



**North York Moors**  
National Park

# **The North York Moors National Park - Nature Recovery Plan**

**January 2024 Draft**

North York Moors Nature Recovery Plan, January 2024- Draft

# Contents

- Introduction..... 4
  - The North York Moors..... 4
  - Environment Act and Local Nature Recovery Strategies ..... 4
  - Management Plan ..... 5
  - Habitats within the National Park ..... 7
  - Current and anticipated pressures..... 11
  - Access and recreation..... 12
- Priorities and Targets for Nature Recovery ..... 13
  - Landscape Scale ..... 13
  - Background ..... 13
  - Vision ..... 14
  - Priorities..... 14
  - Steps to recovery ..... 17
- Farming ..... 18
  - Background ..... 18
  - Vision ..... 18
  - Priorities..... 19
  - Steps to recovery ..... 20
- Moorland..... 21
  - Background ..... 21
  - Vision ..... 21
  - Priorities..... 22
  - Steps to recovery ..... 23
- Grassland..... 24
  - Background ..... 24
  - Vision ..... 24
  - Priorities..... 24
  - Steps to recovery ..... 25
- Trees and Woodland..... 26
  - Background ..... 26
  - Vision ..... 26
  - Priorities..... 26
  - Steps to recovery ..... 29
- Rivers, Water and Wetlands ..... 30
  - Background ..... 30

Vision .....	31
Priorities.....	31
Steps to recovery .....	33
Marine and Estuarine.....	34
Species Targets .....	34
Background .....	34
Vision .....	34
Steps to recovery .....	37
Timetable of actions .....	38

## **Introduction**

### **The North York Moors**

The North York Moors National Park, hereafter referred to as the National Park, is a diverse landscape supporting a broad range of habitats, ranging from moorland to coast. The National Park is located 20 miles north of the city of York and extends northward to the southern fringe of the Tees Valley. It is bordered to the west by the Vale of York, and to the east by the North Sea.

The National Park is one of the most rural areas in England; with just over 23,000 residents, there is an average of 0.16 residents per hectare. The major settlements in the area can all be found just outside the border of the National Park. Tourism is important for the economy, with over 8 million people visiting the area each year.

The topography of the National Park consists of a moorland plateau, with the highest point being 454m above sea level, dissected by a number of dales containing woodland and agricultural land. Much of the geology of the National Park is shale, ironstones, and sandstone, with a limestone belt along the southern edge.

Originally designated in 1952, it is one of ten National Parks in England which collectively cover around 10% of the country. These areas were designated to protect landscapes, enhance wildlife and cultural heritage, and to encourage their use and understanding by people from nearby cities and towns.

### **Environment Act and Local Nature Recovery Strategies**

The Environment Act received royal assent in 2021 and operates as the UK's legal basis for environmental protection and enhancement following Brexit. The Act makes provision for the UK Government to set legally binding targets to restore natural habitats and increase biodiversity, as well as mandating Biodiversity Net Gain and the production of Local Nature Recovery Strategies. The Act:

“establishes spatial mapping and planning tools to identify existing and potential habitat for wildlife and agrees local priorities for enhancing biodiversity in every area of England – Local Nature Recovery Strategies (LNRS)”

The proposal is to expand, improve and connect areas of biodiversity throughout England, to build a resilient biodiverse landscape.

Local Nature Recovery Strategies (LNRS) are implemented by a “Responsible Authority”, typically the county council or combined authority. The North York Moors lies within two LNRS - North Yorkshire and York, and the Tees Valley. This Nature Recovery Plan has been produced to link to these two LNRS and provide detailed information on the proposals for Nature Recovery within the boundaries of the National Park.

It is also worth noting that the Environment Act 2021 included a ‘strengthened biodiversity duty’ on all public authorities. This was further strengthened the Levelling Up and Regeneration Act 2023. This requires all public authorities to consider what they can

do to conserve and enhance biodiversity, agree policies and specific objectives based on these considerations and act to deliver these policies and achieve the objectives.

## **Management Plan**

The latest North York Moors Management Plan was published in 2022. The Management Plan is the most important document that the National Park Authority (hereafter referred to as the Authority) produces. It sets out a long-term vision for the National Park and describes the objectives, policies and goals that the Authority, other public bodies and stakeholders will pursue to achieve it. The Management Plan highlights the key priorities for action over the next twenty years to help address the challenges that the National Park will face.

The Nature Recovery Plan will sit underneath the Management Plan to expand on and support the nature recovery objectives and outcomes included and as well as identify supplementary targets and priorities for Nature Recovery which feed into the Management Plan aims.

The North York Moors Management Plan identified that the National Park has 6 Special Qualities, which define what make the National Park distinctive, and why is it so valuable. These are:

1. A surprising range of contrasting landscapes with extensive views
2. A diverse range of upland, lowland and coastal habitats, home to a rich variety of wildlife
3. A place with strong, visible links to its cultural heritage
4. A variety of distinctive places and communities creating a sense of local identity, culture, traditions, and pride
5. A place of escape from towns and cities, offering a true sense of remoteness and the darkest of skies
6. A source of physical, mental, and spiritual wellbeing.

The Management Plan puts forward the vision for the National Park for the next twenty years:

“By 2040 the North York Moors National Park will be a resilient landscape at the forefront of addressing climate change and nature recovery. It will be a biodiverse, beautiful and varied place that’s proud of its cultural heritage, all of which lift the nation’s health and wellbeing. It will be a place with a diverse, innovative, low carbon economy and home to thriving, welcoming local communities.”

This is achieved through six outcomes, which relate to the Special Qualities of the National Park. Each outcome is underpinned by a number of Objectives.

