

South of Tyne and Wear Local Nature Recovery Strategy

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Foreword

The South of Tyne and Wear is home to a rich and varied natural heritage—from ancient woodlands and river valleys to coastal cliffs, sandy beaches, and rare Magnesian limestone grasslands. These landscapes, and the wildlife they support, are not only beautiful—they are vital to our health, wellbeing, and resilience. They shape our identity, support our economy, and enrich our daily lives.

However, globally, nationally, and locally, nature is in decline. Biodiversity loss and climate change are closely connected, and both call for urgent, coordinated action. The South of Tyne and Wear Local Nature Recovery Strategy sets out a shared vision to restore and enhance our natural environment—for wildlife, for people, and for future generations.

As coastal and urban authorities with significant areas of urban fringe countryside, we understand the pressures facing our landscapes and communities, but we also recognise the opportunities. Restoring nature supports cleaner air and water, improved physical and mental health, climate resilience, and sustainable economic growth. It also means tackling ecological inequality, ensuring that everyone, wherever they live, can benefit from access to thriving natural spaces.

We know that targeted action works. Across our Strategy area, coordinated efforts have already begun to reverse the tide of biodiversity loss. But we must go further, faster. Guided by the Lawton principles—more, bigger, better and better connected—our councils are committed to leading a coalition of the willing—residents, landowners, businesses, and partners—working together to deliver lasting change.

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Executive Summary

Nature needs our help. Across the world — and here in our local area — nature is in decline. But a healthy natural environment, rich in wildlife, is essential to our everyday lives:

- **It supports our health and wellbeing** — clean air and water, green spaces, and access to nature help us feel better and live healthier lives.
- **It brings people together** — nature connects communities, supports local jobs, and helps keep cultural traditions alive.
- **It helps strengthen our economy** — nature supports farming, forestry, fishing, and tourism, and helps reduce the effects of extreme weather.
- **It helps tackle climate change** — woodlands, wetlands, and oceans store carbon and help regulate our climate.
- **It protects biodiversity** — having a rich diversity of plants and animals keeps ecosystems healthy, productive, and resilient.

The South of Tyne and Wear Local Nature Recovery Strategy (LNRS) provides a shared framework for coordinated, targeted, practical action to restore, improve, and connect habitats and wildlife across Gateshead, South Tyneside, and Sunderland.

Developed in line with the Government's 25 Year Environment Plan and the Environment Act 2021, the Strategy focuses on key habitats such as native woodlands, wildflower meadows, wetlands, and coastal areas. It also recognises the important role of farmland and urban spaces in supporting wildlife and helping people connect with nature.

The Strategy identifies clear priorities and potential measures, along with areas that offer the greatest potential for nature recovery and wider environmental benefits. It also recognises the need to balance nature recovery with investment in housing and economic growth. These goals need not be in conflict — they are interconnected and can be mutually supportive. A healthy natural environment helps communities thrive and supports long-term prosperity.

Delivering the Strategy will take teamwork. Success depends on the support and collaboration of local councils, government agencies, conservation organisations, landowners, businesses, and most importantly, local communities. Together, we can create a greener, healthier, and more resilient South of Tyne and Wear — where people and nature flourish side by side.



Vision

“A thriving, connected natural environment across Gateshead, South Tyneside and Sunderland – where wildlife flourishes, communities are healthier and more resilient, and nature is part of everyday life for everyone.”

This Vision has been developed collaboratively as part of the South of Tyne and Wear Local Nature Recovery Strategy. It reflects the shared ambition of Gateshead Council, South Tyneside Council, Sunderland City Council, the North East Combined Authority, Natural England, and a wide range of local stakeholders.





1. Introduction



Background

Local Nature Recovery Strategies (LNRSs) are part of a new national approach in England to help reverse nature's decline. Introduced through the Environment Act 2021, they aim to:

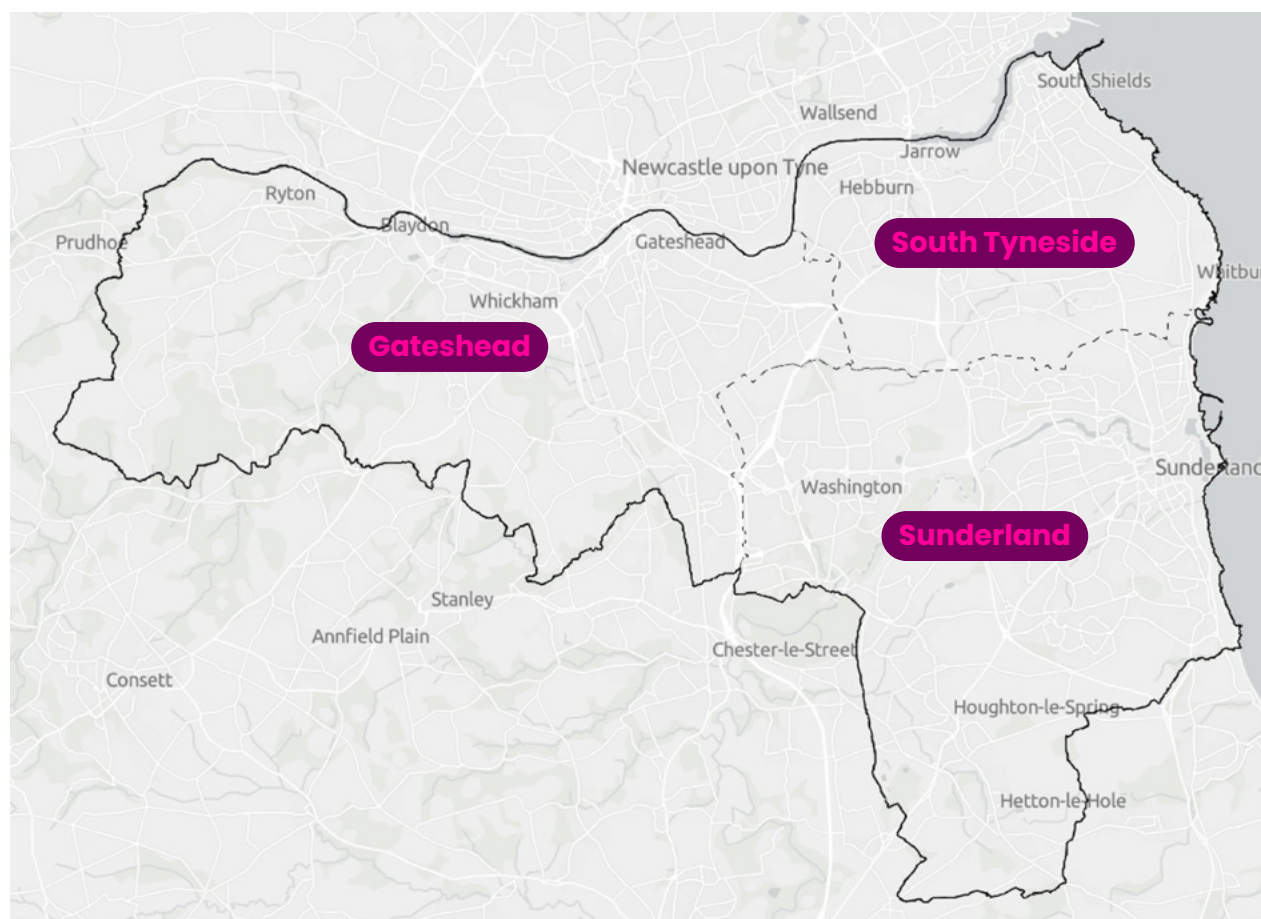
- **Set clear priorities for restoring nature**
- **Identify the best places to create or improve habitats**
- **Support the national Nature Recovery Network—a connected system of wildlife-rich areas across urban and rural landscapes**
- **Help deliver Biodiversity Net Gain (BNG)**
- **Inform local planning to better support nature**
- **Contribute to the Government's Environmental Improvement Plan (2023) and its National Environmental Objectives**

The South of Tyne and Wear LNRS covers the areas of Gateshead, South Tyneside, and the City of Sunderland. It has been developed in line with The Environment (Local Nature Recovery Strategies) (Procedure) Regulations 2023 and statutory guidance.





Figure 1 – Map showing the South of Tyne and Wear LNRS boundary, and the local authority boundaries of Gateshead, South Tyneside, and Sunderland.



Gateshead Council was appointed by the Secretary of State for Environment, Food and Rural Affairs as the Responsible Authority for preparing the South of Tyne and Wear Local Nature Recovery Strategy. South Tyneside Council, Sunderland City Council, the North East Combined Authority, and Natural England were identified as Supporting Authorities.

This strategy uses data and local expertise to set clear priorities for nature recovery and identify where habitat restoration and enhancement will have the greatest impact. It follows the principles of the Lawton Report (2010)—which calls for nature to be “More, Bigger, Better, and Better Connected”—and aims to deliver wide-ranging benefits for both the environment and local communities.

This is a Consultation Draft on the South of Tyne and Wear Local Nature Recovery Strategy, which will be consulted on for a period of seven weeks from 27th November 2025 to 18th January 2026.



Why we need to plan for Nature's Recovery

Nature is facing significant challenges. Across the world, biodiversity is declining at an unprecedented rate. Since 1970, global wildlife populations have fallen by 73%, and around one million species are now at risk of extinction.

This decline is driven by a combination of human activities:

- **Changes in land use** – including urban expansion, new infrastructure, intensive farming, deforestation, and inappropriate tree planting (such as conifers on peat bogs).
- **Direct exploitation** – such as hunting, persecution, illegal logging, overfishing, and unsustainable use of natural resources
- **Climate change** – which is shifting where species and habitats can survive and increasing the risk of wildfires, droughts, floods, and extreme weather.
- **Pollution** – affecting air, land, and water, and damaging habitats and wildlife.
- **Invasive non-native species** – which can out compete native wildlife, alter habitats, and introduce new diseases that native species are more vulnerable to.

In some ecosystems, the impacts of climate change may soon be irreversible. That's why timely action is needed—to stop the decline and restore nature where we can.



The Scale of Nature's Decline in the UK

The UK is one of the most nature-depleted countries in the world. The State of Nature Report and long-term monitoring data reveal the scale of biodiversity loss in the UK:

- Wildlife abundance in England has **declined by 32%** since 1970.
- Of the **8,840 species** assessed, **13% are threatened with extinction**.
- The distribution of **over half** of all plant species has **decreased since the 1970s**.
- Farmland birds have **declined by 61%**, and woodland birds by **37%** since 1970.
- **80%** of UK butterfly species have **declined** since the 1970s.
- **Only 14–15%** of rivers in England currently achieve “**good ecological status**.”
- Water voles have **declined by 47%** between 1998 and 2016.
- England's Biodiversity Intactness Index is just **41%**, compared to a global average of **77%**.

In the South of Tyne and Wear area, detailed biodiversity data is limited, but local observations paint a similar picture to national trends.





Why this Matters

The consequences of nature's decline are serious and wide-reaching:

Food production

Pollinators are disappearing, and soil health is declining, threatening the quality and quantity of our food.

Ecosystem services

Essential for clean water, fertile soil, and climate regulation are becoming less reliable.

Economic impact

Environmental damage could reduce the UK's GDP by up to 12% by 2050, according to recent studies.

Culture and heritage

Nature is deeply connected to our landscapes, traditions, and communities.

Unknown consequences

May emerge as ecosystems lose their ability to regulate climate and support life.

Recovering Nature

The Environment Act 2021 marks a turning point by setting clear legal targets for nature recovery in four key areas: air quality, biodiversity, water, and waste. Crucially, it includes a new target to halt the decline in species abundance by 2030.

The good news is that we already know what works. Across the South of Tyne and Wear, there are inspiring examples of local projects and initiatives that are successfully restoring habitats and supporting wildlife.

The Local Nature Recovery Strategy builds on this momentum. It provides a clear, locally led framework to help nature recover at scale—identifying where habitat creation and restoration will deliver the greatest benefits for biodiversity and the wider environment. By acting now, we can reverse decades of decline, protect the natural systems we rely on, and create a healthier, more resilient future for both people and wildlife.

As part of developing the LNRS—particularly the Priorities and Potential Measures—careful consideration has been given to how nature recovery actions can deliver wider environmental benefits and support nature-based solutions. These are practical, sustainable actions that use natural processes and ecosystems to address challenges like climate change, flooding, and public health, while also benefiting biodiversity.

Nature-based solutions are designed to be cost-effective, long-lasting, and to deliver multiple benefits. Examples include:

- **Tree planting and woodland creation**
- **Wetland and peatland restoration**
- **Hedgerow planting**
- **Urban green spaces**
- **Sustainable farming practices**
- **River and stream naturalisation**

These actions can lead to a range of co-benefits, such as:

- **Reducing flood risk**
- **Improving air and water quality**
- **Storing carbon**
- **Increasing climate resilience**
- **Supporting health and wellbeing**
- **Enhancing pollination and food security**
- **Providing spaces for recreation and learning**

By identifying and prioritising these opportunities, the LNRS aims to support joined-up action that benefits both nature and people.



What is the Local Nature Recovery Strategy

The Local Nature Recovery Strategy (LNRS) sets out how communities, organisations, and landowners can work together to help nature recover. The Strategy will be reviewed and updated every 3–10 years, as directed by the Secretary of State for Environment, Food and Rural Affairs, to reflect progress, new data, and changing priorities.

The Strategy identifies local priorities for nature, highlights opportunities to restore and improve habitats, and maps the areas where action will have the greatest impact. It brings together councils, landowners, environmental groups, businesses, and communities—ensuring that efforts are coordinated, focused, and effective.

The LNRS is a practical tool to help guide land-use decisions, direct funding, and support environmental improvements. It also contributes to broader goals such as addressing climate change, improving public health and wellbeing, and building resilience to flooding and other environmental risks.

The LNRS sets out how we can:



Create and restore nature-rich habitats, supporting a greater diversity and abundance of species



Encourage sustainable land use, benefiting the environment, local economy, and communities



Build climate resilience, helping habitats, species, and people adapt to changing conditions



Improve access to nature, promoting physical and mental wellbeing through nature-based activities



Strengthen connections between people and nature, through community involvement and education

What does the Strategy Contain

This Strategy is made up of two parts:

- **Statement of Biodiversity Priorities (this written document) including:**
 - a description of the Strategy area and its biodiversity
 - overview of historic, current, and potential future pressures on biodiversity
 - opportunities to restore nature, and deliver wider environmental benefits
 - priorities for nature recovery
 - proposed Potential Measures (practical actions) to deliver the priorities
- **Local Habitat Map – an interactive map showing:**
 - the existing most valuable areas for nature
 - mapped Potential Measures for creating or improving habitats

Together, these elements help identify where action, if carried out, will have the greatest benefit for nature and people, and guide how resources can be used most effectively.



How the Strategy has been Prepared

The South of Tyne and Wear Local Nature Recovery Strategy has been developed in line with national regulations and guidance set out under the Environment Act 2021.

The preparation process followed a series of steps, as set out below:

- 1 Mapping Areas of Particular Importance for Biodiversity (APIBs)
- 2 Describing the Strategy area, its biodiversity, and opportunities for recovery
- 3 Agreeing nature recovery priorities and identifying Potential Measures (practical actions) to achieve them
- 4 Mapping Areas That Could Become of Particular Importance for Biodiversity (ACBs)

Areas of Particular Importance for Biodiversity (APIBs)

These include designated sites (e.g. SSSIs, LWSs) and irreplaceable habitats such as ancient woodland. Their protection is already embedded in national planning policy and legislation.

Areas That Could Become of Particular Importance for Biodiversity (ACBs)

These are areas identified in the Local Nature Recovery Strategy (LNRS) where nature recovery actions could enhance biodiversity value. Their future ecological significance is contingent on voluntary landowner participation and implementation of measures aligned with LNRS priorities.

What the Strategy will not do

The LNRS is Not a Designation Tool

Local Nature Recovery Strategies (LNRSs) are strategic documents, not statutory designations. They do not confer legal protection or planning status on land. This is confirmed in the *Local Nature Recovery Strategy Statutory Guidance* (Defra, 2023).

Landowner Autonomy and LNRS Implementation

Local Nature Recovery Strategies (LNRSs) depend on collaboration and voluntary action. Landowners, including public bodies, cannot be required to implement nature recovery measures on their land, even where it is mapped as Areas that Could Become of Particular Importance for Biodiversity (ACBs). This aligns with the *Environment Act 2021* and associated guidance.

Planning Policy and LNRSs

Land identified in Local Nature Recovery Strategies (LNRS) as Areas that Could Become of Particular Importance for Biodiversity (ACBs) may still be allocated for development in Local Plans, subject to the standard planning process and policy considerations.

Role of LNRS in Planning Decisions

Planning applications may be submitted for land identified in the Local Nature Recovery Strategy (LNRS) as Areas that Could Become of Particular Importance for Biodiversity (ACBs), even if the land is not allocated in the Local Plan (i.e. white land). While LNRSs can be a material consideration in decision-making, they are not determinative.





Who's been Involved

Engagement took place with local experts, landowners, land managers, conservation groups, environmental organisations, and other key stakeholders. National bodies—including Natural England, the Environment Agency, Forestry Commission, and Marine Management Organisation—also provided valuable input and expertise.

To support this inclusive approach, several targeted engagement activities were undertaken:

- **A regional biological recording workshop** — facilitated by the Environmental Records Information Centre (ERIC) North East, helped build trust and connections with habitats and species specialists.
- **A series of meetings and workshops** — with landowner and land management representatives including the NFU, CLA, and land agents, introduced the Strategy, explained its purpose, and gathered feedback.
- **A public-facing website** — NaturePlan, was launched in April 2024 to broaden engagement. An online consultation ran from 20 May to 9 July 2024, inviting residents to share their views and priorities for nature recovery.

This collaborative and inclusive approach ensured that the Strategy reflects local priorities and knowledge. It helped identify which habitats and species to focus on, and how nature recovery can also deliver wider benefits—such as climate resilience, flood protection, and carbon storage.

Development of the Strategy was supported by a robust governance structure designed to ensure strategic leadership, operational coordination, and inclusive engagement. This structure promoted transparency, accountability, and evidence-based decision-making throughout the process. Several technical working groups, focused on habitats, species, and data & mapping, were established to provide specialist knowledge, support evidence gathering, and ensure the accuracy, consistency and accessibility of the Strategy's evidence base and mapping outputs.

For a full list of contributors, **see Appendix A.**





2. How to use the LNRS



How to use the LNRS

A key purpose of the Local Nature Recovery Strategy (LNRS) is to identify areas where habitat creation or enhancement, if undertaken, would deliver the greatest benefit for biodiversity and the wider environment. It also provides broad strategic direction on the types of practical measures most suited to achieving the agreed nature recovery priorities.

The Statement of Biodiversity Priorities (this document) and the Local Habitat Map should be reviewed together. Section 5 (Priorities and Potential Measures) and Section 6 (Mapping of Measures and the Local Habitat Map) are essential for understanding how spatial priorities and actions align.

Priorities represent the long-term desired outcomes of the Strategy. They typically focus on priority habitats or species and are shaped by local circumstances. Potential Measures are practical actions that, if undertaken, would support the delivery of these priorities. They suggest activities that could benefit specific habitats or species and/or contribute to wider environmental goals.

The Local Habitat Map shows:

- **Areas of Particular Importance for Biodiversity (APIBs)** — places that already play a key role in supporting nature.
- **Mapped Potential Measures** — potential locations where actions to improve or create habitats have been identified.
- **Areas That Could Become of Particular Importance for Biodiversity (ACBs)** — places that, with the right actions, could become especially valuable for nature where appropriate.

