

# A Vision for Somerset Local Nature Recovery Strategy

Statement of Biodiversity Priorities







Map of Somerset's strategy area

# Contents

|                                                                            |            |
|----------------------------------------------------------------------------|------------|
| Foreword .....                                                             | 2          |
| Executive Summary .....                                                    | 4          |
| <b>1. Introduction and Vision.....</b>                                     | <b>6</b>   |
| 1.1 Background.....                                                        | 8          |
| 1.2 Nature is in crisis .....                                              | 10         |
| 1.3 The State of Nature in Somerset.....                                   | 12         |
| 1.4 The purpose of the LNRS .....                                          | 14         |
| 1.5 A Nature Vision for Somerset.....                                      | 16         |
| <b>2. How to use the LNRS .....</b>                                        | <b>20</b>  |
| 2.1 Understanding the elements of the Local Nature Recovery Strategy.....  | 22         |
| 2.2 Delivery mechanisms .....                                              | 24         |
| 2.3 Step-by-step guide to use this LNRS .....                              | 28         |
| <b>3. Somerset's Natural Environment .....</b>                             | <b>30</b>  |
| 3.1 Strategy Area Description .....                                        | 32         |
| 3.2 Areas of Particular Importance for Biodiversity.....                   | 34         |
| 3.3 Spotlight on: Somerset's Hills our National Landscapes.....            | 36         |
| 3.4 Spotlight on: Exmoor National Park.....                                | 38         |
| 3.5 Spotlight on: Somerset's Coast.....                                    | 40         |
| 3.6 Spotlight on: Somerset Levels and Moors .....                          | 42         |
| 3.7 Threats to Nature .....                                                | 44         |
| 3.8 Nature-based solutions and environmental benefits.....                 | 47         |
| 3.9 Perceptions of nature in Somerset.....                                 | 54         |
| <b>4. Opportunities for Nature Recovery .....</b>                          | <b>56</b>  |
| 4.1 Areas that could become of particular importance for biodiversity..... | 58         |
| 4.2 Our Approach.....                                                      | 60         |
| 4.3 Pressures, Priorities and Potential Measures:.....                     | 58         |
| 4.3 A Coastal.....                                                         | 62         |
| 4.3 B Moorland and Heath.....                                              | 68         |
| 4.3 C Freshwater .....                                                     | 74         |
| 4.3 D Urban.....                                                           | 82         |
| 4.3 E Grassland .....                                                      | 90         |
| 4.3 F Woodland and Hedgerows .....                                         | 96         |
| 4.3 G Lowland wetlands .....                                               | 102        |
| 4.3 H Farmland .....                                                       | 108        |
| 4.3 I Cross-cutting Measures.....                                          | 114        |
| 4.3 J LNRS Targeted Species and Species Assemblages .....                  | 116        |
| <b>5. Working Together .....</b>                                           | <b>132</b> |
| 5.1 Farmers, Foresters, Landowners and Managers.....                       | 134        |
| 5.2 Developers and Planners .....                                          | 138        |
| 5.3 Public Bodies and NGO's.....                                           | 140        |
| 5.4 Individuals, Community Groups and Businesses .....                     | 146        |
| 5.5 Town and Parish Councils.....                                          | 152        |
| <b>6. Appendix .....</b>                                                   | <b>154</b> |
| 6.1 Measures Appendix .....                                                | 156        |
| 6.2 List of abbreviations .....                                            | 164        |



# Foreword

Nature has its own value, and we have a responsibility to protect it. A healthy natural environment is key to our own health and wellbeing. It is the foundation of a productive economy and provides us with food, water, timber, carbon storage, flood control, attractive neighbourhoods, and great recreational and business opportunities.

Protecting and enhancing our natural world could not be more important. England is one of the most nature-depleted countries in the world, ranking 233rd out of the 240 countries.

The LNRS will help address both the climate and ecological emergencies that have been declared by Somerset Council, and will help deliver on our council mission to build a fairer, greener, resilient, and more flourishing Somerset.

We're delighted to have collaborated with so many talented and passionate organisations and people working for nature to develop this strategy. Together we can make this strategy a powerful tool for restoring our natural habitats so that nature and people can thrive together.

Whilst the opportunity maps give a focus to our nature recovery efforts, we also know that every square inch of Somerset represents an opportunity for nature recovery, and anything anyone can do to help nature anywhere in the county is to be welcomed and encouraged. We all can, and should, try to make a difference wherever possible.



**Cllr Graham Oakes**  
Lead Member for Public Health,  
Climate Change and Environment,  
Somerset Council

Anyone who lives in or visits Somerset will know it is a truly special place. We are fortunate to have some beautiful landscapes with a variety of wildlife including bitterns, egrets, dormice, and water voles. People come to visit Somerset to experience wildlife spectacles such as starling murmurations and to benefit from a connection to the natural world.

But, as set out in the Somerset State of Nature 2023 report, and reflecting global trends, nature is in trouble.

The decline of nature has profound implications for the long-term health, wellbeing and livelihoods of Somerset communities.

The causes of decline, well documented in this report, include significant land use change for agriculture and development. Somerset currently has two of the biggest building projects in Europe (Hinkley Point C and the Agratas gigafactory).

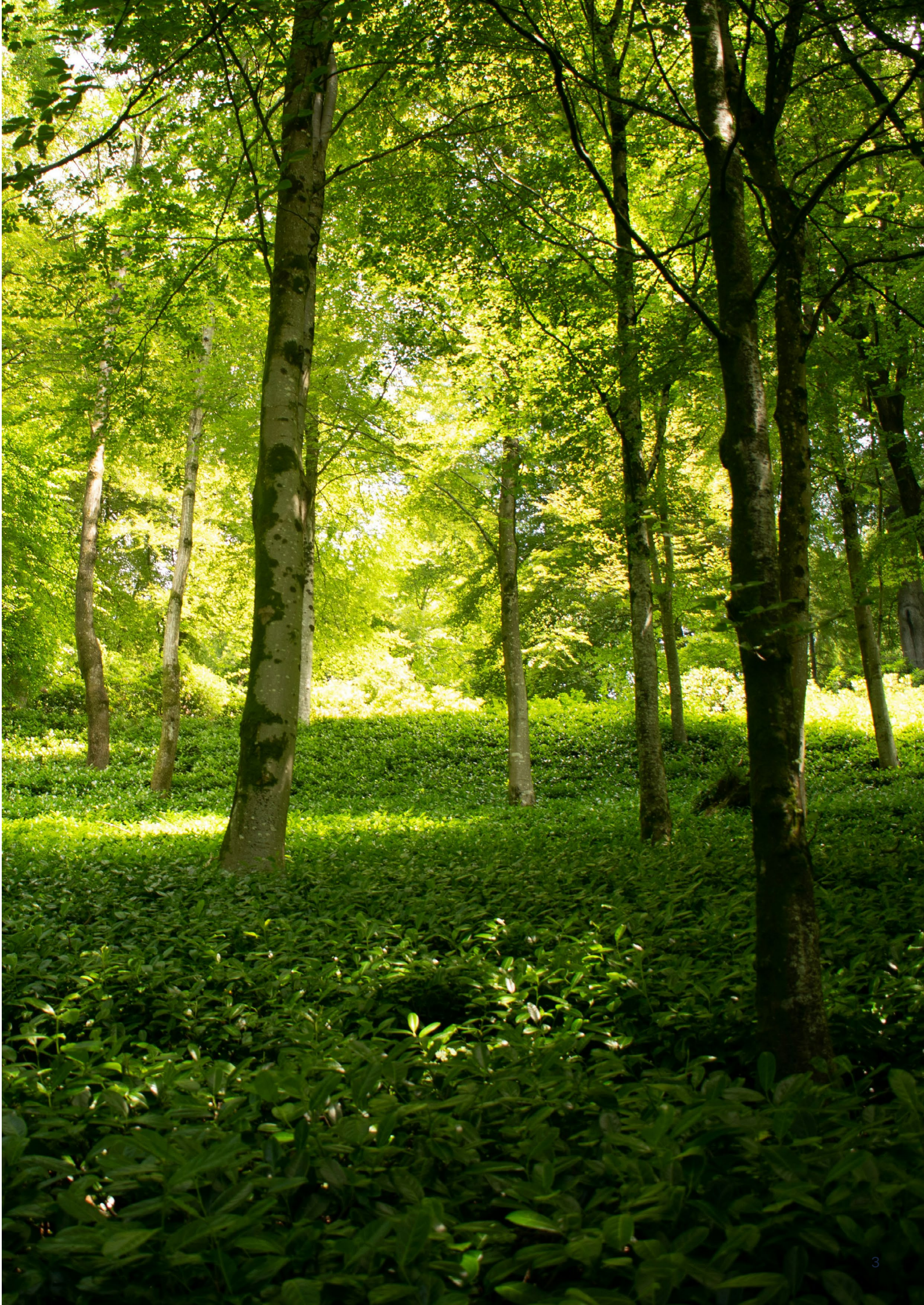
A restored natural environment can contribute to the creation of vibrant, healthy communities and economies with clean air & water, healthy soils with ample pollinators leading to secure food supplies, resilient housing and healthy people.

This groundbreaking nature recovery strategy has been developed in wide-ranging consultation. Together we have thought about what nature in Somerset needs to recover.

The challenge is great but working together to deliver this strategy we can do great things.



**Georgia Dent**  
Chair of Somerset Local  
Nature Partnership





# Executive Summary

Wildlife is disappearing at an alarming rate, and nature in Somerset has suffered significantly over recent decades due to habitat and species loss, and increased habitat fragmentation. There are multiple causes of this, including changes in land use, invasive species, pollution, and climate change.

To address this, the government has committed to halting and reversing biodiversity decline. Under the Environment Act 2021, 48 responsible authorities across England have been tasked with producing a Local Nature Recovery Strategy (LNRS). Each strategy will describe local biodiversity and outline opportunities and priorities for enhancing it, in terms of habitats and species. Together, these strategies will form a nationwide Nature Recovery Network.

This first LNRS for Somerset outlines a comprehensive strategic, landscape scale approach for enhancing and restoring biodiversity across the strategy area. The strategy covers all the land and freshwater, up to the inter tidal zone as far as mean low water.

Developed in collaboration with local authorities, government agencies, environmental organisations, farmers, land managers, communities, residents, and many supporting organisations and individual stakeholders, the strategy is designed to address the urgent challenges of habitat loss, species decline, wider environmental benefits and climate change.

The LNRS guides us all as to what action is needed and where taking this action is likely to be most beneficial. It will therefore direct action and investment to areas where it is needed the most, and will achieve the most

The strategy sets out what, where and how we can take collective action to deliver our shared target of at least 30% of land and inland waters in Somerset to be well managed for nature by 2030, known as '30 by 30'.\* Creating more space for nature will help wildlife to recover and create places that are more resilient to climate change.

The approach is based on Professor Sir John Lawton's seminal 2010 report, 'Making Space for Nature,' which called for more, bigger, better, and joined-up wildlife sites. These Lawton principles provide a framework for our LNRS, emphasising the extension and enhancement of existing habitats and the creation of new or restored habitats to better connect important landscapes identified as crucial for nature recovery

The Strategy:

- **Outlines opportunities and priorities** for what, where and how we can protect and grow nature;
- **Maps a series of specific actions** that can be delivered now to have the most impact for nature across the region; and
- **Lays out the journey** for realising the long-term recovery and growth of nature across the region.

This LNRS points to the potential actions (measures) that can be taken to restore nature in Somerset.

These measures are habitat based and will in turn benefit many species found in the county, but above and beyond this the Strategy identifies some 136 priority species from a long list of 396 species assessed as rare, threatened or significant within the county. Some species at threat have very specific habitat requirements, which cannot be met by the other measures (actions) in the LNRS. These very specific habitat requirements (niches) have been captured in the species shortlist.

The Local Habitat Map for Somerset is a key part of the LNRS, comprising of the "Areas of Particular Importance for Biodiversity" (APIB), areas already afforded protection, and the "Areas that Could become of particular Importance for Biodiversity" (ACIB), the target areas identified by the LNRS as the focus for the delivery of the strategy's potential measures.

An interactive version of the Local Habitat Map can be found on Somerset Council's interactive mapping tool. The maps can be used to provide suggestions for what and where action can happen to make more areas for nature and provide habitats which are bigger, better and joined up.

The maps are a guide, not a prescription, and are not intended to replace landowner choice, good site surveys, local knowledge and project planning. Not all actions can be mapped spatially, so it is important to also refer to the priorities and actions in this document for further inspiration.

Whilst the Strategy makes no requirement for its measures to be implemented, it offers a comprehensive guide to nature recovery that will present many strategic and financial benefits to farmers, landowners, planners, developers, community groups and others, in taking forward the measures.

To meet our goals, it is critical that we measure and monitor our progress. The Somerset State of Nature Report 2023 sets out a baseline for nature in Somerset and along with this strategy, they form a framework for nature recovery efforts in Somerset. From here, we will be able to track trends of change, both positive and negative, for the quality, quantity, distribution, connectivity, and resilience of our habitats and species.



At least 30% of land and inland waters will be well managed for nature in Somerset by 2030



# Introduction and Vision

## A vision for nature in Somerset

This chapter sets the scene for nature recovery in Somerset. It outlines the purpose and vision for collective action.



# Background

**Local Nature Recovery Strategies (LNRSs)** are a new, England-wide system of spatial strategies established by the Environment Act 2021. The main purpose of these strategies is to help reverse the ongoing decline of nature in England by establishing priorities for nature recovery, identify locations to create or improve habitat where this is most likely to provide the greatest benefit for nature and the wider environment, and in doing so contributing to the national Nature Recovery Network. The aim is to coordinate local action to support the delivery of the national 25 Year Environment Plan, which aims to create a Nature Recovery Network of 500,000 hectares of new or restored wildlife-rich habitat outside of protected sites in England by 2042.

Somerset Council was appointed a Responsible Authority by the Secretary of State for Environment, Food and Rural Affairs to lead on preparing a Local Nature Recovery Strategy (LNRS) for the area. Somerset Council chose to create the strategy in partnership with the Somerset Local Nature Partnership, who have acted as overall Steering Group. The LNRS has been locally led and is informed by a wide range of local interested parties, including environment professionals, farmers and growers, foresters, wildlife experts, local businesses and others through a series of workshops, surveys and events.

The methodology guiding the Local Nature Recovery Strategy involved a rigorous, evidence based process, combining local ecological data, national biodiversity datasets, and stakeholder input to identify key areas for intervention

As with all of the 48 LNRSs prepared across England, the LNRS is formed of two key parts:

## 1. A written Statement of Biodiversity Priorities, which identifies the priorities for nature’s recovery, and includes:

- A description of the strategy area and its biodiversity.
- Opportunities for recovering or enhancing biodiversity in the strategy area.
- Proposals for potential measures to deliver the identified priorities.

## 2. A Local Habitat Map, which maps:

- The most valuable existing areas for nature.
- Specific proposals for creating or improving habitat for nature and wider environmental goals



Great Crested Grebe courtship



Aerial view from Wellington Hill, Blackdown Hills



# Nature is in crisis

We are in a climate and ecological emergency the UK is one of the most nature-depleted countries in the world, with monitoring since the 1970s indicating a decline in species abundance of 19% and nearly 1 in 6 species threatened with extinction (State of Nature 2023).

Nature in the UK, and more locally in Somerset, has declined significantly in recent times. The UK's State of Nature reports have sought to quantify the scale of nature's decline, with alarming results indicating that:

- Wildlife in England has declined in abundance by a third (32%) on average since 1970.
- Of 8,840 species assessed, 16% are classified as threatened with extinction.
- 8% of plant species assessed have seen decreases in their distribution.
- The distributions of invertebrate species have decreased by 13% on average since 1970.
- Hazel Dormouse has declined by 51% in Britain since 2000, and Water Voles have declined by 47% in the period 1998/00 to 2016.
- In a global context, England has a Biodiversity Intactness Index (BII) score of 41%, amongst the lowest in the world (and against an average global BII of 77%).

A number of long-term national datasets also illustrate substantial declines of many species:

- Trends for the abundance of breeding birds on farmland show a decline of 61% in the period 1970 to 2022, and in the same period, the abundance of woodland birds declined by 37%.
- Some bird species have declined significantly in the period 1970-2018, including Turtle Dove (- 98%), Willow Tit (- 94%), Tree Sparrow (- 90%), Corn Bunting (- 89%), Spotted Flycatcher (- 88%), Little Owl (- 69%), Lapwing (- 64%) and House Martin (- 54%).



Barn Owl

- Habitat-specialist butterflies have declined in abundance by 27% and lost 68% of their distribution in the period 1976 to 2019, and amongst all species, butterflies have lost 42% of their distribution in the same period

**The Somerset State of Nature report 2023** provided a crucial benchmark for assessing how wildlife is faring across Somerset, and mirrored this national trend of species decline, with species continuing to go extinct from the county and many more threatened, along with their habitats. The report's findings highlight a stark reality: despite significant efforts, we have not succeeded in halting biodiversity decline.

In Somerset, quantitative data is more difficult to come by, but evidence indicates that:

- Terrestrial insects are faring particularly badly within Somerset, with butterfly distribution declining by 874km<sup>2</sup> over 30 years. Fritillary butterflies have suffered drastically with a 60% decline in distribution from 1990-2021; the marsh fritillary butterfly is now considered extinct from Somerset.
- Common mammal species are seeing a decline in reporting. Analysis of hazel dormice records in particular, indicate a reduction in the probability of seeing a dormouse, suggesting a decline in the population.

- Non-native invasive species cover has increased by 260%, from 354km<sup>2</sup> to 923km<sup>2</sup>, between 1990-2021.
- Somerset habitats have also seen declines in species richness, as well as quality and quantity. Somerset has lost 201.94km<sup>2</sup> of grassland in 25 years, a 5.75% loss on top of previous already significant declines

The consequences of nature decline are extensive and affect our everyday lives. Beyond its crucial role in sustaining basic life-support systems through the supply of air, water and food, nature also significantly contributes to our overall quality of life

Some examples of the consequences of the decline in nature include:

- Food production - the absence of pollinators and degradation of soil quality threatens the production and quality of our food.

- Ecosystem services - pollination, water purification and soil fertility are affected by the loss of biodiversity, leading to increased costs of man-made water treatment and alternative systems.
- Health and Well-being - Loss of green spaces reduces access to nature, which has been shown to lower stress, anxiety, and depression.
- Economic impact - Loss of wetlands, forests, and coastal ecosystems increases vulnerability to flooding and erosion, leading to higher insurance costs and public infrastructure spending. New studies have shown domestic and global damage to the environment could lead to an estimated 12% loss of GDP in the UK by 2030.
- Social inequality - Marginalised and low-income communities are disproportionately affected by loss of green space, exacerbating health and opportunity disparities.



“The truth is: the natural world is changing. And we are totally dependent on that world. It provides our food, water and air. It is the most precious thing we have and we need to defend it.”

- David Attenborough



# The State of Nature in Somerset



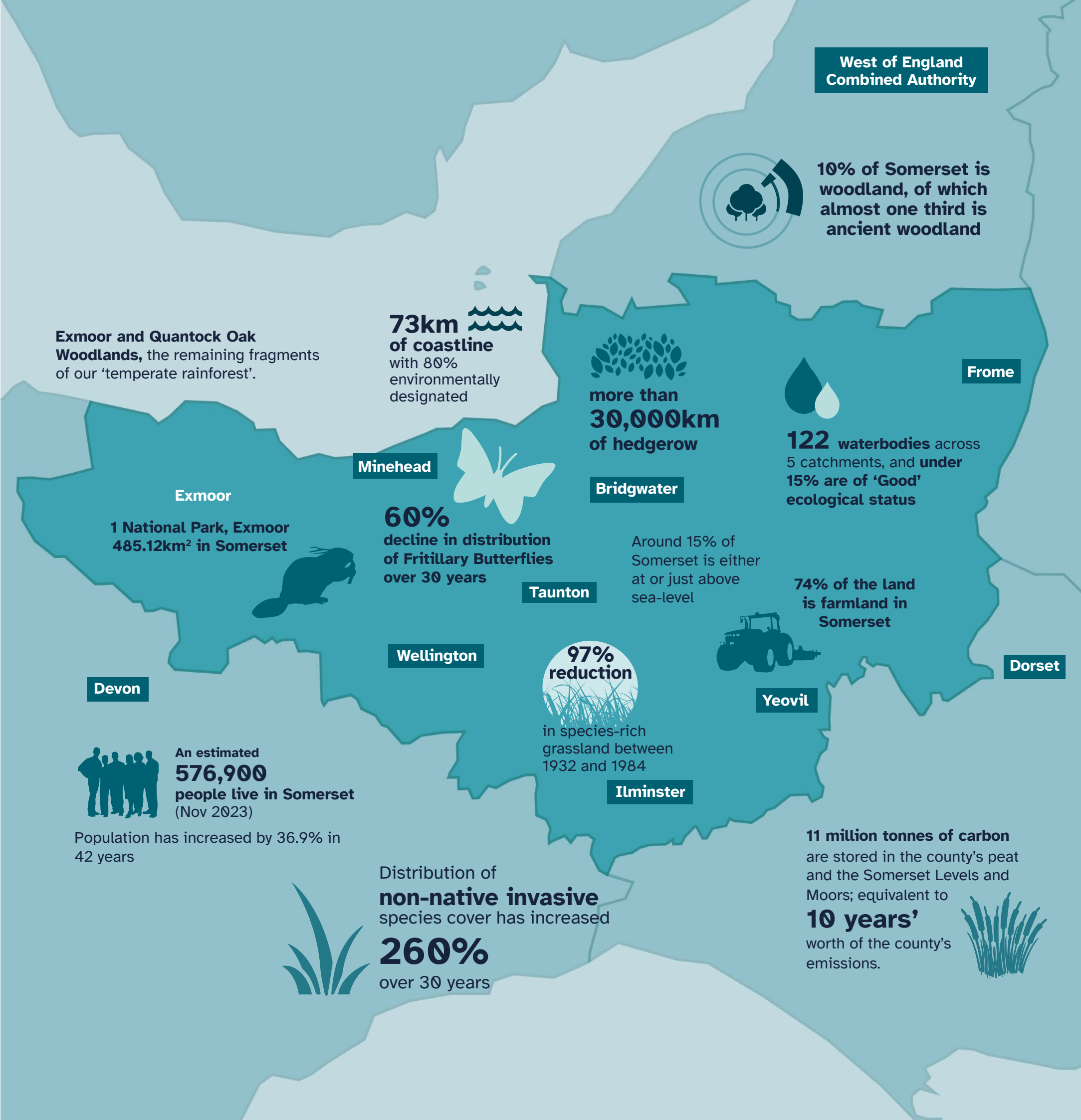
With a general trend of declining biodiversity in Somerset there are, however, good news stories. Through collaboration and working together success is possible with concerted effort, landscape-scale vision, and cohesive partnerships. Positive case studies, such as the Somerset Wetlands and Mendip Hills ‘Super’ National Nature Reserve, demonstrate the power of collective action. You can read about these in Section 4 - Working together.

The first Somerset State of Nature report gives valuable information on the current state of Somerset’s species and habitats in 2023, sets a baseline for future efforts to be measured against and emphasises that it is not too late to act collectively for nature recovery. This LNRS follows on from The Somerset State of Nature report with guidance on how we can achieve nature recovery together.

### Document user guide

This document is interactive and designed to help you easily navigate to relevant content while viewing it online.

-  This icon will send you to The Somerset State of Nature report 2023 to find out more baseline data on species and habitats in Somerset
-  The icon in the top-right corner will bring you back to the contents page
-  Clickable text to find out more





# The purpose of the LNRS

The Strategy identifies a range of priority habitats that are essential for supporting biodiversity and ecosystem services. Each of these habitats play a crucial role in maintaining ecological balance, supporting species, and providing environmental and social benefits to our communities.

Our approach focuses on protecting, creating and enhancing, managing and connecting these habitats to ensure their resilience and sustainability for future generations.

By focusing on key indicators of ecological health and leveraging the expertise of local stakeholders, the LNRS aims to create a landscape that is more resilient to climate change, more connected for wildlife, and more accessible for the people who live and work in Somerset.

**The purpose of the LNRS can be summarised as follows:**

- Identify locations to create or improve habitat most likely to provide the greatest benefit for nature and the wider environment
- Provide clear priorities, proposed activities and mapped high opportunity nature areas for a wide range of people to use as a guide to support nature recovery across Somerset
- Direct action and investment to areas where it is most needed and will derive the greatest benefits
- Support people and organisations putting together land management plans, funding bids, landscape recovery projects and other related plans
- Maximise the opportunities for development, land use and land management to make a positive contribution to nature recovery.

**The primary purpose of the LNRS is to identify locations to create or improve habitat most likely to provide the greatest benefit for nature and the wider environment.**



Large Blue feeding on wild thyme, Collard Hill



Field with red poppies



Grey heron, Somerset Levels



# A Nature Vision for Somerset

## What makes Somerset distinct

Somerset boasts a variety of landscapes which forms a rich tapestry of habitats, from our famous hills to our diverse coastline and iconic wetlands, all of which provides our impressive setting, a strong identity and vital support for our local nature and biodiversity.

The peatlands and wetlands of the Somerset Levels and Moors, and the moorlands of our National Park are home to rare and unusual plants, birds and insects, and store vast amounts of carbon. Our woodlands are precious, with nearly a third being ancient woodland, and which include fragments of temperate rainforest

The grassland habitats of Somerset are varied and echo the geological and soil diversity. With 74% of our land being agricultural, we're well known for our farmed exports including world renowned cheeses and cider.

Our coastline includes sand dunes, rocky shores, cliffs, salt marsh, tidal estuaries and coastal deciduous woodland, with 80% of our coastline having some form of environmental designation. The rivers and waterways of Somerset form fundamental components of our landscape, including the network of ditches and rhynes across one of the most extensive areas of reclaimed wet pastures in the UK.



Exmoor pony

## The problem

Over hundreds of years, human activities have shaped our landscapes. Despite Somerset's relatively low population and the idyllic image of its lush green pastures interwoven with waterways and hedgerows, the region has experienced substantial biodiversity declines.

Changes in land use have led to habitat loss and increases in habitat fragmentation. Pollution has led to degradation of habitats, waterways and species loss. Additionally, poor management and over exploitation of natural resources, such as peatlands, have strained the land and caused release of carbon. Climate change impacts have compounded loss and disruption of nature.

Somerset has the second highest number of Local Wildlife Sites (LWS) in the UK. However, since 2009, we have lost 48 sites, representing 7% of our land. These losses include vital habitats like flower-rich meadows and pastures, wetlands, heathlands, and ancient woodlands. The widespread habitat loss across Somerset has resulted in declines in species, including mammals, birds, amphibians, reptiles, insects, marine life, plants, and fungi. Terrestrial insects are particularly struggling, with the marsh fritillary butterfly now considered extinct from Somerset.



Small pearl-bordered fritillary

## The opportunity

Our vision for a nature-rich Somerset is to restore and conserve the rich tapestry of Somerset's landscapes by weaving in more nature to create healthy and functioning habitats. We want our rivers, seas and waterways to run pollution free and be climate resilient to mitigate future flooding, areas important for nature to be in their best condition and expanding, and wildlife to recover and flourish throughout the whole county in rural and urban areas, alongside providing wider benefits to the current and future communities of Somerset.

**Through this we aim to:**

- **Focus on the extent and condition** of our existing habitats;
- **Expand** existing core habitat areas;
- **Create and restore** additional habitat patches; and
- **Enhance habitat connectivity** and facilitate species movement by linking up existing habitats



Starlings murmuration, Somerset Levels

## Guiding principles for decision making:

- **Understand your site** within the landscape and seek professional advice to deliver the best outcomes for nature;
- **Implement Nature-based Solutions** to restore natural processes and build resilience against climate change;
- **Develop green and blue infrastructure** in urban areas to create networks of natural and semi-natural areas;
- **Promote nature-friendly farming and forestry** to protect and improve soil and water resources;
- **Practice sustainable management** for the benefit of present and future generations;
- **Document and share knowledge** to ensure future generations benefit from our learnings; and
- **Foster partnership and collaboration** to sustain and restore nature. We must work together to integrate nature into our lives, support ecological recovery, and reverse biodiversity loss.



Barn owl



# A Nature Vision for Somerset



### Coastal

A resilient coast, safeguarding marine life and vital intertidal and sub-tidal habitats. We envision a coast that sustainably adapts to climate change, ensuring its long-term health and diversity. It will be a place where wildlife can thrive, from the coastal birds that arrive in their thousands in winter, to clean pollution-free waters that support healthy assemblages of fish, shellfish and marine mammals.



### Moorland & Heath

A thriving heathland and moorland landscape with a diverse mosaic of habitats that store more carbon. Management promotes and provides a vital haven for birds, reptiles and insects. This natural sanctuary will be a place of wild and open habitats that has successfully brought back many of the heathland rarities from the brink of extinction.



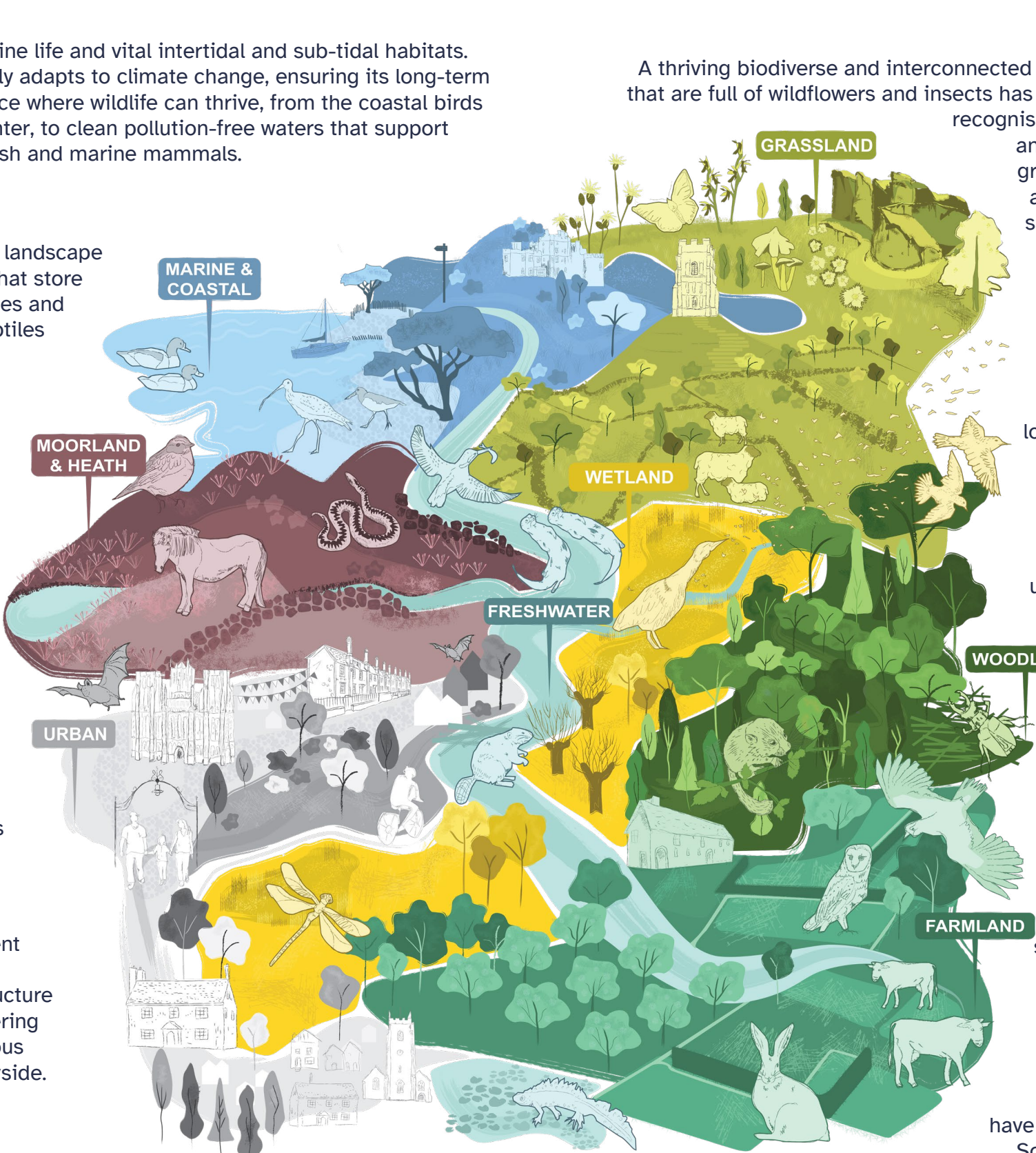
### Freshwater

Waterways will have healthy flow rates and good water quality, supporting a diverse fauna and flora the likes of the colourful kingfisher and the charismatic otter. Waterways will be better connected to their floodplains with restored natural processes helping protect our communities from flooding and create better connected wet habitats for species recovery.



### Urban

A flood and climate change resilient environment with nature on our doorstep. Green and blue infrastructure integrates nature into towns, fostering interconnectedness and harmonious existence with our diverse countryside.



A thriving biodiverse and interconnected network of species-rich grasslands that are full of wildflowers and insects has been restored and created. People recognise and value wildlife-rich grasslands and all that they do for us. The varied grasslands of Somerset, support rare and endemic species and provide a sanctuary for wildlife and pollinators that support our farming industry.

### Grassland



### Lowland Wetlands

Lowland wetlands are protected, restored and re-wetted to re-establish and expand this iconic lowland landscape. Dynamic, healthy and interconnected wetland habitats have been created that stores more carbon, with peat extraction ended, and provides a haven for wetland birds, and unique and diverse plant and insect communities.



### Farmland

Farmland thrives from intertwining agriculture with space for nature. Nature-based Solutions and regenerative agriculture improves soil health, enhances water storage and reduces run-off, soil erosion and flooding. This approach fosters a sustainable, symbiotic relationship with nature, supporting productivity and nature in abundance.



### Woodland & Hedgerows

Woody habitat networks of woodlands, wood pastures, hedgerows and trees have been expanded and diversified across Somerset, with irreplaceable and mature woodlands safeguarded for wildlife. Our enriched, resilient woodlands foster healthy trees and soils, capable of defending and nurturing our most precious and valuable woodland ecosystems.





# How to use the LNRS

## Using the strategy to inform nature recovery

This chapter explains the components of the LNRS, and how to use the potential measures and mapping to inform nature recovery



# Understanding the elements of the Local Nature Recovery Strategy

The Local Nature Recovery Strategy (LNRS) is a set of agreed priorities for Somerset's nature recovery, with spatially framed potential measures to deliver these.

A **priority** is the **outcome** we want to see for nature – you can find Somerset's priorities for nature for each of the eight overarching habitat types in Chapter 4 of the Strategy.

A **potential measure** is the proposed action to deliver the priority. You can find Somerset's potential measures for each of the eight overarching habitat types in Chapter 4 of the Strategy.

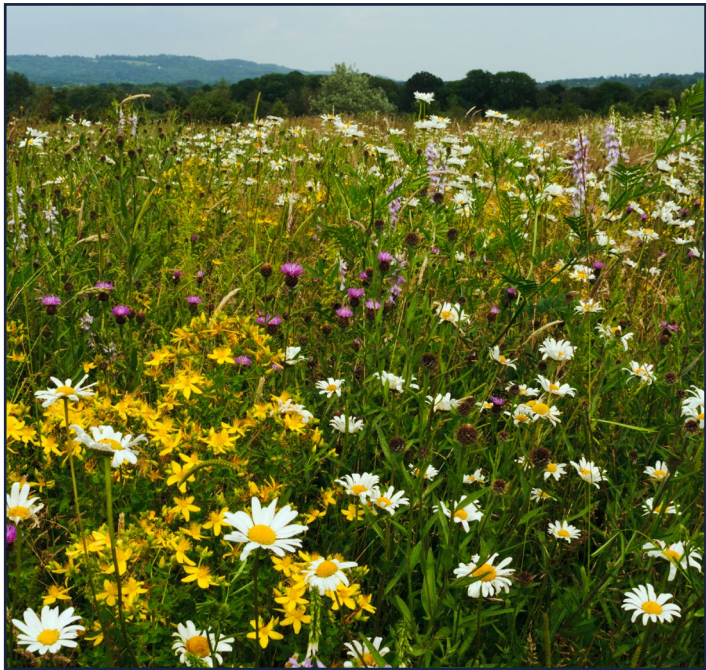
These measures are habitat based and will in turn benefit many species found in the county, but above and beyond this the Strategy identifies some 136 priority species from a long list of 396 species assessed as rare, threatened or significant within the county. From this, 15 individual species and 8 species assemblages were identified that require bespoke actions, beyond those provided by the habitat measures (see Chapter 4.3J and Appendix 5: Species Recovery approach).