Outcome	Outcome	Outcome
<p><b>Outcome 01</b></p> <p>A resilient landscape at the forefront of addressing climate change and nature recovery.</p> <p>Objective 1 The National Park should play a significant part in achieving the regional ambition of being a carbon negative economy by 2040.</p> <p>Objective 2 Capture and store carbon by creating at least 2,500 hectares of additional wooded habitat by 2032.</p> <p>Objective 3 Capture and store carbon by ensuring all degraded blanket bogs and peat habitats in the National Park are under active restoration by 2032.</p> <p>Objective 4 Protect, restore and improve soils across the National Park.</p> <p>Objective 5 Achieve good ecological status for all water bodies by 2027 and support the improvement of the marine and coastal habitat.</p>	<p><b>Outcome 02</b></p> <p>A nature rich, more biodiverse landscape</p> <p>Objective 6 Create bigger, better and more joined-up habitats, with nature-rich wildlife corridors extending beyond the National Park boundaries.</p> <p>Objective 7 Restore wilder and more naturally functioning ecosystems on at least 2,000 hectares in the National Park.</p> <p>Objective 8 Work with our moorland community to support the sustainable management of moorland to ensure it retains its intrinsic character and supports a greater variety and abundance of species and habitats.</p>	<p><b>Outcome 03</b></p> <p>A landscape rich in heritage and highly valued for its sense of remoteness and tranquillity</p> <p>Objective 9 Increase the intrinsic darkness of the National Park International Dark Sky Reserve by expanding the current dark sky core zone by twenty percent by 2027.</p> <p>Objective 10 Work to maintain and improve the sense of peace and tranquillity, including through the protection of its remotest areas.</p> <p>Objective 11 Ensure that our historic environment is better understood, conserved, explained and under appropriate management; and work with partners to reduce the number of identified Designated Heritage Assets at Risk.</p>
<p><b>Outcome 04</b></p> <p>A place that lifts the nation's health and wellbeing.</p> <p>Objective 12 Create specific, targeted opportunities to improve mental and physical health and wellbeing by connecting people with nature.</p>	<p><b>Outcome 05</b></p> <p>A place that supports a diverse and innovative low carbon economy</p> <p>Objective 18 Provide opportunities that attract, upskill and retain a local workforce working in high-value, knowledge-intensive jobs and the 'green' or 'landscape' economy.</p>	<p><b>Outcome 06</b></p> <p>A place of great beauty where local communities thrive</p> <p>Objective 21 Increase the delivery of affordable housing above 2010-2020 levels to build at least 100 affordable homes in villages across the National Park by 2027; and press for</p>

Outcome	Outcome	Outcome
<p>Objective 13 Increase awareness of, and access to, the National Park among underserved communities, particularly those in the surrounding area.</p> <p>Objective 14 Inspire the next generation to enjoy, learn about and care for the National Park, and support young people’s direct involvement in decision-making about its future.</p> <p>Objective 15 Ensure that all members of the public are able to enjoy the National Park using easy-to-use, well-marked rights of way and open access land.</p> <p>Objective 16 Promote the North York Moors National Park as the premier recreational/family cycling destination in the north of England.</p> <p>Objective 17 Work with businesses to establish regenerative tourism as a guiding principle and encourage visitors to make a positive contribution to the National Park</p>	<p>Objective 19 Maintain a strong and viable farming and land management community that delivers more for climate, nature, people and place.</p> <p>Objective 20 Increase opportunities for residents and visitors to travel sustainably in the National Park</p>	<p>changes to control the conversion of housing to second or holiday homes.</p> <p>Objective 22 Work to establish the North York Moors National Park as a leader in low-cost, low-carbon, housing design through the development of at least one new-build exemplar scheme; and promote the deployment of sustainable materials and responsible retrofitting measures in historic buildings to secure their long-term future.</p> <p>Objective 23 Enable resilient communities where residents can meet their basic needs, by identifying any existing gaps in provision and developing community hubs to service a wider catchment or areas where services can be shared.</p> <p>Objective 24 Facilitate local solutions to ensure superfast broadband and/or mobile phone coverage is available to 100 percent of households in the National Park by 2030.</p>