The Mapped Measures and Areas that Could Become of Particular Importance for Biodiversity (ACBs) are based on the best available data, but not on detailed site-level surveys. Before any nature recovery action is undertaken, it is essential to assess its desirability, feasibility, and any potential constraints. Further guidance on this is provided in Section 6.

It's important to note that landowner participation in delivering the LNRS is entirely voluntary. Landowners, including public bodies, are not required—and cannot be compelled—to implement nature recovery measures on Areas of Particular Importance for Biodiversity (APIBs) or Areas that Could Become of Particular Importance for Biodiversity (ACBs). The identification of ACBs does not restrict other legitimate land uses or activities, nor does it confer legal protection or planning status.

In addition, not all aspects of nature recovery fall within the scope of the LNRS. For example, the management of statutorily designated sites (such as Sites of Special Scientific Interest) is governed by existing legislation and policy. The omission of certain areas, habitats, or species from the LNRS does not imply they are not important, nor does it prevent nature conservation activity from taking place outside of areas mapped as Areas that Could Become of Particular Importance for Biodiversity (ACBs).



Links to other plans and strategies

In preparing the LNRS, consideration has been given to a wide range of national, regional, and local plans and strategies, including adopted and emerging Local Plans, to ensure appropriate alignment. Particular focus has been given to how the LNRS supports delivery of the National Environmental Objectives (NEOs) set out in the Environment Act 2021 and detailed in the Environmental Improvement Plan 2023.

A list of other strategies, plans, and policies considered in the preparation of the South of Tyne and Wear LNRS is provided in **Appendix B**.



Biodiversity Net Gain and the role of LNRS

Biodiversity Net Gain (BNG) is a statutory requirement under the Environment Act 2021, which ensures that development results in a measurable improvement in biodiversity compared to the pre-development baseline. A key purpose of the Local Nature Recovery Strategy (LNRS) is to help guide where off-site BNG should be delivered.

The LNRS identifies strategic locations where habitat creation or enhancement will have the greatest benefit for nature recovery. When off-site BNG is delivered in these mapped areas—and the relevant habitat is created or enhanced—it receives a higher biodiversity value in the statutory biodiversity metric, through the application of the ‘strategic significance multiplier’.

This means that delivering BNG in LNRS-prioritised areas can reduce the amount of habitat creation required to meet the 10% net gain target, while also maximising ecological impact. For this reason, it is essential that the LNRS maps areas where investment in nature recovery will be most effective and deliverable.





Environmental Land Management schemes and the role of LNRS

Environmental Land Management (ELM) schemes are government-funded programmes that pay farmers and landowners to manage their land in ways that benefit nature, climate, and people.

They support actions like:

- **Improving habitats for wildlife**
- **Reducing pollution and protecting water**
- **Restoring peatlands and woodlands**
- **Creating green spaces and improving public access**
- **Making farming more sustainable**

There are three main schemes:

1 Sustainable Farming Incentive (SFI) – rewards everyday farming practices that help the environment.

2 Countryside Stewardship – supports more targeted conservation work, like planting hedgerows or restoring wetlands

3 Landscape Recovery – funds large-scale projects that restore nature across whole landscapes.

These schemes are voluntary and designed to work alongside Local Nature Recovery Strategies by helping landowners deliver nature recovery in the most effective places.

Together, LNRSs, ELMs, and initiatives such as England Woodland Creation Offer (EWCO), form a joined-up approach to restoring biodiversity, improving environmental outcomes, and supporting sustainable land management.

LNRSs are designed to guide where nature recovery actions, including those funded through ELMs, will have the greatest impact. Defra’s statutory guidance confirms that LNRSs:

- **Identify priority areas for habitat creation and enhancement.**
- **Support targeting of ELM funding to locations where environmental benefits are maximised.**
- **Help align BNG delivery, public authority duties, and landowner incentives with strategic nature recovery goals.**



Who is the LNRS for and how should it be used

The following list outlines how government expects different sectors to use the Local Nature Recovery Strategy. This list has been tailored to reflect the context of the South of Tyne and Wear LNRS and is not intended to be comprehensive.

Public bodies

Support the enhanced Biodiversity Duty

Consider LNRSs in decisions, policies, and operations to support nature recovery (Environment Act 2021).

Inform Land and Asset Management

Use LNRSs to guide habitat creation and enhancement on public estates (e.g. schools, hospitals, highways).

Enable Nature-Based Solutions

Integrate LNRS insights into flood mitigation, air quality, and climate resilience planning.

Collaborate with Local Partners

Work with authorities, landowners, and communities to support joined-up delivery and share expertise.

Align Funding and Investment

Target grants and budgets to areas identified in LNRSs.

Monitor and Report Progress

Track and share outcomes of supported or implemented nature recovery actions.

Local planning authorities

Inform Planning

Use LNRSs to meet NPPF biodiversity requirements and to help shape Local Plans alongside other relevant evidence.

Support Biodiversity Net Gain (BNG) Delivery

Prioritise BNG delivery in LNRS-mapped areas to maximise biodiversity value.

Deliver Biodiversity Duty

Consider LNRSs in planning, land management, and infrastructure decisions.

Coordinate with Responsible Authorities

Share data, align policies, and contribute expertise during LNRS development.

Enable Nature-Based Solutions

Use LNRSs to integrate environmental benefits into spatial planning.

Guide Investment

Direct funding and developer contributions to high-impact LNRS areas.



Developers

Plan with Nature in Mind

Use LNRSs to align site promotion, design, and planning applications with local nature recovery priorities.

Deliver Smarter Biodiversity Net Gain

Target LNRS-prioritised areas for off-site BNG to maximise biodiversity value and reduce planning risk.

Protect What Matters

Use LNRS maps to avoid irreplaceable habitats and guide compensation to the most strategic locations.

Support and Stay Informed

Monitor LNRS updates, explore funding opportunities, and consider how strategies may affect site viability.

Landowners and farmers (voluntary participation)

Inform Land Management

Use LNRSs to guide habitat creation, restoration, and sustainable practices.

Access Funding

Target Environmental Land Management (ELM) schemes and future funding aligned with LNRS priorities.

Support BNG

Identify strategic locations for biodiversity units with added value.

Collaborate Locally

Work with neighbours and groups (e.g. farm clusters) to deliver joined-up nature recovery.

Project Promotion and Nature Markets

Use LNRS to identify and promote investible opportunities in nature recovery, including habitat banks, for listing on national and regional marketplaces, unlocking access to public and private finance.





Nature conservation charities and groups

Participate in Strategy Development

Share ecological knowledge and shape LNRS priorities.

Support Evidence Gathering

Provide data and help identify nature-based solutions.

Deliver Recovery Actions

Lead or support habitat projects and community engagement.

Facilitate Collaboration

Connect stakeholders and support cross-boundary initiatives.

Monitor Progress

Track outcomes and contribute to LNRS reviews.

Advocate for Funding

Align projects with LNRSs to strengthen funding bids.

Promote Engagement

Raise awareness and encourage public participation.

General public

Learn About Local Nature

Use LNRSs to understand local habitats, species, and nature recovery priorities.

Join Community Projects

Get involved in habitat restoration, wildlife surveys, and volunteer activities.

Support Nature-Friendly Practices

Make choices that benefit biodiversity—wildlife gardening, reducing pesticide use.

Promote Awareness

Raise understanding of LNRS goals through schools, social media, and local groups.

Contribute to Monitoring

Take part in citizen science and help track biodiversity progress.

Respect Nature Spaces

Follow access guidelines and protect sensitive habitats highlighted in LNRSs.



3. Description of the Strategy Area





Description of the Strategy Area

This section provides a description of the LNRS area and its biodiversity, providing a broad overview of its geology and hydrology, topography and climate, as well as its protected areas. It then takes a more detailed look at the area's key habitats and associated species and considers the prospect for recovering these including by referencing current initiatives. It then identifies pressures on nature and broad opportunities for nature recovery with reference to a range of evidence and other strategies.





South of Tyne and Wear LNRS Area – Overview

The South of Tyne and Wear LNRS covers the local authority areas of Gateshead, South Tyneside, and the City of Sunderland, forming a diverse and dynamic landscape in the north-east of England. Bounded by the River Tyne to the north and the North Sea to the east, the Strategy area stretches 24.3 km north to south and 32 km east to west, covering a total area of approximately 344 square kilometres.

Despite its relatively compact size, the area is rich in ecological variety, shaped by its geology, industrial heritage, and coastal location. It includes:

- **Urban centres** such as Gateshead, Sunderland, and South Shields, with significant green infrastructure and post-industrial habitats.
- **River valleys** including the Tyne, Wear, Derwent, Team, and Don, which provide vital wildlife corridors and host a range of aquatic and riparian habitats.
- **Coastal habitats** along 19.5 km of shoreline, featuring sea cliffs, sandy beaches, and rocky shores, supporting seabird colonies and migratory species.
- **Woodlands and grasslands**, including ancient semi-natural woodland, Magnesian Limestone grassland, and lowland meadows.
- **Wetlands and ponds**, many of which have developed on reclaimed industrial land, now providing refuge for a variety of species.

The Strategy area is home to over 625,000 residents and has a long history of human influence, from early agriculture and Roman settlements to coal mining and heavy industry. Today, it retains pockets of unspoiled countryside and a mosaic of habitats that support nationally and regionally important species.





National Character Areas

The South of Tyne and Wear LNRS spans three distinct National Character Areas, each contributing unique landscape features, ecological assets, and cultural heritage to the region.

1. Tyne and Wear Lowlands **NCA 14**

Covers the urban and industrial heart of the Strategy area, encompassing much of Gateshead, South Tyneside, and Sunderland.

Landscape

Gently rolling lowlands incised by major river valleys (Tyne, Wear, Derwent), with a mix of urban development, transport infrastructure, and agricultural land.

Ecology

Fragmented but valuable habitats including rivers, wetlands, post-industrial sites, and urban greenspaces.

Heritage

Rich industrial legacy including coal mining, shipbuilding, and engineering, alongside Roman and medieval features.

Opportunities

Enhancing green infrastructure, restoring river corridors, and improving habitat connectivity across urban landscapes.





National Character Areas

2. Durham Coalfield Pennine Fringe **NCA 16**

Transitional landscape covering the west of the Strategy area, particularly in western Gateshead and the Derwent Valley.

Landscape

Broad ridges and valleys with a strong west–east grain, forming a bridge between the uplands of the North Pennines and the lowlands to the east.

Ecology

Well-wooded river valleys, ancient oak woodlands, and upland grasslands.

Heritage

Mixed farming with sheep and cattle grazing in the west and arable land in the east.

Opportunities

Strengthening woodland networks, restoring upland habitats, and improving water quality and flood resilience.





National Character Areas

3. Durham Magnesian Limestone Plateau **NCA 15**

Covers the eastern edge of the Strategy area, including parts of Sunderland and South Tyneside.

Landscape

Open agricultural plateau with dramatic limestone cliffs, coastal denes, and headlands.

Ecology

Nationally important Magnesian Limestone grasslands, coastal habitats, and ancient woodlands.

Heritage

Strong industrial influence from quarrying and mining, alongside prehistoric and Roman archaeological features.

Opportunities

Protecting and expanding calcareous grasslands, managing coastal habitats, and enhancing access to nature.





Geology and Hydrology

The geology of the Strategy area is varied and strongly influences its landscape, habitats, and biodiversity. Key geological features include:

- **Magnesian Limestone:** Dominates the eastern parts of South Tyneside and Sunderland, forming dramatic coastal cliffs and supporting nationally important calcareous grasslands.
- **Coal Measures:** Underlie much of the southern and western parts of the area, reflecting its industrial heritage and shaping settlement patterns and land use.
- **Sandstone and Grindstone:** Found in eastern Gateshead, contributing to the upland character of the western fells.
- **Glacial Deposits:** Till, boulder clay, and sands from the last glaciation overlay much of the bedrock, particularly in the west and along river valleys.
- **Made Ground:** Post-industrial and reclaimed land is widespread, especially around former mining and industrial sites.

This geological diversity supports a wide range of habitats, including Magnesian Limestone grasslands, ancient woodlands, and wetland systems.

The Strategy area is defined by its river systems and drainage patterns, which play a vital role in shaping its ecology:

- **Major Rivers:** The Tyne, Wear, and Derwent flow through the area, providing important wildlife corridors and supporting aquatic and riparian habitats.
 - **The Tyne** is tidal for much of its length within the area and has a significant ecological and historical influence.
 - **The Wear** flows through a limestone gorge before entering the North Sea at Sunderland.
 - **The Derwent** is a wooded upland river, supporting species like dipper and goosander.
- **Tributaries:** The River Team and River Don also contribute to the area's hydrology, with the Don forming part of the boundary between South Tyneside and Sunderland.
- **Drainage Patterns:** A dense network of smaller streams and ditches criss-crosses the landscape, especially in agricultural areas. Many have been canalised to improve drainage, affecting their ecological value.
- **Water Quality:** While improvements have been made since the 1980s, the ecological status of rivers remains moderate, with challenges from urban runoff, mine water pollution, and agricultural impacts.
- **Groundwater:** Generally poor quality due to legacy pollution from mining, agriculture, and landfill.

These hydrological features are central to the Strategy area's biodiversity and offer key opportunities for habitat restoration and connectivity.



Topography and Climate

The South of Tyne and Wear LNRS area encompasses a richly varied landscape shaped by its coastal setting, river systems, and glacial history. Gateshead features the most dramatic terrain, rising steeply from the River Tyne to upland ridges and fells in the west, with elevations reaching 259 metres at Currock Hill. South Tyneside is generally low-lying, with gently undulating land and striking coastal cliffs, peaking around 90 metres at Boldon Hills. Sunderland's topography is defined by the deeply incised Wear Valley and a series of limestone hills, with elevations ranging from sea level to over 170 metres at Warden Law.

Across the area, the landscape ranges from below sea level in coastal intertidal zones to upland fells, with broad valleys carved by the Tyne, Wear, and Derwent rivers. The Magnesian Limestone Plateau dominates the eastern edge, contributing to distinctive landforms and supporting rare calcareous habitats. Western Gateshead showcases glacially sculpted valleys, moraines, and eskers, while the central and eastern lowlands are flatter and more intensively farmed, interspersed with woodland and post-industrial green spaces.

The climate is temperate maritime, moderated by the North Sea, resulting in cool summers, mild winters, and relatively low annual rainfall—averaging 643 mm, making it one of the driest regions in the UK. Coastal zones are typically cooler in summer and warmer in winter than inland areas. The area enjoys above-average sunshine, particularly in spring and early summer, with May being the sunniest month.

Prevailing westerly winds bring most of the rainfall, distributed unevenly across the seasons. Urban centres experience heat island effects, influencing local microclimates and species distributions.

This combination of diverse terrain and moderate climate supports a wide range of habitats and species, while also presenting unique opportunities and challenges for nature recovery and climate resilience.





Designated Sites

Designated nature conservation sites are officially recognised areas protected for their ecological, geological, or landscape importance, where specific legal or policy measures are in place to conserve biodiversity and natural features.

The most important areas for wildlife within the Strategy area are subject to a range of nature conservation designations, offering varying degrees of protection. These are identified on the Local Habitat Map as Areas of Particular Importance for Biodiversity (APIBs).

Despite its urban character, designated sites cover a combined area of approximately 41 square kilometres, or just over 11.5% of the total Strategy area (c.344 km²). Designated sites form the backbone of the Strategy area's ecological network, and play a vital role in safeguarding biodiversity, supporting ecological connectivity, and guiding nature recovery effort. Designated sites also provide essential ecosystems services and opportunities for the enjoyment of nature by the public.

Special Areas of Conservation (SACs)

These are internationally important sites subject to strict legal protection. Parts of the coast within the Strategy area are included within the Durham Coast Special Area of Conservation (SAC).

The Durham Coast SAC supports the only example of vegetated sea cliffs on magnesian limestone exposures in the UK.

Special Protection Areas (SPAs)

These are internationally important sites subject to strict legal protection. Again, parts of the coast within the Strategy area are included within the Northumbria Coast Special Protection Area (SPA). Within the Strategy area, the SPA supports important populations of overwintering migratory purple sandpiper and turnstone (both small wading birds). The Northumbria Coast SPA is also designated as a Ramsar wetland site of international importance.

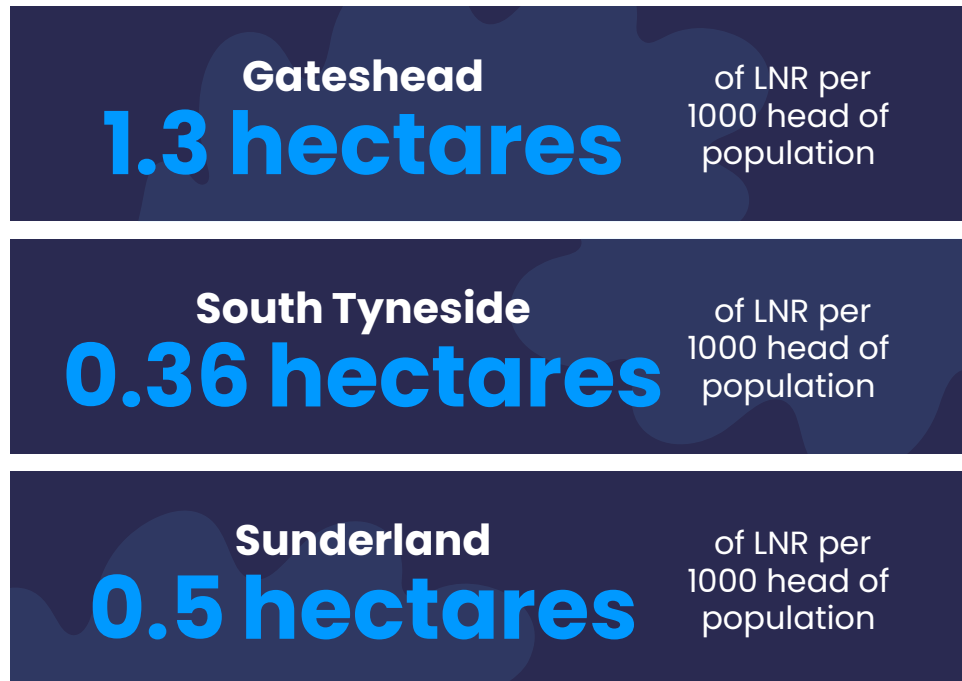
Sites of Special Scientific Interest (SSSIs)

These are nationally important, legally protected sites. There are currently 26 SSSIs with the Strategy area covering a wide range of habitats including ancient woodland, meadows, former quarries, rivers, wetlands, and coastal features. The largest of these is the Durham Coast SSSI. Within the Strategy area, it extends to approximately 164 hectares. At around 90 hectares, the second largest is the National Trust's Gibside Estate in Gateshead. Individually, the remaining 24 SSSIs within the Strategy area all measure less than 20 hectares, with the smallest being Harton Down Hill at 1.03 hectares.



Local Nature Reserves (LNRs)

There are 25 Local Nature Reserves (LNRs) within the Strategy area. These have been designated by the respective local authority and offer opportunities for local residents to access, enjoy, and learn about nature. Combined, they cover 464.1 hectares of the Strategy area, equating to 0.73 hectares of LNR per 1000 head of population. The national provision standard for Local Nature Reserves is 1 hectare per every 1000 head of population. Broken down by local authority, the figures are:



* Approximate hectares





Local Wildlife Sites (LWSs)

These form the backbone of the Strategy area's ecological network. As a non-statutory nature conservation designation, LWSs receive protection through the planning system only. LWSs are selected by the Local Sites Partnership, made up of representatives from Durham County, Gateshead, South Tyneside and Sunderland City Councils, along with Durham Wildlife Trust, based on a set of agreed habitat and/or species criteria. There are 250 LWSs in the Strategy area covering a broad mix of habitats with a combined area of 3,590 hectares. Despite their non-statutory status, many LWSs are of SSSI quality. Their role in supporting biodiversity and ecological connectivity within the Strategy area, cannot be overstated.

