

Publication**Evasion of Elemental Mercury from a Boreal Peatland Suppressed by Long-Term Sulfate Addition****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 2821781**Author(s)** Fritsche, Johannes; Osterwader, Stefan; Nilsson, Mats B.; Sagerfors, Jorgen; Akerblom, Staffan; Bishop, Kevin; Alewell, Christine**Author(s) at UniBasel** [Osterwalder, Stefan](#) ; [Alewell, Christine](#) ;**Year** 2014**Title** Evasion of Elemental Mercury from a Boreal Peatland Suppressed by Long-Term Sulfate Addition**Journal** Environmental science & technology letters**Volume** 1**Number** 10**Pages / Article-Number** 421-425**Keywords** Atmospheric mercury, air-surface exchange, dynamic flux chamber, sulfur deposition, oligotrophic mire, wetlands, background soils

We investigated the evasion of TGM (total gaseous mercury) from experimental plots on a boreal peatland that had been exposed for 15 years to different combinations of atmospheric sulfur (S) and nitrogen (N) deposition as well as greenhouse treatments simulating climate change. Shaded dynamic flux chamber measurements during the summer in 2009 showed emission of TGM to the atmosphere from most of the treated plots ($0.7 \pm 0.94 \text{ ng m}^{-2} \text{ h}^{-1}$). However, TGM exchange rates were significantly lower, occasionally indicating Hg uptake, on plots subjected to S addition at rates of $20 \text{ kg ha}^{-1} \text{ year}^{-1}$. Enhanced nitrogen deposition and greenhouse treatment had no significant effect on TGM fluxes. We hypothesize that the lower Hg evasion from the sulfur-treated plots is related to either earlier Hg evasion or Hg binding to S in organic matter, making Hg less susceptible to volatilization and more prone to transport in runoff.

Publisher ACS**ISSN/ISBN** 2328-8930**URL** <http://pubs.acs.org/doi/abs/10.1021/ez500223a>**edoc-URL** <http://edoc.unibas.ch/dok/A6337735>**Full Text on edoc** No;**Digital Object Identifier DOI** 10.1021/ez500223a**ISI-Number** WOS:000350831600008**Document type (ISI)** Article