



Wales and
Borders



NETWORK RAIL'S SUMMARY REPORT

**On compliance with the Environment (Wales) Act 2016
Section 6 The Biodiversity and Ecosystem Resilience Duty
(period between December 2019 and December 2022)**



Network Rail is committed to enhancing and maintaining the biodiversity value of its land where possible and reasonably practicable. One of our key principles in Network Rail's 'Environment and social performance policy'¹ is that *"We will manage our land sustainably including consideration of our impacts on Biodiversity"*. We regularly consult with external stakeholders, including NRW and the Local Authorities, to agree mitigation for works in areas where there are protected species and habitats present, and in relation to permissions and adjacent protected sites.

It is defined in the State of Nature 2019² report that green infrastructure *"can provide habitat for a wide range of species"*. In the current programme of works we are aiming to deliver and develop resilient ecological networks (e.g. wildlife corridors), establishing a pragmatic direction in relation to balancing a safe operational railway while maintaining and enhancing biodiversity wherever possible. The Section 6 Biodiversity & Ecosystems Resilience duty (hereafter referred to as the "Section 6 duty") is considered where Network Rail undertake operations in Wales specifically, and we are aiming to provide green infrastructure and design enhancements where the opportunities arise, for example: at Railway stations for green roofs, wildlife friendly garden spaces, additional tree planting and wildflower meadows.

Network Rail plan to upskill and enhance the knowledge of staff and have increased the specialist internal ecological expertise on the Wales & Borders Route.

Over the past few years Ash Dieback has unfortunately spread across the UK at a rate that was not anticipated. As the Network Rail lineside estate has a significant number of trees there has been a significant advancement in bringing forward planned tree surveys to identify dead diseased and dying trees that pose a safety risk. This was reported in a Network Rail article on our website³ in December 2021 with a quote from NRW regarding the impact on biodiversity where Andrew Wright (specialist advisor, Natural Resources Wales) said:

"Ash Dieback is one of the most significant tree diseases to affect the Welsh landscape, ash trees affected by this disease potentially pose a significant health and safety risk and we understand the measures taken by Network Rail to reduce the risks and welcome any work to recover lost biodiversity."

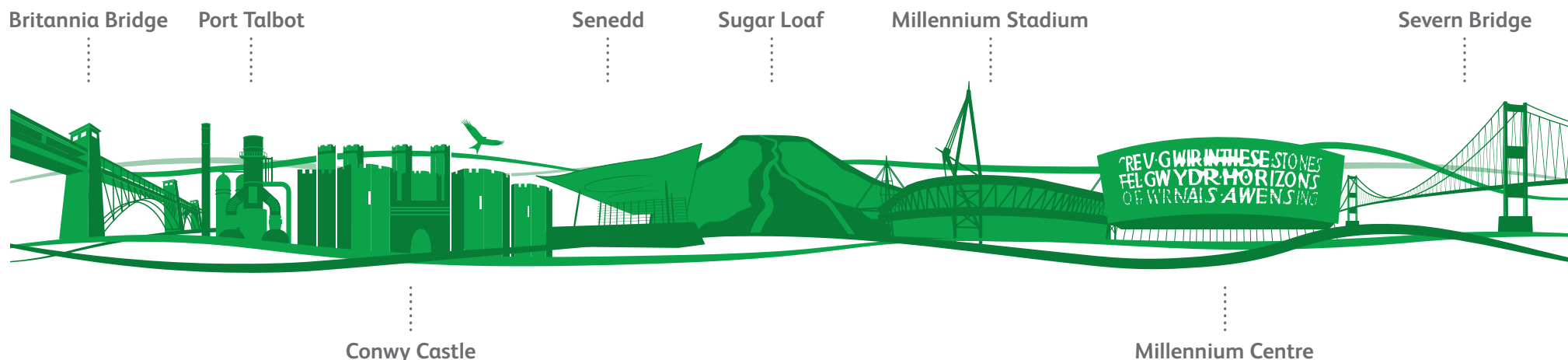
This report aims to fulfil the requirement to report on our Section 6 duty. It highlights some key examples of how Network Rail in Wales are contributing positively towards maintaining and enhancing biodiversity and embedding consideration of biodiversity into our ways of working.

1 [Environment-and-Social-Performance-Policy.pdf \(networkrail.co.uk\)](https://www.networkrail.co.uk/Environment-and-Social-Performance-Policy.pdf)

2 <https://nbn.org.uk/wp-content/uploads/2019/09/State-of-Nature-2019-UK-full-report.pdf>

3 [Tree-mendous: How Network Rail's biggest ever tree survey in Wales is improving railway safety and biodiversity \(networkrailmediacentre.co.uk\)](https://www.networkrail.co.uk/Tree-mendous-How-Network-Rail-s-biggest-ever-tree-survey-in-Wales-is-improving-railway-safety-and-biodiversity)

Introduction



Wales and Borders

Figure 1 Wales and Borders Route corporate logo (Image credit: Network Rail)

This document serves as a summary report to fulfil Network Rail, Wales & Borders route's obligation under the Environment Wales Act 2016 and report on what Network Rail has done to comply with the Section 6 duty.

This report acts a summary report for the period between December 2019 and December 2022.

As a public authority Network Rail in Wales have a duty to comply with the Section 6 duty under the Environment Wales Act 2016, in the exercise of its functions in Wales. In December 2019, Network Rail published their Section 6 summary report⁴ which included a summary of key objectives and outlined what we proposed to do to maintain and enhance biodiversity

and promote resilience.

Network Rail are fully committed to our sustainability obligations and have several existing workstreams which enable us to comply and meet the requirements of Welsh specific legislation. The Wales and Borders Route works with other parts of Network Rail and the Train Operating Companies (TOCs) and Freight Operating Companies (FOCs) to communicate the Wales specific requirements for managing and improving biodiversity management when carrying out our work.

This report specifically focuses on the Section 6 duty that Network Rail Wales and Borders route has under the Environment (Wales) Act 2016. The reporting follows the guidance provided by Welsh Government on their website⁵.

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[Wales Route Section 6 Summary Report P2 \(networkrailmediacentre.co.uk\)](https://www.networkrailmediacentre.co.uk/wales-route-section-6-summary-report-p2)

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[Biodiversity and resilience of ecosystems duty \(section 6\): guidance for public authorities | GOV.WALES](https://gov.wales/biodiversity-and-resilience-of-ecosystems-duty-section-6-guidance-for-public-authorities)

Network Rail own, repair, and manage the railway infrastructure across England, Scotland and Wales. Our infrastructure is located within land we own, and our functions are connected with land management. We exist to get people and goods where they need to be and support Great Britain's economic prosperity. Our role is to run a safe, reliable, and efficient railway, serving our customers and communities.

In 2019, Network Rail underwent a major reorganisation as part of the vision of 'Putting Passengers First'. One of the main changes that occurred was the creation of new Regions and Routes. The Routes are responsible for the everyday running of the railway in a given area including maintaining a safe working railway for passengers and the workforce.

As a multidisciplinary organisation, we have many different departments and teams who have their own ways of working due to the complex nature of our work. Whilst Ecologists are integrated in for instance the Maintenance Delivery and Asset Management teams, we also utilise the expertise of external Consultants who provide direct advice and guidance to the teams they are working with such as on major infrastructure projects or on programmes of work. Into Control Period 7 (CP7) we will be following the 'intelligent client' principle where Principal Contractors will deliver a programme of work and Network Rail will provide assurance, rather than directly manage delivery for projects outside of for instance Maintenance work. We also have Sustainability staff who provide technical support and guidance to the teams across Network Rail on wider environmental issues.

Caring for our planet is important to us at Network Rail. Rail is already the greenest form of public transport and we're on a journey to a cleaner, greener future with an aim to achieve net zero by 2050 in Wales via our decarbonisation programme⁶. Over the past 3 years, Network Rail has

made significant progress in how we manage our estate with regard to biodiversity and ecology. In September 2020, Network Rail published an ambitious 30-year strategy for delivering a sustainable railway⁷ and also a Biodiversity Action Plan (BAP) in December 2020. Progress against our strategic aims, performance, and progress to implementing the BAP will be reported on an annual basis through State of Nature⁸ reports, which was a recommendation by John Varley in his review of vegetation management at Network Rail⁹.

We are the fourth largest landowner in the UK and are actively seeking to be considered a key stakeholder when it comes to new guidance, policy or legislation being formulated with regard to biodiversity in Wales. Equally, we are seeking to be considered a key stakeholder with regard to landscape scale initiatives which cross our boundary such as Local Nature Partnerships (LNPs) and Area Statements, and we are seeking to engage with the LNPs and NRW in this respect.



Figure 2 Illustrating Network Rail's Regions and Routes (Image credit: Network Rail)

6 [A low-emission railway - Network Rail](#)

7 [Environmental Sustainability Strategy - Network Rail](#)

8 [Biodiversity on Britain's railway - Network Rail](#)

9 [Network Rail vegetation management review: valuing nature, a railway for people and wildlife - GOV.UK \(www.gov.uk\)](#)

Overview of the management of ecology on the Wales Route



The Wales and Borders Route (hereafter referred to as the “Wales Route”) operates as a sub division of the Wales and Western Region within a national framework and covers approximately 850 route miles, with the majority of the Route crossing rural areas which have a rich array of biodiversity. The two main railway lines on the Wales Route are the South Wales Mainline from Swansea to Paddington via Bridgend, Cardiff, Newport, and the Severn Tunnel; and the North Wales Mainline from Holyhead to Crewe.

The majority of the Wales Route is adjacent to coastal habitats, and this has resulted in liaison with NRW and WG in relation to permitting works to maintain our infrastructure. The central area of the Wales Route is a rural area, and the ELR which runs along the border is mostly rural but passes through major border towns. In March 2020 the Core Valley Lines (CVL) was transferred across to be managed by Transport for Wales (TfW) as those ELRs will now form part of the South Wales Metro¹⁰. The remaining mileages across Wales are managed directly by Network Rail and therefore decision-making and responsibilities around managing biodiversity and ecology on our Assets across Wales remain with Network Rail.