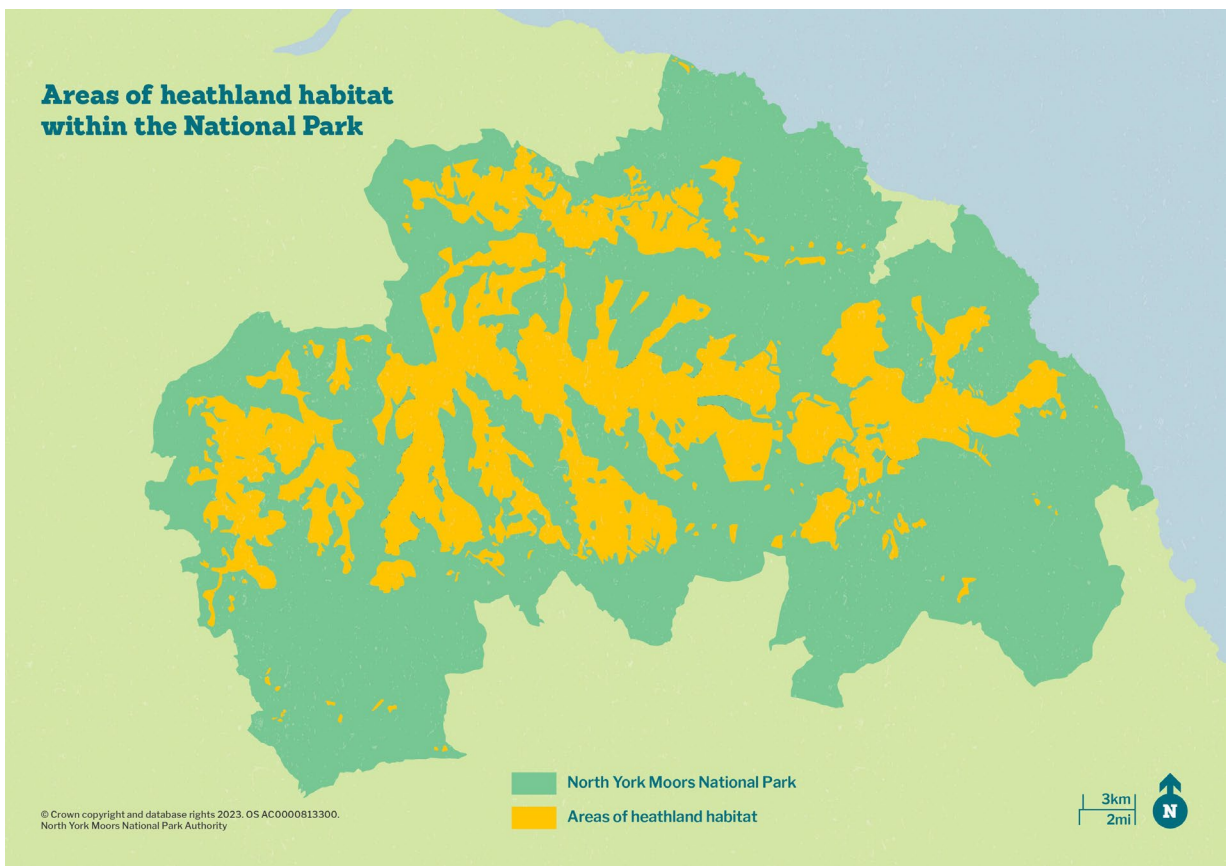
## Habitats within the National Park

### Moorland

Approximately one third of the National Park is designated as a Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC) or a Special Protection Area (SPA). The largest designation is the North York Moors SSSI, SPA and SAC, which covers the majority of the moorland within the National Park. This area is designated for its Blanket Bog, Dry Heath and Wet Heath habitats, as well as around 3% of the breeding populations of Merlin and Golden Plover in Great Britain. The majority of the moorland

designated sites in the North York Moors are in poor condition, with the majority being categorised as “unfavourable recovering” and several declining in condition.

The western and southern extent of moorland is dominated by dry dwarf shrub heath, with a central band of dry modified bog, and moorlands to the east and north consisting of a mosaic of wet and dry dwarf shrub heath. Land adjacent to the moorland boundary is a mixture of productive arable and grazing land- where it is accessible- and dense bracken on steeper banks, with very little marginal, wet habitat compared to other areas of uplands within the North of England. The moorlands, and adjacent in-by and pastures in the valleys, support nationally important numbers of Curlew, as well as other rare wading birds including Lapwing, Oystercatcher, Snipe and Redshank.



## Woodland

The National Park is 22% woodland. The broadleaf and Ancient Semi-Natural Woodland scattered across the National Park supports a vast array of rare plants, fungi, birds and mammals, however, over half of these historic ‘ancient woodland’ sites have been re-planted with conifers. Approximately two thirds of the woodland cover within the National Park is plantation woodland, and broadly coniferous. The forestry is largely in the south of the National Park, with the highest concentration in the southeast.

Although plantation woodlands typically support overall lower levels of biodiversity compared to broadleaf woodlands of a similar age and size, the larger well managed forest areas, such as Langdale Forest, support a host of wildlife including some nationally



rare species<sup>1</sup>. Approximately 80% of the National Park's woodlands are in active management.



## Marine, Coastal and Estuarine

The National Park encompasses 26 miles of dramatic coastline, from towering cliffs and secluded villages to sweeping shores and traditional fishing harbours. This spectacular coastline makes up the eastern edge of the National Park and consists of a great diversity of habitats and species. The number of habitats – grasslands, woodlands, coastal slopes, rocky shores, coastal streams, and the marine environment – means the biodiversity interest on the coast is particularly abundant.

The clifftop plateau is predominately farmed and supports species such as Yellowhammer and Linnet. Intersecting the plateau are steep wooded gills, which contain many ancient woodland indicator species. The coastal cliffs and crags are home to a number of sea birds such as Kittiwake, Fulmar and Sand Martin. Peregrine Falcon have also been observed in the craggy outcrops searching for prey. Multiple streams, alongside the larger Esk Estuary, transport freshwater from high on the moors into the coastal zone. This mixing of waters creates a nutrient-rich environment which is important for migratory fish movements.

Large areas of the coastline are protected via national and international designations. The vegetated sea cliffs of the Beast Cliff (Robin Hood's Bay) Special Area of Conservation are internationally recognised as one of the best examples of this habitat

<sup>1</sup> Walker, B. (2014) Langdale Forest, A Case of Mistaken Identity. *PLACE*.

on the northeast coast. The dynamic nature of the cliffs and the underlying geology means that the vegetation is continually changing, which attracts a wide range of wildlife.

The coastal slope grasslands below the soft cliffs offer some of the most unimproved habitats in the whole of the National Park. These habitats have not been ploughed or fertilised and have therefore retained an abundance of plant life, including rare orchid species. Management of these areas is needed to stop them becoming overgrown with ranker vegetation such as bracken and bramble.

The intertidal zone and marine area are equally diverse, with large swathes of kelp forest providing habitat and food for a huge variety of wildlife including shellfish, seals, and seabirds. The complex rocky shore habitats within the Runswick Bay Marine Conservation Zone (MCZ) are nationally recognised and provide specific protection to the ocean quahog – a long-lived species of bivalve mollusc. Out to sea, marine mammals including Bottlenose Dolphins, Harbour Porpoise, and five different whale species have been recorded.

### **Grassland**

The southern section of the National Park is located on limestone and the resultant calcareous grasslands contain some of our rarest species. Species such as Duke of Burgundy, Dingy Skipper, Fly Orchid, and Dropwort, can be found in these areas, and are of National importance. Other important grasslands within the National Park include our coastal grasslands which can be acidic or calcareous and this mosaic supports a diverse range of species. Pockets of species rich neutral, marshy, and acid grassland can also be found scattered throughout the National Park, particularly on steep slopes or hard to access locations, where improvement for agricultural purposes would not be viable. Species-rich grasslands are one of our rarest and most vulnerable habitats, following a century of loss and fragmentation. They are also one of the harder habitats to recreate, as their condition is strongly linked to the condition of the soil, which in many places has too many nutrients to support a diversity of wildflowers, and grasslands require regular and careful management.

### **Watercourses**

The National Park encompasses two main river catchments: the Rye/Derwent catchment and the Esk and Coastal Streams catchment. Together these catchments cover a large proportion of the National Park (approximately 75%). The remaining 25% consists of a small area of the Swale, Ure, Nidd and Ouse catchment, and the Tees catchment.

Emerging in the uplands, the River Rye and its tributaries rise on the moorland plateau. The Rye supports a number of riparian species such as Eurasian Otter, European Dipper, bat communities, along with notable aquatic species including the scarce Yellow Streak Mayfly, Brown Trout, Lamprey species, and European Eel.

