



Academic Contributions

Natural Capital (NC) 3 Vision:
“We have soils and woodland that are resilient to the impacts of climate change”

Dr Raymond Flynn, Queen's University Belfast

NI Evidence Report Risks & Opportunities Addressed:

Ne4: Risks to soil from increased soil aridity & wetness

Ne5: Risks to natural carbon stores & carbon sequestration

Ne8: Risks of land management practices exacerbating flood risk

Collaborating Organisations:

Queen's University Belfast

Funders

Queen's University Belfast

Implementation Timeline

By end of 2020

Weathering Below Blanket Bogs

Research Project

The aim of the project is to quantify the capacity of blanket bogs to regulate climate. Based on investigations in drinking water catchments to date, results demonstrate that the economic benefits of blanket bog restoration can have significant cost savings over alternative land use practices such as upland grazing. Most natural freshwaters in Ireland are not very acidic. This contrasts with more acid-rich waters seeping from Irish bogs. These more aggressive waters can dissolve minerals more quickly from rocks and soils underlying bogs. This process forms part of a wider process called inorganic weathering. The elements released from inorganic weathering can assist in sequestering atmospheric CO₂. How much is dissolved is suspected to depend on the condition of the bog and how much water seeps from the bottom of the peat. In cases where this is hindered, water flows more rapidly to streams, thus elevating the risk of flooding. This project explores the impact of the dissolved organic carbon, which helps make bog waters acidic, on inorganic weathering rates in bogs, by investigating the impacts of land use on ecosystem services to water.