The **Local Habitat Map**. The Nature Recovery Network is made up of the areas which are currently being protected for nature, and those areas which could be doing more for nature – as shown on the Local Habitat Map. It is a key part of this strategy and can help to guide action for nature and should be used in conjunction with this document. The Local Habitat Map includes:

**Areas of particular importance for biodiversity (APIB)** are the existing protected wildlife sites, which include internationally, nationally and locally designated sites and irreplaceable habitats (see Chap 3.2).

**Mapped Measures and Areas that could become of particular importance for biodiversity (ACBI)** The Mapped Measures relate to those potential measures where specific areas have been identified for the creation or enhancement of habitat which is most likely to deliver the greatest benefit for nature recovery,

and the wider environment. The ACBI are derived directly from these areas, but omit those areas already identified as APIB.



## Bigger, better, more and joined up - the overarching principles for nature recovery in Somerset

Somerset's local nature recovery strategy uses the 4 key principles of creating "better, bigger, more and joined" spaces for nature, as outlined in the Making Space for Nature report led by Professor Sir John Lawton in 2010, now often referred to as the Lawton principles.

By following these principles, the strategy identifies opportunities to create a stronger, more connected and more resilient natural environment that benefits both wildlife and people.

The principles are explained in the boxes below:

- Better**

Improve the quality of our existing habitats and ensure they are in a healthy and functioning state, by applying and resourcing better and appropriate management.
- Bigger**

Increase the size of our most valuable and important habitat sites, not only extending but buffering, to protect them from the pressures of human influences
- More**

Through habitat restoration and creation, establish new, nature-rich sites that not only provide more space for nature but also provide connectivity between existing core sites.
- Joined up**

Enhance connections between, and join up, sites, through improving the quality of the land that exists between, creating new physical corridors, and establishing 'stepping stones'.

Click here to read more on Lawton's principles in Making Space for Nature: a review of England's wildlife sites and ecological network (2010)



The Strategy and associated maps do not dictate actions, nor instruct their implementation – they are a guide for how landowners and managers could use or manage the land, or approach their operations, in a way that could support the recovery of nature.

## Chapter 2.2

# Delivery Mechanisms

This section aims to provide landowners and managers a clearer understanding of what LNRS means for them and their land.

## Uses for LNRS that are based in law

**Targeting Biodiversity Net Gain (BNG)** - LNRSs will determine where habitat creation or enhancement for BNG will be of **'high strategic significance'**. This means that when habitat is created or enhanced to generate biodiversity units for the purposes of BNG, it gets a 15% uplift in the **biodiversity metric** if it follows what was set out in the LNRS.

The Local Nature Recovery Strategy can be used as a key source of information e.g. regarding strategic approaches to off-site biodiversity net gain delivery and connections to existing habitat, when local planning authorities are carrying out their functions in respect of Biodiversity Net Gain. As part of this the biodiversity hierarchy will need to be considered; the **Biodiversity Net Gain planning practice guidance** sets out further information on this.

**Duty on Public Authorities to Conserve and Enhance the Environment** - LNRSs will inform how all public authorities in England meet their **legal duty to conserve and enhance biodiversity**. The duty applies to a long list of national and local government organisations as well as some private utilities such as water companies. Public authorities must understand which LNRSs are relevant to them and how they can contribute. This could be through:

- Managing areas of land that they are responsible for in a way that supports what the LNRS proposes
- Using the LNRS to inform relevant regulatory decisions



Steart marshes

Local Planning Authorities (LPAs) have a particularly important role to play in supporting the delivery of actions proposed in LNRSs.

**Planning Law** - Planners have a legal requirement to 'take account' of the content of the LNRS, to ensure nature recovery is properly reflected in the planning system. The key documentation is available at [www.gov.uk/guidance/natural-environment](https://www.gov.uk/guidance/natural-environment) but is summarised below:

- **For local plan development:** Local planning authorities should be aware of mapped areas and proposed measures in the relevant LNRS and consider how these are reflected in their local plan.
- **For planning decisions:** The LNRS is an evidence base that may be a **'material consideration'** in planning; the decision-maker determines its relevance based on circumstances.



View to Burrow Mump

## Other ways in which LNRSs will be used

**LNRS will also be used:**

- **To provide information to farmers and land managers** to help them choose which Countryside Stewardship and Sustainable Farming Incentive options are appropriate for their land.
- **To help groups of farmers and land managers shape nature recovery priorities** for their area, and to encourage collaboration across holdings and landscapes.
- **To identify opportunities for Landscape Recovery project proposals**, and to provide evidence to support their application and project development.
- **To help Government when considering applications for funding** for specific nature recovery activities, by acting as criteria in applications.
- **To help responsible authorities and/or local partnerships leverage and target funding for environmental projects** to areas where they could have the most impact for nature and the wider environment.
- **To inform how Defra arms-length bodies carry out existing functions to better support nature recovery** – for example, by drawing on LNRS priorities and proposals when providing land management advice to farmers, or when selecting locations for nature-based solutions such as natural flood management and tree planting.
- **To inform the development and implementation of Protected Landscape management plans**, by identifying locations and measures that will drive delivery of the agreed targets and outcomes set out in these plans.



# Ways in which LNRs might be used in future

Government is keen to add to the list above to provide further encouragement and support for the delivery of actions proposed in LNRs.

Below are some further opportunities for how LNRs could be used in future, but which require further exploration to determine whether this will be the case.

## LNRs might be used:

- **To identify where funding could be made available** to encourage farmers and land managers to carry out the most environmentally impactful actions on their land.
- **As required criteria in future government nature recovery funding schemes**, meaning that actions proposed in the LNRs would be eligible for funding.
- **To inform the identification of areas that could potentially contribute towards Government's 30by30 commitment** following appropriate action for nature recovery.
- **To inform where private companies choose to provide corporate donations** for habitat creation or enhancement projects that deliver LNRs proposals.
- **To guide private finance investments in nature and carbon markets** – for example, targeting action on tree-planting as part of the **UK Emissions Trading Scheme**.



## How LNRs will not be used

LNRs are not designed to be prescriptive. They are tools to drive forward action to recover nature. The following list sets out the ways that Defra have told us in writing, they don't intend LNRs to be used. and which they at time of writing, do not foresee changing in the future.

### LNRs won't be used to:

- **Require owners or managers of land to make specific proposed land use changes** – this will remain their choice.
- **Place new restrictions on developing land** – LNRs will be one source of evidence used to inform the preparation of plans that will determine where development should occur (these plan preparation processes have their own consultation and engagement requirements so that different needs for land can be balanced by the plan maker).
- **Identify areas to be given legal nature protections that create restrictions on how land can be used or managed** – LNRs do not propose new nature reserves or any other kind of legal designation.
- **Prevent nature conservation work** in areas not prioritised by the LNRs (e.g. by restricting funding in areas that are not mapped).
- **Determine regulatory decisions**, such as the result of Environmental Impact Assessments – LNRs can be a source of evidence to inform decision making but determination must still be made on the basis of relevant legislation and statutory guidance.





# Step-by-step guide to use this LNRS

This step by step guide is to help you put this strategy into action.



### 1.

#### Identify which Zone your site or project is located

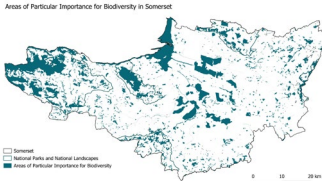
The opportunity maps help identify if your land or project is in:

**Zone 1:** Core areas of high nature value. Actions should focus on extending and improving condition of habitats.

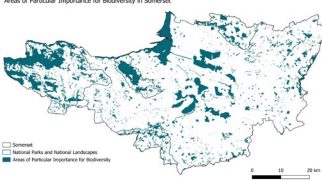
**Zone 2:** Areas that could become important for biodiversity. Actions should focus on creating and restoring habitats to connect core areas and create resilient habitat networks.

**Zone 3:** Sustainable use areas. Actions should focus on implementing sustainable practises and management, and creating spaces for nature.

Clicking on the principle opportunity maps below will take you to the interactive mapping database where you can find out which Zone your project or land is located.



Map of areas of particular importance for biodiversity (APIB) (Zone 1)



Map of areas that could become of particular importance (ACIB) (Zones 2 & 3).



### 2.

#### Identify your goals to help create a coherent and resilient ecological network

Ecological networks consist of high-quality sites protected by buffer zones and connected by wildlife corridors and habitat-rich stepping stones.

The LNRS priority outcomes aim to create better, bigger, more, and joined-up habitats, forming a coherent and resilient ecological network.

Each site is unique, so goals should be tailored to the location of your project or land to focus on the most relevant priority outcomes and measures.

- **Core areas of high nature value** in Zone 1 should focus on priority outcomes and measures to manage and improve habitat conditions, extending these core areas.
- **Corridors and stepping stones** enable species movement and support ecosystem functions. Zone 2 sites should focus on priority outcomes and measures to enhance connectivity through creating and restoring habitats.
- **Restoration areas** in Zone 2 where nature-rich habitat is lost or degraded, should focus on priority outcomes and measures which create and restore habitat. Historic land mapping can help identify remnant or fragmented habitat.
- **Buffer zones** protect core areas, corridors, stepping stones, and restoration areas. Sites in Zone 2 should focus on priority outcomes and measure which create these buffer zones.
- **Sustainable use areas** in Zone 3 should focus on promoting wildlife-friendly practices and Nature-based Solutions.



### 3.

#### Determine the most suited habitat type for your site

By following steps 1 and 2, you can identify the most suitable habitat type for your site. If unsure, use the habitat opportunity maps in Chapter 4 for guidance.

If you're already involved in a project focused on a specific habitat, start there and then use steps 1 and 2 to find suitable locations and set goals from the outcomes and measures in Chapter 4.



### 4.

#### Take action in helping nature recover

Chapter 4 of the LNRS details priority outcomes and measures for each habitat type, including additional species-specific measures.

We recommend you **consult an ecologist through the CIEEM directory of registered consultants**, or nature-friendly organisation such as FWAG SW and SWT, to survey existing habitat and species, and advise on the best habitat creation or enhancement actions.



### 6.

#### Monitoring

Record your starting baseline, what actions you are delivering and monitor the results.

This strategy will be reviewed based on actions that are being delivered and updated to reflect progress and changing circumstances to ensure this LNRS remains relevant and ambitious.



### 5.

#### Identify funding available to you

The user guides in Chapter 2 help you identify funding and support that might be available.

We recommend reading the case studies to see how you can work with others to help achieve conservation at a landscape-scale.

28

29

1. Introduction and Vision

2. How to use the LNRS

3. Somerset's Natural Environment

4. Opportunities for Nature Recovery

5. Working Together



# Somerset's Natural Environment

## A description of our strategy area and its biodiversity

This chapter provides a summary description of nature in Somerset. It describes the areas that are already playing an important role in nature recovery with spotlights on some of these key areas.



# 3

Large Blue, Somerset



# Strategy Area Description

Somerset’s landscape is varied, from farmland and grassland to ancient woodlands, heathlands, and the picturesque coastline. This landscape contains many important habitats, with 22.7% of Somerset nationally or internationally protected, ranging from the uplands of Exmoor National Park to the rolling Mendips, Blackdown, and Quantock Hills, and to the low-lying flat Somerset Levels and Moors. Somerset boasts varied geology and soils, yielding a range of habitats.



## Moorland & Heath

Some of Somerset’s most recognisable landscapes are heathlands. These wild, open areas are characterised by the eye-catching purple haze of heather in late summer. Their mosaic of grassland, shrubs, and bare ground is home to a wide range of wildlife, including rare and endangered species such as merlin, heath fritillary, and adder. Exmoor National Park provides a prime example of this diverse and precious habitat.



## Woodland & Hedgerows

Woodland covers only 10% of the land in Somerset, with one-third being ancient, and much lost over hundreds of years. Somerset is home to fragments of temperate rainforest and Exmoor has the longest stretch of coastal woodland in the UK with rare whitebeam trees unique to Exmoor. Wood pasture, wet woodlands, and over 30,000km of hedgerows are also found in Somerset.



## Freshwater

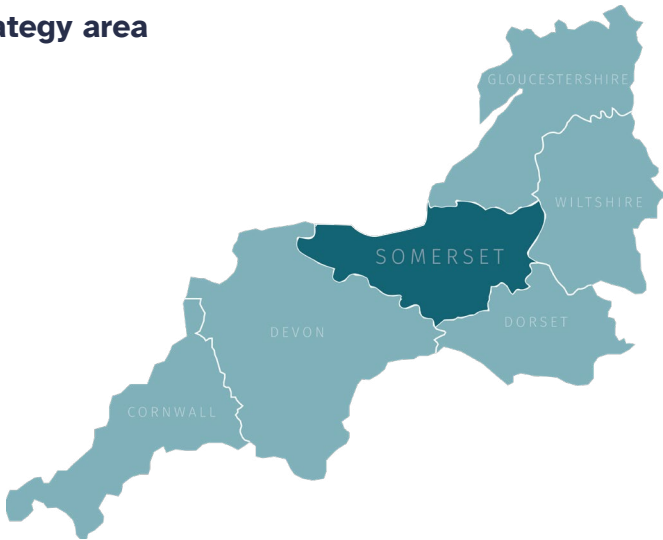
Rivers, ponds, and lakes are crucial components of Somerset’s ecosystems, provide habitat for a great diversity of species, connecting communities and linking terrestrial habitats with the coastal environment. However, less than 15% of Somerset’s rivers are in ‘Good’ ecological condition. Maintaining good water quality is key to ensuring a broad range of species that rely on the waterways for food and shelter can survive and thrive.



## Grassland

Somerset supports a great range of grassland types due to the geography and soils, and grasslands, including agricultural grasslands, cover the largest area of Somerset. However, our species-rich grasslands and meadows, home to rare and unique species, are in decline with 5.74% lost in the last 25 years. The area with the most drastic decline has been the Mendips.

Map of Somerset’s strategy area



## Coastal

Somerset’s 73km coastline features soft shores with salt marsh, dunes, and shingle banks in the east that support diverse wildlife, including those associated with the Severn Estuary, one of the UK’s most significant marine environments. Further west the shore is of harder substrate with lower shore kelp forests, home to diverse species including molluscs, crustaceans, fish, porpoises and grey seals. Maritime cliffs provide nesting for seabirds, while grasslands and scrub on the slopes support rare invertebrates and plants.



## Farmland

Agriculture is vital to Somerset’s heritage and economy, with nearly three-quarters of the county covered by farmland. Somerset does have semi-natural habitats (e.g. woodlands, hedgerows and rhynes) threading through the farmed landscape, however quality spaces for nature have diminished. Ensuring a harmonious relationship between agriculture and nature is crucial for healthy ecosystems and food systems.



## Lowland Wetlands

Lowland wetlands are one of the key landscapes in Somerset. The Somerset Wetlands NNR covers over 6,000ha, the third largest in England, and includes much of the iconic Somerset Levels and Moors, the largest remaining lowland wetland area in England and the UK’s second-largest lowland peat area. Lowland wetlands support diverse habitats and species, including nationally important bird populations and the declining water vole.



## Urban

The increasing population in Somerset is putting strain on nature and green spaces. Nature is essential not only for biodiversity but also for human health and well-being. Green and blue infrastructure is vital to maintaining Somerset’s urban areas’ richness in nature and their connectivity to the broader green and blue network.



# Areas of Particular Importance for Biodiversity

To consider where ambitious nature recovery measures can take place, the locations of the important and diverse habitats that make up the existing nature network across Somerset need to be established. This is achieved within this strategy by creating a single map, identified as the **Areas of Particular Importance for Biodiversity (APIB)** map. This acts to provide a framework of core sites to help identify locations and opportunities for targeting creation of new habitat, or improving, expanding and linking the existing areas.

**Internationally designated sites:**

- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Ramsar

**Nationally designated sites:**

- National Nature Reserve (NNR)
- Site of Special Scientific Interest (SSSI)

**It also includes:**

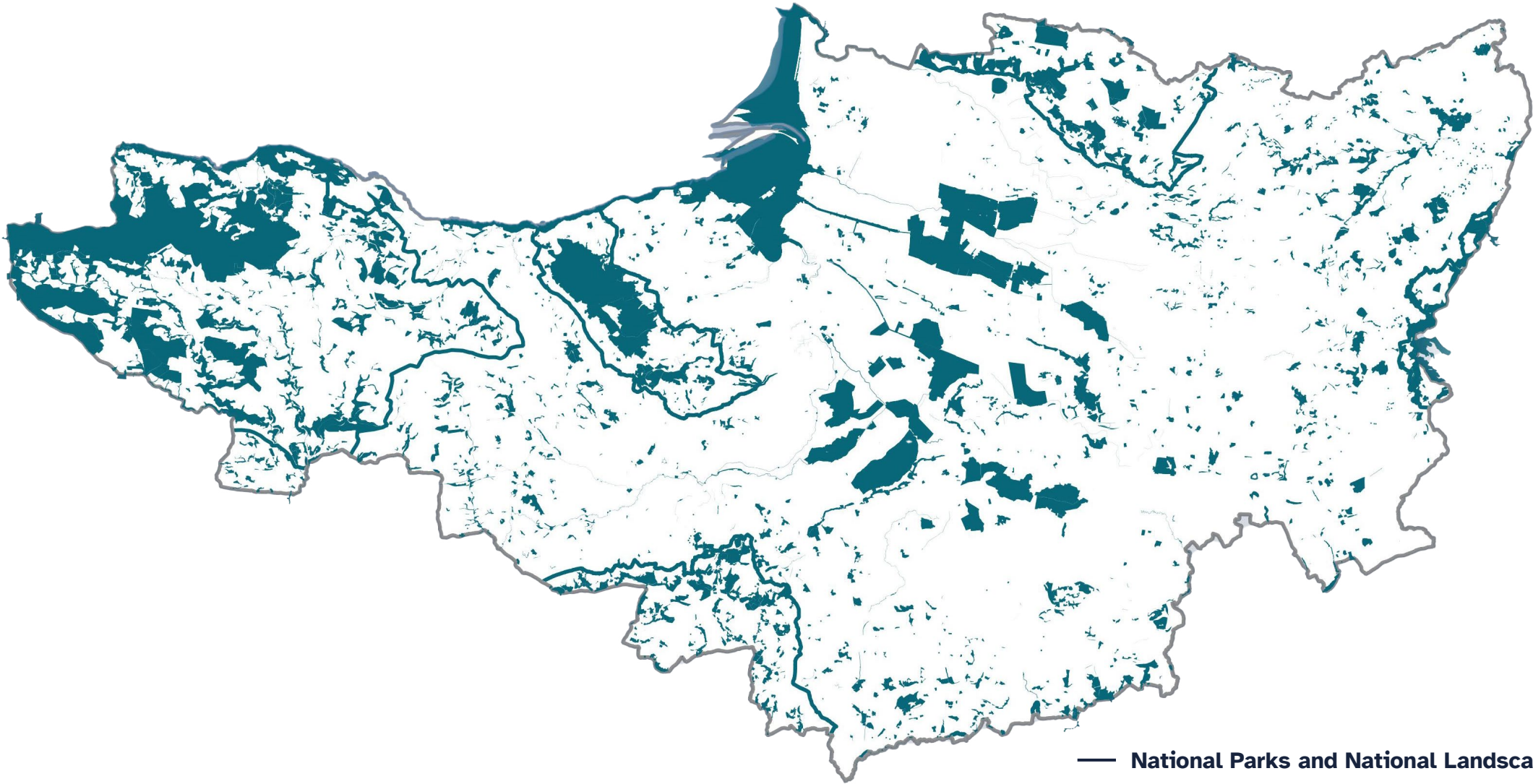
- Local Nature Reserves (LNR)
- Local Wildlife Sites (LWS)
- Irreplaceable habitats (as defined in the ‘Biodiversity Gain Requirements Regulations 2024’)

Whilst the APIB’s need active protection, enhancement and in some cases concerted restoration to reach a more favourable condition, it is not within the remit of the Strategy to map potential measures to the nationally designated protected sites for nature, since these are all subject to existing national and local policies and legislation which must be adhered to when considering any activity.

Potential measures can however be mapped to our Local Nature Reserves, County Wildlife Sites and Irreplaceable Habitat, since these have a different level of protections.

APIB’s cover a total area of XX km<sup>2</sup>, which constitutes XX% of Somerset. Many of these core areas are set within already protected landscapes. The boundaries of Somerset’s protected landscapes, Exmoor National Park, p.30-31) Mendip Hills, Blackdown Hills, and Cranborne Chase National Landscapes are also shown on this map (see also map on p.30-31).

The following pages provide a spotlight on some of these relatively nature rich landscapes, although there is still more we need to do to reverse biodiversity decline in these areas.



**Areas of particular importance for biodiversity**  
Opportunities to extend and improve the condition of these core habitat areas through effective management for nature recovery.

**Find out more:**  
For further information, click on the map to visit the online interactive map.



Spotlight on...

# Somerset's Hills: Our National Landscapes

Of the 46 National Landscapes in the UK, four are in Somerset, although one, Cranborne Chase, is predominantly in Dorset and Wiltshire but does merge into the chalkland of Somerset. Important habitats for the three 'Somerset Hills' National Landscapes include woodland, heathland, meadows and calcareous grassland, as well as special features such as spring-line mire habitats.

The Quantock Hills is one of the smallest National Landscapes, but what it may lack in size, it makes up for in diversity and delights. It consists of heathland, oak woodlands, and ancient parklands. Hilltops are covered in heathland of heather, gorse and bracken, amongst which sit scattered, mixed conifer plantations. The western side of the Quantocks are steep scarp slopes of pasture, woods and parkland.

On the Somerset/Devon border lies the Blackdown Hills, which have a greensand geology unique in Britain. The grasslands, lowland heathland, meadows, wet woodlands, wood pasture and mire mosaic habitats support important populations of fauna, most notably scarce butterflies.

The Mendip Hills, formed from carboniferous limestone has an array of landscape features including gorges, caves, valleys, lakes, woodlands and grasslands. Ash-maple woodland, calcareous grassland and mesotrophic grassland which can be found across the Mendip Hills provide nationally important semi-natural habitats.

## What is special?

### Quantock Hills National Landscape

The Quantock Hills showcases a remarkable diversity of habitats and species within a compact area, and is protected by 4 SSSIs, a SAC, numerous LWSs and an Important Bird Area, and boosts three key priority habitats: woodland, heathland and grassland. The Quantock Hills is important for its assemblages of heathland and farmland birds with iconic species such as the Dartford warbler and nightjar. Other important species include the brown hairstreak butterfly and Barbastelle and Bechstein's bats where populations within the Quantock Hills remain strong.



Dartford warbler

### Blackdown Hills National Landscape

Within the Blackdown Hills, several priority habitats are protected by 16 SSSIs and 1 SAC, and which stand out as exemplifying the value of the area for nature, including woodlands, hedgerows, lowland heathlands, neutral grasslands and spring-line mire habitats. Due to the mosaic of habitats, the hills are also a hotspot for rare and important species such as rare bats species (lesser and greater horseshoe, and Bechstein's bat), hazel dormouse, brown hairstreak and rare fritillary butterflies, and orchid species that are locally abundant (green-winged, lesser butterfly and early marsh orchids).



### Mendip Hills National Landscape

The unique habitats and species of the Mendip Hills are recognised as important for nature and heritage, which have been shaped by the limestone geology, creating stunning gorges, rocky outcrops, grasslands full of endemic species such as the Cheddar pink, and hidden habitats in the cave systems for nationally important numbers of roosting horseshoe bats, whilst also acting as an aquifer for our water supplies. Hedgerows, dew ponds and over 400km of drystone walls weave through the landscape providing lifelines for wildlife and connecting 3 SACs, 1 SPA and 29 SSSIs and associated vital habitats, including lowland heathland, ancient woodland, and acid, neutral and calaminarian grasslands. The Mendip Hills and the newly designated Mendip 'super' NNR span the county border, offering a chance to unify nature recovery efforts between Somerset and the West of England.

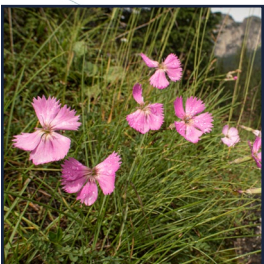


## What have we lost?

Specialist plants of heathlands and bogs are in decline, and many species, such as adders are only found in significant numbers on the Mendip Hills, Quantock Hills and Exmoor. Invertebrates and birds have suffered from declines in heathland and moorland habitats extent and conditions, with fritillary butterflies suffering a 60% decline in distribution from 1990-2021. Priority grassland has been lost, particularly dramatically in the Mendip Hills. Extensive surveying on the Mendip Hills has shown that populations of great crested newts are fragmented into small isolated pockets too far distant from one another for any interaction to occur, and with populations often reliant on a single breeding pond, local extinctions are increasing in probability.



Adder



Cheddar pink



Brown hairstreak butterfly



Bechstein bat



Spotlight on...

# Exmoor National Park

Exmoor National Park spans 692km<sup>2</sup> across Somerset and Devon. It features spectacular and diverse habitats including heathlands and moors, bogs, woodlands, grasslands, freshwater waterbodies and a dramatic coastline.

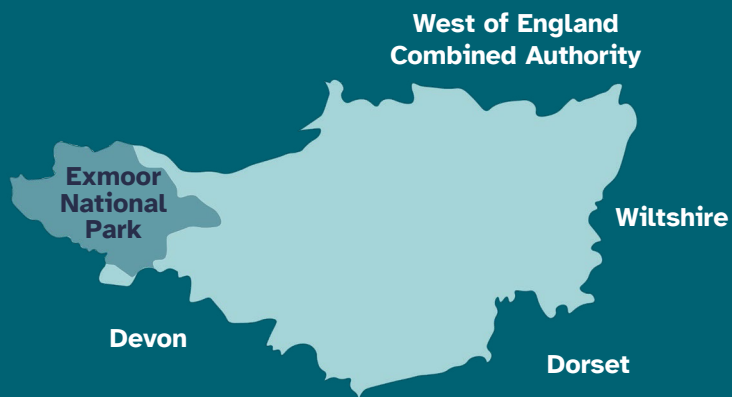
The moorland habitats are internationally important and provide homes to many species including specialist moorland plants, birds and animals.

Traditional mixed farming provides a range of habitats, including unimproved grassland, hedgerows and areas of scrub, which are important for wildlife as they support a wide variety of species.

Exmoor's diverse woodland resource includes deeply incised wooded valleys, and unique coastal woodlands that face the Bristol Channel. The ancient sessile oak woodlands contain rare lichens and one of the densest collections of veteran trees in Europe.

Exmoor was the first International Dark Sky Reserve in Europe, where its nocturnal wildlife such as the hazel dormouse and Barbastelle bat benefit from the lack of light pollution.

Exmoor has a Vision for Nature Recovery 2023, where it aims to have at least 75% of the National Park in nature-rich condition, with the remaining areas providing corridors for wildlife to connect beyond its boundaries.



## Why is Exmoor important for nature recovery?

Thanks to careful management much of Exmoor's wildlife is faring well compared with other parts of the country. However, Exmoor has not escaped the declines in biodiversity with losses of habitat including species-rich grassland, dwarf shrub heath and upland mires and reductions in characteristic species including many songbirds and butterflies.

Clean waterbodies are needed to support varied communities of flora and fauna, including the internationally vulnerable Atlantic salmon.

Notable species include various bat species, dormice, and some of the UK's rarest butterflies including the heath and high brown fritillary.

As a National Park, there is a special responsibility to safeguard Exmoor's wildlife and recover what has been lost. Exmoor could be more nature-rich and help mitigate the impacts of climate change, while remaining productive and viable for land managers. However, continued partnership working is needed to deliver this vision.

## What is special?

Exmoor's moors and heaths support nationally important populations of whinchat, stonechat, Dartford warbler, cuckoo and heath fritillary butterfly.

Dartford Warbler



Whinchat



Cuckoo



They are nationally important for the presence of a wide combination of upland heath types, including two rare types of heathland (bristle bent/western gorse heath and ling/western gorse heath) which are of international importance.

Ancient sessile oak woodlands contain rare lichens and one of the densest collections of veteran trees in Europe.

195km<sup>2</sup> of Exmoor is designated as 15 SSSIs, equating to 28% of the national park (71% of which is in Somerset), of which over half is also designated as 2 SACs (Exmoor Heath and Exmoor & Quantock Oakwoods).

Notable species in Exmoor include 16 of the 17 breeding British bat species found in the UK.

## What have we lost?

Birds such as the curlew are now at the edge of extinction on Exmoor and other species such as yellowhammer, willow tit and greenfinch have seen a big drop in numbers across the National Park.

Targeted management has helped populations of high brown and heath fritillaries to stabilise. However pearl-bordered and marsh fritillary butterflies are now extinct in Exmoor.

The red squirrel has not been seen since 1947 as grey squirrels rapidly increased in numbers. The reintroduction of pine marten and white tailed eagle is being investigated, with long term aspirations for red squirrels.

Centuries of moorland reclamation, agricultural drainage, peat-cutting, overgrazing, and swaling have dried out much of the peat, leading to dominance by moorland grasses and loss of wildlife.

There is less than 25km<sup>2</sup> of species-rich unimproved grassland left, covering just 3.6% of the National Park.



Nightjar



Barbastelle bat



Unsea Florida



Heath fritillary butterfly



Spotlight on...

# Somerset's Coast

There is an amazing diversity of habitats and wildlife along Somerset's 73 km coastline, with 80% of the area enjoying some level of environmental designation from 2 SACs, 1 SPA, 1 Ramsar site, 6 SSSIs, 2 NNRs and 1 LNR. This diverse coastline features sand dunes, sand flats, salt marshes, tidal estuaries, and mud flats. You'll also find shingle banks and ridges, rocky shores, boulder beds, coastal woodlands, fossil-filled cliffs and intertidal bedrock that rival the Jurassic Coast to the south.

Somerset's coastal deciduous woodland, the longest in the country, hosts many threatened species. The dramatic cliffs from Porlock Weir to Foreland Point span nearly 11km, with the wooded slopes and maritime heaths contrasting with the low cliffs and sandy beaches in the east.

Coastal fringe habitats such as the salt marshes at Steart and Porlock, the dunes at Berrow, the kelp forest at Porlock and coastal woodland along the Exmoor cliffs are also vitally important both for biodiversity and as carbon sinks and natural sea defences in the face of increasing climate change.

Although our coastline has a number of national and international protection designations, it remains under pressure from urban expansion and development, and tourism, as well as the need for coastal defences - all compounded by the accelerating changes in our climate and more extreme weather events. The ecological significance of this complex and diverse range of habitats, combined with its role as the 'frontline' defence against climate change and sea level rise, makes it increasingly vulnerable.

## What is special?

Somerset's coastal habitats are a vital part of the county's nature recovery network. Marginal, increasingly threatened ecosystems such as salt marsh, sand dunes, shingle ridges and cliff tops act as a refuge for rare and important plant, invertebrate and bird communities, whose numbers have declined in the last 100 years.

Often seen as wasteland, targeted for drainage schemes, these habitats actually act as buffer zones providing a cost-effective, natural way of coping with higher seas and storm surges, such as Steart Marshes, created to protect neighbouring villages from high tides and nature recovery.

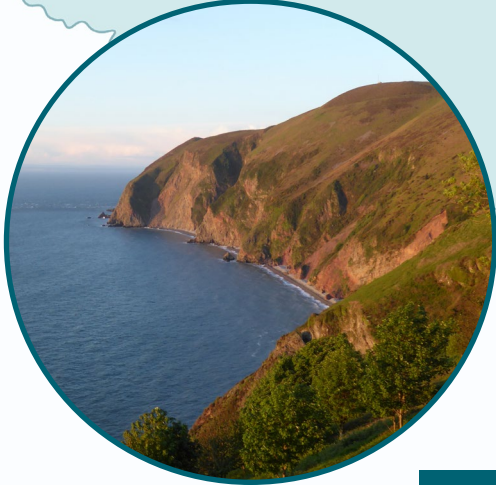
## Berrow Dunes

The coastal habitat at Berrow Dunes are the last remaining dunes in the county and one of the most botanically rich areas in Somerset, with at least 270 species of flowering plant being recorded on this site. Local conservation volunteers, the Berrow Conservation Group, help safeguard the wildlife of the dunes. They have regular work parties to clear the invasive Sea-buckthorn.



## Exmoor cliffs

The Somerset Exmoor sea cliffs are the highest in England and extend for around 14km between Minehead and the Devon border. Much of it is ancient woodland with temperate rainforests which have been compared to tropical rainforests because of their luxuriant growth of lichens, ferns, mosses and liverworts.



## Saltmarsh

Saltmarshes, part land and part water, are home to plants and animals specially adapted for these salt-rich lands. Muds and saltmarsh exposed at low tides, including those of Bridgwater Bay, are a super-rich in marine invertebrates and fish which provide feeding grounds for a range of over-wintering wading birds and wildfowl. A resident breeding population of harbour porpoise are also present within this diverse area of coastline. Saltmarsh is also one of the best habitats for carbon sequestration



## What have we lost?

Our coast has been eroded by historical sea defences and reclaiming land for agriculture and development. Our softer coast features like sand dunes, shingle ridges and salt marshes are increasingly falling victim to more frequent storm events and coastal squeeze, whereby intertidal habitats are unable to migrate landward as sea levels rise, and in the case of our softer cliffs, some sections are retreating by at least two metres per year.



White rock-rose



Honeycomb worm



Common redshank



Common restharrow



Spotlight on...

# Somerset Levels and Moors

The Somerset Levels and Moors covers an area of approximately 400km<sup>2</sup> of low lying land, located within the floodplains of a number of main rivers that flow between Glastonbury, Street, Bridgwater and Taunton, out to the sea at Bridgwater Bay. The majority of this landscape is made up of lowland wet grassland, with smaller areas of other habitats, such as lowland fen, lowland raised bog, lowland meadow and deciduous woodland.

The wetland nature of many of the habitats here means it is internationally and nationally important for a range of species associated with aquatic features, such as breeding and wintering birds, including cranes and bitterns, aquatic invertebrates, including dragonflies, as well as riparian mammals, otters and water voles.

The area also contains nationally significant areas of lowland peat, which are home to their own unique assemblage of species, such as sundew plants. The landscape is highly designated, containing SPA and Ramsar site, as well as 25 SSSIs covering 80km<sup>2</sup>, 1 NNR and 7 LNRs.



Great white egret, Ham Wall

## Why is Somerset Levels and Moors important for nature recovery?

The Somerset Levels and Moors is one of the most important wetland landscapes in England. It is a refuge for many rare and threatened species that have been lost from elsewhere in the county. As a result, it has enormous nature recovery potential, with care and dedicated effort it could become one of the greatest wetlands in Europe.

Much of the wildlife here is being held back from achieving its full potential, due to the way the land is used and managed. However it persists, and therefore the potential for recovery is huge, if the will is there to provide more space for the wetland wildlife to thrive.

## What is special?

It contains the magnificent Somerset Wetlands NNR which is home to wonderful booming bitterns and starling murmurations.

Large areas of deep peat remain, which when in good condition lock in carbon and create unique species-rich vegetation and invertebrate communities.

Huge numbers of birds migrate here in the winter months, including species such as lapwing, golden plover, wigeon and teal.

There are reasonable areas of open water habitat left, which mean aquatic plants can spread and invertebrates such as dragonflies can reach large numbers.

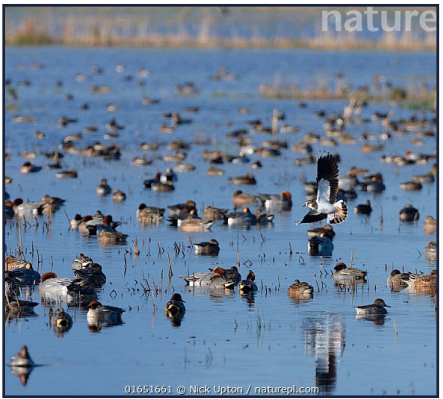
## What have we lost?

Large areas of lowland fen and lowland raised bog have been lost due to land drainage and peat extraction, which has led to a release of carbon and only small fragments of fen and bog remain, primarily confined to the NNRs.

Agricultural intensification, due to food demand, has led to areas of species-rich lowland meadow being lost.

Breeding wading bird numbers have declined, with the majority now being restricted to a few nature reserve sites.

Eutrophication of the rivers and rhynes, due to phosphate pollution, had led to a loss of aquatic life, including plants and invertebrates.



