



River Avon Catchment Fish Barrier Easement Project Report

Summary

As partners of the Tomintoul and Glenlivet Landscape Partnership programme, the Spey Catchment Initiative delivered a project to ease man-made barriers to migratory fish passage at three locations on tributaries in the upper River Avon catchment. The works served to open up around 9km of good quality spawning and juvenile habitat upstream of the barriers which was previously inaccessible to migratory fish under most or all flow conditions.



Fish barrier after easement works on the Allt Garbh-bheinne (Site1) in high flow conditions

Background, Aims and Rationale

The Avon catchment contains some of the most significant salmonid spawning and juvenile habitat in the Spey catchment. It forms part of the River Spey Special Area of Conservation (SAC), designated for its internationally important populations of Atlantic salmon.

There is clear evidence for a decline in salmonid fish populations in the Spey catchment and most other Scottish salmon rivers over recent years. The causes are complex and as yet uncertain, but as the downward

trend becomes increasingly evident there is a growing imperative to take action to boost breeding and survival success where it is achievable and most needed.

A feasibility study in 2015 identified several man-made barriers to passage of migratory fish on tributaries in the River Avon catchment. Three sites were selected as priorities for barrier easement based on the length and quality of habitat in the watercourse upstream, and the technical feasibility of installing easement measures. The objective of the project was to address these barriers by installing in-channel structures to enable unobstructed passage of fish during a widened range of flow conditions. This would allow migratory fish greatly enhanced access to around 9km of good quality habitat which was previously blocked off by the barriers much of the time.

The project was delivered by the Spey Catchment Initiative (SCI) in 2018 acting as a partner of the Tomintoul and Glenlivet Landscape Partnership (TGLP) programme and funded through the Heritage Lottery Fund.

Barrier sites

A location map and photos of the sites before and after construction are appended.

Site 1 - Allt Garbh-bheinne, A939 (Lecht road) crossing, Grid ref: 322384 815127

A concrete apron was constructed across the width of the burn downstream of the road crossing as part of the twin culverts conveying the Allt Garbh-bheinne under the A939 trunk road. A vertical drop of approx. 0.6m from the edge of the concrete apron to the bed of the burn below the structure was forming a barrier to upstream movement of fish. The flow on the apron itself was spread out and shallow, also preventing fish passage under most flow conditions.

Site 2 - Allt na Fanich at Nether Clashnoir, Grid ref: 322995 822400

The barrier at this site was a concrete apron with a drop of approx. 0.5m below a twin culvert under a minor road, of a very similar construction to site 1.

Site 3 Allt na Fanich at Calier Farm, Grid Ref 322739 821359

This barrier further up the Allt na Fanich consisted of a culvert under a farm vehicle access track. The burn was conveyed through three 600mm concrete pipes, below which a 0.5m drop had formed, creating a barrier to fish movement upstream.

All three sites were recognised by SEPA as being barriers to fish passage.

Easement Works

Consultants EnviroCentre were commissioned to undertake site surveys, options appraisal and detailed design of possible easement structures. The most appropriate designs were selected for taking forward on the basis of technical effectiveness, practicality, cost, and in the case of Site 1, which is on a popular tourist route, visual impact. Care was taken to ensure the capacity and functioning of the culverts was not adversely affected.



Easement works on the Allt na Fanich, Site 2

The easement structures were installed by local contractors Strathdee Ltd in September 2018 over a period of three weeks.

The same design was chosen for Sites 1 and 2. A series of timber pre-weirs were anchored into the bed and banks, forming a succession of lower 'steps' and pools for fish to ascend. Notches in the weirs concentrate flow at lower water levels to maintain enough volume and velocity for fish to move through. Likewise, the depth of water over the concrete aprons is maintained at a passable level over a range of flow conditions by wooden batons forming low dams round the edges.



Culvert replacement on the Allt na Fanich during construction (Site 3)

The three pipe culvert at site 3 was removed and replaced with a single 1050mm x 6m pipe, and the farm track above reinstated and re-fenced. The bed of the burn upstream of the culvert was slightly re-graded over a length of 20m to remove accumulated sediment and re-create a more natural gradient.

At all three sites, disturbed ground in the vicinity of the works was reinstated and geotextile laid to protect bare soil and encourage rapid re-vegetation close to the water's edge.

Monitoring

Prior to delivery of the project, electro-fishing surveys and redd counts by the Spey Fishery Board had confirmed the absence of salmon upstream of the barriers, and the presence of trout only in limited numbers. The surveys will be repeated during the autumn of 2019 and at intervals thereafter to monitor the number, age group and species of migratory fish now hopefully passing the sites, and to measure breeding success. Casual observations have already picked up fry and sea trout redds upstream of the Site 3 culvert.

SEPA have indicated that the WFD status of the main tributaries which these burns feed into (the River Conglass and the Crombie Water) is likely to be upgraded for fish passability as a result of the work.

The sites will be regularly inspected by the Spey Fishery Board and any necessary maintenance carried out.

Interpretation

The fish barrier easement work will be highlighted as part of public interpretation boards being installed in summer 2019 to explain and publicise the range of water environment projects which have been delivered in the Avon catchment under TGLP. In addition, a smaller interpretation board will be sited at the Nether Clashnoir site (Site 2) to explain the fish pass, which can be easily viewed by passing road users.

We would like to acknowledge the funding support of the Heritage Lottery Fund and the kind permission of Crown Estate Scotland and their farming tenants.



Appendix 1 - Fish Barrier Sites – Before and After Images

Before easement



Site 1 Allt Garbh-bheinne

After easement



Site 1 Allt Garbh-bheinne



Site 2 Allt na Fanich, Nether Clashnoir



Site 2 Allt na Fanich, Nether Clashnoir



Site 3 Allt na Fanich, farm culvert



Site 3 Allt na Fanich, farm culvert

Appendix 2 - Location Map

