Forest of Bowland AONB

Nature Recovery Plan

Consultation Draft

FOREST OF BOWLAND
Area of Outstanding Natural Beauty

Contents

Executive Summary **2**
Introduction **4**
Vision for nature **5**
The nature we have **6**
Drivers for change **10**
Priorities for nature recovery **13**
Targets **37**
Delivering the Plan **39**

This plan has been prepared by the Forest of Bowland AONB Partnership for public consultation during July - September 2023.

It has been prepared with the support of the Forest of Bowland AONB Nature Recovery Steering Group. It has drawn on information gathered from 80 stakeholders at 5 different events during 2022/23.

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Species:

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- Brown long eared bat – David Talbot
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Executive Summary

The Forest of Bowland Area of Outstanding Natural Beauty (AONB) is one of England's finest landscapes and is internationally and nationally important for its peatland, heather moorland, and rare birds. As a protected landscape it is a key component in the national Nature Recovery Network.

Farmers, land managers, businesses, communities and organisations are committed to looking after the area's landscapes to support more nature rich places across peatlands, grasslands, woodlands, wetlands and rivers. Despite this, nature in the AONB is at risk and habitats and species continue to decline, including the enigmatic Curlew. The reasons for decline are often complex but could relate to habitat isolation and fragmentation, climate change, invasive non-native species, pollution, changing land management practices and disturbance from people.

The Forest of Bowland AONB Nature Recovery Plan is part of the AONB Partnership's response to the biodiversity crisis. The plan builds on and reviews current nature recovery objectives in the Forest of Bowland AONB Management Plan. It sets a vision for nature recovery over the next 20 years and provides a positive and proactive framework for delivery by organisations, landowners, farmers, land managers, businesses, communities and individuals living and working within and around the AONB.

Nature Priorities

There are 6 broad interconnected habitat types and 14 'Champion' species at the heart of the Forest of Bowland AONB Nature Recovery Plan.

Habitats

- Peatland[1]
- Woodland, Trees and Hedgerows
- Grasslands
- Wetlands
- Rivers & Water
- Built environment

Champion species

- Eurasian curlew[2] *(Numenius arquata)*
- Hen harrier[2] *(Circus cyaneus)*
- Black grouse[2] *(Lyrurus tetrix)*
- Swift[3] *(Apus apus)*
- Pied Flycatcher (*Ficedula hypoleuca*)
- Juniper[2] *(Juniperus)*
- Globeflower[4] *(Trollius europaeus)*
- Hard Fern *(Blechnum spicant)*
- Crimson Waxcap *(Hygrocybe punicea)*
- Brown long eared bat *(Plecotus auratu)*
- Brown trout *(Salmo trutta)*
- Yellow May dun *(Heptagenia sulphurea)*
- Bilberry bumblebee *(Bombus monticola)*
- Green hairstreak butterfly *(Callophrys rubi)*

Key Outcomes

- **Core Nature Areas** are well managed and in better condition. Core nature areas are international, national and local nature designations that include areas of blanket bog, peatland, heathland, species-rich grassland, and ancient woodland habitats.
- **Priority Habitats** are better managed, in better condition and are better connected to core nature areas and each other. They buffer Core Nature Areas across the AONB.
- **Connecting Farmland** and farms are integrating nature friendly farming and regenerative farming techniques into their business models, providing stepping stones and corridors between Core Nature Areas and Priority Habitats.

[1] Peatland includes blanket bog, upland heath, lowland heath and raised bog habitats
[2] S41 species on IUCN red list
[3] UK Birds of Conservation Concern Red List
[4] and associated Chiastocheta flies

- Habitats are supporting each other, creating a mosaic of functioning ecosystems with diverse and thriving populations of species.
- Local authorities, organisations and local communities are integrating nature friendly techniques in managing and protecting open spaces.
- The baseline condition of key habitats and baseline condition and abundance of key species is better understood. A monitoring framework is established, and data is being gathered.
- People are better connected to nature and more people are caring for it.
- Partners are working together to deliver the Plan and integrate it with the National Nature Recovery Network and Local Nature Recovery Strategies (LNRS) for Lancashire and North Yorkshire.

Principles for delivery

The following principles will support nature recovery networks and a more nature rich AONB:

Bigger

- Working at a landscape scale and going beyond the AONB's boundaries.
- Increasing the size of and creating nature rich buffers around Core Nature Areas.
- Allowing natural processes to recover and restoring functioning ecosystems.

Better

- Ensuring Core Nature Areas are in the best condition.
- Reducing pressure on the Core Nature Areas by improving habitats in buffering Priority Habitats and across Connecting Farmland.

More joined up

- Improving connection between habitats and ecosystems across the Connecting Farmland, through new or enhanced wildlife corridors and stepping stones and more farms using High Nature Value or Regenerative farming techniques.
- Working together. Everyone has a part to play, from landowners, farmers, land managers, organisations, businesses, residents, recreational users, visitors, local authorities, government, and its advisors.
- Supporting greater connectivity with habitats beyond the boundary of the AONB and with the Lancashire and North Yorkshire LNRS.

Delivering the plan

Nature recovery takes time, involves a lot of people, significant funding and working beyond the AONB boundary. New people and financial resources will be needed to deliver the ambition of the plan. Significant support will continue to be needed from Government, especially through agri environment schemes.

Partnership working is at the heart of the Nature Recovery Plan. Resources will be used effectively by working together, building on existing partnerships and relationships and forging new ones, by expanding and pooling staff resources, by developing knowledge and skills, and by tapping into more public and private funding and data.

Introduction

The Forest of Bowland Area of Outstanding Natural Beauty (AONB) is one of England's finest landscapes and is internationally important for its peatland, heather moorland, meadows, Atlantic oak woodlands and rare birds. The AONB is managed by a partnership of local councils, government agencies, landowners, farmers, local businesses and wildlife and recreation interest groups, who work to conserve and enhance the natural beauty of this special landscape.

The AONB, along with all other protected landscapes, is at the heart of a national Nature Recovery Network. It aims to be an exemplar for nature recovery in the uplands.

This plan has been developed to guide the changes needed to address declines in habitats and species in and around the AONB. It forms part of the AONB Management Plan and informs the county wide Local Nature Recovery Strategies (LNRS) for Lancashire and North Yorkshire.

Farmers and land managers are critical to nature's recovery. Most of the land in the Forest of Bowland AONB is farmed, and half of all species in the UK depend on agricultural habitats. These habitats were created by, and need to be maintained by, farming. This plan seeks to provide information on the ways that farmers and land managers can adopt nature friendly farming approaches to support more nature recovery.

It recognises that for several decades many farmers, land managers, businesses, communities and organisations have been working hard to look after the area's landscapes to support more nature rich places across our grassland, peatland, woodlands and wetlands. Some farm businesses have entered into and operate within agri-environment support schemes to conserve and enhance habitats for wildlife and manage important landscape features on their land. Other farmers have also adopted more sustainable and efficient farming practices, whilst remaining sympathetic to the environment; particularly through initiatives such as Natural England's Catchment Sensitive Farming.

Despite this commitment and hard work, nature is still at risk in the AONB, and some species continue to decline, including the enigmatic Curlew. Reasons for decline are often complex, but some of the reasons relate to isolation and fragmentation of habitat, changing land management policies and practices, climate change, invasive non-native species, and disturbance from people.

This plan sets a vision for nature recovery and provides a positive and proactive framework for delivery by the AONB Partnership, landowners, farmers, land managers, businesses, and communities within and around the AONB. It has been developed with the input of a range of stakeholders from these sectors.

The plan will be integrated into the Forest of Bowland AONB Management Plan. It can be used to help identify priorities for future agri environmental schemes that aim to deliver public benefits and greater biodiversity (Environmental Land Management schemes (ELM)). It provides a finer grain of detail to inform the LNRS for Lancashire and North Yorkshire that will be produced by each County Council during 2023/24. It can also help Local Planning Authorities deliver Biodiversity Net Gain (BNG), identifying priorities for off-site developer contributions where biodiversity gains can't be provided within a development site.

Vision for nature

The Forest of Bowland AONB is one of a series of protected landscape exemplars for nature recovery in the uplands, helping to restore the balance between nature and people.

By 2040 the Bowland landscape is even richer in nature, its mosaic of diverse habitats and ecological networks are being restored to support a greater abundance of wildlife and are more resilient to climate change.

Core nature areas, sites designated for nature conservation, are in better ecological condition, their edges fuzzier and less defined, and they are more joined up across connecting farmland.

The AONB is valued for the range of benefits it provides for society, including carbon storage, water storage and flood management, clean water for drinking, and access to nature. Land management enables natural processes to be restored and for nature to flourish alongside farming.

Landowners, farmers, conservation organisations, public bodies, businesses and communities are working together to deliver more nature. Local craftspeople skilled in traditional techniques maintain hedges, walls and vernacular buildings, while people from all backgrounds are connecting to nature, exploring nature rich places responsibly, and caring for the area's wildlife.

The vision will be delivered by creating nature recovery networks incorporating a mosaic of habitats and ecosystems. These networks will spread out from the area's core nature areas – these are sites and habitats that are designated for their nature interest, such as Sites of Special Scientific Interest (SSSIs) and Biological Heritage Sites (BHS) and Sites of Importance for Nature Conservation (SINCs) – enabling these areas to become 'bigger, better and more joined up' across the wider countryside and farmland. Transitional habitats will buffer core nature areas, and connecting farmland with its rivers, woodlands, trees, hedges, walls and grasslands forming strong corridors and connections between habitats and ecosystems.

Nature recovery isn't about turning back the clock 70 years, to a time when the landscape was richer in nature, it's about managing our dynamic landscapes in a way that supports a sustainable rural economy that is restoring, creating and improving the countryside for nature and for people.

The nature we have

The Forest of Bowland AONB has an expansive upland area rich in peatland, heather moorland, meadows, Atlantic oak woodlands and rare birds. Steep scarp slopes are incised with streams, wooded clough and valleys that give way to lower-lying pastoral farmland of pasture, native hedgerows, trees, woodlands, parkland, reservoirs, broad river valleys and floodplains. Together these combine to form a mosaic of habitats that support a rich variety of wildlife. The AONB covers 803 km^2. This is around 4% of all land designated as an AONB in England.

Over one third of the AONB is mapped or designated as being important for nature conservation. Sites with international and national designations for nature conservation and Priority Habitats[5] account for 277km^2 or 34.4% of the AONB.

There are three internationally protected areas in the AONB. The largest is Bowland Fells Special Protection Area (SPA) which is important for its expanse of peatland and heather moorland which are important habitats for breeding birds such as hen harrier, merlin, peregrine and lesser black-back gull. This area is also designated as Bowland Fells Site of Special Scientific Interest (SSSI). Two other internationally designated sites are Special Areas of Conservation (SAC), one for Atlantic oak woodland, and one for a suite of species-rich upland meadows.

The AONB has 21 Sites of Special Scientific Interest (SSSIs) of national importance, covering 16,382ha or 20.4% of the AONB's area. The largest is Bowland Fells. The rest are rivers, bog, mosses and heathland, species-rich grasslands, ancient woodlands and geological sites.

Additionally, there are over 450 non statutory designated local wildlife sites and local nature reserves that are important at a county level. These comprise woodlands, rivers, wetlands, grasslands, peatland habitats and geological sites.

Collectively, these designations form 'Core Nature Areas', and can provide valuable refuges to wildlife. They form parts of the farmed countryside, and some have public access providing spaces for people to connect with and enjoy nature. Not all of them are in a good condition. Steps are being taken to better understand their condition to support decisions for future management, enhancement and restoration.

The landscape of the Forest of Bowland AONB, including its 'Core Nature Areas', have been managed by generations of farmers and landowners. Sheep and beef farming dominates the upland areas, while dairy farming remains a significant land use in the valleys. Extensive areas of heather moorland are managed specifically for grouse shooting.

The AONB is rich in 'natural capital' – natural elements within the landscape that provide essential services to people in the towns and cities of Lancashire and North Yorkshire and Greater Manchester. The natural capital of its peatlands, woodlands and forests, rivers and reservoirs, grasslands and soils provide services including carbon storage, clean drinking water, managing downstream flooding, health and wellbeing, and recreational opportunities and enjoyment of landscape heritage for people living in the AONB and surrounding urban populations. There is substantial scope within the AONB to manage the natural capital to enable habitats to be restored, extended or created whilst providing multiple benefits for people, including climate change mitigation[6].

[5] Habitats of principal importance under Section 41 of the Natural Environment and Rural Communities Act (2006) that are a focus for conservation action in England.

