

Crag End Land Slip – installation of a hibernaculum (reptile translocation), bird and bat boxes

Rothbury, Northumberland

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BIG Challenge 2015 submission category: Small scale permanent

Project overview

Crag End Land Slip is a very complex and challenging £9 million engineering project. Following a land slip that started on Boxing Day 2012 and worsened during the following winter/spring, the B6344 road at Crag End had to be closed to all vehicles and users.

VBA worked with Northumberland County Council, Natural England and the Environment Agency to develop a solution to retain a 300m length of the existing road by constructing an anchored contiguous drilled pile wall.

The wall will be restrained at ground level using ground anchors through a capping beam and will also be socketed into the underlying bedrock.

In order to control the water within the slopes above and below the road, the scheme also involves the installation of a passive pressure relief system comprising two rows of boreholes installed into the bedrock at road level and towards the base of the slope.



Photo: Installation of bird boxes

Additional permanent drainage of the bedrock aquifer is also required.

The site is a Site of Special Scientific Interest (SSSI) with strict Environment Agency and Natural England constraints. We therefore engaged the services of EcoNorth, a specialist Ecology Consultant.

In addition to best practice environmental protection measures, several ecological enhancements have been incorporated into the scheme including, the translocation of reptiles and bird and bat boxes.

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

SSSI designation on the land to the south of the road including the River Coquet.

Were there any specific conditions that led to you carrying out this work?

Discussions were held with Natural England and detailed plans, specification and method statements were produced to demonstrate that the SSSI designation on the land to the south of the road would remain.

Discussions were also held with the Environment Agency about the temporary and permanent effects. Due to the possible disturbance of breeding birds on site during construction activities we decided to enhance the site of Special Scientific Interest by providing nesting opportunities for birds and bats on site.

Additionally, in 2013 slow worms were discovered on the Crag End road slip site during EcoNorth's ecological supervision of site investigation works.

Slow worms are a protected species and are known to be rare in Northumberland, due to a lack of suitable habitats.

What were the biodiversity measures taken?

In total eleven bird boxes were placed on site in woodland areas and by the River Coquet. Boxes were chosen to incorporate specific bird species found on site during surveys.



Photo: Installed bird box

Three bird boxes were specifically designed and installed for Marsh Tits, a Bird of Conservation Concern Red Listed Species (BCCRLS), as the box allowed them to dig out its own nest.

Two other nest box types were designed in order to provide nesting opportunities for other birds on site, species such as Grasshopper Warbler (BCCRLS), Willow Warbler (Bird of Conservation Concern Amber Listed Species) and other crevice dwelling birds such as Tit species and Robins.

Monitoring is currently ongoing for these boxes, and at the end of the season the boxes will be checked to determine their success rate.

However, regardless of this year's success rate; due to the high quality boxes purchased, they will last on site for many years long after works are complete.

Two quality bat boxes were also placed on site as an enhancement measure for bat species found on site. The boxes were placed in trees along the River Coquet to provide roosting opportunities away from the work areas.

They were placed by the river to encourage species recorded on site during bat surveys, such as Soprano Pipistrelle and Daubenton's Bats, which are associated with water (they forage for invertebrates above it).

Unfortunately nationwide they face serious declines due to habitat loss;

providing these opportunities for bat species assists them to breed and survive.

Measures were also taken to protect species on site including a large scale relocation project and installation of a hibernaculum for slow worms, lizards and adders.

A population estimate survey was undertaken which revealed the number of slow worms on site to be significant.

Once the designs were known in early September 2014 it became apparent that the slow worms would need to be moved before work could begin and before they went into hibernation from November onwards.

Parts of the site that the road repair works would not impact were identified and made more attractive for slow worms and other reptiles by building a hibernaculum; cosy places for reptiles to over winter in.

Once built, the areas where slow worms were found were subjected to habitat management and fingertip searches for all reptiles.

Thirteen slow worms, three common lizards and three adders were successfully translocated to their new more attractive and secure homes.



Photo: Adder for translocation

How would you best describe the project?

An enhancement.