



Transport Scotland Biodiversity Strategy Summary

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Wildflowers on the M80



Transport Scotland/Angus Corby



Foreword

Alison Irvine
Transport Scotland Chief Executive

Scotland's natural environment is one of our greatest assets. From our ancient woodlands and peatlands to our rivers, lochs, and coastlines, biodiversity underpins our wellbeing, our economy, and our unique cultural identity. Yet, like many nations, we face a stark reality: the continued loss and degradation of ecosystems threatens not only the species that inhabit them but also the services they provide to society. As we move towards a net-zero future, it is essential that our efforts to decarbonise transport go hand in hand with decisive action to protect and enhance our natural world.

As the agency responsible for our nation's connectivity, Transport Scotland has a crucial role to play in this endeavour. Our transport network traverses diverse landscapes, interacting with a wide array of ecosystems and habitats. This presents both challenges and opportunities for biodiversity conservation and enhancement.

As Chief Executive, I am proud to introduce Transport Scotland's Biodiversity Strategy and Delivery Plan setting out how we will play our part in halting biodiversity loss and restoring nature, while delivering a transport system that is sustainable, inclusive, and resilient. The sectoral

This sectoral Strategy represents Transport Scotland's commitment to aligning with the Scottish Biodiversity Strategy to 2045, and its overarching framework. It outlines a comprehensive approach to minimising our negative impacts on nature and maximising our positive contributions to Scotland's unique biodiversity.

This Strategy is built around four strategic aims: to reduce the rate of ecosystem loss and degradation; to protect, restore, and enhance natural ecosystems; to increase landscape connectivity; and to avoid climate actions that harm biodiversity. These aims are underpinned by seven clear objectives - from embedding biodiversity into all our decision-making and promoting soil health, to managing invasive species, restoring habitats, and fostering meaningful partnerships with communities and stakeholders.

This is not just a plan for Transport Scotland - it is a commitment to future generations. A commitment to ensure that our transport networks do not come at the cost of nature but instead become part of its recovery. I look forward to working with our partners and stakeholders to create a transport network that truly works in harmony with nature, for the benefit of all Scotland's people and wildlife.

Together, we can build a transport system that continues to move people and goods efficiently, while also nurturing the ecosystems that sustain us all.

Executive Summary

Global biodiversity is experiencing an alarming decline driven by land use change, exploitation of natural resources, climate change, pollution, and invasive species. On average, global animal populations have declined by over 70% in only 50 years. In Scotland, wildlife has decreased in abundance by 15% since 1994 and one in nine species is at risk of extinction. The distribution of native flowering plants has decreased by half since 1970, affecting our pollinators, which play a crucial role in food production.

Scotland's transport infrastructure is fundamental to our nation's communities, businesses and visitors and is vital in providing access to essential services, such as healthcare and education. However, by its nature, the transport sector has historically contributed to biodiversity decline, through habitat loss and fragmentation, pollution, and traffic-wildlife collisions. As a national agency, Transport Scotland has already been working

towards mitigating impacts of new transport infrastructure on biodiversity and implementing sustainable practices to enhance it on the existing transport network. However, the locked-in impacts of climate change are already intensifying, resulting in more frequent extreme weather events and increasing threats to our native wildlife. These escalating pressures further complicate efforts to safeguard Scotland's unique biodiversity.

'Only by coming together to deliver substantial changes in the way we use and manage the asset which is our natural environment can we avoid irreversible damage to biodiversity.'

Scottish Biodiversity Strategy to 2045

This is a Summary document - for the full version please follow this link:

[Transport Scotland Biodiversity Strategy](#)



The A9 and Highland Mainline Railway, passing through ecologically sensitive upland landscape.

The Scottish Government's recently published Strategic framework for biodiversity sets out the actions needed to reverse biodiversity loss in Scotland. This Strategy articulates Transport Scotland's plans to use the opportunities presented by the strategic transport networks to align with and support delivery of the Scottish Government's goals of halting biodiversity loss by 2030 and reversing it by 2045. Transport Scotland recognises that the largely linear aspect of the land it manages lends itself well to landscape-scale habitat connectivity and restoration, while also presenting challenges including the spread of plant diseases and invasive non-native species (INNS).