[6] Mapping Natural Capital and Ecosystem Services in the Forest of Bowland AONB', 2021

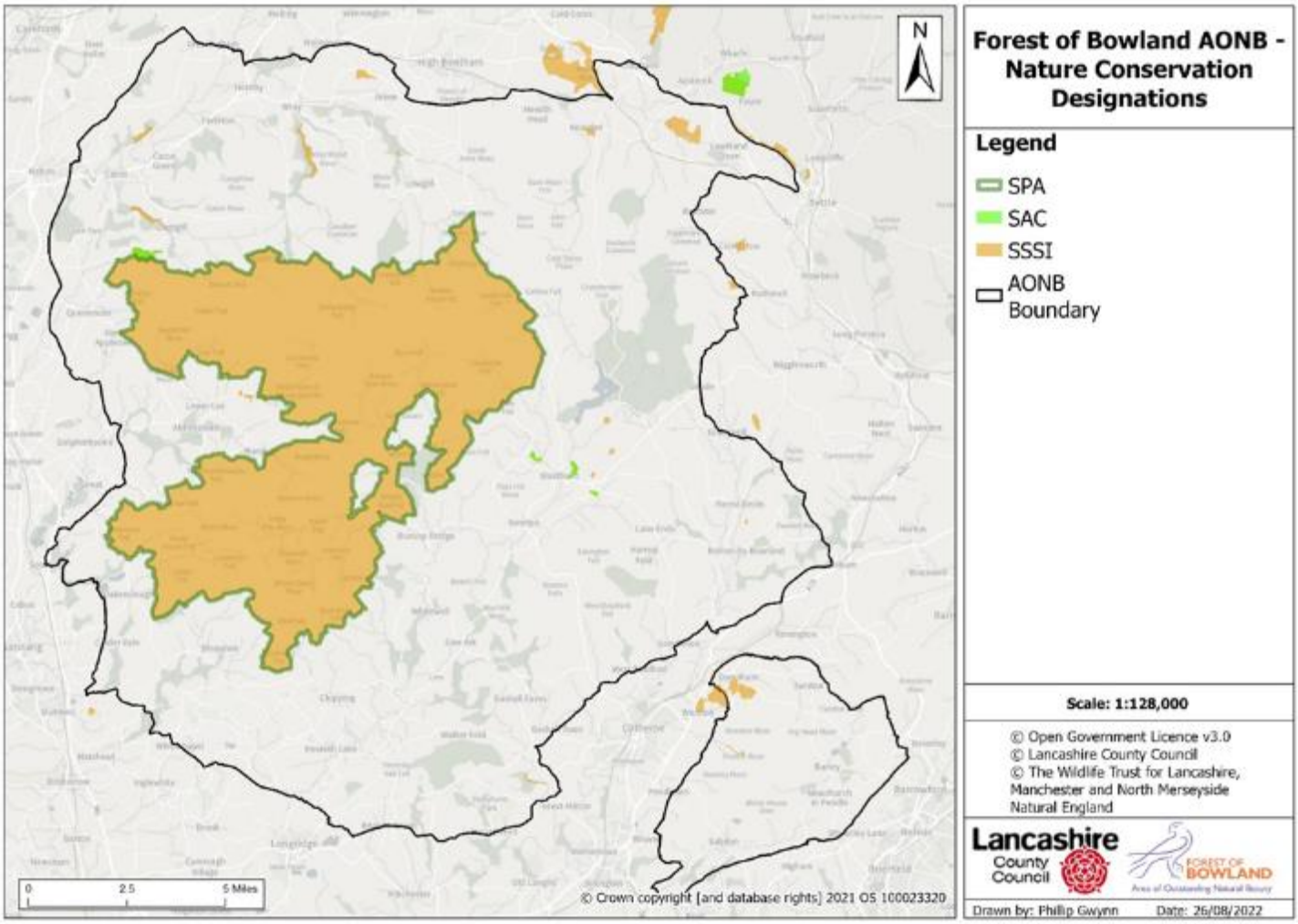
Designated Sites – Core Nature Areas

Almost one third, 32.5%, of the AONB's landscape is designated for nature conservation, internationally, nationally and locally. These form the core nature areas across the AONB.

International and national designations are listed below and shown on Map 1.

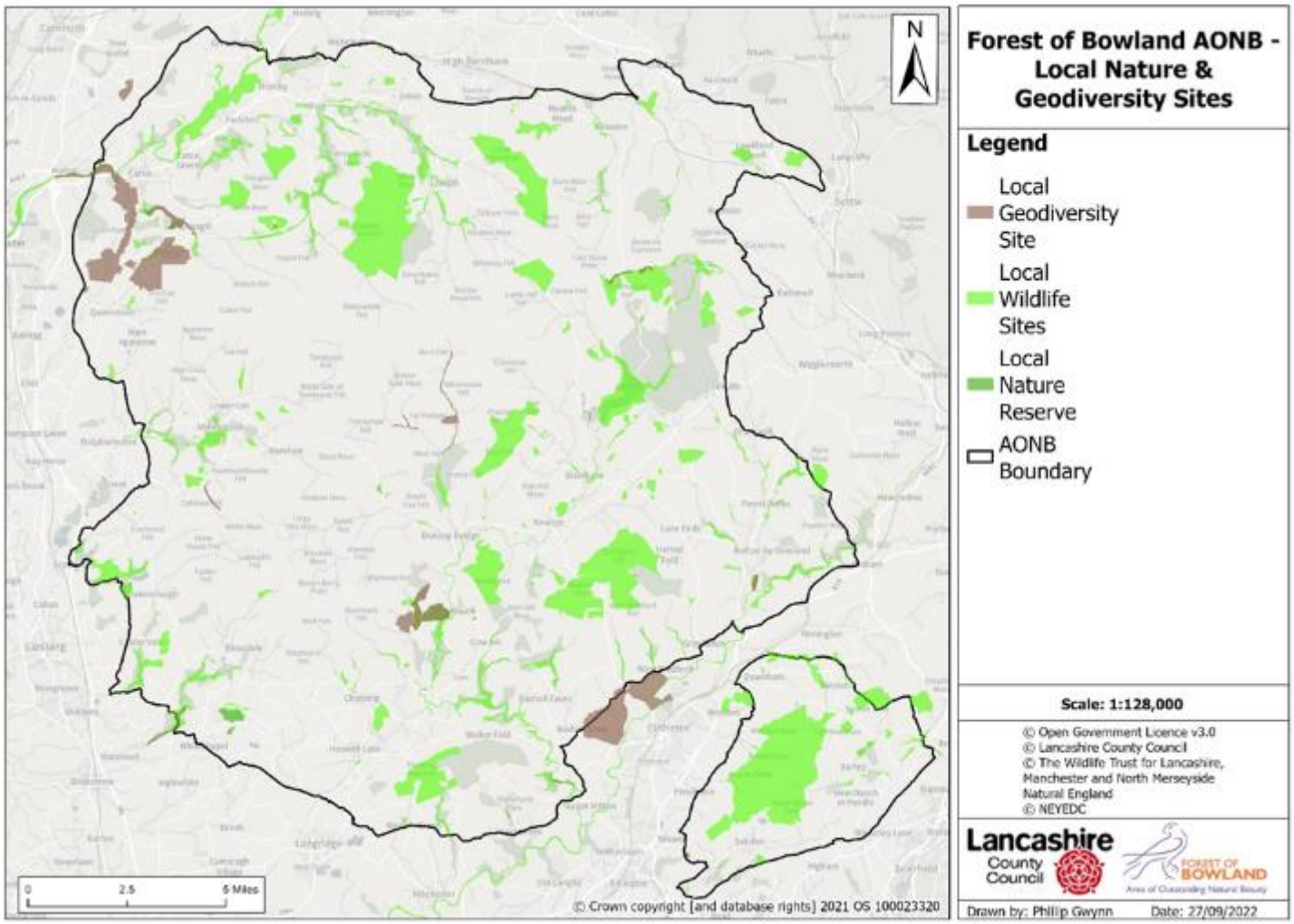
International Designations	Site of Special Scientific Interest (SSSI)	
Special Area of Conservation (SAC)	Artle Dale	Hesley Moss
Calf Hill and Cragg Woods	Austwick and Lawkland Mosses	Hodder River Section
North Pennine Dales Meadows	Barn Gill Meadow	Keasden Moor
Special Protection Area (SPA)	Bell Sykes Meadows	Langcliff Cross Meadow
Bowland Fells	Bowland Fells	Little Mearley Clough
	Burton Wood	Myttons Meadows
	Calf Hill and Cragg Woods	New Ing Meadow
	Clear Beck Meadow	Robert Hall Moor
	Clitheroe Knoll Reefs	Roeburndale Woods
	Far Holme Meadow	Standridge Farm Pasture
	Field Head Meadow	Tarnbrook Meadows

Map 1



There are 456 Local Wildlife Sites covering just over 10% of the AONB. These form part of a national network of non-statutory designated sites that are recognised for their ecological value. Local Wildlife Sites include Biological Heritage Sites (BHS) in Lancashire and Sites of Importance for Nature Conservation (SINC) in North Yorkshire, Local (County) Geodiversity Sites and Local Nature Reserves. These are shown on Map 2.

Map 2



In addition to the statutory and non-statutory designated sites, the AONB has a mosaic of habitats identified on the national Priority Habitats Inventory (PHI). These represent the Natural Environment and Rural Communities Act (2006) Section 41 habitats of principal importance. Many of these are found in designated sites, but some areas extend beyond the designations. The PHI includes most, but not all of the habitat areas in the AONB that meet this standard of importance. Some habitats (in particular Upland wood pasture) do not yet have a published mapped layer. There are more areas of importance than shown on the map below. There is no data on the condition of most of the PHI.

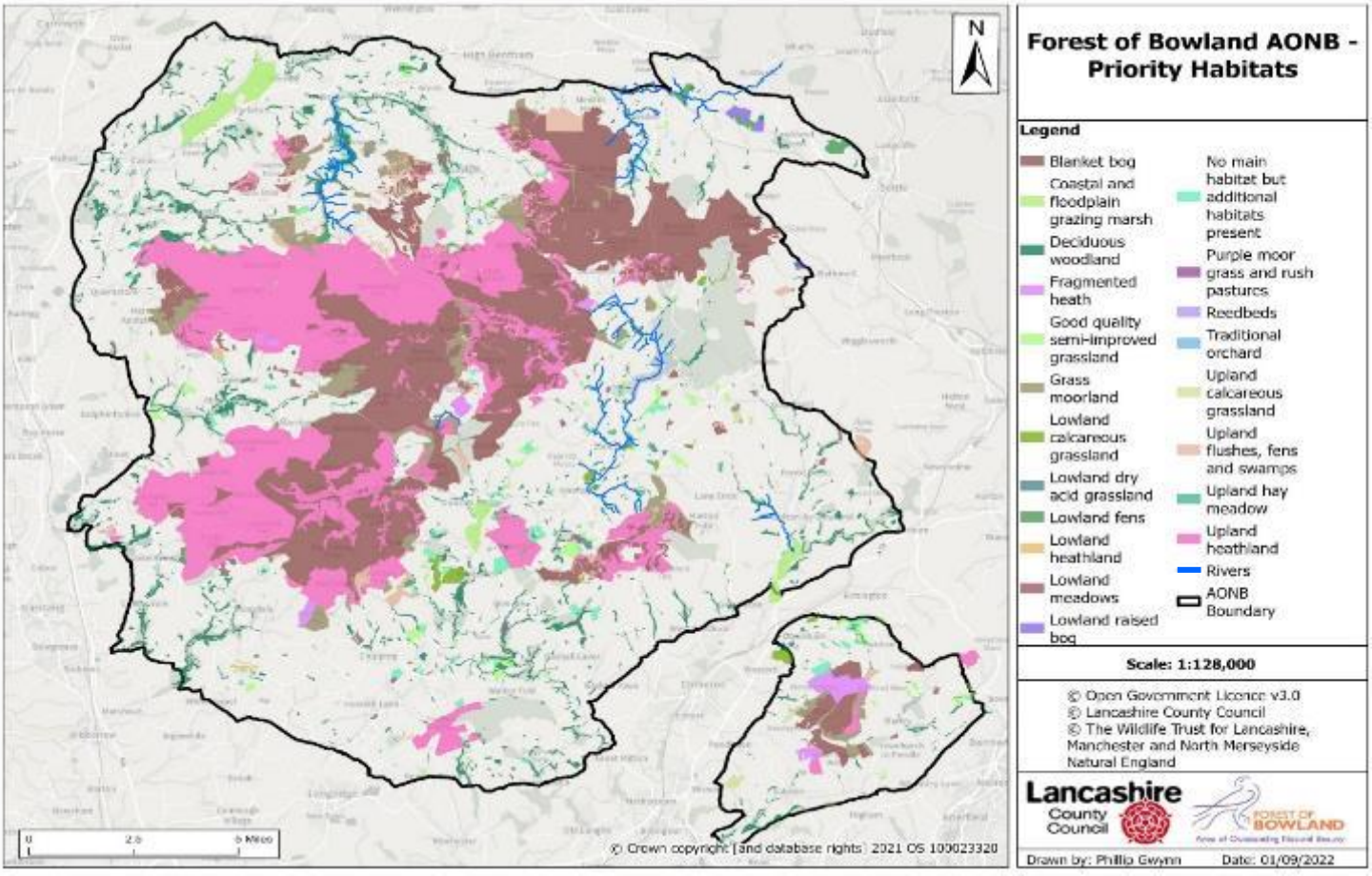
The Forest of Bowland AONB comprises 21 main priority habitats as listed on the Priority Habitats Inventory. Over half of them have been identified as key habitats. These are grouped into 5 broad habitat types below. The key habitats of the AONB (that are found in the designated sites and priority habitats) are broadly grouped below, along with a full breakdown of all the priority habitats. These are indicated on Map 3 (excludes hedgerows and ponds).