The Esk rises between Baysdale and Westerdale, where it flows 45km through the National Park, and out to the North Sea. There are 6 coastal stream waterbodies associated with the Esk catchment that flow into the North Sea. They provide important

connectivity between coastal, intertidal, and terrestrial habitats. The River Esk is Yorkshire's only principal Atlantic Salmon river and home to other nationally important species such as Sea/Brown Trout, European Eel, Brook Lamprey, Water Voles, and Eurasian Otters. The River Esk is also home to the critically endangered Freshwater Pearl Mussel.

## **Current and Anticipated Pressures**

Climate change, and the uncertainty of future weather patterns, is a major concern. Many of the important species and habitats within the National Park are particularly vulnerable to climate change. There is growing concern that species such as Merlin will be pushed higher up the moors as average temperatures rise, potentially resulting in loss of these species as the moorland elevations are not high enough for them. In the 1980s the average altitude for a Merlin nest was 265m. In the late 2010s, the average altitude was 335m. Changing weather patterns may result in longer droughts, which come with an increased wildfire risk, or more intense periods of rainfall, increasing risks of landslips and soil erosion.

Out of the National Park boundary, development pressure has the potential to further erode links between the National Park and nearby partner Protected Landscapes. The Yorkshire Dales is only 30km east of the North York Moors, and migratory wildlife could easily move between the two protected landscapes. Increasing urbanisation and agricultural intensification along the A1(M) corridor exacerbates the fragmentation of the National Park network and isolates the North York Moors and its wildlife. New development on the fringes of the National Park reduces connectivity outside of the boundary and has the potential to increase light pollution which could degrade the dark sky qualities of the National Park.

The habitats in the National Park are also facing discrete threats/pressures. Changes in consumer demand, cheap trade agreements with foreign countries, and shrinking profit margins (or in some cases negative profit margins) also influence the farming environment. The future of upland sheep farming, for example, is uncertain, as demand for sheep meat, and wool, has decreased and subsidies have decreased by an average of 37% (based on NFU modelling figures<sup>2</sup>). Changes and uncertainties surrounding the future of farming subsidies, particularly in relation to upland farming, may change the landscape of farming within the National Park. This may provide additional opportunities for biodiversity and nature conservation, or it may limit ambition and constrain farmers and land managers.

Another pressure on nature recovery is the availability and duration of funding and payments for activities to improve biodiversity. From the stakeholder engagement sessions that were undertaken in the Autumn of 2023, the availability of funding for interventions was highlighted repeatedly by partner organisations, farmers and landowners. Although the Government has promised through Environmental Land Management Schemes (ELMS) tens of millions of pounds of support for conservation and agri-environment schemes, it is still unclear what this will look like, how long term the

---

<sup>2</sup> [Upland farms worse off under current ELMS offer, NFU modelling reveals – NFUonline](#)

funding will be, and what the rates are. Ensuring that the rates and longevity are set at a level that will actually enable delivery benefits for nature recovery is imperative.

Additionally, another caveat of funding is the longevity of conservation projects. The Authority has been incredibly successful at securing funding for specific projects from external organizations such as the National Lottery Fund, which have enabled many projects such as the Ryevitalise and Land of Iron Landscape Partnership Schemes and Blue Corridors to deliver vital projects to support nature recovery. However, sourcing funding like this does have drawbacks, particularly recruiting and retaining experienced staff as only short-term contracts can be offered. This impacts the legacy of projects and monitoring of outcomes, but also relationships with communities and landowners. Funding can often be prescriptive, focused on issues 'of the moment' and can be capital focussed, with minimal time to develop or deliver meaningful outcomes. Long term, flexible funding for large scale projects is needed to continue to support biodiversity in the North York Moors, with projects built from local need rather than driven by funding objectives.

## **Access and Recreation**

The National Park's second purpose is to promote opportunities for public understanding and enjoyment of the North York Moors' special qualities. Natural habitats and landscapes have been shown to be vital for supporting well-being and public health. The National Park is therefore ideally placed to provide vital opportunities for residents and visitors to access and engage with natural spaces, to learn about and treasure our natural environment and to boost health and wellbeing both within the National Park and outside of it. It is therefore crucial that opportunities are taken to deliver nature recovery in spaces that are already accessible to people, but also to enable more access to spaces that are rich in wildlife where this is appropriate.

National Trails and other priority public access routes have the potential to provide excellent corridors for wildlife as well as people. Habitats alongside National Trails (or other significant promoted routes) will be prioritised for habitat enhancement or creation interventions. This could include a whole suite of activities including grass verge management, scrub, tree and hedgerow planting and the creation or management of ponds and wetlands amongst other things. Path maintenance work will complement this approach by reducing braiding of routes, retaining wetness near paths through frequent cut offs. It is envisaged that the North York Moors National Park will become a leader in accessible nature. Promoted public rights of way and National Trails will provide accessible, nature rich corridors for wildlife and people, whilst all residents in the National Park will have access to nature rich spaces near their homes. Recreation activities will be sustainable and have a low or negligible impact on areas of ecological importance.

Further details of the National Park Authority's plan for improving access, recreation and wellbeing through nature can be found in the Health and Wellbeing Strategy which is available on the Authority's website.

## Partnership Working

Nature recovery within the National Park is not deliverable by the Authority alone. Nature recovery takes time, and involves a lot of people working together, building relationships, and collaborating effectively to deliver. This Nature Recovery Plan is for the Authority use, but also to be used by partner organisations, stakeholders, and anyone who has an interest in nature recovery in the National Park. This plan has been produced following a suite of four technical engagement events which were held in the Autumn of 2023. Attendees at these events included representatives from nature conservation non-governmental organizations (NGOs), water and forestry organisations, farmers and landowners, estate liaisons, fisheries organisations, catchment partnerships and governmental organisations. This plan would not have been produced without their input, and its delivery will also not be possible without continuing this partnership working.

By producing this document in partnership with stakeholders in the National Park it is hoped that the targets and priorities identified will also reflect the concerns and deliverables of these organisations.

## Priorities and Targets for Nature Recovery

### Landscape Scale

#### Background

Traditional conservation activity has focussed on preserving or restoring conditions within very focussed, often designated, areas of very high ecological value. Whilst this ‘protect the best’ approach has been important to avoid losing a number of highly endangered species or threatened habitats, it has become evident that these actions cannot alone halt the ongoing loss of biodiversity from the UK and around the world.