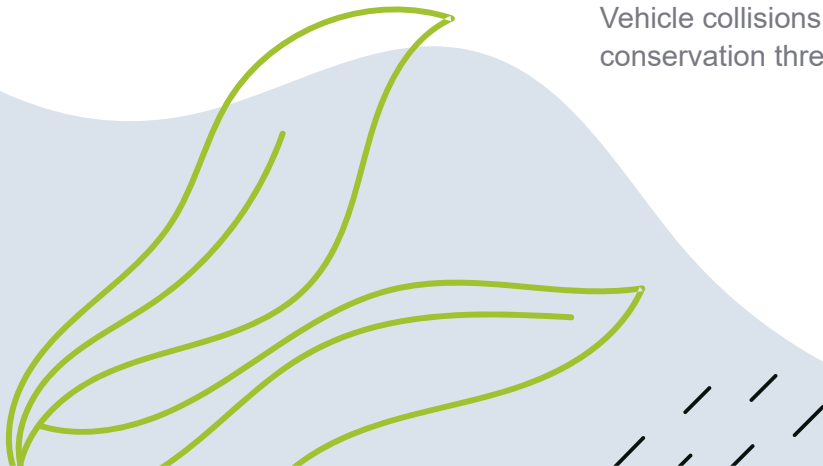
INNS - Japanese Knotweed



Vehicle collisions on rural roads are among the conservation threats to barn owls.



Black grouse, a native of Scottish upland areas, is on the Red List under the Birds of Conservation Concern review, and is threatened by habitat loss and fragmentation.





©Lorne Gill/NatureScot

Red deer stag

Chapter 1

Introduction



Introduction

Why the strategy is needed

- Scotland's biodiversity, which we depend on, faces a crisis
- Transport infrastructure contributes to this decline through habitat fragmentation, soil disturbance, pollution, invasive non-native species (INNS) spread, wildlife collisions and sub-optimal legacy design and management approaches
- National commitments, for example the Scottish Biodiversity Strategy (SBS), Scottish National Adaptation Plan (SNAP3), National Planning Framework 4 (NPF4), Natural Environment Bill, require action to halt biodiversity loss by 2030 and reverse it by 2045.

What the strategy aims to achieve

- Reduce ecosystem loss and degradation (especially from infrastructure projects)
- Protect, restore, and enhance natural ecosystems
- Increase landscape connectivity across linear transport corridors
- Avoid approaches that harm ecosystems



Caledonian pinewood, Scotland's only native coniferous forest, that once covered much of the country, has suffered centuries of decline is now protected under the European Habitats Directive. Although less diverse than lowland oak and ash woodland, it supports wildlife species that occur nowhere else, including capercaillie, black grouse and the Scottish crossbill (inset photo).

Case study

On A9 Dualling Programme trials of native low growing seed mixes were undertaken to inform the development of wild flora species mixes to use in central reserves. The resulting bespoke seed mixes, instead of the default stone chipping treatment within central reserves, are expected to benefit pollinators and enhance the wildlife habitat and connectivity along the road corridor.



Jacobs/Mark Lancaster



Jacobs/John Fowbert

Northern marsh-orchids growing on the verge of the A9 near Pitlochry.

Although widespread, there have been local declines in the range of the common blue butterfly, which is found in a variety of habitats, especially sunny, sheltered spots, including road verges.