	Ha	% of AONB
Peatland	21,100	26
Grassland	500	0.6
Woodland	2,762	3.4
Wetland	1,671	2.1
Rivers	411km	N/A

Source: Natural England 2021

	Priority Habitat	Ha	Km
Peatland	Blanket Bog	11,012	
	Upland heathland	10,045	
	Lowland raised bog	65	
Grassland	Lowland Calcareous Grassland	141	
	Lowland Dry Acid Grassland	56	
	Lowland meadows	143	
	Upland Calcareous Grassland	823	
	Upland Hay Meadows	77	
	Purple moor grass and rush pastures	43	
Woodland, Trees & Hedgerows	Deciduous woodland	2,746	
	Ancient Woodlands	108	
	Traditional orchards	16	
	Hedgerows	N/A	N/A
Wetland	Lowland Fens	305	
	Reedbeds	1	
	Upland flushes, fens and swamps	809	
	Coastal and Floodplain grazing marsh	557	
Rivers	Rivers		411
	Ponds	N/A	
Other	Low heathland	55	
	No main habitat but additional habitats present	566	

Map 3



Drivers for change

The Forest of Bowland AONB's landscape has been shaped by millennia of natural processes and human activity which has helped shape the biodiversity of the past and today. From the geology laid down millions of years ago influencing the soils and vegetation, to the matrix of boundaries that have demarked land ownership over the last 500 hundred years, to industrialisation and changes to land use and climate, and more recently, in the last 80 years or so agricultural policy and changes in farming intensity. All have left a mark on the area's biodiversity leading to changes in habitats and species, and in some cases, their decline.

The area's biodiversity continues to be influenced by human activity both directly such as changes in land management, and indirectly such as from changes in climate. This section sets out some of the key drivers for change identified in relation to nature recovery in the AONB.

Climate Change, Resilience and Adaptation

Climate change can affect habitats and species in several ways. These are summarised below. More information can be found in the Forest of Bowland AONB Climate Change Adaptation Plan (2009):

- The climate conditions of an area change with habitats and species moving to a new area where suitable conditions exist. As temperatures rise it is likely that this will be northwards and/or to higher altitudes. This could impact on species that occur at their most southern range in the Forest of Bowland AONB.
- Seasonal changes, where the timing of natural events such as spring blossoming changes which can lead to a lack of synchronicity between species emergence and availability of food sources.
- Changing weather patterns with warmer drier summers and warmer wetter winters likely to become the norm with more frequent extreme weather events. Heavy rainfall can cause flooding to downstream communities, and long periods of dry weather can cause droughts, leading to erosion, degraded peat, dry heathland, wildfires and reduced flows in rivers and streams. This can impact on species breeding, migration and food resources. Warmer winters can affect flower seeds that rely on sub-zero winter temperatures to germinate in spring. Changes in river water temperatures can adversely affect river species.

There are an increasing number of 'nature-based solutions' that seek to mitigate some of the impacts of climate change that also support nature recovery. These include:

- Peatland restoration and natural river restoration to slow the flow of water and downstream flooding in extreme rainfall events.
- Woodland, tree and hedge planting to lock in carbon and slow the flow of water and reduce downstream flooding in extreme rainfall events, improve water quality, biodiversity and provide shelter and shade for livestock.
- Peatland restoration to wet up peat soils and areas of deep peat to reduce the impact of extreme drought events.
- Species-rich and wet grasslands with healthy soils can help store water in times of drought or heavy rainfall, filter and clean water and increases carbon capture in the soils.
- Regenerative farming techniques can increase soil health, carbon storage and rainwater infiltration.
- Restoring and creating wetlands, and floodplain restoration is a form of Natural Flood Management with habitats storing more water in times of drought or heavy rainfall, filtering and cleaning water and increasing carbon capture in the soils.

Farming, Forestry and Land Management

In previous decades, Government incentives have led to land management practices that have contributed to habitat loss and species decline over the last 80 years or so. Practices include drainage of peat and grasslands, burning of heather on peatland, intensive grazing and cutting, use of slurry, inorganic fertiliser and pesticide, and plantation forestry. In the last 30 years or so, agri-environment payments

have been made to a significant number of farmers across the AONB to help to change some of these practices to enable improvement to the condition of some habitats and ecosystems. Despite this, declines continue.

The funding for farming is changing. Between 2022 and 2027 a new system of farm payments is being implemented – Environmental Land Management schemes (ELM). The future farm payment schemes are seen by some to be the biggest threat to nature recovery, and by others as the biggest opportunity for nature recovery. Until the schemes are finalised and fully rolled out it is difficult for farmers, landowners, and land managers to decide what will be best for their business model.

On one hand, people are concerned that the schemes won't support productive farms to be profitable, that schemes might be too bureaucratic to be attractive, and that there is a lack of good quality, impartial advisors to help farmers determine what is best for their business. On the other hand, people consider that ELM could incentivise more nature friendly farming that is less intensive, with farmers receiving payments for delivering a range of public goods whilst still producing food. This could help to keep farms financially viable. A significant number of farmers in the Forest of Bowland AONB have been in agri-environment schemes for between 10-30 years, so are used to having nature in their business model.

Wider economic changes could also provide opportunities for High Nature Value Friendly farming and Regenerative farming techniques. For example, the energy crisis of 2022 led to rising costs in fertilisers with more farmers looking at the use of herbal leys to improve soil condition and vegetation growth. More people are aware of the importance of pollinators for food security and biodiversity and there is an increased interest and knowledge in soil health and biology.

Taking a Natural Capital approach can unlock opportunities to secure funding for schemes that provide multiple benefits to people as well as delivering for nature. The biggest opportunities are linked to carbon storage (peatland and woodlands), water storage (natural flood management) and water quality (catchment sensitive farming and water companies).

There is a growing appetite for farmers, landowners, and other organisations to work more closely together in the future. Greater cooperation between landowners, managers and conservation bodies could lead to positive management of a mosaic of climate resilient habitats and diversity of species. Various organisations work across the AONB and provide advice to landowners, farmers and land managers to aid with nature recovery. However, there is perhaps an opportunity to coordinate and streamline advisory services to simplify the offer to landowners and farmers.

There is a need for farms to reduce their carbon footprint to support Government and industry targets for net zero. Renewable energy sources and electric vehicles are being considered, and a project is being led by the AONB team to look at the role of regenerative farming and soil management to help this move to net zero.

Pollution, pests, disease and invasive species

Nature is at risk from a range of pollution, pests, disease and invasive species.

Loss of in-river habitats and water eutrophication from pollution from nutrients, pesticides, novel pollutants, pet flea treatments, road and land run off. Phosphate and other pollution can cause harmful algal blooms, reducing oxygen levels in the water which can harm animals living in the water.

Bracken is increasing across the AONB and can be difficult to manage due to the rough and steep nature of the land it colonises. Rhododendron is an invasive species in some woodlands, and there could be an increase in non-native tree species in response to climate change adaptation and disease. Both can lead native species being out competed. Invasive riverside species are increasing, including Himalayan balsam, Japanese knotweed and Giant hogweed.

The heather beetle is a native species that breeds and feeds on heather. Increased populations of heather beetle in concentrated areas have led to significant heather damage in parts of the AONB. There are concerns that an increase in wetter areas could lead to an increase in liver fluke and threats to livestock.

Ash die-back and Phytophthora ramorum are fungal diseases which can leading to a loss of trees and, in some locations, significant areas of woodland. Highly pathogenic avian influenza (avian flu) can impact on wild bird populations.

Deer browsing of woodland damages new growth and regeneration. Grey squirrel is outcompeting the native Red squirrel in the northern reaches of the AONB, close to existing populations of Red squirrel in Clapham and the Yorkshire Dales National Park.

People and Development

The AONB has an estimated resident population of 16,000 but has over one million people living within a 30 minute journey of the area. The extensive rights of way network and open access land within the AONB, offers access to nature, provides excellent recreational opportunities, and supports the health and wellbeing of both residents and visitors. Leisure, wellbeing, and social prescribing can all support the rural economy, but this needs to be managed to prevent harm to nature and landscape. Issues of concern include:

- Recreational disturbance from walkers, cyclists, horse riders, motorcyclists and 4x4 vehicles. All can damage habitats and disturb species from feeding, roosting, and breeding. This is particularly the case for peatland and species-rich grassland habitats.
- Pollution from urban areas and land management practices (from fertilisers and pesticides).
- Litter affects livestock and wildlife on land and in rivers.
- Development pressure to build more homes and businesses continues around key towns and villages, often on improved and semi-improved grassland.
- Historic and new in river physical barriers fragment habitats and are a barrier to trout, salmon and eel migration. In some cases, hydro power schemes can negatively affect river ecology and species.

With so many people living close to the AONB and with more people aware of the importance of pollinators for food security and biodiversity, there is an excellent opportunity to raise awareness with people on the elements that make the area special, including its nature. By providing information, actively engaging with people at events, providing opportunities to get involved with volunteering and developing land management skills, more people will care for nature in the long term.

Finance and Policy

There are concerns that the Government's targets to plant many more trees could lead to pressure for tree planting and commercial forestry in inappropriate habitats such as species-rich grasslands, wetlands, and blanket bog. This has led to the 'right tree, right place' approach as set out in the Forest of Bowland AONB Woodland Strategy, 2022.

New sources of public and private finance could support restoration and management of peatland and woodland creation for increased carbon storage (Carbon Markets, Woodland Carbon Code, Peatland Carbon Code) and water storage (Insurance market and Natural Flood Management) and water quality (Water Companies). Public and private finance isn't supporting wetland creation and management at the same scale as there is a lack of data and evidence on the benefits they offer.

Skills, data and monitoring

There is a lack of a clear baseline of condition for international, national and county wide designations and Priority Habitats on the Priority Habitat Inventory (PHI). Steps are being taken by Natural England

and Lancashire County Council to address this for designated sites, but it may take several years to complete.

There is currently a lack of surveys for species-rich grasslands that could be supporting rare fungus populations. The Priority Habitat Inventory is incomplete for wood pasture, species-rich grassland and other habitats where locally derived good quality data exists. There is a lack of understanding in the ecological network potential of rivers and data can be lacking to support the best restoration priorities.

Science and evidence could develop to support nature focused management. There is no current biodiversity monitoring framework in place for the AONB. Partners currently monitor different elements and data is held in different places. The Lancashire Environmental Records Network and North & East Yorkshire Ecological Data Centre could both provide a central place to store records.

As farmers and land managers retire there is a need to pass on traditional management techniques, such as managing hay meadows, laying hedges and building drystone walls, as they all contribute to farmland that is richer in nature. Equally, farmers are not foresters and support is needed to upskill people to manage and care for woodlands/trees.

Priorities for nature recovery

Overarching outcomes

The overarching outcomes the plan seeks to deliver are:

- Habitats are supporting each other, creating a mosaic of functioning ecosystems with diverse and thriving populations of species.
- **Core Nature Areas** are well managed and in better condition. This includes nature designations across areas of blanket bog, peatland, heathland, species-rich grassland, and ancient woodland habitats.
- **Priority Habitats** are better managed, in better condition and are better connected to core nature areas and each other. They buffer Core Nature Areas across the AONB.
- **Connecting Farmland** and farms are integrating nature friendly farming and regenerative farming techniques into their business models, providing stepping stones and corridors between Core Nature Areas and Priority Habitats.
- Local authorities, organisations and local communities are integrating nature friendly techniques in managing and protecting open spaces.
- The baseline condition of key habitats and baseline condition and abundance of key species is better understood. A monitoring framework is established, and data is being gathered.
- People are better connected to nature and more people are caring for it.
- Partners are working together to deliver the Plan and integrate it with the national Nature Recovery Network and LNRS for Lancashire and North Yorkshire.

Habitats

The six broad habitat types below represent the mosaic of habitats that are most important for developing a resilient network of functioning ecosystems. These have been selected following stakeholder engagement.

- Peatland
- Woodland, Trees & Hedgerows
- Grasslands
- Wetlands
- Rivers & Water
- Built environment

These broad habitats occur in the following areas. All are important to developing nature recovery networks across the mosaic of habitats.

Core Nature Areas

These form the core nature areas of the nature recovery network.

Internationally and nationally designated sites have the highest priority for nature recovery. These are Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Sites of Special Scientific Interest (SSSI).

Locally designated wildlife sites have a high priority for nature and its recovery. These are County Wildlife Sites and Local Nature Reserves.

Many of these need to be in better management to enhance their condition and resilience to support greater species diversity and abundance.

Priority Habitats

Priority habitats outside designations are critical to expanding, restoring, buffering and connecting core nature areas. These need to be in better management to enhance their condition and enable movement of species across the landscape.

Connecting Farmland

A mosaic of all the broad habitat types, core nature areas and priority habitats all occur across the AONB's farmland. More productive farmland with its improved permanent pasture (semi-improved and improved grassland) is critical in supporting ecological networks. It can do this through the provision of transitional habitats, buffers, corridors and stepping stones between core nature areas and priority habitats, improving grassland species mixes, and introducing more trees and hedgerows to improve biodiversity and environmental resilience more widely across the AONB.

Peatland

Over a quarter of the AONB is peatland, making up the wild open spaces and remoteness that are core to the AONB's identity. The Bowland Fells are the most extensive area of peatlands. These support rare and endangered species associated with a very rare mosaic of upland habitats comprising some of England's best blanket bog, upland heath, lowland heath and raised bog. They are of international importance for biodiversity, carbon storage capacity, natural flood management and water quality benefits. Blanket bog and upland heath continue to be priority habitats for nature recovery, along with areas of lowland peat and peat soils found across the AONB.

