PROJECT TITLE: Can methane emissions from restored peatlands be minimised by constraining pool size?

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Project keywords: peatland; restoration; methane; greenhouse gas; net zero;

Proposed start date: Between 26th June and 3rd July 2023

Project description:

Peatland restoration has been identified and promoted as a means to reduce greenhouse gas emissions and achieve net zero targets. However, rewetting of peatlands can increase methane emissions. As methane is a potent greenhouse gas this can lead to increased global warming potential following restoration.

This project aims to understand the relationship between the size (depth and area) and Sphagnum cover of pools created by peatland restoration and methane emissions. With the hope this will influence future restoration techniques used on Dartmoor and other upland blanket bogs.

The project will involve fieldwork to collect greenhouse gas emissions with a portable greenhouse gas analyser from a range of pools at a restoration site (Hangingstone Hill) within Dartmoor National Park. The equipment is carried out to the remote site over uneven terrain. Information about the pools and their locations will also be collected. We would support the candidate to analyse the data in R and/or QGIS.

The candidate would be working within the Nature for Climate Change Peatland Grant Scheme project and the Centre for Resilience Water and Waste. They would be encouraged to fully integrate, expected to attend research group meetings, and present their findings at one to get feedback as they write their report.

Candidate requirements

The candidate must love being outdoors even in inclement weather, with an interest in greenhouse gas emissions, peatlands and GIS. No prior experience is necessary as all essential training will be given and the project can be shaped by the candidates existing interests and experience. The candidate will be required to walk over uneven terrain whilst carrying equipment.

Background reading and references

This work builds on the Mires on the Moors project, the project report can be found here: see https://www.exeter.ac.uk/research/creww/research/casestudies/miresproject/.

The project will be supervised by Dr Naomi Gatis (http://geography.exeter.ac.uk/staff/index.php?web_id=Naomi_Gatis) and Dr Pia Benaud (http://geography.exeter.ac.uk/staff/index.php?web_id=Pia_Benaud).