Despite their status, a significant proportion of statutory and non-statutory designated sites within the Strategy area are in poor ecological condition. Data on the condition of SSSIs in the Strategy area tells us that:

Of the total area of SSSI (415.09 hectares), only 231.84 hectares (55.85%) is assessed as being in Favourable Condition. While this compares favourably with the national average of 35%, the figure is skewed by the Durham Coast SSSI. 27.37% of SSSIs within the Strategy area are assessed as being Unfavourable recovering, with the remaining 16.78% assessed as Unfavourable No Change / Declining. More revealing, is the condition status of individual sites:

Number of SSSIs in Favourable Condition = **11**

Number of SSSIs in Unfavourable Recovering = **4**

Number of SSSIs in Unfavourable No Change / Declining = **12**

There is currently a lack of up-to-date information on the condition of Local Wildlife Sites within the Strategy area. However, anecdotal evidence suggests that a significant proportion may be in unfavourable condition.

All designated sites face a variety of potential direct and indirect pressures which have the potential to negatively impact their conservation value.

The protection, and where necessary, restoration, enhancement, long-term positive management, and monitoring of all designated nature conservation sites with the Strategy area, should be viewed as a priority.



Habitats of Importance

The Strategy area contains a variety of high-value habitats, many of which have suffered significant losses over time owing to a range of factors. These declines have led to reduced species populations and, in some cases, local extinctions.

As part of the Strategy's development, a number of priority habitats have been identified. These represent the most ecologically valuable habitats within the Strategy area and broadly correspond to those listed as being of *principal importance for conservation* under Section 41 of the Natural Environment and Rural Communities Act 2006, as well as those previously recognised in the Durham Biodiversity Action Plan.

In addition, a small number of habitats have been designated by the UK Government as irreplaceable. These habitats cannot be recreated within any meaningful timeframe due to their age, uniqueness, species richness, and/or rarity. Within the Strategy area, irreplaceable habitats include Ancient Woodland, Ancient and Veteran Trees, Coastal Sand Dunes, and Lowland Fen.





Priority Habitats

For the purposes of the LNRS, the identified priority habitats have been grouped as follows:

Woodland, Trees, Scrub, and Hedgerows

- Ancient semi-natural woodland
- Planted ancient woodland sites (PAWS)
- Native broadleaved woodland
- Wet woodland
- Ancient and veteran trees
- Scrub
- Native hedgerow

Grasslands, Heathland and Open Mosaic Habitats

- Lowland meadows and pasture
- Calcareous (Magnesian Limestone) grasslands
- Acid grassland
- Lowland heathland
- Open mosaic habitats on previously developed land

Freshwater and Estuarine Habitats

- Rivers and streams
- Ponds and lakes
- Fen
- Reedbed
- Intertidal mudflats
- Intertidal saltmarsh

Coastal Habitat

- Rocky shores and sandy beaches
- Sand dunes
- Vegetated shingle
- Maritime cliffs and slopes



Priority Landscapes

The following non-designated landscapes have also been identified as priorities for the recovery of nature:

Farmland

- Infield and boundary features

Urban Habitats

- Green and blue infrastructure





Woodland, Trees, Scrub, and Hedgerow

Woodland

Woodlands are habitats dominated by mature or growing trees. They typically include a mix of shrubs, grasses, ferns, and herbs, and low growing vegetation such as mosses, lichens and fungi. Woodlands are one of the most valuable and complex habitats in the UK, supporting a wide variety of plants and animals. Deadwood habitats including fallen trees and standing deadwood, play a crucial role in woodland ecology.

Woodland covers around 10% of the Strategy area—well below the national average of 13%. Gateshead stands out with a woodland cover of around 15%, most of which is found in the west of the borough, making it a key stronghold for woodland biodiversity in the region.

Local woodlands include a mix of ancient woodland, planted ancient woodland, semi-natural broadleaved woodland, wet woodland, broadleaved and mixed plantations, and conifer plantations. These are often found along river valley slopes and together make a significant contribution to supporting biodiversity and ecological connectivity.

Woodlands in the Strategy area are diverse in age, structure, and species composition, providing essential habitats for:

- **Native trees such as oak, ash, alder, rowan, and birch.**
- **Shrubs including holly, hazel, hawthorn, and crab apple.**
- **A rich array of plants, fungi, invertebrates, birds, and mammals.**

Woodland cover within the Strategy area has increased in recent decades thanks to planting initiatives and the efforts of the former Great North Forest and recently established North East Community Forest, and work undertaken by the Woodland Trust and local councils.

Ancient Semi-Natural Woodland

Ancient semi-natural woodland—land continuously wooded since at least 1600—is especially valuable for biodiversity, supporting a wide range of specialist species. Covering approximately 220 hectares (0.64% of the Strategy area), these woodlands are irreplaceable and host some of the Strategy area’s most diverse ecosystems.

The most notable examples within the Strategy area are found in Gateshead’s Derwent Valley, including Thornley Woods and Strother Hills Sites of Special Scientific Interest (SSSIs). Other significant sites include Ridley Gill SSSI in Gateshead, owned and managed by the Woodland Trust, as well as Cox Green and Ryhope Dene in Sunderland.

Ancient woodland remains one of the Strategy area’s most valuable habitats, but many sites have seen a decline in condition in recent decades. This is due to factors such as a lack of appropriate management, misuse (e.g. fly-tipping, unauthorised tree felling, encroachment), and the spread of invasive non-native species.

Less than **1%** of the Strategy area is covered by Ancient Semi-Natural Woodland





Planted Ancient Woodland Sites (PAWS)

PAWS are ancient woodlands that have been felled and replanted—often with non-native conifers—but have retained continuous woodland cover. Despite changes in tree species, these sites still hold significant ecological value due to their long history and the survival of ancient woodland features including ground flora and soils.

PAWS covers approximately 1,050 hectares or just over 3% of the Strategy area. Gateshead has the highest concentration of PAWS, with Chopwell Woods standing out as a key example. Spanning over 250 hectares, it remains a vital site for woodland biodiversity and is being progressively restored to native broadleaved woodland by Forestry England.

Across the Strategy area, several other PAWS are being actively restored to native broadleaved woodland. This involves removing non-native softwoods and encouraging the natural regeneration or planting of locally native broadleaved trees. Notable examples include Snipes Dene within the National Trust's Gibside Estate and Milkwellburn Wood, owned and managed by Durham Wildlife Trust.

Semi-natural Broadleaved Woodland

This habitat includes a mix of broadleaved tree and shrub species, with varying age and structure. While not classified as ancient, these woodlands may have developed over long periods. Good examples are found along the River Wear west of Sunderland and on north-facing slopes of the Tyne Valley.

Wet Woodland

Wet woodland occurs on poorly drained or seasonally wet soils and is dominated by alder, birch, and willow. It is rare in the Strategy area and largely restricted to Gateshead's Derwent, Team, and Barlow Burn valleys. Bog Wood in the Barlow Burn valley supports a rich and diverse flora on heavily flushed soils and is the only site in Gateshead for globeflower.





Broadleaved and Mixed Plantation Woodland

A significant proportion of the Strategy area's woodland falls into this category. These are planted woodlands, often comprising a mix of broadleaved and coniferous species. They are common across the Strategy area on former colliery and opencast sites (e.g. Colliery Wood in South Tyneside). Lacking the structural and species complexity of older semi-natural woodlands, their ecological value is often limited, although this can be improved through positive management.

Coniferous Woodland

The Strategy area includes a range of softwood plantations, from small conifer stands planted as farmland shelter belts to large commercial plantations, including several managed by Forestry England. While these woodlands often have a more uniform structure and support fewer species than well-managed native woodlands, they still provide valuable habitat and contribute to ecological connectivity.

Although conifer plantations typically support lower biodiversity than native woodlands, they contribute meaningfully to carbon sequestration, climate change adaptation, and the provision of ecosystem services. By supplying domestically grown timber, they help reduce the UK's reliance on imported timber. Their management is guided by the UK Forestry Standard (UKFS), which promotes a balanced approach to timber production alongside environmental, social, and economic benefits.





Ancient and Veteran Trees

An **ancient tree** is one that has passed beyond maturity and is old or aged relative to others of the same species. It typically exhibits the following features:

- **Large girth compared to others of its species (though not always, especially in harsh environments).**
- **Hollow trunk or major cavities.**
- **Retracted or flattened crown due to natural ageing (known as *crown retrenchment*).**
- **Deadwood features, such as stag-headed branches or fungal fruiting bodies.**
- **High ecological value, often supporting rare and specialist species.**
- **Cultural or historical significance, sometimes linked to historic events or landscapes.**

Ancient trees may live for centuries beyond their peak maturity and continue to provide vital habitat and heritage value. They are considered irreplaceable due to the time it takes for such features to develop.

A **veteran tree** is defined more by its features and ecological function than by age alone. It may be:

- **Old relative to others of the same species, but not necessarily ancient.**
- **A younger tree that has developed veteran characteristics due to environmental stress, damage, or management (e.g. pollarding).**

Typical veteran features include:

- **Decay processes (e.g. hollowing, rot holes, fungal fruiting bodies).**
- **Deadwood in the canopy or on the ground.**
- **Physical damage such as bark loss, sap runs, or crevices.**
- **High aesthetic or cultural interest.**
- **Habitat value for wildlife, including epiphytes, invertebrates, and cavity-nesting birds.**

Veteran trees are often survivors of past landscapes and management practices and are crucial for biodiversity and cultural heritage.

Ancient and Veteran Trees

According to the Woodland Trust's Ancient Tree Inventory, most of the ancient tree resource within the Strategy area is located in Gateshead, with the majority found in the Derwent Valley, associated with ancient woodland and historic parkland, including the National Trust's Gibside Estate and the Axwell Park Estate. Beyond the Derwent Valley, the remaining ancient trees are primarily located within historic parkland linked to the Bradley Hall Estate in the Tyne Valley and the Ravensworth Estate in the Team Valley. A single ancient tree is recorded in Washington Village, near Washington Old Hall, the ancestral home of George Washington, the first President of the United States. The most numerous ancient tree species within the Strategy area are oak and common beech, with others including ash, rowan, Norway maple, sweet chestnut, and sycamore.

The species of veteran tree recorded within the Strategy area is notably more diverse. In addition to those previously listed, documented veteran trees include alder, common hawthorn, common lime, common yew, holly, horse chestnut, Huntingdon elm, laburnum, service tree of Fontainebleau, silver birch, small-leaved lime, Swedish whitebeam, hornbeam, and wych elm. These trees are found across a range of settings, including historic parkland, churchyards, cemeteries, and municipal parks.





Scrub

Scrub plays a valuable ecological role in many habitats where it is not the dominant vegetation type, including grasslands, heathlands, wetlands, woodlands, sand dunes, and maritime cliffs and slopes.

Scrub supports biodiversity, ecosystem services, and habitat connectivity. It adds structural diversity, providing nesting sites, shelter, and seasonal food for invertebrates, birds, and mammals. It also helps stabilise soils, reduce erosion, slow water flow, and limit sediment runoff.

By offering shade and acting as a windbreak, scrub creates microhabitats that support a wide range of species. As a transitional habitat (ecotone), scrub enhances biodiversity between ecosystems like woodland and grassland. It also supports natural succession, sheltering young trees and aiding woodland development.

Scrub can also form a distinct habitat in its own right, dominated by dense stands of shrubs and small trees. These areas are often structurally complex and ecologically rich. In the Strategy area, examples of scrub-dominated habitats include:

- **Lowland mixed scrub (e.g. hawthorn, blackthorn, elder, dog rose, bramble)**
- **Coastal scrub (e.g. sea buckthorn, gorse)**
- **Wet scrub (e.g. willow, alder)**

Although widespread, there are no figures available on the extent of scrub habitat in the Strategy area. In places with limited tree cover—such as South Tyneside—scrub is particularly important, offering cover and a valuable food resource for both resident and migratory birds.

However, scrub can have negative impacts if left unmanaged—particularly where it encroaches on species-rich grasslands—leading to the loss of open habitats and associated biodiversity. To maintain ecological balance and maximise biodiversity, appropriate management is essential. Techniques such as rotational coppicing, grazing, or selective clearance can help maintain a varied scrub structure, prevent dominance, and support a diverse range of species. In some cases, allowing natural succession to woodland is appropriate for nature recovery.





Native Hedgerow

Hedgerows are linear boundaries composed of at least 80% native trees and woody shrubs, typically extending over 20 metres in length and less than 5 metres in width. They sometimes include associated features such as banks or ditches. Originally planted to mark the boundaries between farms, fields, and estates—and to contain livestock—hedgerows are most commonly found in lowland agricultural landscapes.

Native hedgerows provide shelter, nesting sites, and foraging opportunities for a wide range of insects, birds, small mammals, amphibians, and reptiles. They also act as wildlife corridors, connecting larger blocks of habitat (e.g. woodland), and enabling species movement and genetic exchange.

Hedgerows contribute to landscape character and, in some cases, hold significant cultural value. They help reduce soil erosion, improve water infiltration, and limit surface runoff—thereby mitigating flood risk. Additionally, they store carbon and can filter pollutants and nutrients from adjacent farmland, improving water quality.

Hedgerows are relatively widespread in the more rural and some peri-urban parts of the Strategy area, with the majority dating from the post-enclosure period (16th–19th century). The few remaining ancient (pre-enclosure) hedgerows are located in Gateshead, such as those at Clockburn Lonnen in the Derwent Valley.

While there are some notable exceptions, many hedgerows within the Strategy area are species-poor, irregular in form, and poorly maintained with frequent gaps. Hedgerow trees are often limited in number, and degradation is common due to over-frequent cutting.

Although there are no precise figures to quantify hedgerow loss in the Strategy area during the post-war period, historic mapping suggests that losses were extensive. Some restoration—such as gapping-up and laying of defunct hedgerows—and new planting, often associated with transport schemes or the reclamation of post-industrial land (e.g. former colliery and opencast sites), has taken place in recent years. However, occasional losses still occur.

There remains significant potential for a hedgerow renaissance in the Strategy area.





Grasslands, Heathland, and Open Mosaic Habitats

Grasslands

Grasslands are habitats dominated by grasses and herbaceous plants. Their character and ecological value depend on a range of factors, including soil type and fertility, hydrology, historic land use, and current management.

The majority of grasslands within the Strategy area are intensively managed for livestock grazing, silage, or hay production. Amenity grasslands are frequently mown and managed for recreation, aesthetics, or public use (e.g. school playing fields, sports pitches, urban parks, and golf courses).

As a result, both agriculturally improved and amenity grasslands support minimal biodiversity. In England and Wales, 97% of wildflower-rich grasslands have been lost since the 1930s, primarily due to agricultural intensification and development.

Where they persist, species-rich grasslands are among the most ecologically valuable habitats in the Strategy area. Characterised by a diverse mix of native wildflowers, fine-leaved grasses, and low nutrient levels, these habitats include:

- **Lowland meadows**
- **Calcareous (limestone) grasslands**
- **Acid grasslands**

These grasslands typically result from traditional management, such as low-intensity grazing or cutting for hay in late-summer, which prevents dominance by competitive species and allows a wide range of wildflowers to flourish. In turn, they support a rich diversity of plants, fungi, invertebrates, birds, and mammals.

Within the Strategy area, wildflower-rich lowland meadows are extremely rare, with several sites designated for their ecological importance, including:

- **Lower Derwent Meadows SSSI (Gateshead)**
- **Boldon Pastures SSSI (South Tyneside)**
- **South Hylton Pasture SSSI (Sunderland)**





Along the eastern and southern boundaries of South Tyneside and Sunderland, the Strategy area supports remnant calcareous grasslands, including the nationally important Magnesian limestone grassland. These habitats occur on clifftops, steep escarpments, rock exposures and old quarries growing on dry, nutrient-poor, strongly alkaline, and often shallow soils. They support a unique and diverse flora, including:

- **Blue moor-grass**
- **Common rock-rose**
- **Small scabious**
- **Bee, pyramidal, and fragrant orchids**

Notable examples include:

- **Harton Downhill SSSI, Marsden Old Quarry LWS, and Cleadon Hills SSSI (South Tyneside)**
- **Tunstall Hills and Ryhope Cutting, Hastings Hill, and Herrington Hill SSSIs (Sunderland)**

Unimproved acid grassland is a scarce habitat in the Strategy area, typically found on nutrient-poor, acidic soils derived from sandstone, coal measures, or glacial deposits (e.g. sands and gravels). These grasslands support fine-leaved grasses such as wavy hair-grass, and acid-tolerant herbs like heath bedstraw, sheep's sorrel, and tormentil. They may also host important waxcap fungi and lichen communities.

In the Strategy area, most acid grassland is found in Gateshead, with good examples at:

- **Beda Hills (Derwent Valley)**
- **Guards Farm Meadows (near Coalburns)**

Semi-improved grassland, which has undergone some agricultural improvement but retains elements of its original character and moderate species diversity, is more widespread across the Strategy area. These grasslands can still support a range of invertebrates, birds, and small mammals, particularly where sympathetic management and structural diversity are maintained.

Wildflower-rich grasslands within the Strategy area are extremely rare, reflecting the national picture. The few remaining sites are often small, fragmented, and under threat due to factors such as a lack of ongoing positive management.

However, targeted efforts are underway to restore several degraded priority grassland sites across the Strategy area. In addition, new wildflower grasslands have been successfully established on former arable and pastureland, amenity grassland, and post-industrial sites including former collieries and landfills.

There are also examples of semi-improved grasslands being enhanced to increase their botanical and invertebrate diversity. Alongside the restoration and long-term positive management of all remaining areas of priority wildflower grassland, the enhancement of semi-improved grassland presents the single biggest opportunity to significantly increase the extent, quality, function, and connectivity of wildflower-rich habitats within the Strategy area—supporting a wide range of plant and animal species, and delivering broader environmental and social gains.



Lowland Heathland

Lowland heathland is a rare and fragmented habitat within the South of Tyne and Wear LNRS area. Typically found below 300 metres in altitude, it is characterised by low-growing shrubs such as heather, alongside a variety of grasses, wildflowers, fungi, and lichens adapted to acidic, low pH soils. These habitats usually develop on dry, sandy, nutrient-poor, free-draining substrates, though in some locations they also occur on damp, peaty soils or former colliery spoil.

The most notable example of lowland heathland in the Strategy area is found at Whitehills in Gateshead, where the habitat supports a diverse mix of heathland flora. In a few locations, heathland has also developed within large areas of planted ancient woodland, such as Chopwell Woods and the Gibside Estate in the Derwent Valley. Here, heathland emerges temporarily following tree felling, before new planting or natural regeneration shades out the open habitat.

Gateshead supports the majority of the remaining heathland resource, with additional sites at Burdon Moor, Ousbrough Woods, and Tanfield Railway Sidings in the upper Team Valley. Heathland also persists along some disused railway corridors, including the Bowes Railway Path in Gateshead and the Eppleton Colliery Railway in Sunderland.

Despite its ecological value, lowland heathland remains scarce and vulnerable in the Strategy area. Its fragmented nature and limited extent highlight the need for targeted conservation, sensitive management, and strategic restoration to safeguard and expand this priority habitat.