Blanket Bog covers 11,012ha, almost 14% of the AONB. Over half of this is designated as SSSI and SPA (6,462ha). Between 2010 and 2025 1090 ha of blanket bog is under restoration. It is an important area for lesser black backed gulls, supporting what 'may be' the largest colony of this species in the world.[7]

Upland Heath (heather moorland) covers 10,000ha, 12% of the AONB. Over 80% is protected as SSSI and SPA (8,489ha). The large expanses of heather covered fells have largely been maintained over decades for grouse shooting via managed moorland burning practices and reduced stocking levels. It is a stronghold for Hen harrier in England and supports populations of breeding Merlin, Peregrine, Short-eared owl and Ring ouzel.

Vision

By 2040, the wide open moorland character of the Bowland Fells and other moorland areas is retained with a mosaic of well-connected peatland habitats. Areas of blanket bog are under restoration and rich in sphagnum, heathland is rich in a mix of heather, bilberry and other dwarf shrub species, providing intense seasonal colour and feeding and breeding places for the bilberry bumblebee and green hairstreak butterfly. There is a healthy and resilient population of hen harriers, providing mating 'skydancing' spectacles each spring. Ring ouzel and merlin frequent the moorland and black grouse has returned to the area. Peatlands are managed to capture carbon, slow the flow of water and be resilient to climate change, minimising fire risk and supporting the rural economy. Old and new clough woodlands extend across the moorland fringe, connecting with lower-level woodlands and farmland. Juniper is recovering and beginning to expand in northern parts of the AONB.

[7] Lock, L., Donato, B., Jones, R., Macleod-Nolan, C. (2022) England's breeding seabirds: A review of the status of their breeding sites and suggested measures for their recovery. RSPB and Natural England report.

Key outcomes	Steps to recovery	Restoration and management approaches
• Blanket bog is under restoration to improve its hydrological integrity and allow peat to form, hold more water, support more sphagnum and vegetation growth, greater biodiversity and provide habitat for the plan's key peatland species. Carbon is being sequestered, drinking water is filtered and water flows are better managed.	• Within the Bowland Fells SSSI long-term management plans are in place that focus on SSSI features being on a path to favourable condition including blanket bog and heather moorland. • Outside the SSSI management plans are in place to support better quality blanket bog and diversity of species and age of heather across heathland. • The AONB Unit will facilitate more surveys of peatland to understand depth and condition of blanket bog and peaty soils and to help develop restoration plans in liaison with landowners. • The AONB Unit and Lancashire Peat Partnership work with landowners to help secure large scale funding for restoration via public and private sources. This could include carbon finance as markets and schemes develop.	• Peat, stone and timber dams are built to restore eroding gullies and block grips. • Grips, gullies and hags are reprofiled and revegetated. • Sphagnum, cotton grass plugs are planted and heather brash spread to help revegetate bare peat. • No burning on blanket bog[8].
• Heather moorland is better managed, enhanced and restored to support greater species diversity and age of heather. • Hen harrier nesting sites are protected, new nest sites are created and the population is thriving across the Bowland Fells (along with a suite of heather moorland birds, butterflies and bees). • Peatland mosaic habitats are more mature, larger in extent, have more diverse species and are better connected with a mosaic of woodlands to support the reintroduction of Black grouse.	• Heather moorland management approaches in the areas around hen harrier breeding sites are reviewed to better understand why they are successful, and information is shared on heather management approaches that support hen harrier breeding sites.	• Managed burning on small strips of (30m x 10m) of dry heath on shallow peat. • Up to 5% of moorland area to be cut on blanket bog and up to 5% on dry heath to create fire breaks and reduce the potential for wildfires. • Grazing regimes are tailored to restore species-rich areas on heathland and blanket bog. This may include reductions in sheep number and/or the introduction of cattle or pony grazing. • A local management approach is established to combat and eradicate illegal persecution of hen harriers (and other raptors), including

[8] Blanket bog is peat over 40cm deep, in accordance with burning as a tool for the restoration of upland blanket bog: Position Statement by Natural England 2020.

		survey work, satellite tagging and monitoring, co-ordinated hen harrier nest protection and winter roost site monitoring.
	• People are learning about and are safely exploring the expansive Bowland Moors.	• Where possible footpath alignment and surfacing is integrated in peat restoration projects to help restore blanket bog and provide improved access for people to enjoy the area.
Champion species	Hen harrier Black grouse Bilberry bumblebee Green hairstreak butterfly Juniper	

Woodland, Trees and Hedgerows

Dense broad-leaved woodlands radiate out from the central most part of the Bowland Fells like green ribbons. They cling to the steep sides of deeply incised cloughs and river valleys and provide a rich and diverse habitat for a considerable variety of wild plants, invertebrates birds and mammals. Wood pasture often connects with woodlands. Conifer plantations dominate Gisburn Forest, Grindleton Fell and Longridge Fell and smaller plantations are peppered across the landscape elsewhere. There is over 6,700ha of woodland in the AONB, covering 8% of the landscape. Of this 2,746ha is priority habitat deciduous woodland, with 145ha designated SSSI.

Ancient woodland - accounts for 199ha (1.2% of the AONB). These are over 400 years old and are of considerable conservation importance. They include the AONB's Atlantic oak woodland. Ancient woodland are dominated by oak, ash, birch and rowan, alongside wych elm and wild cherry. They are often found in cloughs on the moorland fringe. They support a rich ground flora and provide food, shelter and breeding places for birds, mammals and invertebrates. Networks of fungal mycorrhizae are integral to woodland health.

PAWS (Plantations on Ancient Woodland Sites) - during the 20th century, many ancient woodlands were planted with non-native species to provide timber. These woodlands are known as PAWS (Plantations on Ancient Woodland Sites). Around 8% of woodland in the AONB are PAWS woods[9]. Important for the species listed above and potential habitat for red squirrel.

Coniferous plantations – many of these were planted in the 20th century and can be found across the AONB. Large scale plantations include Gisburn Forest, Longridge Fell, Knots Wood, Calder Moor and Beatrix Fell. Although not a priority habitat, these can be important habitats for nightjar (felled areas) and crossbill.

Wood pasture and Parkland – these can trace their roots from before the Norman conquest. The estates that date from that time are home to great examples of wood pasture and parkland with outstanding examples of open grown, ancient or veteran trees. The combination of trees and grazed pasture form a unique open habitat with high invertebrate and fungal diversity. Combined with scrub they can provide rich 'edge' habitats.

Trees - Individual, veteran and 'Landmark' trees can be found across the AONB and contribute to the unique character of the AONB landscape. Information on the number and distribution of veteran trees is sparse. Most are found in parkland and along roadsides. The micro-habitats in hollowing trees, other decaying wood and rot holes support a wide range of specialised invertebrates, lichen and fungi. 'Landmark' trees are important to the landscape's character. They can be found in parkland, farmland or on a village green and may be native and non-native species.

Hedgerows – native hedgerows form traditional boundaries and cultural features across the landscape. Although all hedgerows are not mapped, a survey covering almost 40% of the AONB (2001- 2007) identified over 470km of traditional boundaries required restoration work. These included significant lengths of hedgerows.

[9] Forest of Bowland AONB Woodland Strategy 2020

Vision

By 2040 old and new mixed and native broadleaf woodlands flank valleys, dales and moorland fringes, forming a mosaic with other important habitats and species. Our very special Atlantic oak woodlands are well managed and are slowly expanding across the northern cloughs and steep valleys of the AONB. Riparian woodlands snake alongside rivers providing shade, habitat and leaf litter for fish and aquatic species. Coniferous plantations are restructured with a mix of coniferous/deciduous species with softer edges integrating them better into the landscape. Pied flycatcher, crossbill and redstart are more abundant and red squirrels are returning to the northern dales. More woodlands and plantations are managed for wood products, with timber used in local businesses and buildings. Woodlands connect with a strong matrix of in field, veteran and landmark trees and good quality hedgerows and traditional dry stone walls. These wildlife corridors criss-cross the landscape, providing shelter for wildlife and livestock, and in some cases slowing the flow of water. Our woodlands are valued for the full range of benefits the provide society including carbon storage, flood management and biodiversity.

Key outcomes	Steps to recovery	Restoration and management approaches
• More broadleaved woodlands are in better management, restored and expanded. They are better connected with greater resilience to climate change. This includes Atlantic oak woodland, juniper woodland and PAWS. • New woodlands are created to help buffer, expand and connect existing woodlands, reinforcing clough woodlands along the moorland fringes, creating riparian wooded strips and field copses and farm woodland. • Existing and newly created woodlands, hedgerows, scrub and trees are sequestering carbon and are acting as sponges in the landscape holding more water in the soils and slowing the flow of water. • More coniferous plantation management plans include broadleaved species mixes along plantation edges, watercourses and	• More woodland is managed to achieve better species mix and age diversity, and to support greater ground flora. • Opportunities mapping is completed to help identify woodland creation opportunities. (Rivers Trusts, Lancashire Environmental Records Network and Lancashire Wildlife Trust.) • More well designed woodland creation schemes are planted based on the principle of the right tree, right place, right mix of species using the UK Forest Standard. • Grants are accessed to support clough woodland and wood pasture creation on slopes and scarps to suppress bracken growth. • New mechanisms are found to fund long term fencing maintenance costs which are not currently covered by existing schemes. • Advice is available on: o the restoration of PAWS to increase species diversity.	• Broadleaved woodland: maintain a range of stand structures and silvicultural approaches could include veteran trees, open crown trees, occasional windthrow, understory layers, dead wood, open space and areas of natural regeneration. • Atlantic oak woodland: better management, including appropriate levels of seasonal grazing and expansion through natural regeneration and new planting. • Clough woodland: more juniper and other native broadleaf species are planted from appropriate northern seed source in cloughs. Areas in and around cloughs are fenced out to remove grazing to allow natural regeneration.

other features of nature interest and support continuous cover forestry. They are better integrated into the landscape and are better connected to broadleaved woodlands. • Existing native hedgerows are better managed and restored to support flowering and fruiting shrubs. Gaps are filled and new native hedgerows are created to provide stronger wildlife corridors and better connection between hedgerows, woodlands, wood pasture and trees. • More people are trained and in hedge laying and traditional boundary skills. • Wood pasture and scrubby areas are increased to provide more diverse transitions between habitats and to link woodland areas. • More ancient and veteran trees are mapped with succession planting alongside them to ensure the future of this landscape feature. • More in field, hedgerow, veteran and Landmark trees are found across the landscape, providing stepping stones for nature and connecting with scrub, wood pasture, hedgerows and woodland.	○ diversifying species mix, the creation of open spaces, rides, transitional edges and open watercourses in plantations. ○ 'additional contributions' funding available for woodland creation to maximise nature recovery, water quality and flood management, riparian buffer and people/access options. • The extent and opportunity for hedge management, enhancement and expansion is assessed and farm businesses are supported to access grants for hedge management and laying, and planting new hedges. • A training programme is in place that trains farmers and hedge layers, maintains hedge laying skills and trains new trainers. • Veteran, old and landmark trees are surveyed and mapped, information is available on managing veteran, old and landmark trees and a new planting and replacement programme is running. This is particularly important in areas of parkland. • Strategic placement of new woodlands and hedgerows along and close to rivers to reduce diffuse pollution, improve water quality, provide shading for fish, and provide Nature Based Solutions for Natural Flood Management.	• Conifer plantations: maintain a range of stand structures and silvicultural approaches. Ensure wetland features, such as springs, flushes and bogs are protected, and opportunities are taken to restore degraded features. Develop graded edge habitats and manage edges to create diverse, convoluted structure and a transitional zone between habitats. • Manage plantations on a continuous cover forestry approach where appropriate as an alternative to clear felling. • Native hedgerows are left to grow up. Side cutting helps maintain them. Hedgerows are periodically laid. Flailing of hedgerows is minimised to roadside hedgerows and public rights of way. • New hedgerows are left to grow for 10-15 years to allow the hedge to establish. Interim side cuts may be needed but flailing should not be used. New hedges are laid after 10- 15 years. Care is taken to ensure that new hedges are not planted in key wader habitats as waders like an open habitat. • New 'kested' native hedgerows are planted on banks, or across the landscape to physically slow the flow of water. • Native wood pasture and scrub species are planted. Hardy cattle grazing supports wood pasture and scrub regeneration, expansion or creation schemes. • Bat boxes and bird boxes are installed in woodlands without old trees to provide places for bats, pied flycatcher and redstart.
Champion species	Black grouse Pied flycatcher Hard fern Brown long eared bat	

For more detailed information on restoration and management approaches view [The Forest of Bowland AONB Woodland Strategy, 2021](#).

Grassland

Large areas of the AONB are dominated by grassland. Most of the grassland is improved or semi-improved permanent pasture, but there are critically important remnants of upland hay meadows and species-rich grassland.

Species-rich grassland - this vulnerable habitat is one of the AONB's rarest and a priority for conservation and enhancement. Species-rich grassland can include traditionally managed northern upland hay meadows and limestone grasslands that are an oasis for wildflowers, rare fungi, bumblebees and other insects. Road verges, church yards, village greens and some gardens are also refuges for species-rich grassland and can provide stepping stones across the landscape. There are 220ha of species-rich grassland recorded on the Priority Habitat Inventory in the AONB. This comprises 143 ha of lowland meadows and 77 ha of upland meadow, a significant number of the UK's remaining upland hay meadows. More exist but are not yet recorded on the PHI.

