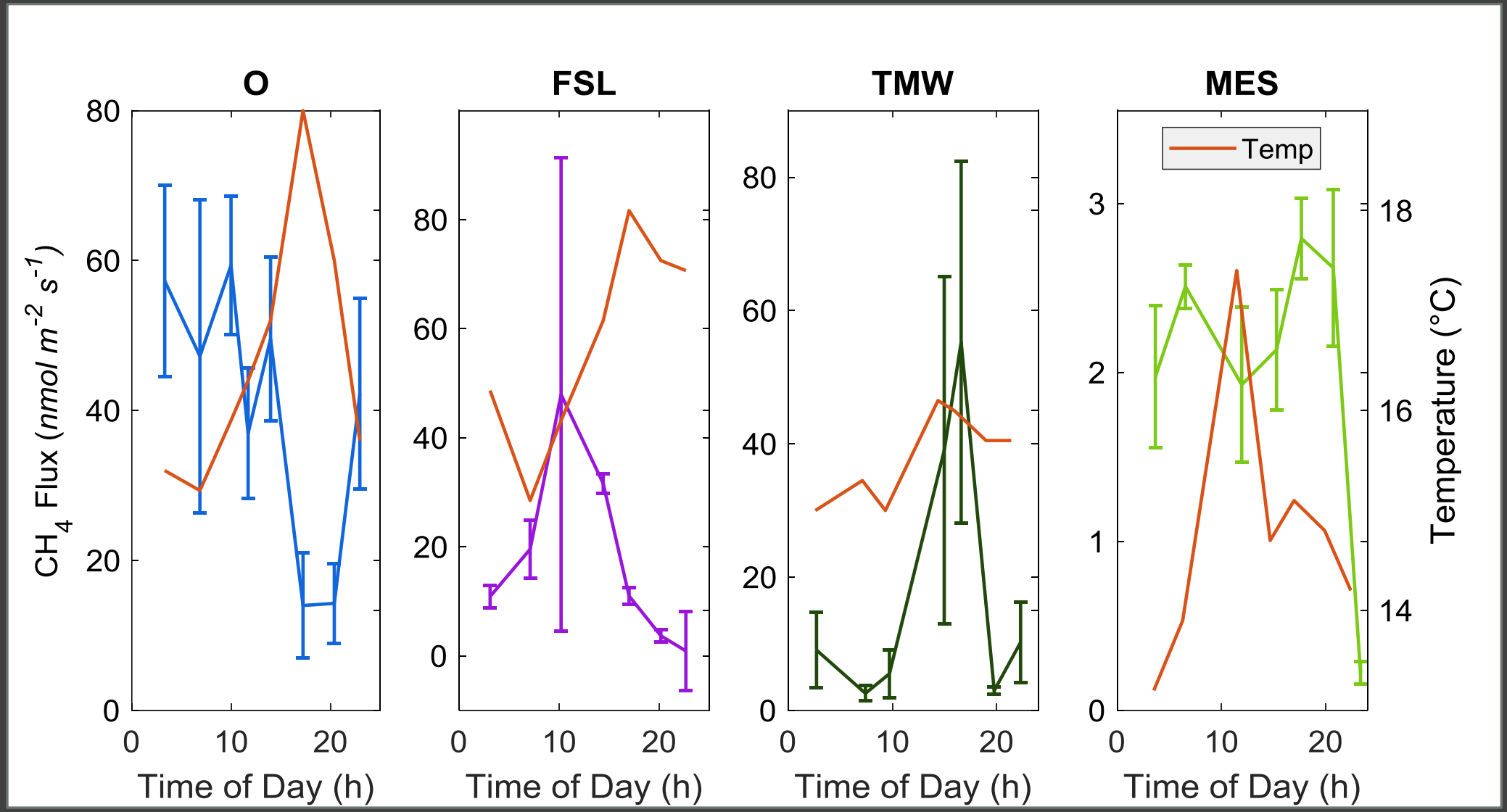




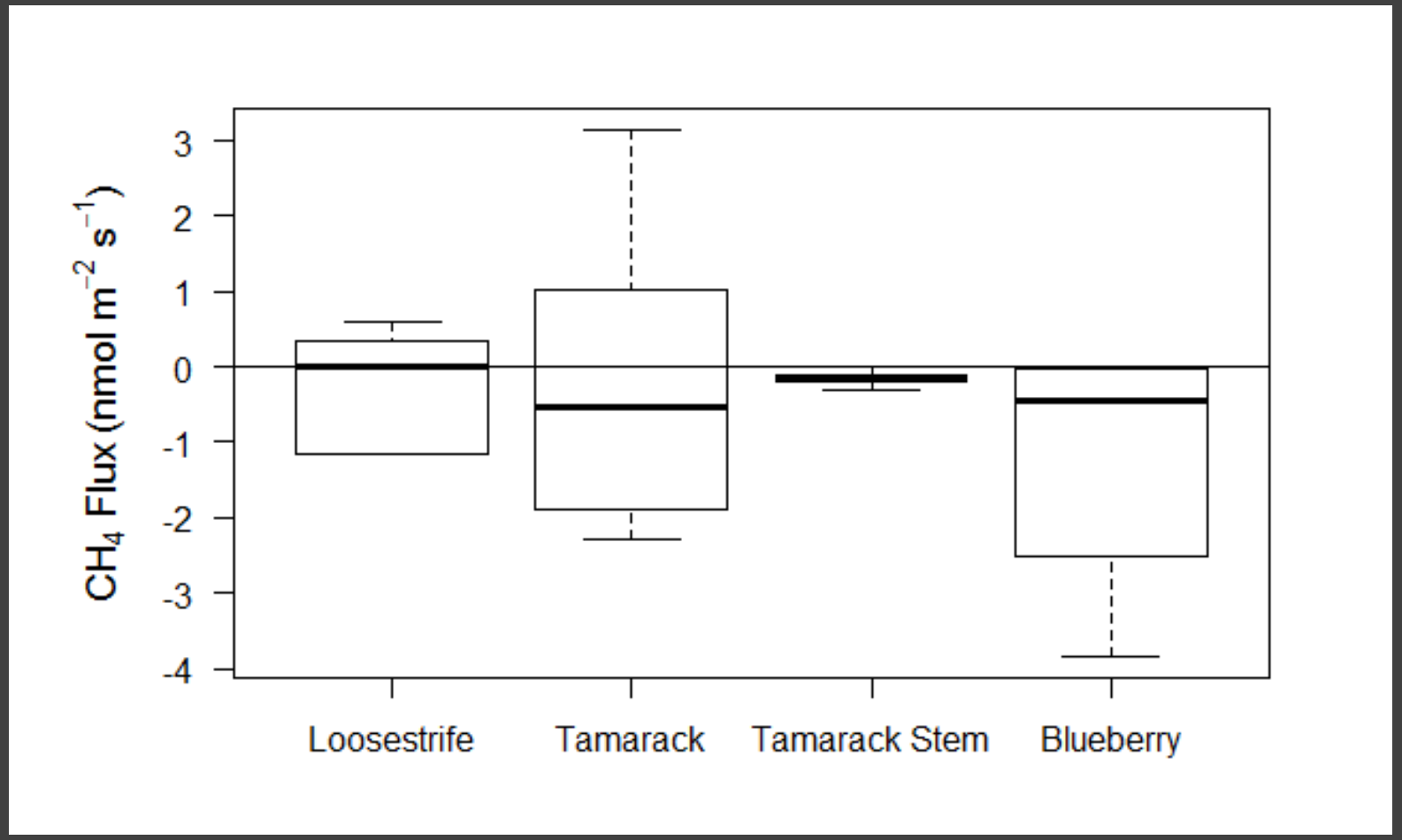
Overall, no good relationship with temperature or water level



