

Peffery Project Phase 3, 2013-14

Project Context:

Phase 3 of the Peffery Project is just a small part of a larger strategic project aimed at improving in-stream and riparian zone habitat in the Cromarty Firth Area. The MFTI is working with Cromarty Fisheries (CF) and Forestry Commission Scotland (FCS) to develop collaborative projects across the area. In September a project began with the Forestry Commission to trial and quantitatively monitor the effects of introducing LWD along a 2km stretch of the Strath Rannoch River. This will also to be accompanied by bank side planting with 16,000 deciduous native trees at sites where the commercial forestry has been pulled back to create the required buffer strip at 3 sites (Strath Rannoch, Alness Blackwater and Balnagowan) . The Forestry Commission is supplying the trees while funding has been secured from the Nineveh Trust to fund the planting of the trees.

Peffery Phase 3:

In phase 3 as well as continuing the wider catchment work (INNS removal, tree planting, barrier easement and commercial forestry management) the in stream habitat restoration work has been continued in the next channelized section downstream from Phase 2 works. The section from Fodderty House downstream to the Railway Bridge (Appendix 2 -map) is owned by Lord Gough who is supporting the project. This section of the Peffery is relatively straight, of uniform depth, with little in-stream diversity or sorting of sediment (Picture 1). Although the bed is gravel it is compacted limiting spawning potential, there is very little deeper holding for larger fish and little sediment sorting or deposition to support invertebrates and lamprey. However, where Large Woody Debris (LWD) has fallen and been left in the river some of these natural features are beginning to return (Picture 2).



Picture 1; the section between Fodderty House and Railway Bridge. Straight channel constrained within flood banks resulting in a uniform depth with limited in-stream habitat and compacted bed.



Picture 2; naturally existing LWD upstream of Fodderty Bridge.

The aim of this project was to improve the natural habitat diversity required to for fish and invertebrates in the river by installing LWD in a way that mimics the natural input of trees from the riparian zone. LWD immediately has an impact on the hydrology and morphology of the river helping to create a diverse range of habitats and to trap fine silt. The Environment Agency Technical Report W185 summarises the benefits of LWD and its use as a management tool. Over 3 days in September a team of Cromarty DSFB Bailiffs, TCV volunteers and MFTI Project Manager, Marcus Walters, felled five sycamores along the 700m section from Fodderty House (NH5133159526) to the Railway Bridge (NH5208559434) (See Appendix 2 - Map). The trees were felled in the riparian zone so as to fall into the river and mimic naturally falling timber (Diagram 1). They were then positioned manually and to ensure they did not cause any flooding or damage

downstream, each one was securely fastened to its stump using 8mm galvanised cable and no trees were installed within 150m of the Railway Bridge. Pictures of the 5 sites before during and 6 weeks post works are shown in Appendix 1.

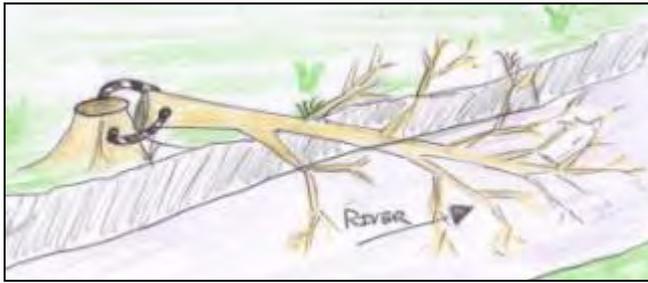


Diagram 1; illustrating how the sycamore trees were felled in situ before being wired to their stumps.



Picture 3; close up of galvanised wire fixing tree to stump



Picture 4; Cromarty DSFB Bailiffs felling sycamores on the bank



Picture 5; TCV Volunteers positioning trees and fixing in place

After 6 weeks

The five felled trees were revisited in mid November, 6 weeks after installation, to check how they were performing. All 5 were still securely fastened to their stumps and although some had swung around with the higher flood flows there was no sign of excessive erosion to adjacent banks. The felled trees were losing their leaves but were doing a good job of trapping smaller organic debris which will build up against the structure and help increase the hydraulic effect. The trees were also beginning to influence flows in the river as they were effectively reducing the channel width and increasing scour at one side while depositing finer materials on the other.



