



Assessing impacts of land use on carbon stock and properties of Irish ombrotrophic peat soils - preliminary results of a national peatland survey

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Peatlands constitute the largest soil carbon stock in Ireland with 75% of soil carbon stored in a peatland area covering an estimated 20% of the land surface. In spite of their crucial role as carbon stores and potential carbon sinks, peatlands often are affected by past and present disturbances related to various land use activities, such as drainage, change or loss of vegetation cover and compaction. Afforestation, grazing and turf extraction for energy and horticultural use are assumed to be major drivers of peatland degradation in Ireland, potentially leading to soil carbon mineralization, while contributing to increased carbon emissions. Current research funded by the Irish Environmental Protection Agency (EPA) addresses these land use pressures with a major goal to investigate the impact of land use on carbon stocks in Irish peatlands and to model carbon emissions from land use activity. In this context, a nationwide peatland survey has been conducted between May 2017 and December 2018, assessing vegetation structure and sampling entire peat profiles at 280 sampling points throughout Ireland. Here, we present results of the national survey hypothesizing that land use activity is a major driver for altered peatland properties and carbon stock. We examine how land use alters basic edaphic, hydrological and vegetation properties of peatlands and discuss an approach for assessing carbon loss across different land use categories.