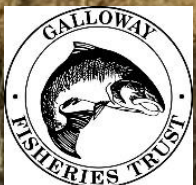


Forestry and Peat land Restoration in Galloway



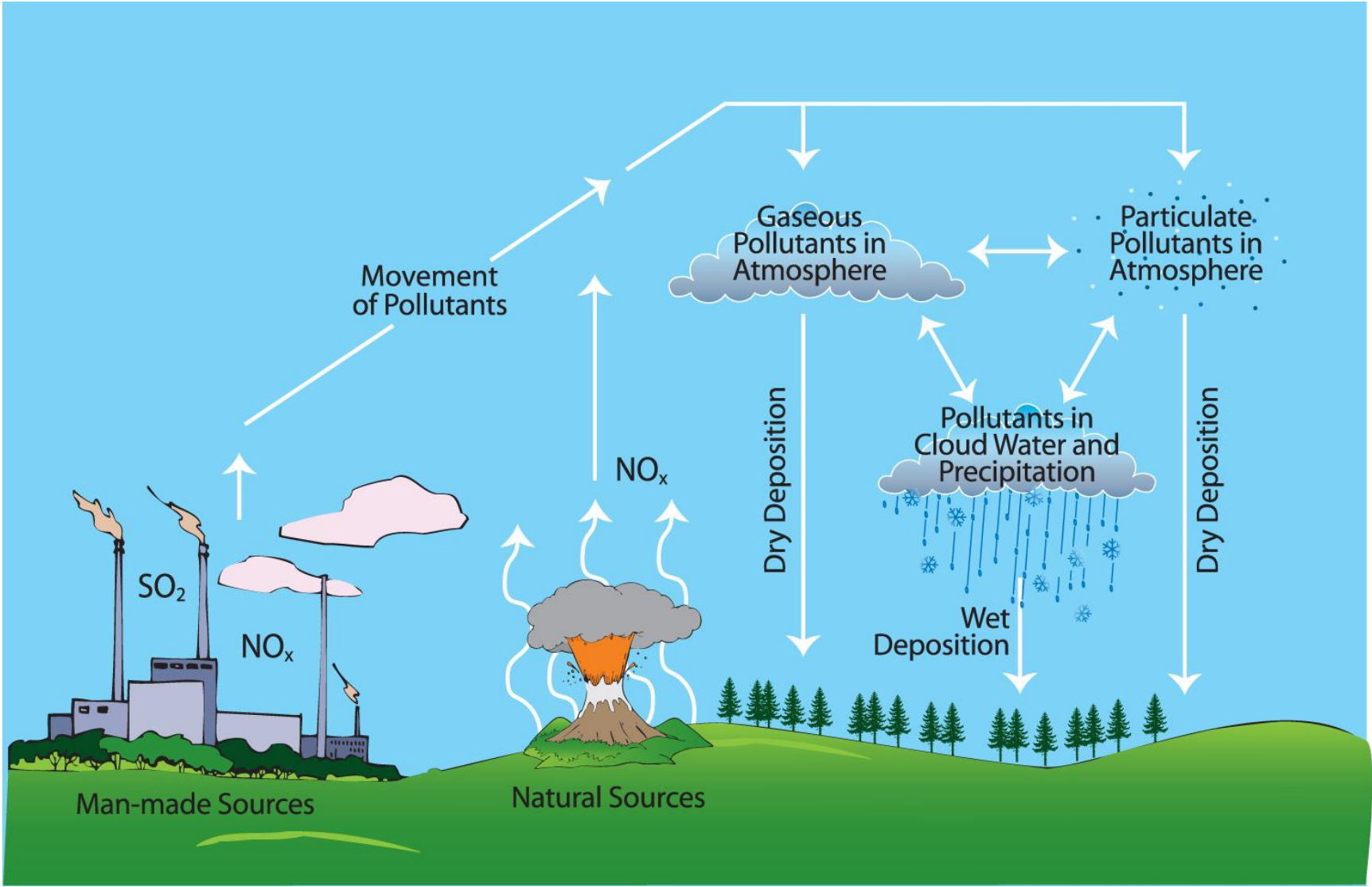
Acidification in Galloway

- Main limiting factor for freshwater fish populations in the Galloway uplands. Mainly affecting salmon and trout populations through recruitment failure. All local Arctic charr populations died out due to acidification.
- Roughly 200 km of running water impacted.
- Low pH results in the release of toxic metals especially labile Aluminium.