Picture 6; Felled sycamore collecting organic matter and increasing hydraulic effect.



Picture 7; finer sediment beginning to collect behind felled sycamore.

Appendix 1: Pre, during and post works pictures of the 5 LWD installations.

Site P1 (251521, 859497)



Pre works



During works



Post works

Site P2 (251590, 859471)



Pre works



During works



Post works

Site P3 (2516679, 859471)



Pre works

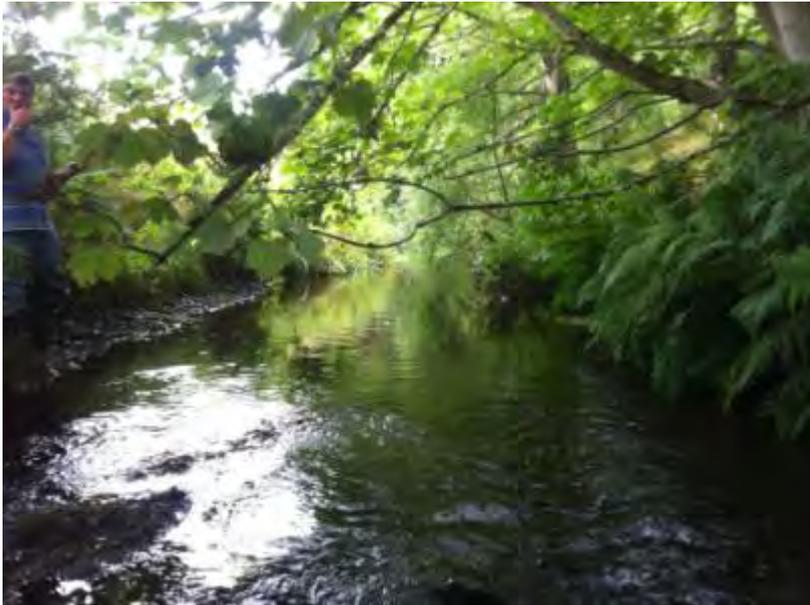


During works



Post works

Site P4 (251716, 859465)



Pre works

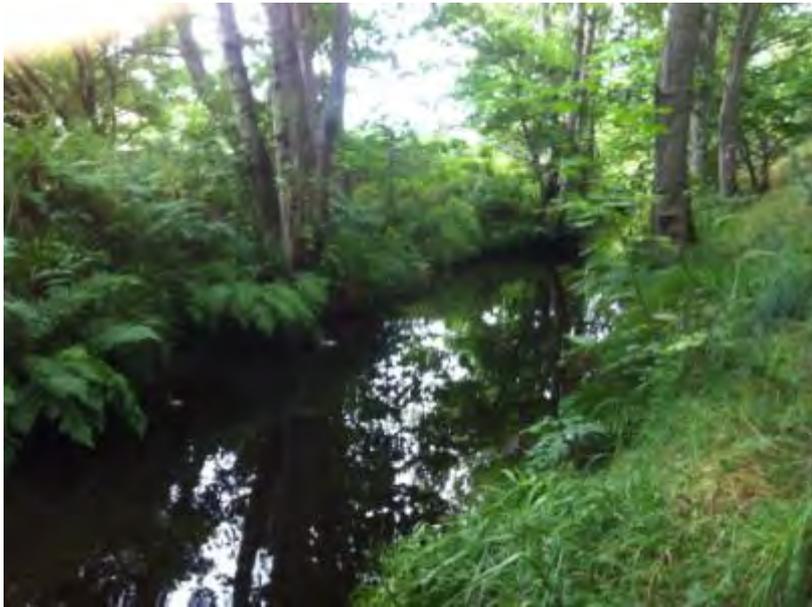


During works



Post works

Site P5 (251778, 859458)



Pre works



During works



Post works

Appendix 2



Peffery Phase 3 LWD sites 2013

Site	Feature	Easting	Northing
P1	LWD	251521	859497
P2	LWD	251590	859487
P3	LWD	251679	859471
P4	LWD	251716	859465
P5	LWD	251778	859458