Jacobs/Gareth Talbot

How the Strategy will deliver change

- Embed biodiversity in all activities, decision-making and supply chains
- Promote good soil health, storage, and management
- Manage the risk from INNS
- Preserve and increase landscape connectivity
- Improve existing habitats and their biodiversity benefits
- Restore and create high-quality habitats
- Promote public/stakeholder engagement and partnership working

Key themes

- Embedding biodiversity in practice
- Landscape-scale thinking
- Soil as a critical asset
- Tackling INNS
- Partnership working
- Monitoring progress

Case study

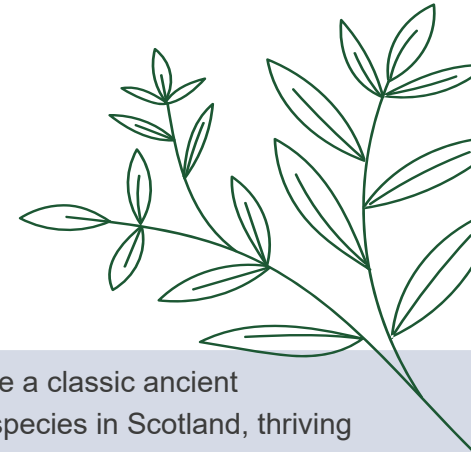
Realignment of previously canalised Swine Burn to return it to a more naturalistic and ecologically healthy state at Junction 1A on the M9 as part of the Queensferry Crossing Project.



Jacobs/John Fowbert

What the Delivery Plan adds

- Specific actions
- Targets
- Timelines (evolving as legislation updates)
- Monitoring indicators
- Required collaborations
- Promotion of positive changes to resourcing, procurement, and contracts



Jacobs/John Fowbert

Scottish bluebells are a classic ancient woodland indicator species in Scotland, thriving in healthy woodland soils. Ancient woodland should be retained and its vegetation and soils protected. The wholesale translocation of ancient woodland soils to attempt to mitigate direct impacts has been undertaken on some recent infrastructure projects, but there is currently little scientific evidence to prove that it will be successful in maintaining the ancient woodland soil microbiome, and soil handling in itself is disruptive to the soil structure.

Case study

In 2026, Scottish Canals is working with Falkirk Council, Forth Climate Forest, Clyde Climate Forest, John Muir Way employability trainees, and The Conservation Volunteers (TCV), including Falkirk High schools and Forth Environment Link, Tamfourhill community and primary school, to plant community orchards and stepping-stone woodlands (5m x 5m in area) along the Forth & Clyde Canal, the Union Canal, and at The Falkirk Wheel. At the same time Scottish Canals is restoring gaps in historic hedgerows, which are rich sources of forage and shelter for urban wildlife, and many of which were originally planted by the early eighteenth-century canal builders.

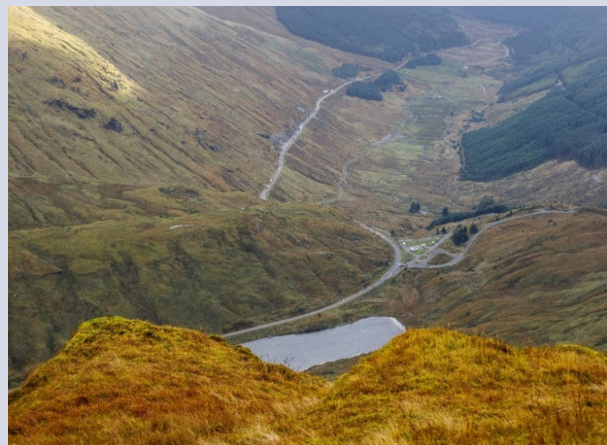


©Scottish Canals

Case study

Nature-based approach to slope management in Glen Croe

The A83, Rest and be Thankful – As part of a nature-based approach to slope management, Transport Scotland has planted native woodland on the steep slopes above the road to help stabilise the ground and support engineering works aimed at mitigating landslip impacts. In addition, the woodland creation expands existing habitat networks, strengthening ecological connectivity and supporting biodiversity.



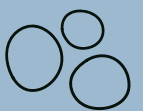
Jacobs/Maria Klimek

Case study

Network Rail, in partnership with Forth Rivers Trust and NatureScot, has completed a major project to restore 273 hectares of peatland at Knoxfauld Farm north of Dunblane. As well as supporting flood management by retaining more water and increasing climate resilience, the project aims to improve wildlife habitats and restore natural peatland processes. With climate change expected to bring more frequent extreme weather, nature-based solutions such as peatland restoration will play an important role in helping transport infrastructure adapt while creating more space for wildlife to thrive.



