Blackhillock Substation Habitat Creation
Blackhillock, Keith, MorayShire
Scottish Hydro Electric Transmission

BIG Biodiversity Challenge Award Category: *Project of the year (up to 5ha)*

Project overview

A range of habitat enhancements at Blackhillock Substation targeted at amphibians, reptiles, bats and insects.

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

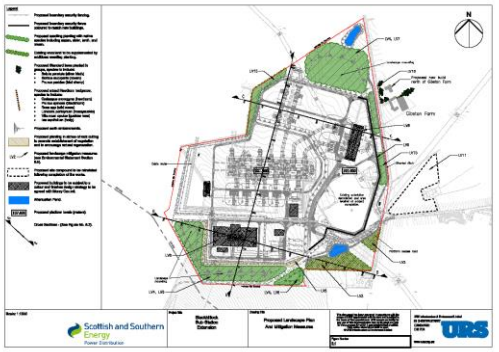
Following the construction of the Blackhillock substation the area around the fire pond was of low ecological value. Planning permission required visual screening to remain so removal of the windblown trees and replanting was not an option.

The consented landscaping plan for the site involved a large amount of native broadleaf planting mainly on the landscaped bunds, to create a visual screen. However, there were no specific biodiversity targets for the site. All of the habitat enhancements were proposed by SSEN over and above the planning commitments and add long-term biodiversity net gain opportunities.

What were the reasons behind this project ?

SSEN has a commitment to no net loss of biodiversity on its sites by 2020. At Blackhillock SSEN has taken a positive approach to its 'biodiversity duty' by identifying opportunities to enhance habitats for known and potentially locally present Scottish Biodiversity List species and wider local biodiversity, contributing towards Scotland's biodiversity targets. The area chosen was identified by SSEN ecologist as having good potential for a small scale habitat enhancement project, focussed on the area surrounding the pond where there had been a significant amount of windblown trees. Features were chosen to demonstrate low cost, low maintenance enhancements.

Newly created fire pond



Proposed Landscape plan

What were the biodiversity measures taken?

The newly created fire pond had good potential to support amphibians and to be a key feature in the area, providing valuable habitat which could be used by birds, insects, bats and terrestrial mammals. A variety of habitat features were identified that could contribute to the biodiversity potential in the area around the pond.

• Log pile hibernacula (which could support Scottish Biodiversity List species toad, slow-worm and common lizard) were formed using some of the windblown trees and turfs taken from creation of butterfly scrapes nearby.

• Root plate hibernacula were created using brash under a number of the windblown tree root plates

• Standing logs were installed in some of the wetter areas to encourage a variety of invertebrates

• Butterfly scrapes were created and sown with a wildflower seed mix

• A bee bank was formed using some surplus stone and sand from the construction of the site.

• Areas of wildflowers were sown to encourage pollinators

• A native broadleaf hedge was planted along the edge of the pond to provide shelter and nesting habitat.

• Several bird and bat boxes were constructed in the wooded area.

An integrated approach was taken with particular regards to bats through the identification of the pond and tree line as foraging and commuting habitat, which has been enhanced through the addition of bat boxes, hedgerows and multiple outcomes of invertebrate habitat enhancement features for foraging. The hibernacula features provide a clear connection between a breeding pond and overwintering features. The North East Scotland Biodiversity Action Plan fauna list is that of the Scottish Biodiversity List with the addition of the locally important species water shrew, therefore all amphibian, reptile and bat enhancements contribute to local as well as national biodiversity action planning.

Amphibian root plate hibernaculum

Butterfly scrape prior to seeding

Further information

A number of simple habitat features were identified as being suitable for installation in the area around the fire pond which would contribute to a rich and biodiverse focus area adjacent to the site. A small team installed log piles, root plates, brash piles, butterfly scrapes, bee bank, native hedge, and wildflower seeding. This only required the use of a small excavator and the use of chainsaw for cutting logs to length. All other work was carried out by hand. The project was overseen by the SSEN ECOW. The pond has naturally regenerated and contains a diverse range of aquatic macrophytes. Amphibians have been observed to be using the pond for breeding so it is likely that the additional habitat features will be of great benefit. Ducks have successfully nested adjacent to the pond as well. No monitoring has been undertaken so far but it is anticipated that some survey work will be carried out next year to assess the success of the project. This project has already demonstrated low cost, low maintenance enhancements which can re-use certain materials on site which would otherwise be redundant or of less biodiversity value and the examples have been shared with colleagues working on other projects across the SSEN portfolio.

Newly constructed log pile

Bee bank under construction

Project Team

- The project was funded by SSEN Caithness Moray HVDC project.
- The project was designed and carried out by SSEN site Environmental Clerk of Works with a local landscape contractor.

What was the motivation for carrying out the enhancement?

SSEN site ECOW noted that the fire pond was attracting some wildlife and was establishing itself as a good pond. Ducks nested in the vegetation adjacent to the pond and a number of bird species were using the pond to forage for insects. The windblown trees had been scheduled to be felled but it was considered that it would be of more benefit to leave them to regenerate naturally while providing valuable habitat for nesting birds. There was a strong motivation to provide additional biodiversity value on the HVDC project to complement larger scale biodiversity net gain at Spittal substation.

Standing logs for insects

Log piles