Open Mosaic Habitats

Open mosaic habitats on previously developed land (sometimes referred to as Early Successional Brownfield Land) is recognised both nationally and locally as a priority habitat. It typically occurs on former industrial, commercial, or residential sites, where soils have been disturbed, removed, or replaced with substrates such as colliery spoil or demolition rubble. The resulting conditions—nutrient-poor, free-draining, and often heterogeneous—can support a dynamic patchwork of early successional habitats.

Open mosaic habitats can be exceptionally rich in biodiversity, particularly for invertebrates, many of which are rare or threatened. They provide a continuity of microhabitats—including warm, sheltered niches, nectar-rich flowers, bare ground for basking and nesting, and varied vegetation structure—that support a wide range of species with highly specific ecological requirements.

Key species include:

- **Dingy skipper and grayling butterflies, which rely on sparse vegetation and bare ground for breeding.**
- **Bees, wasps, beetles, and flies, many of which depend on early successional conditions.**
- **Small mammals, birds, and reptiles, which in turn attract predators such as kestrel, barn owl, and fox.**

In some cases, the species richness of high-quality open mosaic sites rivals that of ancient woodland, particularly for invertebrates.

Within the South of Tyne and Wear LNRS area, open mosaic habitats are found across the urban and peri-urban landscape, particularly along the Tyne and Wear corridors. Notable examples include Tanfield Railway Sidings (Gateshead) and Wardley Colliery at Follingsby Lane (South Tyneside), both of which support regionally important populations of dingy skipper butterflies. Other sites include disused railway lines, former quarries, and derelict industrial land, where natural regeneration has created a rich mosaic of bare ground, flower-rich grassland, ephemeral vegetation, scrub, and wet features.





Freshwater and Estuaries

Rivers and Streams

Within the South of Tyne and Wear LNRS area, river valleys—running broadly west to east and south to north—act as natural corridors, connecting many of the area’s most important wildlife sites and supporting ecological connectivity across urban and rural landscapes.

The Strategy area’s principal rivers, the Tyne and the Wear, have undergone significant recovery from their industrial past and now support a wide range of biodiversity. Both rivers are tidal far inland, with estuaries entering the North Sea at South Shields and Sunderland, respectively.

The Derwent Valley in Gateshead remains largely wooded and joins the Tyne at Derwenthaugh. The River Team, wooded in its upper and middle reaches, flows into the Tyne near Dunston. Its lower course was heavily modified in the 1940s to accommodate the Team Valley Trading Estate. The Don, the Tyne’s easternmost tributary, flows through South Tyneside and enters the river at Jarrow.

Despite ongoing challenges related to water quality, urbanisation, and invasive non-native species, the Strategy area’s rivers are arguably more biodiverse now than at any time in recent decades. Improvements in sewage treatment infrastructure, including the closure of outfalls and the use of reedbeds to treat sewage and mine water—such as those at Lamesley—have supported the return of species including otter, Atlantic salmon, goosander, kingfisher, and grey wagtail.

However, concerns remain. Once a stronghold in the Strategy area, the current status of water vole—one of the UK’s most threatened mammals—on the River Don is uncertain. Recent surveys have failed to confirm its presence. A similar picture is seen across the wider Strategy area, with declines driven by predation from non-native American mink, as well as habitat loss and degradation.

While biological water quality remains variable and overall ecological status is considered moderate, all major rivers within the Strategy area have improved significantly since the 1980s. However, many smaller streams continue to be degraded by pollution, channel modification, and drainage pressures, reducing their value for wildlife and limiting their contribution to landscape-scale connectivity.

The recent restoration of a 1 km heavily modified section of the River Don at South Follingsby, Gateshead, featuring secondary channels, riffle and pool sequences, and the removal of fish obstructions, demonstrates what can be achieved through effective spatial planning and strong partnership working.



Wetlands

Wetlands are habitats that remain wet for at least part of the year and include a wide range of features such as ponds and lakes, fen, marsh, swamp, and reedbeds. These habitats are among the most ecologically valuable in the Strategy area, supporting a rich diversity of wildlife and delivering vital ecosystem services such as water purification, flood mitigation, and carbon storage.

Wetlands in the Strategy area tend to occur in scattered clusters or along river valleys, with few large examples. Many have been created or heavily modified, yet still retain significant biodiversity value, including:

- **Submerged and marginal plants.**
- **Aquatic invertebrates such as dragonflies and damselflies.**
- **Breeding amphibians, including great crested newt and common toad.**
- **Mammals such as otter, and in some locations, water vole and harvest mouse.**
- **Birds, including breeding and wintering wildfowl and waders.**





Ponds and Lakes

Occurring both naturally and as a result of human activity, ponds are the most numerous, widespread, and varied wetland type in the Strategy area. They occur as components of larger wetland sites, within woodlands, or as isolated features in low-lying areas where water collects. Although often small and scattered, ponds provide critical habitat for a wide range of species.

Notable examples of smaller ponds include:

- **Clara Vale Pond (Gateshead).**
- **Monkton Pond (South Tyneside).**
- **Usworth Pond (Sunderland).**

Most of the larger waterbodies within the Strategy area have been created for landscape purposes in urban parks, historic estates, and country parks. Despite their artificial origins, many contribute significantly to local biodiversity.

Examples include:

- **Watergate Forest Park Lake (Gateshead)**
- **Boldon Business Lake (South Tyneside)**
- **Silksworth Lake (Sunderland)**

Some of the largest and most ecologically significant ponds and pond clusters in the Strategy area include:

- **Shibdon Pond SSSI (Gateshead)**
- **Boldon Flats LWS (South Tyneside)**
- **Rainton Meadows LWS (Sunderland)**

A special mention goes to the Washington Wetland Centre, owned and managed by the Wildfowl & Wetlands Trust, which recently celebrated 50 years since its establishment in 1975.

Many ponds have been created in recent decades, often as balancing ponds associated with housing developments or road improvement schemes. Some were designed specifically for biodiversity and have become important wildlife sites.

At the same time, many ponds have fallen into decline as a result of neglect or poor management, or, inconsistent water supply or quality, and lost much of their former interest and value, while others have been lost from the landscape due to drainage or development.

Fen, Marsh, Swamp, and Reedbed

Fens, marshes, swamps, and reedbeds are wetland habitats recognised for their ecological importance and high biodiversity value.

Fens are peat-forming wetlands fed by groundwater or surface water. Their vegetation varies depending on water chemistry and nutrient levels, with some supporting diverse plant communities.

Marshes are wet grasslands dominated by rushes, sedges, and herbaceous plants. They typically occur in low-lying areas subject to seasonal waterlogging.

In swamps, the water table is at or above the surface for much of the year. Dominated by tall emergent vegetation, they often occur at the margins of open water bodies or ditches.

Reedbeds are wetlands dominated by common reed, with the water table at or above ground level. They are especially important for breeding birds including bittern and reed warbler.

The distribution and extent of both fen and reedbed habitats are extremely limited within the Strategy area, while marsh and swamp habitats are more widespread. These habitats often occur together, transitioning into one another and adjoining other wetland features such as open water, ditches, and wet grasslands.





Notable examples within the Strategy area include:

Reedbeds:

- **Lamesley Reedbed (Gateshead)**
- **Primrose Nature Reserve (South Tyneside)**
- **Washington Wetland Centre (Sunderland)**

Lowland Fens:

- **Hetton Bogs**
- **Seven Houses Marsh**
- **Hylton Dene Local Nature Reserve (all in Sunderland)**

These wetland habitats are particularly important for breeding birds, including:

- **Reed warbler**
- **Water rail**
- **Reed bunting**
- **Bittern**

Data on the historic and current extent of these habitats is limited, but it is clear that all were once more widespread across the Strategy area.

In recent decades, the extent of reedbed has increased, both through natural colonisation and habitat creation. This expansion has supported the return of reedbed specialist bird species.

However, some wetland sites have declined due to neglect, pollution, or increasingly inconsistent water supply. Others have been lost entirely through drainage or development.

Despite these challenges, the continued expansion, restoration, and active management of these habitats present valuable opportunities for nature recovery, species conservation, and the delivery of nature-based solutions.





Intertidal Mudflats and Saltmarsh

The estuarine stretches of the Tyne and Wear rivers support significant areas of intertidal mudflat and saltmarsh, forming a vital part of the Strategy area's coastal and estuarine landscape.

Extensive mudflats are exposed at low tide, particularly along the Tyne estuary, where they form a linear complex—the largest of its kind locally. Rich in invertebrates, these habitats provide essential feeding grounds for wading birds such as:

- **Redshank**
- **Curlew**

And for wildfowl, including:

- **wintering Teal**
- **breeding Shelduck**

Since large-scale dredging on the Tyne ceased in the early 1990s, some mudflat areas have expanded. However, future pressures such as coastal squeeze—where rising sea levels compress intertidal habitats against fixed infrastructure—may threaten their extent and ecological function.

Saltmarsh develops where saltwater mixes with freshwater, forming a highly productive ecosystem. These habitats support a distinctive flora, including:

- **Common saltmarsh grass**
- **Sea arrowgrass**
- **Greater and lesser sea spurrey**
- **Orache species**
- **Thrift and sea aster in upper zones**

Saltmarsh is much scarcer in the Strategy area, with historic losses due to industrial development (e.g. Jarrow Slake) and more recent urban expansion. Some areas are naturally reforming, though this may be constrained by sea level rise. More recently, low brushwood structures have been used on the River Tyne at Hebburn to stabilise sediment and promote the establishment of saltmarsh vegetation.



3. DESCRIPTION OF THE STRATEGY AREA



Notable areas of saltmarsh occur at:

- **Baron’s Quay, Timber Beach, and Claxheugh Riverside (Sunderland) – support colonising species such as glassworts (*Salicornia spp.*), not found elsewhere locally.**
- **Jarrow (Don–Tyne confluence) – saltmarsh created in the 1990s.**
- **Dunston (Team–Tyne confluence) – another example of habitat creation.**

Together, mudflats and saltmarshes deliver key ecosystem services, including:

- **Flood mitigation**
- **Carbon storage**
- **Nutrient cycling**

They are also critical for supporting estuarine biodiversity and maintaining the ecological integrity of the Strategy area’s coastal zones.





Coastal Habitats

The South of Tyne and Wear coastline stretches approximately 19.5 km, from the River Tyne to Ryhope Dene. This narrow coastal corridor is ecologically rich, supporting a mosaic of interconnected habitats that include maritime cliffs and slopes, sand dunes, vegetated shingle, sandy beaches, strandlines, and rocky shores.

Although limited in extent and difficult to recreate, these habitats can be enhanced through targeted management. In addition, measures are being implemented to mitigate the impacts of development and increased recreational pressure on these sensitive habitats and their associated species.

Maritime Cliffs and Slopes

Prominent in South Tyneside and southern Sunderland, these cliffs—often capped with boulder clay and herb-rich grasslands—reach their highest elevations at Marsden Bay and Lizard Point. They provide critical nesting sites for seabirds and host diverse plant communities. The cliffs and sea stacks in South Tyneside support one of the largest mixed seabird colonies between the Farne Islands in Northumberland and Bempton Cliffs in Yorkshire, with thousands of nesting pairs of kittiwakes, fulmars, razorbills, cormorants, and herring gulls.

Sand Dunes and Vegetated Shingle

These habitats are rare and fragmented, with remnants found between Seaburn and Whitburn, and from Trow to Littlehaven. Despite their limited extent, they are botanically rich and dynamic, supporting species such as sea sandwort, sea rocket, orache, sea couch, marram, and lyme-grass. Restoration efforts have been initiated, but progress remains constrained by recreational pressure, erosion, and coastal development.





Sandy Beaches and Strandlines

Beaches such as Roker (Sunderland) and Sandhaven (South Tyneside) serve as important feeding grounds for wintering waders including sanderling, ringed plover, and oystercatcher. These areas are also popular for recreation, which can lead to habitat disturbance. Along the upper beach margins, strandlines—accumulations of tidal debris—form narrow but ecologically valuable zones. These support specialised plant communities and invertebrates, playing a key role in coastal food webs and habitat connectivity, though they are often overlooked or removed for aesthetic reasons.

Rocky Shores and Intertidal Zones

Sites like Whitburn Steel feature complex rock pools supporting seaweeds, molluscs, crustaceans, and fish. These habitats are vital for wintering wading birds such as curlew, redshank, golden plover, purple sandpiper, and turnstone, and also support the rock pipit. During autumn migration, they attract large numbers of roosting terns. The broader intertidal areas, including rock pools and sandy foreshores, host a rich marine assemblage that sustains higher trophic levels, including wintering wildfowl and increasingly frequent cetaceans such as dolphins and porpoises.





Farmland

Farmland is a dominant land use in the South of Tyne and Wear, covering over 40% of the Strategy area. It supports the production of cereals and livestock, and plays a key role in shaping both the landscape and ecological character of the area.

The agricultural landscape is largely open, segmented predominantly by poor-quality hedgerows and interspersed with mixed woodlands and conifer shelter belts. Farming is concentrated in a broad east-west corridor stretching from Whitburn to Washington, extending west across the A1, around western Gateshead, and northwards to the Strategy area's outer limits. South of Washington, farmland continues across the River Wear toward the Herringtons, Hetton, Burdon, and the coast.

Farming practices are shaped by soil type and elevation:

- **Fertile, well-drained soils along river valleys and the Magnesian Limestone Plateau support arable cropping, including wheat, barley, and rotational oilseed rape.**
- **Heavier, less fertile soils at higher elevations are used for pastoral farming, mainly cattle, with some sheep.**
- **Horse grazing, often intensive, is widespread across both large and small holdings.**

Despite decades of biodiversity decline, farmland remains ecologically significant:

- **Improved grasslands and arable monocultures dominate, but less intensive areas support species such as linnet, yellowhammer, grey partridge, and brown hare.**
- **Hedgerows, where intact and well-managed, provide habitat for invertebrates, small mammals, and farmland birds.**
- **The uplands of western Gateshead (above 200m) support permanent pasture and breeding populations of lapwing, skylark, and the priority species curlew.**






Farmland habitats face a wide range of pressures, many rooted in historic agricultural policy:

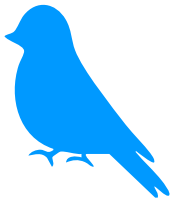
- **Past subsidies under the Common Agricultural Policy (CAP) incentivised intensive farming, monocultures, and the removal of landscape features like hedgerows, contributing to widespread habitat loss.**
- **Herbicide use has reduced wildflower diversity, including species like field poppy, while farmland birds such as tree sparrow, linnet, and skylark have declined by over 70% in the last 40 years.**

Between 2000 and 2020, agri-environment schemes helped slow biodiversity loss and supported partial recovery of species such as the tree sparrow. However, the transition from EU-based support to domestic schemes has introduced uncertainty, with gaps in funding and clarity that risk undermining progress. The future success of farmland nature recovery depends on:

- **Sustained policy commitment**
- **Adequate long-term funding**
- **Practical support for farmers to adopt and maintain sustainable practices**

FARMLAND BIRDS HAVE DECLINED BY OVER

 **70%** in the last 40 years.



A blue-bordered box containing text and a bird silhouette. The text reads 'FARMLAND BIRDS HAVE DECLINED BY OVER' followed by a large blue downward arrow, '70%' in a very large font, and 'in the last 40 years.' to the right. A blue silhouette of a bird is positioned to the right of the text.





Urban Habitats

Urban habitats are widespread across the South of Tyne and Wear and form a varied mix of green, blue, and grey spaces. These include parks, gardens, allotments, school grounds, cemeteries, business parks, transport corridors, post-industrial land (brownfield sites), and built structures such as homes, offices, walls, and bridges. Together, they create a patchwork of habitats that support a wide range of wildlife and contribute meaningfully to the area's ecological character.

Many species have adapted to urban life, using buildings and other structures for shelter and nesting. Birds like house sparrows, starlings, and swifts nest in buildings, while several bat species roost in roofs and crevices. A particularly notable example is the inland colony of kittiwakes on Newcastle and Gateshead quaysides—known as the most inland breeding site of its kind in the world.

Gardens and allotments are vital for urban biodiversity, offering food, shelter, and nesting sites for pollinators, small mammals, and birds. In residential areas, they form part of a wider network of semi-natural spaces. Larger public green spaces—such as parks, village greens, and school grounds—provide similar benefits at scale, supporting species like hedgehogs, bees, and butterflies including the red admiral and peacock.

Several long-established parks act as important wildlife refuges. Examples include Saltwell Park in Gateshead, the Marine and Bents Parks in South Tyneside, and Mowbray and Backhouse Parks in Sunderland.

These parks feature mature trees, shrubs, and ponds that support birds, bats, and other species throughout the year.

Urban transport corridors—such as railway lines and major roads—can also provide valuable habitat and act as wildlife highways, helping animals move between otherwise isolated areas. While these corridors present some ecological challenges, they play an important role in connecting habitats across the urban landscape.

Urban habitats are found throughout the Strategy area and are expected to expand further with new housing, transport, and employment developments. Parks and gardens are especially common around the edges of built-up areas and in less densely developed neighbourhoods.