©Network Rail





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Scottish wildcat

Chapter 2

Strategic Aims



Strategic Aims

Transport Scotland must ensure its own policies and programmes align with the various national plans and strategies relating to biodiversity. Achieving these targets will be challenging particularly the main objectives for the nation to be nature-positive by 2030, and to have restored and regenerated biodiversity by 2045.

Four Strategic Aims will assist in delivering Transport Scotland's Biodiversity Duty and its contribution to the national nature-positive targets:

1 Reduce rates of ecosystem loss and degradation

to minimise biodiversity impacts from infrastructure projects and support positive biodiversity outcomes through planning, design and management.

2 Protect, restore, and enhance natural ecosystem

to improve habitat condition, remove pressures such as pollution and INNS, and support restoration of natural systems.

3 Increase landscape connectivity

to address fragmentation caused by transport infrastructure and improve wildlife movement through transport corridors and crossing opportunities.

4 Avoid approaches that have negative outcomes for ecosystems and biodiversity

to ensure transport projects, maintenance activities and climate measures do not unintentionally damage biodiversity.

Case study

Greater butterfly-orchids on the A83 in Argyll. The species has suffered gradual but protracted decline. Verge management at this location has created conditions suitable for the species.



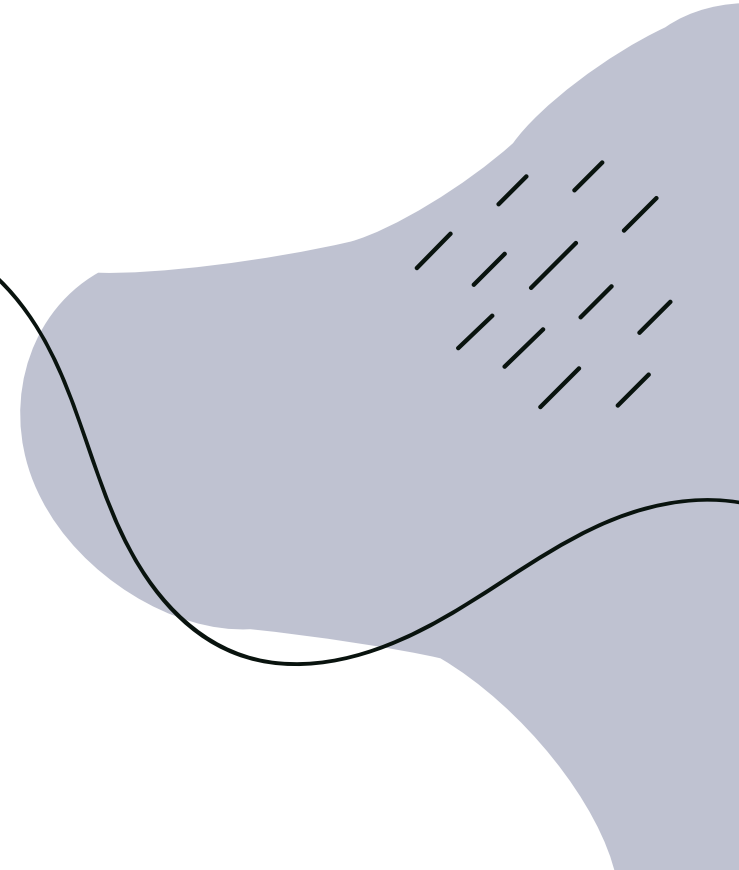
Jacobs/John Fowbert



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Scottish primrose

Chapter 3 Delivery Plan



Delivery Plan

The strategy is supported by a rolling Delivery Plan to implement targeted actions to safeguard and restore biodiversity within the Transport Estate and help facilitate partnership working with other stakeholders to achieve maximum impact. Delivery Plan execution will be monitored and reported, with findings and new information incorporated into subsequent versions to ensure the strategic biodiversity outcomes remain evidence-based and adaptable.

