

Ennerdale Mill Weir Removal Project

West Cumbria Rivers Trust



Date carried out

The project has been discussed for over 20 years; planning and monitoring by WCRT occurred between 2015-2018. Delivery of works was between 11th June and 31st July 2018

Location

River Ehen, Egremont, Cumbria.

Background

Ennerdale Mill Weir, approximately 250 years old, had not been used, as it was intended, for many years and had been proven to be a barrier to migratory species of fish such as Trout and other Salmonids in the Ehen catchment, as well as a crucial site for Freshwater Mussels. Sea Trout and Salmon were frequently seen leaping up the weir but failing to get over it, often becoming injured and stressed, or worse falling prey to predatory birds. Upstream numbers of Salmonids were low, but the barrier also posed a risk to downstream migration of juveniles.

West Cumbria Rivers Trust (WCRT), in partnership with the Environment Agency, Natural England, James Fisher Nuclear (the owner of the weir) and AECOM (independent consultant commissioned to undertake an options appraisal of the barrier) monitored the weir since 2015 and found firm evidence that the weir was failing. If nothing was done, there was significant risk of the weir failing completely, causing major damage to existing infrastructure including a road used by local businesses and farmland adjacent to the site, as

Partners: Environment Agency, Natural England, James Fisher Nuclear (the owner of the weir) and AECOM

Themes



Community Engagement



Water Quality



Water Quantity



Healthy Rivers

well as the Mussel colony immediately downstream.

Project

The fundamental aim of the project was to remove the barrier to fish migration. A feasibility study was commissioned first, which explored several options ranging from installing fish easement only through to partial removal and full removal. This report, combined with extensive flood risk modelling, recommended full removal of the weir as the most viable option.

Once this option was finalised, a programme was drafted to liaise with the local community and gain support from Egremont Anglers. It was understood from conception that local acceptance of the project was crucial, as the weir- despite its derelict condition- held a unique place as a local heritage site. The original objectives of the project were:

- Full removal of the weir structure
- The existing river bank and river bed to be re-profiled and protected
- Fish migration (both upstream and downstream)



would be improved and fish numbers observed upstream would be higher

- Numbers of FWM locally would increase (over many years)
- The river will ultimately be restored to a more natural state without a sudden drop in gradient where the weir used to be

Outcomes

WCRT have been monitoring this river and will continue to do so throughout 2018 and 2019. We have a dedicated Project Officer covering the River Ehen and its source, Ennerdale, as well as an Electrofishing Officer who will perform the first survey of the weir site (post-removal) in 2019. A programme of continual monitoring has been developed with both staff members to ensure real data is realised from this project, and the success recorded.

In addition, the problem caused by the barrier is certainly resolved: the whole stretch of river upstream and downstream, for approximately 350m, has a far more natural gradient and will continue to renaturalise as gravel deposition occurs. A few minor flood events will cause the boulder protection to 'knit together' and improve bedload transport; all of this will be recorded and photographed by our staff so a complete picture of improvements is created.

Overall, fish passage for Trout and other species such as Salmon and Lamprey will undoubtedly

be eased; a river system has been restored to a more natural function; other species such as insects and birds are expected to benefit through this naturalisation; on-going monitoring and electrofishing surveys will take place throughout 2018 and 2019.

Learning

Forming a collaborative partnership was the key that unlocked this project; for years there was an appetite for removal, but only once WCRT, EA, NC and external funders came together between 2015-18 did the project really progress. World-class modelling and scheme design from AECOM, combined with an excellent contractor who understood both the environmental risks and priorities, meant the delivery of works was completed in just 7 weeks with no detrimental effects on the riverine habitat downstream of the weir.

Next Steps

Continual monitoring of the site in Egremont, as well as the extent of the River Ehen and its tributaries, by WCRT will allow us to build up a quantifiable dataset of ecological improvements in the catchment. As part of the wider Cumbria River Restoration Strategy, barrier removal is a priority therefore the lessons learned from this project will invariably inform other important schemes across the Northwest.

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