

Rottal Burn Restoration

Kenneth MacDougall
EnviroCentre Ltd.

Marshall Halliday
Esk Rivers and Fisheries Trust

The lower reaches of the **Rottal Burn in Glen Clova** have been transformed this summer. The burn that flowed through 650m of straightened, embankment-lined channel since the 1830s has been restored to an open, meandering channel 1,100m in length. These works aimed to restore natural river process, providing increased and more varied in-stream and riparian habitat within a designated **Special Area of Conservation** for Atlantic salmon and freshwater pearl mussel. Within just 10 weeks of the burn flowing within the new channel, there is already a significant increase in the variety of habitat present and salmon have started spawning.



Photo: Kenneth MacDougall

Why the scheme was needed

In addition to being straightened, this watercourse had been subject to regular dredging with gravels stockpiled in embankments alongside the channel. Although spawning habitat was present, the lack of variation in habitat resulted in low numbers of juvenile salmonids. The restoration design was process-based rather than focusing on creating individual habitat areas and there were effectively three main zones, each around 350-400m long. The upper zone had the steepest gradient and the river was routed through a new channel in existing agricultural fields. The middle zone had a shallower gradient and the channel was routed through remnants of relict channel which had

remained a relatively wet, marshy area. In the lower zone, a new channel has been constructed through lower-lying agricultural fields to the confluence with the River South Esk.

The intentions of the scheme

The construction works were designed to create the restored channel without any import or export of material, which required careful planning through the design and the construction phase. The existing gravel embankments were used to provide material for the bed of the new channel and excavated material was used in landscaping and infill of the diverted channel. Sections of the restoration included woody material in the form of trees with rootballs which were sourced from wind-blown Scots Pine from the local estate.



www.therrc.co.uk

Rottal Burn Restoration December 2012 *River Restoration* NEWS



Photos: Kenneth MacDougall

Construction schedule and associated problems

The works commenced in the spring of 2012 with a two phase construction programme. The new channel was constructed during late spring and time was allowed for vegetation to grow before diverting flow from the existing channel into the new channel in late summer. There were a number of challenges faced during the construction phase including the remote location, the presence of overhead services on site, weather conditions and the limited growing season at an altitude of 220m above sea level.

Restored natural channel. Inset (top left) shows the river before restoration

Monitoring the scheme shows that benefits are already evident

A monitoring network has been installed across the works which will be used to assess the longer term performance of the project. The new channel has been tested by a number of significant flow events, including the largest spate of the year to date just 36 hours after being diverted, followed in mid-October by one of the largest floods in the past 10 years. A number of sediment bar features have formed creating a significantly improved habitat variety compared to what was present only 2 months ago. The presence of salmon spawning in the new channel is encouraging news for the performance to date.

Project Team

Esk Rivers & Fisheries Trust
(project promoter and project manager)

EnviroCentre Ltd (assessment, design, supervision and construction management)

McIntosh Plant Hire Ltd (construction).

This project was part funded through the **SEPA Water Environment Fund** and the support of **Dee Ward from Rottal Estate.**



Panoramic view of the restored Rottal Burn