

River Calder Environmental Enhancements – a better place for wildlife and people

Key Objectives

- Creation of riparian woodland
- Enhanced riverine and terrestrial habitats and biodiversity
- Improved in-river habitat for salmonids and other aquatic life
- Mitigation against the predicted impacts of climate change
 - water temperature control
 - flood risk mitigation
 - carbon sequestration

Key Facts

- 30 Large Woody Structures installed along c. 1.8km reach
- 37ha riparian land enclosed
- 5.5km deer fencing erected
- 7 water gates installed
- 11ha planted
- 15,500 trees planted
- 4+ha expected tree regeneration

In channel habitat enhancement.....

Spey Fishery Board data indicated that for several decades, the upper River Calder near Newtonmore, Highland, has not been producing as many juvenile salmon as it should. This was thought to be linked to the uniformity of the river bed and lack of suitable spawning gravels and juvenile habitat. To help restore more natural fluvial processes and morphological diversity, felled trees (Large Woody Structures, LWS) were strategically placed in the river channel in 2020 to mimic natural dead wood. Over time this will encourage formation of more varied physical habitats such as gravel deposits and deeper pools, add nutrients, and create better conditions for breeding salmonids and other riverine species.

There have been early indications of success. Salmonid redd counts in November 2020 indicated that fish were spawning in new gravels associated with 12 of the LWS.



LWS installation at strategic points in channel



Windblown trees extracted from nearby plantation



Medial LWS



Salmon redd in newly formed gravel deposits

Monitoring change

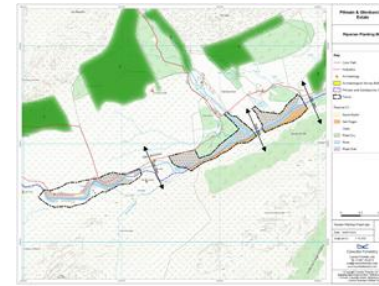
- Electro-fishing
- Redd counts
- Tree density
- Aquatic macro-invertebrate surveys
- UAV topographic surveys
- Aerial re-photography
- Riparian corridor bird surveys



Planting mixed broadleaf trees and Scots pine



Willow seedling establishing



Rowan regenerating



Innovation

The water gates have been specially designed to cope with the high energy, volatile nature and substantial sediment load of the River Calder (photo below). The extra-robust construction and separate panels should minimise maintenance and ensure longevity.



See our River Calder project video at <https://youtu.be/B-xTnLhnxOc>
Full project report at www.speycatchment.org

Creating new riparian woodland....

Three enclosures straddling around 4km of the river were fenced and partially planted with native trees, to boost the expected natural regeneration of trees and shrubs seeded from nearby.

The new woodland along the river banks will ensure a sustainable supply of dead wood in future, provide shading to cool the water, protect the river banks from excess erosion, and help to slow the flow of flood waters out of the catchment.

Eventually the trees will form a connected corridor of native woodland habitat currently lacking in the glen.

The enclosures were designed to be compatible with other estate management activities, eg routes for deer passage were retained.

With special thanks to landowners
Pitmain and Glenbanchor Ltd, and Cluny Estate.