Teal



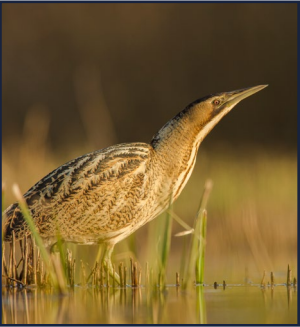
Four-spotted chaser dragonfly



Green-winged orchid



Curlew



Bittern



# Threats to Nature

Somerset’s habitats have been shaped by centuries of human interaction. They have been continually managed in ways to provide us with shelter, food, water, fuel, natural materials and recreation. Over time, the majority of our habitats and species have undergone significant dynamic changes shaped by a range of environmental and social factors. Evidence from the last 50 years indicates that nature is in decline and we have experienced a significant loss of biodiversity.

The UK has suffered extreme losses of biodiversity, with a 32% decline in average species abundance since 1970. Somerset is no different and its picturesque landscapes are facing significant challenges. Climate change is altering habitats and weather patterns, making it difficult for many species to survive.

Habitat loss due to urban expansion, some agriculture practices, and infrastructure development is another major threat, leading to the fragmentation of ecosystems and the decline of native species. Pollution, including plastic waste and agricultural runoff, further degrades natural environments, affecting both terrestrial and aquatic life.

In addition to these pressures, invasive species introduced by human activity are out competing native flora and fauna, further exacerbating the problem.

The cumulative impact of these threats is profound, leading to a significant reduction in the resilience of natural ecosystems. As the health of these ecosystems diminishes, so too does their ability to provide essential services, such as clean air, water purification, and carbon sequestration.



For more information on drivers and threats to nature, click on the icon to read The Somerset State of Nature report 2023.

## Climate change

Climate change in the UK is causing warmer, wetter winters and hotter, drier summers, leading to more frequent droughts, flooding, extreme weather events, and rising sea levels.

This significantly threatens Somerset’s natural environment, and with around 18% of Somerset either at or just above sea-level, this makes it one of the UK’s most climate-vulnerable areas. Climate change also exacerbates other environmental challenges like habitat fragmentation, pollution, and habitat loss, further endangering wildlife and ecosystems.

With mean annual temperatures projected to rise by 2-5% by 2100, more frequent and intense climate-related issues are likely to impact nature, including increased disease rates, degraded habitats, higher extinction risks for threatened species, disrupted migratory patterns, loss of species-rich habitats, and reduction in species ranges.

## Ongoing and future developments

Ongoing and future developments, such as urban expansion and infrastructure projects, are poised to exert further pressure on biodiversity.

Government targets to increase house building each year put pressure on local authorities to



find available spaces. The need for improved infrastructure and economic development to support population growth has historically led to impacts on nature, such as loss of habitat to support development, over capacity on sewage networks leading to spillages, increased traffic on roads leading to runoff pollution and animal collisions – all leading to species loss and habitat degradation.

Additionally, linear infrastructure developments like road and railway expansions create physical barriers that hinder wildlife movement. Such barriers fragment populations, isolate species, and disrupt genetic flow, potentially increasing vulnerability to local extinctions.

The introduction of Biodiversity Net Gain (BNG) for new developments, where developers are required to deliver at least 10% biodiversity gain, aims to contribute to nature’s recovery and leave a positive legacy for people and wildlife.

## Intensive agriculture and resource use

Agriculture for food production is vital to Somerset’s economy and community, supporting various farming types, with dairy and grazed livestock being predominant, contributing over £1 billion to the southwest economy.

However intensive agriculture and certain farming methods pose significant pressure on habitats



and biodiversity in Somerset, particularly through habitat loss and fragmentation. Intensive farming practices, including monoculture cropping, contribute to a loss of habitat complexity, limiting resources for wildlife and increasing vulnerability to pests and diseases. This decline in biodiversity also impacts key ecosystem services such as pollination and soil health, vital for both natural systems and agriculture itself. In addition to habitat loss, agricultural intensification leads to soil degradation and water quality issues. The heavy use of fertilisers and pesticides results in nutrient runoff, causing eutrophication in nearby rivers and wetlands, harming aquatic ecosystems. Sustainable farming practices are critical to mitigating these pressures and preserving biodiversity in agricultural landscapes.

Resource extraction (water, peat, and aggregate and mineral extraction) and poor forestry has also led to significant land-use changes and losses to nature.

There is potential for positive change in the UK agricultural and natural resource sector, focusing on nature and climate recovery. Policy changes provide a mechanism for landowners to receive finance for nature recovery through nature markets, trading in biodiversity, carbon and nutrients, and other ecosystem services.





Invasive non-native species and diseases

There are 37 non-native pecies that have been recorded in Somerset and their distribution has surged by 260% since 1990. Common invasive species include American mink, Signal crayfish, grey squirrel and Turkey oak. Rocky shores now host the Australian star barnacle and the Pacific oyster.

Aquatic plants like floating pennywort and water fern, exacerbated by nutrient overloads, reduce water quality and habitat availability for native flora and fauna whilst increasing flooding and leading to the degradation of the Somerset Levels and Moors.

Invasive flora such as Japanese knotweed, Himalayan balsam, and rhododendron threaten native habitats, including Somerset’s only temperate rainforest. Ash dieback has led to significant tree felling, especially in the Mendip Hills, which has led to impacts to biodiversity, despite best efforts to minimise impacts. A list of significant invasive species, pests and diseases is given on the following page. It is anticipated there will be as yet unidentified plant diseases presenting additional but currently unrecognised pressures. Monitoring, habitat restoration, prevention are essential.



American mink

Pollution

Water, air and light pollution put pressures on nature.

Most rivers in Somerset are of ‘poor’ or ‘moderate’ quality. Contaminated rivers and waterways, especially those polluted by sewage, pose health risks, harm agriculture, damage soils, and reduce biodiversity, causing species and habitat loss. Increased nutrients result in algal blooms, blocking light penetration, which in turn causes submerged plants to decompose, depleting oxygen levels, which can cause fish and invertebrate mortality. This is evident on the Somerset Levels and Moors, suffering poor water quality from high phosphate levels, leading to duckweed and algal blooms.

An increase in air pollution over the last 100 years has negatively impacted habitats. Highlighted by the loss of lichens, an indicator species for air quality, across Somerset. Specifically, 38% of lichen species are inferred to be lost since 1960 in Exmoor.

Increased light pollution from development and urban areas can affect the breeding and foraging of birds, bats, and other mammals, such as the otter and dormouse.



Nature-based solutions and environmental benefits

While this strategy seeks to identify key opportunities for nature recovery, it does so with consideration of wider environmental benefits and co-benefits (‘other benefits’), and the use of nature-based solutions to restore the local area in the most sustainable way.

Nature-based solutions are actions which protect, conserve, restore and sustainably use and manage ecosystems in a way which addresses societal challenges (social, economic and environmental) whilst benefiting both people’s well-being, as well as nature – they are interventions that use nature and the natural functions of healthy ecosystems to tackle some of the most pressing challenges of our time

Restoring natural habitats boosts biodiversity, which supports essential functions like pollination, water purification, and soil fertility. This biodiversity creates stronger ecosystems capable of withstanding environmental stressors such as climate change and pollution. In addition, diverse plant communities sequester more carbon, helping to mitigate climate change, regulate water cycles to reduce flood and drought risks, reduce soil erosion which maintains productivity of farm businesses and improve air quality, benefiting overall environmental health and human well-being.

Wider benefits that can arise from the delivery of the Priorities identified in the LNRS include:

- **Flood mitigation:** Reduced flood risks by restoring natural floodplains, creating wetlands, and planting vegetation to “slow the flow” of runoff.
- **Climate regulation:** Combat the causes and impacts of climate change through carbon capture and cooling (particularly in urban areas). Increased carbon sequestration through the restoration of peatlands and the creation of new habitats.
- **Cleaner water:** Improved water quality for drinking and bathing through the creation of wetlands and better land management practices.
- **Cleaner air:** Trees in particular can remove pollutants and absorb particulates and so help to provide cleaner air and support efforts to reduce pollution
- **Healthier soils:** Positively affecting farming production, carbon capture, and wildlife. For example “regenerative agriculture” aims to retain and improve soil structure, nutrient and water retention, to boost soil health and productivity.
- **Recreational opportunities:** More and better green spaces for recreation and well-being, benefiting local communities including by contributing to local culture and heritage.
- **Economic benefits:** Boosted local economies through increased inward investment, eco-tourism, sustainable land management practices and food production.
- **Educational opportunities:** Increased opportunities for environmental education and community engagement

Through the many habitats within the county, we are presented with the opportunity to not only recover nature through our interventions but also deliver some other significant benefits.



Through the many habitats within the county, we are presented with the opportunity to not only recover nature through our interventions but also deliver some other significant benefits.

Our eight priority habitats offer the following potential wider environmental benefits:



Coastal

- **Protection against erosion and flooding:** The estuary's natural features, such as saltmarshes and intertidal areas, help to dissipate wave energy and reduce flood risk to coastal communities and infrastructure. Coastal habitats act as natural buffers against erosion and flooding, absorbing wave energy and reducing the impact of storms and rising sea levels.
- **Carbon Sequestration:** Salt marshes, seagrass beds, and other coastal ecosystems are effective at capturing and storing atmospheric carbon dioxide, helping to mitigate climate change.
- **Pollution control and improving water quality** from creation of new wetland areas, including saltmarshes and reedbeds.
- **Food provision:** The Somerset coast supports various forms of food production, including fishing, shellfish harvesting, and agriculture in surrounding areas.
- **Recreation and tourism:** The Somerset coast is a popular destination for recreational activities, such as birdwatching, hiking, and water sports, contributing to tourism and local economies.
- **Aesthetic value and tranquility:** The natural beauty of the Somerset coast, including its diverse landscapes and wildlife, provides aesthetic and spiritual benefits for visitors and residents.



Moorland and heath

- **Carbon Storage and sequestration:** Significant carbon sinks, particularly those with peat soils, storing large amounts of carbon.
- **Flood protection** due to storing large amounts of water in their soils and vegetation, helping to regulate river flows and prevent flooding downstream. Particularly on healthy peaty soils, which act like sponges, absorbing and storing large amounts of water, which can then be released slowly over time.
- **Enhanced water quality:** Particularly those areas with well-developed peat and sphagnum moss, act as natural filters, reducing sediment and pollutants in runoff.
- **Climate resilience** due to storing water and regulating flow to mitigate the impacts of extreme weather events.
- **Aesthetic value and tranquility.**



Freshwater

- **Flood protection:** Restoration such as re-meandering rivers and re-connecting floodplains can help to reduce downstream flood risk and severity by storing and slowing water movement through the landscape. Such restoration measures are referred to as Natural Flood Management (NFM).
- **Enhanced water quality:** Freshwater ecosystems can filter pollutants from runoff and sewage effluent, helping to improve water quality.
- **Carbon sequestration** through for example the creation of lowland fen habitat. Naturally functioning wetlands (including ponds and floodplains), particularly mature sites with more vegetation, are more likely to be effective at carbon sequestration than other freshwater habitats.
- **Food production:** Fish extraction from open waters provides a food source, and wetlands can support plant vegetation used for various purposes.
- Opportunities for **recreation, exercise and tourism.**
- **Aesthetic value and wellbeing:** The presence of clean, healthy freshwater habitats enhances the beauty and appeal of landscapes, contributing to human well-being.



Urban

- **Improved air quality:** Trees and green spaces act as natural filters, absorbing pollutants and improving air quality.
- **Noise reduction** created by planting schemes.
- **Carbon sequestration:** Trees and other vegetation absorb carbon dioxide from the atmosphere, helping to mitigate climate change.
- **Temperature Regulation:** Urban trees and green roofs provide shade and evaporative cooling, reducing the urban heat island effect and making cities more comfortable, particularly during heat waves.
- **Water management:** Urban green spaces, including sustainable drainage systems (SuDS), can help manage stormwater runoff, reduce flood risk, and improve water quality.
- **Recreation and Wellbeing:** Parks, gardens, and other green spaces offer recreational opportunities, contributing to physical and mental health and overall wellbeing.
- **Food production** within allotments and community gardens.
- **Property Value Enhancement:** Proximity to green spaces can increase property values, indicating the perceived benefits of urban nature.





### Grassland

- **Improved water quality** by helping to filter and purify water as it percolates through the soil; by preventing soil erosion and sedimentation in water bodies; and by reducing nutrient runoff and leaching.
- **Carbon sequestration**, especially from those grasslands with deep-rooted native grasses, which are effective carbon sinks, absorbing significant amounts of atmospheric carbon dioxide and storing it in the soil.
- **Improved soil health** as a result of their diverse plant and microbial communities, helping prevent soil erosion, improve soil structure, and enhance nutrient cycling.
- **Flood protection** as a result of deep root systems which help improve water infiltration into the soil and reduce runoff, leading to more stable water supplies and flood control.
- **Climate resilience** through various mechanisms, including carbon sequestration, water regulation, and biodiversity. Their ability to withstand droughts and floods makes them valuable in a changing climate.
- Opportunities for **recreation, exercise and supporting health and wellbeing**.
- **Support food production** by providing habitat for a wide range of plant and animal species, including pollinators like bees and butterflies.
- **Aesthetic value and tranquility**.



### Woodland and Hedgerows

- **Economic benefits:** Woodlands can provide a sustainable source of timber and wood products for construction, fuel, and other uses. Woodlands can also yield valuable Non-Timber Forest Products resources like berries, mushrooms, and medicinal plants. Woodlands can be also used for carbon offsetting schemes, generating income for landowners.
- **Improved air quality** by acting as natural filters, removing harmful pollutants and absorbing carbon dioxide.
- **Water Purification:** Tree roots filter pollutants from water, improving water quality.
- **Carbon sequestration** from woodland creation and healthy soil development. Alos, using wood as a building material can reduce the reliance on more carbon-intensive materials like steel and concrete.
- **Soil formation and erosion control:** Tree roots help stabilize soil, reducing soil erosion and preventing nutrient loss.
- **Flood protection** due to increased tree planting in riparian areas, buffer strips, woody debris and floodplain restoration. Woodlands can reduce flood risk by absorbing rainfall, slowing down water flow, and improving water infiltration into the soil.



- **Climate resilience** due to increased connectivity and improved shade and shelter created by mosaics of diverse habitats. Woodlands can help regulate water flow, reducing the risk of both droughts and floods.
- Opportunities for **recreation, exercise and supporting health and well-being**. Studies have shown that spending time in woodlands can reduce stress levels and improve mood.



### Lowland wetland

- **Flood Control and Water Regulation:** Wetlands act as natural sponges, absorbing excess rainwater and reducing the risk of downstream flooding. In Somerset, where drainage is crucial for agriculture, wetlands play a vital role in managing water resources and preventing waterlogging.
- **Water Purification:** Wetlands filter pollutants from the water, improving water quality. They remove excess nutrients, sediments, and other contaminants, acting as natural “kidneys” for the landscape.
- **Carbon Sequestration:** Wetlands can store significant amounts of carbon in their soils and vegetation, helping to mitigate climate change. By maintaining healthy wetland conditions, Somerset can enhance its capacity to sequester carbon and reduce greenhouse gas emissions.
- **Recreation and Amenity:** Wetlands offer opportunities for recreation, such as birdwatching, walking, and fishing. The Somerset Levels and Moors, for example, are popular destinations for nature-based tourism and recreation.
- **Food Production:** Wetlands can support grazing for livestock, particularly in the Somerset Levels and Moors. Traditional farming practices, such as hay production, can also be integrated with wetland management.
- **Cultural and Historical Value:** Wetlands have significant cultural and historical value, with evidence of past human activity often found in these areas. The Somerset Levels and Moors, for example, have a long history of human interaction with the landscape, including traditional farming practices and water management techniques.





Farmland

- **Food production:** Nature-rich farmlands support a wider variety of plant and animal species, including pollinators like bees and butterflies, and natural pest predators. which are vital for crop production and help increase. Examples include hedgerows, field margins, and ponds that provide habitats and corridors for wildlife movement.
- **Pollution control and improving water quality** from use of buffer strips.
- **Reduced soil erosion** from increased permanent vegetation planting, using cover crops, terracing, agroforestry or adopting conservation tillage techniques.
- **Flood protection:** Upland farms can play a vital role in holding water by helping to protect communities downstream from flooding, while still providing grazing land for pasture-fed animals and supporting species-rich habitats. Techniques like re-meandering streams and installing leaky dams slow the flow of water, reducing the impact of storms and violent deluges that are becoming increasingly common
- **Enhanced soil health:** Nature-rich farming practices can enhance soil health, reduce the need for synthetic inputs like pesticides and fertilizers, and improve crop resilience. This can lead to more sustainable and cost-effective farming systems. Examples include using cover crops, crop rotation, and integrating livestock into the farming system.
- **Climate resilience** due to increased connectivity and improved shade and shelter created by mosaics of diverse habitats. Trees help build a resilient landscape that supports livestock through increasingly unpredictable weather, offering shade and shelter, and helping to prevent heat stress as temperatures rise
- **Opportunities for recreation, tourism** and enjoyment of the natural environment
- **Farm resilience:** Growing a wider range of crops can open up new markets and build farm resilience. Niche grains, legumes, herbal leys and heritage varieties all offer opportunities to tap into changing consumer tastes.



Doormouse



# Perceptions of Nature in Somerset

Through a range of workshops, surveys and questionnaires we asked local farmers, community groups and the general public what they thought of nature in Somerset and suggestions for what actions might be needed to help nature recover.

We considered these responses alongside outcomes and measures identified through working with conservation and environmental specialists.

Priority outcomes and measures for nature recovery are set out in Chapter 4 - Opportunities for Nature Recovery.

On this page we have captured a snapshot of what people in Somerset care about most and what people feel needs to be improved to help nature recovery.

## I care about nature because...

“Nature is fundamental to our very survival and existence as well as our health and wellbeing.”

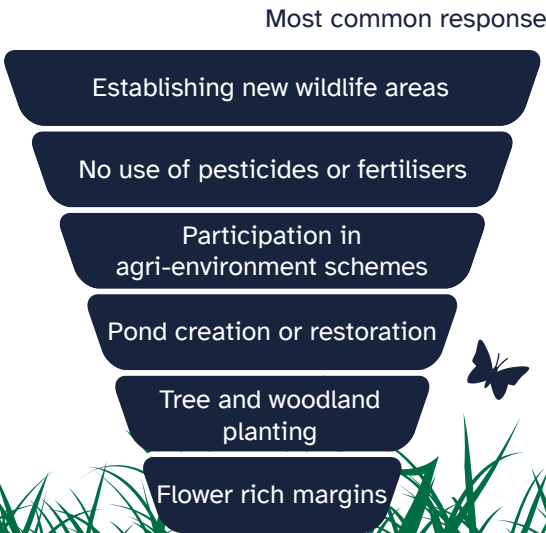
- 1 It has its own intrinsic value
- 2 It's important for tackling climate change
- 3 It's important for our mental health and wellbeing

Public perceptions of actions required to help nature include...

- Education & awareness
- Legislation & planning
- Financial incentives & support
- Community & stakeholder engagement
- Monitoring & adaptation
- Habitat enhancements

## Key ways that farmers help nature

“We have a moral responsibility to be in balance with nature.”

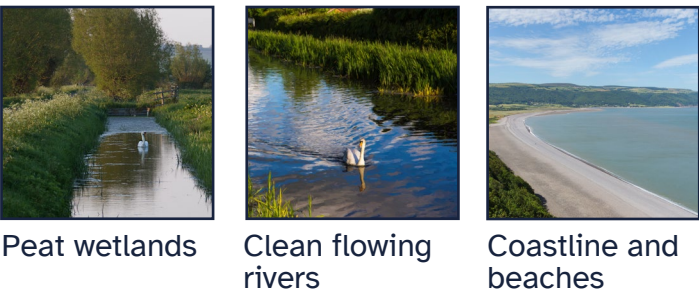


## Most valued nature areas in Somerset

Places that people said they cherish include...



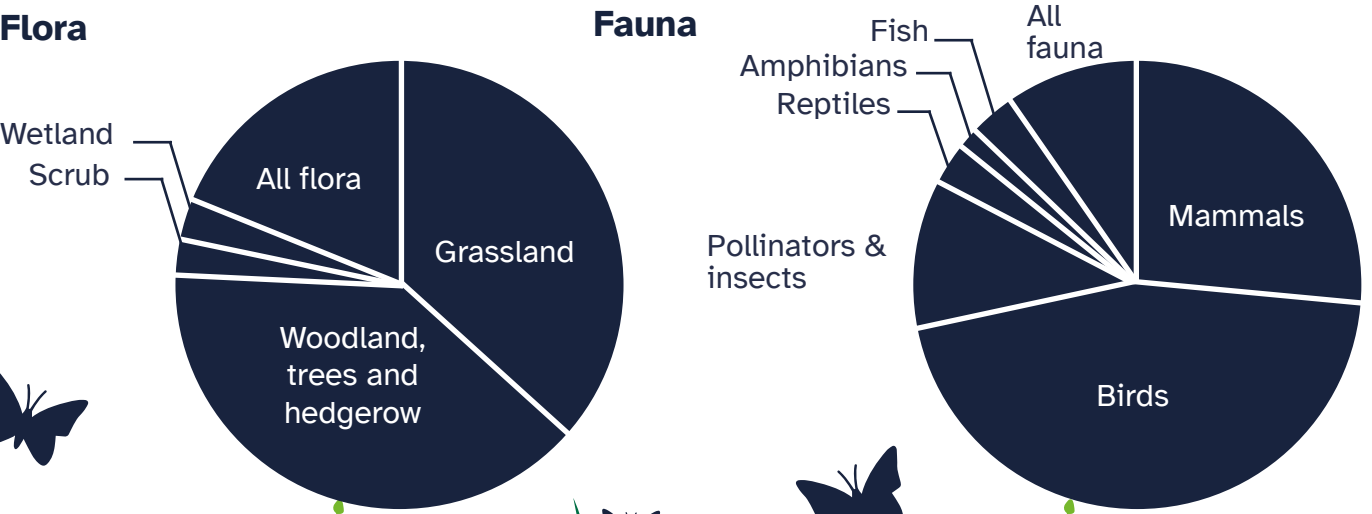
These are the special landscape features that people value in Somerset:



There is a recurring theme of concern for specific wildlife species that are perceived to be under threat, such as hares, red deer, badgers, and various birds.

“Over the last 20 years, I have seen a reduction in biodiversity in coastal waters, which concerns me deeply.”

## What would farmers like to see more of?





# Opportunities for Nature Recovery

## Habitat and species priority outcomes and measures

This chapter outlines the priorities for each habitat type, focusing on creating more extensive, improved habitats to better connect our landscapes in Somerset. It details the measures needed to achieve these goals, as well as those targeted for specific species.

4

View towards Glastonbury Tor from Ham Wall  
(RSPB Nature Reserve)



# Areas that could become of particular importance for biodiversity

Alongside mapping the core areas already of particular importance for biodiversity (APIB), **Areas that could become of particular importance for biodiversity (ACBI)** were also mapped. These are suggested areas where habitat restoration and/ or creation could most effectively take place to benefit species, and are important for creating a coherent and resilient ecological network of habitat, which connect Somerset's core areas.

**This is made up of:**

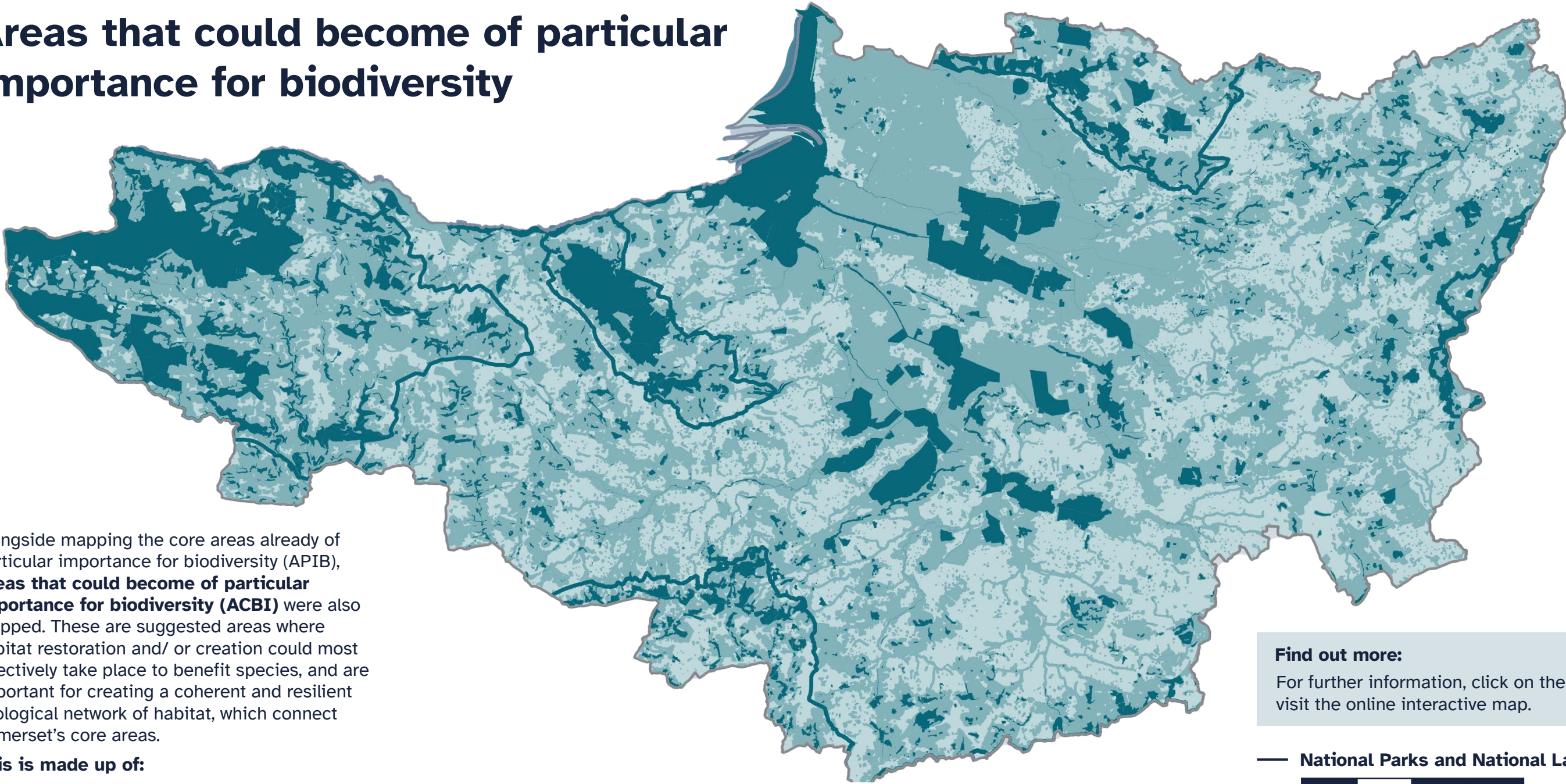
- Non-statutory designations and irreplaceable habitats within the Existing Nature Network
- Priority habitats which are not currently designated and should be retained and restored as part of any project or development
- Areas of existing habitat which can be restored and enhanced to provide greater benefits to wildlife
- Areas which could be suitable for new habitat creation

The ACBI covers approximately xx% of the land area of Somerset, to help provide choices of where to deliver nature recovery to achieve our 30 by 30 target.

The interactive map shows where action can have the most impact. Each Opportunity on the map is accompanied by suggestions of the actions which could be considered in the approximate location.

Areas which fall outside of APIB and ACBI are still important for nature recovery efforts. Some potential measures are not mapped because they can be used widely across the county, including hedgerow planting and many of the Farmland measures.

The following pages set out the priorities and measures for different habitat types.



**Find out more:**  
For further information, click on the map to visit the online interactive map.



**Areas of particular importance for biodiversity**

Opportunities to extend and improve the condition of these core habitat areas through effective management for nature recovery.

**Areas that could become of particular importance for biodiversity**

Opportunities to create and restore habitat to connect core areas through a network of linear and stepping stone corridors.



# Our Approach

## Habitat and species descriptions and their opportunities for nature recovery

Lawton’s principles of more, bigger, better, and joined-up provide a framework to create a robust network of habitats that can better support biodiversity and withstand the impacts of climate change.

More

Bigger

Better

Joined-up

The following pages describe each habitat type and targeted species, and outline priority outcomes and measures to create and restore new habitats (more), extend (bigger) and improve (better) existing habitats, and to connect (joined-up) important landscapes for nature.

The priorities and measures, described in the following pages, are grouped consistent with UK Habitat Classification and the Vision (Chapter 1). However, it is important to note that habitat mosaics, edge habitats, and transitional habitats are essential for biodiversity. They create diverse microenvironments that support various species, promoting higher diversity of flora and fauna. These habitats enhance ecological connectivity, enabling species to move, interact, and adapt, thus fostering resilient ecosystems.

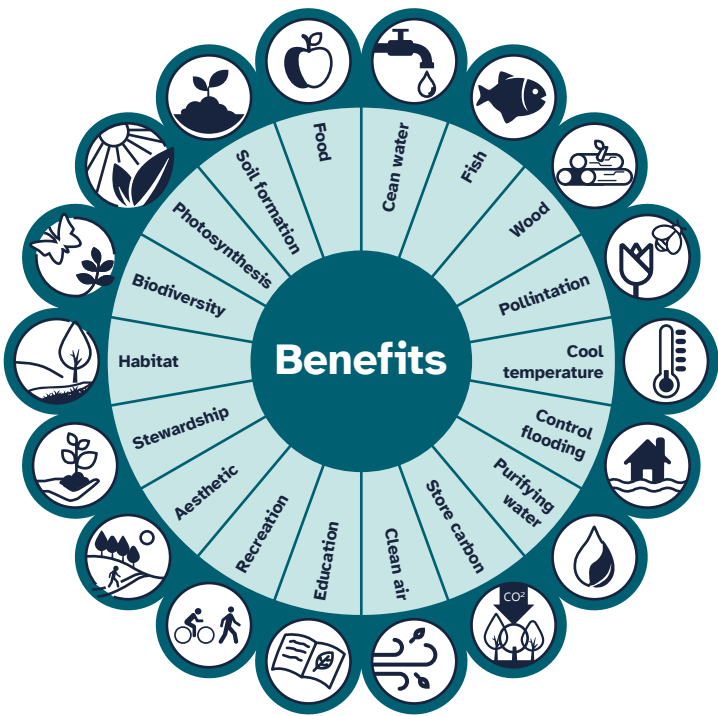
The **Measures Appendix** (Chapter 6.1) shows cross-cutting measures from habitat types that will benefit each of the priority outcomes.

## Wider environmental benefits and co-benefits of nature recovery

As outlined in Chapter 3.8, restoring natural habitats boosts biodiversity, which in turn provides a range of wider environmental benefits and co-benefits.

Different habitats provide a variety of benefits which are shown under each habitat type in the following pages.

Types of ecosystem service can be defined in several ways, but a common approach (originally proposed by the Millennium Ecosystem Assessment, 2005) is shown in the ecosystem wheel below. Those that are highlighted blue are relevant to the measures within each habitat type.



Springtime bluebells



# Coastal

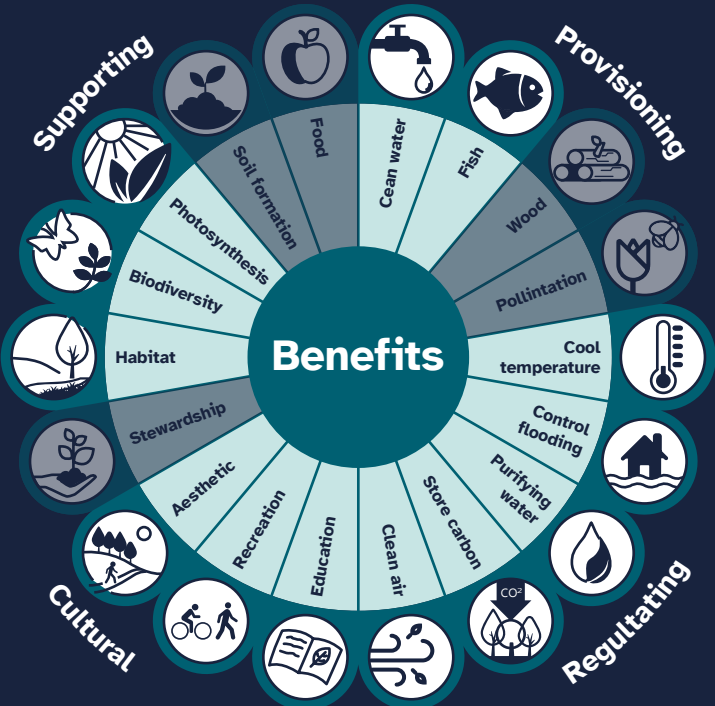
## Habitat typologies

### Habitat description

Somerset’s coastal environment contains important transitional habitats, linking coastal areas with the offshore marine environment. Habitats include coastal saltmarsh and mudflats, sand dunes, shingle banks, maritime cliffs and slopes, kelp forests, as well as coastal woodlands. Some habitats support wildlife of international importance, and provide flood defence.

Coastline habitats develop through different intertidal processes and have different functions. For example, coastal saltmarshes are the vegetated upper portions of the intertidal mudflats and contain specialised species that are tolerant to salt water and store carbon. Dune systems and dune slacks support unique and diverse range of plant species, invertebrates and amphibians.

The rocky coastline is dominated by various seaweeds, however Porlock Bay contains a kelp forest that supports a huge array of life from marine worms, sponges and crustaceans; to fish and even large mammals such as grey seals and harbour porpoise.



### Pressures on habitat

Many of Somerset’s coastline habitats are being squeezed into smaller and smaller areas as the sea level rises and they are increasingly confined in a smaller and smaller zone between high tide and man-made infrastructure (roads and car parks) and development (housing and tourism). Some of the key pressures and threats for coastal sites include:

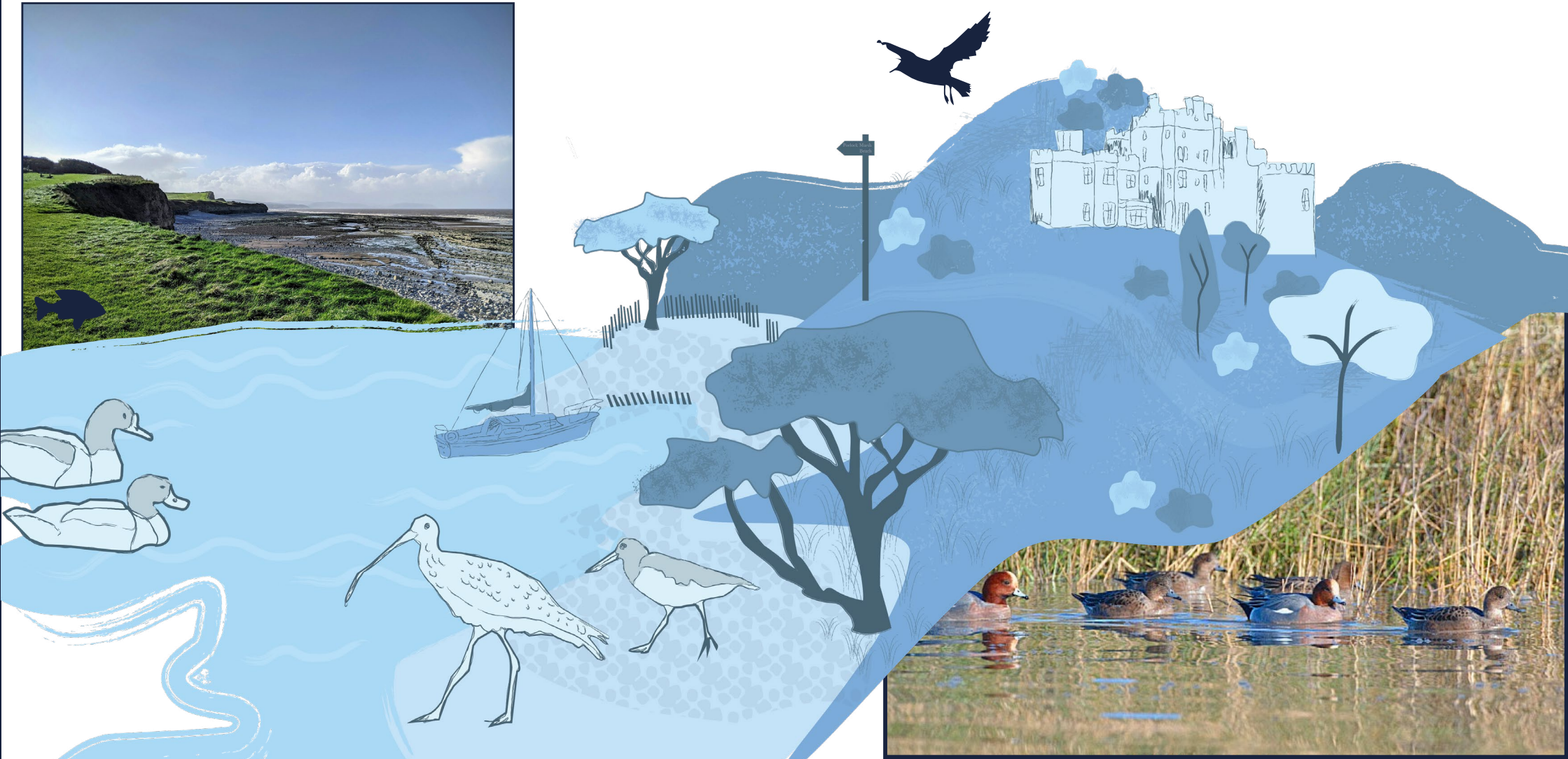
- **Sea level rises**, which have risen by 12 to 16cm since 1900, are projected to continue to rise. Rising sea levels coupled with increased winter flow rates from rivers may lead to loss of coastal habitats.
- **Excess nutrients** entering coastal waters from inland waterways as a result of farming

practice, development and wastewater treatment, impacts on mudflats, saltmarsh and shallow waters.

