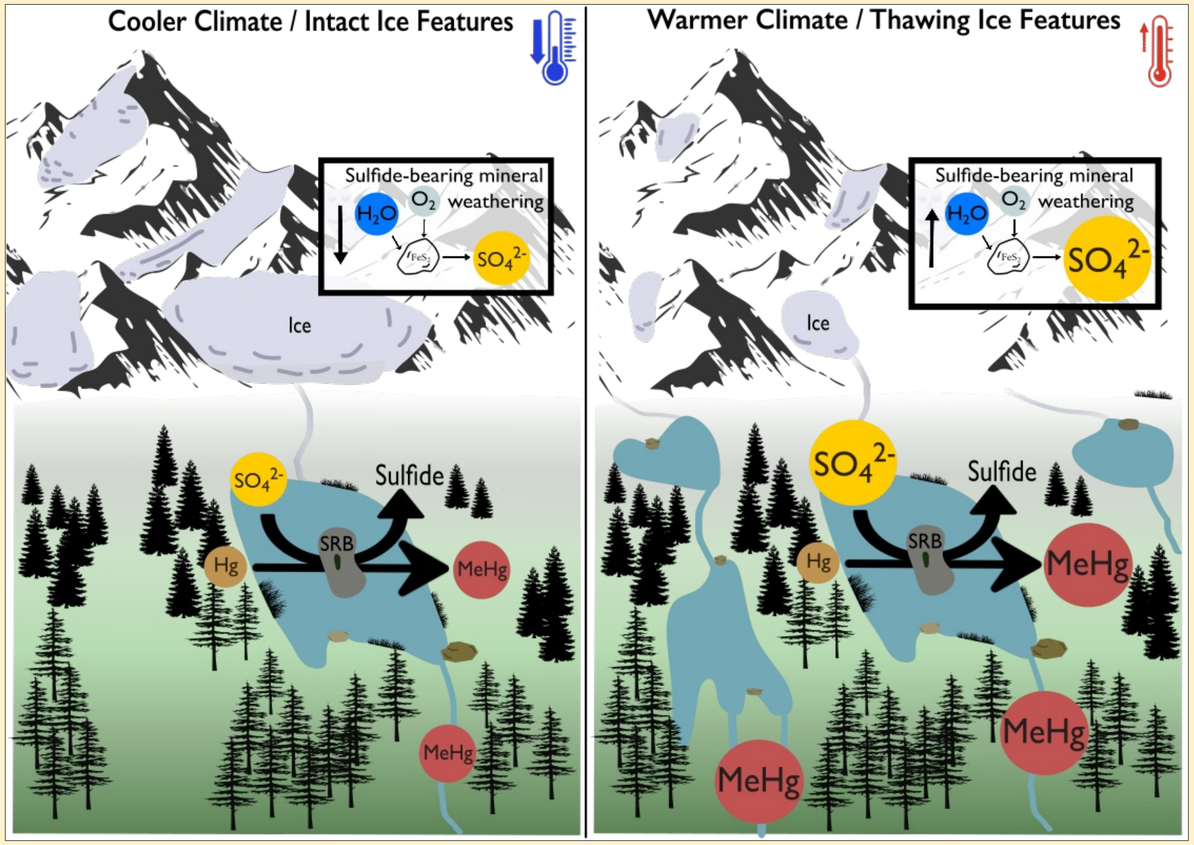
Sulfate stimulates methylmercury production in subalpine peatlands: Local studies in the Colorado Rockies and their implications globally

Hannah R. Miller[1,2], Charley T. Driscoll[3], Sarah E. Janssen[4], Eve-Lyn Hinckley[1,2]

[1] Cooperative Institute for Research in the Environmental Science. [2] University of Colorado Ecology and Evolutionary Biology Department. [3] Syracuse University Department of Civil and Environmental Engineering. [4] United States Geological Survey Mercury Research Lab.