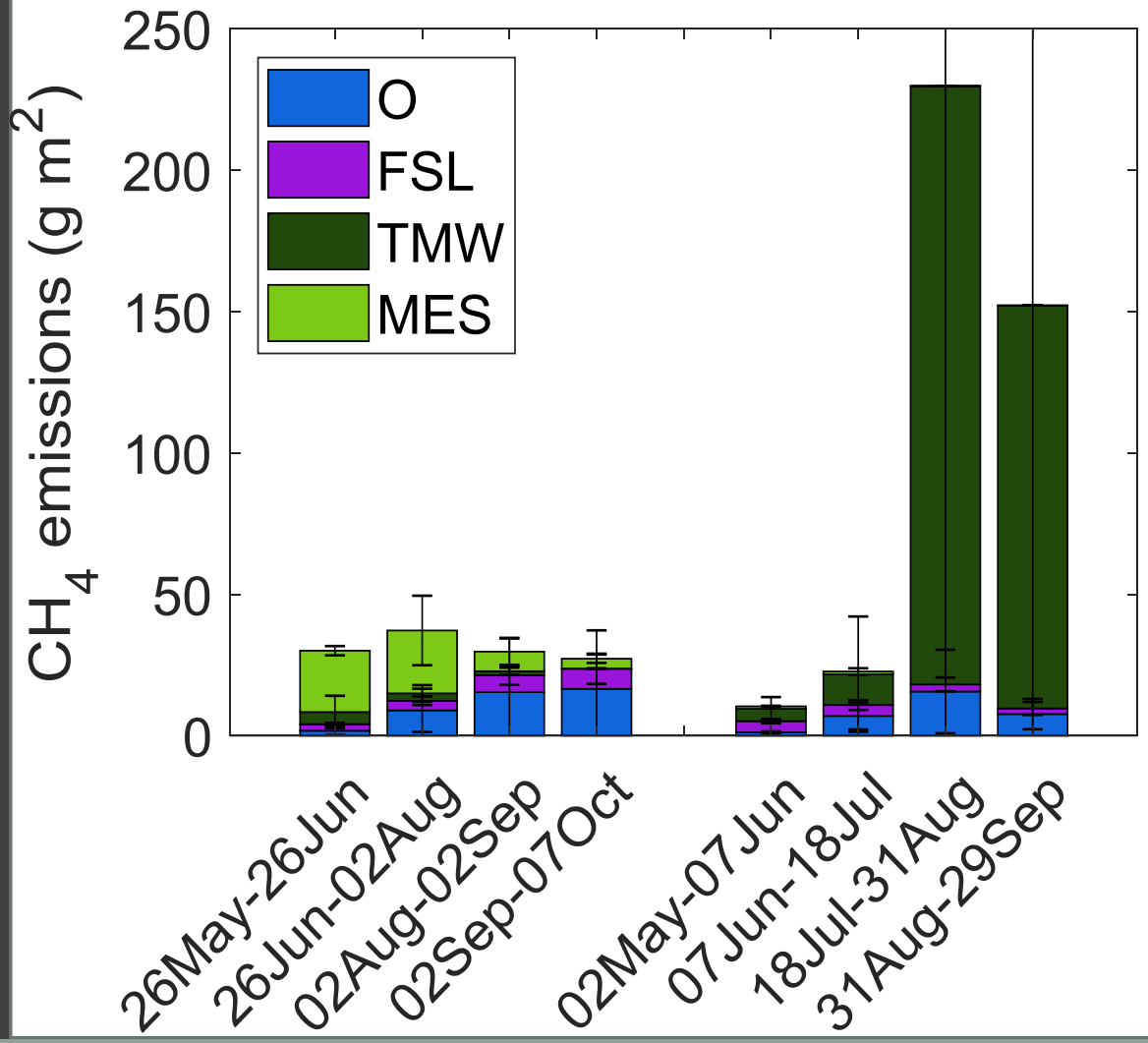
Weak diurnal cycles somewhat associated to temperature