The Wales Route is adjacent to, or within, over 100 UK and European protected sites. It is also the only Route which requires working with three separate environmental regulators, these are: Natural Resources Wales, the Environment Agency, and Natural England. Section 6 of the Environment (Wales) Act 2016 introduced an enhanced duty (the Section 6 duty) for public authorities in the exercise of functions within Wales. As a public authority Network Rail has a duty to comply with this duty, and other UK and European legislation, and provide evidence of doing so. It is recognised that ecology needs to be embedded in policies and standards, and across the organisation.

Interaction with Network Rail’s operations and the natural environment is extensive. It is recognised by key internal stakeholders across the business, that ecology is an area in which the risks should be effectively managed, and we should plan our work accordingly. We aim to integrate our Section 6 duty into the way in which we work. The Wales Route Strategic Plan published in March 2019¹¹, has set out an objective and commitment to “minimise our impact on the environment”. Within this plan, there was an aspiration to focus on ecology as a priority area for management in Control Period 6 (CP6) (2019 – 2023).

¹⁰ [Core Valley Lines Transformation | Transport for Wales \(tfw.wales\)](https://www.tfw.wales/core-valley-lines-transformation)

¹¹ [Route-Strategic-Plan-Wales.pdf \(networkrail.co.uk\)](https://www.networkrail.co.uk/route-strategic-plan-wales.pdf)

Management of the lineside is the biggest area of opportunity to ‘maintain and enhance biodiversity’ on our estate. The Strategic Plan for the Wales Route into CP7 (2024 – 2029) includes objectives on managing the lineside and the habitats within. In 2023, Network Rail published a Sustainable Land Use Strategic Framework for a National Nature Network¹², and describes Network Rail’s vision and strategic aims to achieve a more sustainable way of managing our lineside estate.

The Routes and Regions collaborate with the Network Rail national team, known as the Technical Authority (TA), on strategic goals such as with regard to delivery of the Sustainability Strategy. We also provide regional technical expertise into delivery of guidance and policy, thus ensuring local requirements (such as the Section 6 duty in Wales) are incorporated into National reporting. For instance, Wales and Western Region had direct input to the Network Rail’s internal Standards such as the ‘ENV122’ biodiversity standard and control documents, prepared by the TA. This new biodiversity ENV122 Standard includes requirements regarding use of the mitigation hierarchy when assessing impacts of work on biodiversity. Use of the mitigation hierarchy aligns with the Welsh Government’s briefing on Net-Benefits for Biodiversity (NBB).

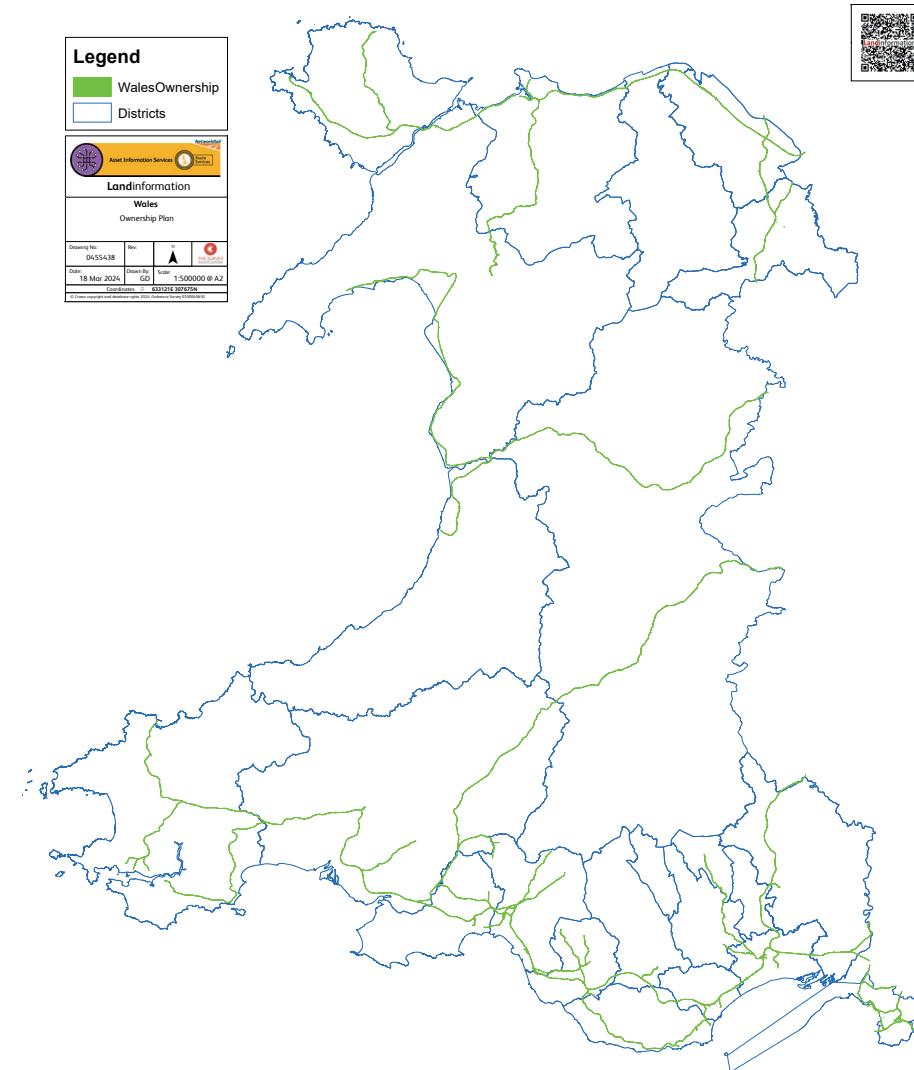


Figure 3 Map illustrating the Wales and Borders Route (Image credit: Network Rail)

A 'Section 6 duty' under the Environment (Wales) Act



Environment (Wales) Act 2016

The Environment (Wales) Act 2016 sets out a requirement for the sustainable management of natural resources and also sets out a new legislative framework for managing the Environment in Wales. The Act presented three main products to focus on key objectives to deliver a viable change to achieve Sustainable Management of Natural Resources (SMNR) in Wales. These products were produced by NRW:

1. State of Natural Resources Report (SoNaRR)
2. Natural Resources Policy
3. Area Statements

The Section 6 duty under the Environment Wales Act, superseded and strengthens the previous 'biodiversity duty' which was detailed in the Natural Environment and Rural Communities Act 2006 (known as the NERC Act).

Wellbeing Duty

Whilst not directly covered by the related Wellbeing and Future Generations Act 2015', Network Rail recognises the importance of this wellbeing duty as it has a positive impact on the public in Wales, and this ties in with our objective of 'putting passengers first'.

The 'resilient Wales's goal further strengthened the biodiversity duty requirement for other public bodies: 'A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and




the capacity to adapt to change (for example climate change).'

Rail transport is recognised as being a sustainable mode of transport, being a key part of an integrated transport system by linking with other public and active transport networks. The railway also acts as an enabler to allow members of the public to access the countryside for leisure purposes, such as interacting with their natural environment and facilitating positive health and wellbeing.

Priority Species and Habitats

In addition to the Section 6 duty, the Environment Wales Act also replaced the NERC Act Section 42 duty on the Welsh Minister to publish, review and revise lists of Priority Species and Priority Habitats in Wales which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

Under Section 6 of the Environment Wales Act, Public Authorities must have regard to:

-  the Section 7 list of Priority Species and Habitats,
-  the State of Natural Resources report (SoNaRR) published by NRW in 2016, and
-  any Area Statements in areas where the public authority exercises its functions.

Area Statements

The Area Statements¹³ were published by NRW in March 2020 and aimed to provide a place-based focus on working to deliver sustainable management of natural resources SMNR. In this respect NRW aim to work collaboratively in a joined-up way with their partners and stakeholders, when managing their natural resources in Wales.

There are seven separate Area Statements covering Wales, six terrestrial and one marine. The marine Area Statement cover the whole inshore marine area out to twelve nautical miles. Each Area Statement has emerging themes for the individual areas the statement relates to and identifies the key benefits of ecosystem services for each area through working with stakeholders.

Ardal Morol Marine Area
Gogledd Orlewin North West
Gogledd Ddwyrain North East
Canalbarth Mid
De Orlewin South West
De Canolig South Central
De Ddwyrain South East