For Galloway Fisheries Trust, the priority for restoring the native fish populations in these river headwaters is to address acidification

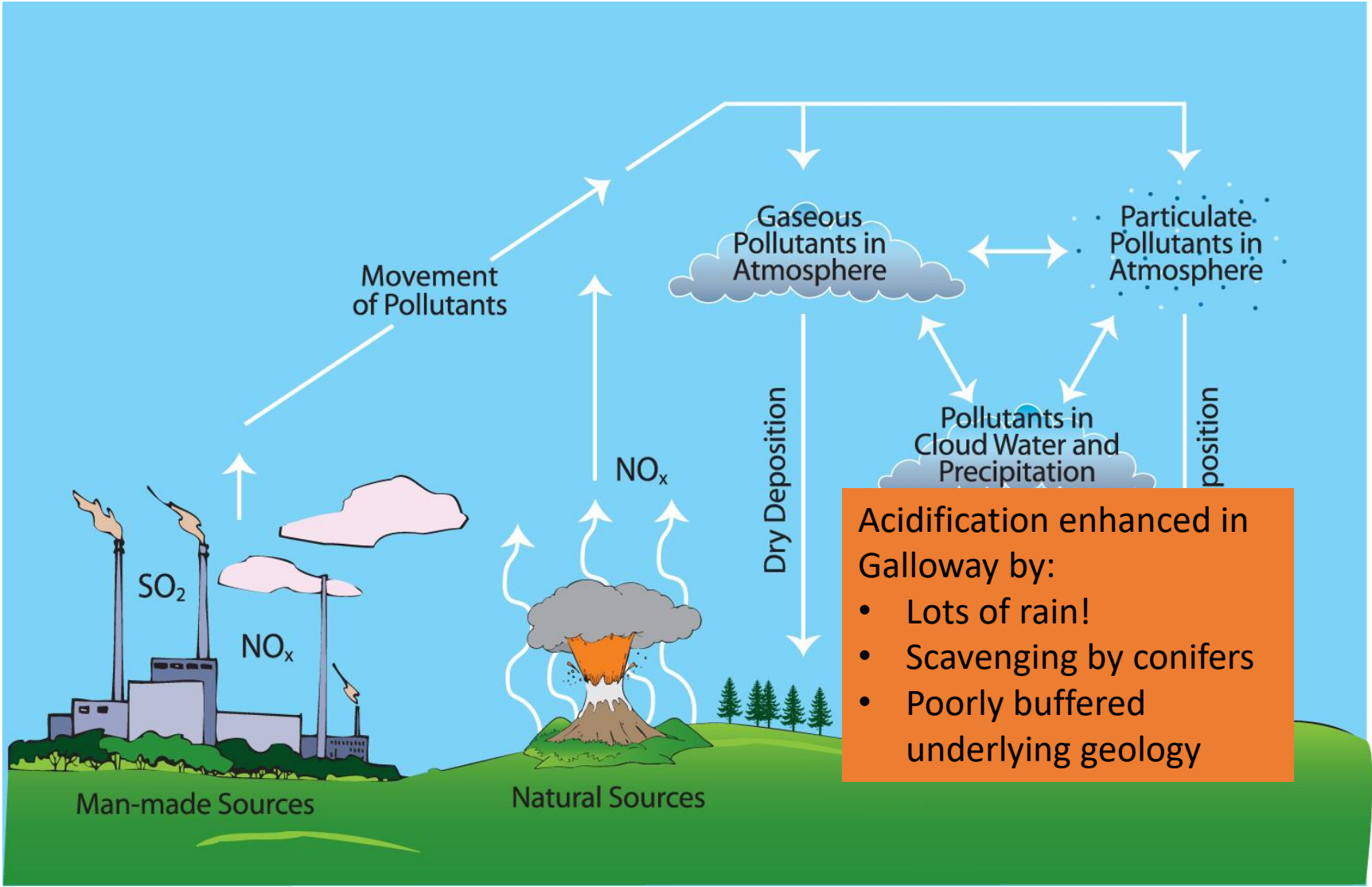


Acidification process



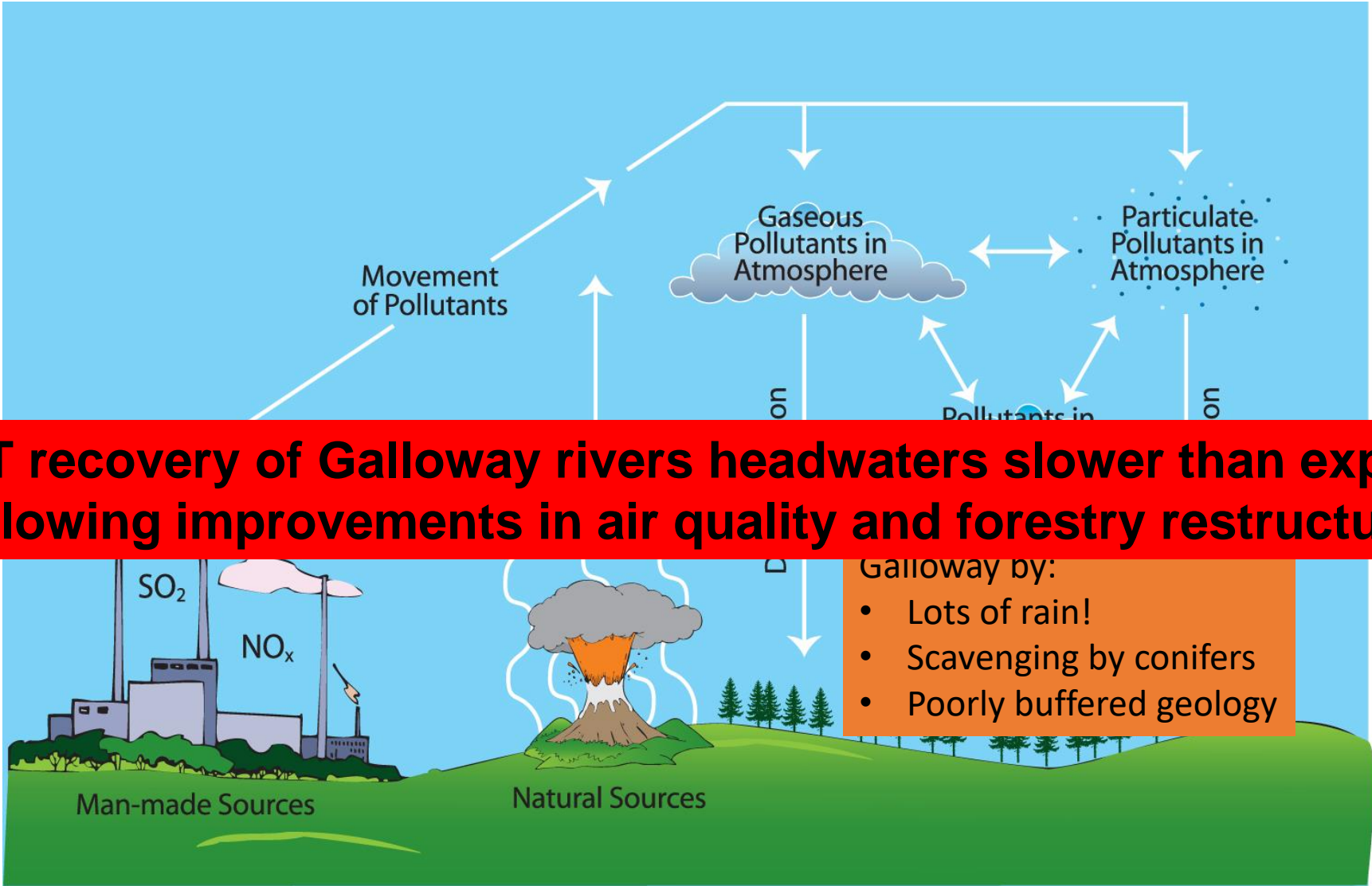
Source: United States Environmental Protection Agency

