

Slowing the flow with Leaky Dams at Muff Glen Eglinton



Eglinton FAS
Scheme
Updates



Flooding is a natural phenomenon, but the risk is increased by various factors, e.g. climate change, land use change, and more impermeable hard surfaces.

Leaky dams are an example of Natural Flood Management (NFM), which can complement traditional hard engineering if implemented across the catchment.

Design and Delivery

2017 & 2022	Severe flooding in Eglinton due to surface water and river overflow.	Autumn Winter 2025	Logs placed above the water and across banks. Rock armour and coir matting installed at the banks.
2024 – 2026	Development of flood alleviation proposals for Eglinton. Design of leaky dams as a pilot interim measure.	2026	Revegetating the banks. Outline business case approval for a flood alleviation scheme.

River flows freely until flood events.

Rock armour to help prevent bank erosion.

Wooden posts reinforced with a steel beam. Logs are also secured with metal chains and bolts.



Fallen trees from Storms Éowyn (Jan 2025) & Amy (Oct 2025), and some felled by the Forest Service.

Coir matting with native seeds of Irish provenance.

10 leaky dams

that are estimated to temporarily store an extra

~8,000 m³

*awaiting full survey results to establish a precise value.

Muff Glen Forest Park, Upstream of Eglinton Village

Design: Initial concept by Jacobs, detailed design by DfI Rivers.

Construction: DfI Rivers, supported by the Loughs Agency.

Land Owner: DAERA Forest Service.

H&S Points to consider

Top of dams is 150 mm below the footpath to help protect walkers from flash floods.

Public Safety Risk Assessments completed which requires signage at each Leaky Dam.

Leaky Dams and Signage are subject to an inspection & maintenance schedule.

The Muff Glen project

Ten timber leaky dams at carefully selected locations along the River Muff, at Muff Glen Forest, upstream of Eglinton.



The river, banks and nearby access path.



Timber structures extending into the woodland floodplain.

Why Muff Glen?

The forest lies upstream of the community at risk. Suitable woodland and floodplain provide space to hold some water temporarily.

Mainly locally sourced timber fits the forest setting. Posts and fixings secure the logs, with bank protection where required.

The forest park is managed by DAERA Forestry Service. Public ownership has helped support delivery,

Existing access paths can aid inspection and maintenance. Location choice brings together flood risk, storage space and access.

A Natural Flood Management pilot within the wider Eglinton flood risk programme.

What a leaky dam is and how it works

A leaky dam is a natural flood management technique that mimics natural processes, where fallen trees and debris create obstructions in waterways, forming barriers within the river channel. It slows higher flows while allowing normal river flow to continue.



Open flow paths beneath the timber remain part of the design. ‘Natural’ leaky barriers (fallen trees) can be seen in the background.

Normal river conditions

Water flows beneath the timber. The design aims to retain normal water movement and fish passage.

During heavy rainfall

Higher water levels meet more resistance. Water may pond upstream and/or sediment can spread onto suitable woodland floodplain, then release more slowly.

Ten structures working together

Each has a limited effect. The series aims to combine small delays along the reach and delay peak flows travelling towards Eglinton.

Benefits, limitations and the wider flood scheme

Potential benefits

Slower water and temporary storage

Reduced velocity and short term storage can delay the arrival of peak flows downstream and reduce the amount of sediment downstream.

Erosion and habitat

Lower flow energy may reduce bank scour and sediment movement. Varied wet woodland and river edges can provide habitat benefits.



Riverbank works within the forest has helped stabilise eroded banks, enhancing fishery habitat

Limits of the pilot

The greatest benefit is expected in smaller, more frequent floods. Very large or long duration storms can exceed the temporary storage available. The dams cannot eliminate flood risk.

Hydraulic assessment informs predicted effects. Monitoring over time will establish how the structures perform as a group.

Hard engineering is still needed

The leaky dams will complement the proposed solutions for the Eglinton Flood Alleviation Scheme. Engineered river, drainage and surface water measures remain necessary alongside upstream Natural Flood Management.

Inspection, monitoring, maintenance and safety



Structures within the river corridor



Safety signage at a dam location

Inspection

DfI Rivers arranges routine checks, detailed inspections and follow up after significant high flow events. Checks cover the timber structure and safety signage.

Monitoring

Observation builds evidence on how all the structures perform together, their durability and maintenance needs. Findings will inform future Natural Flood Management projects.

Maintenance

Material that significantly blocks the flow path is removed where required. DfI Rivers carry out repairs or improvements when inspection findings show a need.

Take care and enjoy the beauty of the forest safely



Flood Risk Area
Path liable to occasional flooding



Do Not Enter
when flooded



Beware
Risk of falling.
Do not climb or walk on structures



No
Swimming



Beware
Slippery slopes and uneven surfaces



Supervise
Children at all times



Beware
Risk of drowning

Visitor safety

Stay on public paths, follow signs and temporary restrictions, keep off the dams and avoid floodwater. River levels can change quickly.