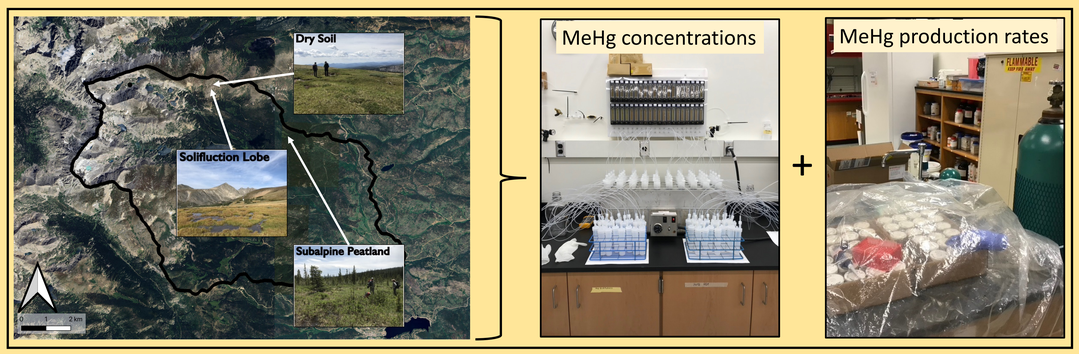
BACKGROUND

- ↑ Sulfate export in high elevation watershed from thawing ice features and ↑ weathering of sulfide-bearing minerals
- Sulfate important control on microbial production of methylmercury (MeHg) in low oxygen, wetland environments
- ↑ sulfate export may increase MeHg production within mountain ecosystems.

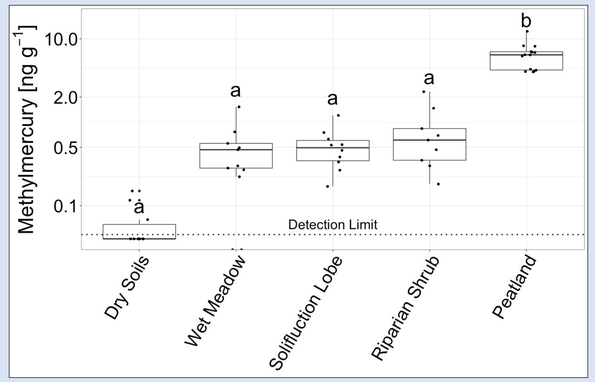


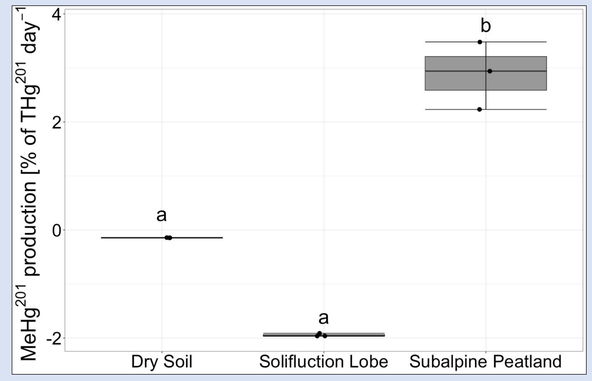
STUDY SITE AND METHODS

- North Boulder Watershed: ~10 wetland cover, 300% ↑ in sulfate export over past 30 years