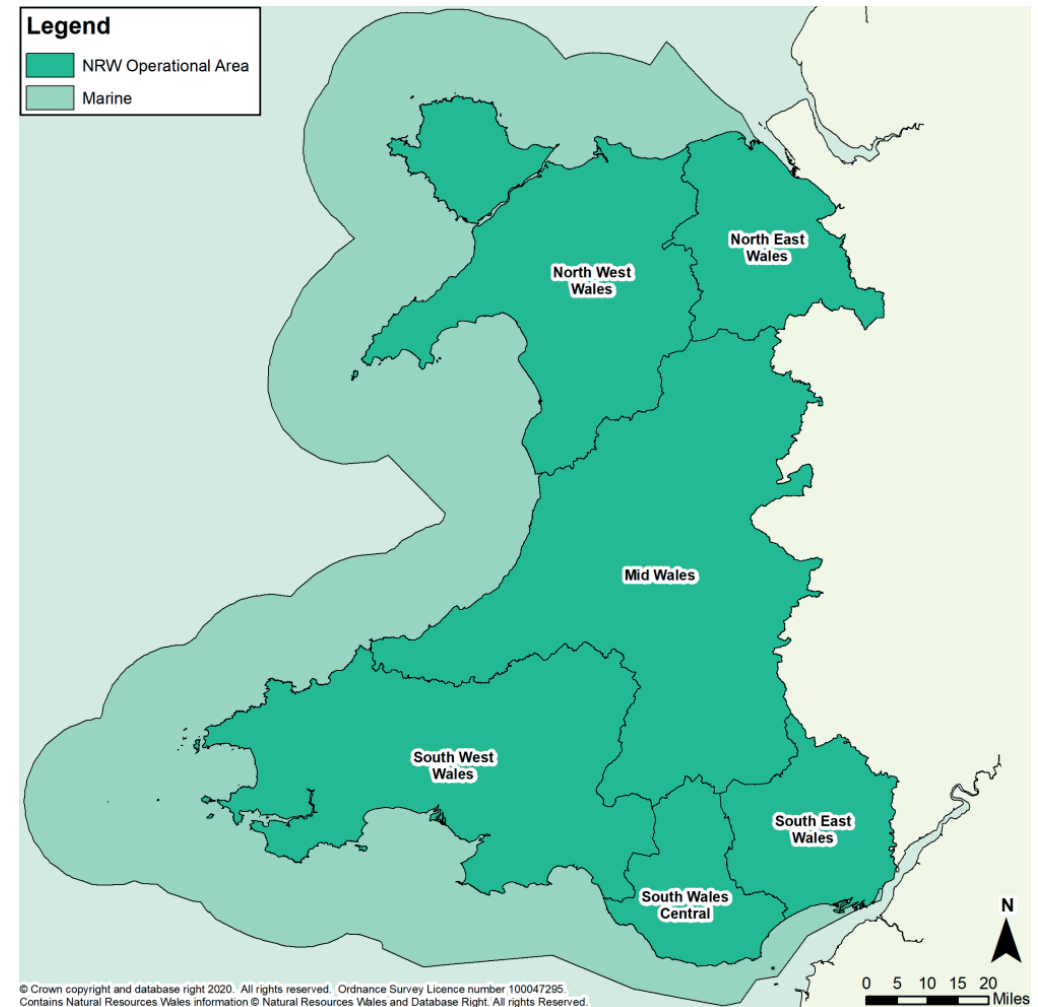








Figure 4 Map of Area Statements in Wales (Image credit: NRW)

Nature Recovery Action Plan for Wales

'The Nature Recovery Action Plan (NRAP) for Wales: setting the course for 2020 and beyond'¹⁴ was produced by the Wales Biodiversity Strategy Board for the Welsh Government in 2015. The plan sets out six objectives for how Wales will reverse the decline of biodiversity and address the Convention on Biological Diversity's (CBD) commitments which the UK government committed to in 1992. The vision of the CBD Strategic Plan for Biodiversity 2011-2020 is: *"By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people."* with its mission *"to take urgent action to halt the loss of biodiversity"*. The key ambition is to: *"To reverse the decline in biodiversity, for its intrinsic value, and to ensure lasting benefits to society."* The measurement of biodiversity in Wales through the NBB approach will aim to provide a quantitative approach, however this and the practical application of the DECCA framework still require clear guidance around practical application in order to be successfully delivered for the management of large-scale infrastructure.

It is considered that each function of a Public Authority should contribute to the NRAP objectives and to promoting resilience, through addressing its attributes as detailed in the Environment (Wales) Act 2016. The NRAP was refreshed in 2021 in consultation with a range of stakeholders, however Network Rail were not consulted. As one of the largest landowners in the UK, Network Rail are actively seeking opportunities to engage with consultations and working groups around the biodiversity and nature recovery agenda in Wales.

The revised objectives under the Part II refresh of the NRAP include:

-  Engage and support participation and understanding to embed biodiversity throughout decision making at all levels;
-  Safeguard species and habitats of principal importance and improve their management. Including the requirement on Welsh Ministers to prepare and publish a list of the living organisms and types of habitat which are of principal importance for the purpose of maintaining and enhancing biodiversity in Wales;
-  Increase the resilience of our natural environment by restoring degraded habitats and habitat creation;
-  Tackle key pressures on species and habitats;
-  Improve our evidence, understanding and monitoring; and,
-  Put in place a framework of governance and support for delivery.

At the end of this report, an Action Plan is provided in Appendix B which aligns with the NRAP objectives.

🌿 The Vegetation Management Review

In June 2018, Jo Johnson MP (acting Minister for Rail), instructed John Varley to undertake an independent review into Network Rail's approach to vegetation management across England and Wales. This followed concerns about the impact that tree felling (considered necessary for the safe operation and performance of the railway) was having on nesting bird populations' (Varley, 2018). The Varley Review¹⁵ identified six recommendations in relation to lineside vegetation management, these are:

1. The Government must set out a clear policy position for Network Rail in terms of delivering for the environment.
2. Appropriate governance must be put in place at organisation, route, and project level.
3. Network Rail should publish an ambitious vision for the lineside estate.
4. Network Rail must value and manage its lineside estate as an asset.
5. Network Rail must improve its communication with affected communities.
6. Network Rail should lead a cultural change for valuing nature and the environment.

In response to this review, Andrew Jones, the Secretary of State at DfT responded that Network Rail and DfT will work towards acting on the six recommendations. It was acknowledged by Andrew Jones that Network Rail is *"one of the largest landowners in the whole of the UK"* and that there will have to be *"a change in governance, organisation and culture within Network Rail, to ensure that these activities are better aligned towards achieving national biodiversity goals"*.

The objectives and actions which are stated in this document all contribute towards realising the recommendations within the Varley Review.

🌿 The Department for Transport's Lineside Policy

The 'DfT Policy' (dated July 2019)¹⁶ is the Department for Transport's (DfT) response to its recommendations from Varley Review. The policy statement addresses the first of the Varley recommendations: *"The government expects well designed and maintained habitat management of its lineside estate to be fully integrated into Network Rail's objectives, culture, decision-making and management processes..."* and *"...expects Network Rail to carry out activities in a way that minimises harm, and wherever possible improves, the natural habitat"*.

¹⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/759698/valuing-nature_a-railway-for-people-and-wildlife-the-network-rail-vegetation-management-review.pdf

¹⁶ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819833/enhancing-biodiversity-and-wildlife-on-the-lineside.pdf

Network Rail's Response to the Varley Review

Network Rail responded to the Varley Review in the document 'Valuing Nature a railway for nature and people. Response to the review of our vegetation management'¹⁷.

As a response to the Varley Review, Network Rail formed the Sustainable Land Use Programme (SLUP) board, which involved key stakeholders from across the business. The SLUP board provided funding to Wales & Western for the Biodiversity Implementation Programme (BIP). The BIP was the regional tool to implement the recommendations from the Varley Review, and funded demonstration projects (referred to as 'Pilot Sites') across the Region. The Pilot Sites provided deliverables including standard report templates, improved ways of working including guidance, and trialling habitat management techniques on our lineside. The BIP programme also laid a foundation for improved stakeholder engagement.

One of the main learning outcomes from the Pilot Sites projects was to promote improved decision-making around future habitat management, including habitat creation for both compensation and biodiversity enhancement activities. The Pilot Sites projects demonstrated the importance of the preliminary ecological appraisal is a vital stage in the decision-making process for habitat management works in order to identify what the existing habitats and species. Baseline data collected provided information on existing biodiversity so that we could work to enhance the habitat to support existing wildlife and species, rather than to for instance plant trees where it might not be beneficial as another existing priority habitat could be present. Benefits of this programme of works has included embedding consideration of ecological constraints into planning of works, with project managers in the delivery teams gaining confidence in how to integrate ecology into their planning and delivery of work. A final report



Photo 1 Train travelling near Ynys Hir RSPB nature reserve (Photo credit: Angharad Owen, Network Rail)

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<https://cdn.networkrail.co.uk/wp-content/uploads/2019/07/Network-Rail-Recommendation-Action-Summary-Response-to-Vegetation-Management-Review.pdf>

from the Pilot Sites that will include a suite of Case Studies with shared learnings is being finalised by the DEAM Biodiversity & Ecology team. These lessons will be utilised in CP7 planning and delivery, to inform compensation for vegetation management on a larger scale and Biodiversity Net Gain (BNG) requirements. This includes provision for incremental biodiversity enhancements for large scale earthworks repairs in CP7, with this addition in the business plan unit rates as a result of learning from the BIP programme.

The BIP programme had far-reaching positive impacts on the way in which was manage biodiversity and ecology in the Region, with lessons learnt provided in areas including: remitting of works, reporting requirements,

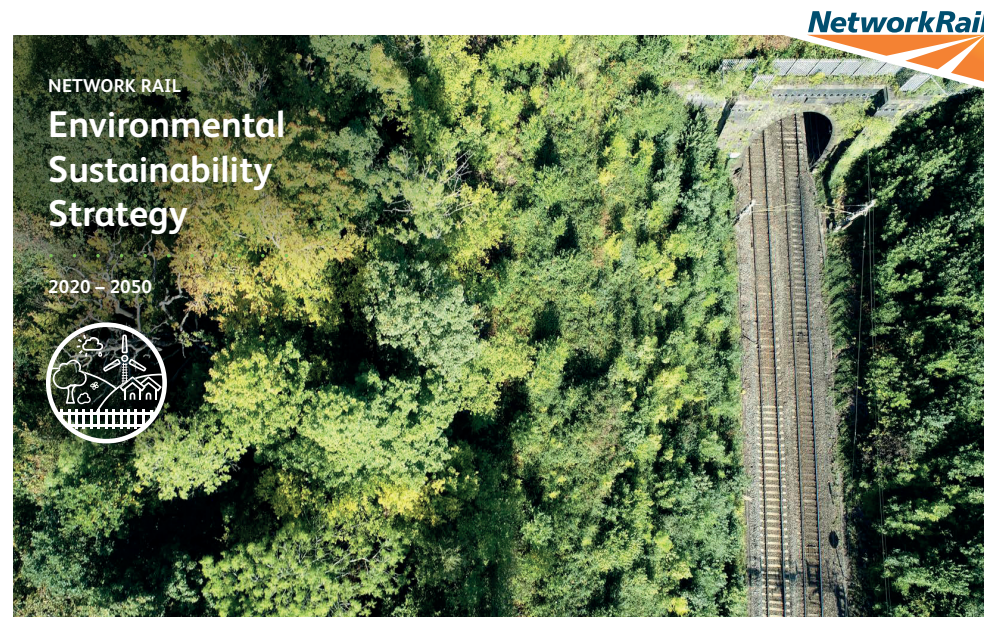


Photo 2 Network Rail Environmental Sustainability Strategy (2020 – 2050)

- 18 [Environmental sustainability strategy 2020-2050 \(networkrail.co.uk\)](https://www.networkrail.co.uk/environmental-sustainability-strategy-2020-2050)
- 19 [A National Nature Network Sustainable Land Use Strategic Framework \(networkrail.co.uk\)](https://www.networkrail.co.uk/a-national-nature-network-sustainable-land-use-strategic-framework)
- 20 <https://safety.networkrail.co.uk/wp-content/uploads/2016/03/Environment-Policy-2015-Signed.pdf>
- 21 <https://safety.networkrail.co.uk/wp-content/uploads/2018/06/Biodiversity-planning-and-managing-Guidance-Note.pdf>

procurement processes, communication with stakeholders, planning of work, pre-construction information, delivery, collaboration and providing evidence to support resource requirements. Through employing internal Ecologists within the Route and in the Regional Asset Management team to provide direct support and advice to their colleagues on managing ecology and biodiversity this has provided demonstratable cost savings. Efficiency related to internal support with programming and planning of work effectively has also been demonstrated.

