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Network Rail Biodiversity Duty Report 2021-2023



SCOTLAND'S RAILWAY
BETTER IN THE MAKING



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Network Rail Biodiversity Duty Report 2021-2023

Introduction



Introduction

Since our last Biodiversity Duty Report in 2020, there have been several significant developments that highlight our commitment to environmental and social responsibility. First and foremost, our vision for sustainability, including the protection and enhancement of biodiversity on Scotland's Railway, was clearly defined through the publication of the Scotland's Railway Sustainability Strategy (2021-2024) and the associated Control Period 6 Biodiversity Delivery Plan.

Additionally, we've taken steps to recognise and actively promote biodiversity as an asset to our railway. This shift is partly attributable to the introduction of Network Rail's Biodiversity Standard (NR/L2/ENV/122), which underscores our dedication to managing and safeguarding biodiversity on our railway.

We've relaunched 'Our Green Code' to highlight the importance of biodiversity and sustainability to colleagues and updated our Scotland's Railway Sustainability Policy to ensure it aligns with the continuously evolving sustainability landscape. During the most recent reporting period (2021-2023), we've also expanded our strategic partnerships with other bodies and engaged in collaborations with multiple stakeholders. Together, we've shared insights and undertaken projects that exemplify our commitment to preserving and enhancing biodiversity. A comprehensive overview of these projects will be provided in the subsequent sections of this report.

As we look ahead to the next duty reporting period, we will outline our upcoming plans and projects designed to further cultivate a more environmentally friendly railway. These initiatives will continue to prioritise sustainability and biodiversity across Network Rail in Scotland.

Report Contents

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Network Rail Biodiversity Duty Report 2021-2023

Strategy & Development



Strategy and Development

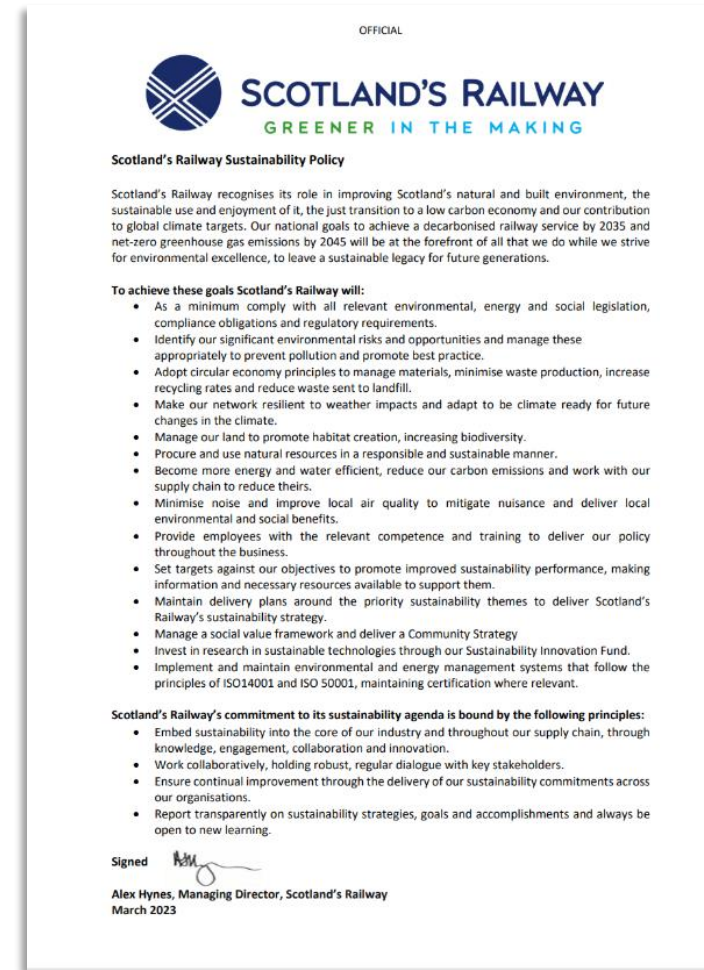
Scotland's Railway Sustainability Policy

A new Sustainability Policy has been created and published for Scotland's Railway. The purpose of the Sustainability Policy is to guide the organisation's efforts on responsible practices and promoting long-term sustainability. It outlines goals and strategies to ensure Scotland's Railway operates in a sustainable manner, while benefiting the communities we operate in.

Scotland's Railway Sustainability Strategy

In addition to the newly published Sustainability Policy, another notable development in the recent duty reporting period has been the publication of the Scotland's Railway Sustainability Strategy and Delivery Plans. The strategy and its delivery plans were developed collaboratively by Network Rail Scotland, ScotRail and Transport Scotland, aligning with the goals of the overall Network Rail Environmental Sustainability Strategy 2020-2050. The strategy also recognises the wider objectives that are important to Scotland and is aligned to the National Transport Strategy and the UN Sustainable Development Goals.

The purpose of the strategy is to outline what we will do to improve the sustainability of Scotland's Railway, setting a series of ambitious targets, and how we will achieve those targets over the period 2021-2024, the remainder of the current funding Control Period.