4. Threats and Opportunities



Threats and Opportunities

This section considers current and anticipated future pressures on biodiversity within the Strategy area, and broad opportunities for nature's recovery. The table below identifies threats/pressures impacting biodiversity (habitats and species) within the Strategy area:

Threat	Pressure	Description
Direct Habitat Loss and Fragmentation	Development and Infrastructure	Conversion of habitats to housing, road, and industrial use
		Land reclamation and coastal defence works
		Fragmentation from transport corridors and urban expansion
	Agricultural Intensification	Removal of hedgerows, ploughing and reseeding of grasslands
		Drainage of wetlands and damp grasslands
	Land Use Change	Loss of priority open habitats (e.g. heathland, grassland) through natural succession or afforestation (sites falling below 0.5ha regulatory threshold)
		Replanting of conifers on ancient woodland sites
		Loss of brownfield and post-industrial habitats
	Land Clearance	Removal of habitats including illegal felling of trees/woodland without a licence
		Informal land grabs/property encroachment by the public (typically neighbouring homeowners) leading to a loss of habitat including 'irreplaceable habitat' and designated sites

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Threat	Pressure	Description
Indirect Habitat Loss and Degradation	Poor or Inappropriate Management	Lack of traditional management practices (e.g. coppicing, hay cutting, low intensity grazing)
		Overgrazing of livestock or horses
		Frequent and poorly timed management operations (e.g. grass cutting, trimming of hedgerows, dredging of watercourses)
		Changes to forestry management including move from cyclical clear-fell to continuous cover reducing establishment of open habitats (e.g. heathland) and potential for associated species (e.g. nightjar)
	Physical Modification	Channelisation of rivers, and streams
		Hard engineering and sediment disruption
		Landscaping and inappropriate planting including poor site selection, design, and choice of species
	Pollution	Agricultural and equine point-source and diffuse pollution (nutrients, pesticides) impacting terrestrial, freshwater, and coastal habitats
		Industrial discharges and emissions impacting terrestrial, freshwater, and coastal habitats
		Urban point-source and diffuse pollution (misconnections and cross-connections) impacting terrestrial, freshwater, and coastal habitats
		Air pollution affecting soil and water chemistry
		Artificial lighting and noise
		Novel pollutants including plastics/microplastic, PFAS ('forever chemicals'), discarded/lost lithium batteries

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Threat	Pressure	Description
Indirect Habitat Loss and Degradation	Invasive Non-Native Species (INNS) and Invasive Native Species	Spread of INNS (e.g. Himalayan balsam, Japanese knotweed, sea buckthorn, and garden escapes)
		Competition and habitat alteration
		Predation of native wildlife (e.g. American mink predating water vole)
		INNS and Invasive Native Species adversely impacting habitats owing to a lack of management (e.g. grey squirrel and deer damage affecting existing and new woodlands) or climate/environmental change (e.g. the spread of bracken on heathlands)
	Pest and Diseases	Increased risk of spread and weakened resistance owing to climate change and environmental stress
		Introduction of new pests and diseases owing to poor biosecurity (e.g. Chalara – ash dieback)
	Climate and Environmental Change	Increased risk of drought and flooding affecting terrestrial and wetland habitats and their associated interest through changes in water levels and flow patterns
		Sea level rise and coastal squeeze
		Phenological mismatches affecting species interactions

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Threat	Pressure	Description
Indirect Habitat Loss and Degradation	Human Disturbance	Trampling, erosion, disturbance from informal access
		Dog walking and dogs off leads in sensitive areas resulting in disturbance of sensitive habitats and species, dog fouling causing eutrophication, and flea treatments impacting waterbodies
		Removal of fallen deadwood from woodlands for use in wood burning stoves
		Illegal use of motor bikes and off-road vehicles
		Vandalism, fly-tipping including garden waste, and littering
		Illegal persecution and exploitation – killing of birds of prey and fish-eating species, egg collecting, badger baiting, hare coursing
		Illegal fishing, poaching, and collecting
	Disconnect between People and Nature	Unauthorised/illegal introduction/release of plants, animals, or fish into the environment including designated sites
		Public pressure for ‘tidiness’ – increased grass cutting and spraying
		Intolerance of wildlife and trees where they create a perceived nuisance or hazard
		Reduced awareness and respect for the outdoors (e.g. following the Countryside Code)
		Use of artificial grass and replacement of vegetated gardens with hard surfaces
		Lack of understanding re climate change and biodiversity loss, and unwillingness to change personal behaviours
		Reduction in volunteer numbers

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Threat	Pressure	Description
<p>Indirect Habitat Loss and Degradation</p>	<p>Capacity, Funding, Coordination, Skills and Diversity</p>	<p>Lack of staff capacity within delivery bodies (e.g. statutory agencies, local authorities, and eNGOs)</p>
		<p>Insufficient funding to deliver conservation priorities</p>
		<p>Lack of joined up working leading to poor outcomes or missed opportunities</p>
		<p>Shortage of skilled staff, volunteers, and training opportunities</p>
		<p>Socio-economic barriers preventing greater diversity among conservation sector workforce</p>





Wider environmental issues

Several wider environmental issues—such as climate change and water quality—operate at national and international levels. While the LNRS cannot solve these challenges, it can help mitigate their impacts locally through targeted nature recovery actions.

Climate Change

Climate change is already affecting the South of Tyne and Wear area, with projections indicating more frequent heatwaves, droughts, flooding, and strong winds. Coastal zones and tidal river reaches are particularly vulnerable to sea level rise and coastal squeeze.

These changes are happening faster than many species and habitats can adapt. Some native species may struggle to shift their ranges northward, while others—better suited to warmer conditions—may colonise new areas. This ecological disruption poses risks to biodiversity and ecosystem stability.

While the LNRS cannot address the global drivers of climate change, it can help mitigate the local impacts of a changing climate, including extreme weather events (e.g. drought, heatwaves, flooding, and storms) on biodiversity, by:

- **Increasing the extent and connectivity of habitats**
- **Supporting climate-resilient ecosystems**
- **Promoting Nature-based Solutions such as woodland creation, wetland restoration, and urban greening**

Water quality and security

Watercourses and wetlands in the Strategy area face pressures from:

- **Sewage discharges including storm overflows**
- **Urban and rural diffuse and point-source pollution including discharges, runoff, and leaching of fertilizers and chemicals**
- **Legacy contamination from historic lead and coal mining (e.g. heavy metals)**
- **Reduced water availability and increased flooding**

These issues degrade aquatic habitats and limit biodiversity.

Although the LNRS is not responsible for regulating water quality, it can support improvements by promoting:

- **The delivery of site-specific and catchment-scale Nature-based Solutions (NbS)**
- **Targeted livestock and equine management, nutrient input reduction, and the use of riparian and wetland buffer strips**
- **Water conservation and biodiversity awareness through community engagement and education**



Air Quality and Eutrophication

Air pollution—particularly from traffic, industry, and agriculture—can affect soil and water chemistry, harming sensitive habitats. Nitrogen deposition contributes to eutrophication, where excess nutrients lead to the dominance of a few species and the loss of biodiversity.

The LNRS can help mitigate these effects by:

- **Supporting habitats that buffer pollution (e.g. woodlands, wetlands)**
- **Promoting land management practices that reduce nutrient runoff**
- **Identifying areas where restoration can improve air and water quality**

Competing Land Use Pressures

The Strategy area faces increasing pressure from:

- **Housing and infrastructure development**
- **Intensive agriculture and horticulture**
- **Recreational use of sensitive sites**

These pressures can lead to habitat loss, fragmentation, and degradation. The LNRS can help by:

- **Identifying priority areas for nature recovery**
- **Supporting multi-functional land use that balances development and biodiversity**
- **Encouraging collaboration between landowners, planners, and communities**





Opportunities for nature recovery

The following outlines a broad range of opportunities for nature recovery within the Strategy area.

Planning and Development



- **Mandatory Biodiversity Net Gain (BNG)**
Embed biodiversity enhancements in all major developments.
- **Local and National Planning Policies**
Protect and enhance designated sites, priority habitats, and species.
- **Minerals and Waste Planning**
Restore extraction and landfill sites for large-scale habitat creation.
- **Blue-Green Infrastructure (BGI)**
Expand SuDS, green corridors, and urban wetlands.
- **National Infrastructure Projects**
Integrate nature recovery into national infrastructure projects (e.g. anticipated Tyne and Wear Metro extension).

Accessible Natural Greenspace



- **New and Enhanced POS**
Delivered via planning gain, BNG, and community initiatives.
- **North East Community Forest**
Expand woodland cover in urban and peri-urban areas.
- **Green Infrastructure Standards**
Apply Natural England's and Woodland Trust's access standards.
- **Urban Nature Recovery Standard**
Aim for 1ha of LNR per 1000 people in urban and fringe areas.



Habitat Creation and Enhancement



- **30by30 Target**
Protect and restore 30% of land for nature by 2030.
- **Public Land Management**
Improve biodiversity in public open spaces such as parks, cemeteries, and on roadside verges.
- **Wilding**
Explore context-sensitive wilding opportunities, especially in peri-urban and rural fringe areas.
- **Designated Site Management**
Improve condition of SSSIs, LNRs, and Local Wildlife Sites.

Funding Opportunities



- **Public Schemes**
ELMS, SFI, Landscape Recovery Fund, Developer Contributions.
- **Private Finance**
Green finance, carbon credits, biodiversity credits.
- **Blended Finance**
Combine public and private funding for landscape-scale recovery.
- **Corporate and Philanthropic Support**
Engage businesses and charities in funding nature recovery.



Farming and Land Management



- **Agri-Environment Schemes**
Promote ELMS, SFI, and Countryside Stewardship.
- **Regenerative Agriculture**
Support soil health, biodiversity, and water quality.
- **Agroforestry**
Integrate trees into productive landscapes.
- **Landscape Recovery**
Facilitate farmer clusters for collaborative habitat restoration.

Forestry and Woodland Management and Creation



- **Woodland Creation and Tree Plantin**
Increase native woodland and canopy cover.
- **Woodland Management**
Support biodiversity, timber production, climate adaptation, and public access.
- **Buffer Planting**
Use trees and woodland to protect watercourses and sensitive habitats.
- **Agroforestry**
Enhance productivity and ecological value.



Watercourses and Wetlands



- **Natural Flood Management (NFM)**
Use leaky dams, wetland creation, and floodplain reconnection to slow flows and reduce flood risk.
- **Nature-based Solutions (NBS)**
Apply NBS to reduce pollution, including nutrient inputs, and improve water quality and ecological status.
- **River Restoration**
Re-naturalise channels and improve habitat connectivity.
- **Water Framework Directive (WFD)**
Align with Northumbria District River Basin Management Plan, and Tyne and Wear Catchment Plans.

Species Recovery, Reintroductions, and INNS



- **Species Recovery Plans**
Target priority species including pollinators, amphibians, and farmland birds.
- **Reintroductions**
Support water vole reintroduction and other native species where feasible.
- **INNS Management**
Control invasive non-native species (e.g., Himalayan balsam, Japanese knotweed) through coordinated catchment-based approaches.
- **Monitoring and Biosecurity**
Strengthen local capacity for early detection and rapid response.



Community and Local Action



- **Citizen Science**
Engage communities in species monitoring and habitat surveys.
- **Local Nature Partnerships**
Support grassroots organisations and volunteer groups.
- **Education and Outreach**
Promote nature recovery through schools, events, and campaigns.
- **Community Stewardship**
Enable local management of green spaces and nature reserves.

Data and Evidence



- **Habitat Mapping and Modelling**
Use GIS and remote sensing to identify priority areas.
- **Biodiversity Monitoring**
Establish baselines and track progress using robust indicators.
- **Evidence-Based Planning**
Inform decision-making with ecological data and socio-economic analysis.
- **Data Sharing Platforms**
Collaborate with local authorities, NGOs, and academic institutions to improve access to biodiversity data.



5. Priorities and Potential Measures





Background

This section presents the Priorities for restoring and enhancing nature within the Strategy area, alongside the Potential Measures that can help deliver these outcomes. These priorities reflect the area's unique ecological context and aim to support broader environmental benefits.

- Priorities represent the long-term desired outcomes of the Strategy. They typically focus on priority habitats or species and are shaped by local circumstances.
- Potential Measures are practical actions that, if delivered, would support the delivery of these priorities. They suggest activities that would benefit specific habitats or species and/or contribute to wider environmental goals.

The development of Priorities and Potential Measures has been informed by:

- Collaboration with a wide range of stakeholders.
- National environmental objectives, relevant strategies and plans.
- Best available data and local knowledge.

A focused set of Priorities have been identified to:

- Address the key Pressures and Opportunities within the Strategy area.

- Support the delivery of relevant National Environmental Objectives (NEOs).
- Target habitats and species of particular importance to the Strategy area.
- Deliver additional environmental benefits (co-benefits) and/or nature-based solutions.

The Potential Measures:

- Include both the restoration/enhancement of existing habitats and the creation of new ones.
- Are designed to be practical, realistic, and achievable.
- Provide sufficient detail to understand their purpose, though they are not step-by-step instructions (additional guidance should be sought before implementation).
- Acknowledge that outcomes depend on how, when, and where actions are carried out.
- Aim to deliver a range of co-benefits.

Species-related Priorities and Potential Measures were developed through a separate process, involving input from species specialists, recorders, and other stakeholders. More information is available in **Appendix C.**



Using the List of Priorities and Potential Measures

The following section presents the identified Priorities and Potential Measures for the Strategy area. These include:

- **A set of Overarching Priorities and Potential Measures applicable across the Strategy area.**
- **Habitat-themed Priorities and Potential Measures, grouped by broad habitat types.**
- **A list of priority habitats associated with each habitat grouping.**
- **Species-themed Priorities and Potential Measures arranged by species group or assemblage.**





Overarching

Overarching – Priorities and Potential Measures

Priority OPI: Evidence Base

A comprehensive, up to date evidence base is maintained and actively used to identify conservation priorities, guide decision-making, and monitor the effectiveness of nature recovery actions.

Table 1: Potential measures that would help achieve Priority OPI

Code	Potential Measure
OPI-Ma	Ensure continued and increased support for the Local Environmental Records Centre as the definitive source of high quality, local, capture resolution biodiversity data—by ensuring consistent data flows from partners, promoting data standards, and embedding its outputs into local decision-making, monitoring, and nature recovery planning.
OPI-Mb	Conduct a systematic biodiversity audit of the LNRS area to establish a baseline for habitats and species to inform priorities and track change.
OPI-Mc	Inspire more people to participate in and enjoy observing and recording nature—by supporting citizen science and encouraging local groups, schools, universities, charities, and businesses to take part. Make it easy and rewarding to share wildlife sightings and habitat data with the Local Environmental Records Centre, helping build a better picture of nature across the Strategy area.



Priority OP2: Jobs and Skills

Increased investment supports growth of the local nature conservation sector, accelerating the delivery of nature recovery across the Strategy area.

Table 2: Potential measures that would help achieve Priority OP2

Code	Potential Measure
OP2-Ma	Develop a green jobs and skills programme to build local capacity for nature recovery, promote corporate partnerships and encourage investment through corporate social responsibility initiatives, and recognise and reward businesses that actively contribute to local nature recovery efforts.

Priority OP3: People and Nature

More people regularly access, benefit from and take positive action for nature locally.

Table 3: Potential measures that would help achieve Priority OP3

Code	Potential Measure
OP3-Ma	Where appropriate and feasible, improve access to nature sites for everyone, including those without private transport.
OP3-Mb	Support school and youth engagement through outdoor learning and the creation of youth ambassador roles to give young people a voice in nature recovery.



Priority OP4: Local Wildlife Sites

All Local Wildlife Sites are supported to achieve and maintain good ecological condition through up-to-date assessment, active landowner engagement, and the implementation of tailored management and monitoring plans.

Table 4: Potential measures that would help achieve Priority OP4

Code	Potential Measure
OP4-Ma	Re-survey all LWS using standardised criteria to establish current ecological condition, prioritising sites with outdated or incomplete data.
OP4-Mb	Develop a targeted engagement programme offering advice, recognition and incentives to LWS owners.
OP4-Mc	Co-produce LWS management and monitoring plans with landowners to ensure feasibility and buy-in.
OP4-Md	Identify funding streams and develop a local LWS grant scheme to support positive management of LWS.



Habitats Woodland, Trees, Scrub, and Hedgerows

Woodland – Priorities and Potential Measures

Priority WPI: Woodland

Ancient and native woodlands are more resilient, in good ecological condition, and better connected across the landscape.

Table 5: Potential measures that would help achieve Priority WPI

Code	Potential Measure
WPI-Ma	Undertake the accelerated restoration of Plantations on Ancient Woodland Sites (PAWS) to native broadleaved woodland.
WPI-Mb	Undertake the restoration, enhancement and long-term positive management of ancient and native woodland to achieve good ecological condition.
WPI-Mc	Undertake the buffering of ancient and native woodland through the restoration, enhancement and long-term positive management of adjoining semi-natural habitat.



Priority WP2: Woodland

The extent of native woodland is increased, contributing to enhanced biodiversity, improved ecosystem services, and greater climate resilience.

Table 6: Potential measures that would help achieve Priority WP2

Code	Potential Measure
WP2-Ma	Undertake the planting or allow for the natural regeneration and colonisation of native woodland, targeting the expansion, buffering and connection of existing woodlands.





Ancient and Veteran Trees – Priorities and Potential Measures

Priority WP3: Ancient and Veteran Trees

The conservation, management and continuity of ancient and veteran trees is improved, safeguarding their ecological, landscape and cultural value.

Table 7: Potential measures that would help achieve Priority WP3

Code	Potential Measure
WP3-Ma	Provide advice, training and ongoing support to landowners and land managers on the identification, care and management of ancient and veteran trees.
WP3-Mb	Undertake the targeted planting and selective veteranisation of open grown trees, prioritising areas of remnant and former parkland, wood pasture and hedgerows.



Scrub – Priorities and Potential Measures

Priority WP4: Scrub

Priority scrub habitat has increased in extent and is more resilient, in good ecological condition, and better connected across the landscape.

Table 8: Potential measures that would help achieve Priority WP4

Code	Potential Measure
WP4-Ma	Undertake the restoration, enhancement and long-term positive management of scrub of high conservation value to achieve good ecological condition.
WP4-Mb	Undertake the buffering of scrub of high conservation value through the restoration, enhancement and long-term positive management of adjoining semi-natural habitat.
WP4-Mc	Undertake the planting or allow for the natural regeneration and colonisation of native scrub, targeting the expansion, buffering and connection of existing areas of scrub of high conservation value.



Hedgerows – Priorities and Potential Measures

Priority WP5: Hedgerows

Native hedgerows have increased in extent and are more resilient, in good ecological condition, and better connected across the landscape.

Table 9: Potential measures that would help achieve Priority WP5

Code	Potential Measure
WP5-Ma	Undertake the restoration, enhancement and long-term positive management of native hedgerows to achieve good ecological condition.
WP5-Mb	Undertake the buffering of native hedgerows through the introduction of conservation headlands and buffer strips or the restoration, enhancement and long-term positive management of adjoining open habitats.
WP5-Mc	Undertake the planting of new species-rich native hedgerows incorporating hedgerow trees. Target areas where this will support the recovery of priority species, provide improved ecological connectivity, and maximise ecosystems services, agricultural landscape benefits.



Grasslands, Heathland, and Open Mosaic Habitats

Grasslands – Priorities and Potential Measures

Priority GPI: Grasslands

Biodiverse grasslands have increased in extent and are more resilient, in good ecological condition, and better connected across the landscape.

Table 10: Potential measures that would help achieve Priority GPI

Code	Potential Measure
GPI-Ma	Identify and catalogue grasslands of high biodiversity value, including those requiring restoration, and grasslands that offer the potential for significant enhancement.
GPI-Mb	Undertake the restoration, enhancement and long-term positive management of grasslands of high biodiversity value to achieve and maintain good ecological condition.
GPI-Mc	Undertake the buffering of priority grasslands through the restoration, enhancement and long-term positive management of adjoining semi-natural habitat.
GPI-Md	Undertake the creation of biodiverse grasslands where appropriate and soil conditions allow, targeting the expansion, buffering and connecting of grasslands of high conservation value.



Heathland – Priorities and Potential Measures

Priority GP2: Heathlands

Lowland heathland has increased in extent and is more resilient, in good ecological condition, and better connected across the landscape.

Table 11: Potential measures that would help achieve Priority GP2

Code	Potential Measure
GP2-Ma	Identify and catalogue all remaining areas of lowland heathland, including that requiring restoration or which offers the potential for enhancement.
GP2-Mb	Undertake the restoration, enhancement and long-term positive management of all remaining areas of lowland heathland to achieve good ecological condition.
GP2-Mc	Undertake the buffering of lowland heathland through the restoration, enhancement and long-term positive management of adjoining semi-natural habitat.
GP2-Md	Undertake the creation of lowland heathland or complementary habitat where appropriate and soil conditions allow, targeting the expansion, buffering and connection of remnant areas of lowland heathland.



Open Mosaic Habitats – Priorities and Potential Measures

Priority GP3: Open Mosaic Habitats

Open Mosaic Habitats have increased in extent and are more resilient, in good ecological condition, and better connected across the landscape.

Table 12: Potential measures that would help achieve Priority GP3

Code	Potential Measure
GP3-Ma	Identify and catalogue areas of OMH requiring restoration or which offer the potential for enhancement.
GP3-Mb	Undertake the restoration, enhancement and long-term positive management of strategic OMH sites to achieve good ecological condition.
GP3-Mc	Undertake the buffering of OMH through the restoration, enhancement and long-term positive management of adjoining semi-natural habitat.
GP3-Md	Undertake the creation of OMH or habitats providing a similar function to OMH where appropriate and soil conditions allow, targeting the expansion, buffering and connection of strategic OMH sites.