The Network Rail Sustainability Strategy (2020 -2050)¹⁸ has a key vision to *'serve the nation with the cleanest, greenest mass transport. We want to put passengers first, help passengers and freight users to make green choices, support local communities and be a good neighbour'*. One of the four key priorities for Network Rail is for an *'Improved biodiversity of plants and wildlife'*.

In April 2022, Network Rail published the strategic framework 'A National Nature Network'¹⁹, with an aim to achieve the ambitious environmental and performance targets that have been presented in our responses to the Varley Review including the Sustainability Strategy objectives. Network Rail have existing policy and guidance notes which provide information on how we manage biodiversity, these include 'Environment and social performance policy'²⁰ and the 'Planning and managing biodiversity guidance note'²¹.

Through complying with these documents that have been produced as a response to the Varley Review and ways of working, we are also concurrently working towards our Section 6 duty under the Environment Wales Act 2016, in the exercise of our functions in Wales.

Weather Resilience and Climate Change Adaptation

Network Rail works closely with many governmental and specialist organisations to prepare our railway for the climate changes projected over the next few years, decades and beyond. Network Rail has produced a ‘Weather Resilience and Climate Change Adaptation’ (WRCCA) Strategy²² and a Wales specific ‘Route CP6 Weather Resilience and Climate Change Adaptation Plan (WRCCAP)’²³. The Wales Route’s updated plan reports Network Rail’s progress and sets out the plan for CP6 and beyond. The plan also updates on our vulnerability and impact assessments to account for changes in the Network Rail WRCCA strategy and guidance.

It is acknowledged in the WRCCA strategy document, that *“Climate change is projected to increase the frequency and severity of extreme weather and is likely to have significant impacts on our infrastructure in the future.”* The Strategy provides commitments for Network Rail to *“transform the way we work to ensure that, over time, Britain’s railway becomes resilient to projected future climatic conditions at the same time as managing high risk assets which are currently disrupting operations during periods of adverse and/or extreme weather.”*

The Shoreline Management Plan

A Shoreline Management Plan (SMP) is a large-scale assessment of the risks associated with coastal processes including tidal patterns, wave height, wave direction and the movement of beach and seabed materials. A SMP helps reduce these risks to people and the developed, historic, and natural environments. The Network Rail strategic interim study was published in March 2020²⁴. Network Rail had significant engagement with key external stakeholders including NRW, Gwynedd County Council, climate change experts and rail industry asset management teams in Wales & Borders route.

²² <https://safety.networkrail.co.uk/wp-content/uploads/2017/02/NR-WRCCA-Strategy-2017-2019.pdf>

²³ <https://cdn.networkrail.co.uk/wp-content/uploads/2019/10/Wales-CP6-WRCCA-Plan.pdf>

²⁴ [Understanding the impact of the Shoreline Management Plans on the railway across Wales & Borders - Interim Findings - Network Rail \(readkong.com\)](#)



Photo 3 Barmouth Bridge (Photo credit: Network Rail)

THE FUTURE

A railway for People and Wildlife



This section highlights examples of how the Wales Route are already showing commitment towards fulfilling the requirement of the Sections 6 duty as a Public Company in Wales.





Embedding specialist internal capability on the Wales Route

Over the current CP6 (2019 – present (ending March 2024)), Network Rail on the Wales Route has illustrated strong commitment to embedding Ecologists with technical expertise into the Maintenance Delivery teams. It has proven difficult to recruit during the pandemic, however we do currently have five Ecologist roles which have become integrated into the Maintenance delivery teams as a resource to support with planning and delivery of work with regard to advising on biodiversity and ecology. The Wales Maintenance teams are also committed to recruiting two Senior Ecologist roles to provide line management to the existing Ecologists in the DU's. The Ecologists within the delivery teams provide toolbox talks and method statements, in addition to supervising works, providing support for planning work to be compliant with relevant legislation, and assisting with procurement of ecology surveys across the Route. We also have generalist Health Safety and Environment (HSE) staff who are embedded within our delivery organisations to provide first contact support.

The DEAM Biodiversity & Ecology team provides overarching strategic and technical support across the functions, including support to the planning and delivery of major infrastructure projects, including advice on

requirements for survey, mitigation and monitoring. The DEAM Biodiversity & Ecology team has also prepared key guidance documents to assist the teams with planning their work, template documents, guidance notes, an Ecologist Starter Pack, created a shared depository for reports, and we are currently working on an Ecology Database tool.

Increasing our internal technical support with regard to Ecology aligns with the NRAP objectives to:

-  Improve our evidence, understanding and monitoring.
-  Tackle key pressures on species and habitats.
-  Safeguard species and habitats of principal importance and improve their management.
-  Engage and support participation and understanding to embed biodiversity throughout decision making at all levels.

An example of where specialist internal advice on projects is the Britannia Bridge, where in 2022 the DEAM Ecology team identified a requirement for specialist expertise to advise on Peregrine's that had been identified to be resting on masonry portcullis on the bridge. The internal Ecologists within DEAM liaised with both external and internal stakeholders to understand the concerns and also requirements. Network Rail remitted for the Contractors delivering the inspection and repair works to engage with

a Raptor Ecologist, which resulted in Ecologists from Raptor Aid²⁵ assisting with external stakeholder liaison (including the RSPB, NRW and the Treborth Botanical Gardens), undertaking monitoring and providing advice on licensing requirements. It was assessed that the peregrines using the site were not breeding. Provision of this specialist expertise from an external specialist, but also the internal expertise within the DEAM organisation was beneficial in this instance. Situations like this can be positive for public perception of Network Rail when it can be demonstrated that a sensitive approach to the situation is happening. The issues we faced at the Britannia Bridge, are an example of how Network Rail on a daily basis has to balance safety needs of the operational railway (and in this instance also the highway that shares the use of the bridge) while meeting our environmental obligations (including the Section 6 duty). This project was a great example of how the project team worked with external stakeholders to find a pragmatic but sensitive way of working in order to complete inspection work and maintenance of the structure.



Photo 4 Britannia Bridge (Photo credit: Network Rail)

Network Rail's progress to integrate Biodiversity and Ecology into our BAU

The Wales Route also has strong links via the DEAM Biodiversity & Ecology team, with the Technical Authority who set the framework for Biodiversity and Environmental management. The Environment Manager (Biodiversity & Ecology) in Wales & Western, made a significant contribution to the new Sustainable Land Use e-Learning modules which have a strong focus on ecology and biodiversity. The first introduction stage of e-Learning modules are available to all Network Rail staff.

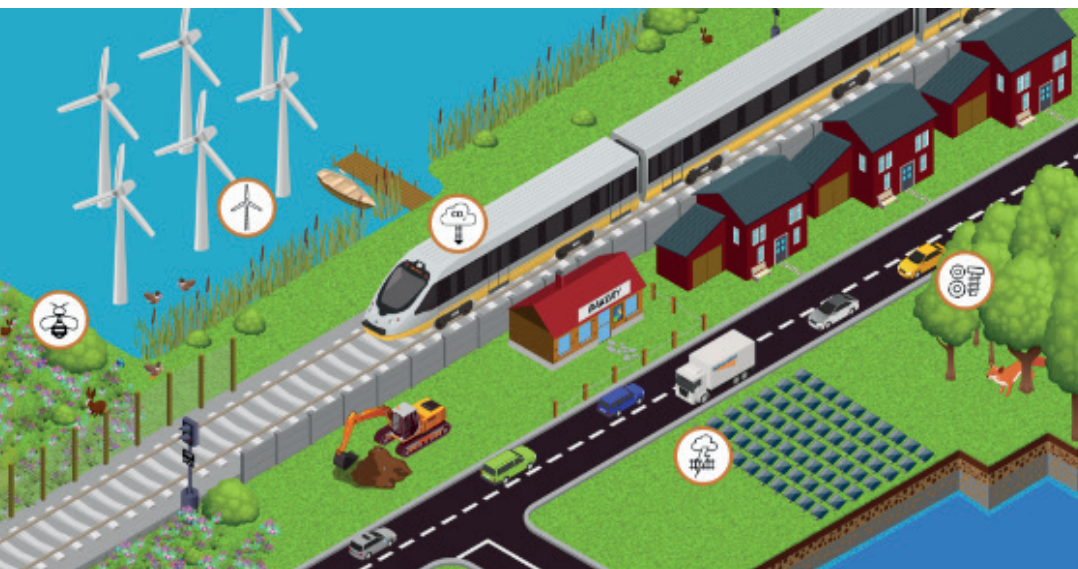


Figure 5 Screenshot of Network Rail's Introduction to Sustainable Land Use E-Learning
(Image credit: Network Rail)

Planned project work is managed through the 'Project Acceleration in a Controlled Environment' (PACE) process by our Capital Delivery organisation. As part of this process there are 'Environmental Management and Social Performance' (EMSP) deliverables, which cover ecology and biodiversity. Network Rail published a new Standard that applies to PACE projects, which is the 'Environmental and Social Minimum Requirements – Design and Construction' (REF: ENV_015) in June 2021. This new ENV_015 standard references the 'ENV_122 Biodiversity Standard'.