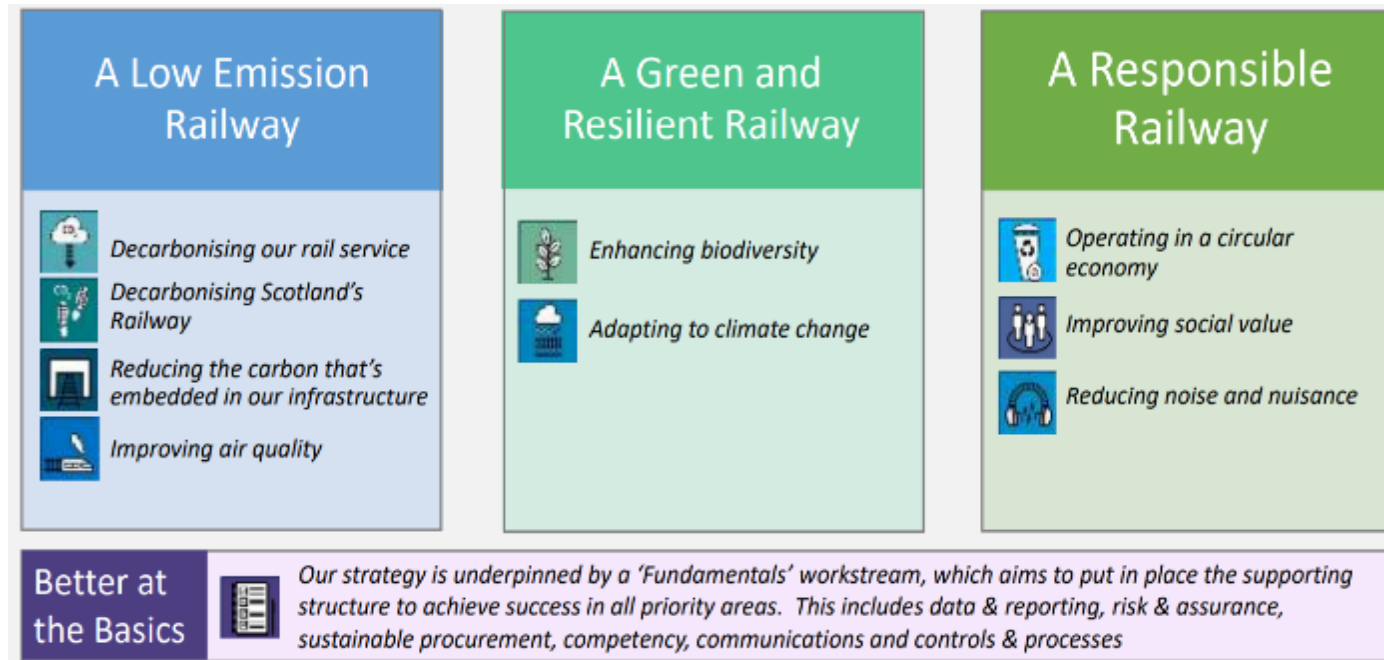


Strategy and Development

Scotland's Railway Sustainability Strategy

Our strategy is divided in three key themes: A Low Emission Railway, A Green and Resilient Railway and A Responsible Railway. Under each of these themes there are further strategic priorities covering the topics Biodiversity, Climate Change and Adaptation, Circular Economy, Social Value, Air Quality, Noise and Nuisance, Non-Traction, Traction and Capital Carbon and Fundamentals, which underpins the strategy aiming to put in place the supporting structure to achieve success in all priority areas.

Each of the strategic priorities has its own delivery plan which has been developed by a working group led by experts in the area working with colleagues from across Network Rail, ScotRail and Transport Scotland. Each delivery plan comprises a series of milestones to be delivered over the remainder of the Control Period. Progress against the delivery plans for each strategic priority is tracked and reported to a steering group, which is attended by key stakeholders across Scotland's Railway.



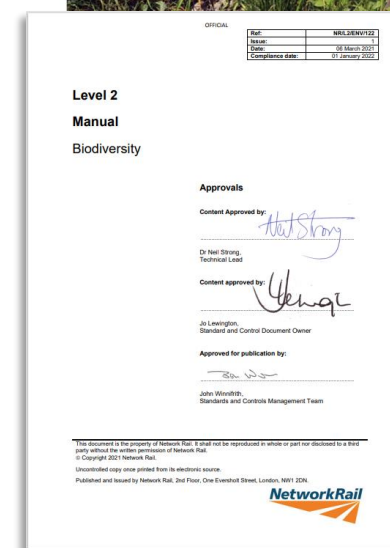
Strategy and Development

Network Rail Biodiversity Action Plan

Following the publication of John Varley's review into the management of vegetation on our railway, in late 2020 Network Rail published its Biodiversity Action Plan (BAP), noted as the first step in achieving our vision of a railway managed sustainably for safety, performance, the environment, our customers and our neighbours.

Our BAP outlines our ambitions for biodiversity and how we intend to protect, manage and enhance our lineside and infrastructure over the current five-year Network Rail funding cycle, until 2024, and beyond. It commits us to the key goal of increasing biodiversity on our lineside and where it is not safe or practical to mitigate biodiversity loss associated with vegetation management to create appropriate habitats elsewhere on, or beyond, our estate to offset any impact. The BAP also outlines our commitment to improve communication with our stakeholders and publish annual biodiversity performance results.

Since its publication, some key activities have taken place including establishing a Network Rail Biodiversity standard setting out the requirements for the management of biodiversity on our railway. Annual State of Nature reports have also been published by Network Rail Scotland to provide an update on our performance and showcase how we are managing and promoting biodiversity across the railway.



BAP, regional State of Nature Report
and Network Rail Biodiversity
standard manual