Acidification process



Source: United States Environmental Protection Agency

Acidification process



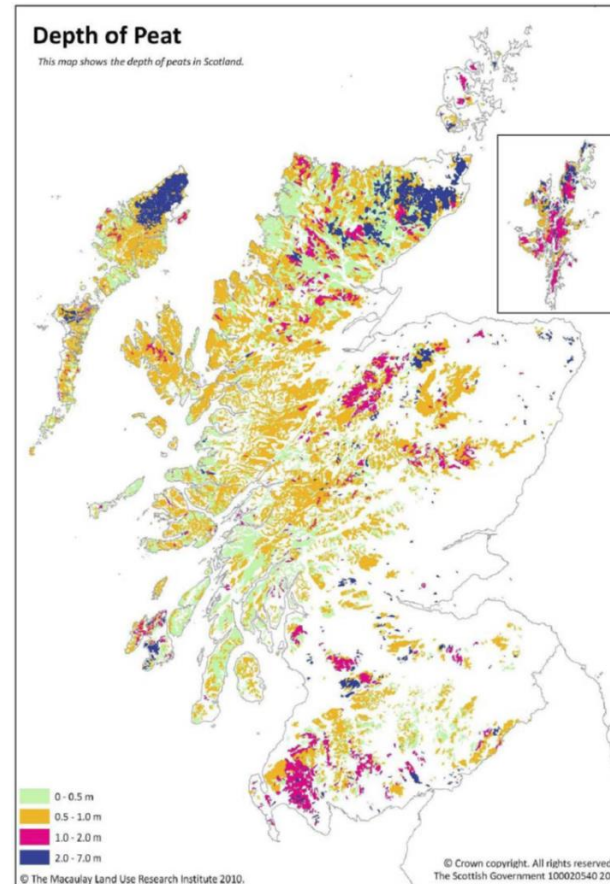
BUT recovery of Galloway rivers headwaters slower than expected following improvements in air quality and forestry restructuring.

- Galloway by:
- Lots of rain!
 - Scavenging by conifers
 - Poorly buffered geology

Source: United States Environmental Protection Agency

Role of degraded peat lands in acidification

- Approximately 60,000 ha of unplanted Blanket Bog and Lowland Raised Bog nationally (~10,000 ha in Galloway).
- 80,000 to 120,000 ha of afforested deep peat nationally (~40,000 ha in Galloway)



Role of degraded peat lands in acidification

- Many ways to degrade peat lands but forestry drainage particularly harmful. Anaerobic conditions required in peat so needs a high water table.
- A lot of forestry in Galloway – 31% forest cover in Dumfries and Galloway (211,000 ha).
- Historically Sitka spruce planting concentrated on peat land uplands due to availability of land



