Carbon futures in the mire? Knowledge controversies in European peatland restoration

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Research Project Grant

James Palmer and his team examine how the restoration of Europe's diverse 'peat-scapes' could be scaled up in a manner that successfully reconciles climate benefits with broader social, economic and environmental objectives

In the context of the climate crisis, a race is underway to restore some of Europe's most important wetland landscapes – peatlands (or mires). Wet peat soils serve as significant carbon sinks if left undisturbed for long periods, as decaying plant matter is starved of the oxygen needed to decompose fully. Historically, peatlands have often been viewed as desolate, stagnant spaces, leading to their widespread drainage and conversion into productive energy, agricultural and horticultural resources. Attempts to rewet peatlands as a 'nature-based' solution for binding carbon emissions today are, therefore, far from straightforward, and spark controversies as they encounter diverse ways of knowing, valuing and living with 'peat-scapes' on the ground.

The *Carbon Futures in the Mire* project will draw on field research at four peat restoration sites – two in the UK and two in Estonia – to undertake the first social science investigation of the knowledge controversies entailed in ongoing efforts to remake European peatlands as carbon storage resources. I will work with Dr Kärg Kama (University of Birmingham) and two postdoctoral researchers to examine how restoration projects must contend with complex ecological systems and contentious understandings of peatlands' cultural importance and economic value.

Using a range of qualitative methods – including walking interviews, photovoice and deliberative workshops – the project team will engage closely with local communities and stakeholders to address three key research challenges:

- What are the implications of carbon-based imperatives of peat restoration for pre-existing uses and experiences of peatlands – including as a fuel source, fertile soil for agriculture, local commons, clean water reservoir, biodiversity haven and palaeoecological archive?
- How does expert scientific knowledge about peat restoration and carbon accounting circulate across diverse socio-ecological contexts, and how does this science inform novel strategies for extracting economic value from peat-scapes?
- How might scientists and restoration practitioners collaborate with local communities and stakeholders to co-produce place-specific visions of what healthy peat-scapes of the future should look like and how they should be managed?

Ultimately, prioritising and balancing different objectives in the peat restoration process will require integrating diverse knowledge – not just scientific but also historical, embodied and emotional. By experimenting with inclusive, participatory approaches for generating collective visions of healthy peat-scapes, our project will provide crucial insights into how to scale up restoration in Europe in a sustainable and socially legitimate manner.

An active peat mine in Valga County, Estonia. Photograph: Dr Kärg Kama.