

Rising Brook Rugeley Flood Risk Management Scheme Rugeley, England Environment Agency

BIG Biodiversity Challenge Award category: Medium Scale Permanent Award

Project overview

The Environment Agency (EA) is constructing a flood storage reservoir on Hagley playing fields, Rugeley to protect 114 residential properties and 157 commercial properties from flooding and to enable redevelopment of the town centre.

The storage area will retain flood water and slowly release it back into the brook. The main feature is a 350m long, 4m high embankment. The collaborative Flood Risk Management Scheme (FRMS) with Staffordshire County Council and Cannock Chase District Council commenced construction in December 2016 and is due to be complete in November 2017 at a cost circa £5m. FRMS Project run by EA delivered by Contractors supported by Design and Environmental Consultants.

The project includes work on the watercourse on the site and risks were identified to a population of Native White Clawed Crayfish (WCC). Mitigation measures to rescue and relocate the WCC within the watercourse locally including Natural England licence were put in place.

What were the biodiversity conditions on site, prior to the enhancement?

The site was public open space mainly mown grass. The watercourse had been historically straightened and impounded. There was a lot of urban rubbish across the site. The watercourse had retained some biodiversity value from its bank-side trees, river gravels and clean water from Cannock Chase. WCC were present.

Were there any specific reasons that led to this project?

The WCC is a nationally and locally threatened species and this project will strengthen survival chances by establishing a new WCC population. FRMS requirement to temporarily divert watercourse led to crayfish mitigation plan being incorporated into the construction management plan. The existing WCC population is thought to be under threat from a population of invasive non-native Signal Crayfish in a nearby pool.



Photo Description: White Clawed Crayfish rescued from in-channel beer bottles!

Work is ongoing in Staffordshire to protect existing populations of WCC and identify suitable sites to establish new populations. There was an opportunity to deliver a crayfish ark site using WCC rescued from the working area.

What were the biodiversity measures taken?

A total of 259 healthy WCC including 51 berried females were moved to the ark site and if all survive and eggs hatch this could establish a population of around 1800 individuals from the first translocation.

Working with Consultant crayfish national expert (Stephanie Peay), the Local Wildlife Trust and County Council the Environment Agency secured additional permits to allow the translocation of WCC to a new 'ark' site. Providing the funding (£7,600) for a 3-5 year project to improve ark site habitat, translocate WCC and provide pre and post monitoring.

Actions taken;

- Landowner agreement secured and ark site registered as a fishery.
- Ark site assessment of habitat and water quality suitability and management plan put in place to deliver pre and post monitoring.
- Habitat enhancement work to ark site including tree clearance to increase light and provide brush material to improve shelter for crayfish.
- Licence from Natural England to translocate crayfish obtained.
- Licence from EA to introduce crayfish to ark site obtained.
- Equipment for safe transport, animal welfare, biosecurity and site monitoring, including water quality analysis provided.
- Funding for licensed crayfish experts to support work of volunteers, to ensure best practice is followed, to educate and encourage enthusiasm, to deliver habitat and monitoring work on ark site provided.



Photo Description: "Berried" female assessed ahead of release at Ark Site

What were the biodiversity measures taken?

The ark site will be managed by Staffordshire County Council and Staffordshire Wildlife Trust. Volunteers are involved in the habitat management on the ark site and will help with the crayfish monitoring. The WCC rescue and translocation was delivered by the EA, its licensed crayfish contractor, the Local Wildlife Trust, County Council and the works Contractors. The Contractors involved in the Rugeley site dewatering were shown the WCC and the ecology including threats to WCC were explained. The first WCC translocation to the ark site was in February 2017.

How would you best describe the project?

Enhancement

Further information

Best practice was followed for pre project site assessment, identifying environmental risks and opportunities. Environmental impacts from the works include tree loss, additional engineered structures within watercourse, landscape change from new flood embankment. Mitigation measures identified include tree planting, WCC rescue, sensitive embankment design, new sports pitches.

The WCC ark site was an opportunity to deliver a biodiversity enhancement beyond the required scope of mitigations for the FRMS. It was an opportunity to work with local organisations and volunteers already engaged on WCC conservation work. It enabled the EA to deliver its wider remit to conserve and enhance the environment and helped to deliver conservation actions for a nationally threatened Biodiversity Action Plan species. This work was undertaken to strengthen long term survival by establishing a new WCC population.

Initial surveys indicated a low WCC population (approx. 10 individuals) but during the dewatering large numbers of WCC were found (259 individuals) including berried females. The success of the translocation therefore exceeded all expectations.

Collecting crayfish during a dewatering exercise proved to be very time effective. It would have taken considerably more time to collect the same number of individuals through more conventional methods. Timing of works enable berried females to be collected which will significantly increase the chances of the successful establishment of the ark site. Connecting with local partners already working in the area increases the chances of effective project delivery.

This work could easily be repeated at other project sites where local conditions make it appropriate.



Photo Description: River diversion works in progress ahead of crayfish rescue and translocation

What was your personal motivation for carrying out the enhancement?

Working for the Environment Agency means that striving for a better environment and doing work to improve biodiversity are constant aims. Working in an area where we are losing some existing populations of the native white clawed crayfish most years provides a focus for delivering crayfish conservation work whenever possible.