Role of degraded peat lands in acidification

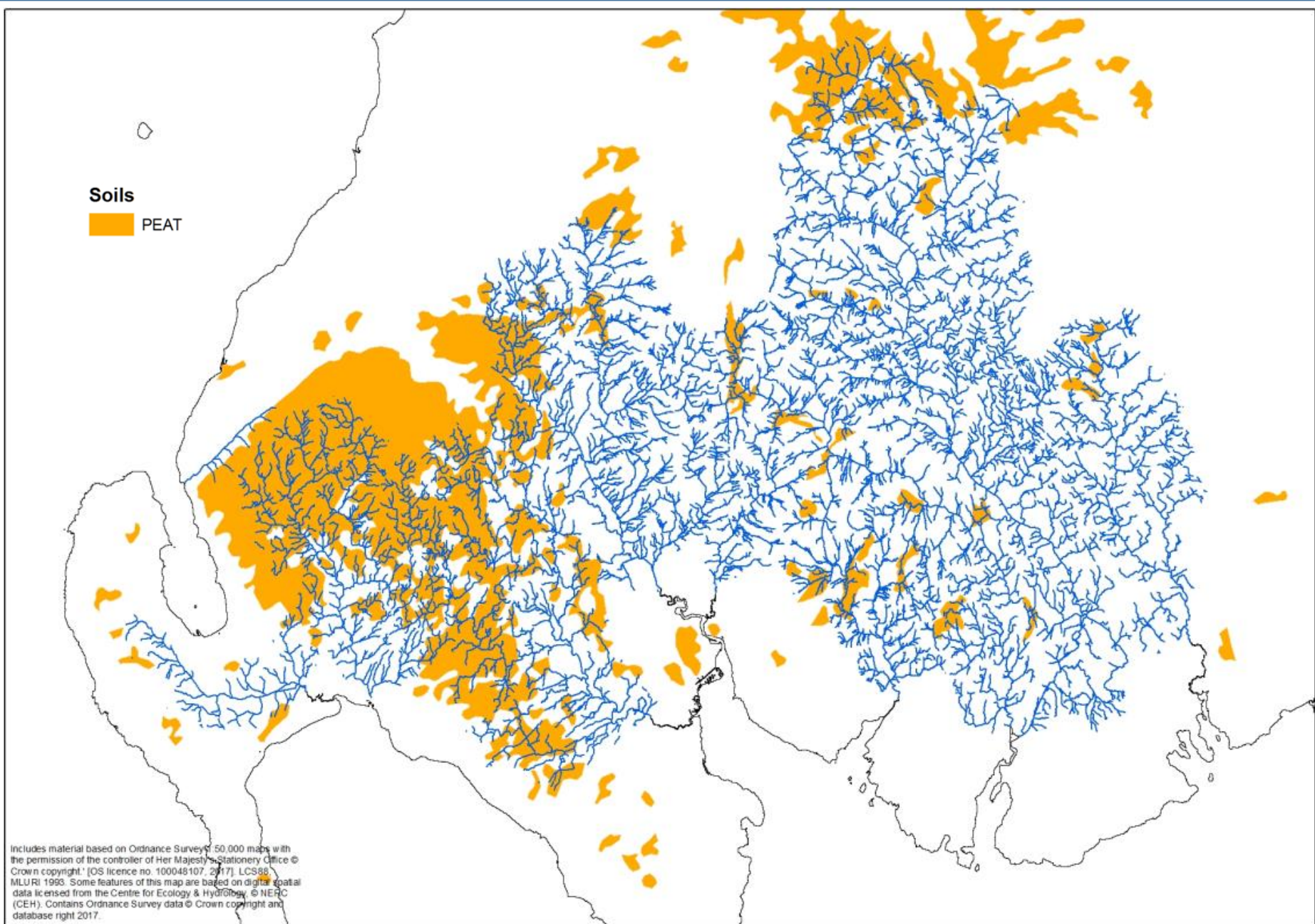
There is clear evidence that peat degradation by erosion and drainage reduces water quality by increasing:

- Acidification
- Metal concentrations
- Dissolved organic carbon and colour
- Concentrations of suspended sediments