For reactive works, Ecologists provide support to planners, delivery managers and site operatives in the form of providing pre-construction surveys, site supervision and reporting. The Ecologists provide advice on whether protected species or sites (including local and statutory sites) might be impacted by the works. Where applicable, protected species licences and any permissions required are gained prior to works commencing.

Future plans to increase the awareness, understanding and knowledge around biodiversity matters include an Ecology Roadshow across the Wales Route to educate and inspire frontline staff, cascading 'Lessons Learnt' and 'Case Studies' of both best practice and also learning from our mistakes, and highlighting Ecological requirements through the SHE packs which are presented at periodic team briefs.

Network Rail's TA led on producing a range of strategic Policy and Guidance for the rail network (including Wales). This was with the collaboration through working groups with key regional representatives, including contribution from the Wales & Western region.

These have included:

- 📄 Network Rail (2020) Biodiversity Action Plan
- 📄 Network Rail (2021) Railway Sustainability Design Guide
- 📄 Network Rail (2022) Sustainable Land Use Strategic Framework
- 📄 Network Rail (2021) State of Nature Region Reports
- 📄 ENV122 Biodiversity Standard and Habitat Management Plan requirements
- 📄 Network Rail (2020) Environmental Sustainability Strategy 2020-2050
- 📄 Internal Network Rail 'Sustainable Land Use' e-Learning modules

Looking ahead, the DEAM Biodiversity and Ecology team will help produce the HMPs to inform future VMPs, in collaboration with key stakeholders across the Route and Region. These management plans will be based upon the ecological baseline survey information and an Ecologist will be involved in forming these plans with the Asset Management team. The new Ecology Database that is in development, will be the tool to record what management prescription is required per eighth of a mile, which is the recognised standard distance that Network Rail currently manage lineside inspections and other Assets.



Photo 5 Pont Briwet, Penrhyndeudraeth (Photo credit: Angharad Owen, Network Rail)

🌿 Creating a baseline

Previously we have undertaken surveys on a project-by-project basis. However, as part of our CP6 business planning process for vegetation management we commissioned targeted surveys of our lineside vegetation. We will continue to undertake the project-based surveys until the comprehensive baseline is established alongside advances in technology mapping. These surveys provide a baseline information resource which the Wales Route can use to plan their work and enable compliance with wildlife legislation. A baseline survey of the Wales Route will provide an overarching baseline dataset for habitats and species present.

In addition to this ongoing programme of baseline walkover surveys, the TA commissioned a habitat survey through UKCEH which aims to provide a tool for a high level summary of habitat types, to understand the requirements of wildlife in the present and under future climate change events. This work was completed by UKCEH in December 2020 and is illustrated in a layer on GeoRINM. As a region we look to ground truth and add to the granularity alongside the baseline surveys.

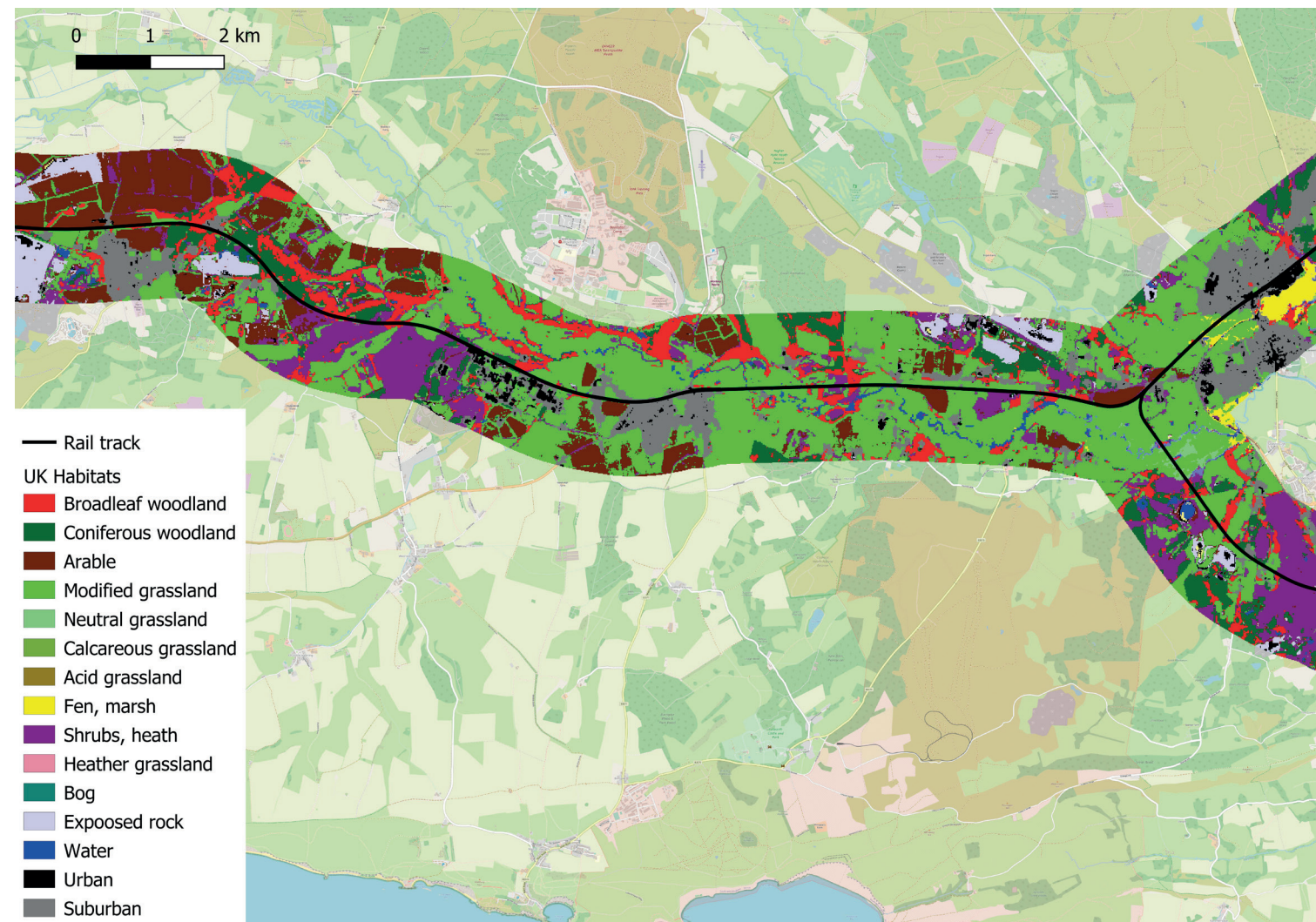


Figure 6 Example map from the UKCEH habitat mapping commissioned on behalf of Network Rail (Image credit: Network Rail)

Providing a Green Corridor for Wildlife

Our lineside has a considerable number of trees and hedgerows which Planning Policy Wales Edition 11 (PPW11)²⁶ describes these habitats as ‘important connecting habitats for resilient ecosystem networks and make a valuable wider contribution,’ for instance as a corridor across the landscape for movement of rare species including Dormice. Connecting habitats and ecological networks is a key attribute of ecosystems and our land connects communities and habitats across the landscape. Indeed connectivity is an attribute of the DECCA framework for ecosystems resilience and is also an aspect of ‘building resilience’ under the SMNR principles.

The lineside vegetation of the railway lines across Wales can provide a network of green corridors which wildlife use for navigating, commuting, and habitat for foraging and shelter. These green corridors are in the form of hedgerows and lines of trees, or dense scrub. Network Rail manage these vegetation corridors firstly with safety in mind, whilst being sympathetic to the wildlife that use them. We work with Ecologists and specialist tree surveyors (Arboriculturalists) who have been trained in identifying the features trees. The Ecologist identifies potential use by protected species, whilst the arboriculturalist identifies those trees which are hazardous and dead, decaying or dying (DDD) for instance. Whilst the safety of the line, our people and its users are paramount, Network Rail are committed to compliance with wildlife legislation and to retaining a wildlife corridor wherever there is space to do so.



Photo 6 Train travelling through Llwyngwril showing the lineside vegetation
(Photo credit: Angharad Owen, Network Rail)

🌿 Sharing our lineside with Wildlife

In April 2020, Ecologists were integrated in the Director of Engineering and Asset Management (DEAM) team, to provide an overarching technical advisory role. With Ecologists integrated into the business at this level their work involves strategy and planning of work from the outset, which is then filtered down to the delivery teams and allows biodiversity to be embedded as a key consideration in decision-making. The DEAM Ecologists attend monthly team briefs of the Regional Asset Management teams for Geotech, Lineside and Drainage which is considered the area with the highest level of risk and impact with regard to biodiversity and ecology from maintenance and renewal activities.

Network Rail owns, maintains, and renews the various assets that make up the railway infrastructure, in order to provide train paths for train operating companies to run services. Where we undertake major engineering works our processes are written to consider the impact on protected species and potential mitigation for works. For instance during habitat management works, we regularly create habitat piles which are secured so as to avoid impact to the Railway infrastructure.



Photo 7 Habitat piles created on the South Wales Main lineside (Photo credit: Nathaniel Legall, Network Rail)

Regular earthworks inspections are required to carry out visual monitoring of the embankments, soil cuttings, and rock cuttings and these inspections require strip clearance of vegetation to ground level. Our Asset Manager in Geotech considered how we could have a reduced impact on the existing habitats from the original requirement for vertical and horizontal strips which may result in a fragmented habitat. The new requirements is for perpendicular 'T' shaped strips as shown in Figure 7. Through alternating these T-shaped strips across the embankment, this allows earthworks inspections to be completed without resulting in habitat fragmentation. The Network Rail Asset Management team have modified the original requirements for the locations of the vegetation removal strips within certain 5-chain length to T shapes to provide a continuous strip of vegetation specifically with dormice in mind.