Strategy and Development

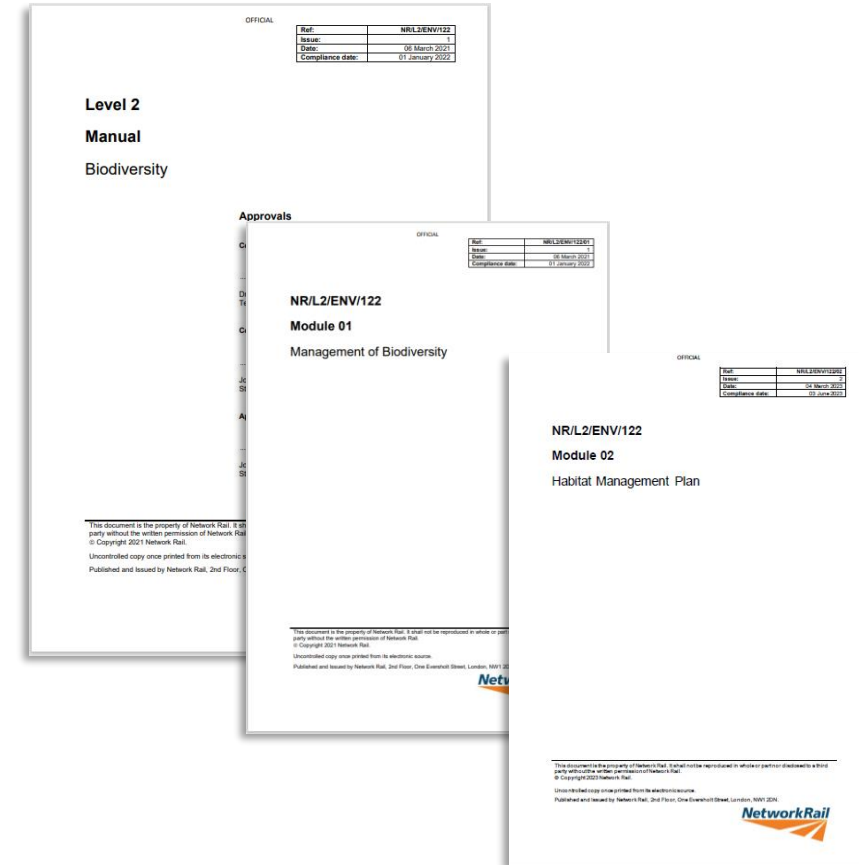
Biodiversity Standard

Network Rail has standards to cover the construction, maintenance and operation of the railway, which are designed to ensure the safety, reliability and efficiency of the network.

In 2021 Network Rail published its Biodiversity standard (NR/L2/ENV/122). This is the first time the requirement to manage biodiversity has been documented within a Network Rail standard.

The standard itself is made up of three documents: an overarching manual and two modules. Module 1 covers the management of biodiversity, and Module 2 sets out the requirement to produce Habitat Management Plans.

The overall purpose of the standard is to provide a way of demonstrating how we're effectively managing biodiversity on our lineside and document the process to ensure we meet all legal and other compliance obligations. The standard also allows us to demonstrate a consistent approach to regulators, show a coordinated approach to the management of habitats, and how our actions contribute to wider nature conservation targets.



Network Rail Biodiversity standard
NR/L2/ENV/122

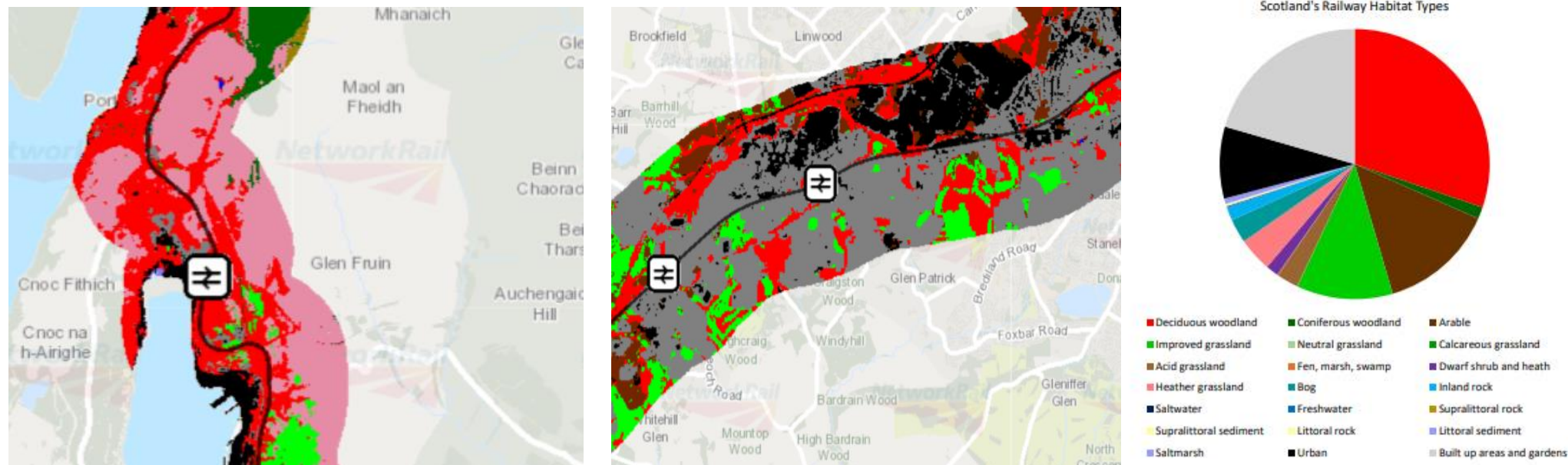
Strategy and Development

Remote Habitat Sensing Data

Measuring biodiversity can be complicated for a large organisation like Network Rail which manages a vast land estate spread throughout the country. To overcome the challenge of measuring biodiversity, Network Rail has been working with the UK Centre for Ecology and Hydrology (UK CEH) to use high-resolution satellite and aircraft imagery to enable us to map habitats across the rail network in a safe, quick and cost-effective way. This cutting-edge technology is being used along Britain's 20,000-mile rail network, as part of Network Rail's Biodiversity Action Plan.

Analysing the data helps us to identify likely biodiversity 'hotspots' and understand more about the role of the railway in connecting wildlife across landscapes. This information also provides a baseline for monitoring future trends in biodiversity.

Habitats across Scotland and the rest of the Britain's rail network were first mapped using this technology in 2020, providing a baseline for monitoring future trends in biodiversity. The habitat data has been updated on an annual basis since and is published in the annual State of Nature report.



Layer displaying remotely sensed habitat types and the corresponding habitat types across the Scotland region

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Network Rail Biodiversity Duty Report 2021-2023

Stakeholders & Strategic Partnerships



Stakeholders & Strategic Partnerships

Network Rail & Forestry and Land Scotland (FLS)

Network Rail and FLS, two of Scotland's largest landowners, have been seeking ways to work closer together where public forestry and land is adjacent to the country's rail network.

Teams from both organisations have met to discuss day-to-day operational matters such as track access and supervision and the removal of dead or diseased trees adjacent to operational railway, as well as discussing integrating work programmes to deal with wider issues such as improving water management and reducing the risk of landslips or rock falls.