- **Development and human actions** which encroach intertidal habitats, resulting in coastal squeeze, such as man-made hard-engineered defences. The Bristol Channel has much potential for energy generation schemes such as tidal barrages to add to its existing contribution to key energy provision such as the new Hinkley C Nuclear Power Station. Such major infrastructure projects, without careful consultation and evidence based ecological monitoring can lead to major conflicting pressures on the already highly

designated habitats and ecosystems of its marine and coastal environment.

- **Warmer air temperatures and higher CO2 levels** are also leading to warmer waters, lower oxygen levels, increased acidity, salinity and reduced mixing of waters which can disrupt vulnerable intertidal ecosystems.
- **Non-native invasive species** arrive in our coastal waters through shipping activity, and once established they can outcompete our native species causing extinction in extreme cases.





# Coastal

Habitat typologies



Find out more:

Click on the map to visit the interactive mapping portal to view where the measures (practical actions) for achieving the priority outcomes would be best located to make the most difference to nature.

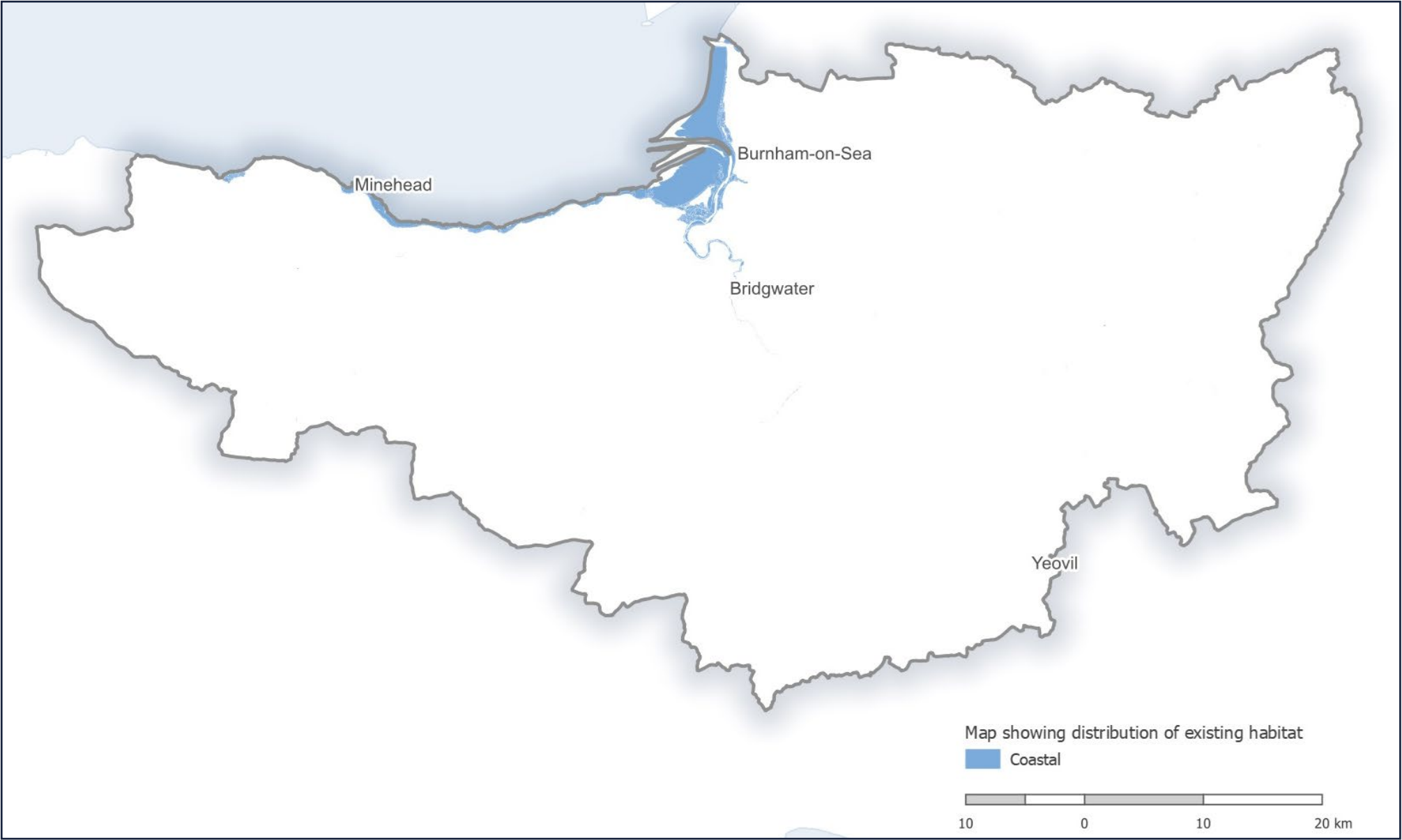
Key - Lawton’s principles

More

Bigger

Better

Joined-up



Priority outcomes

- Coastal and intertidal habitats are more extensive, more biodiverse, in better condition, and more joined-up.
- There are more and better managed coastal and intertidal habitats along the Severn Estuary, supporting healthy species populations.
- An adaptive, resilient network of coastal habitats has been created, that are managed with a catchment to coast approach that acknowledges the connection between marine, coastal, freshwater and terrestrial ecosystems.

- Coastal and intertidal habitats and species populations are benefiting from cleaner waters, less disturbance in sensitive locations and a more sustainable use of our coastlines.
- Coastal and intertidal habitats are allowed to evolve, with natural dynamic processes and progression restored, to enable adaptation and resilience to climate change and minimise loss.

Supported species

Outcomes for coastal habitats will help support these important species:

Slender hare's-ear

Peregrine falcon

Dune tiger beetle

Curlew



# Coastal

Habitat typologies



### The vision

A resilient coast, safeguarding vital intertidal and sub-tidal habitats. We envision a coast that sustainably adapts to climate change, ensuring its long-term health and diversity. It will be a place where wildlife can thrive, from the coastal birds that arrive in their thousands in winter, to clean pollution-free waters that support healthy assemblages of fish, shellfish and marine mammals.

### Measures

The following measures are actions that will help to deliver outcomes to extend and improve existing coastal habitat, create and restore new coastal habitat and to connect coastal habitats.

### Key - Lawton's principles

More

Bigger

Better

Joined-up

### C1 Create and restore intertidal habitats

C1.1 Create and restore saltmarsh and mudflat habitats (e.g. through managed retreat to allow for their natural landward migration, and appropriate grazing regimes) to mitigate and compensate the impacts of coastal squeeze and reconnect fragmented areas, where feasible

C1.2 Manage saltmarshes to retain a full transition of vegetational stages, from open saline pools and salt pans, brackish dune slacks, to vegetated terrestrial fringes in upper saltmarsh areas. This will support species of varying salinity tolerance, create a diversity of microhabitats, and provide winter hibernation sites. Where saltmarsh has been lost or degraded, restoration efforts can focus on planting vegetation, introducing plant fragments, or depositing plant material to encourage colonization.

### C2 Create additional habitat above high tide to act as high tide roost

C2.1 Create additional habitat above high tide to act as high tide roost, such as wetlands, saline lagoons, and coastal grazing marsh, to provide places above mean high-tide levels where waterbirds can rest and recover and to help respond to sea-level rise. Habitat creation should

have regard to and enable the implementation of shoreline management plans

C2.2 Link existing areas of coastal habitats with other wetland and freshwater habitats to form a landscape mosaic of wetlands, improving the condition of the coastal and intertidal ecosystems.

### C3 Protect existing intertidal habitat to promote coastal species

C3.1 Protect shingle bank and saltmarsh habitats from the impact of coastal squeeze, by enhancing natural defences that aim to work with natural processes. For example managed realignment, or beach nourishment, preferably using locally sourced materials, that can help to protect the shingle bank and saltmarsh behind it from erosion and flooding. Take into account the specific geological and hydrodynamic conditions when choosing appropriate protection methods.

C3.2 Develop a restoration plan outlining specific actions including techniques for stabilizing shingle banks, managing vegetation, and controlling access to protect the area from further degradation.

C3.3 Protect important nesting grounds of coastal birds from recreational disturbance (e.g. through limiting access to important areas of

shingle ridge and sand dunes to allow ground nesting birds to breed such as oystercatchers and ringed plover). Cordon off shorebird and wader nesting areas and use signage to remind dog owners to walk their dogs on leads during ground nesting bird season, in accordance with national legislation.

C3.4 Protect rare, notable and sensitive coastal habitats (e.g. saltmarsh) from pollution and over-nutrication. Reduce nutrients entering coastal waters through changes to development, wastewater treatment and farming practices and greater use of nature-based solutions, such as creation of riparian buffer zones and wetland restoration and creation.

C3.5 Ensure important inter-tidal biotopes such as honeycomb reef worms, lower shore shingle and cobble communities (including the kelp forest at Porlock) are not disturbed in coastal developments

C3.6 Protect important sea mammal populations (e.g. resident breeding harbour porpoise) from coastal and subtidal developments (e.g. underwater infrastructure noise disturbance).

C3.7 Monitor and take action to limit the spread of invasive intertidal and subtidal marine species and their potential impact (e.g. the Pacific Oyster)

C3.8 Ensure coastal habitat management is informed by and aligns with the recommendations in the latest version of the Shoreline Management Plan.

### C4 Protect, restore and manage cliff top and slope plant communities

C4.1 Protect, restore and manage cliff top and slope plant communities (e.g. through creating wider natural buffer zones between cliff-top/slope edges and adjacent arable or grazed fields)

### C5 Protect, restore and manage sand dunes

C5.1 Restore and manage sand dunes. Recognise their importance as natural, but dynamic coastal defences

C5.2 Management of sand dunes aims to encourage natural dune dynamics which include a balance between newer areas, successional habitats and older habitats. Management takes into account the whole dune system and connecting systems to develop a site-specific approach which benefits a range of wildlife . Invasive species such as sea buckthorn and Japanese rose are removed using techniques such as hand pulling. Sea Buckthorn will require hand tools or even machinery to remove. Refer to 'Dynamic Dunescapes – sand dune management Handbook' for further info.

C5.3 Periodically fence off access points and vulnerable areas, such as young sparsely vegetated foredunes and ground nesting bird sites, to prevent damage by excessive disturbance or from erosion resulting from overuse.



# Moorland & Heath

Habitat typologies

## Habitat description

Moorlands and heath are open semi-natural habitats found on nutrient-poor, acidic soils. They are generally dominated by heathers and other dwarf shrubs such as gorse and bilberry. Moorlands are dynamic mosaic habitats which include heathers and other dwarf shrubs such as gorse and bilberry, blanket bog, upland peat, valley mires, purple moor grass and bracken slopes as well as acid grassland and bare ground. Heathlands are also dynamic habitats which include a mosaic of bare ground, grassland, and dense heather or other shrubs. Lowland heathland is generally found below 300m altitude and on freely draining sands and gravels.

Lowland heathland is found in north and west Somerset including Cheddar Complex SSSI and Exmoor Coastal Heaths SSSI, respectively. Upland heathland (moorland) in Somerset is limited to upland areas of the Quantocks SSSI and Exmoor Heaths SAC. The moorland is grazed by free-roaming ponies, cattle and sheep.

Moorlands and heath are particularly important for plants, lichens, bryophytes, reptiles, invertebrates, and birds.

## Pressures on habitat

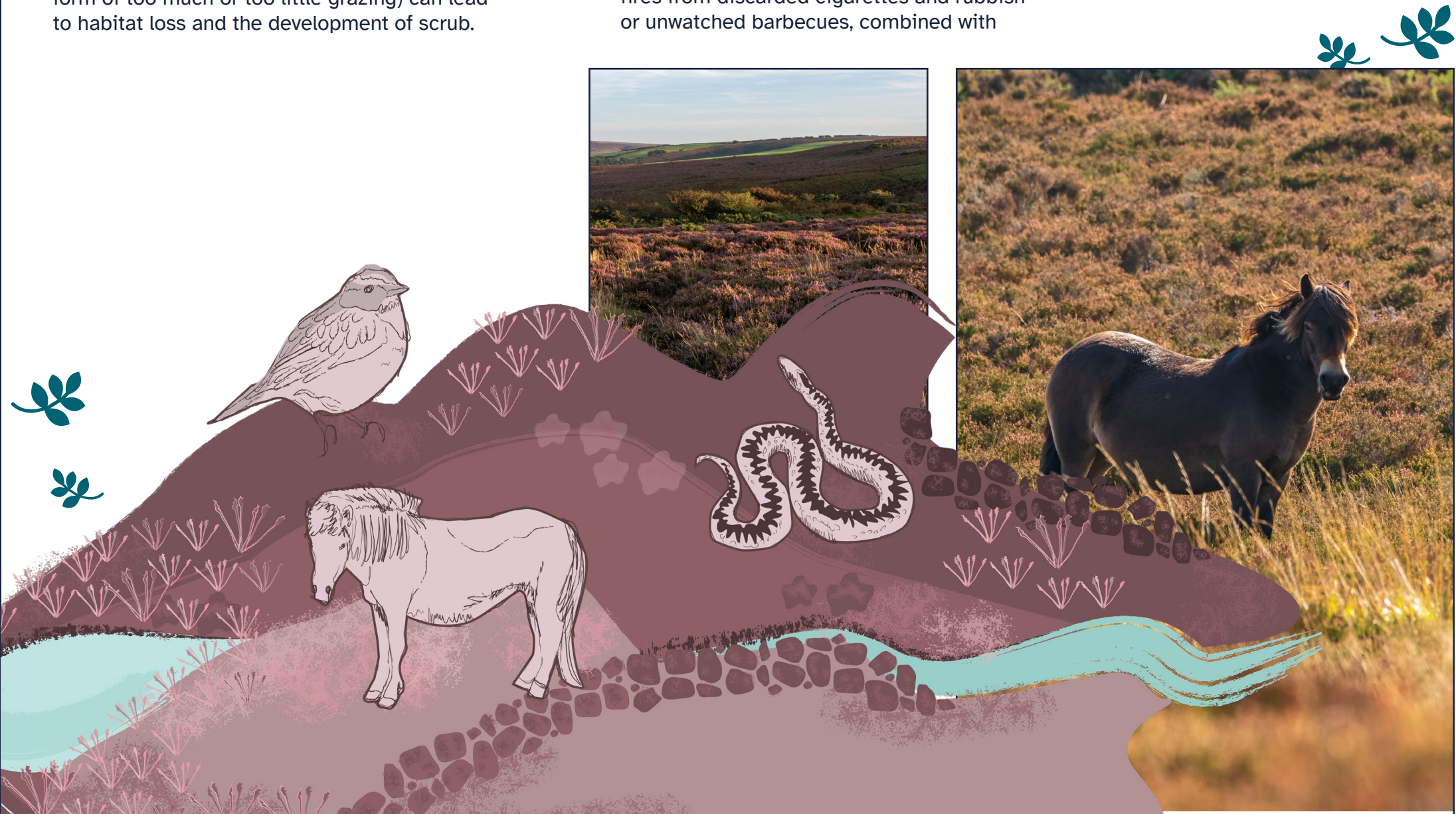
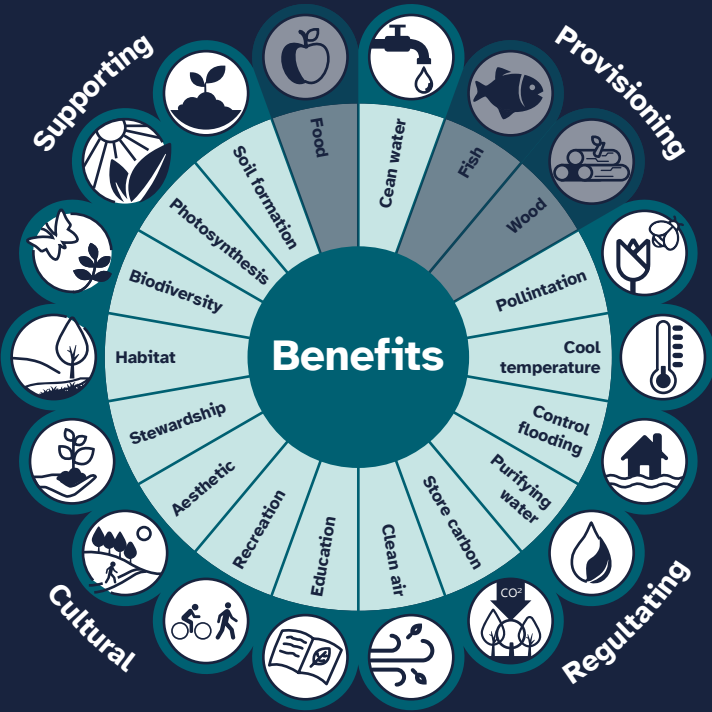
Large areas of moorland and heath have historically been lost to forestry and agriculture. Nowadays, we're better at recognising the unique characters of our priority habitat heathlands and many of these areas are protected. But moorlands and heath are still under threat with some of the main pressures including:

- **Direct loss** still occurs on moorland and heath outside of the Protected Lanscapes where the habitat is used for development and infrastructure.
- **Lack of appropriate management** of moorland and heath habitats (usually in the form of too much or too little grazing) can lead to habitat loss and the development of scrub.

- **Heavy access and recreation** use in open access moorland and heath areas can damage the habitat and is a particular threat for many ground nesting birds.
- **Hyper-dominance of purple moor grass** caused by a combination of insufficient grazing, warming climate with wetter winters, and atmospheric deposition of nitrogen compounds, has led to a severe decline in moorland habitats, including the function of peatlands. Once established this is very difficult reverse.
- **Heathlands** are especially vulnerable to fires from discarded cigarettes and rubbish or unwatched barbecues, combined with

increased summer droughts, can quickly cause an uncontrollable fire and be devastating for heathland.

- **Air pollution** can be devastating for bryophytes and lichens associated with heathlands, with approximately 38% of the lichen species in Exmoor inferred as lost since 1960.





# Moorland & Heath

Habitat typologies



Find out more:

Click on the map to visit the interactive mapping portal to view where the measures (practical actions) for achieving the priority outcomes would be best located to make the most difference to nature.

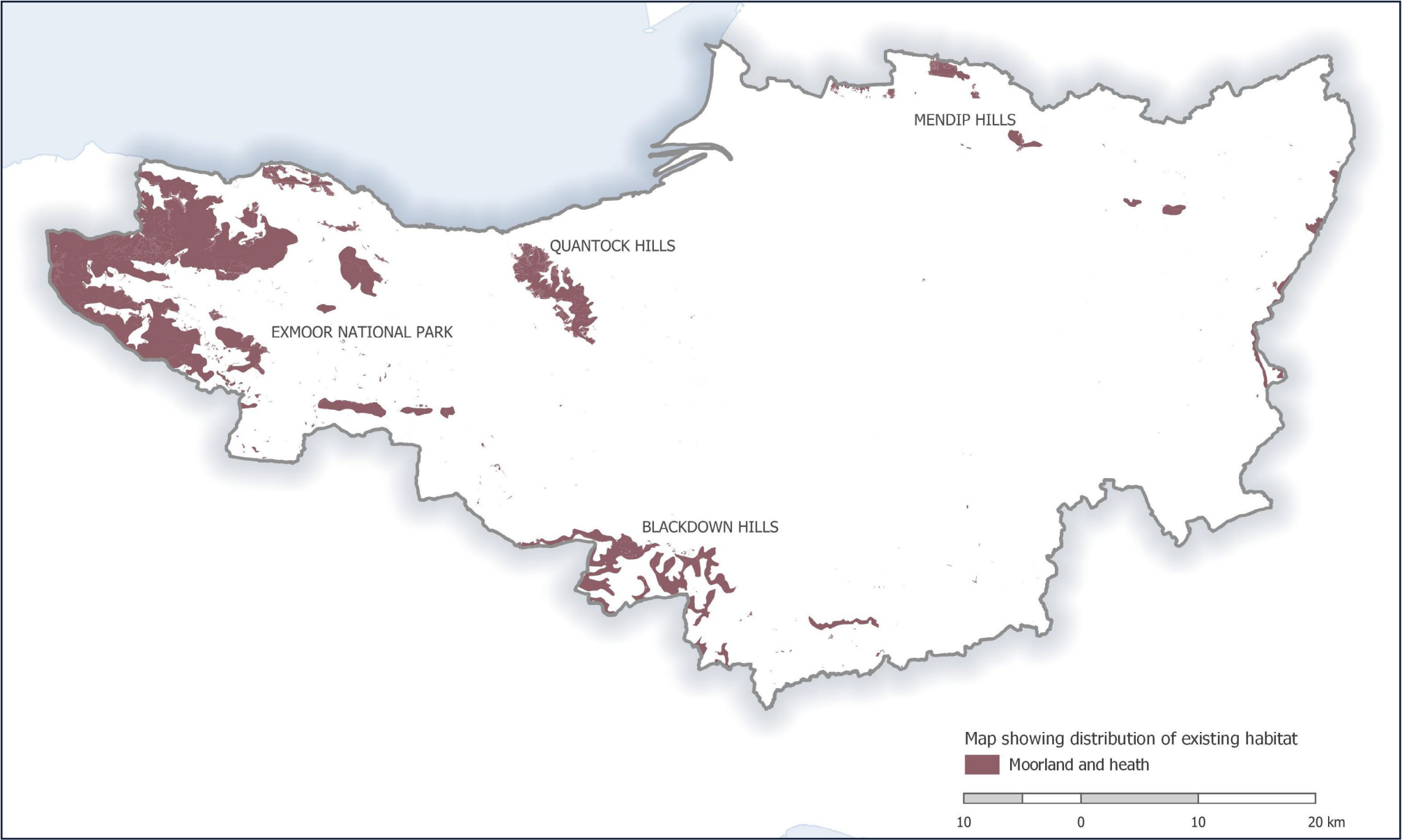
Key - Lawton’s principles

More

Bigger

Better

Joined-up



Priority outcomes

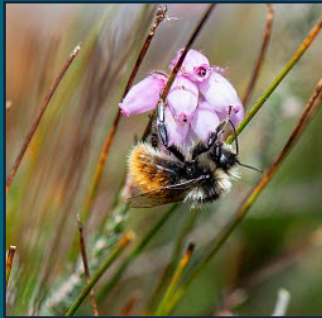
- There is greater species diversity and abundance of upland heathlands and peatlands habitats, within a dynamic mosaic of habitats such as blanket bog, valley mires, heath, and acid grassland, supported by healthy hydrology.
- Moorland, peatland and heath ecosystems are functioning naturally, better connected hydrologically, with new areas expanding existing ones and providing stepping stone habitats.
- Moorland mosaic habitat includes trees and scrub particularly within steep sided combs and valleys, linking and expanding adjacent areas of temperate rainforest
- Heathland and peatland ecosystems support more biodiversity, improved water quality and carbon storage, reduced flood risk, and enhanced wildfire resilience.
- Upland and lowland heathlands and peatland ecosystems are appropriately managed to achieve good condition and habitat areas that are bigger and better connected.
- Invasive non-native species are controlled, and eradicated on specified sites through a collaborative approach at a landscape scale.

Supported species

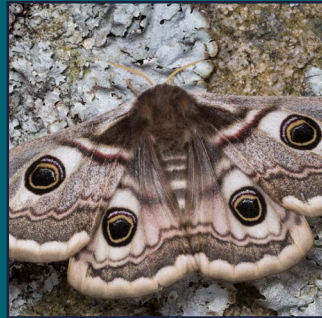
Outcomes for moorland & heath will help support these important species:



Dartford warbler



Bilberry bumblebee



Emperor moth



Adder



# Moorland & Heath

Habitat typologies



## Key - Lawton’s principles

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### The vision

A thriving heathland and moorland landscape with a diverse mosaic of habitats that store more carbon. Management promotes and provides a vital haven for birds, reptiles and insects. This natural sanctuary will be a place of wild and open habitats that has successfully brought back many of the heathland rarities from the brink of extinction.

### Measures

The following measures are actions that will help to deliver outcomes to extend and improve existing moorland and heath habitat, create and restore new habitat and to connect existing habitats.

#### MH1 Manage existing unenclosed upland habitats - including moor, heath and mire -sustainably, so they are in good condition, and supporting a thriving and diverse community of species

MH1.1 Diversify and improve the condition of moorlands, and create dynamic mosaics, through bespoke and appropriate grazing regimes (e.g. grazing season, stock density and duration of grazing, and species and breed of grazing animal).

MH1.2 Manage moorlands to have a mosaic of vegetation types, structure and composition (e.g. damp grasslands, bare ground, lichens, mosses, dwarf shrubs, gorse, and bracken and trees where appropriate) providing diverse niches for a wide range of species

MH1.3 Use native-breed hill ponies such as the hardy Exmoor pony to graze moorland sites. Avoid, or reduce, use of ivermectin drugs to treat stock which can damage moorland communities. Protect some ungrazed areas of mature heather to avoid damage and preserve a range of vegetation structures

MH1.4 Manage Molinia to reduce it’s dominance and promote diversity in vegetation structure

and species via targeted cutting and grazing for example including no-fence technologies

MH1.5 Reduce wildfires and their spread through creation of firebreaks, re-wetting areas and raising the water table, restoring structural diversity to slow fire spread.

MH1.6 Reduce the extent of, and where appropriate, eradicate invasive species such as rhododendron and montbretia across moorland and heathland habitats, with landowners working together, ensuring coordinated efforts across the landscape

MH1.7 Promote better coordination between landowners and managers allowing more cohesive grazing regimes benefiting the moorland and heath habitats, promoting clusters of landowners/managers to benefit from payment schemes, share knowledge and develop a shared ambition (for example Quantock Commons Management Group).

MH1.8 Promote better awareness on impacts and risks to moorland and heathland habitats associated with visitor pressures, risk of wildfires and illegal burns. Promote the development of visitor management strategies to reduce the impact on habitats and species.

#### MH2 Restore unenclosed moor, heath and mire ecosystems so that they are more naturally functioning, with dynamic habitat mosaics underpinned by functioning hydrology

MH2.1 Restore heath and mire habitats where soils are suitable, using techniques to improve hydrological function, rewet areas and reduce erosion by slowing run-off (e.g. ditch blocking and creating pools), as well as considered reseedling and management regimes.

#### MH3 Expand unenclosed moor, heath and mire habitats where soils are suitable for restoration

MH3.1 Expand unenclosed moor, heath and mire habitats where soils are suitable for restoration, via rewetting, reseedling and appropriate grazing so they are bigger and better connected, reducing fragmentation

MH3.2 Identify, survey and map unrecorded mire sites, to facilitate appropriate management, alongside landowner engagement.

#### MH4 Create, restore and manage wood pasture and meadows around unenclosed moor and heath

MH4.1 Create, restore and manage flower-rich, diverse wood pasture and meadows around unenclosed moor, heath and mire sites to create soft edges and improve connectivity, using regenerative agricultural principles and allowing longer grasslands throughout the year.

MH4.2 Manage successional habitats, Including applied nucleation and fencing, and no grazing exclosures, to kick start natural succession and to create soft edges

MH4.3 More extensive grazing approaches are adopted, using regenerative agricultural principles on the edges of moorland where longer grass is permitted throughout the year.

#### MH5 Restore peatlands (blanket bog, valley mires) through re-wetting and low input farming

MH5.1 Restore blanket bog / valley mire using re-wetting techniques such as ditch blocking, willow planting, hag re-profiling etc and subsequent targeted grazing management. Habitats include mosaic with wet heath, scrub and standing water.

MH5.2 Protect valley mire from erosion by slowing run off from plateaux blanket bog.

MH5.3 Increase opportunities for sphagnum growth on upland peat and mire sites by re-wetting and reducing the dominance of Molinia, bracken, gorse and other undesirable species within these wet habitats through a combination of targeted control techniques e.g. rotational cutting, grazing regimes (including no-fence technologies).



# Freshwater

Habitat typologies

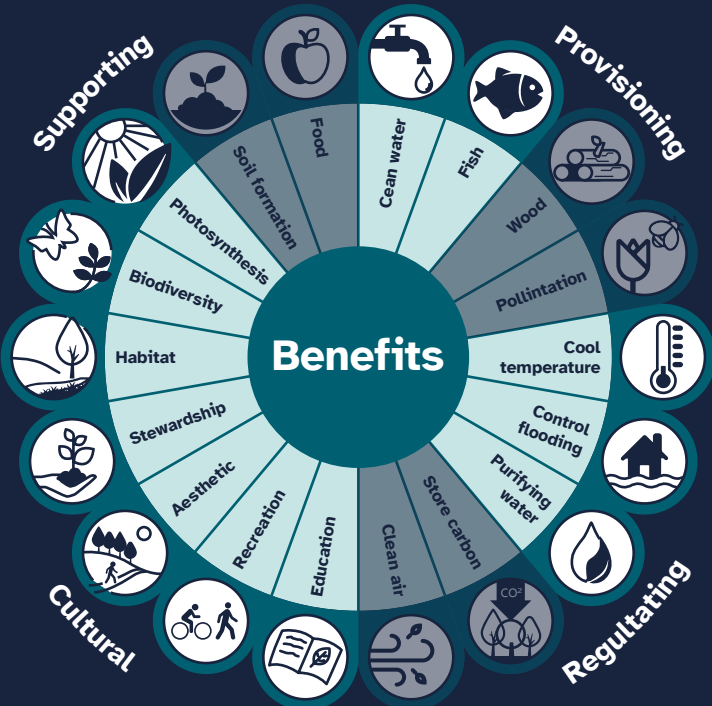
## Habitat description

Freshwater habitats include rivers and streams, and still water, including ponds and lakes. These habitats typify some of Somerset’s most unique landscapes. They provide freshwater habitats for plants, fish, invertebrates, birds, amphibians, reptiles and mammals and connection between habitats.

Somerset has many operational river catchments including the Brue and Axe, Parrett, Tone and West Somerset Streams. Many rivers have been historically modified to prevent flooding and to drain low lying areas.

Ditches and rhynes in the Somerset Levels and Moors were created to drain the land for agriculture. Healthy ditches and rhynes can support a huge diversity of aquatic plants and invertebrates. The freshwater networks also provide critical habitat for the declining European eel and water vole.

Standing freshwater habitats are critical for wildlife and some ponds are considered priority habitats as they support protected or notable species.



## Pressures on habitat

Water supply and good water quality is key for all freshwater habitats, however, with changes in weather patterns and alarming issues with water quality due to pollution across the UK this is not always the case. Less than 15% of rivers in Somerset are in ‘good’ ecological condition. The key pressures on watercourses and associated freshwater habitats include:

- **Climate change** is leading to more extreme weather. Intense rainfall can cause flash flooding events with more pollution washed into rivers. Hotter and drier summers cause water levels to drop, concentrations of pollutants to increase and temperatures to rise which can lead to harmful algal blooms and decreases in oxygen levels, with devastating effects on river ecology.

- **Pollution**, of which the three main sources are household sewage and storm overflows, agricultural land use, and built environment and transport. Nutrient enrichment leads to algal blooms, blocking light penetration, causing submerged plants to decompose, which depletes oxygen levels, causing fish and invertebrate mortality. Increased phosphate levels in Somerset have caused significant harm.
- **Loss and fragmentation of habitats** from waterway modifications such as straightening, realignment of rivers for quick water disposal to the sea, and installing weirs and culverts. These alterations can change the freshwater ecosystem and create barriers for fish migration.

- **Non-native invasive species** such as American mink and American signal crayfish have significantly impacted native species, and Floating pennywort can choke waterways and deplete oxygen levels on the Somerset Levels.
- **Habitat loss** from infilling of ponds, including from lack of management





# Freshwater

Habitat typologies



**Find out more:**  
Click on the map to visit the interactive mapping portal to view where the measures (practical actions) for achieving the priority outcomes would be best located to make the most difference to nature.

## Key - Lawton’s principles

More

Bigger

Better

Joined-up



## Priority outcomes

- Rivers and streams have the space and energy to develop natural forms, driving natural channel processes, are better connected both longitudinally and laterally within their floodplains, supporting an abundance of wildlife.
- Water quality and quantity has improved in rivers and associated wetland features so that ‘good ecological status’ is consistently achieved.
- Rivers, streams, rhynes and ditches, through a catchment-based approach, have increased abundance and diversity of native plant, invertebrate, fish and mammal species.
- Riparian habitats are more extensive, healthy, connected and diverse, providing corridors for wildlife.
- Existing standing water features (e.g. lakes, ponds and other standing water) have been retained, restored and enhanced alongside the creation of new good condition standing water features, so that they can support an abundance of wildlife.

## Supported species

Outcomes for freshwater habitats will help support these important species:

Otter

Brown/sea trout

Great crested newt

Kingfisher



# Freshwater

Habitat typologies



### Key - Lawton’s principles

More

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### The vision

Waterways will have healthy flow rates and good water quality, supporting a diverse fauna and flora the likes of the colourful kingfisher and the charismatic otter. Waterways will be better connected to their floodplains with restored natural processes helping protect our communities from flooding and create better connected wet habitats for species recovery.

### Measures

The following measures are actions that will help to deliver outcomes to extend and improve existing freshwater habitat, create and restore new freshwater habitats and to connect habitats.

### Running water

#### FW1 Create, restore and manage habitat features to increase biodiversity and connectivity in waterways

FW1.1 Remove redundant artificial in-channel barriers and redesign waterway systems Increase longitudinal connectivity, to promote free fish passage (e.g. bypass channels, rock ramps or boulder weirs). Where not possible, installation of technical fish passes

FW1.2 Establish riparian buffers across floodplains around rivers and waterways, through natural regeneration, tree planting and management of open habitats, to create a diverse structure of shady areas to keep rivers cool and warmer open areas for fish spawning.

FW1.3 Reintroduce licensed beavers to help manage wetland mosaics. Beavers are effective at creating and enhancing varied and dynamic habitats for a wide range of wildlife, increasing water storage and drought resilience, slowing flows and helping flood prevention

FW1.4 Restore and manage rhynes and ditches to increase their value for aquatic wildlife (e.g. great silver water beetle) through appropriate management (e.g. rhyne/ditch dredging and bank reshaping at appropriate intervals and season, reducing bank failure caused by stock with

fencing and alternative waterings, and effective management of water levels).

FW1.5 Establish uncultivated grassy buffer strips alongside rhynes/ditches to provide additional habitat for species including water vole.

#### FW2 Restore natural processes by reconnecting rivers to their floodplain, through a range of approaches, ensuring this does not cause flood risk but allows inundation of floodplains during higher flows

FW2.1 Undo historical physical modifications which have disconnected rivers and floodplains to improve the lateral connectivity between the river and its floodplain, allowing floodwater to spill naturally onto adjacent land, securing flood risk and wetland habitat benefits. One way to do this would be via channel bed raising and river bank regrading.

FW2.2 Where appropriate give the river room to change naturally by allowing it to spread out over its floodplain and create multi-threaded systems, with full floodplain reconnection - this approach is often termed stage 0 restoration

FW2.3 Introduce woody material, to encourage flow diversity and “spillage” into adjacent floodplain areas, allowing this to remain in the channel where not causing flood risk.

FW2.4 Promote morphological complexity within modified and straightened rivers by restoring natural sinuosity, re-creating in-channel features such as meanders, pools, and riffles, and enhancing habitat diversity through the introduction of natural materials such as gravels and woody debris.