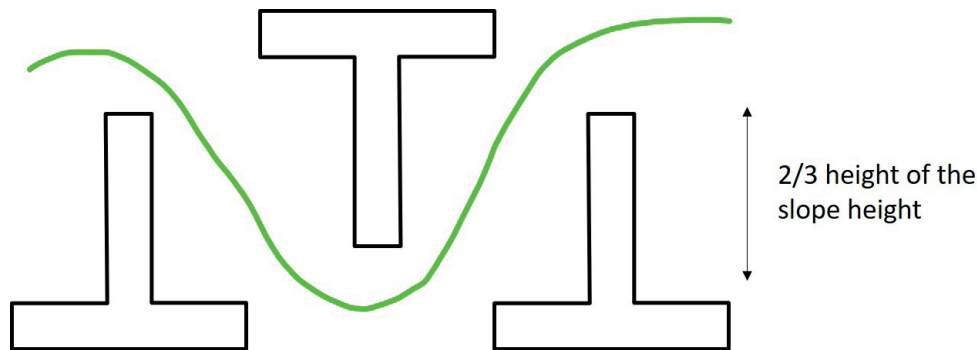


Figure 7 Requirement for 'T'-shaped vegetation strips which reduce impact on existing vegetation and habitats on site (Image credit: Simon Tovey, Network Rail)



Photo 8 Natterjack toad on Rail (Photo credit: Anna Humphries, Network Rail)

An example of where we have engaged with external stakeholders is where the Maintenance Ecologist engaged with North Wales amphibian and reptile conservation (ARC) group at Bagillt in 2022 on the delivery of drainage works where flooding had previously occurred during times of heavy rainfall. The location of the drainage works was within 100m of the Dee Estuary suite of designated sites and also within an area with potential for Natterjack toads. There is a breeding population of natterjack toads *Epidalea calamita* adjacent to the Site at Bagillt, which is a result of a successful re-introduction programme that was sponsored by Network Rail in 2018²⁷. In 2022, Network Rail employed the services of a specialist natterjack licenced ecologist from ARC to act as an ECoW, undertaking toolbox talks and pre-works searches of the vegetation in the vicinity for toads, and other herpetofauna.

🌿 Pollinators

Network Rail continue to seek opportunities to improve our lineside and habitats on our land for pollinators. An example of this is the Llanelli Sidings Pilot Site project, where a Sidings was identified by the South Wales Maintenance team as having potential for biodiversity enhancement. Our internal Ecologist undertook an initial preliminary ecological assessment in 2021 and identified species-rich grassland with potential for invertebrates. A specialist survey was procured which recorded Dingy Skipper (Listed on Section 7 of the Environment (Wales) Act 2016) and Common Bird's-foot Trefoil which the caterpillars of this butterfly live on. The BIP programme funded work at this site to remove scrub including buddleia, grass cutting late in the season and also to demarcate specific areas for operatives to avoid in this Sidings area that is still occasionally in use.

🌿 Use of innovation to avoid negative impacts on Ecology

On the Wales Route we have many internal colleagues who have a keen interest in Ecology and conserving biodiversity and Network Rail continue to seek new methods to find efficiency with delivery of work and to have the least amount of impact on wildlife. A machine that we have used wherever possible is the long arm reach which allows removal of Ash trees having the least amount of impact on the ground flora and fauna.

For hard-to-reach locations, such as on cuttings, where it would be difficult to access without machinery or rope access, we also utilise mobile elevated working platforms (MEWPs). These can be used by the Ecologists to undertake pre-construction checks for instance.





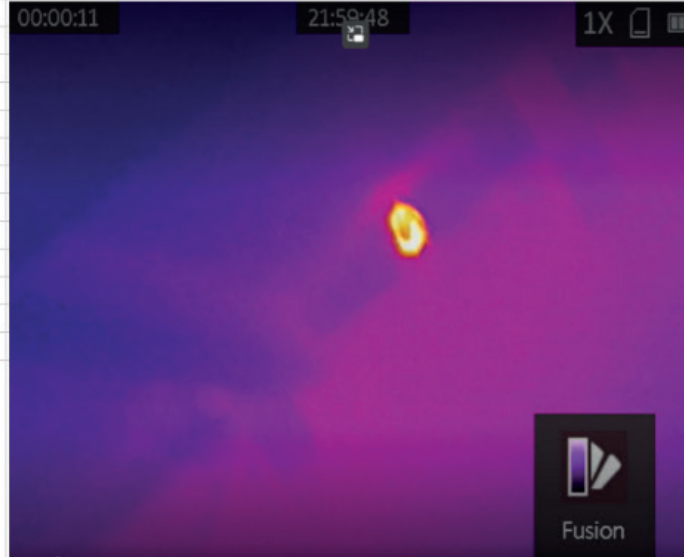
Photo 9 & 10 Long reach tree cutter (Photo credit: QTS)



Photo 11 MEWPs that have been adapted to run on the Railway (Photo credit: QTS)

The use of technology for biodiversity and ecology assessments is a fast-emerging area of expertise. Internal Ecologists at Network Rail have trialled night-vision thermal monocular to assist with vegetation assessments during pre-construction surveys where night-time working is the only access available at that location (due to health and safety constraints of working on the Railway line with difficult terrain, main lines and limited clearance for instance). Using this equipment has also avoided destructive searches of vegetation such as through dense bramble for example.

Images from trial

Deer		Bird nest in scrub		Hanging Bat	
Distance from animal	50 - 100 m	Distance from animal	20m	Distance from animal	5m
Type of light	Pitch black	Type of light	Pitch black but lit up with lights on track	Type of light	Pitch black
Able to see animal without monocular?	No	Able to see animal without monocular?	Despite using really powerful lights, the ecologist could not see this bird without the thermal scope because it was too camouflage. By using the scope, they were able to identify the nest and	Able to see animal without monocular?	With a torch. Using thermal monoculars is a far less obtrusive method of detection and allow

Photo 12 Thermal imagery captured during trial of thermal imaging equipment for Ecology surveys (Photo credit: Network Rail)

⚡ Dealing with the threat of Ash Dieback

The Tree Council prepared an Ash Dieback toolkit for Network Rail in June 2020. In addition, the Wales Route also prepared an internal document 'Network Rail Wales Route Ash Dieback Action Plan' in September 2022. The spread of Ash Dieback across the Welsh landscape has progressed at an unanticipated rate, with a significant amount of Ash being recorded on our lineside through our specialist hazardous tree surveys and inspections. Wherever possible we aim to retain diseased trees through coppicing and pollarding rather than only removal.



Photo 13 Crown reduction at the Cliff Farm Pilot Site on SWM2 in 2022 (Photo credit: Network Rail)

⚡ Engagement with adjacent landowners and key stakeholders

It is recognised that the land owned by Network Rail can provide a valuable wildlife corridor at scale and therefore it is pertinent that we consider the wider landscape when undertaking our work. We aim to become involved with projects which have a Landscape Scale approach to biodiversity. The DEAM Ecology team are actively seeking opportunities to collaborate on nature-based solutions with external stakeholders, such as finding opportunities for habitat compensation off-site.

As previously stated, Network Rail already have in place excellent working relationships with key stakeholders and are already involved with strategic planning in Wales. For instance, since 2016 Network Rail have a Memorandum of Understanding (MoU) with NRW which has greatly assisted our work, providing a key central contact for our staff to communicate directly with. Network Rail will complete the MoU refresh in 2023 with an agreement in place and individual annexes being agreed currently.

On the Wales Route we have staff with specific roles to have an interface with the Public, including dealing with public complaints, lineside neighbour issues and communications. Our Customer Support team also work with local community groups and issue community licences for groups to e.g. plant flowers, or for gardening on Network Rail land. In 2022, Network Rail collaborated with Transport for Wales to install wildlife friendly planters at train stations across Wales.

We aim to become more involved with working with key stakeholders and local landowners, either with a common interest in biodiversity or with their own Section 6 duty that they need to comply with. We aim to target working with the following:

- Public
- RSPB
- The Welsh Government
- National Trust
- Local Wildlife Groups and projects
- The Wildlife Trusts in Wales
- Natural Resources Wales
- Woodland Trust
- Transport for Wales

For many of the Pilot Site projects delivered through the BIP, the DEAM Biodiversity & Ecology team engaged with external stakeholders. On the Friog Corner Pilot Site, Network Rail was approached by Snowdonia National Park Authority (SNPA) and Celtic Rainforest Project Manager requesting collaborative working to help achieve the eradication of *Rhododendron ponticum* from the south-east corner of the national park. These works contribute to a wider project funded by EU's LIFE Programme to remove *R.ponticum* for the long-term future of the Celtic Rainforests. Each mature *R.ponticum* plant can produce up to a million seeds annually, with the seed being so tiny that it be spread by the wind and on clothing and forestry equipment. This makes eradication of all areas of *R.ponticum* vitally important to the long-term success of the project. Friog is also at a Coastal site, and as the seeds can travel some distance on prevailing winds, it is considered that tackling this coastal location is vital to stop spread of this invasive non-native species (INNS). Use of drone footage to provide the extent of *Rhododendron* at this location was a useful tool for planning the clearance works. In 2021, Network Rail employed contractors to undertake an initial clearance of the area along the Railway line, with the next stage planned for 2023. The location at Friog was challenging due to steep sided cliffs, prevailing winds, vicinity of designated sites and a road above the Railway line.



Photo 14 *Rhododendron ponticum* on land adjacent to the Railway (Photo credit: SNPA)

🌿 Service Level Agreement with Aderyn

Network Rail entered into a Service Level Agreement (SLA) with the Wales Biodiversity Records Centres through Aderyn at the beginning of 2019. Aderyn is the biodiversity Information and Reporting Database of Local Environmental Records Centres Wales, collating all the data held by the four individual records centres into one place. This provides a fantastic wealth of information and intuitive database of biodiversity information.

