



Project acronym: SAFE

Project title: Evaluation of Soil Activity, Functioning and green-house gas Emissions in unmanaged and drained Wetlands (SAFE-Wet)

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Discipline: Earth Sciences & Environment: Other - Environment

Station(s): Sudurnes Science and Learning Center (Iceland)

Changes in land use of wetlands imposed through drainage can have large effects on the fluxes of GHG to and from the atmosphere. After drainage, the sites may turn from a carbon sink to net sources of CO₂, depending on soil properties, ground water level and management practices. Moreover, peatland drainage increases the availability of oxygen and mineral nitrogen, which trigger N₂O production. However, measurements of GHG budgets from drained wetlands are few and there are no accurate estimates for the coverage of all land-use options, including e.g. the various after-use options such as croplands, abandoned croplands, grasslands, livestock grazing.

The objectives of SAFE-Wet project are: i) measuring differences in CO₂, CH₄ and N₂O emissions from vegetated undisturbed wetlands (saturated and damp) and disturbed wetlands (drained), including ditches; ii) evaluating the impact of the use and management of drained wetland (livestock grazing, hayfield, abandoned); iii) assessing the influence of soil type and organic C and N content on GHG fluxes, soil activities and functioning.

Measurements of CO₂, CH₄ and N₂O will be performed using static chambers, gas chromatographic and FTIR determinations. Gas fluxes will be related to soil types and C and N content of unmanaged and drained wetlands under different land use.