

Caithness - Moray HVDC Biodiversity Projects
MorayShire
Scottish and Southern Electricity Networks

BIG Biodiversity Challenge Award Category: *Project Award (>5Ha)*

Project overview

A collection of biodiversity initiatives undertaken by the developer, SSEN on both Caithness-Moray HVDC convertor stations. At Spittal substation a combination of wildflower seeding, tree and scrub planting, and a newly created wetland ecosystem with enhanced SUDS channel. Blackhillock focussed on a small area implementing a range of habitat features.

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

At Spittal HVDC substation in Caithness the site was predominantly semi-improved grassland with some areas of marshy grassland. The land surrounding the site was previously grazed and was considered to be of low ecological value. At Blackhillock the biodiversity focus was originally coniferous woodland with a relatively low ecological value. This particular area suffered severe windblow following removal of the windfirm edge during construction. Following completion of the substation the area surrounding the newly created fire-pond was identified as having good potential to support a range of habitat features which could be implemented to benefit a range of species.

What were the reasons behind this project ?

SSEN have set ambitious targets for our construction projects to have no net loss of biodiversity by 2020 and Nett Biodiversity Gain by 2025. A planning condition for the Spittal site was to implement biodiversity enhancements where possible.

The habitat enhancements at Spittal were identified as a way to achieve a net biodiversity gain on the site while Blackhillock was identified as a small project where a number of features could be implemented to benefit a range of species. This was seen as a way of benefiting local habitats and wildlife and contributing to Local Biodiversity Action Plans.



Aerial view of Spittal Substation:



Aerial view of Spittal Substation during construction:

What were the biodiversity measures taken?

The project had several aspects to it and covered both the Caithness and Moray HVDC substation sites. At Spittal substation in Caithness creation of large areas of scrub habitats and wildflower seeding for butterflies and bees took place. The Great Yellow Bumblebee was identified as a species which would particularly benefit from the wildflower habitats but many other species are also likely to benefit. This includes ground nesting birds which will benefit from the scrub habitat. Other insects, including pollinators and reptiles will also benefit. A second aspect at Spittal was to increase the wetland and aquatic habitats surrounding the site. There was a small area of wetland which was expanded through the addition of a wetland and pond design. The outlet ditch from the SUDS pond was also re-aligned to increase channel diversity and improve the habitat for aquatic invertebrates.

At Blackhillock substation in Morayshire a small biodiversity focus area was identified around a newly created fire-pond. A range of features were installed here incorporating amphibian log piles and root plates, standing logs for invertebrates, butterfly scrapes, bee bank, native hedgerow planting and wildflower seeding. Bird and bat boxes were also installed in the adjacent woodland which was previously scheduled to be felled following wind-blow. However the decision was taken to leave the wind-blow in place and allow natural regeneration to take place. Materials for the bee bank were sourced from site which would have otherwise been considered as waste. Forest residues were utilised to form the root plates and log piles.



Wetland construction at Spittal substation



Newly formed wetland/pond



SUDS channel before and after enhancements

Further information

The area surrounding the substation at Spittal was not subject to any planning conditions and was not affected by the footprint of the site. An opportunity to achieve a biodiversity nett gain was identified due to the large area of semi-improved grassland surrounding the site which had been purchased by SSEN. Large areas of wildflower seeding took place in areas identified as being suitable to support wildflowers. These included the reinstated lay down areas. A significant area of scrub (mainly willow species) was planted along with other native broadleaved trees and a native hedge.

The majority of the works were carried out by hand planting into inverse mounded planting sites. Long term monitoring will take place to see how the area establishes over time. The project is designed to require minimal or no maintenance.

At Blackhillock 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, brush piles, butterfly scrapes, bee bank, native hedge, and wildflower seeding.

Both Blackhillock and Spittal have demonstrated that projects of different scales and budgets can help to achieve positive outcomes for biodiversity.



Root plate hibernacula at Blackhillock



Wetland area being formed

Project Team

The project was funded by SSEN Caithness Moray HVDC project. The planting and seeding was carried out by local landscape contractor and supervised by SSEN Environmental Clerk of Works. A local eco-engineering company specialising in wetland and river geomorphology designed and implemented the wetland works at Spittal with input from SSEN project environmental team.

What was the motivation for carrying out the enhancement?

For Spittal there was a planning condition to implement biodiversity improvements on the site and through this an opportunity to achieve a net biodiversity gain was identified as the primary motivation. SSEN is hoping to achieve net biodiversity gain on all sites from 2025. However the creation of the wetland and the works at Blackhillock were driven entirely by the client environmental project team who wanted to leave a lasting biodiversity legacy for the Caithness Moray HVDC project.



Small part of the area which was planted with scrub and trees at Spittal: