



Soil carbon in restored peatlands

Study: MB-2026-07 | Site: Flóinn, South Iceland | Authors: Mossbank Institute field team

Abstract

We measured soil organic carbon in twelve peatland plots three, six and nine years after rewetting, and compared them with drained control plots on the same farms. Rewetted plots gained carbon in the top 30 cm at a steady rate, while drained controls continued to lose it.

Method

Each plot was sampled at five points on a fixed grid in June and September. Cores were taken to 50 cm, split into 10 cm layers and analysed by dry combustion. Water table depth was logged hourly.

Results

Plot group	Years since rewetting	Mean water table (cm)	Carbon change (t C/ha/yr)
Rewetted A	3	-8	+0.9
Rewetted B	6	-6	+1.4
Rewetted C	9	-5	+1.6
Drained control	n/a	-47	-2.8

Carbon gains were strongest where the water table stayed within 10 cm of the surface through the summer.

Discussion

The difference between rewetted and drained plots is larger than the year-to-year variation within either group. Rewetting appears to stop losses within the first growing season and begin net gains within three years.



Next steps

- Extend sampling to the 2027 season and add methane flux chambers.
- Share the raw core data with the national inventory team.