Purple Moor Grass and Rush Pasture - areas of marshy grassland dominated by purple moor grass are also widespread on thin peaty soils on the lower moorland slopes around the Bowland Fells. 43ha is identified on the Priority Habitat Inventory. This habitat provides part of the mosaic of habitats required for successful black grouse introduction and supports wading birds such as snipe.

Semi improved and improved grassland – Permanent pasture covers 43,271 ha of the AONB's area. This accounts for 67% of the AONB's total farmed area.[10] The majority of this area is improved grassland, with a smaller amount of semi-improved grassland. These grasslands support sheep, cattle and dairy farming. They form part of the AONB's open grassland mosaic with woodlands, hedgerows, trees, dry stone walls, streams, rivers, floodplains and ponds. They are very important in supporting landscape scale habitat restoration, healthy and resilient soils and greater habitat resilience. Agri-environment schemes are a key tool in continuing to support the management and restoration of farmed land for nature recovery. In the AONB, since 2011, over 50ha of wet grassland has been restored on semi improved and improved grassland to support breeding waders. A further108ha has been restored in land between the AONB and Yorkshire Dales National Park.

The greatest opportunities are for change across semi improved and improved grasslands, and associated farmland, are:

- Improving soil health and plant species diversity which increases biodiversity.
- Reducing fertiliser and pesticide use, reducing reliance on costly and carbon rich fuel and fertilisers.
- Creation of new habitat, especially on land that is marginal for farming, such as planting wood pasture and scrub on bracken dominated slopes.
- Restoration and creation of habitats, features and corridors, such as native hedgerows, riparian woodlands and species-rich grasslands.
- Creation of scrubby and/or woody areas, often along field margins and in less productive corners.
- Creation of wet grassland for breeding and over wintering waders in areas of semi-improved and improved grassland.
- Cattle targeted to the right places can support habitat restoration – for example their grazing habits can help remove coarse grasses and create a greater variety of structure in habitats.

[10] Analysis of the Economic Profile of the Forest of Bowland AONB, Rural Futures and Rural Solutions, July 2013.

Vision

By 2040 the undulating lowland farmland provides a mosaic of hay meadows, species-rich pasture, semi-improved and improved pasture, with scrubby and mixed species margins and around boundaries of native hedgerows and dry stone walls. Fields are grazed by a range of livestock including native sheep and hardy cattle. There are more hay meadows and species-rich pastures providing breeding and feeding grounds for wading birds like curlew, lapwing, snipe and oystercatcher in spring. In summer they are filled with a multitude of flowers, including the rare globeflower, and are alive with the buzz of bees, butterflies and other insects. In autumn they are dotted with fungi, including the crimson waxcap. Throughout the year they are home to a range of mammals including hare, hedgehog and field vole. Beyond the farmland, roadside verges, village greens, cemeteries, school grounds and private gardens provide 'mini meadows' or 'pollinator patches' acting as stepping stones for species across the area.

Key outcomes	Steps to recovery	Restoration and management approaches
Species-rich grasslands • Species-rich meadow, pasture and roadside verges are conserved, enhanced and restored. They are rich in plants, fungi and invertebrates, are better connected and have a greater resilience to climate change. • More globeflowers are thriving in more places across the AONB. • Purple Moor Grass and Rush Pasture is restored, expanded and created along the moorland fringe. These areas are better connected with transitionary habitats.	• More traditional meadows have a management plan in place to support restoration, enhancement and management for a wide range of flowering plants, invertebrates and fungi. Funding is secured for good management and hay meadows continue to provide a good crop for livestock. • Information is available on seed collecting, propagating and planting of globeflower in meadows. • Grants are secured to support restoration through ELM, Farming in Protected Landscapes and the Hay Time programme. • Coordinated farm advice is provided through the Hay Time Project and by advisors at the Rivers Trusts, Forest of Bowland AONB, RSPB, Yorkshire Dales Millennium Trust enabling opportunities for species-rich meadow and pasture restoration to be identified during farm advisory visits.	• Adopt High Nature Value farming systems (HNV) with low inputs (no chemical fertilisers). • Manage grazing to enable the right plants to grow and set seed • More information and advice on managing and restoring species-rich grasslands can be found through The Hay Time Project. This has run for a decade in the AONB: https://www.forestofbowland.com/Hay-Time-Project

Improved grasslands • More farms are deploying High Nature Value farming and Regenerative farming systems, • More farms have pasture with more diverse plant species and sward, with little or no use of artificial fertilisers and slurry and herbal leys have been widely adopted.	• Information and demonstration events are available for High Nature Value farming and Regenerative farming systems. • Silage cutting regimes adapt to enable safe nesting and fledging of Curlew and other ground nesting birds. Nests are identified and protected from predators.	• Adopt High Nature Value Farming or Regenerative Farming systems and techniques to support healthy soils, livestock shelter, and greater pollination and biodiversity. Techniques can include: o Adding herbal leys to improve soils and plant nutrients whilst reducing the use of additional fertilisers, o Managing grazing that enables plants to flower and seed, ground nesting birds to nest and chicks to fledge. o Diversified planting in and around fields including wood pasture, scrub and hedgerows.
• More Curlews (and other wading birds) are nesting, roosting and feeding on the mosaic of inbye, wet meadows, semi improved, improved pasture and moorland fringe farmed habitats.	• Information and advice are available to farmers and land managers on meadow and pasture restoration and creation of good quality wet areas on semi improved and improved pasture for breeding and overwintering waders.	• Manage semi-improved and improved grassland to boost the availability of seeds and insects, with a more diverse sward, management of water levels in spring and winter, and the creation of wet scrapes with rush management. • Adapt silage cutting regimes on semi improved and improved grassland to protect breeding wader nests, with cutting taking place at a later date, once the chicks have fledged the nest. More information on managing land for breeding waders is set out below this table.
Other grasslands • There are more species-rich or pollinator friendly grasslands outside farmed land.	• Information is available to local authorities, landowners, communities and individuals on managing roadside verges and other public open spaces to conserve species-rich grasslands. and to support the creation of 'mini meadows' in public spaces and gardens.	• Plant flowering species to provide food for pollinators. • Leave grass to flower before cutting. • Remove grass/graze after cutting. • Create a nature pond. • Plant native hedgerows and trees. • Install bird and bat boxes on buildings/trees. More information can be found at:

		https://www.lancswt.org.uk/action-for-nature
Associated habitats • Wood pasture and scrub is increased, creating more diverse transitions between habitats. (See Woodland section for more information). • Native hedgerows, dry stone walls, clough, riparian and other woodland areas are managed, restored and created across farmland to provide important habitat corridors and stepping stones.	• Grants are accessed to support clough woodland and wood pasture creation on slopes and scarps to suppress bracken growth. • Strategic placement of new woodlands and hedgerows along and close to rivers to reduce diffuse pollution, improve water quality, provide shading for fish, and provide Nature Based Solutions for Natural Flood Management. • The extent and opportunity for hedge management, enhancement and expansion is assessed and farm businesses are supported to access grants for hedge management and laying, and planting new hedges.	• Native wood pasture and scrub species are planted. Hardy cattle grazing supports wood pasture and scrub regeneration, expansion or creation schemes. • Native hedgerows are left to grow up. Side cutting helps maintain them. Hedgerows are periodically laid. Flailing of hedgerows is minimised to roadside hedgerows and public rights of way. • New hedgerows are left to grow for 10-15 years to allow the hedge to establish. Interim side cuts may be needed but flailing should not be used. New hedges are laid after 10- 15 years. Care is taken to ensure that new hedges are not planted in key wader habitats as waders like an open habitat. • New 'kested' native hedgerows are planted on banks, or across the landscape to physically slow the flow of water.
Champion species	Eurasian curlew Globeflower and Chiastocheta flies Crimson waxcap	

For more advice on supporting wading birds visit:

Re-wetting grassland for waders

Curlew Advice

Lapwing Advice

Snipe Advice

Wetlands

Our wetland habitats are mainly a mixture of upland fens, flushes and swamps, lowland fens and floodplain grazing marsh. Many provide good feeding areas for wading birds in spring, and wildfowl in winter.

Upland fens, flushes and swamps – 808ha is found around the moorland fringe. Around 13% are designated SSSI. These habitats support high concentrations of invertebrates including craneflies, beetles and spiders.

Lowland Fens – there are just over 300ha of lowland fens in the AONB, often found in small fragments across farmland. Around 10% (32ha) are designated SSSI.

Floodplain grazing marsh - large areas are found along the wide, low lying areas of the River Lune, River Hodder and River Ribble, totalling 556ha. The land is often drained and banked and improved for grazing, but tussocky (areas where grass is longer and thicker) and damp swards provide good habitat for foraging and breeding waders, and shallow flooding creates ideal conditions for wildfowl during the winter.

Vision

By 2040 wetlands and grazing marsh are supporting functional floodplains next to rivers. Fens, swamps, and flushes provide a mosaic with wet grasslands and are better connected to river restoration projects. Damp, tussocky land, wet flushes and scrapes provide more feeding, resting and nesting places for wading birds. The call of the curlew bubbles up in the spring, mixing with those of lapwing and the drumming of snipe. Redshank have returned to the area.

Key outcomes	Steps to recovery	Restoration and management approaches
• Fens, flushes, species-rich floodplain meadow and pasture are maintained, created, expanded and are better connected.	• Information and advice is available from Lune, Ribble and Wyre Rivers Trusts and the RSPB on restoration of wetlands and floodplains. • Areas of wet grassland are created alongside rivers and in other pasture on farms to help reduce diffuse pollution and improve water quality and provide Nature Based Solutions for Natural Flood Management.	• Restoring natural river forms enabling natural processes to reconnect rivers to floodplains. • Maintain or restore water level management (where appropriate) including ditch networks and in field gutters. • Where appropriate, re-wet grassland for breeding season habitat that is resilient to drought and heat waves exacerbated by the climate crisis • Create scrapes that can retain surface water during spring. • Increase structural integrity by varying the type and timing of management interventions. • Monitor invasive non-native species and introduce management measures that minimise the colonisation of undesirable species.
Champion species	Eurasian curlew	

Rivers and water

Supporting the nature of rivers, streams, reservoirs and ponds involves much more than just looking at the water of the water body itself. Water runs across a catchment – for example from a river's headwaters in the upland peatlands, along its length draining into streams and rivers, crossing other habitats, including woodlands, grasslands and wetlands, before it drains into the sea. Ponds and reservoirs all sit within other habitats and connect with other water sources. The condition of the mosaic of habitats surrounding any water body is critical to its health and water quality.

Rivers and streams –The Rivers Brock, Calder, Conder, Hindburn, Hodder, Loud, Roeburn, Wenning and Wyre all originate in the upland core of the Bowland Fells. There are 411km of rivers covered by the Water Framework Directive. Just over half (52%) are in good ecological condition, with a further 42% in moderate condition. The headwaters provide some of the best breeding grounds in Lancashire for Atlantic salmon and Brown and Sea trout.

Reservoirs – Stocks, Barnacre, Barn Fold and Longridge Reservoirs (along with the rivers) provide good quality water for people in towns across Blackburn, Burnley, Lancaster and the Fylde. Stocks Reservoir is classified an 'Important Plant Area' by Plantlife for its rare mosses and liverworts that grow at the edges of the reservoir, establishing when the water level drops. Reservoir bunds often provide refuges for migrating birds such as whimbrels. Industrial reservoirs, ponds and leets can also provide important areas for nature.

Ponds – ponds used to be numerous providing watering places for livestock and arising from extracting building materials. They have been declining and are now found in a few places across farmland and woodlands. They provide habitat for a range of freshwater plants and invertebrates, and feeding areas for bats, and feeding and breeding areas for voles, toads, newts and frogs. Lost ponds, or 'ghost ponds' may remain visible as damp circular marks or depressions in fields. These could be prioritised for restoration. The AONB is a Strategic Opportunity Area for creating ponds to support Great-crested newts. Since the scheme started in Lancashire in December 2021, four ponds have been created in the AONB.

Vision

By 2040 rivers and streams are cleaner with less barriers to fish, with the headwaters providing the best breeding grounds for salmon and trout in Lancashire. They form natural wildlife corridors, with wooded areas, trees and flower rich banks and wet meadows along their routes. In places natural processes have been restored with rivers meandering across floodplains and slowing the flow of water downstream. Ponds and reservoirs provide havens for nature across farmland, woodlands, and forests, including habitats for rare shoreline plants. Osprey, otter, water vole and kingfisher are regularly seen fishing in and around the AONB. Lune, Ribble and Wyre Rivers Trusts are working with landowners, managers and farmers to deliver this vision at a catchment scale. The rivers and streams of the Forest of Bowland AONB are supporting nature recovery in the wider landscape, and North West coast and marine environments as watercourses continue downstream to Morecambe Bay and beyond.

