

## Catchment Restoration Fund Briefing Note



### Hogsmill River Connectivity Project

The Hogsmill River Connectivity Project will enable the Hogsmill to take significant steps towards meeting GEP by addressing fish passage at 14 obstructions and improving habitat at two strategic locations. The weirs and their impact on the connectivity of the river are one of the primary causes for the current failing status of fish on the Hogsmill. Most obstructions are impassable to coarse fish species and under most flow conditions also for salmonids and eel. The cumulative effect of the structures means that the river has very poor in-channel connectivity for fish. The problem is compounded by the modified and canalised nature of the channel.

The obstacles include three large broad-crested weirs, a concrete road and rail culverts, a 120 metre concrete lined channel, a gauging station and a bridge footing which further functions as an Environment Agency level monitoring site. Further up the catchment, a number of weirs present total barriers, stopping fish, particularly migrating salmonids, reaching potential spawning grounds. In areas of the catchment where fish are present, they are frequently washed downstream in spates arising from the flashy response to the urbanised nature of the catchment in heavy rainfall events. When the flow subsequently subsides, they are then unable to move back upstream. In addition to addressing the obstacles, the Hogsmill River Connectivity Project has a habitat based component which will rehabilitate two sections where in stream habitat has been detrimentally affected through dredging and over-widening.

Key Facts	
<b>River Basin District</b>	Thames
<b>Catchments</b>	Hogsmill (London)
<b>Outcomes</b>	Improved in-channel connectivity. Enhanced habitat and biodiversity. Increased hydrogeomorphological diversity. Climate change mitigation. Increased public awareness and involvement.
<b>Start Date</b>	1 <sup>st</sup> July 2012
<b>End Date</b>	31 <sup>st</sup> March 2015
<b>Budget</b>	£340,709 (£315,009 from CRF)
<b>Project Partners</b>	Environment Agency, Wild Trout Trust (WTT), Thames Water, Kingston University, Epsom & Ewell Borough Council, Zoological Society of London (ZSL)

#### About the team

Project Officer - Toby Hull

Director - Dr Bella Davies

#### Other Contacts

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## Description of Works

Each of the 14 obstacles have been assessed and suitable solutions to facilitate passage for most fish species considered. Where feasible the complete removal of the structure was sought as a priority, however, due to various constraints in certain cases easements had to be selected. Due to the incredibly varied nature of the obstacles along the course of the river, an array of techniques are being employed:

- Three concrete broad-crested weirs with a head of 0.8 metres are being completely removed with their concrete and stone abutment walls. The bed is being regraded to a sustainable gradient and where necessary stabilised. The banks and the channel are being re-naturalised and a low flow channel installed. Habitat improvement works will follow with the creation of pools and riffles, the introduction of gravels and marginal planting.
- The gauging station is being fitted with the Low Cost Baffle Solution. This solution will enable gauging to continue without being effected. A level monitoring site will be drowned out with a pre-barrage and the flow focused with the use of baffles.
- The road and railway culverts are being fitted with baffles to deepen and slow the flow without affecting the structure. The 120 metre section of concrete channel with three low head weirs are being addressed using a combination of notches, pre-barrages and baffles.
- Two low head weirs connected with a concrete spillway are being tackled with a combination of notching, pre-barraging and baffling.
- In two locations, the concrete bed is being removed and a low flow channel installed.

Habitat improvements works are being undertaken at the Hogsmill Sewage Treatment Works and through Kingston University. At both sites, the channel is being narrowed, hydrogeomorphological diversity increased to reinstate natural river processes and habitat and biodiversity are being enhanced. Where possible, habitat improvement work will involve local volunteers helping to establish a sense of ownership around the river and a greater understanding of the challenges and opportunities for river improvement.

## What Success Will Look Like

The project will achieve comprehensive connectivity for most fish species from the source of the Hogsmill to its confluence with the River Thames at Kingston. This will be complemented by habitat improvements which will serve as functional sections of river to help enhance and support the currently struggling fish, plant and invertebrate populations which will be a significant contributing factor in assisting the Hogsmill to achieve GEP.

This project will establish partnerships of interested stakeholders along the whole river which will motivate and facilitate ongoing work. An important aspect of this will be encouraging public involvement through volunteer work parties which aim to instil local ownership and interest in the river. The Hogsmill River Connectivity Project will support a separate parallel project through which the Wandle Trust is working with the Environment Agency and Wild Trout Trust to reintroduce a population of urban adapted wild brown trout to the river. For these populations to be sustained, the issues causing fish to fail WFD targets on the Hogsmill must first be addressed and connectivity issues targeted through this Catchment Restoration Fund project will be an important strategic step in achieving this goal.



Obstructions on the Hogsmill.