#### FW3 Adopt Natural Flood Management (NFM) techniques to improve habitat extent, diversity and connectivity, and to slow the flow of water and increase water storage in the landscape, helping to reduce the risk of flooding and reduce the impacts of drought

FW3.1 Slow the flow and store water in the catchment in areas of low agricultural productivity or where there is space in urban areas. By using natural features such as ponds, wet woodland, swales, in-field bunded scrapes, leaky woody dams and tree and hedgerow planting, water is slowed and stored which reduces the risk of flooding downstream while also helping to restore natural habitats and improve biodiversity.

FW3.2 Cross-slope (following a contour) planting of trees, woodland strips and hedgerows to intercept flows of water, providing natural flood management and capturing pollutant run-off. Woodland strips should be up to 10m wide, or 30m wide for steeper slopes

FW3.3 Restore or improve management of existing wetlands, including floodplain grazing marsh or floodplain meadows, including permitting seasonal flooding, to allow natural silt deposition within the floodplain, especially

where this would provide benefits to flood management. Ideally, sites would be managed using an extensive grazing regime to maintain species and structural diversity.

#### FW4 Reduce input of diffuse pollutants to safeguard freshwater habitats and restore them to achieve favourable ecological status

FW4.1 Reduce phosphate and nitrate pollution and fine sediment to surface and groundwater bodies to reduce pollutants, including chemicals, nutrients and sediment, before it enters rivers and streams from farms, livery yards and similar land uses

FW4.2 Reduce run-off of pollutants from farmland through the use of best practice in applying fertiliser, manure and slurry

FW4.3 Create 30m buffer zone along all main rivers. Establish unsprayed buffer strips alongside watercourses in areas with high levels of diffuse pollution and surface water runoff to hold runoff and remove pollutants.

FW4.4 Establish a buffer strip (which can contain long grasses, trees, and shrubs) of 4-12m on field boundaries or runoff channels to hold runoff and remove pollutants.



# Freshwater

Habitat typologies

Key - Lawton’s principles

More

Bigger

Better

Joined-up

**FW5 Prevent or reduce the impact of point source pollution to safeguard freshwater habitats and restore them to achieve favourable ecological status**

- FW5.1 Reduce urban run-off by upgrading existing drainage infrastructure, and installing sustainable urban drainage (SuDS) features.
- FW5.2 Interception features on highways, local roads, and existing and new developments.
- FW5.3 Reduce the risk of combined sewer overflows by reducing surface water entering the drainage system for example through the use of SuDS.
- FW5.4 Use constructed wetlands in wastewater treatment to reduce the amount of pollutants entering the freshwater environment, while providing wetland habitat.

**FW6 Slow or stop the spread of invasive and non-native species that affect freshwater species**

FW6.1 Prevent spread of invasive species, including American Mink, American Signal Crayfish, New Zealand pygmyweed, and Himalayan balsalm , though awareness, monitoring and mapping (e.g. INNS Mapper), biosecurity and appropriate control and eradication, including the use of approved biocontrols.

**FW7 Collaborative working**

FW7.1 Promote and support catchment partnerships and collaborative working between landowners, stakeholders and community groups to restore, create and protect freshwater habitats (e.g. beaver re-introduction projects to restore waterways, and promote and increase awareness of Natural Flood Management)

Open water

**FW8 Create ponds for wildlife**

- FW8.1 Create new ponds for wildlife in locations with restricted public access and a clean water source, including on agricultural land, gardens and green spaces. Use the Freshwater Habitats Trust pond creation toolkit and risk assessment.
- FW8.2 Design ponds to maximise diversity at the landscape scale, with varying depth profiles, hydrological regimes, different stages of succession, shapes, sizes and shading.

**FW9 Manage and improve ponds for wildlife**

- FW9.1 Manage for a diverse pondscape of different ages, shading, sizes and designs. Pond management and restoration is very individual to the type, age, and structure of your existing pond. Use Freshwater Habitat Trust pond management guidance.
- FW9.2 Safeguard ponds from agricultural runoff and road runoff by implementing and maintaining wide buffers around them, including consideration of livestock fencing and to reduce access for people and dogs.





# Urban

Habitat typologies

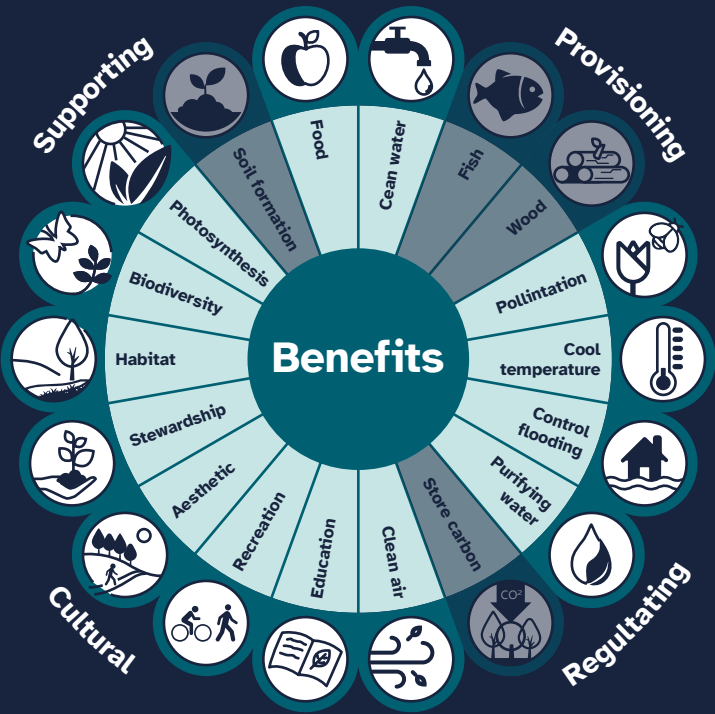
## Habitat description

While development can pose a risk to many of the habitats mentioned in this strategy, as well as the species these support, urban spaces can also be key places for wildlife.

Buildings can provide habitats for nesting birds, including red listed species such as house sparrow and swifts, as well as roosting opportunities for bats. Green spaces (e.g. gardens, parks and allotments), urban trees and woodlands provide habitat and ecological connectivity for wildlife through urban spaces.

Former industrial areas can provide the conditions required for priority habitats, such as open mosaic habitat. Disused mines and tunnels (found particularly in the Mendip Hills) provide habitats for bat species including greater horseshoe bat, which has led to designation of the Mendip Bats SAC.

Natural vegetated areas and waterways (green and blue infrastructure) provides ecological linkages, creating commuting and foraging habitats for pollinators and other species.



## Pressures on habitat

The population of Somerset has risen by 36.9% since 1981, with just over 50% of Somerset residents living in urban areas. Urban spaces are expanding as the population increases which poses risks to other natural habitats, and good quality greenspace and green infrastructure within urban areas. Some of these factors include:

- **Direct and indirect habitat loss and fragmentation** from residential and industrial development, the transport network and increased light pollution impacting light sensitive species. Many green spaces are not well managed for nature. They are often over-mown and manicured, with planting that offers little or no food source or shelter. Natural grassed areas are being lost to

parking spaces, artificial grass, paving stones, decking, and gravel.

- **Intensive management** of greenspaces such as verges and parks can negatively impact biodiversity, including excessive cutting and clearing to maintain ‘tidiness’, and use of pesticides and weedkillers removes valuable habitat for invertebrates which can be devastating to pollinators.
- **Species habitat loss in buildings** such as house sparrows and swifts, and several species of bats that suffer when older buildings are refurbished or lost because many new or repaired buildings don’t allow access to or provide opportunities for their traditional nesting and roosting sites.

- **Fences and walls** divide many of our gardens and parks which disrupts passages for species such as hedgehog.
- **Removal of green infrastructure** features such as large, mature avenues of trees or hedgerows due to conflict with residents and damage caused to buildings and roads. It can take many tens or hundreds of years to replace this loss.
- **Pollution, drought and extreme rainfall** events all degrade blue infrastructure and their habitats such as waterways and canals, as well as sustainable urban drainage features.





# Urban

Habitat typologies



Find out more:

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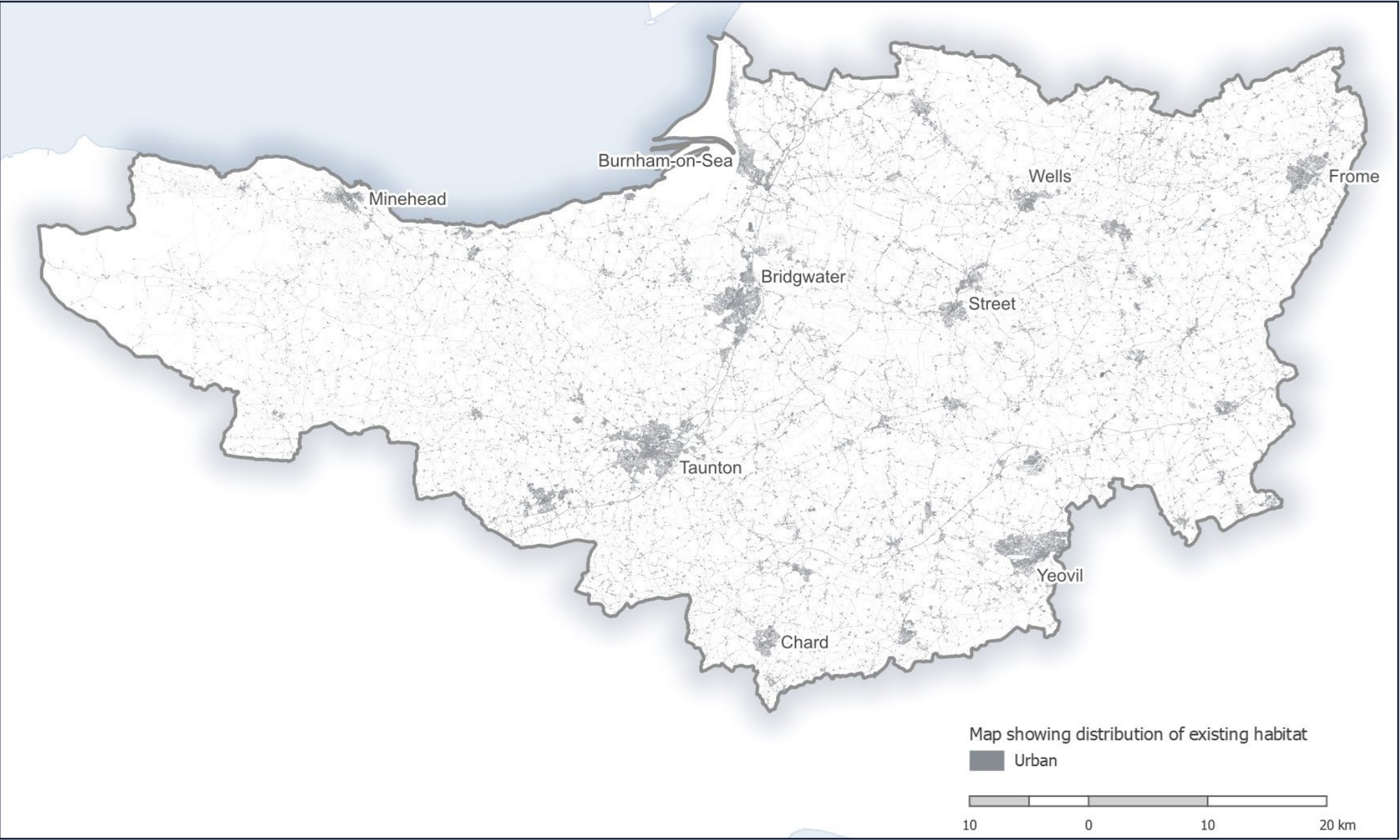
Key - Lawton’s principles

More

Bigger

Better

Joined-up



Priority outcomes

- There are more well-designed and connected nature-rich, equitable green and blue spaces in urban environments that are appropriately managed, including multi-functional spaces.
- Nature is recognised as essential for improving health and wellbeing, and people are encouraged to take meaningful action to deliver nature recovery and protection.
- There is greater tree canopy cover in towns and cities, benefiting urban wildlife, helping adapt to climate change, and improving people’s wellbeing.
- There are more Nature-based Solutions used in urban environments creating more resilient towns and cities, resulting in greater biodiversity, reduced flooding and urban heat.
- Areas important for nature within and surrounding the urban environment are recognised, recorded, managed and appropriately protected.

Supported species

Outcomes for urban habitats will help support these important species:



Hedgehog      Common toad      Lesser horseshoe bat      Swift



# Urban

Habitat typologies



### The vision

A flood and climate change resilient environment with nature on our doorstep. Green and blue infrastructure integrates nature into towns, fostering interconnectedness and harmonious existence with our diverse countryside.

### Key - Lawton’s principles

More

Bigger

Better

Joined-up

### U1 Improve connectivity, ensuring urban species can freely move about and developed areas and infrastructure does not impede passage

U1.1 Create more nature-rich and appropriately managed habitats at a range of scales, to increase the diversity and condition of public green and blue (waterways and wetlands) spaces. Establish a connected network aligned to green and blue infrastructure strategies where developed.

U1.2 Make use of roadside verges, railways, cycle paths and other linear infrastructure to connect areas of biodiversity, and aid movement of key species, by reduction in mowing to once or twice a year and collecting cuttings, and re-seeding areas with local, native species to increase grassland diversity.

U1.3 Ensure new and existing infrastructure does not impede passage of urban species by Installing features such as green bridges and suitable underpasses, and retrofit ‘Hedgehog Highways’ in the garden fencing of residential development wherever possible

U1.4 Enhance, increase and create green spaces, ponds, canopy cover, green roofs and walls and wild verges/swathes to establish wildlife corridors

and provide habitat stepping stones across urban and developed landscapes.

U1.5 Ensure that landscaping, green infrastructure, mitigations and Biodiversity Net Gain delivered within development sites provide appropriate and compatible habitats well connected to the wider ecological network, relevant to the site location and context. Drawing upon national and local guidance including Natural England’s Green Infrastructure Principles and the Somerset BNG Principles.

### U2 Deliver benefits for wildlife through urban public greenspace and land management

U2.1 Manage areas of urban greenspace specifically for nature recovery, to provide a greater complexity of habitats, with year-round shelter, forage and food, focussing on where benefits are most needed.

U2.2 Adapt mowing and maintenance regimes in green spaces such as parks, sports fields, and grounds of hospitals, schools or businesses. Create wild patches and meadows, and areas for insects to overwinter.

U2.3 Incorporate pollinator-friendly wildflowers and shrubs in urban green spaces including parks and road-side verges, and promote such

### Measures

The following measures are actions that will help to extend and improve existing green and blue infrastructure within our towns, create and restore habitat, and connect green infrastructure within our towns and into the wider network.

interventions in private gardens in line with the Somerset Pollinator Action Plan.

U2.4 Restore urban watercourses to improve conditions for aquatic and riparian biodiversity (e.g. restore and create riparian zones, de-culverting and daylighting watercourses and removal of hard engineered structures where appropriate), whilst sensitively balancing public access and wider placemaking benefits of urban watercourses where appropriate.

U2.5 Increase and promote the integration of biodiversity enhancements such as bat and nest boxes for swifts, martins and swallows into existing and new buildings, creation of ‘hedgehog highways’ through gardens and parks, dark corridors for bats using sensitive lighting methods, and bug hotels.

U2.6 Reduce pesticide, herbicide and artificial fertiliser use in urban spaces, both public and private (e.g. parks, road-side verges, private gardens and allotments, and multi-functional spaces).

### U3 Safeguard and increase the extent of green space, trees and hedgerows within urban areas

U3.1 Appropriately manage and protect urban green sites, informed by ecological survey, to improve condition, increase biodiversity and provide a suitable mosaic of habitats across the urban landscape.

U3.2 Prioritise planting native and climate resilient species for developments and public spaces, utilising a broad mixture of species suited to urban conditions, preferentially using native species where appropriate. Implement long-term management and monitoring plans appropriate to habitats, recognising environmental stressors.

U3.3 Make nature recovery a key consideration in development, following policy and guidance on, green infrastructure, urban greening, sustainable/active travel, suitable alternative natural greenspace (SANGs), and biodiversity net gain.

U3.4 Reduce further loss of ecologically valuable urban green space to hard surfaces, and promote the improvement of permeability and greening of existing hard surfaces, that would benefit wildlife while addressing localised flooding reducing flood risk.



# Urban

Habitat typologies

Key - Lawton’s principles

More

Bigger

Better

Joined-up

**U4 Increase the integration of Nature Based Solutions to deliver nature and wider benefits**

- U4.1 Plant trees to deliver air quality, temperature regulation/cooling and surface water management benefits and targeted to areas where it is most needed and will deliver the greatest impact, by focusing action in neighborhoods with low ‘tree equity’ scores
- U4.2 Create new Sustainable Urban Drainage Systems (SuDS) to manage areas at high risk from surface water flooding, that comply with technical standards and that are designed and implemented to provide habitat for wildlife
- U4.3 Establish new and retrofitted green walls and roofs to enhance biodiversity, whilst also providing temperature regulation in settings most at risk from urban heat island effects.
- U4.4 Create biodiverse green spaces which promote health and wellbeing, targeted to communities where it is most needed. These can range from small break spaces to community gardens to green spaces within schools and other estates.

**U5 Increase biodiversity, habitats and habitat connectivity potential of gardens**

- U5.1 Increase biodiversity, habitats and habitat connectivity potential of gardens, for example by planting a range of nectar source plants including fruit trees, creating small ponds, avoiding the use of slug pellets, herbicides, fungicides, insecticides and peat-based garden products, planting native species in preference to non-native if there is an option, and having gaps in fences between gardens to allow species movement, including hedgehogs.



Wells recreation ground, free public access



# Grassland

Habitat typologies

## Habitat description

Grassland habitats are a familiar, open habitat type, dominated by grasses and sometimes rich in wildflowers. Species-rich grasslands have huge importance particularly for invertebrate species including pollinators, as they provide nectar and larval food plants.

There are five key priority habitats in Somerset: calcareous grassland, lowland dry acid grassland, lowland meadows, purple moor grass and rush pasture, and calaminarian grassland. Key sites have been designated for the good quality grassland and associated features. Mendip Limestone Grassland SAC contains calcareous grassland which supports rare species (e.g. white rock rose and Somerset hair-grass). There are many other designated sites, particularly SSSIs, in Somerset which contain priority grasslands.

Wet grasslands, purple moor grass and rush pasture, and semi-improved grasslands are covered in Wetland and Farmland below.

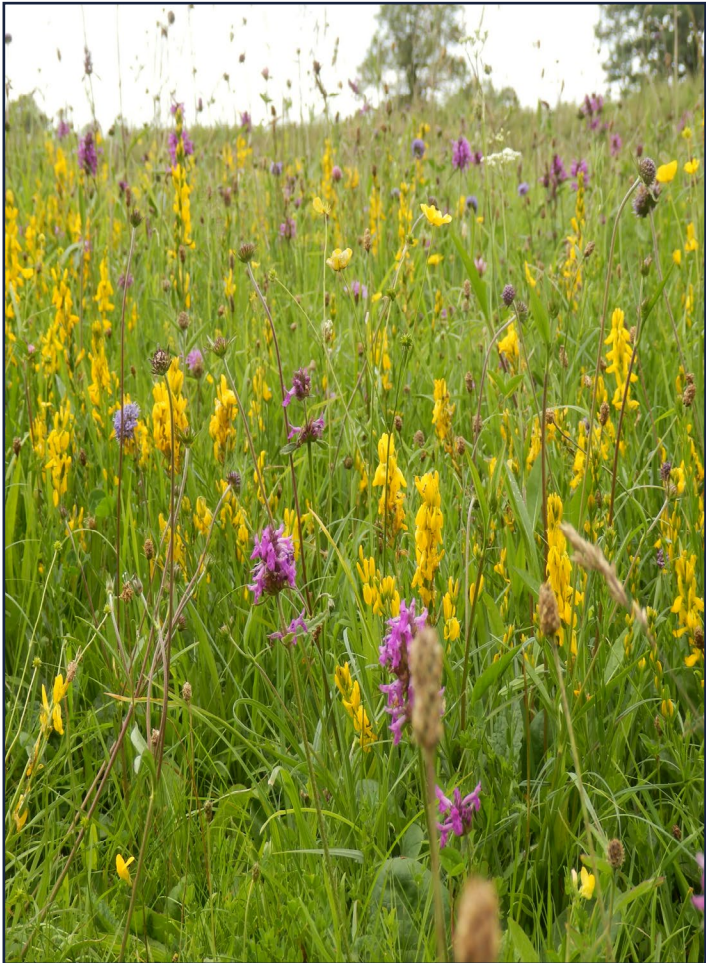
## Pressures on habitat

Species-rich grassland habitats are highly vulnerable to human activity and environmental change. Fragmentation from historical habitat loss has reduced these habitats to small, isolated patches, making them more prone to degradation. These habitats are decreasing in the county, with particular losses in Mendip. This trend echoes a bigger picture, with 97% of the UK's species-rich grasslands being lost since the 1930's.

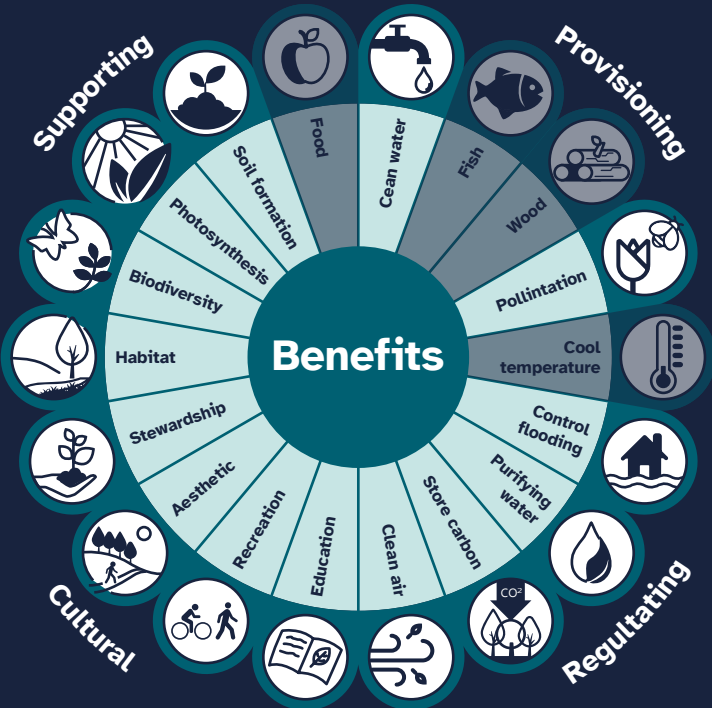
Some of the key pressures and threats that have led to this include:

- **Changes in farming practices** including conversion of hay meadows and other semi-natural grasslands into productive grassland for livestock, silage and crops, and management practices such as increased use of fertilisers, ploughing and seed drilling.

- **Habitat loss and fragmentation** from housing development, road development, agriculture, forestry. Nationally, 96% of lowland hay meadows have been lost over the last 150 years.
- **High nutrient runoff and atmospheric pollution** from farmland and infrastructure affects vegetation and can alter habitat composition (eg by encouraging more grass growth which outcompetes flowering plants).
- **Lack of managment** of priority and species-rich grasslands can lead to the habitat being lost to natural succession and colonised by scrub or bracken.
- **Inappropriate management** also poses a risk to grassland, for example, tree planting on priority grassland and over- or under-grazing or mechanical management which impacts habitat structure which can degrade and ultimately lead to loss of the habitat.
- **Climate change** which can lead to changes in species composition - linked to changes in hydrological conditions, more frequent droughts and warmer temperatures causing grass species to become more dominant or allowing invasive species to establish, and, due to higher temperatures, a higher frequency of fires.



Hay meadow - 'Hollow Marsh Meadow' (Somerset Wildlife Trust)





# Grassland

Habitat typologies



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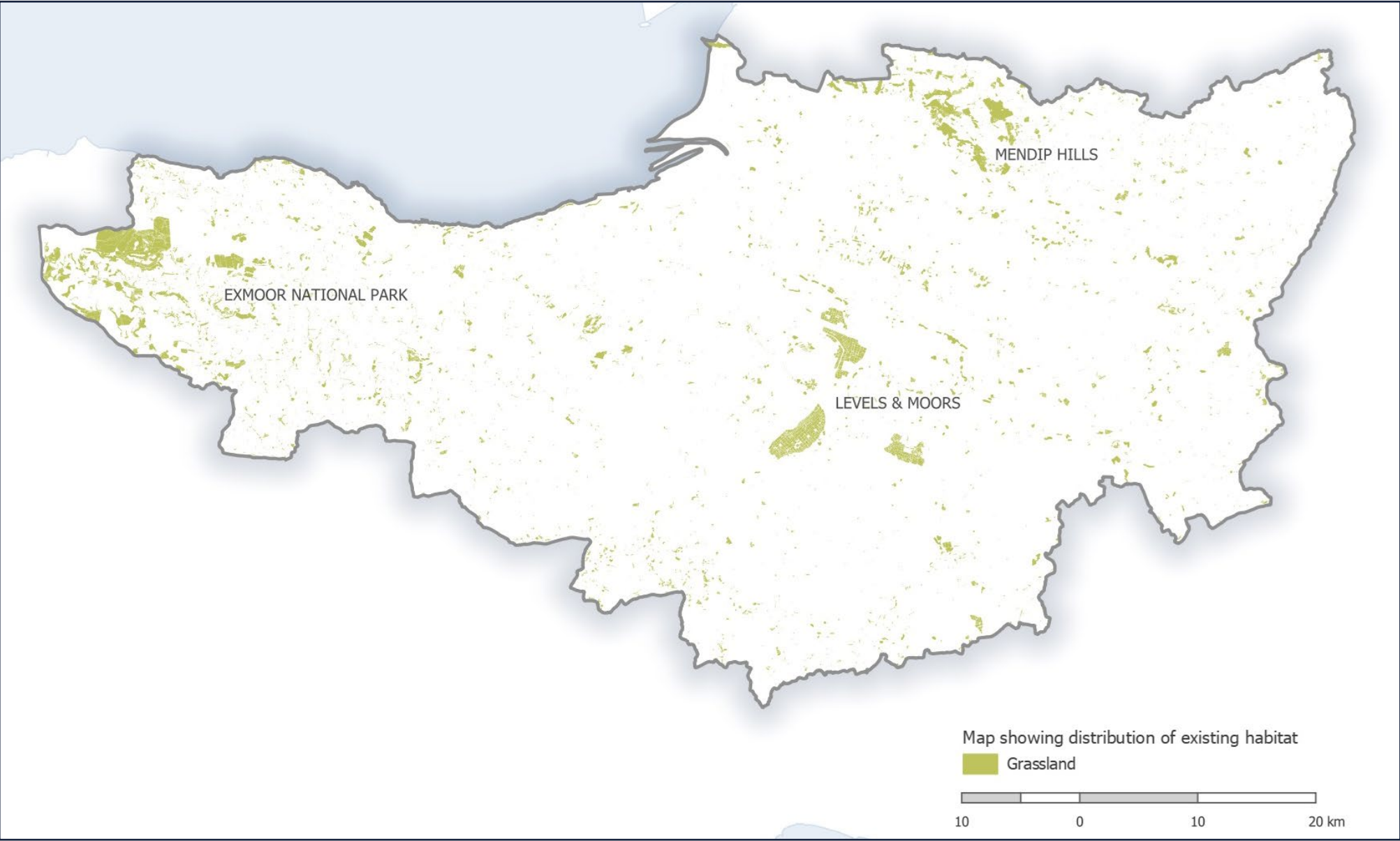
## Key - Lawton’s principles

More

Bigger

Better

Joined-up

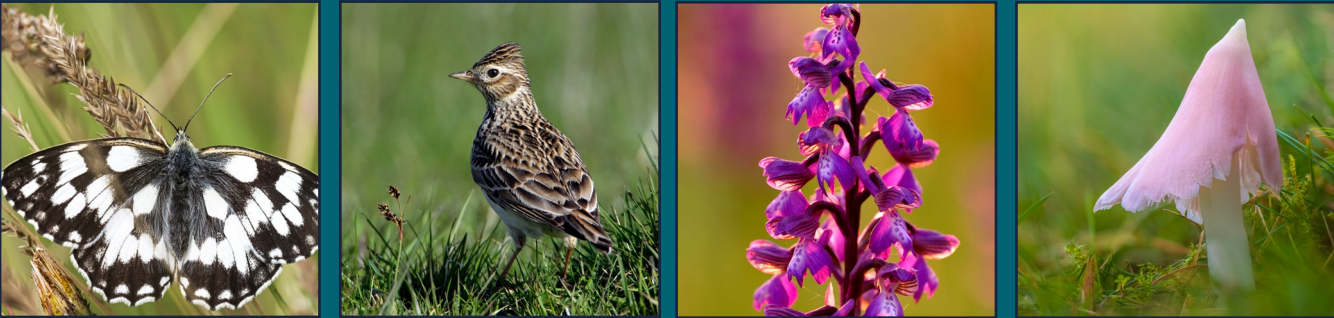


## Priority outcomes

- Extent and condition of priority habitat and species-rich grassland sites has increased and existing sites protected and restored.
- Targeted creation and enhancement of connecting grassland has helped support increased grassland diversity and the resilience and coherence of the wider ecological network.
- Grassland restoration, enhancement and creation has commenced at scale, prioritising sites that bring most benefits for nature.
- The condition and value of grassland sites is better understood and monitored to inform future management and respond to change.
- Species diversity and abundance of pollinators and invertebrates has increased as a result of restored and enhanced species-rich grasslands across the county.

## Supported species

Outcomes for grassland habitats will help support these important species:



Marbled white      Skylark      Green winged-orchid      Pink waxcap



# Grassland

Habitat typologies



## The vision

A thriving biodiverse and interconnected network of species-rich grasslands that are full of wildflowers and insects has been restored and created. People recognise and value wildlife-rich grasslands and all that they do for us. The varied grasslands of Somerset support rare and endemic species and provide a sanctuary for wildlife and pollinators that support our farming industry.

## Measures

The following measures are actions that will help to deliver outcomes to extend and enhance existing grassland habitat, create and restore new grassland habitat and to connect grassland habitats.

## Key - Lawton’s principles

More

Bigger

Better

Joined-up

### G1 Maintain existing wildlife rich grasslands for nature

- G1.1 Increase the diversity and species richness of grasslands including amenity grasslands such as playing fields, churchyards and road verges through the introduction of appropriate wildflower grassland seed mixes or green hay application (preferably locally sourced), to suitable sites, and appropriate management.
- G1.2 Increase diversity and species richness across all grassland habitats in Somerset by reducing the application of herbicides, pesticides and other artificial inputs, reducing excess slurry use, and reducing repeated mowing and dropping of cuttings on amenity grassland sites
- G1.3 Improve the structural diversity and condition of grasslands that provide benefit and varied structure for a range of species through appropriate and targeted management. For example, through actions such as conservation grazing, rotational cutting, thatch removal and later hay cuts.
- G1.4 Manage grasslands within a diverse landscape mosaic, integrating scrub, scattered trees, heath, and wetland habitats to extend habitat edges and promote transitional changes between ecosystems.

- G1.5 Enhance grassland biodiversity in transitional infield areas through management changes like diversifying grazing practices, herbal leys, introducing a variety of grasses and forbs, and maintaining a mosaic of vegetation types, while also protecting existing species-rich areas.
- G1.6 Manage field margins to provide graduated field edges, with wider and cultivated margins.
- G1.7 Manage road verges using ‘cut and collect’ to restore and maintain wildflower-rich habitat.

### G2 Create and restore wildlife-rich grassland

- G2.1 Restore and create new areas of wildflower grassland, especially by increasing size, variety and connectivity of existing grassland. Consider translocation, seeding and plug planting of rare/endemic/target species (e.g. Cheddar pink and forage species of the shrill carder bee). Green hay from similar wildflower meadows can be spread as an alternative to seed.
- G2.2 Increase the extent and diversity of all types of species-rich grassland (e.g. calcareous, lowland dry acid, neutral and calaminarian grassland, and purple moorgrass and rush pasture) through habitat restoration and creation, and appropriate management techniques (e.g. conservation grazing and hay meadow cutting).

- G2.3 Improve the connectivity of species-rich grasslands across the county, increase the extent of existing sites and provide stepping stone grassland habitats to improve the resilience of the habitat network, using management practices such as herbal leys and field margins in arable field systems and associated habitats such as hedgerows.
- G2.4 Create new grassland habitats along road verges. Aim for floral biodiversity in road verges, through natural recolonisation, by strewing local green hay in late summer, potentially from adjacent conservation road verges, or by planting native species. Avoid using topsoil for new verges.
- G2.5 Identify and restore degraded grasslands through re-seeding with native wildflower and grass species that are beneficial to pollinators and other wildlife
- G2.6 Integrate grassland creation and enhancement with other habitat types, such as woodland edges, to create transitional zones that are valuable for a range of species.

### G3 Enhance species poor grasslands to improve diversity for wildlife

- G3.1 Increase species-richness of semi-improved grassland. For example, by reducing agricultural inputs, adding in different native plant species, or using rotational grazing. Semi-improved or modified grasslands can be diversified by harrowing and over seeding with appropriate species mix for the soil and geohydrology. Arable can be reverted to wildflower grassland through seeding, following site preparation. Plants grown as plugs can be used for species that do not spread well as seed. Use brush-harvested seed or plug sources of local provenance and similar soil conditions.



# Woodland and Hedgerows

Habitat typologies

## Habitat description

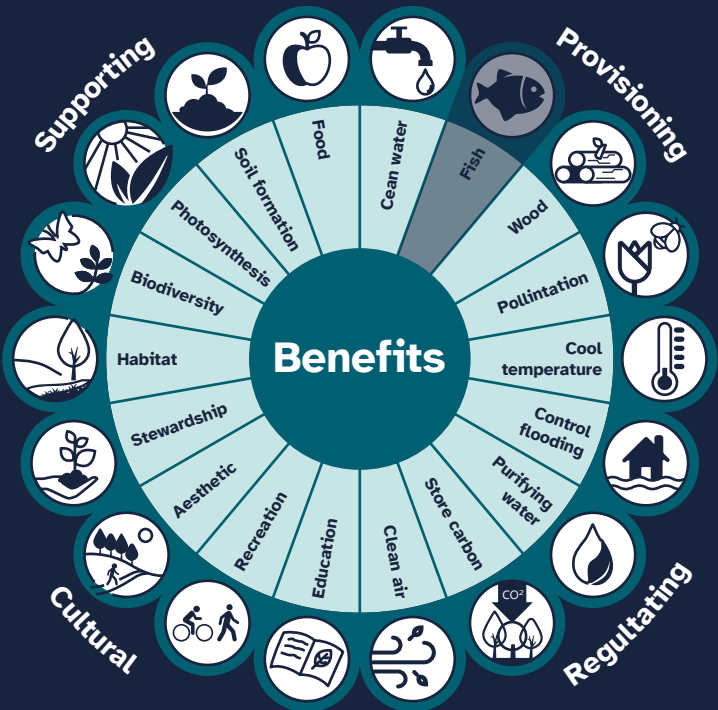
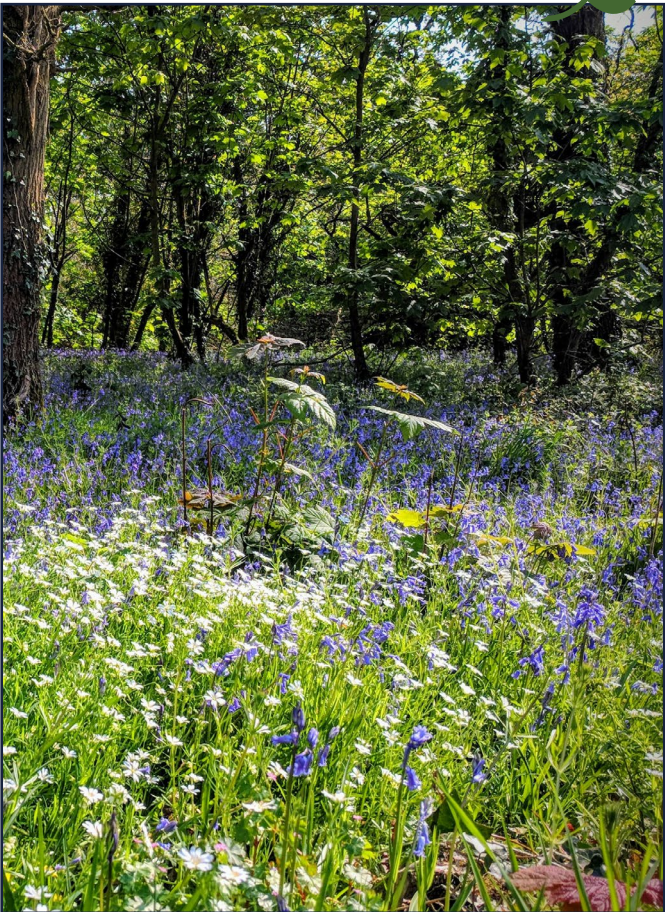
Woody habitats in Somerset include broadleaved and coniferous woodland, temperate rainforest, wet woodland, orchards, wood pasture, individual trees and hedgerows. These habitats support diverse wildlife and aid in water purification, climate change mitigation, and flood risk reduction.

