Innovative approaches to environmental mitigation for ecological receptors

<table>
<thead>
<tr>
<th>The employment of suitable environmental mitigation measures is an important element of EIA projects, ensuring effects on receptors are minimised as far as is possible. On a recent project, in addition to employing a wide range of standard environmental protection measures, Wood employed several novel approaches to minimise environmental impact on ecological receptors. The project involved the refurbishment of approximately 150km of overhead electricity transmission line stretching from Beauly (Highland) to Dounreay (Caithness). The route of the overhead line traversed 16 nationally and/or internationally designated nature conservation sites as well as undesignated areas that supported ecologically important flora and fauna.</th>
<th>With this site-specific information, it was determined that it should be possible to undertake the works without disturbing the birds and a risk assessment, method statement and monitoring protocol were therefore prepared. The planned mitigation was agreed with Scottish Natural Heritage and the works commenced in July 2017 overseen by suitably experienced ornithologists, who monitored all osprey activity during works over 12 consecutive days. Early in this monitoring, the female osprey became agitated when linesmen climbed a tower 400m from the nest. Given the good weather conditions, age of chicks and the fact that she had not been continuously brooding the chicks, the ornithologist allowed five minutes to see if she would settle. Before the five minutes had elapsed, the linesmen had descended from the tower and the bird had returned to the nest. Wood’s ornithologist reviewed the incident with the site foreman and slight changes were made to the pattern of working. As a result, there were no further incidences where the birds showed any signs of disturbance, distress or agitation and the pair successfully fledged two chicks.</th>
</tr>
</thead>
</table>
| Drone technology
The proposed works had the potential to have a significant effect upon osprey, a legally protected bird species and a qualifying feature of a nearby Special Protection Area and Site of Special Scientific Interest. A regularly used osprey nest was located within disturbance distance of proposed works that could only take place during the bird breeding season. Ornithologists within Wood therefore drew up an innovative solution to ensure that the breeding success of these birds would not be jeopardised by the proposed works. Wood commissioned a drone survey in November 2016 to determine the visibility of works from the nest location. This showed that the towers were part obscured by terrain/vegetation. | Helicopters
Helicopters were used to deliver equipment to remote locations, significantly reducing ground disturbance, particularly in areas of soft, deep peat. Careful planning was required to ensure that helicopter flight paths avoided impacts on specially protected breeding bird species including hen harrier and osprey. |

---

Drone technology
The proposed works had the potential to have a significant effect upon osprey, a legally protected bird species and a qualifying feature of a nearby Special Protection Area and Site of Special Scientific Interest. A regularly used osprey nest was located within disturbance distance of proposed works that could only take place during the bird breeding season. Ornithologists within Wood therefore drew up an innovative solution to ensure that the breeding success of these birds would not be jeopardised by the proposed works. Wood commissioned a drone survey in November 2016 to determine the visibility of works from the nest location. This showed that the towers were part obscured by terrain/vegetation.
### Access Tracks
The overhead line traverses long sections of soft, wet peat supporting important plant communities, including sections within Special Areas of Conservation and Sites of Special Scientific Interest where blanket bog/wet heath are designated features.

Special attention was given to avoiding or minimising potential damage to sensitive habitats. Within these areas, vehicular routes across sensitive peatland habitats was planned according to a strict protocol:

- The Ecological Clerk of Works (ECoW) together with the Access Tracks Construction Manager identified suitable routes which would minimise the potential for damage;
- Access was limited to soft track vehicles;
- The number of journeys was kept to the minimum by careful planning; and
- Regular monitoring was undertaken by the ECoW who could amend the route as necessary where this option would reduce environmental damage.

This approach was captured within an access tracks method statement which was implemented across the project. A Restoration Plan was also developed which will ensure that any damaged areas were restored. In addition to protecting important areas of blanket bog and heath, this also minimises carbon losses from damaged peatland.

### Other innovative measures to reduce environmental impacts
Environmental impacts were reduced through careful implementation of other mitigation measures including:

- Biosecurity decontamination regime to prevent the cross contamination of clubroot;
- Use of Eco Welfare Units, reducing Carbon Footprint, Solar Technology, Eco Generator, Auto operation to reduce power use; and
- Utilisation of turf to act as natural Water Filters along areas of run off.

This project demonstrated that essential works can be undertaken in ecologically sensitive habitats without adversely affecting important flora and fauna by adopting novel and innovative approaches to environmental mitigation alongside more standard measures. This was achieved through collaborative working between Wood (the contractor), the owner of the transmission asset and stakeholders (including landowners and regulatory bodies).

*Colin Ormston, Principal Consultant, Wood, February 2020.*

---

For access to more EIA articles, case studies and hundreds of non-technical summaries of Environmental Statements visit: [http://www.iema.net/eia-quality-mark/](http://www.iema.net/eia-quality-mark/)