The Wales Route have utilised this SLA which allows a limited number of licences providing direct access to the biodiversity information to our selected individuals who frequently conduct database searches to support out work. Through supporting the Local Records Centres in Wales through this SLA, this also supports wider efforts towards biodiversity and nature conservation across the extent of Wales.

🌿 Wellbeing and improving connection between people and nature

A common theme in the new legislative framework in Wales and that which is included in the Marine Area Profile (published by NRW), is that of the connection between spending time in nature and that of health and wellbeing. The railway provides transportation for the public, with its main ethos being 'putting passengers first'. Connecting cities and rural areas, inland to coastal sites, the railway is in an important route for the public to use to connect people with nature. The beautiful scenery of Wales provides a backdrop for commuters and holiday makers with some of the most breath-taking views in Wales only being seen from the train.



Photo 15 Train travelling along the coastline near Ffiog (Photo credit: Angharad Owen, Network Rail)

Conclusions and Summary



Network Rail are fully committed to their sustainability obligations and have several existing workstreams which enable us to comply and meet the requirements of Welsh legislation with regard to the Section biodiversity duty. These include the Sustainability Strategy, Sustainable Land Use Strategic Framework²⁸ and 'Management of Biodiversity' Standard ENV_122. It is recognised in the business that we are at the beginning of our journey, and we have areas for improvement including in relation to embedding biodiversity into our decision-making and planning of work.

Into the next Control Period (2024 – 2029) we will be focusing on completing Habitat and Vegetation Management Plans across the Wales & Western Region, prioritising these for areas where there are designated sites or recent records for protected species gathered through from our baseline surveys. These plans will incorporate requirements for biodiversity compensation and enhancement, including signposting opportunities to work with external stakeholders through for instance the Nature Networks and Local Nature Partnerships. We will progress with the baseline surveys across the Route to inform our ongoing maintenance and major infrastructure projects, whilst also looking for opportunities to enhance biodiversity on our land where feasible.

Our internal Ecologists will be valued by the business and continue to support with driving forward a cultural change in the way in which we manage our lineside habitats and ecological constraints whilst undertaking our work internally & with our competent suppliers.

Highlights

Network Rail continue to progress with improving the way in which we are effectively managing biodiversity and embedding biodiversity in decision making at all levels. We are achieving this through shared learning & case studies, provision of E-Learning modules, increasing the number of internal Ecologists who can provide direct advice to colleagues and therefore safeguard species and habitats.

The Wales Route is also increasing our evidence, understanding and monitoring through ground-truthed ecology surveys which then inform how we can maintain and enhance biodiversity when undertaking our work. UKCEH have also developed a habitat mapping tool on behalf of Network Rail which is a tool used to report on biodiversity and nature, and assist with identifying opportunities for connecting habitats across the landscape.

Network Rail funded pilot site projects across the Region, which included sites in Wales, have aided and improved the Wales Route's practical delivery of projects to benefit biodiversity. Case Studies are in draft that can then be referenced and used to inform future projects, management and programmes of work.

Key outcomes

The result of Network Rail's Ecologist's promoting to embed biodiversity in our decision-making is that colleagues across the business are identifying more opportunities for us to improve our ways of working with regard to managing biodiversity and ecological constraints. Across the business Network Rail staff involved with all aspects of work from planning, strategy and delivery have gained awareness that both habitats and species need protecting and that we can find ways of working that will allow us to complete our work without having a detrimental impact on the wildlife that we share the lineside with. There is also a better understanding around why and when we need permissions in place and improved engagement with external stakeholders when planning work. Our delivery teams also look for opportunities to enhance our estate for biodiversity, such as on disused sidings and junctions.

Improved communication of terminology and requirements around the subject of ecology and biodiversity has been key, but we still have progress to be made in order to ensure that messaging is at the right level for the target audience. Through the raising of awareness through communication tools, an outcome is that colleagues have been requesting development of a standalone Ecology Database that will present information at different levels depending on the requirements of the user. This database and system are currently at the inception stage with both the Network Rail IT department and an external Consultancy involved in the development.

The pandemic resulted in lower passenger numbers and impacted revenue and therefore funding for Network Rail was subsidised from government.

The recovery continues to be challenging within the financial envelope from government and is challenging to maintain a core safe and performing railway. This has resulted in funding to support biodiversity enhancement being pressured alongside all areas of the business, including that to employ specialist expertise. As an outcome this has resulted in better integration and cross-team working to find efficiency, including with the supply chain in order to be coordinated in how we manage biodiversity and ecology across the functions. We have also found efficiencies and looked at best practice from wider stakeholders, whilst working closely and collaboratively with governing bodies and authorities.

Issues

Network Rail own a linear corridor of habitat that connects the landscape. However, this corridor is not a uniform width, and in some instances, there is no viable land to deliver biodiversity benefits. Therefore we need to work with adjacent landowners and stakeholders to deliver net-benefits for biodiversity.

Network Rail's DEAM Environment Manager (Biodiversity & Ecology) is actively seeking opportunities to collaborate with external stakeholders through the Nature Partnerships and Working Groups which align with the Area Statements. However, Network Rail are not able to stall their work in order to wait for future opportunities when we need to maintain a safe and reliable Railway line.

Summary of Key objectives set in the 'Network Rail Section 6 Summary Report (December 2019)'



Next steps to fulfil our biodiversity commitments	Theme	Summary of the objectives set in 2019	Progress between December 2019 and December 2022
1	Specialist technical expertise from Ecologists on Route	The Wales Route Ecologist to continue communication with the BTP Wildlife Crime Officer for Wales.	With changes in the organisation, the new role of Environment Manager (Biodiversity & Ecology) has remained in contact with the BTP Wildlife Crime team.
2	Specialist technical expertise from Ecologists on Route	The Wales Route to recruit additional internal Ecology support by end of 2020.	The internal capacity of Ecologists on the Wales Route has increased, to a current position of six Ecologist roles, and two new Senior Ecologist roles to support Maintenance. In the DEAM team, which provides overarching support to the delivery units, we have an additional two Ecologists and an Environment Manager who acts as a technical lead advisor on Biodiversity & Ecology across the Wales & Western Region. Due to re-organisation of the business, there has been some delay to recruiting into all of these new roles.
3	Network Rail's Biodiversity Action Plan	Network Rail Technical Authority to publish the Network Rail Biodiversity Action Plan in January 2020	BAP published in December 2020. Link to document: Our commitment to helping biodiversity – Network Rail
4	Network Rail's Biodiversity Action Plan	Network Rail to produce the template for the 'Route Level Biodiversity Action Plans' July 2020. Wales Route to publish their BAP in this format by end of August 2020.	This objective was replaced by the requirement to publish Annual State of Nature reports. Link to the report for 2020 /2021: Network Rail State of nature report
5	Network Rail's Biodiversity Action Plan	Network Rail to publish overarching Key Performance Indicators by end of 2020.	This objective is to be finalised by the start of CP7 (March 2024) and will be informed by DfT.
6	Providing a Green Corridor for Wildlife	Retention of a corridor of vegetation wherever it is practical to do so.	This is an ongoing objective continues to be considered wherever the Delivery teams identify it is practical and safe to achieve retention of vegetation along the boundary such as a hedgerow.

Next steps to fulfil our biodiversity commitments	Theme	Summary of the objectives set in 2019	Progress between December 2019 and December 2022
7	Providing a Green Corridor for Wildlife	Incorporate biodiversity as a priority in our Route Specific Habitat Management Plans. Wales Route to produce their plan by July 2020.	The Habitat Management Plans have been delayed. The HMP standard (ref: NR/L2/ENV/122/02) was published 6th March 2021. The Wales & Western region have planned for the delivery of habitat management plans to be via an Ecology Database which is in development.
8	Sharing our lineside with Wildlife	Wales Route teams to continue to work with Ecologists to protect the wildlife on the lineside.	Internally on the Wales Route we are continuing to progress with the cultural change around Biodiversity and Ecology. The new Ecologist roles are becoming integrated into business as usual. The overarching role of Environment Manager (Biodiversity & Ecology) has led on providing overarching technical support on Biodiversity and Ecology for the Region.
9	Sharing our lineside with Wildlife	Network Rail will look at options to plant wildflower meadows specifically to attract pollinators where it does not be detrimental to other Priority Habitats or Priority and protected species.	Work to identify sites to fulfil this objective continues to be progressed. In March 2021 the RAM GDL and colleagues from Capital Delivery visited the National Botanical Gardens in Carmarthen to learn more around potential seeding of embankments.
10	Use of innovation to avoid negative impacts on Ecology	Improve the knowledge base internally at Network Rail to allow staff to recognise opportunities to enhance biodiversity when programming or project managing.	Network Rail have produced eLearning modules around sustainable land use with a specific focus on Biodiversity and Ecology. In addition, we are building an internal suite of decision-making documents and reference material to assist teams with planning their work.
11	Use of innovation to avoid negative impacts on Ecology	Capital Delivery to continue to look at finding innovative solutions to lower the impact of our engineering works on the environment.	This is an ongoing objective, with assistance from external Contractors.
12	Use of innovation to avoid negative impacts on Ecology	Ecologists to work with Asset Management team to include ecological requirements.	Within the DEAM organisation in Wales & Western, we have a Biodiversity & Ecology team who are integrated within the Geotech, Lineside and Drainage team and provide overarching advice to other teams across the Region and functions.