Somerset’s woodland covers approximately 285km<sup>2</sup>, with over two-thirds being broadleaf and the rest conifer. The county has around 95km<sup>2</sup> of ancient woodland, with just over half being ancient and semi-natural. The remainder is plantation on ancient woodland sites. Forestry Commission data indicates that nearly two-thirds of Somerset’s woodland is managed sustainably. Traditional orchards, covering about 0.5% of the county, have cultural and historical significance, but more than half have disappeared in the last 50 years.

## Pressures on habitat

These habitats can take hundreds of years to reach maturity and create the ecological niches to support other species, and therefore any loss and degradation can take years to recover. Increasing pressures creating vulnerabilities to these habitats include:

- **Isolation and fragmentation** of woodlands and hedgerows puts species at risk of local extinction as natural processes are limited, for example mobile species may be unable to migrate between locations.
- **Inappropriate development** in proximity to trees, woodland and hedgerows can cause long-term impacts by affecting root health.
- **Increased pests and diseases** resulting from the international plant trade and poor biosecurity, have surged across the UK, threatening tree populations e.g. ash dieback.
- **Uninformed management and/or neglect** resulting in poor age, species and canopy diversity, reducing the ecological condition and resilience of all woody habitats.
- **Climate change** increasing the frequency of the storm, drought and flooding events that cause harm to trees, hedgerows and woodlands. Resulting in reduced vitality and resilience to other threats. A changing climate also affects which tree species can best thrive and may thus change the composition of our woodlands, removing niche habitats for specialist species. It can also mean pests and diseases increase.
- **Neglecting to replace losses** or to plant future generations, erodes woody habitats and prevents ecological continuity.
- **Browsing pressure** from herbivores, deer species, grey squirrels and livestock preventing natural regeneration and damage to establishing trees in woodlands.
- **Inappropriate planting and invasive species** such as rhododendron can reduce diversity within woody habitats.





# Woodland and Hedgerows

Habitat typologies



Find out more:

Click on the map to visit the interactive mapping portal to view where the measures (practical actions) for achieving the priority outcomes would be best located to make the most difference to nature.

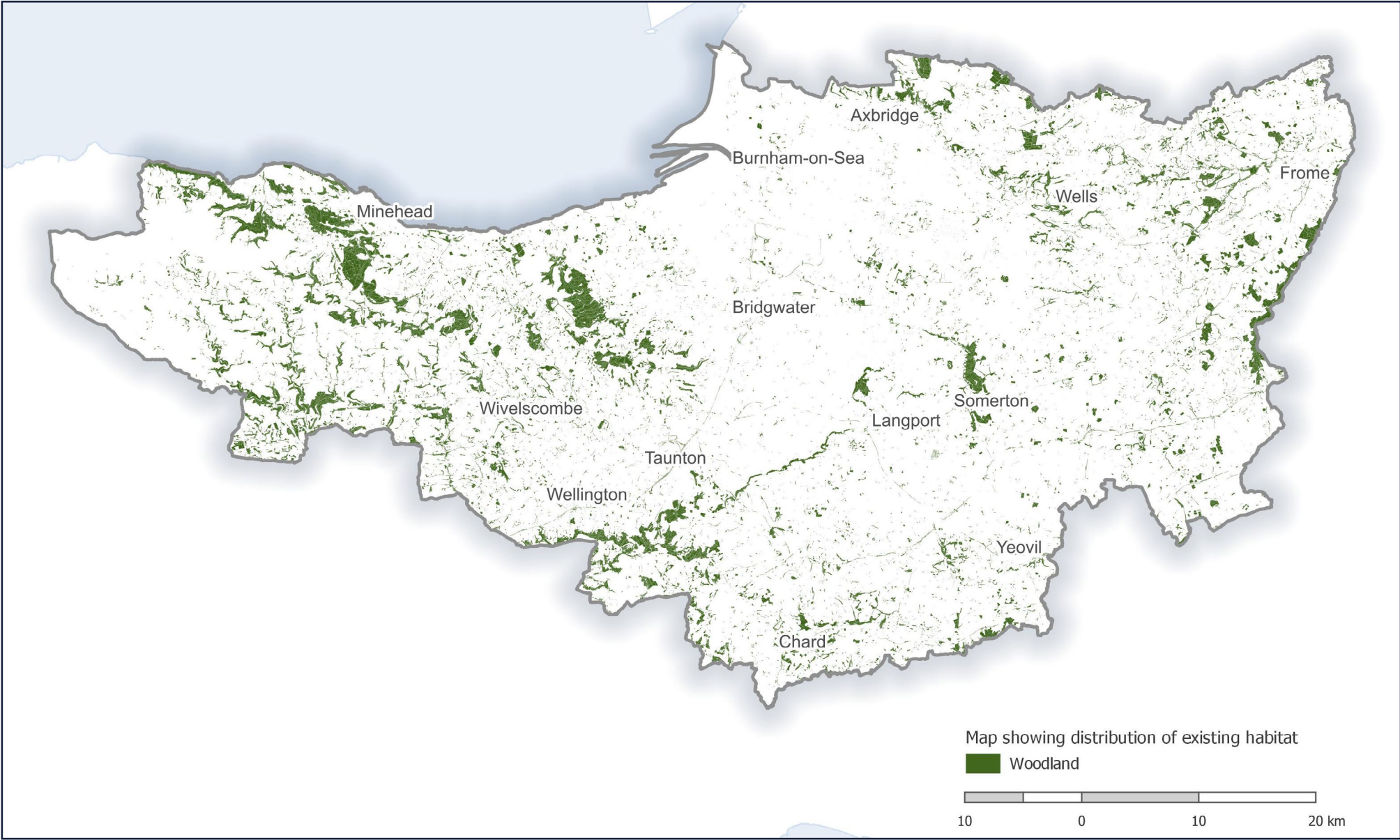
Key - Lawton’s principles

More

Bigger

Better

Joined-up



Priority outcomes

- The diversity and abundance of native species, both flora and fauna, associated with woody habitats has increased and are appropriately protected and managed.
- The extent and condition of woody habitats, in both rural and urban environments, has been improved through successful restoration, creation and appropriate management, resulting in improved soil health, and carbon sequestration and storage.
- Natural processes within woody habitats have been successfully restored, including the reintroduction and establishment of sustainable populations of keystone native species and ecosystem engineers, such as pine martens.
- Existing woody habitats are buffered and linked through the creation and appropriate management of transitional and mosaic habitats and hedgerows.
- There is a larger, more biodiverse, interconnected, resilient mosaic of woody habitats across rural Somerset that are better connected to our improved urban treescapes.

Supported species

Outcomes for woodland habitats will help support various important species:



Stag beetle



Hazel dormouse



Barbastelle bat



Bluebell



# Woodland and Hedgerows

Habitat typologies



## The vision

Woody habitat networks of woodlands, wood pastures, hedgerows and trees have been expanded and diversified across Somerset, with irreplaceable and mature woodlands safeguarded for wildlife. Our enriched, resilient woodlands foster healthy trees and soils, capable of defending and nurturing our most precious and valuable woodland ecosystems.

### Wo1 Improve structure and diversity of existing woodlands

Wo1.1 Restore, enlarge and manage semi-natural woodlands to improve connectivity and resilience, using best practice techniques that diversify and increase native tree, shrub, and ground flora cover. Support natural regeneration, and actions that promote diversity of age, species and canopy structure.

### Wo2 Enhance conifer and mixed woodlands

Wo2.1 Through the management of commercial and multifunctional woodlands, maximise opportunities for biodiversity, implementing sustainable best practice. Both retain and enhance existing open habitats and natural features, and secure species, age and structural diversity. Adopt low impact silvicultural systems, such as continuous cover forestry and coppice where appropriate.

### Wo3 Enhance ancient woodland and temperate rainforests

Wo3.1 Restore and appropriately manage ancient woodland and temperate rainforests (including plantation of ancient woodland sites) to improve their condition and diversity using best practice guidance and well-informed management plans.

### Wo4 Conserve and restore traditional orchards

Wo4.1 Conserve and restore traditional orchards and manage all types of orchards (e.g. traditional, community and commercial) for biodiversity using best practice approaches (e.g. use of appropriate local varieties and cultivars, restorative pruning, retain deadwood and avoid using pesticides).

### Wo5 Control invasive species and protect from disease and pests

Wo5.1 Improve the biodiversity and resilience of woody habitats to pests and diseases, wildfires, and extreme weather events through best practice management approaches (e.g. creation of firebreaks, allowing natural regeneration, and diverse planting and re-stocking).

Wo5.2 Manage and remove invasive species and prevent their spread.

Wo5.3 Landscape scale, sustained and co-ordinated grey squirrel management to improve ecological condition of woodlands, improve sustainable production of native hardwoods and prepare for future reintroduction of red squirrels.

Wo5.4 Landscape scale, sustained and co-ordinated management of deer populations to secure successful establishment of trees and woodlands, to protect crops and to secure the natural regeneration of herb, shrub and tree layers within existing woodlands.

## Measures

The following measures are actions that will help to deliver outcomes to extend and improve existing woodland and hedgerow habitats, create and restore new woody habitats and to connect habitats.

### Wo6 Manage wood pasture, ancient and veteran trees

Wo6.1 Restore and protect wood-pasture and appropriately manage as a holistic system, e.g. conserving veteran and future veteran trees (including pollard willows), plant or allow natural colonisation of appropriate species, and low intensity grazing that allows establishment of a mosaic of woody and open habitats.

Wo6.2 Secure and implement management plans for ancient and veteran trees across landscapes (where not within wood pasture), establish trees to ensure continuity of habitat.

### Wo7 Establish new woodland

Wo7.1 Establish new semi-natural woodlands to improve connectivity. Support natural regeneration.

Wo7.2 Through natural colonisation, direct seeding and/or planting, establish UKFS compliant mixed, multifunctional woodlands. Utilising a diverse and resilient palette of species, to be informed by landowner objectives.

Wo7.3 Increase the supply of locally sourced and grown native stock through support of existing and establishment of new tree nurseries. Ensure that both native and non-native stock are procured through a bio secure supply chain i.e. demonstrating Plant Healthy Certification or ‘Ready to Plant’ assessment.

## Key - Lawton’s principles

More

Bigger

Better

Joined-up

### Wo8 Establish trees outside of woodlands

Wo8.1 Create and manage transitional and mosaic habitats to buffer woodlands, increase connectivity, and increase diversity both within and surrounding woodlands (e.g. open space creation within woodlands to allow natural colonisation, and cyclic scrub management and coppicing to support structural diversity).

Wo8.2 Create and manage riparian and wet woody habitats to increase diversity, buffer watercourses, provide natural flood management, and provide suitable habitat for keystone species and ecosystem engineers, such as beavers.

Wo8.3 Increase the area of farmland that follows the principles of agroforestry systems, both in pasture and arable. Incorporate more in field trees, copse, hedgerows and shelterbelts within farm systems.

### Wo9 Create and restore hedgerow networks

Wo9.1 Create and restore hedgerow networks by planting new and restocking gaps with a diverse mix of native and honorary-native species (as defined in the “Managing ancient and native woodland in England – Forestry Commission Practice Guide”), and use appropriate management approaches (e.g. allowing hedgerows to grow tall and wide, rotational winter cutting, and applying traditional techniques such as hedge laying and pollarding).



# Lowland Wetland

Habitat typologies

## Habitat description

Lowland wetlands are characterised by high water levels and waterlogged soils rich in organic matter. They may be permanently wet or only seasonally flooded. Wetland habitats include marshes, wet grasslands, fens and bogs. Lowland wetland habitats are typified by the Somerset Levels and Moors. Peat is often a key underlying feature of the wetlands found in Somerset which has formed over thousands of years and supports a range of unique and rare plants and insects.

Lowland wetlands play a vital role in storing carbon, with the Somerset Levels and Moors alone storing approximately 11 million tonnes of carbon. They are also important tools in flood alleviation and maintaining water quality as they slow and filter water as it moves through the landscape.

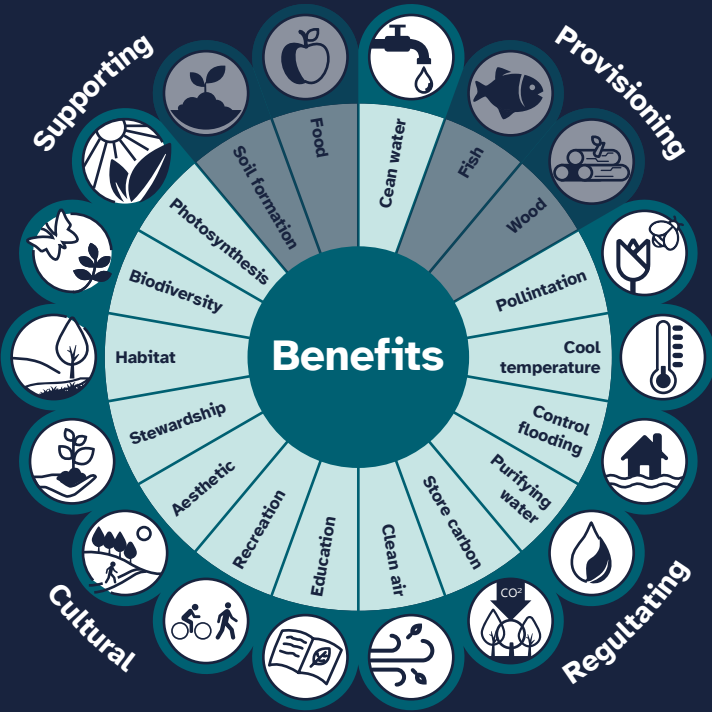
Many of the wetlands in Somerset are rich in biodiversity, supporting rare species for which they are internationally and nationally protected.

## Pressures on habitat

Lowland wetlands are vulnerable to rapid degradation. Over 80% of the UK’s wetlands and peatlands are damaged and degraded. The key pressures in Somerset are:

- **Direct draining of peatlands and wetlands** causes peat and wetland soils to dry out and degrade. Large areas of lowland fen and lowland raised bog have been subjected to land drainage and now only small fragments remain. When peat is drained and dried it causes the land to shrink, the lowering of field levels and an increase in flooding, resulting in greenhouse gas emissions.

- **Peat extraction for horticulture** is ongoing within the Somerset Levels and Moors, causing direct loss of peat. Data is incomplete on the volume of peat already lost and future extraction.
- **Development and land use changes** in or near wetlands can lead to habitat fragmentation, pollution and altered water flow in wetland areas.
- **Some of the farming practices undertaken on peatlands and wetlands** such as ploughing, tilling, intensive grazing, inappropriate cropping (e.g. maize) and fertiliser application can all cause degradation.
- **Climate change** can exacerbate drying of peaty soils. Wetlands are especially vulnerable to the impacts of climate change, with drought and flooding causing negative impacts. The artificial engineering that defines much of this landscape has removed much of its resilience to cope with such pressures.
- **Pollution** from sewage works and storm overflows, as well as run-off from agricultural land, development and roads, causes degradation of wetlands and loss of biodiversity.





# Lowland Wetland

Habitat typologies



**Find out more:**  
Click on the map to visit the interactive mapping portal to view where the measures (practical actions) for achieving the priority outcomes would be best located to make the most difference to nature.

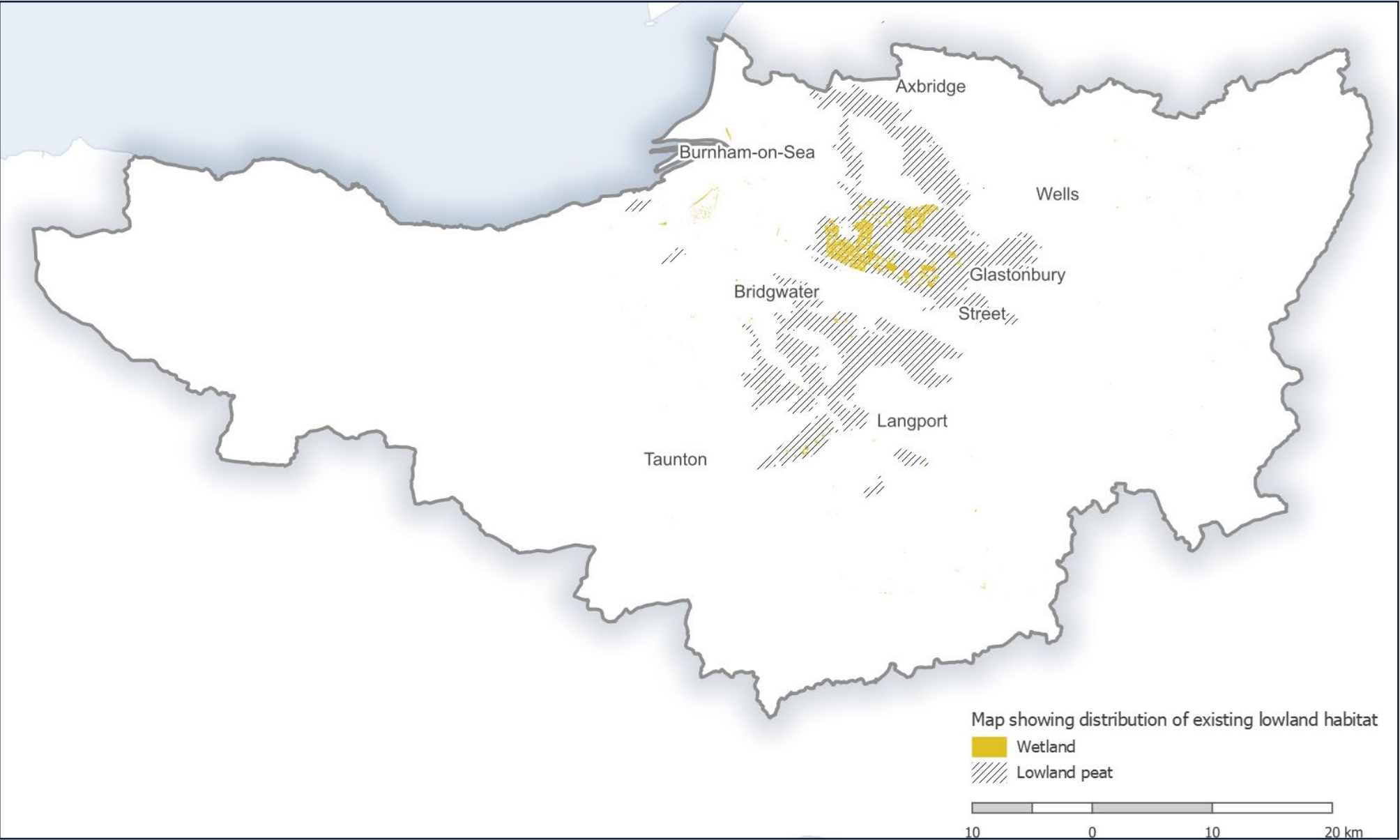
## Key - Lawton’s principles

More

Bigger

Better

Joined-up

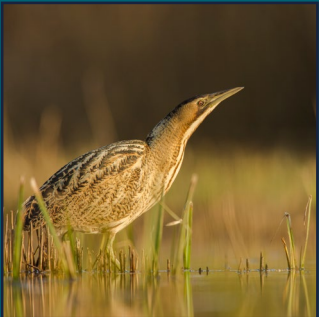


## Priority outcomes

- There are more, bigger, better and more joined-up wetland habitats, including wet woodland, reedbeds and swamps, fens, wet meadows and raised bogs.
- Wetlands are species diverse, supporting a full range of plants and animals associated with these habitats, and can adapt to climate change, store carbon, reduce flood risk and improve water quality.
- Wetlands provide vital connectivity for wildlife at river catchment scale, particularly between core protected nature sites, either through physical corridors, or through ‘stepping stones’ of high-quality wetland habitat.
- The catchments are managed to ensure that water supply to wetlands, including sensitive peatlands and their peat formation, is of sufficient quality and quantity to support an increase of current extent and improve habitat and species diversity.
- Land use of wetlands, including peatlands, is compatible with nature recovery and climate adaptation, and peat extraction has ceased and peat voids are restored to nature-rich habitats.

## Supported species

Outcomes for wetland habitats will help support these important species:



Bittern



European eel



Variable Damselfly



Lesser silver diving beetle



# Lowland Wetland

Habitat typologies



## The vision

Lowland wetlands are protected, restored and re-wetted to re-establish and expand this iconic lowland landscape. Dynamic, healthy and interconnected wetland habitats have been created that stores more carbon, with peat extraction ended, and provides a haven for wetland birds, and unique and diverse plant and insect communities.

## Measures

The following measures are actions that will help to deliver outcomes to extend and improve existing wetland and peatland habitat, create and restore new wetland habitat and to connect wetland habitats.

## Key - Lawton’s principles

More

Bigger

Better

Joined-up

### We1 Restore and manage wetlands, incorporating a mosaic of wetland features to benefit a wide variety of fauna and flora

We1.1 Maintain and protect existing areas of wetlands and secure their appropriate long-term management (e.g. eliminate fertiliser run-off, draining or diverting/abstracting water from wetlands, ground compaction, and implement ecologically-sensitive grazing and cutting regimes)

We1.2 Restore and manage wetland habitats to improve their value to wildlife, whilst also enhancing their capacity to store carbon and flood management function, using techniques such as low input hay cuts and extensive (low-intensity) grazing, sensitive watercourse maintenance, management of high water levels, and minimising the requirement for infrastructure (barriers) and pumping

We1.3 Enhance wetland habitat diversity to include a mosaic of conditions (e.g. seasonally wet areas and muddy pools, deeper and permanently wet ponds and ditches, and reedbeds and swamp), which benefit the needs and recovery of priority species.

We1.4 Increase and promote biodiversity-focused Natural Flood Management schemes, that support landscapes that are more resilient to winter flooding and summer drought, slowing the flow and re-wetting areas which both restore historic and create new wetlands, creating natural water storage to prevent flooding.

We1.5 Undertake phosphate and nutrient reduction upstream of wetlands, across different sources and users, from sewage networks to agricultural practises, including using complimentary mitigation at strategic locations (e.g. the creation of artificial wetlands to filter water upstream of lowland wetlands).

We1.6 Consider wetter farming (paludiculture) on peaty soils where full peatland habitat restoration is not available, particularly buffering existing peatland habitat.

We1.7 Reduce extent of, and where appropriate eradicate, invasive and undesirable species such as invasive aquatic plants and undesirable scrub encroachment in wetland habitats.

### We2 Create wetland habitats which contain a matrix of various habitat types which are suitable for the site (e.g. wet grassland, ponds, ditches, hedgerows, trees, or wet woodland)

We2.1 Reduce the fragmentation of wetlands through the restoration and creation of new wetlands, where ecologically and hydrologically appropriate, creating landscape-scale networks of wetland mosaics, which provide optimal conditions for important species and assemblages, and provide other ecosystem services.

### We3 Expand and manage Fen, lowland grazing marsh and lowland bog

We3.1 Expand areas of fen, lowland grazing marsh and lowland bog, grazed by appropriate stock levels and type of cattle, by linking isolated sites to facilitate functioning floodplains which are favourable for wildlife interests.

We3.2 Manage existing fen and bog sites to reduce encroachment, including through scrub management and appropriate grazing.

We3.3 Create and maintain wide buffers around existing fen and bog sites to safeguard them from diffuse pollution.

### We4 Protect and manage habitats on Peat

We4.1 Eliminate peat extraction, supporting landowners/ managers to access funding opportunities for alternative landuse practices, and explore innovative techniques to restore peat voids.

We4.2 Use adaptive water level management plans or peat restoration techniques to prevent loss of peat through erosion and oxidation, benefiting wetland biodiversity and carbon storage.

### We5 Work together and share knowledge

We5.1 Promote and increase community co-creation and restoration of wetlands, and promote the uptake of public and private payment schemes for ecosystem services.

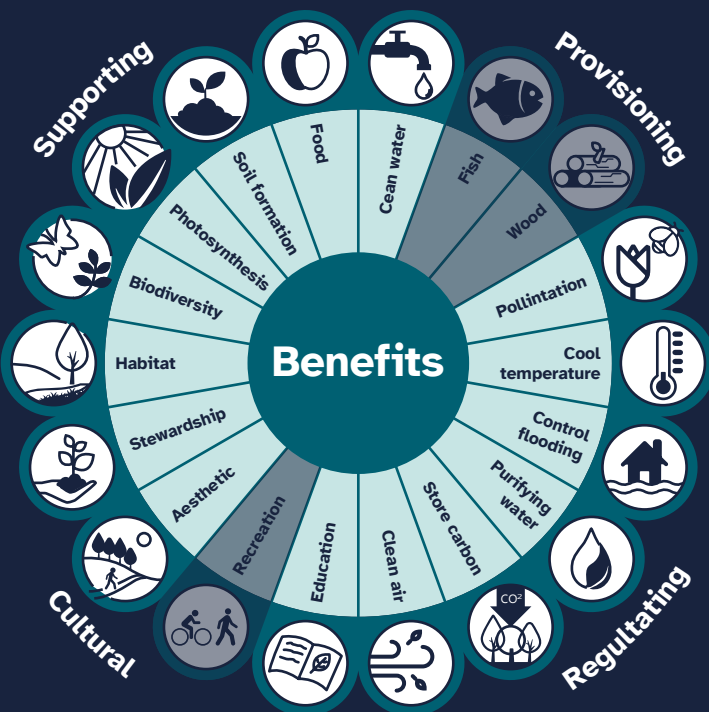


## Habitat typologies

Somerset is predominantly shaped by farming, with around 75% of land in agricultural use, and farming is critical to the county's culture, economy and rural heritage. A high proportion of this farmland is grassland pasture and the dominant farm type is dairy and grazed livestock. Approx. 640km<sup>2</sup> is arable land used for growing cereals and general cropping, and horticulture and orchards account for approx. 1.5% of arable land in the county.

Farmland is home to habitats important to many species, and its productivity is reliant on nature for many things, including pollination of crops, healthy soils and availability of clean water. Additional habitats (e.g. hedgerows, freshwater and wetlands) described in this LNRS are present throughout the farmed landscape. This co-existence makes the farmed landscape essential to nature recovery.

When managed sensitively and integrated into farming practices with the right incentives, advice and support, productive farmland can support a wide range of wildlife, help to combat habitat fragmentation and improve soil health.



Agriculture uses land to produce commodities (food, materials, etc.). When land is used unsustainably, farming can have a negative impact on habitats, wildlife and can even jeopardise ongoing farming. Some of the potential pressures on the condition of the farmed landscape and the habitats this encompasses include:

- **Intensive farming practices**, such as use of pesticides and fertilisers, negatively impact soil biodiversity and health, as well as invertebrates, including pollinators, and can also impact freshwater wildlife as the chemicals run-off into our waterways

- **Soil erosion** due to a variety of factors including stock pressures, regular soil tillage and ploughing, lack of ground cover and use of unsuitable land types for agricultural practices.
- **Loss of traditional field margins, small copses, isolated hedgerow trees** limits habitats and wildlife corridors that allow species to traverse agricultural land.
- **Removal and/or poor management of hedgerows** removes vital habitat for many species and increases disease introduction.
- **Regular grass cutting** for haylage and silage reduces the diversity of grasslands, and decreases the habitat of ground nesting birds such as skylark or lapwing.
- **Monocropping** and other modern farming practices such as increased specialisation diminishes plant diversity, and can make crops more vulnerable to pests and diseases. It also contributes to habitat loss and fragmentation and loss of habitat complexity.
- **Climate change** causing an increase in frequency and extremity of weather events that will significantly impact the farming community and biodiversity on farms.





# Farmland

Habitat typologies



**Find out more:**  
Click on the map to visit the interactive mapping portal to view where the measures (practical actions) for achieving the priority outcomes would be best located to make the most difference to nature.

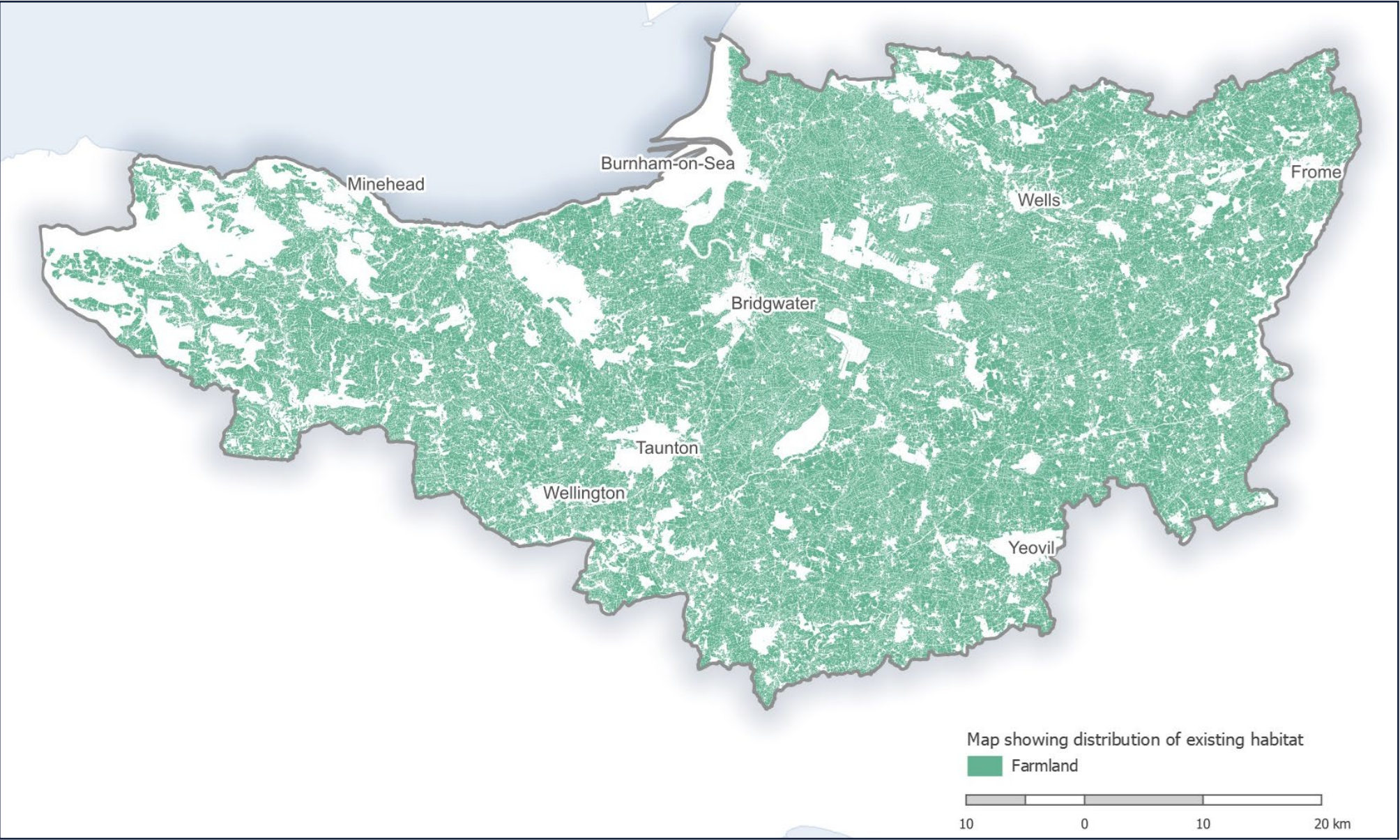
## Key - Lawton’s principles

More

Bigger

Better

Joined-up



## Priority outcomes

- There is greater diversity, extent and abundance of wildlife habitats and their associated species, across farmed landscapes.
- Somerset has healthier soils. As a result, soil biodiversity, soil organic matter and water carrying capacity has increased.
- The farmed landscape actively contributes to the recovery of our rivers and wetland habitats.
- Farmers collaborate to increase knowledge and deliver nature recovery and habitat connectivity on a landscape-scale.

## Supported species

Outcomes for farmland habitats will help support these important species:



Yellowhammer      Brown hairstreak      Brown hare      Harvest mouse



# Farmland

Habitat typologies



Key - Lawton’s principles

More

Bigger

Better

Joined-up

The vision

Farmland thrives from intertwining agriculture with space for nature. Nature-based Solutions and regenerative agriculture improves soil health, enhances water storage and reduces run-off, soil erosion and flooding. This approach fosters a sustainable, symbiotic relationship with nature, supporting productivity and nature in abundance.

Measures

The following measures are actions that will help to deliver outcomes to extend and improve habitats for nature within existing farmland, create and restore new nature-friendly habitats that connect to surrounding wildlife landscapes.

Fa1 Undertake regenerative practices that maintains or improves soil health, biodiversity, water quality and reduces flood risk

Fa1.1 Apply regenerative principles of land management including limiting soil disturbance; maintaining soil cover; fostering agricultural diversity and rotations; keeping living roots in the soil; integrating livestock and arable systems

Fa1.2 Increase the extent of environmentally sensitive agricultural practices that provide additional wildlife resources (e.g. introduce flowering herb-rich leys within rotations for invertebrate nectar sources, leave over-winter stubble for wintering farm birds)

Fa1.3 Increase the use of mixed farming and the diversity in crops, livestock and wildlife. For example, having a mix of grazing livestock and crops, improving crop rotations and increasing structural and species diversity of plants, trees and hedgerows on farm

Fa1.4 Livestock to be managed through regenerative grazing and husbandry practices such as maintaining permanent pasture, herbal leys, riverside buffer strips, tree establishment and mob grazing where appropriate.

Fa1.6 Adopt sensitive / regenerative arable land

management practices such as cover crops aiming for 60-100% soil cover, rotations and integrating livestock for diversity. This can improve soil health and improve soil biodiversity for species such as earthworms. Management practices should be dependent on local conditions and species. No till or low till can help improve soil health and structure

Fa1.7 Improve the management of farm soils through a range of management approaches. For example, reduce soil compaction and disturbance (e.g. ploughing and tilling) and increase soil cover in winter (e.g. stubbles and cover crops).

Fa1.8 Reduce agricultural run-off that impacts wildlife habitats through a range of measures (e.g. improved slurry and silage storage and management, cover crops, arable field margins, plant trees and hedgerows and riparian buffers).

Fa1.9 Reduce use of pesticides to increase biodiversity (including within soils and waterways) through management and biological control approaches (e.g. appropriately designed arable field margins to enhance natural pest control).

Fa1.10 Reduce use of artificial fertilisers and reduce nutrient levels within the soil to lower runoff into waterways by using appropriate management approaches (e.g. use natural organic matter to feed soils, catch crop planting and leave areas unfertilised such as arable field margins).

Fa2 Create and improve wildlife-rich habitat that supports biodiversity, helping species to spread through fields, edges, and corridors

Fa2.1 Increase habitat complexity on farmland, with mosaic habitats, and strategically considered field margins and hedgerows, providing connectivity across the landscape. Utilise: wider, higher, bigger hedges; smaller fields, with grass margin buffers; more scrub, cover crops, arable wildflowers; more trees in hedgerows and worked fields; and ponds.

Fa2.2 Create and manage graded margins up to hedgerows to support birds and other farmland species.

Fa2.3 Create wildflower arable field margins to help with pest control, pollination, nesting areas for birds, soil health and water management

Fa2.4 Maximise the diversity of field margins to provide a range of habitats within margins. Aim to vary management of margins to increase diversity. For example, annual cutting of the strip nearest the crop but with less frequent cutting nearer the field boundary. Variety could also be introduced by managing blocks, strips or whole margins at different intervals.

Fa3 Introduce trees and hedges within productive farmland

Fa3.1 Create, restore and manage wooded habitats (e.g. woodlands, orchards, hedgerows and trees) to increase biodiversity and wildlife corridors within and between farms and surrounding landscape.

Fa3.2 Maintain or introduce in-field trees or agroforestry systems on farms, this involves growing trees, hedges and shelterbelts on farmland alongside crops and grazing livestock. For example, silvopasture or silvoarable. . Introducing trees within productive farmland can provide food, shade and shelter for livestock and diversify income sources.

