CASE STUDY
DUNSIDE RESERVOIR

PROJECT OVERVIEW

The project was undertaken to remove the Upper and Lower Dunside Reservoirs from regulation under the Reservoirs (Scotland) Act 2011, as both reservoirs had been non operational since 2009.

Following agreement with SEPA and the Appointed Reservoir Panel Engineer, full discontinuance was selected, involving removal of the embankments and restoration of the original watercourse alignments.

EXECUTIVE SUMMARY

The Dunside Reservoir Discontinuance project removed the Upper and Lower Dunside Reservoirs from regulatory control and delivered measurable environmental and ecological benefits.

Post works monitoring confirmed stable water quality and evidence of successful fish recolonisation within the restored watercourses, demonstrating ecological recovery and long term resilience.

OUR SUSTAINABILITY ROUTE

- Nature Based Solutions
- Recycled Aggregates
- Low Carbon Steel
- Low Carbon Concrete
- Battery Units
- HVO Fuel
- Welfare Eco Cabins
- Green Energy

PROJECT BACKGROUND

Unseasonably wet weather during July and August constrained earthworks operations, with frequent stoppages required to prevent the generation of turbid runoff during periods of heavy rainfall.

Water management was the most critical challenge. All site discharges entered a burn feeding the Logan Water, a highly sensitive catchment with strict discharge controls.

As a result, allowable turbidity limits were set at approximately half those typically permitted elsewhere. Conventional mitigation was insufficient, requiring a layered water management approach including settlement lagoons, QP33 flocculant dosing, filtration and continuous over pumping. These controls operated throughout the works and required significant resource commitment.

Flood risk also influenced construction methodology. Earthworks were undertaken in strictly controlled stages in line with a detailed hydrological risk assessment by Mott MacDonald. Maximum permissible water levels were enforced at each stage, supported by high capacity pumps maintained on standby.

Ecological constraints, including nesting birds, otters and fish populations, were managed through exclusion zones, licensed fish rescue operations and ongoing monitoring.

Despite these challenges, the project delivered key lessons. Early engagement with SEPA and ecological specialists was essential to risk management, while combined flocculation and settlement proved effective for sediment control.

Weather related downtime highlighted the need for greater programme flexibility, and reinstating historically accurate, meandering watercourses delivered ecological benefits and improved long term channel resilience.

ENVIRONMENTAL BENEFITS

Post works ecological surveys undertaken by the Clyde River Foundation confirmed biological water quality was classified as “Good” at all

surveyed locations in 2024. Notably, there was no evidence of long term adverse impacts from the construction works, despite periods of elevated turbidity during extreme weather events.

Fish surveys showed:

- No decline in trout populations in the Logan Water between pre works (2022) and post works (2024)
- Increased densities of young of the year trout at most monitoring sites
- Evidence of successful recolonisation and spawning by brown trout in the restored Lochfennoch Burn

The reinstated watercourses now provide improved habitat continuity, natural sediment movement and enhanced ecological connectivity.

The project also supported Scottish Water’s Net Zero ambitions through:

- Reuse of excavated materials on site, reducing waste and transport emissions
- Use of battery powered welfare facilities
- Planned tree planting and vegetation establishment

CONCLUSION

The project outcomes demonstrated that reservoir discontinuance can deliver tangible environmental and ecological benefits when carefully managed. Despite challenging weather, flood risk constraints and highly sensitive water quality requirements, the works were completed safely and effectively.

GEORGE LESLIE