

Downham Mill Weir fish easement:

Project Details and construction considerations

Introduction

This project is part of a Species Survival Fund project (Room for Rivers), funded by Defra. Downham Mill Weir is located in Downham in Ings Beck valley. The land is predominantly used for grazing sheep by the landowner and tenant, the watercourse, Ings Beck, runs through the valley and converges with the Swanside Beck watercourse. A steep weir was identified in Ings Beck which diverts water to the mill and acts as a partial barrier to fish migration. The works are planned to install rock ramp and create a new channel on the left-hand bank, as well as repair the surface of the weir that has washed away over time.

Creating a rock ramp and a new channel will have multiple benefits to nature and biodiversity. Currently, the weir is barely passable for some salmon and trout of certain sizes and under specific flow conditions. The valley itself is considered one of the best rivers within the river catchment with regards to habitat and water quality, with a historically good population of salmon and trout as well as white-clawed crayfish however, significant declines in these populations have been observed. The fragmentation of the watercourse by the weir will likely act as a stressor that impacts the species so by installing the rock ramp and lowering the gradient of the weir will address the connectivity issues and could significantly improve the ability for the fish and other Biodiversity Action Plan (BAP) and red list fish species and therefore enhancing the ecological health of the waterbody.

Repairing the surface of the weir will also reduce the chances of future erosion risk of the weir that could impact the geomorphology of the river.

Design

As this is a design-build contract, the outline design will be provided by RRT, and the contractor is to provide detailed design of the rock ramp and new channel.

The contractor is also to provide final construction designs and drawings for all other elements.

The design is to ensure that the structure remains intact in all flow conditions.

Designs must meet the relevant Local Authority or British Standard and must be submitted to RRT for review prior to the works being undertaken. This should be factored into proposed project timescales.

Construction considerations

- The use of plastic is to be avoided where possible and minimised if its use is necessary.
- The finished surface of the fish pass is to be rough, with smoothness minimised, to create a turbulent flow suitable for supporting fish movement.

Timing

- Work is to be completed by 30th September (i.e. before the start of salmonid breeding season).

Utilities

- Overhead electricity cables are on site, suitable controls included in the construction phase plan.

Expected Method of Works

The following method of works was put together by RRT for the purpose of the OWC application. Whilst the structure and details should be followed, the contractor should propose their own method of works with additional details where necessary.

Pre-works (all sections)

1. The site manager will sign up to Met Office weather warnings and will closely monitor the weather forecast. If a medium to high rainfall event is anticipated, plant machinery and other equipment will be relocated to higher ground and work suspended.
2. If the works is to take place within the bird breeding season (March-September inclusive, a nesting bird survey will be undertaken by an experienced ecologist before works are to take place.
3. Any plant machinery shall be pressure washed and disinfected prior to arriving on site to remove all visible mud and reduce the risk of importing invasive species. RRT shall inspect machinery on arrival to ensure that this has been carried out.
4. All works are to be carried out with the support of an excavator. No earth materials will be brought onto site and no materials taken off site. Fencing materials and water troughs will be brought onto site.

Duration and Timing of Work

Working hours will be restricted to 08:00 – 18:00 **OR** an hour after dawn and an hour before dusk (whichever is sooner). No artificial lighting to be used for the duration of the works.

Environmental Protection Measures

1. The contractor will adhere to Environment Agency pollution prevention guidelines, especially PPG5 and 12 for working in or near water.
2. Hydraulic and lubricating oils used in the machinery shall be biodegradable.
3. All fuel storage and refuelling areas to be bunded.
4. A spillage kit shall be always present on site.
5. Any spills or other pollution incidents will be reported to the Environment Agency immediately via the pollution hotline 0800 807060.
6. Any plant machinery shall be pressure washed and disinfected prior to arriving on site to remove all visible mud and reduce the risk of importing invasive species.
7. Damage to surrounding land use to be kept to a minimum.
8. Disturbance of habitat and species to be kept to a minimum; contractors to keep to planned route and tracks and work within works boundary and works to take place between the hours of 08:00 – 18:00 **OR** an hour after dawn and an hour before dusk (whichever is sooner) and no artificial lighting to be used for the duration of the works.
9. Work will take place during settled weather periods and not heavy rainfall to minimise the impact of rain. The contractor and project manager will be signed up to EA flood warnings and Met Office warnings.