Fa3.3 Enhance, create and manage hedgerows as important wildlife corridors between farmland and other habitats, including a diversity of hedgerow trees. Incorporate hedgerows into livestock management practices.

Fa4 Work together and share knowledge

Fa4.1 Continue and grow Somerset’s strong history of partnership working. For example, farm clusters, catchment-based approach, and landscape recovery projects. Use this strategy as a tool to help target collaborative efforts, working together across sectors by sharing knowledge and pooling resources, and exploring opportunities for future finance and markets

Fa4.2 Use existing and new clusters, and other means, to connect farmers with those already employing nature friendly farming.

Fa4.3 Provide effective advice and signposting to funding for land managers to enable them to adopt wildlife-friendly land management practices.



# Cross-cutting Measures

There are some measures that are cross-cutting across different habitat types. Because they are applicable universally across the county, these are not mappable. They are nevertheless important actions that, if taken, will greatly improve the chance of the LNRS priorities being achieved, and will generally benefit species and habitats across the board.

## Priority Outcome: Monitor, control and eradicate Invasive Non-Native Species and Pest Management

Invasive non-native species and pests pose a significant threat to native biodiversity by outcompeting native species, altering habitats, and spreading disease. Sustainable pest management is essential to maintaining balanced ecosystems and preventing adverse impacts on biodiversity and food production.



Himalayan balsam

### Key - Lawton's principles

More

Bigger

Better

Joined-up

#### INV1 Implement coordinated efforts to monitor, control, and eradicate invasive non-native species to protect native biodiversity and restore ecological balance

- INV1.1 Establish a comprehensive monitoring program to identify the presence of invasive non-native species (INNS) early, particularly in sensitive habitats such as wetlands, woodlands, and along waterways.
- INV1.2 Form rapid response teams that can act quickly to control new infestations before they become widespread.
- INV1.3 Focus on eradicating the most harmful invasive species first, which have the greatest negative impact on native biodiversity.
- INV1.4 Follow best practice guides to choose the correct methods to manage invasive species, ensuring that the methods used are safe for the environment and non-target species.
- INV1.5 After removal of invasive species, promptly revegetate the area with native plants to prevent re-invasion and restore the ecological balance.
- INV1.6 Improve habitat conditions that favour native species over invasive ones, such as enhancing soil health, water management, and light conditions.
- INV1.7 Implement long-term monitoring and management plans to ensure that eradication efforts are sustained and that areas cleared of invasive species do not become reinfested.

## Priority Outcome: More people are informed on nature recovery in Somerset and are actively doing something to make space for nature.

Nature recovery needs to be at the heart of every community, with collective action bringing the biggest gains. More people knowing, loving, appreciating and doing something for nature will lead to more nature positive behaviours. Each person, business, organisation, landowner, farmer, school, group is part of the solution to make nature more abundant, connected and resilient in Somerset.

#### COM1 Individual and community action

- COM1.1 Encourage involvement in local conservation projects and initiatives identified in the nature recovery strategy, such as habitat restoration, tree planting, wildlife monitoring and invasive species control, through volunteering, citizen science programmes or community-led conservation groups.
- COM1.2 Help set up or join an existing local community nature recovery group, friends of or voluntary group working to manage local greenspaces for the benefit of both wildlife and people. These groups represent a massive pool of support on the ground for the delivery of the LNRS potential measures.
- COM1.3 Promote community learning, knowledge sharing and implementation of measures that support nature recovery to foster a sense of ownership (e.g. community-led nature focused initiatives, learning in schools, and involvement in the design and management of nature spaces).
- COM1.4 Encourage nature friendly gardening, with advice, support and awards used to encourage action. Share information on what people can do to help wildlife at home.
- COM1.5 Raise awareness of ways people can enjoy nature, while minimising pressures this can put on wildlife
- COM1.6 Maintain and increase green social prescribing, supporting people to take part in nature-based activities that can help improve health and wellbeing and foster nature connectedness
- COM1.7 Raise awareness of new funding for nature recovery activities and increase support to access funding where needed, for example, farm advisors, community fund finder
- COM1.8 Support local farmers, landowners and land managers in their asks to government regarding support for sustainable farming or forestry practices



# LNRS Targeted Species and Species Assemblages

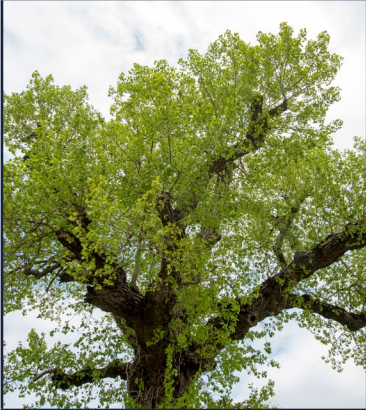
Species abundance and diversity are crucial indicators of the health of the natural environment. The habitat outcomes and measures described above will benefit many species in Somerset. It will also help contribute to the national species extinction risk targets (as outlined in Appendix 4). However, **some key species will require more targeted actions to improve their chances of survival, beyond those provided in the habitat measures.**

The measures outlined below provide specific actions to aid in the recovery and enhancement of the LNRS Priority Species Shortlist. These actions will help to deliver an increase in the geographical distribution and abundance of the LNRS Target Species and Species Assemblages,.

Appendix 5 outlines the approach followed to create this target list.

| Plants                                                                             |                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                      |                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Species / species assemblages                                                      |                                                                                                                             | Species / assemblage overview                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Habitat measures with direct support | Additional targeted measures                                                                                                                                                                                                                                                                                                                                                                            |
|   | <b>S1 - Cheddar Pink</b><br>Dianthus gratianopolitanu                                                                       | Limestone grassland plant.<br>Calcareous south-facing dry grassland with exposed rock / cliff faces.<br><br>Declines due to overcollection, scrub and bracken encroachment as well as due to its restricted range within the UK                                                                                                                                                                                                                                                                                                                                              | G1, G2                               | <b>S1a:</b> Increase the abundance and distribution of Cheddar pink through translocation and re-introduction programmes to suitable receptor sites.<br><br><b>S1b:</b> Carefully manage areas of Cheddar pink by controlling scrub encroachment through targeted scrub control, by maintaining a balanced grazing regime to avoid both over and undergrazing, and by reducing pressure from trampling. |
|  | <b>S2 - Bare ground plant species assemblage</b><br>Upright chickweed (Moenchia erecta) and chaffweed (Centunculus minimus) | Many habitat measures will target reduced grazing and increased species richness, but these rare plants need areas of low competition and open ground in order to survive.<br><br>Upright chickweed is found in specific habitats like dry heath-grassland and sandy habitats such as sandy grassland and dunes.<br><br>Chaffweed thrives in open, damp, and often disturbed habitats with bare or lightly disturbed soil. It grows in areas with low-growing vegetation, including grasslands and coastal habitats, where it can tolerate some disturbance and competition. | C1, C3, MH1                          | <b>S2a:</b> Manage suitable sandy habitats (e.g. cliff-tops, dunes, heathland tracks) to create areas of low competition and open ground, ideally through natural processes (e.g. large herbivore grazing and human disturbance), encouraging dynamic systems to create stepping stones for dispersal.                                                                                                  |
|  | <b>S3 - Wall bedstraw</b><br>Galium parisiense                                                                              | Thrives in dry, open habitats like old walls, pavements, and sand dunes. Intolerant of competition, susceptible to nutrient-enrichment, agricultural improvement and ancient walls being either restored or completely demolished.                                                                                                                                                                                                                                                                                                                                           | Fa1, G1, U2                          | <b>S3a:</b> Identify, map, monitor and protect locations of suitable habitat for wall bedstraw and maintain for their growth. S3b: Retain stone walls across their distribution (e.g. cemeteries, footpaths and lanes) and manage to allow growth of plants.                                                                                                                                            |



| Trees                                                                              |                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| Species / species assemblages                                                      |                                                                                                                                                                                                                                                                                                   | Species / assemblage overview                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Habitat measures with direct support | Additional targeted measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|    | <b>S4 - Endemic whitebeams</b><br><br>Cheddar whitebeam ( <i>Sorbus cheddarensis</i> ), Gough's Rock whitebeam ( <i>Sorbus rupicoloides</i> ), Twin Cliff's whitebeam ( <i>Sorbus eminentoides</i> ), Bloody whitebeam ( <i>Sorbus vexans</i> ) and Devon whitebeam ( <i>Sorbus devoniensis</i> ) | <p>Endemic whitebeams in Somerset are rare primarily due to their very limited geographical range and specific habitat requirements. Many of these species are found nowhere else in the world and are restricted to small, localized areas. Habitat loss and the potential for genetic contamination from introduced whitebeams also pose threats.</p> <p>A number of woodland measures can have a positive impact although not specific to the location and niche of these species.</p> | <b>Wo1, Wo3, Wo7, Wo8, Wo9, C1</b>   | <p><b>S4a:</b> Identify, map and monitor locations of these species.</p> <p><b>S4b:</b> Appropriately manage the sites containing these species, including reduced pressure from recreation and grazing goats.</p> <p><b>S4c:</b> Increase the abundance and distribution of the endemic whitebeams through seed collection, propagation and habitat improvements.</p> <p><b>S4d:</b> Control scrub encroachment, in particular invasive non-native species, such as rhododendron and cotoneaster, to prevent them out-competing whitebeam species.</p> |
|  | <b>S5 - Black poplar</b><br><br><i>Populus nigra</i> subsp. <i>betulifolia</i>                                                                                                                                                                                                                    | <p>Black poplars, a native and once widespread tree species in the UK, are now rare, especially in Somerset. They are most commonly found in floodplains and near ditches.</p> <p>Pressures include loss of suitable habitat through canalisation of rivers, ditch maintenance regimes, drainage of floodplain woodlands and wet meadows.</p> <p>Displacement by faster-growing hybrids / non-native black poplars is also a major factor in decline.</p>                                 | <b>Wo1, Wo5, Wo7</b>                 | <p><b>S5a:</b> Identify, map, and monitor and protect locations of native black poplar.</p> <p><b>S5b:</b> Increase the number of female black poplar trees in close proximity to male individuals through tree planting, ensuring genetic diversity is increased and avoiding hybrids.</p> <p><b>S5c:</b> Remove hybrid or non-native poplars, especially in areas near known female black poplars, to reduce cross-pollination and maintain genetic purity.</p>                                                                                       |



Reptiles and Amphibians

| Species / species assemblages                                                    |                                                                                                                                                                                      | Species / assemblage overview                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Habitat measures with direct support | Additional targeted measures                                                                                                                                                                                                                      |
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|  | <b>S6 - Herpetofauna hibernacula assemblage</b><br><br>Adder ( <i>Vipera berus</i> ), Common lizard ( <i>Zootoca vivipara</i> ) and Great crested newt ( <i>Triturus cristatus</i> ) | <p>Adders favour habitats like heathland, open woodland, and moorland. They need areas for basking, like gorse and bracken, and places to hibernate, such as burrows or dry stone walls.</p> <p>Common Lizard - Sunny and open areas for basking, in a variety of habitats, with nearby cover</p> <p>Great crested newts need large, deep ponds with good water quality and vegetation for laying eggs. They also require surrounding terrestrial habitat for foraging and shelter.</p> <p>These species are experiencing a decline in numbers and are facing threats from habitat loss and fragmentation, including the loss and degradation of pond habitats for the GKN.</p> | <b>MH1</b>                           | <b>S6a:</b> Create and appropriately maintain hibernation sites for reptiles and amphibians in lowland and upland habitats (e.g. adders, common lizards and great crested newts), which can include log piles, large stones and organic material. |

Mammal

| Species / species assemblages                                                      |                                                         | Species / assemblage overview                                                                                                                                                                                                                                                                                                 | Habitat measures with direct support | Additional targeted measures                                  |
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|  | <b>S7 - Water vole</b><br><br><i>Arvicola amphibius</i> | <p>Need well-vegetated, slow-flowing or static water bodies with plenty of food plants and suitable burrowing habitat. They favour banks with good vegetation cover, offering both food and protection from predators</p> <p>The water vole is under serious threat from habitat loss and predation by the American mink.</p> | <b>FW1, We1</b>                      | <b>S7a:</b> Coordinated American mink removal and monitoring. |





| Invertebrates                                                                      |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| Species / species assemblages                                                      |                                                                                                                                                                                                                                      | Species / assemblage overview                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Habitat measures with direct support | Additional targeted measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|    | <b>S8 - Hairy click beetle</b><br><br>Synaptus filiformis                                                                                                                                                                            | <p>Current habitat use - On the banks of the River Parrett in tidal reeds in areas that are only marginally saline. Associated with shallow sloping tidal terraces, where dense stands of reed canary-grass are subject to flooding on the highest tides. Extinction of this species from the UK is a very real risk, 4 known populations in the UK, particularly if the Parrett stronghold is compromised.</p> <p>Low motility of the HCB and lack of drivers to move from existing adequate habitat upon emergence.</p>                                                                                                             | <b>FW1, FW4</b>                      | <p><b>S8a:</b> Identify partners to complete captive breeding trials of hairy click beetle.</p> <p><b>S8b:</b> Increase abundance and distribution of hairy click beetle through translocation and re-introduction programmes to suitable receptor sites, and manage and monitor these areas appropriately (e.g. limiting access of grazing animals and avoid sensitive periods during bankside management and dredging).</p>                                                                                                   |
|   | <b>S9 - Shrill carder bee</b><br><br><b>Bombus sylvarum</b>                                                                                                                                                                          | <p>A rare and endangered bumblebee species, is found in a few key areas in the UK, including Somerset. Found in wet grazing marshes and other areas with abundant flowers and undisturbed nesting sites. Shrill carder bees face threats from habitat loss and fragmentation. The Somerset population is considered at risk of further decline and local extinction.</p>                                                                                                                                                                                                                                                              | <b>C3, G1, G2, G3, Wo9</b>           | <p><b>S9a:</b> Create, restore and protect flower-rich meadows allowing a diverse range of late flowering forage species for the shrill carder bee to be present through appropriate management, aiming to link suitable sites.</p> <p><b>S9b:</b> Manage the banks and margins of ditches, rhynes and hedgerows to allow for late-flowering forage species, and the development of tussocky grasslands for nesting sites (e.g. leaving areas undisturbed and uncut from April to October, and cut on a 3-5 year rotation).</p> |
|  | <b>S10 - Short grassland species assemblage</b><br><br>3 Rare spiders: Cozyptila blackwalli (a crab spider), Typhochrestus simoni (a money spider) and Walckenaeria monoceros (a dwarf spider); Roman chamomile (Chamaemelum nobile) | <p>C. blackwalli on short grass and understones on coastal cliffs. Recorded from Brean Down (also on Steep Holm)</p> <p>T. simoni recorded from short limestone grassland on Mendip and Poldens.</p> <p>W. monoceros favours short grassland and sand dunes and also thought to be a pioneer of recently burnt heathland.</p> <p>Roman chamomile occurs in short grassy places on sandy soils along coastal cliffs, in grasslands and on commons.</p> <p>Commonly all need Grassland management to ensure areas of short grasslands are maintained and also reduce insecticide use to relieve pressures on them and prey species.</p> | <b>MH1, C1</b>                       | <p><b>S10a:</b> Manage suitable grassland sites to maintain an open stony grassland on cliff tops and under-cliff, control scrub growth and ensure adequate levels of grazing on chalk grassland sites for T. simoni. These measures will also benefit Roman chamomile.</p>                                                                                                                                                                                                                                                     |



| Species / species assemblages                                                      |                                                                                                                                                                                                                     | Species / assemblage overview                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Habitat measures with direct support | Additional targeted measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|    | <b>S11 - Patchy calcareous grassland butterfly mosaic</b><br><br>Large Blue (Maculinea arion), Chalk Hill Blue (Polyommatus coridon), and Adonis Blue (Polyommatus bellargus)                                       | <p>Large Blue requires closely-grazed grassland where foodplants and the host ant Myrmica sabuleti are found in abundance. Typical sites are on south-facing slopes that receive the full benefit of the sun. Larval foodplants: wild thyme/marjoram</p> <p>Distribution of Chalk Hill Blue follows the distribution of Horseshoe Vetch which, in turn, follows the distribution of chalk and limestone grassland</p> <p>Adonis Blue occurs on dry chalk or limestone grassland with abundant Horseshoe Vetch growing on short turf, but slightly taller vegetation may be used in sheltered quarries. Most colonies occur on warm, south-facing slopes.</p> | <b>G1, G2, G3</b>                    | <p><b>S11a:</b> Appropriately manage areas of calcareous grassland that allow patchy sward length mosaic, including bare ground, to develop that creates ideal conditions for the target species and their host species (e.g. red ant – Myrmica sabuleti, black ant – Lasius niger, thyme, marjoram, horseshoe vetch) including, variable grazing regimes, stocking densities and timings and sensitive scrub and bracken management</p> <p><b>S11b:</b> Increase the abundance of the larval food plants of the target species through seeding, plug planting and appropriate management.</p>                                                                                                                                                                                                                                                                         |
|   | <b>S12 - Bracken woodland edge mosaic</b><br><br>Fritillaries: High Brown (Argynnis adippe), Pearl-bordered (Boloria euphrosyne), Small Pearl-bordered (Boloria selene) and Dark Green fritillary (Speyeria aglaja) | <p>Found in a well connected network of violet-rich bracken dominated moorland slopes, especially moorland/woodland edge habitats.</p> <p>Pressures include lack of appropriate grazing/management, scrub encroachment, lack of connectivity, reduction in extent of suitable habitat. Abandonment and under-grazing quickly leads to total domination by Bracken and loss of the associated flora on which Fritillaries and other insects depend. Overgrazing causes an increase in grass cover; which is particularly detrimental to the High Brown Fritillary.</p>                                                                                        | <b>MH1, MH5, Wo1, Wo7, Wo8</b>       | <p><b>S12a:</b> Create, protect and manage a well connected network of violet-rich bracken edges on moorland slopes and moorland-woodland edge habitats with appropriate bracken litter depth to create a warm micro-climate for rapid larval development.</p> <p><b>S12b:</b> Appropriately manage areas of suitable habitat to create edge habitat and ensure bracken does not get too dense or tall (e.g. grazing with cattle or ponies, periodic cutting of bracken, bracken bruising and raking).</p> <p><b>S12c:</b> Promote collaboration between landowners and conservation groups to create networks to aid dispersal, specific identification and consideration of suitable sites, targeted management, and consideration of translocation and re introduction programmes where suitable habitat present but limited potential of natural colonisation.</p> |
|  | <b>S13 - Wet grassland invertebrate assemblage</b><br><br>Marsh fritillary (Euphydryas aurinia), silver nomad bee (Nomada argentata) and narrow bordered bee hawk-moth (Hemaris tityus)                             | <p>All species require damp grassland (Rhos pasture) and have a similar need for late flowering devil's-bit scabious food plant. Declines are linked to habitat loss due to agricultural improvement, lack of grazing, and scrub encroachment (e.g. gorse and willow)</p>                                                                                                                                                                                                                                                                                                                                                                                    | <b>G2</b>                            | <p><b>S13a:</b> Appropriately manage suitable habitats for the target species (wet grassland, springline mire mosaic and damp moorland grassland) to increase the abundance of larval food plants of the target species (devil's-bit scabious), including extensive cattle and pony grazing at suitable stocking densities, scrub management and preventing</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



| Species / species assemblages                                                    |                                                                 | Species / assemblage overview                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Habitat measures with direct support | Additional targeted measures                                                                                                                                                                                                                                                                                                                               |
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|  | <b>S14 - White clawed crayfish</b><br>Austropotamobius pallipes | <p>The White-clawed crayfish is the only species of crayfish native to the UK and has declined dramatically throughout much of its range since the 1970s, in particular due to introductions of invasive non-native crayfish species and associated pathogens. Habitat degradation, pollution and changes to water quality have also contributed to the species' decline.</p> <p>To date, conservation action for White-clawed crayfish in the South West has focussed on the strategic establishment of safe-haven Ark sites, surveys of wild populations, landowner engagement and the development of a captive breeding programme.</p> | <b>FW1, FW4, FW6</b>                 | <p><b>S14a:</b> Targeted signal crayfish removal and monitoring.</p> <p><b>S14b:</b> Create in-water refuges in locations of known / potential White clawed crayfish populations through placing cobbles, boulders, bricks, breeze blocks or hessian sacks on river banks and margins.</p> <p><b>S14c:</b> Establish safe ark sites for translocation.</p> |

| Birds                                                                              |                                                |                                                                                                                                                                                                                                                                                                                                                                              |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| Species / species assemblages                                                      |                                                | Species / assemblage overview                                                                                                                                                                                                                                                                                                                                                | Habitat measures with direct support | Additional targeted measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|  | <b>S15 - Lapwing</b><br>Vanellus Vanellus      | <p>Lapwings nest on spring-tilled arable land or on short grassland with a low stocking rate. Wet grassland is a particularly important source of food.</p> <p>Declines in the west of the UK are leading to local extinctions. Declined by 55% since 1967 largely caused by the loss of mixed farming, spring cropping and the intensification of grassland management.</p> | <b>Fa1, Fa2, MH1, MH2, MH3, We1</b>  | <p><b>Arable:</b></p> <p><b>S15a:</b> In areas of mixed farming, prioritise the introduction of spring-sown plots ideally close to grazed pasture to provide proximity to feeding habitat. Where not possible, consider the creation of fallow plots.</p> <p><b>S15b:</b> Ensure farming practices do not destroy/remove nests – if operations such as cultivating, muck spreading, or rolling are unavoidable during the nesting period then nest checks should be completed first.</p> <p><b>Grassland:</b></p> <p><b>S15c:</b> Graze heavily from late summer onwards to provide a short sward for nesting the following spring.</p> <p><b>S15d:</b> Avoid stocking at more than one livestock unit per hectare between mid-March and end of June to prevent nest trampling.</p> |
|  | <b>S16 - Nightjar</b><br>Caprimulgus europaeus | <p>Require open habitats such as heathland, moorland, and young conifer plantations for breeding and foraging. These habitats need to be managed to ensure their suitability, as they can become overgrown. Clear-felled areas and open woodland edges with plenty of insects are also important.</p>                                                                        | <b>Wo2, MH1, MH4</b>                 | <p><b>S16a:</b> Identify, map, monitor and protect locations of nightjar.</p> <p><b>S16b:</b> Create, restore and protect a mosaic of heathland, grassland and woodland habitats through sympathetic forestry management practices and promote extensive nature friendly agriculture (e.g. appropriate grazing by cattle, ponies and pigs, felling and re-stocking).</p>                                                                                                                                                                                                                                                                                                                                                                                                            |



| Species / species assemblages                                                      |                                                                                                 | Species / assemblage overview                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Habitat measures with direct support | Additional targeted measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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|    | <b>S17 - Whinchat</b><br>Saxicola rubetra                                                       | <p>Whinchats are a grassland species but have been lost from most lowland areas of Britain and are now largely confined to upland valleys or coombes. Exmoor holds an important population.</p> <p>Whinchat breed in open, lightly grazed habitats and nest on or very near the ground, concealing their nest in grass tussocks, bracken or other vegetation (e.g. bilberry).</p> <p>Require coombes with bracken in a mixed height mosaic with grasses, heather, bilberry and a very low density of trees.</p> | MH1, MH2                             | <p><b>S17a:</b> Maintain Low density of scattered trees where Whinchats occur; proposals for high density tree planting need to be carefully assessed at a landscape scale to avoid negative effects on Whinchat.</p> <p><b>S17b:</b> Light grazing to maintain a dense field layer and mix of vegetation types and heights.</p> <p><b>S17c:</b> Manage bracken to allow dense bracken to form by not cutting or rolling until at least early August to avoid brood destruction and allow for dispersal of fledglings.</p> |
|   | <b>S18 - Grasshopper warbler and reed bunting</b><br>Locustella naevia and Emberiza schoeniclus | <p>Grasshopper warblers favour habitats with dense vegetation like reedbeds, grassland, and scrub, often near water.</p> <p>Reed Warblers primarily inhabit wetland areas, particularly reedbeds, and can also be found along the fringes of rivers and ditches.</p> <p>A decline in these habitats, both in their breeding and wintering ranges, has contributed to their rarity.</p>                                                                                                                          | MH1, MH2                             | <p><b>S18a:</b> Protect and manage mires and marshy grasslands to maintain ground wetness throughout the breeding season and thick areas of Juncus are protected and promoted.</p>                                                                                                                                                                                                                                                                                                                                         |
|  | <b>S19 - Lesser redpoll</b><br>Acanthis cabaret                                                 | <p>Moorland edge - tall dense scrub including gorse, mixed woodland, birch scrub and wet woodland.</p> <p>Species numbers are in decline, due to loss of habitat, in particular hedgerows and a lack of young woodland, and changes of land use</p>                                                                                                                                                                                                                                                             | MH1, MH2                             | <p><b>S19a:</b> Manage gorse, birch scrub, wet woodland and mixed woodland to allow tall, dense structure to provide good nesting habitat</p>                                                                                                                                                                                                                                                                                                                                                                              |
|  | <b>S20 - Tree pipit</b><br>Anthus trivialis                                                     | <p>Favour open, wooded areas with a mosaic of habitats, including glades, clearings, and heathland, often near scattered trees. They require a sparse field and shrub layer, with light to moderate grazing and low-growing scrub.</p> <p>It is thought that changes in forest structure are playing a role in their decline, though as long-distance migrants, issues on their migration route and their wintering grounds could also play their part.</p>                                                     | MH1, MH2                             | <p><b>S20a:</b> Maintain and increase broad woodland edges as well as scattered trees and shrubs in open habitat to create edge habitat.</p>                                                                                                                                                                                                                                                                                                                                                                               |



| Species / species assemblages                                                    |                                        | Species / assemblage overview                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Habitat measures with direct support | Additional targeted measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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|  | <b>S21 – Cuckoo</b><br>Cuculus canorus | <p>The cuckoo’s habitat needs are quite general, but they thrive in areas with a mix of open and semi-open landscapes, including farmland with hedges, woodlands, heathland, scrub, moorland, and marshes.</p> <p>Cuckoo populations have declined in Somerset, as in many other parts of the UK, primarily due to a combination of factors affecting their breeding and migration. These include habitat loss and degradation, and declines in host species, like meadow pipits and reed warblers.</p> | <b>MH1, MH2</b>                      | <p><b>S17a:</b> Maintain Low density of scattered trees where Whinchats occur; proposals for high density tree planting need to be carefully assessed at a landscape scale to avoid negative effects on Whinchat.</p> <p><b>S17b:</b> Light grazing to maintain a dense field layer and mix of vegetation types and heights.</p> <p><b>S17c:</b> Manage bracken to allow dense bracken to form by not cutting or rolling until at least early August to avoid brood destruction and allow for dispersal of fledglings.</p> |

| Mixed taxa assemblage                                                              |                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Species / species assemblages                                                      |                                                                                                                                                                                                                                                             | Species / assemblage overview                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Habitat measures with direct support | Additional targeted measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|  | <p><b>S22 – Woodland edge and calcareous grassland patchy mosaic species assemblage</b></p> <p>Duke of Burgundy (Hamearis Lucina), Fly Orchid (Ophrys insectifera), Lesser Butterfly orchid (Platanthera bifolia) and Frog orchid (Coeloglossum viride)</p> | <p>The combining factor is the need for the right conditions and attributes in the grassland, but with the close proximity of woodland edge.</p> <p>The Duke of Burgundy butterfly thrives in specific habitats characterized by chalk or limestone grasslands with some slopes or scrub, and sunny woodland clearings or rides.</p> <p>Fly orchids and Frog orchids thrive in open, sunny habitats with free-draining chalk and limestone soils.</p> <p>The Lesser Butterfly orchid thrives in a variety of open, damp habitats.</p> | <p><b>G2, Wo6, Wo8</b></p>           | <p><b>S22a:</b> Manage woodland edge habitats to create a mosaic of micro-habitats, including clearings and rides, and manage and graze grasslands appropriately depending on target species present to maintain open grassland.</p> <p><b>S22b:</b> At known sites for the target orchid species, identify and monitor locations of orchids and protect during flowering. Use appropriate management that creates suitable habitat for dispersal. Consideration should be given to seeding and/or plug planting.</p> |



# Working Together

**Everyone has their part to play in helping nature to recover and reverse the loss of biodiversity.**

In this chapter, you'll discover ways to help nature recovery in Somerset. It includes guidance tailored for various users on effectively implementing the strategy, along with case studies that showcase inspiring stories of nature recovery in action.





# Farmers, Foresters, Landowners and Managers

## How to use this strategy

Farmers, foresters and landowners are the stewards for over 75% of our land area and will be vital to help achieve ambitions for more nature and for areas to be bigger, better and more joined up. You know your land better than anyone and your stewardship and involvement is essential to a successful LNRS. We therefore encourage you to be informed by the strategy and use it with your knowledge of the land to inform decision-making where appropriate.

The Opportunity Area maps are there to support land managers and farmers in their decision making. The maps are based on best available published evidence but should be ground truthed and considered alongside local knowledge. Effective management planning is still needed to decide the best options and this should be informed by local knowledge. Farmers and land managers can consider different options for nature recovery and make decisions that best suit their land, budget and farming practices. No strategy can replace the intimate knowledge we know farmers and foresters have of their land. The strategy is high-level and intended to support decision making, not to prescribe.

Farmers recognise the benefits of sustainable farming that works with nature and good soil health. Many have been involved in countryside stewardship and are embarking on Environmental Land Management (ELM) schemes which provide positive outcomes for nature, as well as public goods and services. The LNRS can serve as a channel for effective use of ELM funding, achieved through co-design with landowners, managers and foresters, to meet landscape-scale priorities.

In addition, land managers are diversifying, with some benefiting from carbon and net gain markets, as well as deploying Nature-based Solutions to address issues such as flood risk

mitigation and managing the impacts of climate change on their land.

**For farmers, foresters, land owners and managers this Strategy can be used to:**

- **Identify key priorities and opportunities.** Aids in pinpointing habitat opportunities across farmland, offering initial guidance on the most suitable habitat types for those areas.
- **Identify the priority opportunity area** your land falls within and what measures you can action to support recovery in that habitat. If you are in an opportunity area for a priority habitat, consider whether you can take action to support recovery in that habitat.
- **Provide information to help access grants and incentives.** Many government grants and agri-environment schemes (such as Environmental Land Management Schemes in the UK) align with LNRS priorities.
- **Provide information to foresters** to help access grants and incentives. Many funding schemes (e.g., England Woodland Creation Offer, Woodland Carbon Code) are linked to LNRS objectives.
- **Help groups of farmers and land managers** shape nature recovery priorities for their area, and to encourage collaboration across holdings and landscapes.
- **Identify opportunities for Landscape Recovery project proposals**, and to provide evidence to support their application and project development.
- **Guide woodland management and tree planting** in ways that enhance biodiversity, support climate resilience, and align with local conservation priorities.

# Nature friendly farming

## Case Studies



### Home Farm, Curry Rivel

Over the last 30 years there has been a decline in biodiversity on farms, notably a fall in the abundance of cowslips, skylarks, butterflies and bees. Home Farm made changes to protect and encourage wildlife for future generations, while continuing to run a commercially successful farm.

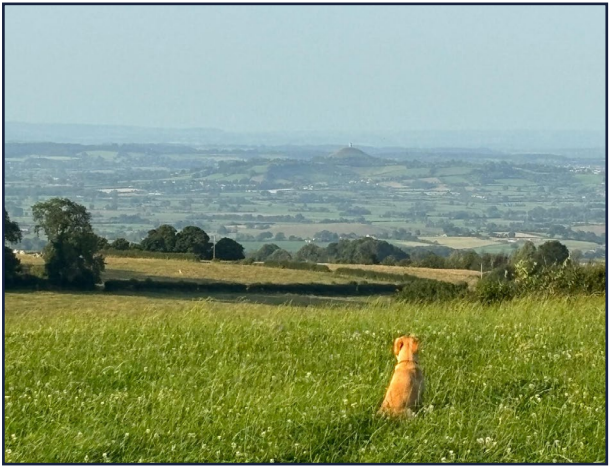
Areas of low agricultural productivity were identified for habitat enhancement using stewardship options, which helped promote biodiversity and operational efficiency, with low impact on agricultural output.



### Home Farm, an arable farm, enhances biodiversity with wild flower margins and sustainable practices.

Buffer strips and wildflower margins, or ‘linear hay meadows’, have been established around all arable fields (48km) to protect water quality and promote biodiversity. No insecticides are sprayed in spring or summer. The margins, planted nearly 20 years ago with traditional wildflower hay meadow seeds, support voles, the main food for barn owls. The Hawk and Owl Trust monitors barn owl numbers, which are among the highest in the UK. The farm’s rotation includes wheat, linseed, oilseed rape, beans, and legume fallow to build fertility and minimize weeds and disease. Eight ponds, lakes, 15 acres of woodland, and nesting plots for skylarks and lapwings have been created.

There is a hay meadow that has not been ploughed and has never been sprayed. It is managed with a late hay cut and grazed by sheep over winter only, making for an impressive and diverse spot that replicates the meadows of old that used to be such an important part of this landscape.



### Lower Haydon Farm

Rob Lunnon, a mixed farmer on Mendip, is transitioning to regenerative agriculture on his 300-acre farm. He raises 170 dairy and beef animals and produces 600 turkeys annually. Rob joined the Mendip Hills Farm Cluster for training and support, entered a Sustainable Farming Incentive agreement, and plans to plant hedges and reduce stocking pressure. He aims to diversify into wildlife safaris and ice cream experiences, and will shift to an all-grass farm, exploring sustainable mixed agriculture with pigs and vegetables.



# Horner Farm, Porlock Vale

## Case Studies



Horner farm over the past 6 years has been building a farm that brings nature into the heart of what they do. They are working to create a farm that not only supports nature but learns from nature, recognising the strength in diversity in our habitats and farming systems, which in turn supports good animal welfare. Equal importance is given to all elements of the farm to bring balance to the land that feeds our community and rebuilds our environment.



**Horner farm is predominantly a livestock farm but also has a Community Supported Agriculture (CSA) veg plot onsite, with an emphasis on selling their produce into their local community.**

Over the past 6 years Horner Farm has returned poor degraded soils from previous arable management into a grassland farm, planting woodpasture, silvopasture, new orchards, herbal lays and undergoing species rich grassland meadow restoration.

The Cattle, Sheep, Goats and Chickens play an intrinsic part in the restoration, ensuring natural processes take place on the land with a mix of

species, that in turn helps support and build the ecosystem at the farm from the swallows feeding from the dung to the barn owls utilising the varied grasslands sward.

The farm has undertaken butterfly, grassland, bird and reptile surveys to monitor change over time with their Landlord the National Trust to ensure the positive change and impact can be monitored.

# Neroche Wild Core Area

## Case Studies



**Neroche ‘Wild Core Area’**  
Blackdown Hills

Neroche features a complex mosaic of habitats, including ancient woodland, plantation woodland, wood pasture, ancient and veteran trees, heathland, grassland, and wetlands.

Forestry England have adopted a landscape scale approach delivering ecological enhancements in collaboration with partners and neighbours.

A fully-functioning forest ecosystem will be resilient to future environmental conditions and a diverse forest will likely be better able to cater to future human needs.



**A fully-functioning forest ecosystem resilient to future environmental conditions and catering to human needs.**

Forestry England aims to deliver landscape-scale ecological enhancement with partners and neighbours by replicating natural processes. Creating water-defined landscapes, climate-resilient woodlands, and habitats for invertebrates, mosses, liverworts, lichens, fungi, and dynamic ecosystems where animals and plants move freely.

Feasibility studies assess missing natural processes and how these might be enhanced, reinstated or replicated. Interventions include reinstatement of natural hydrology, removal of invasive species and use of natural grazing regimes. Baseline surveys will monitor changes and impacts.

Forestry England manage a complex of forest blocks, consisting of mixed productive woodlands, heathland, pasture, ancient woodland, ancient and veteran trees and SSSIs. They use low impact silvicultural systems to maximise opportunities for nature and open space, alongside sustainable timber production.



Being led by natural process means we cannot fully predict how the project will develop, but this uncertainty is a key part of the Wild Areas.



# Developers and Planners

## How to use this strategy

Developers and Planners have a key role in shaping the local environment and supporting nature recovery. This strategy provides important guidelines on where and how new developments should occur to benefit the environment.

The LNRS shows developers and planners where development could have the biggest impact on nature. Local Planning Authorities (LPAs) like Somerset Council and Exmoor National Park Authority will use this strategy to support land use planning both in terms of Local Plan Development and making planning decisions. Alongside the interactive maps, the strategy will ensure that new developments take nature into account. Development proposals will be expected to demonstrate how they will maintain and enhance nature recovery.