It is hoped that greater collaboration could lead to a range of positive outcomes in the way both organisations work together. Ultimately, this would generate savings for the taxpayer through a safer more efficient railway and more effective management of adjacent forestry.

For passengers, particularly on our scenic railway routes, this could also offer the potential to increase the enjoyment of journeys by improving key views through strategic planning and management of trees beyond the railway corridor.

The two organisations met at FLS's Dunkeld base in summer 2022 to hear from a range of speakers and to review different sites which may present the opportunity of a joint working approach.

The session provided an insight into each organisation's operational challenges and areas of expertise, laying the foundations for closer working relationships that will help avoid incidents and better utilise resources.

A further four sessions located at areas covering all FLS regions at Dunkeld, Arrochar, Moffat and Inverness have taken place and have been well attended by both FLS and Network Rail colleagues.



FLS and Network Rail teams meeting on site

Stakeholders & Strategic Partnerships

Network Rail & Forestry and Land Scotland (FLS)

Network Rail and FLS have agreed to an ambitious two-year pilot project near Glenfinnan Viaduct to enhance natural habitats. This project, with a total investment of over £300k, represents the most ambitious biodiversity enhancement project ever undertaken by Network Rail in Scotland.

It aims to compensate for biodiversity loss resulting from safety-critical lineside tree and vegetation management works across Scotland's rail network. The project area is situated within Scotland's endangered Atlantic rainforest zone, covering approximately 200 hectares.

The first phase of work which began in February 2023 involved the removal of non-native vegetation, the installation of protective deer fencing to preserve ancient oak woodlands and a survey to scope native woodland expansion at Callop Woods to determine whether planting is required to supplement natural vegetation regeneration.

The project will support activity to protect, enhance and expand habitats including nationally and internationally designated sites managed by Forestry and Land Scotland (FLS). The long-term result of this activity is expected to be an increase in biodiversity across the area. There is not only scope to protect and enhance these existing priority areas, but also opportunities to expand the woodland and peatland habitats further to increase resilience and aid recovery of biodiversity.



FLS and Network Rail teams at the Glenfinnan project site

Stakeholders & Strategic Partnerships

Scottish Land and Estates

Scotland's Railway is now a member of Scottish Land and Estates - the 'go to' land management organisation in Scotland. This membership provides access to 1500 stakeholders which includes landowners, landlords, tenants, and agents many of whom we have previously been unable to reach or had limited contact with. Members include landowners of estates and farms of all sizes (public and private sector). We have joined Scottish Land and Estates to strengthen those relationships and reach out to even more of the communities we serve and work with.

Membership of Scottish Land and Estates brings a host of benefits for Scotland's Railway including getting our key messages to stakeholders and attending the organisation's regional receptions.

Network Rail Scotland has attended various summer shows across Scotland to increase the visibility of Scotland's Railway among members - including the Royal Highland Show, the Game and Wildlife Conservation Trust Scottish Game Fair at Scone and the Border Union Show.

These shows give us the opportunity to engage with our lineside neighbours and stakeholders to explain the challenges and risks that we must collectively manage, like boundary repairs and renewals, animal incursions onto the railway and problems associated with climate change. It's also a chance to the work that we are doing to make the rail network more resilient in the face of our changing climate and to promote biodiversity.



Network Rail representation at recent summer shows

Stakeholders & Strategic Partnerships

Stakeholder Events

Over the reporting period we have been actively engaging with both internal and external stakeholders through a series of informative and collaborative events.

The 'Getting to know Network Rail' event provided a unique opportunity for stakeholders, including elected members, landowner representatives, utility companies and council officers to gain first-hand insights into the organisation's lineside work.

This 2022 event addressed various issues, including tree and vegetation management, the growing threat posed by ash dieback, our favourite biodiversity stories and sustainability measures implemented in trial projects across the rail network.

In early 2023, Network Rail hosted the first ever Scotland Drainage and Lineside Conference, bringing together Network Rail colleagues from across Scotland and external guest speakers to explore a wide range of topics, including railway ecology, our biodiversity strategy, and the coexistence of beavers and the railway.

This summer we also hosted the inaugural Scotland's Railway Sustainability and Engineering Conference. This event was for colleagues across Scotland's Railway and our supply chain. The conference centred around discussions on how to effectively deliver our strategic priorities and create a sustainable future for Scotland's Railway.



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Competence & Resources



Competence & Resources

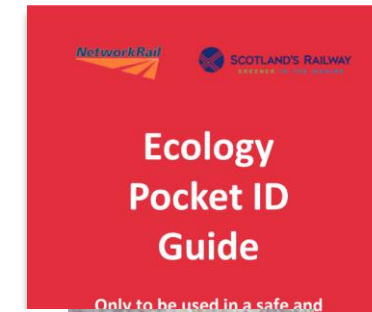
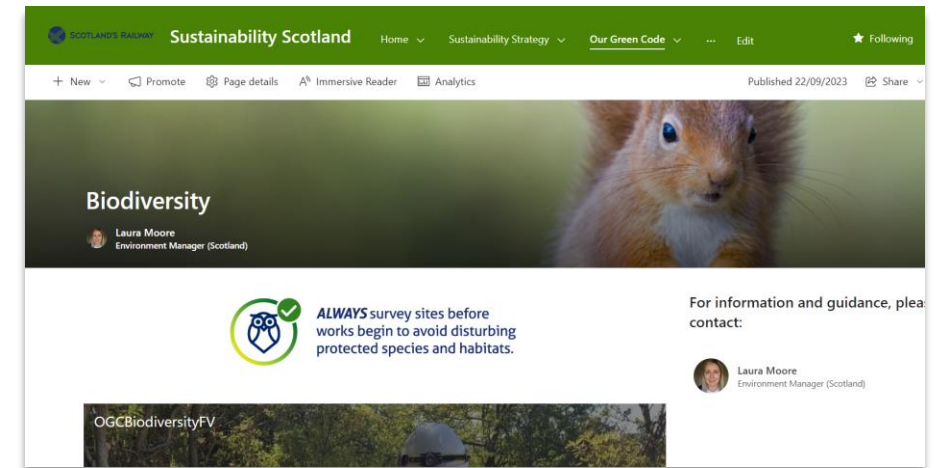
Species ID Guide & Sustainability Microsite

In Scotland, a concerted effort has been made to equip decision-makers with the essential tools and guidance necessary for informed choices regarding biodiversity. This provides valuable resources and elevates the collective awareness and skill set of colleagues.