In 2010, Professor Sir John Lawton led an independent review of England’s wildlife sites: **Making Space for Nature: a review of England’s wildlife sites**. This report, commonly referred to as the Lawton Report, identified that business as usual in conservation was not working and a much more connected, landscape scale approach was required to make a meaningful difference to restoring functionality back into natural ecosystems. The report established the current fundamentals for nature recovery, summarised using four words “bigger”, “better” “more” and “joined”.

Landscape scale thinking means considering how existing nature rich sites connect with each other, but also how the ‘matrix’ through which species move, live and feed also plays its part – whether agricultural land, private gardens, public spaces, urban areas, or something else. If all land within a defined area can be enhanced to support a little more biodiversity, then there will be more food and habitat available for species and easier movement between particularly rich areas, leading to an uplift in overall biodiversity.

## Vision

The National Park supports vibrant landscapes brimming with life. Wild species are abundant throughout the National Park both within productively managed land and in sites primarily managed for nature conservation. The importance of collective action is well understood, and National Park land managers, residents and visitors all feel they can contribute to supporting biodiversity. Land managers have the knowledge and support to practice good soil management and aid water retention on their land, leading to healthy diverse habitats and reduced issues of sedimentation or flooding both within and outside the National Park. Landscapes that support biodiversity extend beyond the National Park boundaries, connecting with other protected landscapes and sites of importance for nature. The habitats within the National Park are dynamic and heterogenous, resilient to changes in climate, and have space to function naturally.

## Priorities

### **Support all opportunities to improve soil health.**

The importance of soil to nature recovery cannot be understated with healthy soil essential for nature recovery and delivery of nature-based solutions. One teaspoon of healthy topsoil contains around 1 billion individual microscopic cells and around 10,000 different species. These species are often related to the terrestrial habitat, and work in symbiosis with the plants and fungi to create a healthy soil ecosystem<sup>3</sup>. All opportunities to preserve, conserve and enhance healthy soils need to be supported to drive nature recovery and food security.

Sedimentation is a major issue for watercourses within the National Park. The loss of topsoil is incredibly detrimental to farming, but also causes issues within watercourses. High sediment loads can disrupt the natural process of a river, causing loss of aquatic vegetation, turbidity within the channel, and can lead to the loss of many aquatic species which rely on clear water, as well as those that feed on them. Minimising the wash of sediments from land helps support healthy, functioning rivers and other wetlands.

### **Wetter habitats**

Wet habitats support a wider range of plants, and subsequently invertebrates and birds, than equivalent dry habitats.

With global climate change, the weather of the National Park is becoming increasingly irregular, with extended spells of hot, dry weather in spring or summer resulting in high wildfire risk in many parts of our moorland. Limited plant diversity exacerbates loss of soils and water from the moor, locally compounded by man-made drains, whilst increased local dominance of bracken and/or purple moor grass has created an abundance of dry flammable litter in spring. Wetter habitats are less damaged by wildfire, and also regenerate quicker. Research has shown that dry heathland recovers worse than wet heathland habitats following fire, and more soil damage is done when the

---

<sup>3</sup> Whitley, A. The impact of Climate change on soil biodiversity. The Centre for Ecology and Hydrology.

fire burns dry soil<sup>4</sup>. Re-wetting of heathland habitats is therefore important for both biodiversity and carbon capture.

Wet woodlands are currently rare within the National Park, though historically many of our wooded habitats would have been much wetter. In the Esk Valley woodlands would have been comprised of species such as Oak, Alder, Downy Birch, and Willow but are now largely coniferous. Wet woodlands are waterlogged for all, or part, of the year and the standing water and shallow rooting structure create a woody complex which provide a rich habitat for mosses, fungi, invertebrates, lichens, and other species. Wet woodlands are now one of the rarest habitats in the UK. It is therefore a priority to conserve our existing areas of wet woodland, create new habitat where possible, and restore areas that have been damaged, drained or replanted.

The increase in likelihood of summer droughts can be detrimental to many species which require regular access to freshwater, such as Turtle Doves, other farmland birds or amphibians. Nowhere in the National Park should be more than 500m from a source of fresh water.

Wet habitats also benefit our watercourses. Wet habitats which hold more water during heavy rainfall and retain water in droughts help to reduce extreme peaks and troughs of rivers downstream, leading to reduced impact of flooding or water scarcity. Wetter terrestrial habitats help slow runoff of water into watercourses after heavy rain reducing the washing of topsoil and nutrients into a river.

All opportunities to create wetter habitats within the National Park should be supported where practical, and restoration of wet habitats should be prioritised.

### **Soft edges, scrub, natural recolonisation and transitional woodland**

With increasing intensification of land use, hard boundaries of land ownership, site designations and management styles, many habitats have 'hard edges' meaning they do not grade gently into new habitats, but instead change abruptly. A good example of this can be seen in the sharp profile of small block plantation woodlands, which can transition from mature height trees to close cropped pasture, arable or moorland within the space of a few metres. Without human influence these edges would be much more gradual, and many species within the UK are declining in response to the loss of this transitional habitat.

There is an increased value to naturally established transitional and successional habitat, as it is likely created by plant species which are more suitable to the area and therefore adapted to local conditions. These transitional habitats support species within their own right, but also can allow the habitats either side to support more biodiversity<sup>5</sup>. Transitional woodland, scrub and soft edges should be considered as part of all habitat projects. It is aspirational to create moorland scrub edges, where appropriate, with species such as Juniper.

---

<sup>4</sup> Burch, J. A. (2009). The regeneration of bryophytes after the burning of dry and wet heath; a literature review and a field study conducted on the North York Moors. Natural England.

<sup>5</sup> Kark, S. et al. (2007) The Role of Transitional Areas as Avian Biodiversity Centres. *Global Ecol & Biogeog.* 16 (2) 187-196

## **Bigger, better, and more joined up.**

At a landscape scale the Lawton report objectives of “Bigger, Better and More Joined-Up” should be at the forefront of any conservation proposal. Over 45,000 hectares of the National Park is already protected for its ecological and geological value, but many species which are features of designated sites will also use habitats outside of the designated area. For example, our moorland is designated for Golden Plover, but they frequently spend time feeding on the undesignated in-between land<sup>6</sup>. Land which supports these species but is not designated is known as functionally linked land. Further research on functionally linked land within the National Park is required to prioritise interventions where required, and the conservation of this land is also necessary for nature recovery.