Key outcomes	Steps to recovery	Restoration and management approaches

• River water quality and quantity are improved.
• Hydrological networks are restored and river habitats are better connected and healthier.
• The rivers and streams of the Forest of Bowland AONB are supporting nature recovery in the NW coast and marine environment.
	• Projects are developed to gain a greater understanding in the ecological network potential of rivers to enable effective restoration.
	• Strategic placement of new woodlands, wetlands and hedgerows along and close to rivers reduces diffuse pollution, improves water quality, provides shading for fish, and provides nature Based Solutions for Natural Flood Management.
	• Catchment Sensitive Farming provides advice to farmers on a range of nature friendly approaches including creating fenced/unfence river buffers, re-naturalisation of river channels and reconnection of floodplains, tree planting, wetland creation etc.
	• Information is available on the options to manage and restore riverbanks for woodland (native species) and species-rich grassland.
	• Funding is secured and projects implemented to remove in river structures such as weirs to enable species migration, habitat connectivity and for natural channels and features to form.
	• Information is available on invasive non-native species and approaches to remove them, including Himalayan balsam, knotweed, giant hogweed and rhododendron growing close to watercourses.
	• Lune, Ribble and Wyre Catchment Partnerships and Rivers Trust's secure funding to:
	  ○ bring partners and communities together to deliver projects to improve river health and engaged people in caring for the rivers and water bodies in the Lune, Ribble and Wyre Catchments.
	  ○ Support farmers to work together to improve farm infrastructure, reduce phosphate levels, and increase natural flood management measures in catchments.
		• Planting and restoring hedgerows to slow the flow of water.
		• Planting riparian woodlands to provide shade to fish.
		• Building leaky dams.
		• Creating other habitats that support natural functions and forms of rivers.
		• Weirs and other artificial structures in rivers are removed and riverbanks restored.
		• Fish passages are installed where structures can't be removed.
		• Canalised and modified rivers are restored to natural forms enabling natural processes including active floodplains.
		• Blanket bog is under restoration (see Peatland section).

	○ Provide advice on, and deliver, ways to minimise pollution with farmers, land managers, communities, businesses and visitors. ○ Provide advice on opportunities to plant trees along watercourses (based on right tree, right place) is available to farmers, land managers, communities, businesses and visitors. See woodland section for more information on this. ○ Deliver habitat improvements to rivers, and habitats that support improved rivers and water quality. ○ Continue monitoring mayfly populations to determine water quality • United Utilities Catchment Systems Thinking (CaST) approach is deployed in multiple catchments across the area.	
• More ponds are restored or created in farmland.	• Research identifies the number of ponds in the AONB now and in 1935 and identifies a target for restoring and creating more ponds in farmland. • Lancashire Wildlife Trust supports the delivery of more ponds through Natural England's Great Crested Newt (GCN) District Level Licensing (DLL) scheme.	• Ponds are maintained, restored and created in farmland.
• More people are caring for and enjoying rivers, stream, ponds and lakes.	• Rivers Trusts and other partners develop people facing projects that raise awareness of the importance of clean, connected rivers and watercourses.	• Volunteering opportunities are in place to reduce Himalayan balsam, knotweed, giant hogweed, and rhododendron along rivers and water bodies. • People are volunteering in river cleans, monitoring species and other activities that promote river health.
Champion species	Brown Trout Yellow May dun	

Built Environment

Drystone walls – drystone walls criss-cross the landscape, providing stock-proof boundaries to fields, fells, roads and paths. Some are no longer required for livestock management, but still remain strong features in the landscape. Walls are built to shed water and are full of nooks and crannies that can provide a valuable habitat to a range of invertebrates and mosses and lichens. They provide cove and hunting grounds for mammals, amphibians and reptiles, and provide corridors and connections with other habitats across the landscape.

Traditional buildings– traditional houses, farmhouses, cottages, churches, vernacular barns, other buildings, lime kilns and stone bridges can all provide places for wildlife. These could be gaps in timber soffits under the eaves, in roofs where there are gaps and openings, and in nooks and crannies in walls, and in open chimneys. Swifts, swallows, house martins and bats often roost and nest in traditional buildings. When buildings are renovated these important gaps can be closed up, removing important habitat. Simple steps, such as installing bird and bat boxes on the outside of the buildings can replace these nesting or roosting places for wildlife.

New buildings – new buildings have the potential to provide options for birds and bats. It is relatively easy to provide nest sites and roosts for birds and bats by installing bird and bat boxes to the exterior of the building. Some outdoor lighting can produce light pollution and reduce dark places for nocturnal wildlife to live, breed and feed. Careful placement of exterior lighting and low light levels can reduce light pollution.

Gardens -gardens can be a really valuable resource for wildlife and can provide stepping stones across towns and villages, and connect with nearby farmland. Everyone with a garden or outside space could encourage wildlife by choosing flowering plants that pollinators can feed on, providing a pond for amphibians, and a whole range of invertebrates, and homes for small mammals. Native hedgerows along garden boundaries can connect with hedgerows in the wider countryside.

Disused Quarries – disused quarries and lead mines that have laid dormant for decades can be recolonised by nature. Some are now local nature reserves (including Cross Hill Quarry and Salthill Quarry near Clitheroe) with a mosaic of species-rich grasslands and woodlands providing habitats for a diverse range of birds, bats, butterflies, mammals, plants (including many types of wildflowers) and invertebrates. They are also rich in geology and fossils.

Vision

By 2040, local communities and people are providing space for nature in public spaces, school grounds, churchyards, village greens, community places and in their gardens, yards and terraces, and on their homes. New developments and restored traditional buildings have swift boxes and bat boxes, low levels of lighting and native garden boundaries that connect with hedgerows, trees and drystone walls at the countryside edge. More buildings and trees have bird and bat boxes. Disused quarries and industrial areas are havens for nature. People, skilled in traditional techniques, maintain hedges, walls and vernacular buildings, while people from all backgrounds are connecting to nature, exploring nature rich places responsibly, and caring for the area's wildlife.

Key outcomes	Steps to recovery	Restoration and management approaches
• Drystone walls connect with hedgerows to create corridors. • Buildings, trees, hedgerows and open spaces in the urban environment provide roosting and breeding sites for swifts, other birds and bats. • Open spaces are managed for nature as well as recreation. • More people of all ages are engaged and inspired in the nature and wildlife that can be encouraged in villages and towns.	• Planning authorities seek Biodiversity net gain within or adjacent to new development sites, where possible. • Advice, grants and skilled people are available to support the restoration and maintenance of dry stone walls.	• Maintaining, repairing and restoring dry stone walls. • Dry stone wall training to upskill people in traditional dry stone walling techniques. • Maintaining access to nesting sites or installing swift and bat boxes when traditional buildings are restored. • Installing bat boxes and bird boxes on buildings and in trees. • Planting pollinator friendly native flowering plants and 'mini meadows' in gardens and open spaces and the fringes of towns and villages. • Planting native trees and hedgerows in gardens, open spaces and along curtilages that connect with open countryside and farmland. More information can be found at: https://www.lancswt.org.uk/action-for-nature
Champion species	Swift	

Species

There are 14 'Champion' species at the heart of the Forest of Bowland AONB Nature Recovery Plan. These species were selected following stakeholder engagement and represent:

- Species of conservation concern that are rare or threatened and consequently have been identified as Species of Principal Importance under Section 41of the Natural Environment and Rural Communities (NERC) Act, or species on the UK Birds of Conservation Concern Red List or are a nationally or locally rare or threatened species. This includes Black Grouse, where the Bowland Fells have been identified as a nationally important expansion area for reintroduction.
- Charismatic species that are distinctive and provide inspiration for people to care for nature.
- Indicator species that can show that an ecosystem or habitat is healthy.

Although only 14 species have been identified as Champion Species, any work that seeks to sustain resilient, healthy and better-connected habitats and ecosystems will support the full range of species found throughout the AONB, providing more space for them to expand and thrive.

Champion Species

- Eurasian curlew[11] *(Numenius arquata)*
- Hen harrier[11] *(Circus cyaneus)*
- Black grouse[11] *(Lyrurus tetrix)*
- Swift[12] *(Apus apus)*
- Pied Flycatcher (*Ficedula hypoleuca*)
- Juniper[11] *(Juniperus)*
- Globeflower[13] *(Trollius europaeus)* and associated Chiastocheta flies
- Hard Fern *(Blechnum spicant)*
- Crimson Waxcap *(Hygrocybe punicea)*
- Brown long eared bat *(Plecotus auratu)*
- Brown trout *(Salmo trutta)*
- Yellow May dun *(Heptagenia sulphurea)*
- Bilberry bumblebee *(Bombus monticola)*
- Green hairstreak butterfly *(Callophrys rubi)*

These are either S41 species on the IUCN Red list or species on the UK Birds of Conservation Concern Red List or are a nationally or locally rare or threatened species.

[11] S41 species on IUCN red list
[12] UK Birds of Conservation Concern Red List

Eurasian curlew

Maintaining Curlew populations remains a priority for the AONB, but more action is needed to increase populations. Curlews are globally under threat and populations are in decline in England and the AONB. Unenclosed peatland habitats and adjacent semi-improved grassland pastures and meadows are important areas for breeding populations in the Forest of Bowland AONB.

Hen harrier

The AONB is very important for breeding hen harriers. Land owned by the water company, United Utilities, is a stronghold for nests. In 2022, 39 chicks fledged from 11 nests. With an additional 3 nests on other moorland estates it was the first time in over 10 years that the Bowland Fells SPA has reached the minimum number of breeding pairs that it was designated for. For the population to thrive, more of the Bowland Fells need to provide suitable habitat and persecution needs to cease in the wider countryside.

Black grouse

An iconic species of the British uplands, black grouse thrive in areas with a mosaic of heather moorland, in-bye and forestry or scattered tree habitats. They are currently found in neighbouring Northern Uplands such as the North Pennines and Yorkshire Dales. In 2019, the Bowland Fells were identified as an area to promote expansion of Black grouse through continuing habitat enhancement on moorland fringe via agri-environment schemes. The restoration of this mosaic of habitats may be conducive for species translocation by 2030.[14]

Swift

The swift is a medium-sized bird that sleeps, eats, bathes and mates on the wing. They rarely touch the ground. Swifts are summer visitors to the AONB and can be seen feeding over fields and rivers, displaying their scythe-like wings and short, forked tail. Swifts pair for life and return to the same site each year to breed. Swifts like to live in old buildings, squeezing through small gaps to nest in roofs. As old buildings are renovated swift nest sites are lost. They are now globally threatened. Swift bricks or nest boxes in new buildings can help reverse declines.

[14] A Strategic Approach to Delivering Black Grouse Conservation Targets in Northern England, Updated 2020, The Game and Wildlife Conservation Trust.

Pied Flycatcher

The pied flycatcher is a small, flycatching bird, slightly smaller than a house sparrow. It is a summer visitor and can be found in ancient and mature woodlands. Each autumn it returns to over winter in West Africa. They can be found in Forest of Bowland's Atlantic oak woodlands. Increasing connectivity with other mature woodlands is needed to support their expansion.

Juniper

Juniper is a native moorland coniferous shrub. In Bowland it is restricted to just a few sites in the northern fells on the AONB. Cragg Wood in Littledale is one of the last refuges for Juniper. None of the colonies appear to be producing new seedlings. This could be due to phytophthora disease and grazing. As a result the existing populations are aging. Grazing management could help support regeneration along with new planting.

Globeflower (and associated Chiastocheta flies)

Once abundant in Bowland, the Globeflower is found at just a few sites within the AONB, a spectacular species of limey damp patches within grasslands. The Bowland Haytime Project is facilitating the propagation of globeflower seedlings from local sustainably sourced seed. These have been successfully planted out at carefully chosen sites across the AONB. This work needs to continue at more sites.

Hard fern

Hard fern is a hardy evergreen fern that can be found in the AONB's ancient and Atlantic oak woodlands. It is sometimes called 'Deer fern' as deer eat it in winter. It is found in damp, shady gorges, on banks, rocks, and walls. It is easy to spot with feather like leathery foliage with spotty undersides. These turn orange/brown when the spores are ready to erupt. It can be bought in garden centres and planted in gardens to entice more wildlife in.

Crimson waxcap

This deep red waxcap can be found in late summer and autumn in species-rich grassland where there has been no disturbance or fertiliser spread. Its colour is strongest when young, developing paler patches as it ages. It can occur individually or in small clusters. It is larger than the more common Scarlet waxcap, which it can be confused with. Retaining and restoring more species-rich grasslands could support their conservation and expansion.

Brown long-eared bat

The Brown long-eared bat is a protected species in the UK along with their roosts. It is a medium sized bat with huge ears that are almost as long as its body. They roost in holes in trees, old buildings, lime kilns and caves and feed at night along hedgerows, woodlands and in parks and gardens. It has a slow fluttery flight. Management of ancient and mature woodlands and traditional buildings and features to provide habitat and the introduction of bat boxes in new woodlands would help support the Brown long eared bat.

Brown trout

Native wild Brown trout can be found in unpolluted rivers and streams with cold water and gravel areas for spawning. They are often found in the headwaters of the main rivers across the AONB. They primarily feed on invertebrates that live in the water or drop on to the water from trees and plants on riverbanks. They are a useful indicator that the water quality, quantity and habitat of a river or stream is good.

Yellow May Dun

The Yellow May can be found in unpolluted rivers and streams with gravel and vegetation to support their lifecycle. It is sensitive to pollution and is an indicator of good water quality. It is a favoured food of brown trout. They are easily identified from the yellow body and transparent lacy wings and two long tails. The flies hatch from May to July, often emerging from mid-morning but on bright sunny days most flies hatch at dusk. They can appear to glow bright yellow when the sun hits them.