Freshwater and Estuaries

Freshwater and Estuaries – Priorities and Potential Measures

Priority RPI: Freshwater and Estuaries

Watercourses, estuaries, and wetlands are more resilient, in good ecological condition, and better connected across the landscape, with an increased extent of biodiverse water-dependent habitats.

Table 13: Potential measures that would help achieve Priority RPI

Code	Potential Measure
RPI-Ma	Restore and re-naturalise heavily modified watercourses using appropriate techniques, including de-culverting (daylighting), floodplain reconnection and channel re-meandering.
RPI-Mb	Undertake the targeted restoration, enhancement and long-term positive management of watercourses, estuaries and wetland habitats to achieve and maintain good ecological condition.
RPI-Mc	Undertake the creation of new biodiverse water-dependant habitats where conditions allow, prioritising opportunities to expand, buffer and connect existing high-value wetland and riparian habitats.
RPI-Md	Extend and enhance the riparian zones of rivers and streams through the creation, restoration, enhancement, and long-term positive management of semi-natural habitats including, where appropriate, native woodland and non-woodland tree cover.



Priority RP2: Freshwater and Estuaries

Water quality in watercourses, estuaries, and wetlands has improved, with reduced impacts from diffuse and point source pollution.

Table 14: Potential measures that would help achieve Priority RP2

Code	Potential Measure
RP2-Ma	Mitigate the impacts of agriculture and grazing on riparian and water dependant habitats through targeted livestock management, nutrient input reduction, and the establishment of buffer features to reduce runoff, erosion, and habitat degradation.
RP2-Mb	Promote and implement Natural Flood Management and Nature-Based Solutions to reduce flood risk and erosion, complementing or replacing engineered approaches while enhancing biodiversity and climate resilience.



Coastal Habitats

Coastal Habitats – Priorities and Potential Measures

Priority CPI: Coastal Habitats

Priority coastal habitats have expanded and are more resilient, in good ecological condition, and better connected.

Table 15: Potential measures that would help achieve Priority CPI

Code	Potential Measure
CPI-Ma	Restore, enhance, and manage priority coastal habitats and support natural coastal processes by controlling invasive species and removing or modifying anthropogenic features such as land drains and hard coastal defences, where feasible.
CPI-Mb	Reduce recreational disturbance and unauthorised activities (e.g. the unlicensed commercial harvesting of shellfish) in priority coastal habitats through targeted access management, public education, and active wardening.
CPI-Mc	Encourage more nature-friendly approaches to managing priority coastal habitats such as strandlines and sand dunes by modifying visitor-focused maintenance practices that negatively impact wildlife or natural processes.
CPI-Md	Support the creation of new priority coastal habitats—such as sand dunes and vegetated shingle—targeting areas of non-priority habitat and enabling managed retreat, including the removal or modification of built infrastructure.



Coastal Habitats – Priorities and Potential Measures

Priority CP2: Coastal Habitats

Promote and allow the occurrence of natural processes within priority coastal habitats.

Table 16: Potential measures that would help achieve Priority CP2

Code	Potential Measure
CP2-Ma	Restore, enhance, and manage priority coastal habitats and support natural coastal processes by controlling invasive species and removing or modifying anthropogenic features such as land drains and hard coastal defences, where feasible.
CP2-Mb	Encourage more nature-friendly approaches to managing priority coastal habitats such as strandlines and sand dunes by modifying visitor-focused maintenance practices that negatively impact wildlife or natural processes.
CP2-Mc	Support the creation of new priority coastal habitats—such as sand dunes and vegetated shingle—targeting areas of non-priority habitat and enabling managed retreat, including the removal or modification of built infrastructure.



Farmland Habitats

Farmland Habitats – Priorities and Potential Measures

Priority FPI: Farmland Habitats

The extent of agricultural land and land used for horticulture that is positively managed for nature has increased.

Table 17 Potential measures that would help achieve Priority FPI

Code	Potential Measure
FPI-Ma	Create, restore, and manage infield and boundary features that enhance farmland biodiversity, supporting invertebrates (including pollinators), birds, and mammals, for example, trees and hedgerows, flower-rich field margins, and beetle banks.
FPI-Mb	Promote good soil health and sustainable land and water management practices that help protect healthy watercourses and wetlands, for example, low or no-till cultivation, buffer strips, and effective nutrient and chemical planning.



Priority FP2: Farmland Habitats

More farm and equine businesses are accessing funding to support nature's recovery.

Table 18: Potential measures that would help achieve Priority FP2

Code	Potential Measure
FP2-Ma	Establish a local funding hub to connect farmers and land managers with public and private funding sources, expert advice, and collaborative opportunities to support nature recovery, enhance climate resilience, and strengthen the diversification and sustainability of farm and equine businesses.
FP2-Mb	Support the development of farm clusters and networks to enable knowledge sharing and peer-to-peer support, encouraging wider adoption of nature-friendly farming practices such as organic farming, regenerative agriculture, and agroforestry.



Urban Habitats

Urban Habitats – Priorities and Potential Measures

Priority UPI: Urban Habitats

Green and blue infrastructure is more resilient, in good ecological condition and better connected.

Table 19 Potential measures that would help achieve Priority UPI

Code	Potential Measure
UPI-Ma	Restore, enhance and manage degraded green and blue infrastructure to achieve and maintain good ecological condition.
UPI-Mb	Promote nature-friendly management of public and private land to increase the area of green and blue infrastructure actively managed for biodiversity.



Priority UP2: Urban Habitats

The extent of biodiverse multifunctional green and blue infrastructure has increased.

Table 20: Potential measures that would help achieve Priority UP2

Code	Potential Measure
UP2-Ma	Increase urban green and blue spaces by transforming underused land into biodiverse areas such as wildflower meadows, rain gardens, and pocket parks; planting native trees and shrubs; creating or restoring ponds, wetlands, and SuDS; incorporating green infrastructure into buildings; connecting habitats through corridors and pollinator planting; and involving communities in their design and care.

Priority UP3: Urban Habitats

More people enjoy regular access to nature and are actively involved in its care and appreciation.

Table 21: Potential measures that would help achieve Priority UP3

Code	Potential Measure
UP3-Ma	Support community-led initiatives to maintain and enhance local green and blue spaces, improving biodiversity and social value.



Priority UP4: Urban Habitats

Priority species and those providing essential ecosystem services (e.g. pollinating insects) are thriving in urban environments.

Table 22: Potential measures that would help achieve Priority UP4

Code	Potential Measure
UP4-Ma	Implement targeted habitat restoration, enhancement, and creation measures to provide nesting sites and foraging areas.
UP4-Mb	Integrate priority species and pollinators into urban planning, green infrastructure design, and land management, ensuring their habitats are conserved and expanded.
UP4-Mc	Support citizen science and community-led monitoring schemes to track the presence and health of priority species and pollinators, raising public awareness, and informing adaptive management.



Species – Herptiles (Amphibians and Reptiles)

Priority Amphibians – Great Crested Newt, Common Toad

Amphibians – Priorities and Potential Measures

Priority SPI: Amphibians

Priority species and species assemblages are sustainably recovering, more resilient to environmental change, and progressing towards favourable conservation status.

Table 23 Potential measures that would help achieve Priority SPI

Code	Potential Measure
SPI-AMa	Raise Awareness – Increase public and landowner awareness of the conservation status of priority amphibians, the threats they face, and the actions needed to support their recovery.
SPI-AMb	Restore and Enhance Habitat – Undertake the targeted restoration and enhancement of degraded breeding ponds and surrounding terrestrial habitat by removing introduced fish populations, managing invasive non-native species, mitigating factors affecting water quality and availability, excluding dogs and livestock where necessary, and providing refugia and hibernacula.



Code	Potential Measure
SPI-AMc	<p>Create New Habitat – Create new ponds, pond clusters, terrestrial habitats, and refugia and hibernacula in locations that will: support the expansion of existing populations, facilitate the formation of meta-populations, and reduce habitat fragmentation and improve ecological connectivity.</p>
SPI-AMd	<p>Secure Long-term Management – Increase the number and extent of breeding ponds and terrestrial habitat under long-term positive management, including through the development and implementation of site-specific management plans and landowner agreements such as agri-environment schemes.</p>



Priority Reptiles – Adder, Common Lizard, Grass Snake, Slow Worm

Reptiles – Priorities and Potential Measures

Priority SPI: Reptiles

Priority species and species assemblages are sustainably recovering, more resilient to environmental change, and progressing towards favourable conservation status.

Table 24 Potential measures that would help achieve Priority SPI

Code	Potential Measure
SPI-RMa	Raise Awareness – Increase public and landowner awareness of priority reptiles, the threats they face, and the actions needed to support their recovery.
SPI-RMb	Protect Key Sites and Features – Ensure the protection of key sites and features used or with the potential to be used by reptiles for breeding, basking, foraging, and hibernation.
SPI-RMc	Restore and Enhance – Undertake the targeted restoration, enhancement and long-term positive management of degraded or sub-optimal sites currently or historically supporting priority reptiles, including through restoration and enhancement of heathland, wetland, wet and dry grassland, open mosaic habitats (OMH), scrub, and woodland rides and glades.
SPI-RMd	Create New Habitat – Create new terrestrial and aquatic habitats and provide refugia and hibernacula in locations that: support the expansion of existing populations or colonies, maximise opportunities for colonisation or recolonisation, facilitate the formation of new colonies or meta-populations, and reduce fragmentation and improve ecological connectivity.



Birds

Priority Birds:

Assemblage	Assemblage	Assemblage	Assemblage
Farmland	Urban	Waders	Woodland
Species	Species	Species	Species
Barn Owl Grey Partridge Linnet Skylark Tree Sparrow Yellowhammer	House Martin House Sparrow Kittiwake Peregrine Starling Swift	Avocet Curlew Golden Plover Lapwing Purple Sandpiper Redshank Ringed Plover Sanderling Turnstone	Pied Flycatcher Spotted Flycatcher Willow Tit Woodcock



Birds – Priorities and Potential Measures

Priority SPI: Birds

Priority species and species assemblages are sustainably recovering, more resilient to environmental change, and progressing towards favourable conservation status.

Table 25 Potential measures that would help achieve Priority SPI

Code	Potential Measure	Species
SPI-BMa	Support Urban Nesting Kittiwakes – Increase public, local authority, and business awareness and support for urban nesting kittiwakes through creative and inclusive engagement – collaborate with partners across sectors to protect existing colonies and create new, sustainable nesting opportunities – support and promote ongoing research to deepen understanding and inspire pride in this distinctive urban wildlife success story.	Kittiwake
SPI-BMb	Enhance Nesting Opportunities – Design and implement targeted nest box schemes to increase and improve nesting sites for priority bird species and require integrated and externally mounted nest boxes for priority bird species in new development proposals.	Barn Owl, Tree Sparrow, House Martin, House Sparrow, Peregrine, Starling, Swift, Pied Flycatcher Spotted Flycatcher, Willow Tit



Code	Potential Measure	Species
SPI-BMc	<p>Engage Building Owners and Managers – Raise awareness among public building and social housing owners and managers about the importance of conserving and enhancing nesting opportunities for priority bird species during repair and maintenance works and scheduled upgrades.</p>	<p>House Martin, House Sparrow, Starling, Swift</p>
SPI-BMd	<p>Create, Enhance and Manage Key Habitats – Undertake the targeted creation, enhancement and management of high-value habitats for priority bird species, including: – wet woodland and scrub with standing and fallen deadwood – species-rich native hedgerow with hedgerow trees – wetlands and wet grassland – inter-tidal mudflats and saltmarsh.</p>	<p>Willow Tit, Woodcock, Linnet, Tree Sparrow, Yellowhammer, Waders</p>
SPI-BMe	<p>Reduce Recreational Disturbance – Minimise recreational disturbance to high-value breeding, foraging and resting sites crucial to the successful recovery of priority bird species through: – public education and awareness (e.g. signage, interpretation, and direct engagement) – installation of temporary or permanent physical barriers (e.g. fencing).</p>	<p>Waders</p>



Code	Potential Measure	Species
SP1-BMf	<p>Manage Predation – Mitigate the impact of predators where they have a demonstrable significant adverse impact on the favourable conservation status of priority bird species, using appropriate and lawful methods such as predator exclusion fencing.</p>	Waders
SP1-BMg	<p>Support Farmland Birds – Work collaboratively with farmers and land managers to reverse farmland bird declines by: – raising awareness of effective recovery practices, such as retaining winter stubbles, using conservation headlands and wild bird cover mixes, and managing native hedgerows sensitively – promoting and supporting the uptake of agri-environment schemes and other funding initiatives to expand bird-friendly habitats and enhance the resilience and diversification of farm businesses.</p>	Farmland, Waders



Butterflies

Priority Butterflies – Dingy Skipper, Grayling, Green Hairstreak, Wall, White-letter Hairstreak

Butterflies – Priorities and Potential Measures

Priority SPI: Butterflies

Priority species and species assemblages are sustainably recovering, more resilient to environmental change, and progressing towards favourable conservation status.

Table 26 Potential measures that would help achieve Priority SPI

Code	Potential Measure
SP1-BuMa	Restore and Enhance Existing Sites – Undertake the targeted restoration and enhancement of viable degraded sites that currently support, or have previously supported, priority butterfly species.
SP1-BuMb	Create New Habitat – Create new habitat in strategic locations to: – support the expansion of existing colonies – facilitate the formation of new colonies – reduce fragmentation and improve ecological connectivity.
SP1-BuMc	Secure Long-Term Management – Increase the number of key butterfly sites under long-term positive management, including through the development of management plans and landowner agreements where appropriate.



Fish

Priority Fish – Atlantic Salmon, Brown/Sea Trout, Eel, Brook Lamprey, River Lamprey, Sea Lamprey, Smelt

Fish – Priorities and Potential Measures

Priority SPI: Fish

Priority species and species assemblages are sustainably recovering, more resilient to environmental change, and progressing towards favourable conservation status.

Table 27 Potential measures that would help achieve Priority SPI

Code	Potential Measure
SPI-FMa	Restore and Re-naturalise Watercourses – Undertake the targeted introduction of coarse sediment (e.g. gravel) to provide suitable spawning habitat and reduce the accumulation of organic matter.
SPI-FMb	Remove or Mitigate Barriers – Remove or mitigate artificial structures that obstruct fish movement or disrupt natural process – redundant dams, weirs, and pipe crossings – installation of fish passes where removal is not feasible.



Mammals

Priority Mammals – Brown Hare, Harvest Mouse, Hedgehog, Otter, Water Vole

Mammals – Priorities and Potential Measures

Priority SPI: Mammals

Priority species and species assemblages are sustainably recovering, more resilient to environmental change, and progressing towards favourable conservation status.

Table 28 Potential measures that would help achieve Priority SPI

Code	Potential Measure
SP1-MMa	Raise Awareness – Increase public and landowner awareness of priority mammals, the threats they face, and the actions needed to support their recovery.
SP1-MMb	Restore and Enhance Habitat – Undertake the targeted restoration, enhancement and long-term positive management of degraded terrestrial and aquatic habitats of particular value to priority mammals, including rivers and streams, wetlands, hedgerows, and conservation headlands.
SP1-MMc	Create New Habitat – Create new terrestrial and aquatic habitats in locations that support the expansion of existing populations, met-populations, or colonies of priority mammals – reduce fragmentation and improve ecological connectivity.



Code	Potential Measure
SPI-MMd	<p>Address Key Threats – Implement targeted measures to address threats that impede the recovery of priority mammals, including: management of invasive non-native species (INNS), mitigation of factors affecting water quality and availability, exclusion of dogs and/or livestock where necessary, provision of secure breeding and resting sites (e.g. artificial otter holts), and installation of ledges, underpasses, and barrier/drift fencing to reduce road traffic mortality.</p>
SPI-MMe	<p>Support the Recovery of Water Vole – Explore opportunities for the targeted reintroduction of water voles by: identifying suitable sites based on the confirmed absence of water voles, habitat quality, connectivity, and threat mitigation - ensuring all actions comply with relevant licencing requirements and follow established good practice guidelines - working in partnership with landowners, conservation organisations, regulatory bodies to support long-term monitoring and management of reintroduction sites.</p>





6. Mapping of Measures and the Local Habitat Map



Mapping of Measures and the Local Habitat Map

The second part of the Local Nature Recovery Strategy (LNRS), alongside this written Statement of Biodiversity Priorities, is the Local Habitat Map.

The map shows:

Areas of Particular Importance for Biodiversity (APIBs)

Places that already play an important role in supporting nature, including designated sites and irreplaceable habitats (See Appendix E for list of APIBs in Strategy area).

Mapped Potential Measures

Locations where listed actions, if undertaken, would deliver nature recovery and wider environmental benefits.

Areas That Could Become of Particular Importance for Biodiversity (ACBs)

Places that, subject to the voluntary undertaking of listed nature recovery actions, could become of particular importance for biodiversity.

View the Map

You can view the South of Tyne and Wear Local Nature Recovery Strategy – Local Habitat Map online at:

SoT&W LNRS Local Habitat Map

The graphic features a dark blue background with a light blue cloud-like shape. The text is in white and light blue. A white mouse cursor icon points to the right of the 'SoT&W LNRS Local Habitat Map' button.





The aim of the LNRS is to support coordinated, collaborative, and targeted efforts to help nature recover. The mapping is a tool to help guide decisions and support landowners and managers in making informed choices.

Landowner participation is entirely voluntary. The mapping of Potential Measures and land as Areas That Could Become of Particular Importance for Biodiversity (ACBs) does not mean landowners, including public bodies, are required or can be compelled to take action, nor does it prevent other legitimate land uses.

Mapping areas where nature recovery action (Potential Measures), if undertaken, would have the biggest impact is one of the most important parts of the LNRS. These areas are identified based on how suitable they are for delivering the actions (Potential Measures) set out in Section 5 of this document.

In some instances, Mapped Measures have been applied to existing Areas of Particular Importance for Biodiversity (APIBs). Where this is the case, such areas are not then mapped as Areas That Could Become of Particular Importance for Biodiversity (ACBs).

Not all Potential Measures can be mapped. Some are too broad or apply across wide areas, especially where data is limited.

Areas not covered by the Mapped Measures or mapped as Areas That Could Become of Particular Importance for Biodiversity (ACBs) are not excluded from the delivery of nature recovery activities. Such areas may still benefit from nature positive action, for example, in built up areas where the written Priorities and Potential Measures for Urban Habitats should be consulted.

The mapping of Areas of Particular Importance for Biodiversity (APIBs), Mapped (Potential) Measures, and Areas That Could Become of Particular Importance for Biodiversity (ACBs) has been guided by an evidence-led approach, using the best available spatial and ecological data. While every effort has been made to ensure the accuracy and relevance of this mapping, it reflects current datasets and expert interpretation. As such, it may be subject to refinement during any future review and republication of the LNRS, as directed by the Secretary of State for Environment, Food and Rural Affairs, and in light of any new or emerging information.

For more information on the mapping methodology, see **Appendix E**.



Using the Local Habitat Map – Mapped Measures

Mapped Measures are areas identified as suitable for nature recovery actions. These locations have been mapped using different approaches:

Site-specific areas

These are usually individual fields or parcels of land where a specific nature recovery action is considered technically feasible.

Landscape-scale areas

These are broader zones where nature recovery could take place, but without pinpointing exact field boundaries. Not every part of these areas is expected to be used for the same action. For example, if an area is marked for woodland creation, it doesn't mean the entire area will become woodland—just that parts of it are suitable.

Buffer zones

These are areas around features like rivers or streams, identified using national datasets. They help target nature recovery efforts in places likely to benefit from them.