Soils
PEAT

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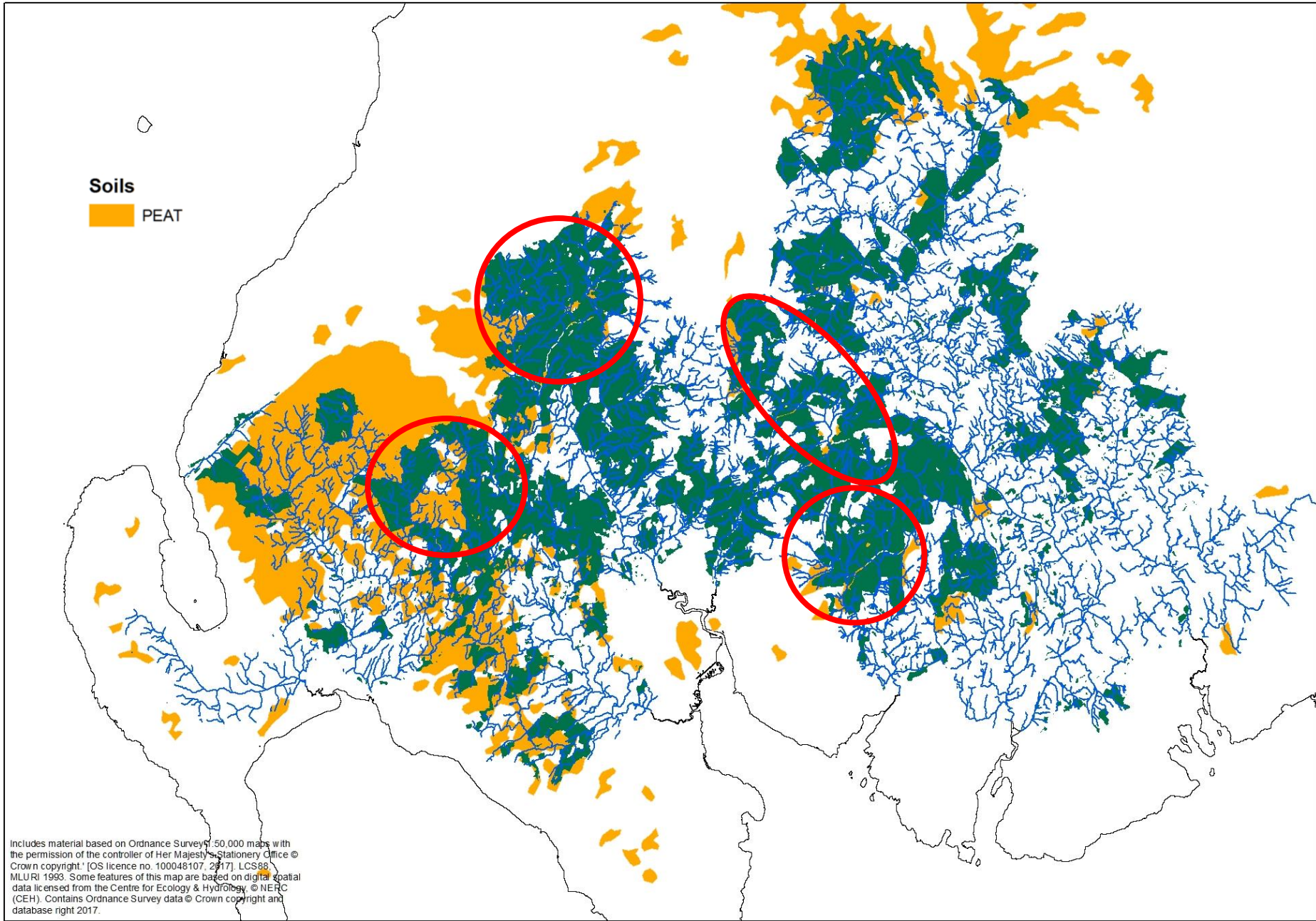


Soils
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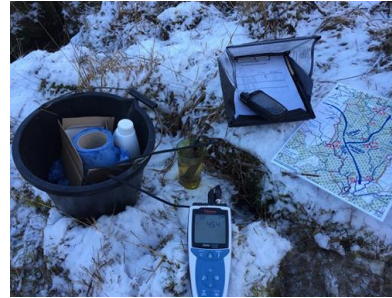
Bladnoch Peatland restoration work

Partners: GFT and Forest Enterprise (Funded by SNH/ Fishmongers Co)