Bilberry bumblebee

The Bilberry bumblebee is nationally scarce and in serious decline. Queen bees feed almost exclusively on bilberry stands in peatland habitats, but a mosaic of habitats including heath and species-rich grasslands are needed for the worker bees.

Green hairstreak butterfly

This eye-catching green butterfly has undergone local losses in some parts of the UK. It can be found feeding on plants in species-rich grassland, blanket bog and heathland in the Forest of Bowland AONB.

Other species

The AONB is rich in hundreds of species. The list is too long to include here. The following species and groups of species are just some of those that would all benefit from a mosaic of bigger, better and more joined up habitats.

Birds

Lesser black-backed gulls, Merlin, Peregrine, Short eared owls, Ring ouzel, Grey partridge, Golden plover, Redstart, Crossbill, Tree pipit, Wood warbler, Tawny owl, Barn owl, Great spotted woodpecker, Woodcock, Tree sparrow, Sparrowhawk, Snipe, Lapwing, Oystercatcher, Kingfisher, Dipper, Grey wagtail, and Common sandpiper.

Mammals

Otter, Brown hare, Badger, Fox, Field vole, Stoat, Weasel, Shrew. Potential for Red squirrel. Whiskered, Brandt's, Natterer's, Daubenton's, Noctule and Common and Soprano Pipistrelle bats.

Fish

Atlantic salmon, Brown trout, Sea trout, Grayling, Eel, Brook lamprey and Sea lamprey.

Insects

Bees – White-tailed bumblebee, Buff-tailed bumblebee, Red-tailed bumblebee, Tree bumblebee, Garden bumblebee, Early bumblebee, Heath bumblebee, Bilberry bumblebee, Common carder bee, Gypsy cuckoo bumblebee, Field cuckoo bumble bee and a range of honeybees, solitary bees, and wasps.
Invertebrates – mayflies, stoneflies, blackflies, caddis flies, dung beetles.
Butterflies - Large heath, Small pearl bordered fritillary.
Moths - Emperor moth, Manchester treble-bar, Northern spinach, Red twin spot carpet moth.

Plants

Club mosses, round leaved sundew, bog rosemary, cloudberry, cotton grass, heath milkwort, tormentil, lousewort, bluebells, pignut, dog's mercury, primrose, ramsons, beard lichen, Wilson's filmy fern, broad buckler fern, lesser butterfly orchid, eyebrights, melancholy thistle, globeflower, meadow cranesbill, yellow rattle, quaking grass, ballerina wax cap, crimson and scarlet waxcaps, bird's-eye primrose, saw-wort, butterwort, fragrant orchid, cuckoo flower, marsh marigold, ragged robin, angelica, common spotted orchid and northern marsh orchid.

Fungi

Crimson waxcap, Pink waxcap (also known as Ballerina waxcap), Parrot waxcap, Yellow waxcap, Spangled waxcap, Scarlet waxcap, Scarlet elf cup.

Reptiles/amphibians

Adder, Common lizard and Slow worm, Great crested newt, Palmate newt, Common frog and Common toad.

Connecting People and Nature

A key outcome of the plan is for people to be better connected to nature.

The Forest of Bowland is a place where people can experience and be uplifted by nature. There is an inspiring story to share and engage people with nature and its recovery, to improve access and encourage more people to understand the nature of the AONB and to care for it. This can be achieved through events celebrating the nature of the area, supporting and delivering nature connectedness and wellbeing projects, supporting and delivering training for teachers and children, and through a range of partner volunteering opportunities.

People that work the land have knowledge, skills and experience that should be shared. There is a need to unlock knowledge from farmers and land managers and support skills development with them and others in the community to help with delivery. The Farming in Protected Landscapes programme is supporting a farmer contact group to support this work. More funding will be needed to develop this along with skills programmes.

The Forest of Bowland AONB Sustainable Tourism Business Network bring businesses together to engage visitors more positively with the things that make the area special, including its nature and wildlife through walks, bike rides, activities and farms that have diversified to secure an income from visitors.

Targets

The following ambitious targets have been set to help deliver the vision by 2040. These targets will contribute to the Government's commitment to have 30% of England's terrestrial, inland water and coastal and marine areas being effectively conserved and managed for nature by 2030.[15] They will only be achieved through long term commitments and sufficient resources and funding being available to farmers, land managers, landowners, advisors and AONB Partner bodies. DEFRAs new Environmental Land Management scheme, especially the Countryside Stewardship Plus and Landscape Recovery schemes, will be critical to delivery. These need to be long term and funding rates need to be set at a level that support farmers to effectively deliver the public goods.

By 2040:

Core Nature Areas

- 75% of SSSIs will be in good[16] condition.
- All County Wildlife Sites will have been re-surveyed. 75% will be in better management.
- 2,400ha of peatland in the Bowland Fells SSSI is restored or undergoing restoration.[17]

Priority Habitats and Connecting Farmland

- 80% (64,400ha) of the AONB's landscape will be delivering nature friendly farming[18].
- 75% of waters to have good ecological condition.
- Species diversity and abundance is improved in 80% of rivers.

To support this:

- 2,000ha of peatland outside the Bowland Fells SSSI is commencing restoration.
- 900ha of meadow and species-rich pasture (outside SSSIs) is created, restored or undergoing restoration.
- 1,000ha of wet grassland is created, restored or undergoing restoration for wading birds.
- More floodplain is reconnected to rivers and wetlands. Target to be confirmed.
- 34,500ha (80%) of permanent pasture is being managed using regenerative farming techniques.
- 5,300ha of woodland is being actively managed.
- 750ha of broadleaf woodland will be created (right tree, right place) or allowed to regenerate naturally, with a particular focus on clough and riparian planting.
- 200km of native hedgerows are restored, enhanced or created.
- Veteran, ancient and other in field trees have new succession trees planted alongside them. Target to be confirmed following survey of current number.
- Wood pasture and parkland are expanded. Target to be confirmed following survey to establish current extent.

Species

Species action plans will be published for 12 nationally and locally rare or threated[19] Champion Species. These are:

- Eurasian Curlew
- Hen Harrier
- Black Grouse
- Swift
- Pied Flycatcher
- Juniper
- Globeflower
- Crimson Waxcap
- Brown long eared bat
- Brown trout
- Bilberry bumblebee
- Green hairstreak butterfly

[15] Land that is in long term management for nature conservation

[16] Good condition is Natural England's 'Favourable' condition status. Due to the long term nature for the recovery of blanket bog, Bowland SSSI, land with a management plan, where restoration work has or is taking place and where Natural England has identified the land as 'unfavourable recovering' will count towards this target.

[17] Due to the long time scales needed to restore blanket bog, it is considered unlikely that this will be in a favourable condition by 2040. The ambition is to ensure the land has a management plan in place and that work is continuing to restore the habitats.

[18] This is likely to be achieved through landowners and farmers being under an agri environment schemes. This will include all Environmental Stewardship and Countryside Stewardship Agreements and all new and emerging Environmental Land Management Schemes.

[19] S41 species on the IUCN Red list or nationally or locally rare or threatened species.

Monitoring

A monitoring framework will be developed in 2023/24 to measure the success of the targets of the Nature Recovery Plan. The framework will align with Natural England's Monitoring Outcome Framework when it is published later in 2023.

Effective monitoring will be reliant on easily accessible nationally held data and evidence, supplemented by local environmental data collated and managed by local record centres. It will also need the active involvement of AONB partners as many of these will be collecting data on behalf of the Partnership.

We know that there are some limitations to the existing baseline data and steps are being taken to improve this.

- Up-to-date baseline condition information for designated nature conservation sites is incomplete across the AONB. Baseline data is over a decade old in some cases. There is a need for SSSI condition assessments to be carried out, along with a resurvey of BHS to confirm the baseline of the plan's Core Nature Areas. Key partners commenced this work in 2022. Periodic reviews of SSSIs condition will need to be carried out over the lifetime of this plan.
- Priority Habitats Inventory mapping does not include up to date mapping for all the AONB's Priority Habitats, for example where there is locally derived/collated data. As data is collected by partners it will be provided to Natural England for inclusion on the national inventory.

To help with a Monitoring Framework a Nature Recovery Action and Delivery plan will be incorporated into the AONB Management Plan.

The Nature Recovery Plan will be reviewed every five years (ideally concurrently with the review of the AONB Management Plan).

Delivering the Plan

Principles for delivery

The following principles will support nature recovery networks and a more nature rich AONB:

Bigger

- Working at a landscape scale and going beyond the AONB's boundaries.
- Increasing the size of and creating nature rich buffers around core nature areas.
- Allowing natural processes to recover and restoring functioning ecosystems.

Better

- Ensuring core nature areas are in the best condition.
- Reducing pressure on the core nature areas by improving the wider environment.

More joined up

- Improving connection between habitats and ecosystems through new or enhanced wildlife corridors and stepping stones and more High Nature Value farms.
- Working together. Everyone has a part to play, from landowners, land managers, farmers, organisations, businesses, residents, recreational users, visitors, local authorities, government, and its advisors.
- Connecting with the Lancashire and North Yorkshire Local Nature Recovery Strategies (LNRS).

The image below shows what this might look like. Core areas are our SSSIs and Biological Heritage Sites. Landscape and linear corridors could include rivers, woodland, hedges and walls. Stepping stone corridors could be new hay meadows or areas of wood pasture between SSSI hay meadows or North Atlantic Oak Woodlands. Buffer zones could be areas woodlands planted alongside rivers. Restoration areas could be areas of blanket bog on the peatland, species-rich pasture in grasslands, or rewiggling of rivers across a floodplain.

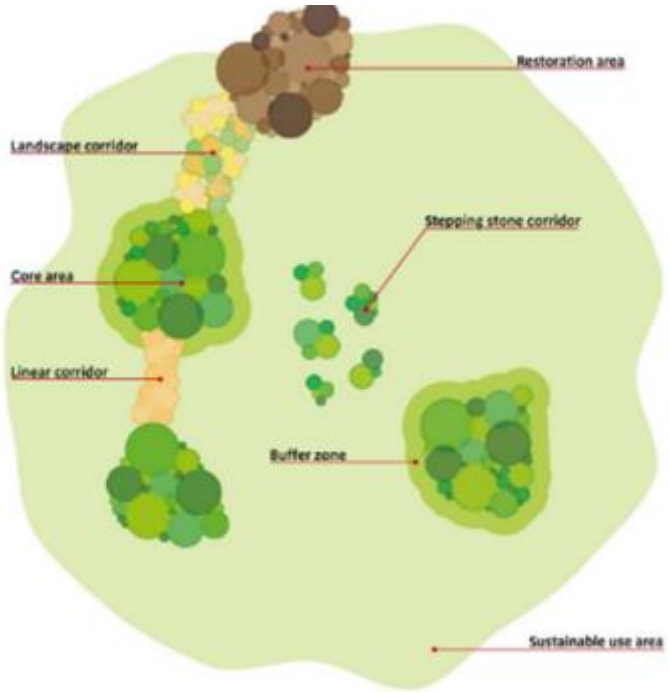


Fig. 1 The components of ecological networks, or nature recovery networks, as described in Making Space for Nature, J Lawton et al, 2010.

Land management approaches

A range of approaches to land management and restoration that could support the delivery of the nature recovery networks are set out below. Some of these approaches are already being used in some places across the AONB. Greater uptake of them could accelerate the pace and scale of the delivery of nature recovery networks in the future.

Restoring functioning ecosystems

Restoring natural processes at a landscape scale can help whole ecosystems to recover, enabling a mosaic of connected habitats where the relationships between different species can properly function. This is sometimes referred to as restoring functioning ecosystems, where natural processes are enabled. A more popular term sometimes used is 'rewilding'.

Natural processes can be restored in a range of ways, including:

- Native grazing animals that rootle, scrape and encourage plant growth.
- Re-wiggling rivers to follow a natural course and wiggle across their floodplains.
- Natural regeneration of woodland, wood pasture and trees and other habitats, with seeds being dispersed by birds and other animals. This is often reliant on the removal of grazing by sheep and deer.
- Reintroducing missing species, such as the black grouse.
- Forging better connections between upland habitats across the Northern Uplands.

Nature-based solutions

Nature-based solutions provide benefits for people and nature. They usually take place at a landscape scale. They can protect and restore the management of natural and semi natural ecosystems and support the sustainable management of river catchments and agricultural areas. Actions are underpinned by biodiversity but always provide multiple benefits to people, often delivering climate change adaptation and mitigation. Solutions are usually designed in partnership, based on research, and include input from local communities.

Natural flood management is one example of a Nature-based solution. The aim is to slow the flow of water through a catchment, slowing water down or storing it. This can help to reduce the downstream maximum water height of a flood (flood peak) or help to delay the arrival of the flood peak downstream, giving people more time to prepare for floods. It can increase restore natural habitats in rivers and streams and improve water quality by reducing soil erosion. Techniques include:

- Blanket bog restoration
- Soil permeability
- Tree and hedge planting
- Swales and ponds
- Leaky wood dams
- River re-naturalisation

More information on the different techniques can be found in Natural Flood Management Measures: A practical guide for farmers, Pendle Hill Landscape Partnership. Or by talking to a farm advisor at Lune, Ribble or Wyre River Trusts.