The Levelling up and Regeneration Act (LURA) 2023 states that any Local Plans and Spatial Strategies must ‘take into account’ the relevant LNRS for the planning authority, making clear that the LNRS plays a role in place-making and planning.

Although LNRS areas do not prevent development, they highlight potential impacts on nature and suggest measures for mitigation. By considering location, minimizing environmental impacts, incorporating net gains, collaborating with stakeholders, and fostering long-term stewardship, developments can contribute to resilient, nature-rich landscapes benefiting wildlife and communities.

- For LPAs, planning agents and developers, this Strategy can be used to:**
- Guide landowners and developers in considering appropriate sites to bring forward for development in Somerset. Assists in determining suitable locations for development through data-driven site identification for nature recovery, and supports links between green growth and economic policy.
  - Guide how and where developers will deliver their Biodiversity Net Gain (BNG) duties in Somerset, including the delivery of any off-site requirements
  - Act as an evidence-base document and material planning consideration for the local planning policy context for Somerset, with potential to inform the new sustainability and environmental impact assessment framework (due to be introduced by the Levelling Up and Regeneration Act 2023 (LURA) when this comes into force).
  - Support LPAs in the designation of any new local wildlife sites or areas of biodiversity importance, Local Green Spaces (LGS) (as defined by paras 105-107 of the NPPF) and other strategic development allocations within the policy-making and local plan development process.
  - Inform local decision-making and the development management process relating to planning applications received by the LPAs as a material planning consideration, including recommendations for strategic BNG delivery and where necessary to mitigate the effects of development.
  - Provide information to LPAs on the nature recovery priorities in their area and best practices for enhancing biodiversity

# Steart Marshes

## Case Studies



### Steart Marshes

Completed in 2014, Steart Marshes is one of Europe’s largest wetland creation schemes and plays a major role, nationally and internationally, as a demonstration and wetland exemplar site. Having spent a decade developing Steart Marshes into a site with the potential to offer transformative impact, the reserve is firmly established as a community asset, with key connections throughout the local area.



**Steart Marshes came into being as a habitat creation scheme to compensate for the loss of internationally important intertidal habitat within the Severn Estuary due to coastal squeeze, that was set to increase as a result of rising sea levels and climate breakdown.**

Saltmarsh is a cheaper and more sustainable way to protect against flooding into the future and it creates much needed space for wildlife.

Development across the Severn Estuary has caused considerable habitat loss. Projects such as The Bristol Port Company’s development of its Avonmouth container terminal identified Steart as an ideal location for compensatory habitat. The site at Steart is large enough to compensate for 40% of the total losses in the region.





# Public Bodies and NGO's

## How to use this strategy

### Public bodies

As well as a statutory obligation, public bodies have a major role to play in the delivery of nature recovery. Public bodies must have due regard to the strategy in all decision-making. Many are already taking action for the climate emergency and acting for the ecological emergency will complement that.

As policy makers, landholders, enforcers, investors and leaders, public bodies should demonstrate best practice consideration of the strategy. The LNRS should be used to shape policies and local outcomes, prioritise public funding and the delivery of environmental investment. The Opportunity Maps help to highlight the places where public funding will yield the most public good and benefits for nature.

This document will help shape local strategies, place-shaping, master planning and project design for maximum benefit to One and All.

### Non governmental organisations (NGO's)

The knowledge and expertise of environmental NGOs will be fundamental to the successful implementation and monitoring of this LNRS. Their roles include providing expertise, facilitating community engagement, supporting implementation, monitoring, and ensuring long-term sustainability. By bringing expertise, resources, and public engagement to the table, they help ensure that local initiatives to protect and restore nature are effective and sustainable over the long term.

Some bodies such as the Somerset Wildlife Trust, Royal Society for the Protection of Birds (RSPB) and National Trust are significant landowners in Somerset and also fall into the category of landowners and managers.

### For public bodies and NGO's, this Strategy can be used to:

- Inform how public authorities meet their legal duty to conserve and enhance biodiversity. This could be through managing areas of land they are responsible for that supports what the LNRS proposes; or using the LNRS to inform relevant regulatory decisions.
- Consider potential habitat restoration and creation projects that are aligned with this LNRS and its biodiversity priorities. Will help towards the ambition of achieving '30 by 30'.
- Raise awareness of the importance of the LNRS among local communities, policy makers, businesses, landowners and other stakeholders and engage them to take action for nature recovery through participation.
- Facilitate partnerships between different stakeholders, including government agencies, businesses, landowners, land managers and foresters, and community groups to join forces on nature recovery initiatives.
- Support funding applications for nature recovery projects. The strategy can be used to inform opportunities for local action utilising public and/or private investment.
- Conduct ecological assessments to evaluate or advise on the potential impacts of development projects, land use changes, and other human activities, to minimise negative impacts of disturbance to nature.

# ENNIS Project

## Case Studies



### ENNIS Project

Through collaboration, the Exmoor Non-Native Invasive Species (ENNIS) Project is reversing the spread of invasive flora such as Japanese knotweed, Himalayan balsam, montbretia, and American skunk cabbage, while also monitoring and controlling populations of invasive fauna such as signal crayfish.

The ENNIS Project aims to bring about a greater awareness of the issues of invasives, and lessons learnt will be shared widely both at a local and national level.



### Since 2019, the ENNIS Project has been at the forefront of controlling non-native invasive species.

Invasive species threaten Exmoor National Park's ecology, including its Special Areas of Conservation and six Sites of Special Scientific Interest. Funded by the Farming in Protected Landscapes (FiPL) Programme, the ENNIS Project combats these species with local communities, volunteers, and organisations like the National Trust and Natural England. Partnering with Nicky Green Associates, they also manage invasive signal crayfish. Annually, over 800 invasive plant sites are treated, covering 90% of known sites. The project trials innovative methods like electricide treatment and aims to protect Exmoor's wildlife, habitats, and economy while raising public awareness.





# Mendip NNR

## Case Studies



### Mendip NNR

A new, large ‘super’ National Nature Reserve (NNR) predominantly along the south-facing grasslands and woodlands of Mendip will bring together organisations committed to improving space for wildlife, help develop collaborations and joined-up management approaches.

This new NNR will enhance biodiversity, making the Mendip hills a bigger, better and more joined up place for wildlife to thrive. It will support a sustainable future for local communities, farmers, and businesses through the development and promotion of a nature rich landscape.



**The new Mendip NNR, created in 2023 will join up 14km<sup>2</sup> of land managed for nature conservation.**

The project will link ecologically important sites along The Mendip Way, including over 4km<sup>2</sup> of land not previously managed for conservation. It will conserve and restore limestone slopes, wildflower grasslands, ancient wooded combs, gorges, and rocky outcrops. The initiative will unite 31 existing nature reserves and over 4km<sup>2</sup> of new conservation land, enhancing access to nature for locals.

Creating larger, connected spaces is crucial for halting nature’s decline and boosting populations. The site spans the Mendip Hills National Landscape, from Wells woodlands to Brean Down in the Severn estuary. The new NNR will demonstrate collaborative efforts among land managers, locals, and visitors to aid nature recovery.



# Sowing the Seeds Project

## Case Studies



### Sowing the Seeds, Exmoor

The Exmoor Sowing the seeds project is an initiative run by the National Park in conjunction with FWAG SW, SW Water and other partners to create more wild flower meadows across Exmoor.

The Project is helping to support farming businesses in nature recovery and diversification, focusing on species rich grassland which currently covers just 3.6% of the National Park.



**Helping to create or restore over 4km<sup>2</sup> of species rich meadows, increasing this rare habitat across the National Park.**

Launched in 2021, and funded by the Farming in Protected Landscapes (FiPL) Programme, the project has worked with over 70 landowners and groups across Somerset and Devon, helping to create or restore over 4km<sup>2</sup> of species rich meadows, increasing this rare habitat across the National Park.

The Project provides support to landowners and community groups, with practical actions to increase wildflowers in grasslands. The project provides bespoke advice depending on the lands specific situation, botanical and soil surveys, management plans, and donations of wildflower seed which are harvested from local species rich grassland on Exmoor.

The project works with schools and community groups to develop educational, technical, and wellbeing activities. These include wildflower identification and monitoring, promoting effective grassland management to support biodiversity, and botanical drawing and writing, deepening knowledge and connection to meadow landscapes.





# Holnicote Estate

## Case Studies



### Holnicote Estate, West Somerset

The National Trust has adopted a catchment-based, landscape-scale approach to manage land and water sustainably on the Holnicote Estate. Partnering with local farm tenants, volunteers, and the community, they aim to create a resilient, nature-rich, and productive environment. The project spans 12,500 acres, restoring natural processes and ecological functions across five schemes, including the River Aller and Horner Water catchments.



**The River Aller Floodplain Reconnection scheme is the first large main river restoration scheme of this scale implemented in the UK.**

The work was designed to take the River Aller back to a natural state from being a single thread channel to a system of multiple, cross-connected channels. This technique reconnects the river to its floodplain, helping to hold back floodwater during high flows and protect downstream communities. Groundwater levels are raised to store more water throughout the year. This helps the river become more resilient during times of prolonged dry weather and drought.

Many smaller interventions have also been delivered in the area at catchment scale.

The new wetland created will slow the flow of water through the landscape, combat flooding and become a haven for wildlife. In addition, two beaver families were introduced to Holnicote Estate and they have developed the sites into complex wet woodland habitats. Beavers are nature's engineers, re-building the lost wetland habitats and offering Nature-based Solutions to existing environmental problems.

The work ensures Holnicote Estate is a more



climate resilient and sustainable landscape, achieving improvements for the environment, biodiversity, and local residents.

# The Meads Bridgwater

## Case Studies



### The Meads, Bridgwater

The Meads in Bridgwater is an example of floodplain grazing marsh that was drained in the past to meet agricultural needs. Today, the imperative is to use these places to once again store floodwaters for longer. This is a 20-hectare floodplain grazing marsh, which was historically drained for agriculture and could only store floods for a short while. Careful restoration is now protecting people and property in Bridgwater, through new wetland features, including reedbeds, and restoration of a historic river channel.



**The Friends of the Meads have been working closely with the Wildfowl and Wetlands Trust (WWT) to create a wetland meadow and spaces which everyone can enjoy.**

New water control structures are improving water levels, especially during summer months. This is also helping invertebrates, so providing food for waders, as well as offering new habitat for water voles.

New conservation grazing regimes are managing the landscape and creating microhabitats, and habitat created for wildlife and future generations.

Work is ongoing to provide a constant source of water from river or stream to make the wetland resilient to drought, introduce more water control structures, and deliver continuing citizen science.

These measures are attracting new wetland wildlife to the area like wading birds, water voles, otters, birds and wetland plants. The Meads is now also proving itself to be a great place where people can find out about wetlands.

Restoring the Meads will help improve the wellbeing of local people by creating more opportunities for nature-based healthy activity. Although the current open spaces in Bridgwater are enjoyable for recreation, they have so much



more potential as habitat filled with wildlife, not just around the outside but urban pockets of wildness in the town.



# Individuals, Community Groups and Businesses

## How to use this strategy

### Individuals and community groups

Everyone can contribute to nature’s recovery. As an individual or member of your community take time to find out more about your local greenspaces and the challenges to people and nature in your area. Explore our Opportunity Maps to see what nature recovery options might best suit your area and read through our case studies to see what inspires you.

Residents, schools, and local groups can use LNRS to support applications for funding and grants for tree planting, habitat restoration, or nature-based activities. Communities can use LNRS to advocate for nature-friendly development in planning applications and ensure biodiversity is considered in new housing or infrastructure projects. It strengthens community campaigns to protect vital wildlife corridors and greenbelt land. It can inspire local schools and groups to participate in wildlife monitoring (e.g. bird counts, wildflower surveys) to track biodiversity changes over time.

Speak to your local Councillor to ask them to support your ideas. There is additional support and funding available from a range of sources and you can use our nature recovery principles to shape the design of your project.

### Businesses

Nature is ‘critical infrastructure’ for the economy. Nature loss presents systemic risks to businesses and the financial system, from disrupted supply chains to diminished economic growth. In contrast, investing in nature recovery offers significant opportunities in sustainability-linked markets and nature-based solutions

Taking action on nature can deliver multiple business benefits, but certainty and clarity are needed to drive investment at scale. The LNRS

can give businesses confidence on what actions to take for nature recovery and nature-based climate change adaptation and mitigation, where and how.

The LNRS will play an important role in bringing green investment into the county from national and international funding sources, and creating local opportunities for Somerset businesses to achieve their environment and social governance (ESG) objectives

### For individuals, community groups and businesses this Strategy can be used to:

- Explore our opportunity maps to identify what opportunities there are in your community for nature recovery. The maps are a starting guide so use them to generate ideas.
- Assess your community spaces to understand which opportunities will work best for your land. Evaluate what opportunities you have and if you need any more information or permissions to deliver for nature recovery
- Decide what projects you want to pursue and explore funding opportunities such as the Climate and Nature Fund. Think about what you need to deliver your project or actions and align your priorities with the right funding.
- Develop an action plan for nature recovery, think about what works for your community and what’s feasible to deliver. Take guidance from our nature recovery principles and consider the short and long-term, and how you could monitor positive impacts
- Help set up or join an existing local community nature recovery group, friends of or voluntary group working to manage local greenspaces for the benefit of both wildlife and people.
- Align business operations with nature recovery priorities where possible.





# Stowey Wood

## Case Studies



### Stowey Wood

Stowey Green Spaces Group (SGSG), formed in 2016 in Nether Stowey, Somerset, conserves local green areas. Stowey Wood, dating back to 1700 or earlier, contains ancient woodland indicators. In 1970, half the wood was felled and replanted with Sitka Spruce by the Forestry Commission.



**Stowey Wood, 4.5 hectares of ancient woodland possibly dating back to 1700, saw half its area felled and replanted with Sitka Spruce in 1970.**

From 2014, forestry students began felling some of these trees. In 2018, Somerset County Council licensed SGSG to manage the wood for wildlife and community benefit, initiating native broadleaf replanting. In 2021, horse-logging funded by the Green Recovery Challenge Fund removed more Sitka, creating glades and boosting biodiversity. By November 2022, SGSG and partners planted around 2,500 trees.

Volunteers also dammed a stream, forming pools for frogs. Wildlife, including foxes, rabbits, badgers, roe deer, birds, and butterflies, has returned, and flowers now carpet the woodland floor.



# In your garden

## Case Studies



### Bryony Slaymaker's Garden

Bryony Slaymaker, who works at Somerset Wildlife Trust, re-managed her garden in October 2022 to make it a haven for wildlife.

Small interventions including replacing the leylandii hedge with a native hedge, creating a pond and bog area, replacing the rye lawn with meadow mix and pollinator friendly plants in the beds has gained large wins for biodiversity.



**Small interventions in gardens can lead to significant increases in biodiversity.**

In less than a year, Bryony recorded 51 moth species, amphibian species including toads, frogs and newts. 10 different butterfly species, 7 species of dragonflies and damselflies. Numerous bird species including blackbirds, robin, wood pigeon, sparrows and tit species.

Today, the native hedge continues to grow, providing food and shelter for birds and small mammals. The perennials in the meadow lawn put on a visual display along with the bulbs which provide early food for pollinators. The pond has been re-sculpted to create a bigger draw down zone and a secondary small pond created which the water butts run into. There are loads of frogs and lots of dragonfly larvae. Toads everywhere, they like the stumpery next to the pond and even the veg patch too which helps to keep the slugs down. Families of birds are regularly seen enjoying the garden.

Gardens and private spaces may seem inconsequential on their own but together they can have a large and positive impact for nature and biodiversity across Somerset.





# Drayton Wildlife Group

Case Studies



## Drayton Wildlife Group

We are a group of locals of all ages who love our natural world. We work to improve local habitats: plant trees, sow wildflower seeds, record trees and hedgerows, share interests and learn from experts about the wildlife around Drayton.



**The group grew from a desire to educate neighbours about nature by giving insight into our local wildlife.**

Drayton Wildlife Newsletters have been delivered, as time allows, since January 2021 and it became clear people wanted to learn more.

Since then they have enjoyed several expert-guided walks: birds, bumblebees and wildflowers, also illustrated talks in the village hall: David Ramsden of the Barn Owl Trust, Damon Bridge of RSPB, Bryony Slaymaker of Somerset Wildlife Trust, Jo Chesworth of Bumblebee Conservation and Catherine Mowat previously of Plant Life and a highly accomplished botanist and ecologist.

Last November culminated in a day-long wildlife fair with experts from a variety of wildlife organisations, officers from Somerset Council and several nature-based charities. Visitors were educated and enthralled by engaging talks and slide shows, displays and wildlife goods: bat boxes and hedgehog boxes, otter mugs and much more!



# Fox's Field and beyond

Case Studies



In 2019, an 8.5-acre patch of open field next to Tonedale Mill was bought by Somerset West and Taunton council to protect as an open, green space for the community. Since then, thanks to thousands of volunteer hours from Transition Town Wellington (TTW), Fox's Field now boasts a forest garden with over 400 trees, a food-hedge or 'fedge', hundreds of bulbs, edible and medicinal herb area, perennial veg, woodchip pathways, green manure patches.

The popularity of this project prompted the council to think about more ambitious plans for boosting biodiversity and connecting people with the land. Fox's Field now forms part of a 65.5-acre 'green corridor', owned by Somerset Council on a 150-year lease to Wellington Town Council. The Woodland Trust has worked with the council to design and enable the planting over 3,000 trees across the site through their MOREWoods scheme, to create and extend new areas of woodland. Wellington also now has its own community farm, supplying fresh, chemical-free veg boxes to families in town. New hedges have been laid and wildflower meadows planted. All of which aims to increase biodiversity, help flood mitigation, build soil health and sequester carbon.

TTW's key to success is to involve the whole community, work in partnership with others and in harmony with nature. Get people involved early on in the design stage, celebrate your successes and learn from your failures. Start small, demonstrate your impact, then take a step up and do a bigger project. The positive energy around Wellington's green corridor is spreading outwards, with a new local nature reserve being planned, and a wildlife corridor to Wiveliscombe and beyond, eventually – the dream is – connecting the Quantocks, the Brendons and the Blackdown Hills.





# Town and Parish Councils

## How to use this strategy

To tackle the ecological emergency and reach 30 by 30, we need everyone, at every level of society, to be taking action. In addition to local community groups and residents, Parish and town councils will know their area best, and the this strategy helps enable them to take action for nature.

Parish and town councils can use this Strategy to support sustainable local development, protect biodiversity, and enhance green spaces for the benefit of residents. It can be used to shape the positive management of their local green spaces for nature and people, along with helping to inform environmental and land use policies and Neighbourhood Development Plans.

The Strategy can help Public bodies, including Town & Parish Councils, who now have an enhanced duty (The Environment Act 2021) to ‘maintain and enhance’ biodiversity, rather than just ‘conserve’ biodiversity. The new extended duty requires public authorities to include the enhancement of biodiversity alongside conservation by way of creating ‘the general biodiversity objective’.

A Parish or Town Council may wish to consider creating a Local Nature Action Plan (LNAP), informed by this strategy. This is simply a way for parish and town councils to plan the action they will take to help nature in their area. They are intended to help parish and town councils identify their existing assets for nature and opportunities for restoring nature in their area. Opportunities may exist on land they own and arise through engaging with residents and communities, businesses and local landholders. the concept first developed by South Gloucestershire Council. For examples of completed plans by parish and town councils, visit **South Gloucestershire Council Local Nature Action Plans**.

- For Town and Parish Councils, the LNRS:**
- Aids in developing Local Nature Action Plans (LNAPs): Councils can create tailored action plans that align with the broader LNRS objectives.
  - Aids in Implementing Biodiversity-Friendly Practices: Councils can adopt practices on land they manage such as creating wildflower meadows, planting hedgerows, community orchards, and establishing community composting sites.
  - Aids in shaping local planning and development. Councils can include biodiversity considerations in their comments on planning applications, ensuring that development proposals minimize harm to biodiversity and contribute to nature recovery.
  - Helps in Applying for Funding and Grants for environmental projects, such as tree planting, pond restoration, and hedgerow creation.
  - Helps support Climate Resilience and Flood Prevention. Councils can use LNRS to implement nature-based solutions to climate challenges, such as tree planting for carbon sequestration and shade, and Restoring wetlands and planting hedgerows to reduce flooding and soil erosion.
  - Helps in engaging the Community in Environmental Stewardship: LNRS can help councils raise awareness and involve residents in environmental initiatives, such as educational workshops, wildlife surveys, and conservation projects, fostering a sense of ownership and collective responsibility for local natural resources

# Frome Town Council

## Case Studies



Frome Town Council declared an ecological emergency in 2021, and has launched a number of initiatives, including: the Frome Community Wildlife Mapping Project, which encourages people to connect with nature while also generating valuable ecological data; the Pocket Meadows Project (see below); and the Wild About Trees project, a community-led tree planting initiative to showcase the Council’s commitment to planting trees and hedgerows while also encouraging the community to engage with the green space and woodland areas in the town.

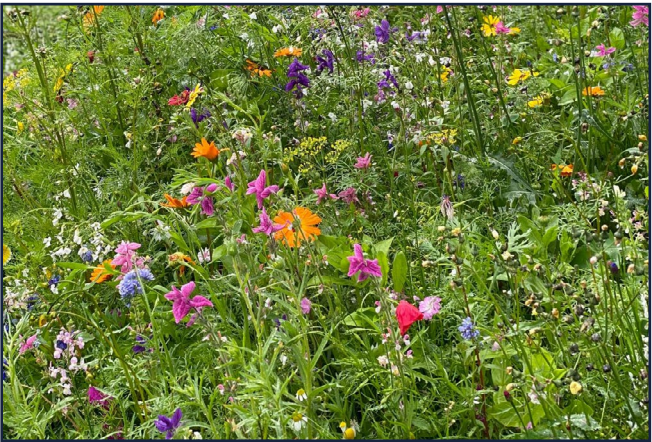
**The Pocket Meadows Project is about turning small areas of Frome Town Council’s owned spaces like roadside verges, community greens and private gardens into vibrant wildflower meadows that support bees, butterflies and other pollinators.**

Launched in 2025, the project is a collaboration between the Community Interest Company Meadow in My Garden, who generously offered free seeds, Frome Town Council, and Frome Wild Bunch. The focus is on giving people seeds and guidance to create and look after their own mini meadows in spaces managed by the town council, and in private gardens.

As part of this pilot project approximately 900msq worth of Pocket Meadows have been planted in spring 2025.

Looking ahead, the plan is to expand the project further and include native bulb planting involving local schools and the wider community.

Thanks to Frome’s commitment to boosting insect populations through habitat creation, pollinator-friendly planting, and a no-pesticide policy, the town has been recognised as a ‘Bee Friendly Town’ by the Bee Friendly Trust.





# Appendix

## Cross-cutting habitat and species measures to benefit multiple outcomes.

This chapter provides the cross-cutting measures from the habitat types and targeted species measures that can benefit each of the priority outcomes. These tables can be used to ensure the best outcomes are achieved holistically within the landscape.

6



Measures appendix



Grassland

| Outcomes                                                                                                                                                                     | Measures/Actions |    |    |     |     |     |     |     |    |  |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----|----|-----|-----|-----|-----|-----|----|--|--|--|--|--|--|
| Extent and condition of priority habitat and species-rich grassland sites has increased and existing sites protected and restored.                                           | G1               | G2 | G3 | Fa1 | FW2 | We3 | MH4 | Wo6 |    |  |  |  |  |  |  |
| Targeted creation and enhancement of connecting grassland has helped support increased grassland diversity and the resilience and coherence of the wider ecological network. | G1               | G2 | G3 | Fa1 | Fa2 | We3 | MH4 | We6 | U1 |  |  |  |  |  |  |
| Grassland restoration, enhancement and creation has commenced at scale, prioritising sites that bring most benefits for nature.                                              | G1               | G2 | G3 | We3 | MH4 | U1  | U2  |     |    |  |  |  |  |  |  |
| The condition and value of grassland sites is better understood and monitored to inform future management and respond to change.                                             | G1               | G2 | G3 | Fa1 | MH4 | U6  |     |     |    |  |  |  |  |  |  |
| Species diversity and abundance of pollinators and invertebrates has increased as a result of restored and enhanced species-rich grasslands across the county.               | G1               | G2 | G3 | Fa1 | Fa2 | MH4 | U1  | U2  |    |  |  |  |  |  |  |



Woodland & Hedgerows

|                                                                                                                                                                                                                                                   |     |     |     |     |     |     |     |     |     |     |     |    |     |     |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|--|
| The diversity and abundance of native species, both flora and fauna, associated with woody habitats has increased and are appropriately protected and managed.                                                                                    | Wo1 | Wo2 | Wo3 | Wo4 | Wo5 | Wo6 | Wo7 | Wo8 | Wo9 | Fa3 |     |    |     |     |  |
| The extent and condition of woody habitats, in both rural and urban environments, has been improved through successful restoration, creation and appropriate management, resulting in improved soil health, and carbon sequestration and storage. | Wo1 | Wo2 | Wo3 | Wo4 | Wo5 | Wo6 | Wo7 | Wo8 | Wo9 | Fa3 | U1  | U3 | FW3 | MH4 |  |
| Natural processes within woody habitats have been successfully restored, including the reintroduction and establishment of sustainable populations of keystone native species and ecosystem engineers, such as pine martens.                      | Wo1 | Wo2 | Wo3 | Wo7 | Wo8 |     |     |     |     |     |     |    |     |     |  |
| Existing woody habitats are buffered and linked through the creation and appropriate management of transitional and mosaic habitats and hedgerows.                                                                                                | Wo1 | Wo2 | Wo3 | Wo6 | Wo7 | Wo8 | Wo9 | Fa3 | MH4 |     |     |    |     |     |  |
| There is a larger, more biodiverse, interconnected, resilient mosaic of woody habitats across rural Somerset that are better connected to our improved urban treescapes.                                                                          | Wo1 | Wo2 | Wo3 | Wo6 | Wo7 | Wo8 | Wo9 | Fa3 | U1  | U3  | FW3 |    |     |     |  |





Farmland

| Outcomes                                                                                                                      | Measures/Actions |     |     |     |     |     |     |    |     |     |     |     |     |     |
|-------------------------------------------------------------------------------------------------------------------------------|------------------|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|
| There is greater diversity, extent and abundance of wildlife habitats and their associated species, across farmed landscapes. | Fa1              | Fa2 | Fa3 | Fa4 | Fa5 | We1 | G1  | G2 | G3  | MH1 | MH4 | MH5 | Wo4 | Wo6 |
|                                                                                                                               | Wo7              | Wo8 | Wo9 | C1  | C2  | FW8 | FW9 |    |     |     |     |     |     |     |
| Somerset has healthier soils. As a result, soil biodiversity, soil organic matter and water carrying capacity has increased.  | Fa1              | We1 | We4 | G2  | MH5 |     |     |    |     |     |     |     |     |     |
| The farmed landscape actively contributes to the recovery of our rivers and wetland habitats.                                 | Fa1              | Fa2 | Fa3 | Fa4 | We1 | We2 | We3 | G1 | MH5 | Wo8 | FW3 | FW4 | FW8 | FW9 |
| Farmers collaborate to increase knowledge and deliver nature recovery and habitat connectivity on a landscape-scale.          | Fa5              | We5 |     |     |     |     |     |    |     |     |     |     |     |     |



Lowland Wetland

|                                                                                                                                                                                                                                                       |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| There are more, bigger, better and more joined-up wetland habitats, including wet woodland, reedbeds and swamps, fens, wet meadows and raised bogs.                                                                                                   | We1 | We2 | We3 | We4 | We5 | Fa4 | Wo8 | FW1 | FW2 | FW4 | FW6 | FW8 | FW9 | G1 |
| Wetlands are species diverse, supporting a full range of plants and animals associated with these habitats, and can adapt to climate change, store carbon, reduce flood risk and improve water quality.                                               | We1 | We2 | We3 | We4 | We5 | Fa4 | Wo8 | FW1 | Fw1 | FW4 | FW6 | FW8 | FW9 |    |
| Wetlands provide vital connectivity for wildlife at river catchment scale, particularly between core protected nature sites, either through physical corridors, or through ‘stepping stones’ of high-quality wetland habitat.                         | We1 | We2 | We3 | We5 | Fa4 | FW1 | FW2 | FW8 | FW9 |     |     |     |     |    |
| The catchments are managed to ensure that water supply to wetlands, including sensitive peatlands and their peat formation, is of sufficient quality and quantity to support an increase of current extent and improve habitat and species diversity. | We1 | We2 | We3 | We4 | We5 | Fa1 |     |     |     |     |     |     |     |    |
| Land use of wetlands, including peatlands, is compatible with nature recovery and climate adaptation, and peat extraction has ceased and peat voids are restored to nature-rich habitats.                                                             | We1 | We2 | We3 | We4 | We5 |     |     |     |     |     |     |     |     |    |





Coastal

| Outcomes                                                                                                                                                                                                                  | Measures/Actions |    |    |     |     |     |     |     |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----|----|-----|-----|-----|-----|-----|--|--|--|--|--|--|
| Coastal and intertidal habitats are more extensive, more biodiverse, in better condition, and more joined-up.                                                                                                             | C1               | C2 | C3 | C4  | C5  |     |     |     |  |  |  |  |  |  |
| There are more and better managed coastal and intertidal habitats along the Severn Estuary, supporting healthy species populations.                                                                                       | C1               | C2 | C3 | C5  |     |     |     |     |  |  |  |  |  |  |
| An adaptive, resilient network of coastal habitats has been created, that are managed with a catchment to coast approach that acknowledges the connection between marine, coastal, freshwater and terrestrial ecosystems. | C2               | C3 | C5 | Fa1 | FW4 | We1 |     |     |  |  |  |  |  |  |
| Coastal, intertidal and marine habitats and species populations are benefiting from cleaner waters, less disturbance in sensitive locations and a more sustainable use of our coastlines.                                 | C1               | C2 | C3 | Fa1 | FW1 | We1 |     |     |  |  |  |  |  |  |
| Coastal and estuarine habitats are allowed to evolve, with nature dynamic processes and progression restored, to enable adaptation and resilience to climate change and minimise loss.                                    | C1               | C2 | C3 | C4  | C5  | FW2 | FW3 | We1 |  |  |  |  |  |  |



Moorland and heath

|                                                                                                                                                                                                                              |     |     |     |     |     |     |  |  |  |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|--|--|--|--|--|--|--|--|
| There is greater species diversity and abundance of upland heathlands and peatlands habitats, with dynamic mosaics of habitats such as blanket bog, valley mires, heath, and acid grassland, supported by healthy hydrology. | MH1 | MH2 | MH5 |     |     |     |  |  |  |  |  |  |  |  |
| Heathland and peatland ecosystems are functioning naturally, better connect hydrologically, with new areas expanding existing and providing stepping stone habitats.                                                         | MH2 | MH5 |     |     |     |     |  |  |  |  |  |  |  |  |
| Heathland and peatland ecosystems support more biodiversity, improved water quality and carbon storage, reduced flood risk, and enhanced wildfire resilience.                                                                | MH1 | MH2 | MH3 | MH5 | We4 |     |  |  |  |  |  |  |  |  |
| Upland and lowland heathlands and peatland ecosystems are appropriately managed to achieve good condition and habitat areas that are bigger and better connected.                                                            | MH1 | MH2 | MH3 | MH4 | MH5 | We4 |  |  |  |  |  |  |  |  |
| Invasive non-native species are controlled, and eradicated on specified sites through a collaborative approach at a landscape scale.                                                                                         | MH1 |     |     |     |     |     |  |  |  |  |  |  |  |  |





Freshwater

Outcomes

Measures/Actions

|                                                                                                                                                                                                                                 |     |     |     |     |     |     |     |     |     |    |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Rivers and streams have the space and energy to develop natural forms, driving natural channel processes, are better connected both longitudinally and laterally within their floodplains, supporting an abundance of wildlife. | FW1 | FW2 | FW7 |     |     |     |     |     |     |    |  |  |  |  |
| Water quality and quantity has improved in rivers and associated wetland features so that ‘good ecological status’ is consistently achieved.                                                                                    | FW2 | FW3 | FW4 | FW5 | FW6 | FW7 | FW9 | Fa1 | Fa4 | U4 |  |  |  |  |
| Rivers, streams, rhynes and ditches have increased abundance and diversity of native plant, invertebrate, fish and mammal species.                                                                                              | FW1 | FW2 | FW3 | FW4 | FW5 | FW6 | Fa1 | U4  |     |    |  |  |  |  |
| Riparian habitats are more extensive, healthy, connected and diverse, providing corridors for wildlife.                                                                                                                         | FW1 | FW3 | FW4 | FW5 | U2  | Wo8 |     |     |     |    |  |  |  |  |
| Existing standing water features (e.g. lakes, ponds and other standing water) have been retained, restored and enhanced alongside the creation of high quality standing water features, supporting an abundance of wildlife.    | FW6 | FW8 | FW9 | Fa1 | Fa4 | We1 |     |     |     |    |  |  |  |  |



Urban

|                                                                                                                                                                                  |    |     |    |    |    |    |     |     |     |    |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|----|----|----|----|-----|-----|-----|----|--|--|--|--|
| There are more well-designed and connected nature-rich, equitable green and blue spaces in urban environments that are appropriately managed, including multi-functional spaces. | U1 | U2  | U3 | U4 | U5 | U6 | FW1 | FW4 | FW5 | G2 |  |  |  |  |
| Nature is recognised as essential for improving health and wellbeing, and people are encouraged to take meaningful action to deliver nature recovery and protection.             | U2 | U3  | U4 | U5 | U6 |    |     |     |     |    |  |  |  |  |
| There is greater tree canopy cover in towns and cities, benefiting urban wildlife, helping adapt to climate change, and improving people’s wellbeing.                            | U1 | U3  | U4 | U6 |    |    |     |     |     |    |  |  |  |  |
| There are more Nature-based Solutions used in urban environments creating more resilient towns and cities, resulting in greater biodiversity.                                    | U4 | FW1 |    |    |    |    |     |     |     |    |  |  |  |  |



# List of abbreviations

**ACBI** - Areas that could become of particular importance for biodiversity

**AONB** - Area of Outstanding Natural Beauty (now National Landscape)

**APIB** - Area of Particular Importance for Biodiversity

**BNG** - Biodiversity Net Gain

**CIEEM** - Chartered Institute of Ecology and Environmental Management

**CO2** - Carbon dioxide

**ENNIS** - The Exmoor Non-Native Invasive Species Project

**FiPL** - Farming in Protected Landscapes

**FWAG** - The Farming and Wildlife Advisory Group

**INNS** - Invasive Non-Native Species

**LGS** - Local Green Spaces

**LNR** - Local Nature Reserve

**LNRS** - Local Nature Recover Strategy

**LPA** - Local Planning Authority

**LURA** - The Levelling Up and Regeneration Act 2023

**LWS** - Local Wildlife Site

**NFM** - Natural Flood Management

**NGO** - Non-Governmental Organisation

**NL** - National Landscape

**NNR** - National Nature Reserve

**OS** - Ordnance Survey

**RSPB** - Royal Society for the Protection of Birds

**SAC** - Special Areas of Conservation

**SFI** - Sustainable Farming Incentive

**SGSG** - Stowey Green Spaces Group

**SoBP** - Statement of Biodiversity Priorities

**SPA** - Special Protection Area

**SSSI** - Site of Special Scientific Interest

**SuDS** - Sustainable Drainage Systems

**SWT** - Somerset Wildlife Trust

**WWT** - Wildfowl and Wetlands Trust

# Datasets used to identify APIB’s and ACBI’s

**Datasets used to identify APIB areas include:**

Special Areas of Conservation (SACs)

Special Protection Areas (SPAs)

Sites of Special Scientific Interest (SSSIs)

Ramsar sites

National Nature Reserves (NNRs)

Local Nature Reserves (LNRs)

Local Wildlife Sites (LWSs)

Irreplaceable habitats

**Datasets used to identify ACBI areas include:**

Class 4 & 5 agricultural land

National Landscapes (previously known as AONB)

Exmoor National Park

Statutory Main Rivers

Ordnance Survey (OS) Open Greenspace

Somerset Wildlife Trust (SWT) reserves

Royal Society for the Protection of Birds (RSPB) reserves

Woodland Trust sites

Hawk and Owl reserves

Wildfowl and Wetlands Trust (WWT) reserves

Private and Community Nature Reserves

Priority Habitats

EcoNet woodland/wetland/heathland/grassland

EcoNet woodland/wetland/heathland/grassland dispersal

Woodland/wetland/heathland/grassland cost paths (least cost paths to connect area of woodland/wetland/heathland/grassland)