The National Park is close to three other protected landscapes nearby; the Howardian Hills National Landscape, Yorkshire Dales National Park, and the Yorkshire Wolds (which is in the process of becoming a National Landscape). The Yorkshire Dales are further connected to an additional 4 protected landscapes. By creating functional habitat links with these protected landscapes there is the potential to ensure that a very large area within the North of England is connected, protected, and delivering for nature recovery.

## **All lighting in the National Park to be wildlife and dark skies friendly.**

Light pollution is one of the fastest-growing pollutants in the environment and knows no boundaries. It is just as important to focus efforts to control lighting around the periphery of the National Park as in the intrinsically dark rural settlements within. Light pollution is easy to solve, reduces carbon emissions and can save billions of pounds in the UK alone.

Artificial lighting has been found to disrupt the natural behaviour of hundreds of species of flora and fauna<sup>7</sup>. It impacts the foraging, interaction, and reproduction of species as diverse as bats and hedgehogs, reduces the role of moths as pollinators and impacts the health and migratory behaviour of birds. It even impacts the health and natural cycles of plants, trees, and crops. Long term exposure can also have significant health implications for humans.

The National Park was designated an International Dark Skies Reserve in 2020 in conjunction with the Yorkshire Dales National Park. At the time of publishing there are only 21 such designated Reserves in the world. Our Management Plan sets out one of our special qualities as “A place of escape from towns and cities offering a true sense of remoteness and the darkest of skies”. It includes a target of increasing the dark sky core zone by 20% by 2027.

## **Designation of local wildlife sites**

The Local Nature Recovery Strategy legislation requires that the baseline of areas to be mapped includes nationally and locally designated sites. This does not allow for the inclusion of baseline habitats which are diverse, species rich or otherwise important but currently undesignated. For the National Park this poses concerns, as there are no locally designated wildlife sites within the boundary. Whilst it offers little legal protection, or

---

<sup>6</sup> Ratchliffe, D. A. (1976) Observations on the Breeding of the Golden Plover in Great Britain, *Bird Study*, 23(2), 63-116

<sup>7</sup> Bliss-Ketchum, L. L. et al., (2016) The effect of artificial light on wildlife use of a passage structure. *Biological Conservation*, 199, 25-28.



requirements for management, local wildlife site designation is clearly an important part of how the LNRS process is working, and it is likely reporting on nature recovery success will relate to levels of local designation. Where there are areas of importance outside of designated sites, and landowners are amenable to the designation, Local Wildlife Site status should be secured.

### **Sustainable practises**

It is proposed to phase out the use of all single use plastics, in the management of the natural environment. This is not yet practically achievable in all cases, as alternative solutions are not fully developed. To start working towards this objective it is important all projects assess the need for plastics during early planning to identify where alternatives are available and practicable. Projects and activities should opt for the best practicable sustainable practices available at the time, which may include prioritising the removal of plastic tree tubes when no longer needed, if not possible to avoid using them entirely.

### **Steps to recovery**

- Consider soil with every habitat creation scheme proposed, and support proposals for soil inoculation where suitable.
- Support research into soil health, conservation, and enhancement.
- Investigate funding for research into functionally linked land within the National Park.
- Buffer designated sites where possible.
- Work with Natural England to enable flexible management of the designated sites, maximise their resilience, ecological function, and contribution to wider nature recovery.
- Investigate designation of Local Wildlife Sites within the National Park, and designate sites where landowners are currently receptive.
- Promote wetter habitats and support the creation of all types of wetland habitat through appropriate funding.
- Maximise use of external funding to drive restoration/creation of wet habitats and ponds across the National Park.
- Deliver a National Park wide funding scheme to support adoption of dark skies friendly lighting.
- Continue to build on education and communications pieces, such as the Dark Skies Festival, to increase engagement with dark skies.
- Work with residents to facilitate the creation of Dark Sky Friendly Communities, through funding, advice, and support.
- Assess all materials and products used as part of Nature Recovery Projects to ensure that they are sustainable.
- Targeted tree tube removal and recycling programme.

- Continue to work with innovators to trial and develop sustainable alternative to products such as tree tubes.
- Opportunities to support development of transitional habitat should be prioritised.

## **Farming**

### **Background**

Outcome 5 of the Management Plan includes Objective 19 that the Authority will maintain a strong and viable farming and land management community that delivers more for climate, nature, people, and place. The detail included below sets out the priorities and mechanisms by which we hope to achieve this objective.

The National Park is a varied and diverse landscape supporting a variety of farm types with farming businesses more diverse than in many other areas of the country, including most other National Parks. The majority of holdings are classed as Less Favoured Areas, are used for grazing livestock, and are typically small (<50 – 100ha) and managed independently.

Agriculture plays a huge part in the way of life for communities within the National Park; it has sculpted the National Park we know today into the valued landscape it has become. Agriculture continues to have an essential role in managing the landscape and flora and fauna within it and plays an important role not only in the economic story of the place but also in the culture and heritage of the National Park.

The Authority currently runs a very successful Farming in Protected Landscapes (FiPL) programme. The programme is a four-year Defra funded scheme (July 2021 to March 2025) to help farmers and other land managers adapt to future changes in agricultural support. By supporting farmers, land managers and people who live and work in these areas, the programme helps to protect these exceptional places and support local communities. The FiPL programme in the North York Moors has been widely successful, but as the FiPL funding will come to an end in 2025, we need to be mindful of how to continue the legacy of this project, and build on the learning and opportunities identified through FiPL for the lifespan of this Nature Recovery Plan.

### **Vision**

The National Park boasts a diverse mix of profitable farming enterprises which integrate nature rich spaces with production to support a wealth of biodiversity within our farmed land which are permeable to rarer specialist species. Farming practices in the National Park result in healthy management of soils and have low impact on water and air quality, whilst supporting a robust and sustainable agricultural community. Opportunities to attract, upskill and retain a local workforce working in high-value, knowledge-intensive jobs and the 'green' or 'landscape' economy are available.