High Nature Value Farming

High Nature Value Farming (HNV) is a term used in relation to low intensity, traditional livestock farming systems that support food production and high levels of biodiversity. It is often associated with marginal farmland and is characterised by low livestock levels, low/no use of inorganic fertilisers and pesticides, and more labour intensive management practices, such as hay-making. It is largely associated with livestock grazing systems. HNV farms provide wider benefits to people, including carbon storage, soil conservation, water quality and management, habitat for pollinators and provide space for recreation and tourism.

Many farms in the AONB use HNV farming systems to support the area's species-rich grasslands, peatland, hedgerows and woodlands. Many provide wet areas in inbye for wading birds. If more farms developed a HNV system approach the mosaic of habitats and connectedness between could be improved.

HNV farming systems make best use of the land, but produce low outputs and income, whilst at the same time require high levels of labour. Studies have shown that these farming systems are economically vulnerable[20]. The new ELM schemes will be critical in maintaining existing HNV farms and supporting more in the future.

Regenerative Farming

Regenerative farming practices support soil health, encouraging the soil's microbes (biological and mineral systems) to flourish. This can lead to richer, more productive soils that can support more biodiversity and provide a range of benefits to people beyond food production such as water quality and management and carbon storage. More farmers are looking at these principles as they develop their farm businesses to respond to the energy and cost of living increases. The use of herbal leys is proving a cost-effective way for some to minimise artificial fertilisers, increasing pasture nutrients and diversity to meet livestock needs.

Simple steps include:

- Adding herbal leys (perennials and wildflowers) into pasture.
- Adding trees to provide shelter for livestock, natural animal treatments (reducing the need for artificial wormers), filter water, help with drainage and moisture retention in soils. Wood pasture or agroforestry and shrubs, alongside herbal leys, could all play a part.
- Rotational paddock grazing, including mob grazing, to ensure more species are eaten but not to excess.

Working together

Nature recovery takes time and involves a lot of people. But by working together, building on existing partnerships and relationships and by forging new ones, the ambitions of the plan can be delivered. Partnership working is at the heart of the AONB Management Plan, and the Nature Recovery Plan will be agreed by the Joint Advisory Committee to help ensure partner organisations work together to promote and deliver nature recovery in and around the AONB.

Partners are already collaborating to develop and implement joint projects that are providing multiple benefits for people and helping nature networks to improve and be restored. This work has highlighted that people and places are at different stages of managing land for nature. Some farmers and land managers have embraced High Nature Value Farming and have it embedded in their business model or are developing Nature Based Solutions on their land. Others are just beginning to map out what will work best for them during and after the Government's Agricultural Transition. Whatever stage people are, advice, practical and financial support and a long-term commitment are needed to see the change that is needed.

Partners

[20] Less is more: Improving profitability and the natural environment in hill and other marginal farming systems November 2019, RSPB, Wildlife Trusts and National Trust.

The plan has been prepared with the support of a Nature Recovery Steering Group comprising representatives from the AONB Team, local authorities, environmental, water and forestry organisations, landowners and farmers. The following partners will be important to the delivery of the plan:

Local Authorities: Lancashire County Council, North Yorkshire County Council, Craven District Council, Lancaster City Council, Pendle Borough Council, Preston City Council, Ribble Valley Borough Council, Wyre Borough Council, Highways Agency.

Environmental organisations: Natural England, Forestry Commission, Environment Agency, RSPB, Lancashire Wildlife Trust, Lune Rivers Trust, Ribble Rivers Trust, Wyre Rivers Trust, Yorkshire Dales Millennium Trust, Woodland Trust, Lancashire Local Access Forum, Lancashire Environmental Records Network, North & East Yorkshire Ecological Data Centre, Lancashire Peat Partnership.

Water, Farming and Forestry organisations and businesses: United Utilities, Moorland Association, Bowland Farmer Group, Estate and other landowners, individual farmers, land managers, small holders, woodlanders and foresters.

Community and other organisations and businesses: Parish Councils, Lancashire and Westmorland Hedge laying Society, Drystone Walling Association, Bowland Sustainable Tourism Network, Champion Bowland, Friends of Bowland, Ramblers Association, Local community and volunteer groups.

Partnerships

The following partnerships are all supporting projects that deliver multiple benefits for people and nature.

Catchment Partnerships

The Catchment Based Approach is a partnership approach led by the area's Rivers Trusts - Lune Rivers Trust, Ribble Rivers Trust and Wyre Rivers Trust. Working at a river catchment scale, Catchment Partnerships bring together Government organisations, Local Authorities, the Water Company (United Utilities), the AONB Unit, landowners, farmers, other organisations and businesses to collaborate, develop and implement projects that protect and enhance the water environment and maximise multiple benefits, including improvements to water quality, enhanced biodiversity, reduced flood risk, resilience to climate change, and health and wellbeing benefits for local communities. Projects can include habitat management and creation, farmer engagement, removal of barriers to fish migration and inspiring people to volunteer and monitor projects. Catchment Partnerships have secured significant sources of funding to date and will continue to be an important lynchpin in securing funding for future nature recovery work.

Lancashire Peat Partnership

The Lancashire Peat Partnership brings together organisations working to protect and restore the areas peatlands. Partners work together to promote the importance of peatland restoration, deliver restoration projects, secure funding, and share knowledge, information, and research findings. The AONB Unit employs a Peatland Officer who connects with this Partnership and who is leading the restoration of blanket bog in the AONB.

Hay Time

The Yorkshire Dales Millennium Trust brings together partners who are restoring upland and lowland hay meadows within and around the Forest of Bowland AONB and Yorkshire Dales National Park. Partners have been developing and implementing projects for almost two decades.

Forest of Bowland Farmer group

The Farming in Protected Landscapes (FiPL) programme is funding a facilitator to run a farmer contact group in 2023/4. This is bringing farmers together across the Forest of Bowland AONB to provide support and connectivity during the agricultural transition. The group is providing knowledge sharing sessions on farming techniques and funding mechanisms for farmer groups that could support nature recovery. You can find out more by visiting: https://www.forestofbowland.com/Bowland-Farmer-Group

Working beyond boundaries

The AONB, as a protected landscapes, is a key part of the National Nature Recovery Network. Work on nature recovery needs to go beyond the AONB boundary, connecting habitats and ecosystems in the wider countryside and with other protected landscapes and sites nearby. There are a number of existing initiatives that can help to do this:

- Northern Upland Chain Local Nature Partnership that links AONBs, National Parks and National Nature Reserves and land in between along the Pennine uplands from the Forest of Bowland AONB in the south to Northumberland National Park in the north.
- The Great North Bog which connects the Lancashire Peat Partnership with other peatland partnerships across the North of England.
- Lune, Ribble and Wyre Catchment Partnerships.
- Hay Time project.
- Three Counties: Lune Valley is a £multi million project that is in development to help manage, conserve and enhance nature rich areas from the Forest of Bowland AONB to the Yorkshire Dales National Park and along the Lune Valley. If funding is secured work will commence in 2025/26.

Funding for delivery

Nature recovery in the AONB is highly dependent on the right funding mechanisms being in place. The Government is relying on a mix of public and private finance to support nature recovery, however in the short to medium term it is likely that Government funding will continue to be a major source of funding for landowners, farmers and land managers in the AONB. Navigating new and emerging private finance (green finance) initiatives requires new skills and knowledge. Additional staff resources will be needed, either within the AONB Unit or within a partner organisation, to develop the skills and resources to access future at scale funding from private finance. The following section highlights the funding that is currently available to support delivery.

Government Funding

Farming in Protected Landscapes (FiPL)

FiPL will run until 2025. Grants are available to all farmers and land managers in the AONB, or in areas where action will benefit the AONB for projects that support nature recovery, mitigate the impacts of climate change, provide opportunities for people to discover, enjoy and understand the landscape and cultural heritage, or support nature-friendly, sustainable farm businesses. The programme is run by a dedicated team of advisors based at the Forest of Bowland AONB Unit. For more information visit https://www.forestofbowland.com/farming-protected-landscapes#overview

Environmental Land Management schemes (ELM)

ELM schemes are in development and will be critical to the future management, restoration and creation of habitats and ecosystems. They will provide funding to farmers and land managers to provide public benefits including supporting more nature and wildlife, water and air quality, climate resilience and carbon storage alongside sustainable productive farming. There will be three schemes, with support for delivering benefits for nature increasing with each level.

1. Sustainable Farming Incentive (SFI).

2. Countryside Stewardship (CS), including CS Plus. This will build on existing CS schemes.
3. Landscape Recovery will pay for bespoke, long-term, large scale projects to enhance the natural environment.

By the end of 2027 ELM will replace current funding mechanisms:

- Catchment Sensitive Farming: the Catchment Sensitive Farming offer currently supports farmers to protect water, air and soil through tailored advice, support and grants is available across the AONB.
- Countryside and Environmental Stewardship: Countryside Stewardship (CS) currently provides financial incentives for farmers, foresters and land managers to look after and improve the natural environment and to increase biodiversity.
- England Woodland Creation Offer (EWCO): Grant funding for the planting and maintenance of new and extended areas of woodland across England. This includes planting and natural colonisation, on areas from one hectare upwards.

Environment Agency

The main source of funding from the Environment Agency is through Government Grant in Aid (GiA) for Flood Risk Management or Water Environment Improvements. Other sources of funding, generated by fees and charges from various licences (Water Resources, Water Discharges, Rod Licences), may also be applicable. The Environment Agency works closely with the Catchment Partnerships to develop projects in line with the criteria for different funds. The funding is normally allocated to priority projects on an annual basis. Several grants are available including Water Environment Grant, Water Environment Improvement Fund, Fisheries Improvement Fund and Natural Flood Management Fund to support water quality and habitat improvement work that benefits nature in the Forest of Bowland AONB. For more information you can talk to your Environment Agency Catchment Coordinator. Contacts are available here: https://www.gov.uk/government/publications/map-of-water-management-catchments

Nature for Climate Fund

The main source of one off grants for capital restoration work from Defra is the Nature For Climate Fund. This runs until 2025 and £millions have been secured to enable blanket bog restoration and woodland creation work across the AONB and in adjacent catchments. Partners will seek to secure any future funds made available from Defra.

Private Finance

There is a lot of interest in private investment and growing markets for funders wanting to offset and develop more sustainable business models. In the short term there are limitations to opportunities for nature recovery, particularly as private finance is currently driven by carbon and water outcomes, rather than nature recovery. It is likely that more opportunities for nature recovery will become available in the medium to long term. Some of the current opportunities are set out below.

Biodiversity Net Gain

This will be led by the Local Planning Authorities. Funding can be secured from developers to ensure that new development provides a net gain for biodiversity. The biggest opportunities for restoration work will be from major development, which are likely to take place outside the AONB. The main opportunity is to submit sites to the national BNG register, enabling developers outside the AONB to contribute to restoration work if they can't provide a net gain for nature within their development sites.

Natural Environment Infrastructure Readiness Fund

Ribble Rivers Trust is testing out nature capital investment models via the Natural Environment Infrastructure Readiness Fund. This is linked to water quality improvement and woodland planting. Nature recovery will be achieved via the project as it is focusing on multiple outcomes.

Wyre Catchment Community Interest Company (C.I.C.)

Wyre CIC has secured £1.5m of capital to pay for catchment scale NFM intervention. The funding is a mix of grants from the charitable sector and private sector loans. The loans will be repaid by buyers of ecosystem services. Farmers and land managers will be paid to host the intervention on the ground. It will deliver many benefits, such as carbon sequestration, water quality improvements, and biodiversity improvements from hedgerow planting and grassland conversion.

Water Industry Funds
This includes Water Industry National Environment Programme (WINEP). United Utilities is currently reviewing its next five year management programme (AMP) which will run from 2025 – 2030. It is likely that this will continue to support nature based solutions to provide clean water, with wider benefits to people and nature, with the restoration of blanket bog and the main areas of nature recovery potential.

Woodland and Peatland Carbon Codes
These codes provide a quality assurance system for woodland creation schemes and peatland restoration projects, enabling carbon units to be verified for carbon trading and offsetting. The Woodland Carbon Code is established and is generating finance for landowners. The Peatland Carbon Code is establishing and is likely to be more attractive to landowners in the coming years.

Private landowners
Several private estates across the AONB are match funding peatland restoration projects, woodland creation schemes and investing in natural capital assessments to understand the opportunities for managing and improving the natural capital of their land holdings.

Charitable Sector

Several large charitable trusts and foundations provide support to organisations, charities and community organisations for nature recovery. The National Lottery Heritage Fund is a significant Trust that has and continues to fund nature recovery, connecting people and nature and wider cultural and landscape benefits. The People's Postcode Lottery is supporting peatland restoration, Funding from the trusts and foundations is always competitive but many partners in the AONB have a proven track record at securing funding from them and delivering quality projects. A range of smaller trusts and foundation will also support work, such as the Ernest Cook Trust with its nature based education programmes.

Individuals and communities

There are plenty of opportunities for communities to work together to create more nature rich spaces in public spaces and gardens, and for individuals to support nature and wildlife in gardens and spaces around their homes. Nature rich grasslands, ponds, bee/butterfly friendly flowers, native hedges and trees in gardens and public places can all provide stepping stones and corridors to other nearby habitats in the wider countryside.

For more information on what you can do to help nature near your home visit:

Bumblebee Conservation: https://www.bumblebeeconservation.org/nature-recovery/

Lancashire Wildlife Trust: https://www.lancswt.org.uk/action-for-nature