

Summer CO₂ and CH₄ fluxes from emerging *Sphagnum* lawns in a rewetted extracted peatland in Sweden

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16 years (2015) after rewetting a nutrient-poor extracted peatland, a functioning wetland ecosystem with stable hydrology and characteristic peatland vegetation has been established. Some parts of the restored wetland are covered by almost 100 % of *Sphagnum* and terrestrialization by *Sphagnum* of the newly established shallow lakes is proceeding rapidly. To monitor the *Sphagnum*'s climate impact, sites with dense *Sphagnum* lawns were investigated with transparent automated chambers for methane (CH₄) and carbon dioxide (CO₂) fluxes in summer 2015.

In June, July and August 2015, the *Sphagnum* sites were CO₂ sinks (-15, -28 and -15 g CO₂-C equivalents m⁻²) but also CH₄ sources (28, 22, 55 g CO₂-C equivalents m⁻²). Adding for both gases, the sites were sinks in July (-6 g CO₂-C equivalents m⁻²) and sources in June and August (13 and 40 g CO₂-C equivalents m⁻²).

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