



## What rules GHG-(greenhouse gas)-fluxes in a prealpine bog - management or watertable?

Christoph Förster and Matthias Drösler

Chair of Vegetation Ecology, Technische Universität München (TUM), Emil-Ramann-Straße, D-85350 Freising, Germany  
Phone (+49) 08161-712611; eMail: christoph.foerster@wzw.tum.de

Being an important sink of carbon, the small stripe of bogs in the foreland of the Alps plays an important role for the carbon balance of Germany. A big part was drained for peat-use and to get agricultural land in the last centuries. Restoration of these degraded bogs can help to rebuild this function, whereas the watertable is an important co-factor for the amount of mitigation of greenhouse gases (CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O).

To estimate GHG-balances gas-flux measurements, using the chamber method developed by Drösler (2005) were done in 2007 and 2008 on a degraded bog-meadow, which was partly rewetted in 1993 and which is still managed in large areas. This mosaic of restored, drained and managed areas showed big differences in their carbon-balances from a high source ( $\sim 500 \text{ g CO}_2\text{-C m}^{-2} \text{ a}^{-1}$ ) to a moderate sink ( $\sim -200 \text{ g CO}_2\text{-C m}^{-2} \text{ a}^{-1}$ ).

Where the management was stopped in 1993, some Sphagnum-communities developed which helped to turn these areas from moderate sources ( $47 \text{ g CO}_2\text{-C m}^{-2} \text{ a}^{-1}$ ) or sinks ( $-58 \text{ g CO}_2\text{-C m}^{-2} \text{ a}^{-1}$ ) to permanent sinks with uptakes between ( $-150$  and  $-250 \text{ g CO}_2\text{-C m}^{-2} \text{ a}^{-1}$ ).

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