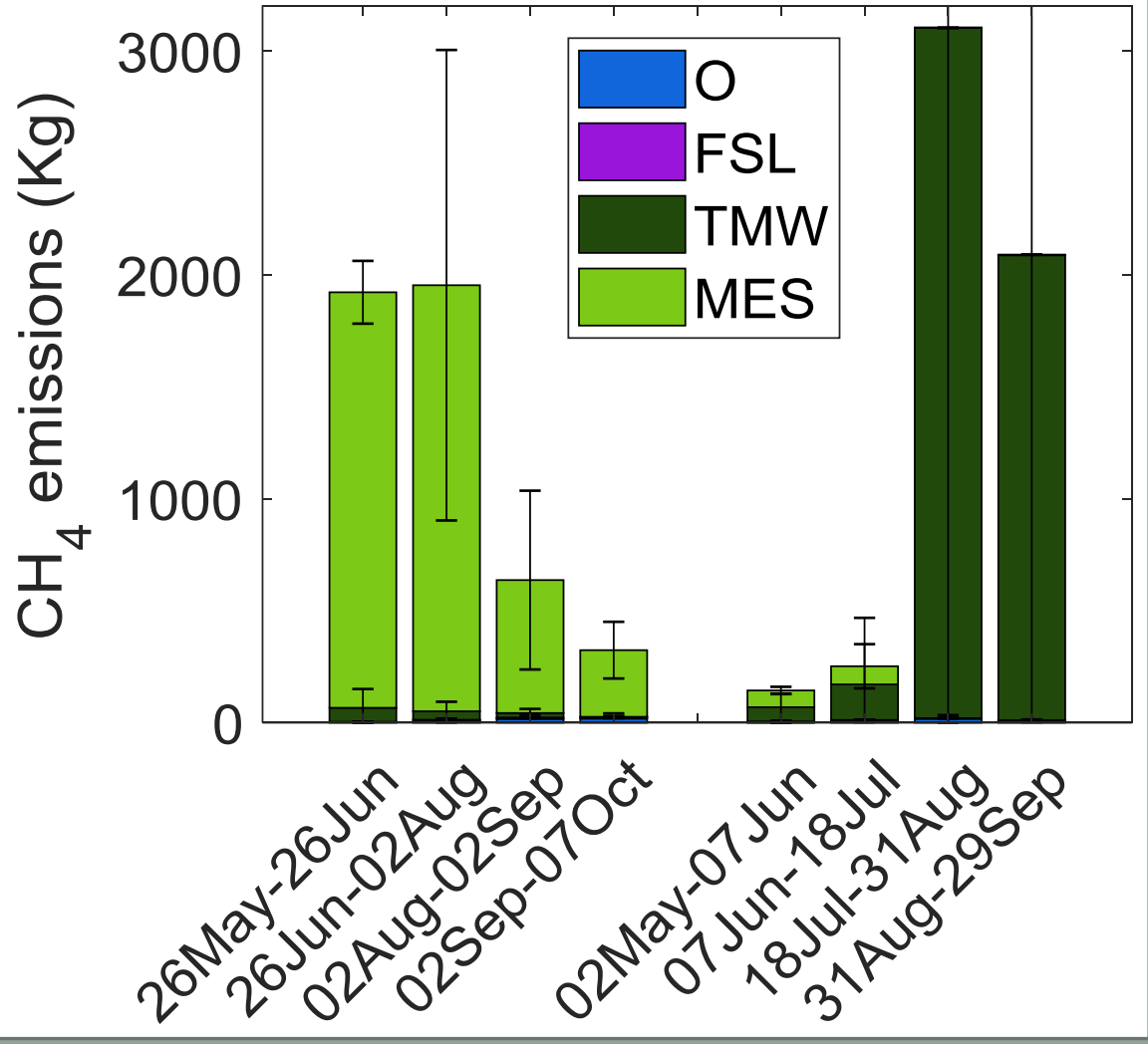


Plants are slight sinks of methane but contributions are not significant



Closing the methane budget





Acknowledgements

Dominique Hadad

Bryan Cassidy

Anna Thompson

Austin Rechner

Alexa Baratucci

Tasmina Uddin

Tim Becker

Di Xu

Charles Davis

Taylor Cai

The Nature Conservancy Ohio

WATER RESOURCES CENTER OHIO WRC

SOCIETY OF WETLAND SCIENTISTS NORTH CENTRAL CHAPTER