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Post-fire carbon dioxide emissions from a peatland undergoing restoration

Rebekka Artz, Mhairi Coyle, Pete Gilbert, Roxane Andersen, and Adrian Bass

James Hutton Institute, United Kingdom of Great Britain – England, Scotland, Wales (rebekka.artz@hutton.ac.uk)

In May 2019, a major wildfire event affected >60 km² within the 4000 km² Flow Country in Northern Scotland, UK, a flagship blanket bog peatland that is being considered for UNESCO World Heritage Status. While the fire itself created significant damage, it also led to an extraordinary and unique opportunity to compare burned and unburned landscape scale greenhouse gas flux and surface energy dynamics using sites that, crucially, have otherwise identical biophysical characteristics (slope, aspect, peat depth) and land management histories. Since September 2019, carbon dioxide and methane flux data have been collected alongside other micrometeorological variables. Due to the COVID-19 lockdown in the UK, the team had severe difficulties in maintaining the equipment and hence, only partial and preliminary data will be reported here to showcase the findings from this project to date. The data obtained so far suggest a post-fire reduction in net CO₂ emissions for a period of one year since the beginning of our monitoring campaign.