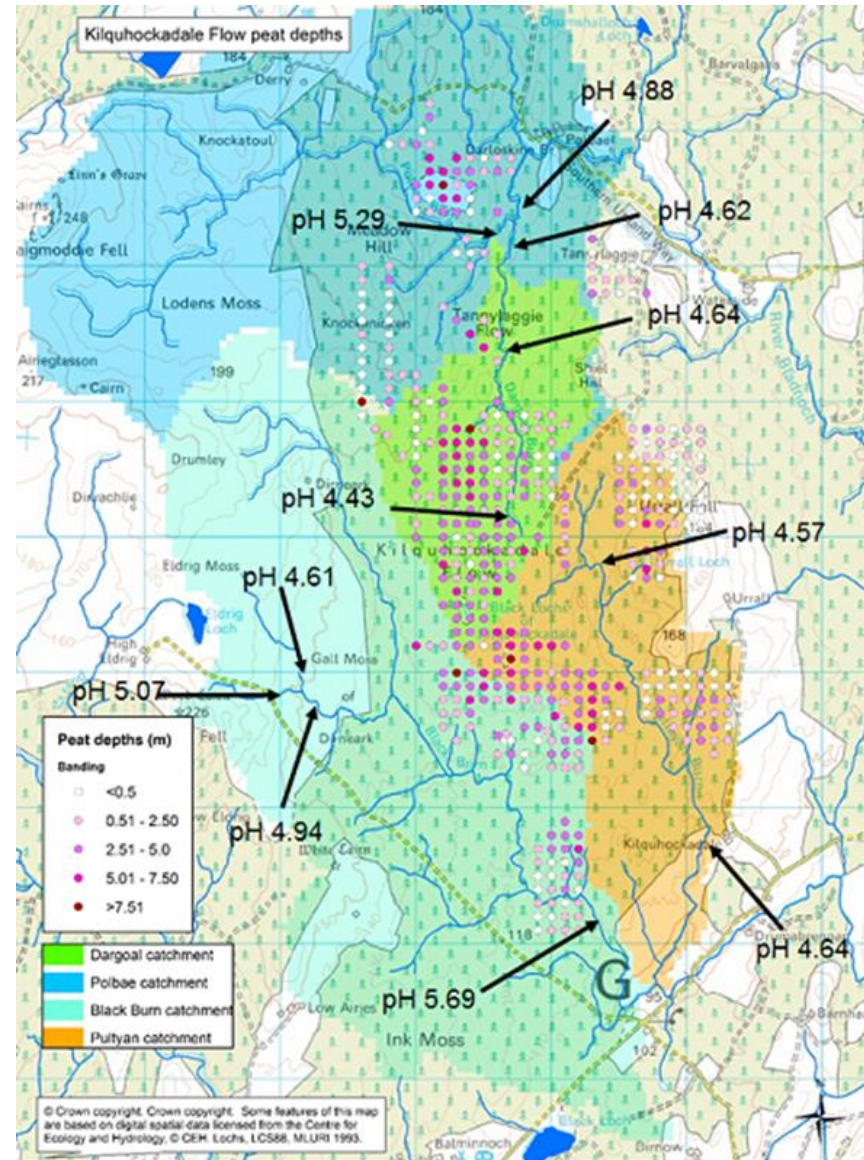
Location: Kilquhockadale Flow

GFT role was to collect data to show the suitability of the site for peatland restoration:

- Focussed on sub-catchments producing the lowest pH's
- 100's peat depths taken
- Water quality data collected
- Drainage network mapped