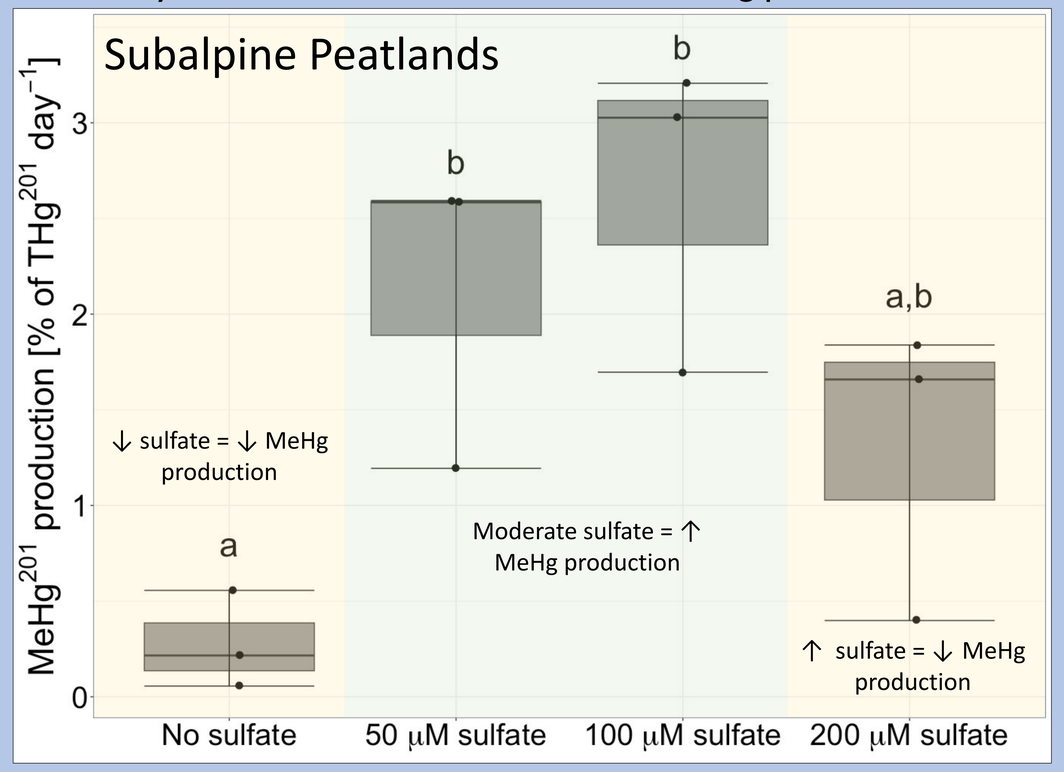


MeHg concentrations and production rates highest in subalpine peatlands

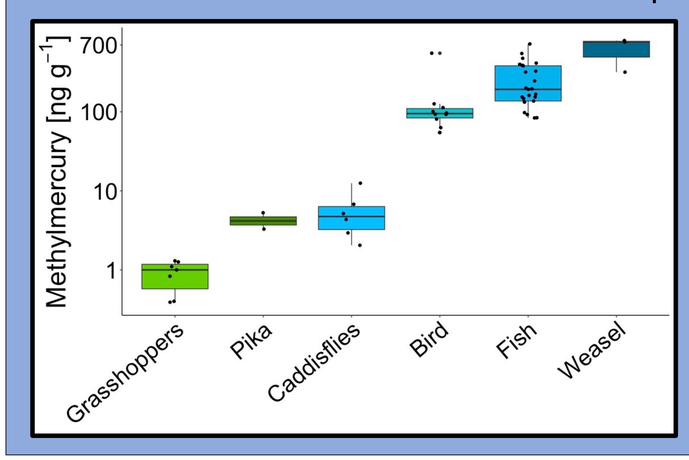


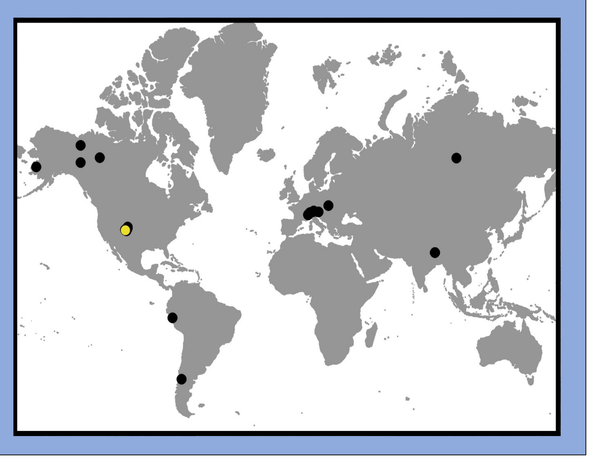


Subalpine peatlands sulfate-limited. Continued export of sulfate from high elevation ecosystems could stimulate increased MeHg production.



Broader Implications





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