## Priorities

**Every land manager within the National Park has access to a local farm advisor with an emphasis on nature friendly farming alongside sustainability and profit of the business.**

With changes around farming subsidies and the Environmental Land Management Scheme, development in technology, changing climate, and competing pressures on land use, the future of farming is becoming increasingly uncertain. Farmers and land managers are at the forefront of nature recovery, but they need support to implement this. This plan aspires to ensure that every farmer within the National Park has access to a local farming advisor who can provide bespoke advice on nature recovery and nature friendly farming solutions alongside farming sustainability and profit. Having a single advisor to offer this service would remove impacts of conflicting advice and streamline delivery. Collectively English protected landscapes are arguing, through National Parks England, that the legacy of FiPL should be retained through the funding of local advisers, which are employed through the protected landscape bodies, which can support and help farmers make the most of the Environmental Land Management Scheme, in a way that delivers for their businesses and nature recovery. The Authority is well placed to host this advisory service, but funding for this function is necessary and not currently available. The appetite for this advisory service is currently being investigated through the Farming in Protected Landscapes (FiPL) scheme, and the Authority has also initiated contact with a number of other organisations that could provide funding.

**All hedgerows in the National Park managed in a nature friendly way.**

Hedgerows can provide a wealth of benefits for nature, providing food and shelter, connectivity, carbon sequestration and water retention. It is estimated that 80% of our woodland birds, 50% of our mammals and 30% of our butterflies use hedgerows in some way, and as such they are invaluable habitat<sup>8</sup>. Most hedgerow trees fruit and flower on second year growth, however most hedgerows are cut on a yearly basis, meaning these hedges have less fruit and flower than they could. This in turn means they support less wildlife. Changes to hedgerow cutting regimes including 3-year cut cycles, only cutting one side a year, or cutting an inch longer each year, would allow hedgerows to support more biodiversity. Hedgerow surveys can be used to target the planting and management of hedgerows and engage land managers with sustainable hedgerow management. The National Park Authority has 90+ years of funding for hedgerow creation, restoration, and management as part of a legal agreement with the Potash mines within the National Park.

**Less air pollution arising from farming and support for transition to lower impact systems.**

Many habitats within the National Park are being degraded and damaged due to high nutrient levels. Species like Sphagnum mosses, which are integral to high quality moorland habitats, decrease where nitrogen levels are too high<sup>9</sup>. Nitrogen deposition in

---

<sup>8</sup> Why are wildlife corridors important? | Heart of England Forest

<sup>9</sup> Granath, G., Strengbom, J., Rydin, H. (2011) Direct physiological effects of nitrogen on *Sphagnum*: a greenhouse experiment. *Functional Ecology* 26 (2).

woodlands can cause the loss of rare ground flora, as they are out competed by faster growing species<sup>10</sup>, and has significantly reduced species richness in grasslands<sup>11</sup>. It is incredibly important that measures are taken to reduce the levels of nutrient deposition on sensitive areas of the National Park. Whilst a significant proportion of nitrogen related pollutants arise from outside the National Park from industrial combustion, transport and agricultural sources, source attribution models indicate<sup>12</sup> that local agricultural activities such as slurry/muck storage, livestock housing, muck spreading, and fertiliser can significantly contribute to deposition on these sensitive habitats. Funding is required to support farmers to transition towards lower impact schemes. Schemes such as the Slurry Infrastructure Grant, which was designed to provide farmers with funding to upgrade their slurry storage systems to 6 months holding capacity, considering both air and water quality impacts, are needed across the National Park, whilst support is also required to help farmers to understand and model proposed interventions to inform investment decisions and planning applications.

### **Share learning from Nature Friendly Farming and schemes such as Farming in Protected Landscapes to support farmers outside of the National Park boundary to increase resilience, connectivity, and funding opportunities.**

The National Park can be heavily affected by activities outside of the boundary. Following the Lawson Principles of bigger, better, and more joined up, consideration of the opportunities and challenges for nature recovery working outside of the governance boundaries is important. To the south and west, of the National Park there is good quality agricultural land, with many farmers who have not had access to the schemes and resources such as the FiPL scheme. Opportunities to share learning and funding outside of boundaries, where it can help the conservation efforts of the National Park will be supported.

### **Steps to recovery**

- Secure funding and recruit farming advisors to provide bespoke advice on nature recovery and nature friendly farming, as well as sustainability, productivity, and profit.
- Use existing and evolving streams of communication with farms and land managers to undertake a suite of engagement and education events around hedgerows and their management.
- Continue to develop flexible conservation schemes which can offer farmers flexible funding for nature recovery interventions on their land. Build on projects such as the Ryevitalise Landscape Partnership Scheme, to run projects which include funding for conservation agreements and ensure that these agreements can be secured for multiple years.
- Increase awareness through existing and new communication channels of the availability of funding through the Authority for traditional management of hedgerows including hedge laying, coppicing, and infill planting.

---

<sup>10</sup> Willi, J., Mountford, J. & Sparks, T. (2005). The Modification of Ancient Woodland Ground Flora at Arable Edges. *Biodivers Conserv* 14, 3215–3233

<sup>11</sup> Carly J. Stevens et al. , (2004) Impact of Nitrogen Deposition on the Species Richness of Grasslands. *Science*303,1876-1879

<sup>12</sup> Erisman, J. W. et al. (2008) Agricultural air quality in Europe and the future perspectives. *Atmospheric Environment*, 42 (14) Pages 3209-3217.

- Secure funding through external organisations to support farmers to transition to lower impact systems. Schemes where there are other factors requiring air or water quality mitigation (such as government legislation or planning conditions) should still be considered for funding, if the benefits from a better funded system surpass the benefits from a system that the individual can afford.
- Support all opportunities to share learning on nature friendly farming opportunities and solutions, as well as funding, outside of the National Park boundary where the projects can contribute to the conservation of species and habitats within the National Park.

## **Moorland**

### **Background**

Objectives 3 and 8 of the adopted Management Plan both set out aspirations relating to our moorlands and moorland community. Objective 3 is to capture and store carbon by ensuring all degraded blanket bogs and peat habitats in the National Park are under active restoration by 2032 and Objective 8 posed to work with our moorland community to support the sustainable management of moorland to ensure it retains its intrinsic character and supports a greater variety and abundance of species and habitats. This chapter sets out our strategy for achieving these outcomes.