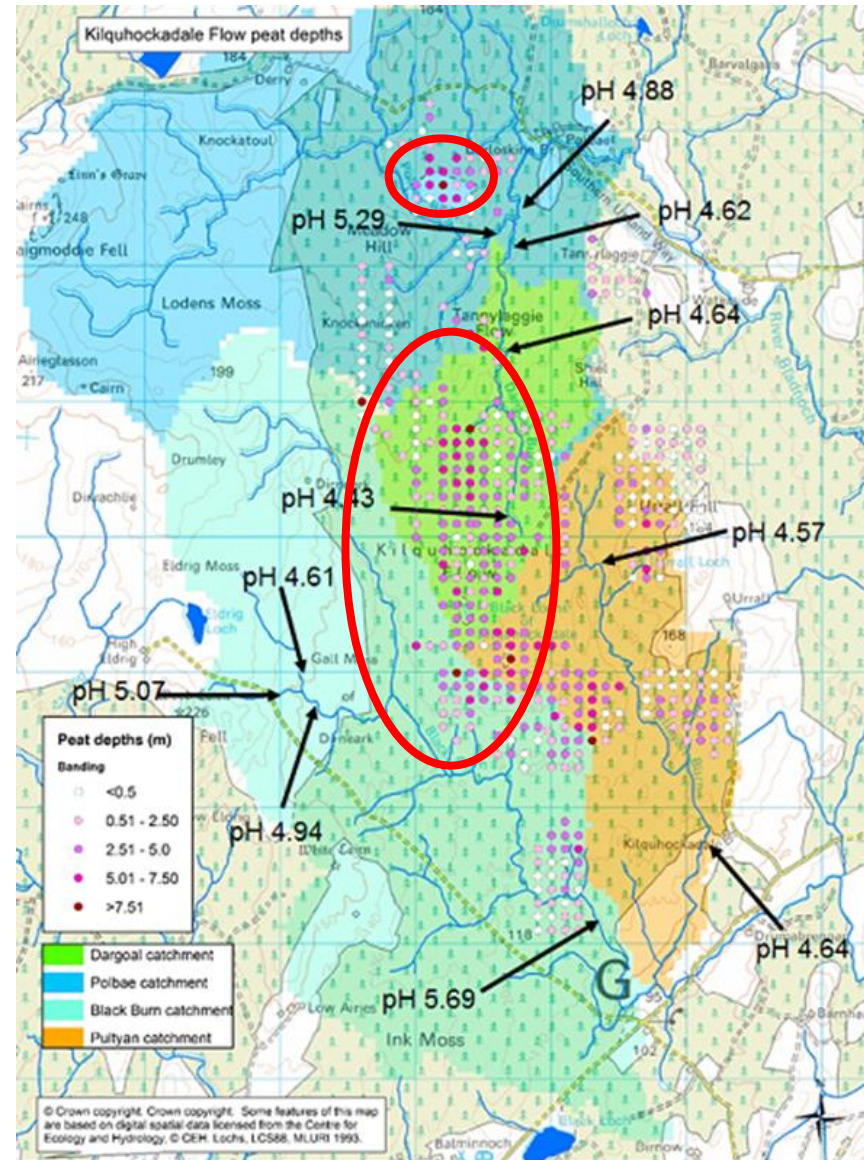


Bladnoch peatland restoration work



Bladnoch peatland restoration work

200 Ha to be restored
(which was previously
conifer plantation)



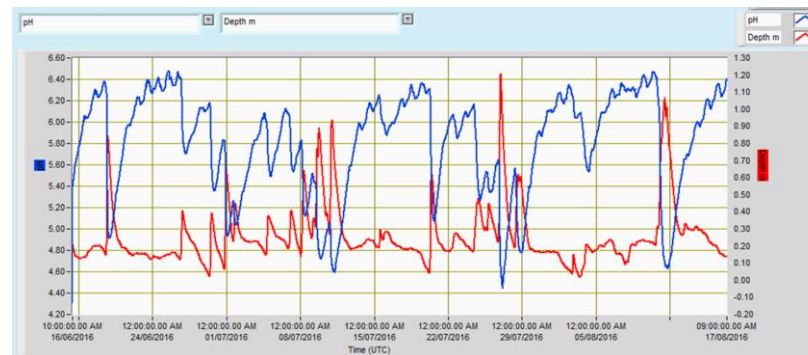
Fleet Peatland restoration work

Partners: GFT, SEPA, SNH, Fleet DSFB, land owners, Forest Enterprise, Galloway and Southern Ayrshire Biosphere

Location: River Fleet catchment

GFT chair steering group and collecting data to prioritise restoration:

- Sondes collecting various water quality data every 15 minutes
- 500 peat depths taken
- Annual electrofishing
- Drainage network mapped
- Data sharing between partners



Fleet Peatland restoration work

SNH have just finished phase 1 restoration of the 'Cairnsmore of Fleet NNR Peatland Restoration Project' with 40 days of digger time funded – 100's metres of drain blocking being completed. It is hoped similar work will take place on the afforested ground nearby.



Fleet Peatland restoration work

SNH have just finished phase 1 restoration on their non-afforested uplands – 130 ha of hagsgs reprofiled.



Forestry policy now regarding peat lands

- No new planting on peats over 0.5 m deep (UK Forestry Standard)
- “Deciding future management options for afforested deep peatland in 2015” – replanting based on yield class and tree growth i.e. what is best for carbon storage



Practice Guide

Deciding future management
options for afforested
deep peatland

A brighter future for peatlands?

- Scottish Government commitment to peatland restoration (for Carbon storage) 20,000 ha target
- £8m available through Peatland action this financial year and also SRDP funding available for land owners.
- Increasing expertise and understand of peatland resource and how to restore effectively (particularly contractors)
- Multiple benefits from peatland restoration!



Scottish Natural Heritage
Dualchas Nàdair na h-Alba

Peatland
ACTION