One initiative is the publication of the Ecology Pocket ID Guide. Tailored for on-site personnel, this guide gives them with the knowledge to identify both protected and invasive species while working on the network. It also outlines the actions and reporting procedures needed to minimise disturbance to these species. The guide has been distributed to site-based teams, and a digital version is readily accessible to all colleagues.

Another addition within the duty reporting period has been the Scotland Sustainability Microsite. This internal 'sustainability hub' serves as a centralised platform for sharing guidance on various environmental topics, including biodiversity, noise and nuisance, waste management and pollution prevention. It also offers additional resources such as toolbox talks on various environmental aspects and provides access to sustainability performance data.

Also available via the microsite are the recorded versions of a series of technical briefings and drop-in sessions delivered by the sustainability team over the past year, covering Network Rail Standards, including the new biodiversity standard. These sessions have been designed to comprehensively explain the standards and the actions necessary for compliance with them.



Microsite
screenshot and
Ecology Pocket ID
Guide

Competence & Resources

Our Green Code Relaunch

First launched in 2015, Our Green Code simplifies environmental management principles and directs colleagues to adopt five easily remembered guidelines.

Our sustainability team has recently refreshed and relaunched the guidelines.

As part of the relaunch of Our Green Code, our sustainability team arranged a visit to Dunbar Primary School to deliver a STEM workshop and engage with primary 7 pupils.

The school had previously won a COP26 school competition, showcasing their understanding of the sustainability of trains. During the visit, pupils were encouraged to openly discuss their perspectives on climate change, its local impact and environmental changes they've observed. This initiative not only encouraged dialogue between the railway and local community it also gave our colleagues valuable insights into the environmental concerns of the younger generation.

The Our Green Code guidelines, and associated initiatives, are helping to empowering colleagues with the right tools and guidance for making informed decisions regarding biodiversity - reinforcing our commitment to sustainability and environmental stewardship.



Our Green Code

-  **ALWAYS** survey sites before works begin to avoid disturbing protected species and habitats.
-  **NEVER** let hazardous discharges or site materials pollute land or enter watercourses without consent.
-  **ALWAYS** use only the materials you need, reuse materials where you can and recycle waste in the right bins.
-  **NEVER** waste energy by leaving equipment, heating or lighting on when not in use.
-  **ALWAYS** treat line side neighbours with consideration and respect.

 **SCOTLAND'S RAILWAY**
 GREENER IN THE MAKING

Updated 'Our Green Code'

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Network Rail Biodiversity Duty Report 2021-2023

Case Studies



Case Studies

Dalgety Bay Vegetation Management Pilot

Dalgety Bay is one of Scotland's most problematic areas during Autumn because of leaf fall on the line, which can cause train breaking distances to increase.

The location was selected in early 2022 as a site to trial new lineside techniques, focussing on the removal of high-leaf fall species that posed a risk to the railway infrastructure, as well as targeting trees that were at risk of falling onto the tracks.

This was also one of the first major Scottish trials introducing multiple biodiversity offsetting and mitigation measures during vegetation management work. This included the creation of a more biodiverse scrub and woodland habitat through compensatory planting, and the installation of biodiversity enhancement measures to provide habitats for protected species.



Dalgety Bay site **before** vegetation management works



Dalgety Bay site **after** vegetation management works

Case Studies

Dalgety Bay Vegetation Management Pilot

Following completion of the tree and vegetation management work, a range of ecology measures to minimise the impact of the work on the local wildlife were implemented at the site.

This included retaining some trees along the north side of railway line to create a wildlife corridor for bats and other wildlife. Features for roosting bats or nesting birds were retained along with most of the tree, where possible, or repositioned/reattached to a neighbouring tree if the tree needed to be fully removed.

Bat and bird boxes were installed along the route and habitat piles of varying sizes were built to act as habitat and refuge sites for small mammals, hedgehogs, birds and invertebrates. High stumps were left on site with cuts and incisions for fungi and invertebrates and some trees were reduced in height and had features added imitating natural breaks and fractures to promote natural wood decay and create habitat for invertebrates. The felled woodland area was replanted with over 2500 new native tree species including hazel, hawthorn, alder, rowan, birch and Scots pine, resulting in more diverse woodland that will attract more wildlife.



Incisions being cut into the tree stump with a chainsaw



One of 17 bat boxes installed at the Dalgety Bay site



Habitat pile created at the Dalgety Bay site

Case Studies

West Highland Line Tree and Vegetation Management Pilot

A trial tree and vegetation management project was also undertaken at a site along the West Highland line which had similar issues with leaf fall onto the railway track. At this location the lineside was dominated by leaf fall species which, if ignored, could lead to leaves on the line affecting train braking distances and interfering with our signalling systems. Selected woody vegetation within a minimum of four-metres of the track was cleared then any trees that could strike the line were pruned or felled to remove the risk to the railway.

Following the vegetation management works, some trees with bat roost potential were maintained and the lineside area was replanted with trees and shrubs that are native to the area.

This will help the lineside area become a more diverse corridor, benefitting the surrounding wildlife. Hawthorn, holly, blackthorn and elder trees, native to the area, have been planted as these are better suited to the railway environment due to their slow growth rate, low height and minimal leaf-fall.

Bat and bird boxes have been installed to create and maintain existing wildlife corridors and increase the availability of bat roost and bird nest sites. Habitat piles were also created throughout the site, designed to add to the existing natural features and to offer sheltering opportunities for insects, hedgehogs and nesting birds, among other species.



Habitat piles created at the West Highland Line site

Case Studies

Bee Bank Installation

In 2022 Network Rail completed emergency repairs on a section of the line in Ayrshire after a large sink hole appeared close to the track. As well as repairing the sink hole, a team from Network Rail and Scottish Woodlands worked together to install a bee bank next to the site of the repairs as part of our efforts to enhance biodiversity on the railway.