Delivery of the Strategy will be supported through:

- Biodiversity requirements embedded in contracts, projects and maintenance activities
- Improved biodiversity data and asset inventories
- Increased specialist ecological input
- Partnership working with bodies such as NatureScot, Forestry and Land Scotland, National Parks, local authorities and neighbouring landowners

Delivery plan objectives

To implement the four strategic aims, the Strategy has seven objectives, each with actions for delivery:

Objective 1: Embed biodiversity protection and enhancement further into Transport Scotland's activities and decision making and those of its sub-contractors and consultants

Under this objective, six actions have been identified to raise awareness of biodiversity, giving it the prominence required to ensure that targets can be met.

Objective 2: Promote soil health, storage and management

Under this objective, the actions are aimed at raising awareness of the importance of soil biodiversity, promoting and implementing soil protection measures, identifying and appropriately handling and using biologically valued soils.

Objective 3: Manage the risk from invasive non-native species

Non-native species are considered a primary risk to biodiversity especially when they are invasive. A number of these species have been identified within Transport Scotland's landholding. This objective includes five actions aimed at raising awareness of invasive non-native species and promoting their control and removal.

Objective 4: Preserve and increase landscape connectivity

Preserving and increasing landscape connectivity will protect wildlife, maintain viable ecosystems, and assist in developing resilience. The actions under this objective seek to identify key connectivity points on the existing transport network and develop solutions to reduce barriers, and to embed landscape connectivity into new infrastructure projects.

Objective 5: Manage existing habitats to improve condition and biodiversity benefits

This objective includes five actions aimed at managing existing habitats effectively and enabling opportunities for enhancement beyond the boundaries of the transport estate to be identified, allowing for increased landscape connectivity.

Objective 6: Restore and create high-quality habitats

The actions under this objective are aimed at ensuring good design appropriate to the relevant ecosystem, designing and managing habitats to improve their condition, and expanding areas of priority habitat where possible.

Objective 7: Promote public and stakeholder engagement and partnership working

The actions under this objective seek to raise the public awareness of the importance of the trunk road estate in delivering benefits to biodiversity and help ensure that the Strategy has broad support amongst Transport Scotland's stakeholders.

Case study

On the Queensferry Crossing project new native woodland was planted in advance of the main road and bridge construction work to help mitigate the impacts of the scheme by reconnecting two fragments of existing ancient woodland.



Jacobs/John Fowbert

Case study

During the planning phase of the Aberdeen Western Peripheral Route (AWPR), it was determined that sufficient ecological measures would not be possible to fully mitigate the impacts of the project within the corridor of land purchased for road construction. In response funding was provided to selected third party organisations for offset mitigation projects on private land within the wider area, including the reintroduction of water voles, wetland restoration, invasive non-native plant control and woodland habitat creation in the river catchments crossed by the new road.

To address the potential impacts of the new road on red squirrels resulting from the loss and severance of woodland habitats, combined with competition from the invasive non-native grey squirrel, Saving Scotland's Red Squirrels joined efforts with Aberdeen City Council and Forestry and Land Scotland. Over the 10 years funded by the AWPR, significant progress has been made towards achieving the main goal to eradicate grey squirrels and facilitate the recovery of the iconic red squirrel in both Aberdeen City and Aberdeenshire.



Governance of the Strategy will be undertaken through:

- Transport Scotland Biodiversity Lead engaging across Directorates
- Biodiversity Champions or Managers within operating companies, DBFO concessionaires and major projects
- Annual monitoring of Delivery Plan actions
- Biodiversity Duty reporting every three years
- A six-monthly Biodiversity Forum including representatives from trunk road operators plus Network Rail, Scottish Canals, CMAL, HIAL and Prestwick Airport

The full version of the [Transport Scotland Biodiversity Strategy](#) and the detailed [Delivery Plan](#) are available on the agency website.



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