Next steps to fulfil our biodiversity commitments	Theme	Summary of the objectives set in 2019	Progress between December 2019 and December 2022
13	Dealing with the threat of Ash Dieback	The Wales Route Ash Dieback Plan will be published in early 2020.	The Tree Council prepared an Ash Dieback toolkit for Network Rail in June 2020. In addition, the Wales Route also prepared an internal document 'Network Rail Wales Route Ash Dieback Action Plan' in September 2022.
14	Response to adverse weather events	The Wales Route to continue with the MoU with NRW.	The MoU between NRW and Network Rail is currently being refreshed with ongoing discussions between the organisations.
15	The Shoreline Management Plan	The date for publication of the Strategic Network Study is 2020.	Understanding the impact of the Shoreline Management Plans on the railway across Wales & Borders (networkrail.co.uk) was published in March 2020.
16	Engagement with adjacent landowners and key stakeholders	Form and maintain working relationships with target stakeholders.	The Environment Manager (Biodiversity & Ecology) in the Asset Management team has continued to maintain relationships with key stakeholders including Welsh Government, NRW, Transport for Wales (TfW), DCWW, SNPA) and the Royal Society for the Protection of Birds (RSPB). Further opportunities to form new working relationships through the Local Nature Partnerships in and seeking to engage with the revision of Area Statements will continue.
17	Targeting the conservation of key species	Network Rail will continue to support the Dyfi Osprey Project.	Network Rail have continued to support the Dyfi Osprey project with access across the railway line to the nest and also providing electricity to the CCTV which protects the nest from egg collectors.
18	Targeting the conservation of key species	Wales Route Ecologist to continue discussions with the Dyfi Beaver Project team around the feasibility of the scheme.	Ongoing discussions over the past three years with the Welsh Beaver Project, and Welsh Government who have provided funding to this project. There are ongoing discussions around funding from government to cover the costs around resource and mitigation for potential damage caused by beavers on our lineside if they are to be released into the wild.
19	Invasive non-native species management	Continue our work to tackle non-native invasive species through targeted treatment.	The RAM GDL team are working on a project to use AI to identify areas of Japanese knotweed on the Network Rail estate. The Delivery teams are progressing with their programme of work to target Japanese knotweed at targeted locations.

Next steps to fulfil our biodiversity commitments	Theme	Summary of the objectives set in 2019	Progress between December 2019 and December 2022
20	Organisational mitigation Licences for European Protected Species	Work towards gaining our first organisational licence by the 31st December 2020.	Due to delays in completing the Baseline ELR survey across the Route, and therefore not having the baseline data to identify where protected species licensing would be required, this has been put on hold.
21	Baseline Ecology surveys	Preliminary ecological appraisals to be completed for over 450 miles by end of 2020.	The deadline for this objective is the end of the Control Period (March 2023). There have been significant issues with procurement of these surveys, such as surveys not being to boundary and therefore needing to re-survey where insufficient information has been reported. Due to the spread of Ash Dieback since setting these Actions, the priority for funding has been to undertake the initial DDD tree survey in order to identify any Health & Safety risk. Network Rail do have a new habitat mapping tool produced by UKCEH that uses aerial imagery to identify habitats : Latest technology to improve thousands of miles of biodiversity – Network Rail but this has not been ground-truthed and needs to be refined.
22	Baseline Ecology surveys	All ELRs across Wales will have baseline ecology data completed by the end of CP6 (March 2024).	The Asset Management team has provided funding for these baseline survey to the Maintenance team as part of the Vegetation Management to become compliant with Standard 5201. This work is ongoing.
23	Service Level Agreement with Aderyn	The current SLA is due to expire in March 2020. Network Rail will continue will review the SLA periodically.	The Environment Manager (Biodiversity & Ecology), DEAM, continues to be the main point of contact for Aderyn and the SLA has continued to be renewed due to the benefits (including costs and time) which this agreement provides to Network Rail. It is a unique opportunity in Wales to have one point of contact to extract recent records from across Wales.

Action Plan for 2023 onwards, set against the NRAP Objectives



Next steps to fulfil our biodiversity commitments	Relevant NRAP objective	Summary of the objectives set in 2019 that will be carried over as Actions	Progress between December 2019 and December 2022
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2	Specialist technical expertise from Ecologists on Route	The Wales Route to recruit additional internal Ecology support by end of 2020.	The internal capacity of Ecologists on the Wales Route has increased.
3	Network Rail's Biodiversity Action Plan	Network Rail Technical Authority to publish the Network Rail Biodiversity Action Plan in January 2020	BAP published in December 2020. Link to document: Our commitment to helping biodiversity - Network Rail
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7	Providing a Green Corridor for Wildlife	Incorporate biodiversity as a priority in our Route Specific Habitat Management Plans. Wales Route to produce their plan by July 2020.	The Habitat Management Plans have been delayed. The HMP standard (ref: NR/L2/ ENV/122/02) was published 6th March 2021. The Wales & Western region have planned for the delivery of habitat management plans to be via an Ecology Database which is in development.

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8	Sharing our lineside with Wildlife	Wales Route teams to continue to work with Ecologists to protect the wildlife on the lineside.	Internally on the Wales Route we are continuing to progress with the cultural change around Biodiversity and Ecology. The new Ecologist roles are becoming integrated into business as usual. The overarching role of Environment Manager (Biodiversity & Ecology) has led on providing overarching technical support on Biodiversity and Ecology for the Region.
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10	Use of innovation to avoid negative impacts on Ecology	Improve the knowledge base internally at Network Rail to allow staff to recognise opportunities to enhance biodiversity when programming or project managing.	Network Rail have produced eLearning modules around sustainable land use with a specific focus on Biodiversity and Ecology. In addition, we are building an internal suite of decision-making documents and reference material to assist teams with planning their work.
11	Use of innovation to avoid negative impacts on Ecology	Capital Delivery to continue to look at finding innovative solutions to lower the impact of our engineering works on the environment.	This is an ongoing objective, with assistance from external Contractors.
12	Use of innovation to avoid negative impacts on Ecology	Ecologists to work with Asset Management team to include ecological requirements.	Within the DEAM organisation in Wales & Western, we have a Biodiversity & Ecology team who are integrated within the Geotech, Lineside and Drainage team and provide overarching advice to other teams across the Region and functions.
13	Dealing with the threat of Ash Dieback	The Wales Route Ash Dieback Plan will be published in early 2020.	The Tree Council prepared an Ash Dieback toolkit for Network Rail in June 2020. In addition, the Wales Route also prepared an internal document 'Network Rail Wales Route Ash Dieback Action Plan' in September 2022.
14	Response to adverse weather events	The Wales Route to continue with the MoU with NRW.	The MoU between NRW and Network Rail is currently being refreshed with ongoing discussions between the organisations.

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19	Invasive non-native species management	Continue our work to tackle non-native invasive species through targeted treatment.	The RAM GDL team are working on a project to use AI to identify areas of Japanese knotweed on the Network Rail estate. The Delivery teams are progressing with their programme of work to target Japanese knotweed at targeted locations.
20	Organisational mitigation Licences for European Protected Species	Work towards gaining our first organisational licence by the 31st December 2020.	Due to delays in completing the Baseline ELR survey across the Route, and therefore not having the baseline data to identify where protected species licensing would be required, this has been delayed.

Next steps to fulfil our biodiversity commitments	Relevant NRAP objective	Summary of the objectives set in 2019 that will be carried over as Actions	Progress between December 2019 and December 2022
21	Baseline Ecology surveys	Preliminary ecological appraisals to be completed for over 450 miles by end of 2020.	The deadline for this objective is the end of the Control Period (March 2024). There have been significant issues with procurement of these surveys, such as surveys not being to boundary and therefore needing to re-survey where insufficient information has been reported. Due to the spread of Ash Dieback since setting these actions, some funding has been diverted to deliver DDD tree surveys to manage the significant risk from the tree population in line with NR internal standards. Network Rail do have a new habitat mapping tool produced by UKCEH that uses aerial imagery to identify habitats : Latest technology to improve thousands of miles of biodiversity – Network Rail but this has not been ground-truthed and needs to be refined.
22	Baseline Ecology surveys	All ELRs across Wales will have baseline ecology data completed by the end of CP6 (March 2024).	Asset Management has provided some funding for the baseline survey to Maintenance teams as part of overall Vegetation Management to meet Standard requirements . This work is ongoing.
23	Service Level Agreement with Aderyn	The current SLA is due to expire in March 2020. Network Rail will continue will review the SLA periodically.	The Environment Manager (Biodiversity & Ecology), DEAM, continues to be the main point of contact for Aderyn and the SLA has continued to be renewed due to the benefits (including costs and time) which this agreement provides to Network Rail. It is a unique opportunity in Wales to have one point of contact to extract recent records from across Wales.

List of Acronyms

AI	Artificial Intelligence
ARC	Amphibian and Reptile Conservation
BAP	Biodiversity Action Plan
BAU	Business as Usual
BCT	Bat Conservation Trust
BNG	Biodiversity Net Gain
BTP	British Transport Police
CBD	Convention on Biological Diversity
CD	Capital Delivery (project organisation in Network Rail)
CEFA	Civil Examinations Framework Agreement
CEH	Centre for Ecology and Hydrology
CMSP	Continuous Modular Strategic Planning
CP6	Control Period 6 (2019 – 2024)
CP7	Control Period 7 (2024 – 2029)
DCWW	Dŵr Cymru Welsh Water
DDD	Dead, Decaying or Dying
DEAM	Director of Engineering and Asset Management

DfT	Department for Transport
ELR	Engineering Line Reference
EMSP	Environmental Management and Social Performance
EPS	European Protected Species
HMP	Habitat Management Plan
HSE	Health Safety and Environment
INNS	Invasive Non-Native Species
NERC	Natural Environment and Rural Communities (Act)
NBB	Net-Biodiversity Benefit
NRAP	Natural Resources Action Plan
NRW	Natural Resources Wales
MoU	Memorandum of Understanding
PACE	Project Acceleration in a Controlled Environment
PPW11	Planning Policy Wales, Edition 11
SHE	Safety Health and Environment
SLA	Service Level Agreement
SMNR	Sustainable Management of Natural Resources

SMP	Shoreline Management Plan
SNPA	Snowdonia National Park Authority
SoNaRR	State of Natural Resources Report
TA	Technical Authority (national standards framework owner within Network Rail)
TOC	Train Operating Companies
TPO	Tree Preservation Order
UKCEH	United Kingdom Centre for Ecology and Hydrology
WG	Welsh Government
WRCCA	Weather Resilience and Climate Change Adaptation
WRCCAP	Weather Resilience and Climate Change Adaptation Plan
VMP	Vegetation Management Plan