The bee bank is designed to support several solitary bee species, including mining bees, providing warm, sheltered patches of bare ground where solitary mining bees can nest. Logs, canes and rocks were also placed into the structure to provide additional habitat for other species.



Bee bank installation adjacent to the railway line

The area adjacent to the bee bank was seeded with a native dry meadow wildflower seed mix and was selected in line with advice provided by Scotia Seeds, as it will increase the diversity of species in the area and provide the world's pollinators with food, shelter and places to breed.

The site sits close to a 'B-Line' insect corridor and the River Irvine which is an ideal position to promote biodiversity and enhance connectivity with the railway corridor and surrounding habitats.



Area adjacent to railway where bee bank was installed

Case Studies



Signage installed at Lanark Station



Hedgehog sized hole cut into fencing at Lanark Station

'Hedgehog Highway' Fencing Installations

Hedgehogs are a much-loved wild mammal found across Scotland, but population numbers have been in decline mainly due to habitat loss and fragmentation. Railway embankments are a hedgehog haven, with a rich mix of trees and vegetation which provide a safe and food-rich area for hedgehogs to forage and feed.

A concerned local resident contacted Network Rail after noticing that hedgehogs were becoming trapped under a boundary fence at Lanark station.

A team from Network Rail, which included one of our in-house ecologists, visited the site at Lanark Station to better understand the situation and devise ways to stop the creatures from getting trapped. The simple action of making a suitable hole in the fencing has helped the hedgehogs move safely between their foraging habitats and their nests.

Hedgehog sized holes at regular intervals were cut along the bottom of boundary fencing to create 'Hedgehog Highways' to allow the animals to move freely back-and-forth and escape should they become trapped. To raise awareness of the plight of the animals, the Hedgehog Highway has been marked with some hedgehog shaped signs and an information board has been installed to highlight the reasons behind the work and raise the profile of hedgehogs in general.

Following the success at Lanark station, Hedgehog-friendly holes have since been included along a one-mile stretch of timber fencing renewal at Muirend in Glasgow to allow hedgehogs to move freely in and around railway property. This is the first time this approach has been rolled-out as standard on large scale fencing renewal works.

The initiative has been supported by HogWatch Scotland who monitor hedgehog numbers and provide courses to educate and raise awareness in schools and across communities. The initiative has also been reported on by regional and national news outlets such as the BBC and STV news.

Case Studies

Network Rail Collaboration with Local Raptor Study Group

Network Rail has successfully completed tree and vegetation management work between Rogart and Lairg while protecting nearby nesting hen harriers. Urgent works needed for the safe operation of the railway coincided with breeding season and were in a location that was both a Site of Special Scientific Interest (SSSI) and Special Protection Area (SPA).

Network Rail, in close cooperation with the Highland Raptor Study Group, conducted surveys and, when breeding hen harriers were identified, adopted specialised practices during works to minimise disruption. This partnership harnessed the extensive local knowledge these groups possess about the birds in the region.

The outcome was the successful fledging of three hen harrier chicks, demonstrating the indispensable role of local raptor study groups in providing insights and expertise that safeguard wildlife during rail projects.



Hen harrier chicks in their nest near site of Network Rail works

In another instance, during a routine visit to a Midlothian railway yard, a kestrel nest was discovered within a railway overbridge. This discovery led to a collaboration with the Lothian and Borders Raptor Study Group to ring the chicks. Two out of three chicks were successfully ringed by an experienced ornithologist.

This partnership with local raptor study groups also revealed that the adult female kestrel had been previously ringed by the same ornithologist, underscoring the significance of tapping into local knowledge to protect and conserve bird populations.

The work remains crucial, especially as the kestrel population is in decline, making them a species of concern on the UK's conservation list. Bird ringing, facilitated by local expertise, contributes essential data on species, enabling a better understanding of population dynamics and habitat preservation.



Kestrel discovered at railway yard being handled under licence

Case Studies

The Railway's First Ever 'Beaver Tunnel'

In the previous biodiversity duty report (2018-2020) we reported on the impact of beavers who dammed inside a culvert and burrowed in the railway embankment in an area near Gleneagles.

The culvert was blocked by the dam leading to flooding on an area of land which formed part of a Site of Special Scientific Interest (SSSI) designated for wet woodland, scrub and fen meadow habitats. The wet woodland and fen meadow sit on deep peat. Therefore, the burrows and impoundment also presented a risk to the structural integrity of the embankment and track stability.

The Tay catchment around Perth has a growing beaver population and is a recent example of an area where their impact was felt on the rail network and a solution was needed to a flooding issue caused when a resident pair of beavers dammed a culvert under the track. After obtaining the appropriate licenses to work in the SSSI and working with species specialists at NatureScot, the Network Rail team have been able to pump the water out of the area before removing the 2m high 5m wide beaver dam by hand.

Once the culvert was clear of material, Network Rail engineers then constructed what is believed to be the first 'beaver tunnel' in the country under the Scottish Central Main Line (SCM4).



Flood waters around the culvert



Beaver picked up by camera trap located at the culvert

Case Studies

The Railway's First Ever 'Beaver Tunnel'

As part of the project an additional pipe has been inserted through an existing larger culvert drain with wild mesh fitted either side to protect the railway while still allowing the movement of wildlife. The new tunnel was constructed to help the protected species pass under the railway and to help prevent flooding issues caused by the animals building dams across the railway's drainage culverts under the line.

When the culvert was clear, the beaver tunnel was installed, and wild mesh fitted at either side of the tunnel. Our activities were in line with SEPA best practice guidelines for altering culverts, to enable wildlife, including beavers and otters, to pass safely under the railway. Since its installation, camera traps set up in the area have detected local beavers using the pass.

Beaver populations will naturally expand across Scotland and as they do, it is possible they could occasionally impact railway infrastructure through felling trees on to the line, flooding caused by their dams or burrowing into railway embankments, like the site at Gleneagles.