Efforts have been made to avoid mapping areas that are clearly unsuitable, such as roads or built-up residential zones.

Where possible, overlapping or conflicting nature recovery actions have been avoided. However, some places may be covered by more than one mapped measure. These may relate to the same habitat type or to different ones.

Use common sense when interpreting the map. It's a guide—not a set of instructions. Always consider the suitability of the location and seek expert advice if needed.





Interacting with Mapped Measures on the Local Habitat Map

When you click on an area marked as a Mapped Measure on the Local Habitat Map, a pop-up box will appear. This box includes:

Measure Code

A reference number for the proposed nature recovery action.

Measure Description

A brief explanation of the type of habitat improvement or creation suggested.

Additional Information

Notes about known heritage features in the area.

Warnings

Alerts about possible constraints, such as planning issues or ecological concerns.

Important Note – a reminder that being included in the map does *not* mean landowners, including public bodies, are required to carry out the suggested actions, nor does it prevent other legitimate land uses.



Areas That Could Become of Particular Importance for Biodiversity

This layer—often referred to as the ACBs layer—shows areas that have strong potential to support nature in the future. It combines all the Mapped Measures, but removes places already recognised as Areas of Particular Importance for Biodiversity.

To understand what nature recovery actions are suggested for a specific location within the ACBs layer, you'll need to refer to the Mapped Measures layers.





Considering Feasibility and Constraints Before Starting a Habitat Project

The Local Nature Recovery Strategy (LNRS) mapping is strategic and broad in scope. It does not include detailed site surveys for each area shown. Before starting any habitat creation or enhancement project in a mapped location, it's important to assess whether the project is suitable and achievable. This includes seeking expert advice and checking for any potential constraints.

Ecological Considerations

Some areas already support valuable habitats and/or species that may not be compatible with the listed proposed actions (Potential Measures). For example, woodland planting on a site of high value for wading birds. In other cases, poor soil conditions, water levels, or other site-specific factors may make habitat creation difficult or inappropriate.

Historic Environment

Habitat projects may affect sites with archaeological or historical significance. For instance, creating wetlands could damage buried heritage assets. If a project may impact such features, consultation with Historic England or the local planning authority may be needed.

Other Constraints

Additional factors to consider include:

- **Underground or overhead utilities**
- **Airport safeguarding zones**
- **Planning permission requirements**
- **Land ownership issues or legal covenants**

Important Notes

- **Being mapped in the LNRS does not override existing legal protections or planning policies.**
- **All necessary permissions must be obtained before starting work.**
- **Landowner participation is voluntary. Mapping does not require landowners, including public bodies, to take action or prevent other legitimate land uses.**

The LNRS is designed to guide and support coordinated nature recovery across the area. The mapping helps inform decisions, but each project must be carefully assessed on a case-by-case basis.



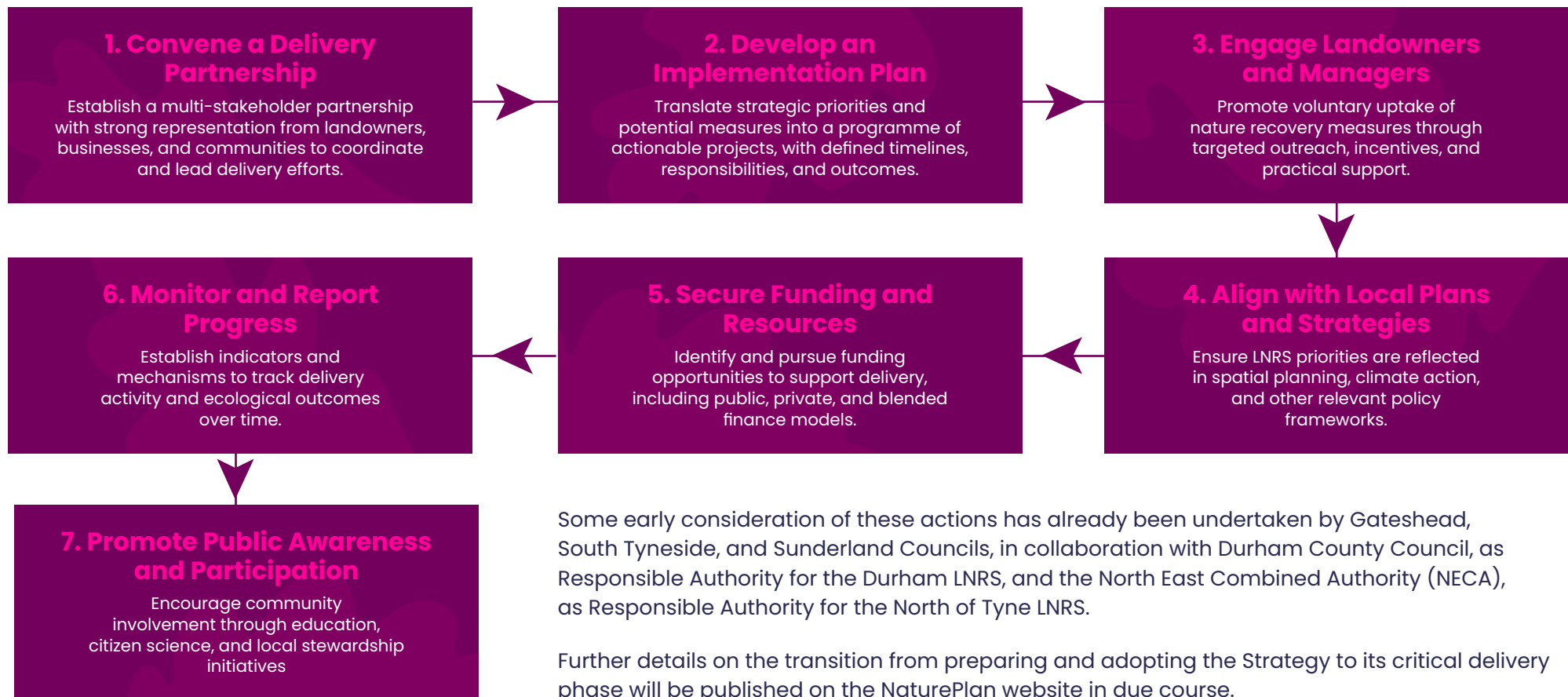
7. Next Steps: Transitioning to Delivery





Next Steps: Transitioning to Delivery

Following the adoption of the South of Tyne and Wear Local Nature Recovery Strategy—and with regard to emerging Defra guidance—the following key actions are anticipated:



Some early consideration of these actions has already been undertaken by Gateshead, South Tyneside, and Sunderland Councils, in collaboration with Durham County Council, as Responsible Authority for the Durham LNRS, and the North East Combined Authority (NECA), as Responsible Authority for the North of Tyne LNRS.

Further details on the transition from preparing and adopting the Strategy to its critical delivery phase will be published on the NaturePlan website in due course.



8. Glossary



Glossary

Term	Definition
Anthropogenic	Caused by people or human activities.
Biodiversity Action Plan (BAP)	A local plan that sets out actions to protect and improve priority habitats and species.
Biodiversity	The variety of all living things including plants, animals, fungi, and microorganisms, and the places they live.
Biodiversity Duty	A legal requirement for public bodies to consider and support the conservation and enhancement of biodiversity in undertaking their functions.
Biodiversity Net Gain (BNG)	A function of the planning system that requires development leaves nature in a measurably better state than before.
Biosecurity	The protection of living organisms and ecosystems. It includes measures to prevent the introduction and spread of harmful organisms, invasive species, pests or diseases.
Biosphere	The parts of the Earth where life exists, including land, air, and oceans.
Biotic	Refers to anything related to living organisms or arising from them.
Blue Infrastructure	Refers to water-based natural and semi-natural features, such as rivers, lakes, wetlands and coastal waters, which provide environmental, social and economic benefits.
The British Trust for Ornithology (BTO)	Organisation dedicated to the study of birds. It coordinates surveys and provides essential scientific data to monitor bird populations.



Glossary

Term	Definition
Carbon Sink	Natural or artificial system that absorbs more carbon dioxide from the atmosphere than it releases, helping to reduce climate change impacts.
Catchment	The area of land from where a river or water course collects its water, from its source to where it flows into another water body or the sea.
Climate Change	A long-term shift in global weather patterns and average temperatures. Human-driven climate change is attributed to an increase in greenhouse gases, such as carbon dioxide and methane, since the Industrial Revolution.
Climate Space	The area where conditions are suitable for a species or habitat, based on factors such as temperature, humidity and exposure. Climate change may significantly alter this space for many species.
Coastal Squeeze	Describes the loss of coastal habitats, such as saltmarshes and mudflats, caused when rising sea levels meet fixed landward barriers like seawalls. This squeeze prevents these habitats from naturally shifting inland.
Countryside Stewardship	Government-funded scheme that pays farmers to manage land in ways that supports wildlife. Actions can include enhancing and expanding habitats, improving air and water quality, and increasing natural flood resilience.
Defra	The UK Government department responsible for food production, environmental protection (including biodiversity) and managing the countryside and rural affairs.
Diffuse Pollution	Pollution from multiple, scattered sources (e.g. agricultural and urban runoff) rather than a single identifiable point, often affecting water quality.



Glossary

Term	Definition
Ecological Networks	Connections between habitats and species across a landscape. They consist of high-quality habitat patches linked by surrounding land. Well-connected habitats are more resilient and better for biodiversity.
Ecological Resilience	An ecosystems ability to withstand disturbance or damage and continue functioning. A resilient ecosystem can recover from shocks such as fire, pollution or flooding. In the context of climate change, resilience means coping with rising temperatures, changes in water availability, and invasive species.
Ecosystem	A community of plants, animals, and other organisms interacting within a network of connected habitats.
Ecosystem Services	<p>Benefits people gain from nature. These include goods like food, timber, and clean water, and services such as pollination, water purification, and climate regulation. They are often grouped into four categories:</p> <ul style="list-style-type: none"> • Cultural services – Non-material benefits of like recreation, aesthetic value, and spiritual enrichment • Provisioning services – Physical products such as food, fresh water, energy and timber • Supporting services – Processes that sustain life, including nutrient cycling, photosynthesis, and the water cycle • Regulating services – Natural protections like flood control, air and water purification, climate regulation, and pest and disease control.
Environmental Land Management Schemes (ELMS)	Government backed programs that pay landowners or managers to use nature-friendly practices on their land.
Environmental Records Information Centre (ERIC) North East	The region's main hub for environmental data, covers the South of Tyne and Wear LNRS area.



Glossary

Term	Definition
Farm Clusters	Groups of neighbouring farms working together across land ownership boundaries to restore nature, enhance biodiversity, and manage natural resources sustainably over a larger area, following the Lawton Principles.
Greenspace	Land covered by vegetation such as parks, gardens, and natural areas, used for recreation and supporting wildlife.
Green Infrastructure Networks	Linked greenspaces and features, such as parks, woodlands, and street trees, that support wildlife, people, and healthy ecosystems.
Geology	Study of the Earth's physical structure, rocks, minerals and the processes that shape its surface over time.
Habitat Creation	The process of creating new habitats, such as planting new native woodland, to replace lost habitats or to enhance biodiversity.
Habitat Connectivity	How well different habitats are linked, which affects wildlife movement and ecosystem health.
Habitat Restoration	Returning degraded or damaged habitats to a healthy state, such as planting native trees, restoring wetlands, or removing invasive species.
Herptiles	Cold-blooded vertebrates, including amphibians (frogs, toads, and newts) and reptiles (lizards and snakes).
Invasive Non-Native Species (INNS)	Species introduced outside their natural range that can harm the environment, economy, or human health, such as grey squirrels, signal crayfish and Japanese knotweed.



Glossary

Term	Definition
Landscape Permeability	How easily species can move through a landscape without barriers, reflecting how wildlife-friendly an area is.
Landscape Scale Nature Recovery	A large-area approach to restoring and connecting habitats that supports biodiversity while considering social and economic factors.
Lawton Principles	Guidelines from the 2010 <i>Making Space for Nature</i> review, calling for more, bigger, better, and better-connected habitats to build resilient ecological networks.
Local Nature Recovery Strategy (LNRS)	A statutory local framework under the Environment Act 2021 that sets priorities for restoring nature and biodiversity through collaboration among stakeholders.
Local Nature Reserve (LNR)	A site designated by local authorities for its wildlife, education, or public enjoyment value; locally important but sometimes can also be designated a Site of Special Scientific Interest (SSSI).
Local Geological Site	A locally designated area that protects important geological features and heritage, outside statutorily protected sites like SSSIs.
Local Wildlife Site	A non-statutory site designated for its local biodiversity value, identified by the local Planning Authority and conservation partners.
Managed Realignment	A coastal management approach that removes or alters defences to let land flood naturally, creating habitats like saltmarsh and mudflats.
Magnesian Limestone Grassland	A species-rich calcareous grassland on magnesium-rich limestone, important for rare plants and invertebrates, nationally significant in northeast England.



Glossary

Term	Definition
Microclimate	Localised climate conditions within a small area, influenced by factors like slope or aspect, which affects plants and wildlife.
Natural Flood Management (NFM)	Using natural processes and features, such as wetlands, woodlands, and soil management, to reduce flood risk and enhance water storage.
Nature-based Solutions (Nbs)	Actions that use natural processes and ecosystems to address societal challenges, such as climate change, biodiversity loss, and disaster risk, while providing environmental and social benefits.
Nature-friendly Farming	Agricultural practices that protect biodiversity and reduce environmental harm, such as limiting pesticides, maintaining hedgerows, and creating wildlife habitats.
Nature Recovery	Actions to restore or improve habitats and ecosystems to increase biodiversity and strengthen ecological resilience.
Nature Recovery Network (NRN)	A connected network of habitats designed to support biodiversity, the movement of species through landscapes, and build resilience to environmental change.
Net Gain Measures	Actions required to delivery Biodiversity Net Gain for development where BNG applies.
Non-governmental Organisations (NGOs)	Independent mission-driven groups, often charities, which work on social, environmental, or humanitarian issues, sometimes with government funding.
Outcomes	The results or end goals achieved by delivering the Strategy's actions and measures.



Glossary

Term	Definition
Phenology	The study of seasonal natural events, such as plant flowering, leaf budding, and bird migration timing.
Plantlife	A UK membership charity dedicated to protecting wild plants and fungi and promoting the restoration of wildlife across rural and urban landscapes.
Point-Source Pollution	Pollution that comes from a single, identifiable source, like a factory pipe or sewage outlet.
Potential Measures	Coordinated actions required to successfully deliver the agreed priorities of the Local Nature Recovery Strategy.
Priority Habitats	Habitats identified as requiring urgent action under the Local Nature Recovery Strategy to enable nature's recovery.
Priority Species	Species identified as highest priority for recovery under the Local Nature Recovery Strategy due to their ecological importance, conservation status, or role in ecosystem functioning.
Ramsar Site	A wetland of international importance for its waterfowl, designated under the Ramsar Convention, often overlapping with SACs and SPAs.
Resilient Landscapes	Landscapes capable of maintaining their essential functions and processes after disturbance or damage.
Responsible Authority	The organisation charged with preparing and publishing the Local Nature Recovery Strategy; for South of Tyne and Wear, this is Gateshead Council.



Glossary

Term	Definition
The Royal Society for the Protection of Birds (RSPB)	A leading UK membership charity dedicated to conserving birds and other wildlife, and a strong advocate for biodiversity nationally and internationally.
Site of Special Scientific Interest (SSSI)	Nationally important areas of land or water representing the UK's natural heritage, designated by Natural England for their wildlife, geology, or geomorphology, and protected under the Wildlife and Countryside Act.
Soil Erosion	The loss of soil by wind, water, or human activity, leading to reduced soil fertile, land degradation, and increased flood risk.
Soil Permeability	The ability of soil to allow water movement, influenced by composition, structure, and organic matter, affecting drainage, plant growth, and flood risk.
Spatial Targeting	Directing conservation actions to specific areas, focussing on key biodiversity sites within a broader landscape scale approach.
Special Area of Conservation (SAC)	An internationally important site designated under the Habitats Directive to protect Europe's rarest species and habitats, offering the highest level of planning protection.
Special Protection Area (SPA)	An internationally important site designated under the Birds Directive to protect rare, vulnerable, and migratory bird species; all SPAs also hold SSSI status and enjoy strong legal protection.
Supporting Authority	An organisation that collaborates with the Responsible Authority to help develop the Local Nature Recovery Strategy; in South of Tyne and Wear, these include South Tyneside Council, Sunderland City Council, the North East Combined Authority, and Natural England.

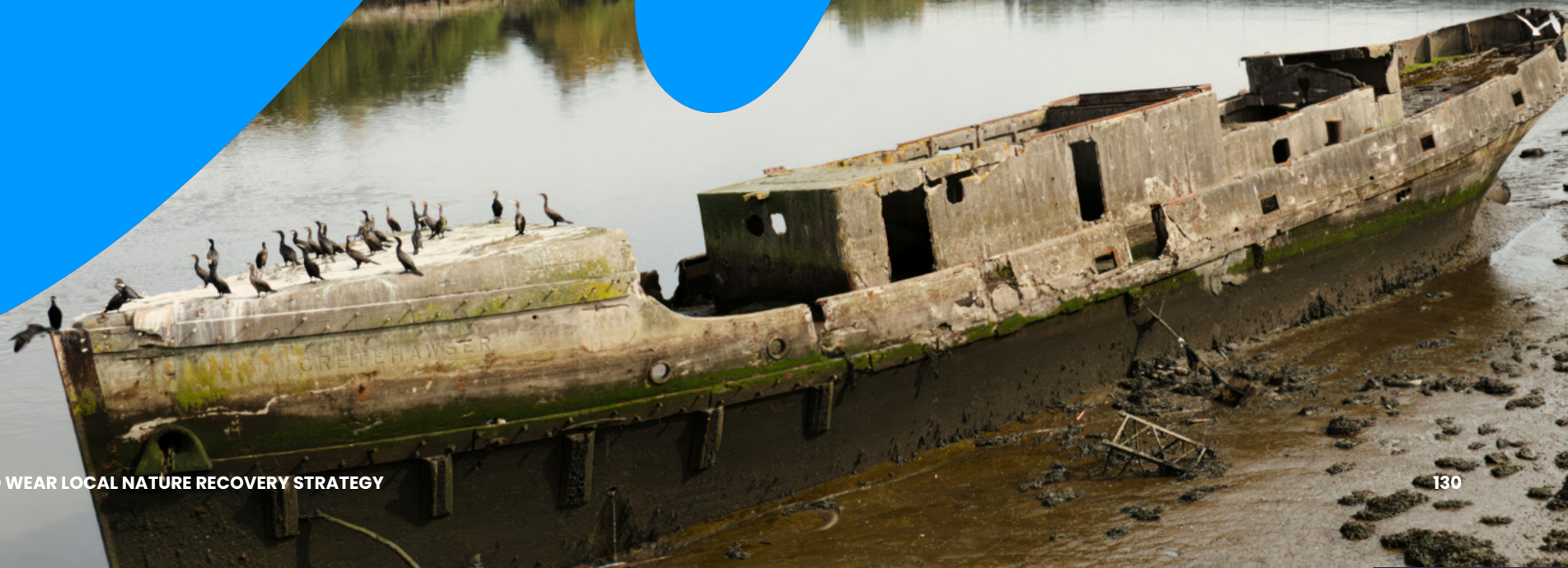


Glossary

Term	Definition
Transpiration	The process by which water moves from a plant's roots through its stem and evaporates from leaves, stems, and flowers.
Wetlands	Habitats where soil is permanently or seasonally saturated with water, supporting diverse plants, invertebrates, mammals, and birds adapted to wet conditions.
The Wildlife Trusts	A UK-wide federation of 46 local Wildlife Trusts, and the Royal Society of Wildlife Trusts, working together to protect and restore wildlife; in South of Tyne & Wear, this is led by Durham Wildlife Trust.
Urban Greening	The integration of natural and vegetated spaces into urban areas, such as parks, green roofs, and street trees, to enhance biodiversity and improve quality of life for local people.



