

UK– CUMBRIA CONNECT

Climate Change Mitigation in the Endangered Landscapes and Seascapes Programme



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

The Endangered Landscapes and Seascapes Programme supports nature restoration across European land- and seascapes.

Why restore nature?

As well as providing benefits for biodiversity and ecosystem services, restoring natural landscapes also has the potential to contribute to climate change mitigation.

About the project

The Cumbria Connect site covers the Yorkshire Dales and Lake District National Parks in North West England. These 33,000 ha areas include diverse habitats including upland heaths, blanket bogs and ancient woodland, set in a mosaic with traditional farming and forestry activities, towns and villages.

These habitats are home to rare species including the red kite and European water vole. The area has become degraded due to intensive land management and other human activities including draining peat bogs.

The project aims to restore woodland, peatland and grassland habitats and increase the connectivity and resilience of the landscape. Rare species are also due to be reintroduced in the area.

Project size: 31,433 ha

Assessment timeframe: 2022-2042

Project lead: Royal Society for the Protection of Birds (RSPB)

Key activities:

- Restore and reconnect habitats, including woodland and wetlands
- Rewet drained peatlands
- Reintroduce rare and lost species

Total mitigation potential: -149,373 tCO₂-e

Assessing the climate change mitigation potential of this project

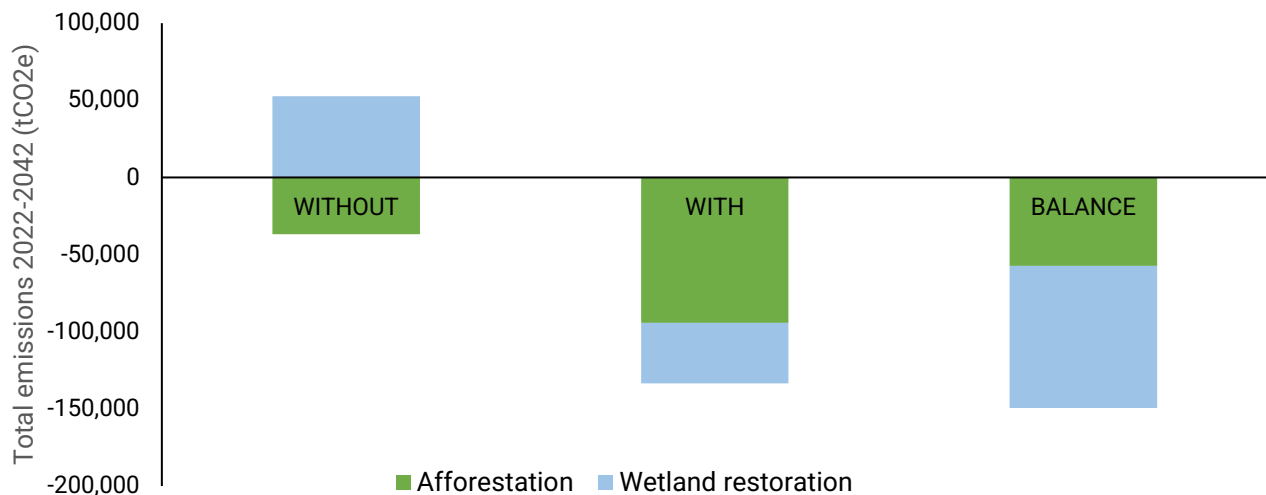
To determine the contribution of these actions towards climate change mitigation, their impacts on carbon stocks and GHG emissions need to be calculated. The most applicable tool for doing this is the EX-ACT carbon assessment tool, developed by FAO.

This tool uses the default 'Tier 1' emission factors, for the carbon sequestration of broad habitats and regions. Accuracy can be increased by more specific 'Tier 2' emission factors from the literature.

EX-ACT compares the 'project scenario' (the impacts of the restoration interventions) with a 'baseline scenario'. This determines the changes in greenhouse gas sequestration that are due to the project.

For this project, these interventions include afforestation on grassland and rewetting drained peatland.

Climate change mitigation results



Assessed total emissions (tCO₂-e) over 20 years in the baseline scenario (without), project scenario (with), and the resulting emissions difference due to the project (balance)

Project outcomes

Over the 20 years of this assessment (2022-2042), the EX-ACT tool predicts there will be a total net emissions reduction of around **-149,373 tCO₂-e**.

This is mostly due to enhanced afforestation with semi-natural woodland. This resulted in a net increase in carbon sequestration of **-57,384 tCO₂-e** compared to the baseline scenario, where this land remains as grassland.

Additionally, rewetting drained peatland avoided emissions of **-91,990 tCO₂-e**, by reducing the emissions of carbon dioxide, nitrous oxide and methane. This is despite the peatlands remaining a slight source of greenhouse gases over this timeframe.

Limitations

Due to the uncertainties associated with Tier 1 and Tier 2 emission factors, the results shown here are estimates. To increase accuracy, on-site carbon flux measurements can be used for future assessments.

The EX-ACT tool simplifies ecological processes and this adds further uncertainty.

The assessment timeframe of 20 years is also relatively short in relation to ecological processes. Over timescales longer than this assessment (beyond 2042) the mitigation potential is expected to be much higher.

Associated benefits

- Improved habitats to support rare species
- Increased water-holding capacity and flood reduction
- Support farmers/ land managers in a sustainable local economy

More information:

[ELSP- Cumbria Connect](#)

[EX-ACT tool](#)

[ELSP- Natural Climate Solutions](#)