Network Rail has now set up a Beaver Working Group made up of representatives from across Network Rail, with the aim of developing a beaver management strategy to ensure a more proactive approach to managing the potential impacts of beavers in and around our railway.



Construction of the Beaver pass at culvert near Gleneagles



Constructed Beaver pass



Footage of a Beaver picked up by camera trap utilising the new Beaver pass

Case Studies

Biodiversity Enhancement through Land Remediation Works

A landslide at Fairlie in North Ayrshire saw 7,000 tonnes of earth and spoil engulf the railway from the slope above following heavy rainfall. As well as damaging the railway this also resulted in the loss of trees and plant species.

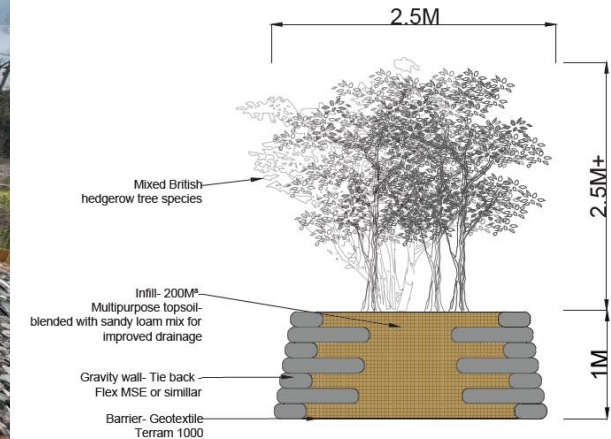


Fairlie land slip site

Following events such as this, it is current practice to leave the slope bare following repairs. However, as part of the remediation of this site, raised beds have been installed and planted with native plants and hedging, which will be spread across different levels of the regraded slope at the site. The aim is to significantly improve the visual impact of the substantial repair work that was needed following the slip.

The planting includes a range of species compatible with the railway environment, like hawthorn, blackthorn, hazel and crab apple, all with good root systems which will help promote stability of the regraded slope. The work will help the lineside move from a species poor scrub to a species rich area which will be of benefit to the surrounding wildlife.

The works represents an investment of more than £100,000 to mitigate the biodiversity loss to the surrounding landscape and to off-set the carbon impact of the project to reinstate the slope.



Raised beds installed as part of the Fairlie landslip remediation

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Network Rail Biodiversity Duty Report 2021-2023

Social Value: Volunteering & Material Reuse



Environmental Volunteering

All colleagues across Network Rail are entitled to take up to five days of leave per year to support charitable causes. Over the duty reporting period, a number of volunteer days to support environmental initiatives have been arranged and supported by colleagues. Examples of the types of volunteering days colleagues have been involved in are included below.

Tree-Planting at West Heads Farm and the Govan Wetlands

Over the two-week period of COP26, the sustainability team organised two tree planting days with the tree-planting organisation Gone West. Around 40 colleagues volunteered during the two days and over 1,000 native tree saplings were planted across the 40-acre site at West Heads Farm which comprises areas of existing broadleaved deciduous woodland.

The site at Govan Docks, opposite the COP26 campus, forms part of the Govan Wetlands Project which will turn a 2-hectare site in the currently vacant Govan Docks into a thriving urban wetland, restoring value to underutilized land. The trees planted at both sites are covered by 'Plant and Protect' agreements, which ensures they will remain in place for at least 90 years.

Borders Forest Trust Habitat Restoration

A team undertook a day's volunteering leave for the Borders Forest Trust, a charity organisation who are re-storing natural habitats and healthy ecosystems to a 3100ha area of wild land for the benefit of wildlife and people.

The team were involved in de-tubing over a 1,000 young trees to assist in the tree growth. The de-tubing which initially assisted in the protection and growth of the sapling needs to be removed when the trees reach a certain level of growth. At a certain point, the plastic tubing can damage the tree and cause rot and fungi growth due to a lack of airflow.



Volunteers from Network Rail and Gone West tree planting at West Heads Farm

Environmental Volunteering

Tree Planting with the Tree Council

Network Rail partnered with the Tree Council and various community groups to undertake community planting days at two parks located in Glasgow City Centre: Queens Park and Elder Park.

The project at Elder Park brought together a team from the Tree Council, volunteers from Network Rail, members of the Friends of Elder Park, new local residents from Ukraine, as well as pupils from two local primary schools.

The groups came together to plant over 500 hedgerows to provide some structural planting for a new community orchard. As well as the new hedgerow planting, volunteers from Network Rail also assisted with the maintenance of some of the park's more established trees and carried out mulching of a more recently planted avenue of trees.



Community planting day at Elder Park

At the Queens Park site, volunteers from Network Rail worked alongside a team from the Tree Council and Propagate Scotland to plant new trees and construct protective chestnut frames. Volunteers also had the opportunity to carry out pruning of some of the more established trees within the orchard, and to learn about orchard maintenance while developing some new practical tree pruning skills.

Community planting days like these not only promote biodiversity through planting, but also upskill volunteers and the local community which empowers them to take ownership of and improve their local environment.



Community planting day at Queens Park

Environmental Volunteering

Allan Water Improvement Project

Scotland's Railway provided a grant, through the Tree Council, of £16,000 to a local community tree planting initiative near the Allan River in Perthshire, enabling 2,000 native trees and shrubs to be planted.

The trees were planted as part of the Allan Water Improvement Project, a project hosted by Forth Rivers Trust, to revive the river and its associated habitats and to benefit the wider landscape. The planting involved local volunteers and businesses on land made available by Blackford Farms.

The native tree and shrub species were planted on the Danny Burn, a tributary of the Allan Water, south of the A9 to create new habitats and link fragmented habitats, on the banks of the upper Allan River. Not only did this project represent an excellent opportunity to engage the local community to plant native trees and shrubs, but also offered a range of practical and environmental benefits.

The new trees will improve biodiversity in the area by shading the water, keeping it cool and therefore protecting it against the warming climate. Replanting will also enable carbon capture, and over time will improve bank stability on the water course.