9. Appendices





Appendix A – Contributors

Gateshead Council as the Responsible Authority for the South of Tyne and Wear Local Nature Recovery Strategy, extends its sincere thanks to everyone who contributed to its development, including:

- Butterfly Conservation North East
- Country Land and Business Association
- Cumbria County Council
- Different Narrative (Consultant)
- Doug McCutcheon
- Durham Bird Club
- Durham County Council
- Durham Heritage Coast
- Durham Wildlife Trust
- Edwin Thompson
- Environment Agency
- Environmental Records Information Centre (ERIC) North East
- Forest England
- Forestry Commission
- Galbraith Group
- Genee Consulting Ltd (Consultant)
- George F White
- Glead Ecological & Environmental Services (Consultant)
- Groundwork North East and Cumbria
- GSC Grays
- H&H Land Estates
- Highways England
- Ian Bond
- John Grundy
- Keith Bowey
- Marine Management Organisation
- Matt Hawking
- Merit Estates
- Michael Turner
- Mining Remediation (Coal) Authority
- National Farmers Union
- National Trust
- Natural England
- Natural History Society of Northumbria
- Network Rail
- North Durham Argus CIC
- North East Combined Authority
- North East Community Forest



Appendix A – Contributors

Gateshead Council as the Responsible Authority for the South of Tyne and Wear Local Nature Recovery Strategy, extends its sincere thanks to everyone who contributed to its development, including:

- North East England Climate Coalition
- Northumberland County Council
- Northumbrian Water Limited
- Paul Davidson
- Pennine Forestry Limited
- Peter Bell
- Rob Stonehouse
- Ross Ahmed
- RSPB
- Savills
- Seascapes
- South Tyneside Council
- Sunderland City Council
- Tees Valley Combined Authority
- The Crown Estate
- Tyne Kittiwake Partnership
- Tyne Rivers Trust
- Vivien Kent
- Wear Rivers Trust
- Woodland Trust
- YoungsRPS

Special thanks also go to the many groups and individuals who generously submit their ecological records to the local records centre (ERIC NE), and whose data has been invaluable to the preparation of this Strategy.



Appendix B – Strategies, Plans, and Policies

The South of Tyne and Wear Local Nature Recovery Strategy has been developed to align with, and contribute to, a range of national, regional, and local strategies, plans, and policies, including the following:

National

- 25 Year Environment Plan 2018
- Environment Improvement Plan 2023
- Environment Act 2021
- National Planning Policy Framework 2024

Regional

- NECA Environmental Stewardship, Coast & Rural Growth Plan 2024
- River Basin Management Plan for the Northumbria River Basin District
- Northumbria Flood Risk Management Plan 2021 – 2027
- North East INNS Strategy and Action Plan 2020 – 2024

Sub-regional / Local

- North of Tyne Local Nature Recovery Strategy – Consultation Draft 2025
- Durham Local Nature Recovery Strategy – Consultation Draft 2025
- Core Strategy and Urban Core Plan for Gateshead and Newcastle 2020 – 2030
- Making Spaces for Growing Places Local Plan Document for Gateshead 2021

- South Tyneside Local Development Framework 2007
- South Tyneside Local Plan 2023–2040 (Draft)
- Sunderland City Council Core Strategy and Development Plan 2015 – 2033
- Tyne Catchment Flood Management Plan 2009
- Wear Catchment Flood Management Plan 2009
- Tyne Catchment Plan 2012
- Wear Catchment Plan 2020 –2025
- Gateshead Council Climate Change Strategy 2022
- Sustainable South Tyneside 2020 – 2025
- City of Sunderland Low Carbon 2020
- Gateshead Council Green and Blue Infrastructure Strategy and Delivery Plan 2024
- South Tyneside Council Green and Blue Infrastructure Strategy 2023
- Sunderland Green Infrastructure Strategy 2018
- Sunderland Green Infrastructure Delivery and Action Plan 2019
- Durham Biodiversity Action Plan 2011
- Durham Wildlife Trust 2030 Strategy
- Gateshead Health NHS Foundation Trust Green Plan 2022 – 2025
- South Tyneside and Sunderland NHS Foundation Trust Green Plan 2022 – 2025



Appendix C – Species Recovery

Local Nature Recovery Strategies (LNRS) must identify opportunities, set priorities, and propose measures to support the recovery and enhancement of species.

For the South of Tyne and Wear LNRS, the approach to species recovery followed statutory guidance and best practice advice. This involved:

- Identifying threatened and locally significant species within the Strategy area
- Determining which of these species should be prioritised for recovery action

Creating a LNRS Species Longlist

The Environmental Records Information Centre North East (ERIC NE) was commissioned to produce a list of species recorded in the Strategy area that meet one or more of the following criteria:

- Native species assessed as Red List Threatened under IUCN criteria
- Native species not formally assessed but with strong evidence indicating they meet Threatened status
- Native species considered nationally extinct that have re-established or been rediscovered
- Native species assessed as Red List Near Threatened under IUCN criteria
- Native species identified by Natural England as suitable for conservation translocation or already subject to conservation efforts

A provisional draft longlist was shared with stakeholders, including local recorders and experts, to validate and identify additional species of local significance. These included species not yet Red List assessed or lacking approved lists but supported by strong evidence—or authoritative expert opinion—that they meet Threatened status criteria.

Developing a LNRS Species Shortlist

The shortlist was developed by considering species pressures and recovery opportunities within the Strategy area, with input from key partners and stakeholders, including:

- Natural England
- Environment Agency
- Forestry Commission
- NGOs (e.g., Durham Wildlife Trust, RSPB)
- Local Authority Ecologists
- ERIC NE
- County Recorders
- Local species groups and experts



Appendix C – Species Recovery

Species likely to benefit from general habitat expansion and connectivity improvements, or those with high recovery potential without targeted measures, were excluded.

Species were also discounted where:

- Evidence of decline drivers or recovery actions was insufficient
- Recovery potential was low due to factors outside the UK (e.g., migratory species)
- Occurrence was outside normal range (e.g., vagrants or occasional visitors)

Species requiring targeted or bespoke conservation actions beyond general habitat improvements were retained on the shortlist.

Selecting LNRS Priority Species

To produce a concise, manageable list of priority species, the following factors were considered:

- **Urgency:** Are recovery needs particularly pressing?
- **Deliverability:** How feasible are the required recovery measures?
- **National significance:** Does the area hold national or international importance for the species?
- **Cross-boundary opportunities:** Can recovery efforts be coordinated across LNRS boundaries?
- **Maximising benefits:** Will recovery deliver wider biodiversity or environmental gains?

- **Climate resilience:** Are species particularly vulnerable to climate change?
- **Existing initiatives:** Can we build on recent recovery successes or projects?

Once agreed, the priority species were then grouped into logical assemblages based on shared recovery needs.

Developing Potential Measures

Finally, potential recovery measures were developed for agreed priority species in collaboration with key partners and stakeholders, ensuring actions are practical, targeted, and aligned with LNRS objectives.



Appendix D – Areas of Particular Importance for Biodiversity (APIBs)

The following is a list of Areas of Particular Importance for Biodiversity (APIBs) that meet the criteria set out in the LNRS Regulations and statutory guidance and which occur within the South of Tyne and Wear Local Nature Recovery Strategy area:

Internationally and nationally protected sites:

- **Special Areas of Conservation (SACs)**
- **Special Protection Areas (SPAs)**
- **Ramsar Sites (wetlands of international importance)**
- **Sites of Special Scientific Interest (SSSIs)**

Locally designated sites:

- **Local Nature Reserves (LNRs)**
- **Local Wildlife Sites (LWSs)**

Irreplaceable habitats:

- **Ancient woodland**
- **Ancient and veteran trees**
- **Lowland fen**
- **Sand dunes**



Appendix E – Mapping Methodology

The Environmental Records Information Centre North East (ERIC NE) serves as the Local Environmental Records Centre for the North East of England. Its role is to collect, collate, and manage information on the natural environment to support a range of purposes, including environmental decision-making.

In 2023, ERIC NE was commissioned by the relevant Responsible Authorities (RAs) to provide data and mapping services for the preparation of the following Local Nature Recovery Strategies (LNRSs):

- Durham
- North of Tyne
- South of Tyne and Wear
- Tees Valley

This report is intended to ensure transparency and explain the approaches taken to mapping for the South of Tyne and Wear LNRS. It outlines the datasets, methods, and tools used to produce the mapped elements of the Strategy.

Throughout the process, ERIC NE convened regional working groups to align mapping approaches wherever possible.

Data Sources and Outputs

The datasets used were sourced from a range of providers, including the RA and Supporting Authorities (SAs) for the South of Tyne and Wear LNRS, various NGOs, and ERIC NE's own data holdings. Additional data from Ordnance Survey (OS) and the Centre for Ecology & Hydrology (CEH) was also incorporated.

The mapping process followed Defra guidance throughout. All maps were produced using tools within ArcGIS Pro or QGIS.

Areas of Particular Importance for Biodiversity (APIBs)

As outlined in Defra's guidance for LNRS production, the Strategy requires mapping of APIBs. ERIC NE worked closely with the RA and local authority SAs to ensure up-to-date and consistent Local Sites datasets. This involved supporting a review of site boundaries.

These datasets were then combined with national datasets for statutory designated sites and irreplaceable habitats to create the APIBs layer.

Mapped Measures

The outputs from mapping Potential Measures were developed through a series of processes. The RA engaged with local and national experts to identify priorities, measures, and relevant data via a series of working groups.

Once the RA had interpreted these outcomes and drafted written Potential Measures, an iterative process began to map these, where possible. This involved establishing a set of principles, tools, and processes to guide the work.

The approach to mapping Potential Measures was largely informed by the Lawton principles: more, bigger, better, and more joined-up.



Appendix E – Mapping Methodology

Core Habitat

Working with local authority ecologists, areas of Core Habitat were identified and mapped using the following sources:

- Ancient Woodland Inventory
- Priority Habitat Inventories
- DBAP habitat data
- Local Wildlife Sites data
- OS MasterMap parcels within Local Wildlife Site boundaries
- Other important areas identified by local authority ecologists

These layers were reviewed by the respective local authorities, and polygons were retained or removed based on their suitability. Core Habitat areas were defined as areas of sufficient quality or importance to be considered strategically significant for nature.

This process was completed for priority habitats under the following categories:

- Woodland
- Grassland
- Heathland
- Open Mosaic Habitat
- Freshwater and Intertidal Habitats
- Coastal Habitats

Potential Measures mapped directly within areas of Core Habitat typically relate to habitat improvement or enhancement. Adjacent measures—generally polygons suitable for habitat creation or enhancement within 50 m of an area of Core Habitat—typically focus on habitat expansion or buffering against surrounding land uses. Corridors for habitat creation or enhancement between areas of Core Habitat were based on the principle of improving ecological connectivity.



Figure 2 – Map of Core sites reviewed by LA Ecologists



Appendix E – Mapping Methodology

Ecological Connectivity Modelling (ECM)

ERIC NE first explored ecological connectivity tools during the Northumberland LNRS pilot in 2021. This work was shared with the regional data working group, and ERIC NE was tasked with reviewing a suite of connectivity modelling approaches.

A comparative review by Greater Manchester Ecology Unit, Cheshire Wildlife Trust, and Lancashire Wildlife Trust assessed nine different methods. Three were shortlisted, and a preferred option was selected. Using this information, a shared approach to ECM was agreed, with Linkage Mapper chosen as the preferred tool for mapping ecological connectivity.

Linkage Mapper

Linkage Mapper uses GIS maps of Core Habitat areas combined with resistance values to identify and map ecological linkages between these areas. Each cell in a resistance map is assigned a value representing the “cost” of movement—reflecting factors such as difficulty and mortality risk. These resistance values are typically derived from cell characteristics, such as land cover or housing density, and are informed by species-specific landscape resistance models.

Resistance maps were created using the following datasets:

- Ancient Woodland Inventory
- Priority Habitat Inventories
- National Forestry Inventory
- OS MasterMap
- UKCEH Land Cover Maps

The tool operates within ArcGIS and uses Python scripts to identify adjacent Core Habitat areas. It then generates least-cost corridor maps between these areas and combines the individual corridors into a single composite map. The resulting output illustrates the relative value of each grid cell in facilitating connectivity between areas of Core Habitat, helping users identify routes that encounter more or fewer features that support or hinder movement.

All datasets used in these workflows underwent several preprocessing steps, including:

- Validation to ensure the most up-to-date information was used
- Projection standardisation (all layers reprojected to British National Grid where necessary)
- Cleaning and polygon refinement to remove overlaps and duplication and achieve sufficient spatial accuracy

The tool produces a raster output—a grid-based image representing resistance values for each cell. This raster can be converted into a shapefile for use in mapping mitigation measures and generating both static PDF maps and interactive web maps.



Appendix E – Mapping Methodology

Catchment Restoration Optimisation (CaRO)

After the completion of the Northumberland LNRS pilot, Natural England commissioned environmental consultancy Binnies to develop a tool for identifying opportunities to naturally restore catchment function.

The methodology was shared with ERIC NE to incorporate elements of the CaRO approach into the mapping of watercourse, wetland, and riparian related Potential Measures for the LNRS. This process involved combining datasets for:

- Within-water areas (wet and water habitats directly along the watercourse)
- Adjacent areas (within 1 vertical metre of the watercourse or within Environment Agency Flood Zone 3)

Hydrologically modelled components were produced using Environment Agency LiDAR data and a suite of tools in ArcGIS Pro. Enhanced datasets, which had undergone preparatory processing, were provided by the EA Geomatics team.

Species Mapped Measures

Draft species Priorities and Potential Measures were identified through a process guided by Defra's requirements and supported by engagement with local experts and the recording community. As part of this process, ERIC NE hosted a conference in March 2024, where delegates were invited to review species long lists and suggest candidates for shortlisting.

The information gathered was provided to the RA and used to support species technical working groups in identifying priority species and assemblages. These informed the development of draft Priorities and Potential Measures.

The methodology for mapping priority species Potential Measures is summarised overleaf.



Appendix E – Mapping Methodology

Amphibians

Mapped Measure: SPI-Amb

Priority amphibian species records from the last 10 years (2015–present) with a spatial resolution of up to 100 m were used. Ponds intersecting these records were extracted from the OS Surface Water dataset. Next, OS MasterMap parcels within 50 m of these ponds were selected, and all non-relevant land use classes were removed.

Mapped Measure: SPI-AMc

The number of ponds within 1 km of each priority amphibian pond was tallied and used to calculate a Habitat Suitability Index (HSI) ranging from 0 to 1. Ponds with an HSI below 0.7 were considered less ecologically connected.

Birds (Coastal and Wetland assemblages)

Priority wading bird species records from the last 10 years (2015–present) with a spatial resolution of up to 1,000 m were used. Records were divided by season: November–February records informed mapping of winter feeding and roosting grounds, while April–August records were used for breeding areas.

OS MasterMap parcels intersecting these records were extracted, and non-relevant land cover classes were removed. A 50 m buffer was then applied to these parcels to identify intersecting OS MasterMap parcels, which were added to the layer after further removal of non-relevant land cover classes.

Butterflies

Priority butterfly records from the last 10 years (2015–present) were extracted. Two versions of the measure were produced:

- Version 1: All records with a resolution of up to 1,000 m (441 records)
- Version 2: Records with a resolution of up to 100 m (359 records)

For both datasets, intersecting OS MasterMap parcels were extracted and non-relevant land cover classes removed, creating the core layers. A 50 m buffer was then applied to each core layer (v1 and v2) to identify intersecting OS MasterMap parcels, which were added as adjacent layers after removing non-relevant land use classes.



Appendix E – Mapping Methodology

Fish

Mapped Measure: SPI-FMb

For this measure, the EA river obstacles dataset was used. A 30 m buffer was applied to each obstacle and clipped to the watercourse.

Mammals

Mapped Measure: SPI-MMb

This measure focuses on waterbodies and adjacent habitats suitable for water vole and otter. Water vole records were buffered to 2 km and mapped where these buffers intersect a 30 m buffer around a watercourse. Waterbodies intersecting otter records were also included. All species records used are post-2015.

Mapped Measure: SPI-MMc

Layer comprising the following areas of Core Habitat: rivers, ponds, fens, and reedbeds, plus adjacent land where these intersect with post-2015 records for otter, water vole, and/or harvest mouse.

Mapped Measure: SPI-MMd

Derived from the SPI-MMb layer, with the addition of potential barriers identified within the road network.

Reptiles

The Gibside Estate is the only site within the Strategy area with recent reptile records. Although the site is a SSSI, the proposed mapped measure was applied due to its significance and potential for reptile recovery efforts.

Mapped Measure: SPI-RMc & SPI-RMd

Mapping of areas suitable for delivery within 1 km of the SPI-RMb mapped measure layer.



Appendix E – Mapping Methodology

Constraints on Mapped Measures

A series of constraints were applied to the mapped measures to avoid conflicts with areas unsuitable for delivery. These constraints included those required by the LNRS process—such as nationally designated sites—as well as areas identified by the RA and local authority SAs as unsuitable, including allocated, safeguarded, and permitted development sites, and built-up areas.

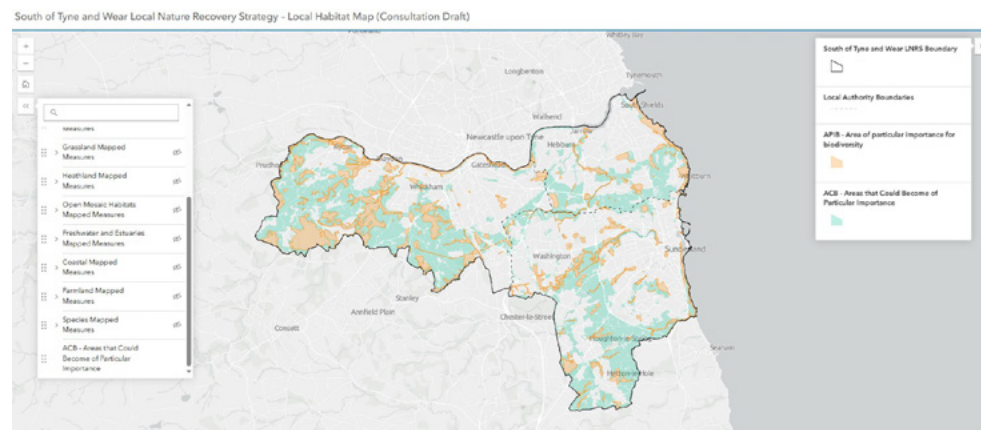
Where modelling processes resulted in part or all of these areas being mapped, they were removed.

Areas that Could Become of Particular Importance for Biodiversity (ACBs)

The Areas that Could Become of Particular Importance to Biodiversity (ACBs) are created from the merging of the Mapped Measures minus the APIs. Potential Measures can be mapped on APIs but are already considered of importance so cannot be mapped as ACBs.

ArcGIS Online Local Habitat Map

To make the Local Habitat Map easy to navigate, ArcGIS Online was used to create an interactive web map. This allows users to explore and interrogate the APIs, Potential Mapped Measures, and ACBs layers.





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