The work will also help to address potential flooding issues downstream at the village of Blackford, where the A9 and a busy line of route are located.



Newly planted trees at the Allan Water Improvement Project site

Materials: Reduction and Reuse

Network Rail is actively advancing its commitment to operate within a circular economy while striving to achieve its vision of waste minimisation and responsible resource use.

Demonstrating this dedication, our Works Delivery Off-track team, in collaboration with contractor QTS, introduced a range of ecology measures during tree and vegetation works conducted between Innerwick and Penmanshiel. These measures focus on the reuse of materials generated from the works, aligning with our vision of conserving natural resources.

Among the innovative steps taken, existing materials found on the site were repurposed to create habitat piles, providing shelter for a variety of species, from invertebrates to hedgehogs and nesting birds. Furthermore, the wood chippings resulting from vegetation management works were provided to a nearby farm for use as animal bedding, effectively closing the loop on resource utilisation.

Network Rail's commitment to circular practices goes beyond material generated directly from works. At our newly refurbished Perth Depot at Acorn Trade Park, our Works Delivery off track team demonstrated their creativity by upcycling materials to enhance the aesthetics of the depot, making it more appealing for those working at or visiting the site. Surplus timber from crates used for material deliveries was transformed into planters, then planted with flowering species, creating an inviting environment that attracts bees.



Wood chippings arriving at local farm from the vegetation management works



New planters installed outside the Perth Depot

Materials: Reduction and Reuse

The Dalgety Bay project also exemplifies our dedication to waste reduction and circular economy principles. Biodiversity measures were strategically chosen to utilise waste materials generated on-site, which would otherwise be discarded or chipped. This approach not only led to cost-neutral opportunities, including the retention of high stumps, monoliths, and bat roost features, but it also aligned with the circular economy model by selling heavy timber on-site to local timber merchants. Additionally, biodegradable tree guards were employed, further demonstrating Network Rail's commitment to environmentally responsible practices and sustainable resource management.



Biodegradable tree guards round the newly planted trees at Dalgety Bay



Heavy timber resulting from the vegetation management works at the Dalgety Bay site sold on to local timber merchants

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Network Rail Biodiversity Duty Report 2021-2023

Future Workstreams



Future Workstreams

As we look to the next duty reporting period, there are many workstreams that will strengthen our commitment to the protection and enhancement of biodiversity across Network Rail Scotland.

Scotland's Railway Climate Action Plan

The current Scotland's Railway Sustainability Strategy and Delivery Plans have been produced to outline how we will improve sustainability across Scotland's Railway over the remainder of the current five-year Control Period, which ends in April 2024.

As we are nearing the end of this current Control Period, we now need to look at how we continue to embed and improve sustainability over the next five years as we move into Control Period 7 (CP7).

A key piece of work is currently underway to develop Scotland's Railway CP7 Climate Action Plan (CAP), which will set out the actions we will take to play out part in addressing the climate crisis.

The CAP has been streamlined to include five delivery plans covering the following themes: Biodiversity, Social Value, Environmental Management, Climate Ready and Net Zero. Each of these themes sets out its overall objective and a series of outcomes under which there are milestones and actions, outlining how each outcomes and the overall objective will be achieved.

The biodiversity delivery plan includes strategic outcomes which will see us create and enhance habitats across Scotland, reduce invasive and non-native species across the railway and ensure our workforce are equipped with the right training, tools and data to make informed decisions around the management of biodiversity.

The CAP is currently being consulted on by colleagues across Scotland's Railway and is expected to be published in early 2024.

Scotland's Railway Climate Action Plan	
THEME	High level action area e.g., Biodiversity
OBJECTIVE	A clear statement of what we want to achieve. Each of the five action plan themes have an objective that together define the overall goals of our plan. Our objectives are specific, measurable, achievable, relevant, and time-bound.
OUTCOMES	The outcomes are the expected positive results or impacts of achieving our objectives. They provide a broader perspective on the benefits we expect to see as the plan is delivered.
MILESTONES	Milestones are key events or achievements that will be delivered as the plan progresses. They will help us monitor progress and provide an indicator as to whether the plan is on track or not.
ACTIONS	Actions are the specific steps or tasks we need to take to reach milestones and deliver intended objectives. They outline the practical on-the-groundwork.

Climate Action Plan structure

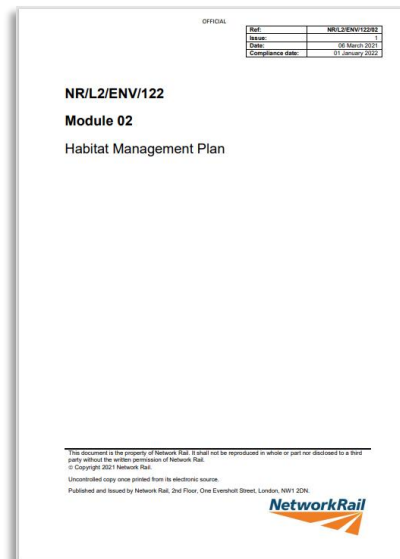
Future Workstreams

Habitat Management Plans

The recently published Network Rail Biodiversity standard (NR/L2/ENV122) sets out a requirement for Scotland's Railway to prepare and publish Habitat Management Plans.

Work is currently underway to establish a methodology for the preparation of these plans for Scotland, which is expected to be rolled out in the coming year.

The Habitat Management Plans will describe the existing habitat types and conditions across the country and will set out how these habitats should be managed to improve their condition and promote biodiversity on our lineside.



Network Rail Biodiversity standard, module 2 'Habitat Management Plan'

Network Rail & FLS: Glenfinnan

As previously mentioned within this report, Network Rail are partnering with FLS to deliver an ambitious biodiversity enhancement project across approximately 200ha at a site near the Glenfinnan Viaduct.

The two-year project got off the ground in February 2023 and we will continue to work with FLS to deliver the enhancement project and, as we move into the next Control Period, to explore further opportunities to undertake more biodiversity enhancement projects like the one at Glenfinnan.



Glenfinnan project site

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