The majority of the moorland habitat within the National Park is designated as a SAC, SPA and SSSI. Whilst these designations are important and do provide the area with protection, they can also be highly prescriptive in their management requirements which may restrict or limit opportunities to support a greater range and abundance of biodiversity through increased variety of management approaches.

The Authority is currently undertaking an ambitious programme of peat restoration called ‘Moor to Restore’. The overarching aim of this project is to have all the degraded deep peat in the National Park under active restoration by 2032. The initial phase of the project used Natural England’s Nature for Climate Peatland Discovery funding to gather information on peat depth and condition across areas of the National Park where it was felt information was lacking. In total 9410 hectares of moorland were assessed using existing data or data gathered from surveys commissioned by the project. This data and subsequent engagement with the landowning community has led to 1100 hectares of moorland being entered into a Nature for Climate Peatland Restoration Grant, 75% funded by Natural England.

### **Vision**

A structurally diverse upland mosaic of heath and bog habitats supporting a rich suite of animals and plants which are resilient to the impacts of climate change. Moorland areas boast healthy peatlands and other wet habitats providing crucial ecosystem services through the storage of carbon and retention of water, whilst their diverse and sustainable management supports robust populations of moorland specific species including raptors, breeding waders and reptiles.

## Priorities

### **Increase the species and structural diversity of heathland habitats.**

Due to a combination of burning, grazing and changes in weather patterns across the National Park, some areas of moorland are transitioning from a typical heather community, to a more grass dominated community. England has lost approximately 85% of its historic heathland in the last 200 years, and in the North York Moors, historic moorland loss is largely attributed to agricultural improvement and coniferous plantations<sup>13</sup>. In addition to the existing land designations, diversification of moorland grazing would help prevent the loss of more heathland. Due to the intensity of the current management of much of the moorland within the National Park is dominated by Ling Heather with other dwarf shrub species not as common. Species such as Bilberry, Crowberry, Cranberry and Cowberry alongside Cross-leaved Heath and Bell Heather should all be found at greater levels on many of our moorlands but are less resistant to frequent burning. Longer periods between burning or cutting practices could support an increase in these shrub species.

### **All deep peat habitat in active restoration by 2032**

Deep peat is an immensely important and irreplaceable. It acts as a carbon store, with the peatlands in the UK, storing an estimated 3.2 billion tonnes of carbon. Healthy peatlands have a key role to play in natural flood management with the ability to buffer lowland habitats from the impacts of high rainfall and prevent flooding by storing up to 20x its own weight in water. The Authority has received funding from Natural England to restore 1,100 hectares of deep peat within the National Park by 31 March 2025 as part of the Moor to Restore project. The aspiration is to take the learning from this project and apply it across all moorland areas of the National Park. All deep peat should be in active restoration by 2032.

### **Increase understanding of shallow peat (<40cm) within the National Park, in relation to extent, and potential restoration opportunities**

Deep peat is known to be important, but shallow peat is often overlooked. Approximately 47,000ha of the peatland within the National Park is classed as shallow peat but this data has not been ground truthed. Opportunities for restoring this habitat have not been identified, with shallow peat restoration techniques broadly untested in the North York Moors. Research has shown that shallow peatlands may be most vulnerable to carbon loss when damaged through wildfire<sup>14</sup>. This means that the restoration of shallow peatlands to ensure that they are more resistant to damage is vital to limiting the loss of an important carbon store. It is proposed to trial a shallow peat restoration project within the National Park, with the long-term ambition to bring all peat into active restoration.

---

<sup>13</sup> Grant, S.A., Armstrong, H.M. (1993). Grazing ecology and the conservation of heather moorland: the development of models as aids to management. *Biodivers Conserv* 2, 79–94

<sup>14</sup> Wilkinson S L et al (2020) Shallow peat is most vulnerable to high peat burn severity during wildfire. *Environ. Res. Lett.* 15 104032

## Steps to recovery

- Support diversification of management of moorland habitat through diversification of grazing strategies.
- Build on the Moor To Restore project to apply learning across the entirety of the National Park, using funding from external partners such as Natural England, National Lottery, as well as other sources.
- Research the extent of shallow peat within the National Park, and produce restoration plans for these areas, leading to trials of approaches where appropriate.
- Promote small burn/cut areas on longer rotations.
- Buffer moorland edges, support funding opportunities for softer edges and transitional habitat, with more woodland and scrub.
- Undertake works to increase the water table across all of the moorland within the National Park, through measures such as blocking grips and gullies, restoring, and creating moorland ponds and scrapes where appropriate and inoculating areas with Sphagnum mosses.

# Grassland

## Background

Mirroring trends from across England, the National Park has lost a significant proportion of its species rich grassland over the last few years. Whilst the exact extent of loss cannot be known, changing farming practices have led to a major change in grassland composition with a vast reduction in species richness and diversity.

Pockets of species rich grassland have been retained – particularly in areas of the National Park which are harder to access or work productively, whether due to steep slopes, shallow ground, poor drainage, or small fragmented sites. Many of these remain memories of the grasslands lost to history, boasting a rich diversity of plant and invertebrate species. Species rich grasslands can be found anywhere where some low level of disturbance or grazing pressure is present but where agricultural improvement, tree planting or pressures of urbanisation is not. Road verges, coastal slopes, disused quarries, and woodland glades can all be hotspots of biodiversity for grassland species if managed the right way and help to buffer and connect the fragments of our historic meadows.

## Vision

Species rich grassland habitats are understood and celebrated for the diversity of species they support. Existing species rich grasslands of all types are well managed in the long term, whilst improved management of other grassland habitats and creation of new species-rich grasslands means grassland habitats are well connected and resilient to local pressures.

## Priorities

### **Identify, protect and enhance all existing areas of species rich grassland.**

Creating species rich grassland is not always easy to achieve, and many factors can affect success, including soil pH, nutrient levels, and the existing vegetation. It is therefore important when considering species rich grasslands, to ensure that preservation of existing grasslands is a top priority. These grasslands are primarily being lost through changes in the intensity of management. There are also concerns that species rich grassland in the National Park is under-recorded and, due to changes in funding, access difficulties, and competing land use interests, are at risk of being lost.

### **Support active management of all existing species rich grasslands.**

Many of the existing areas of species rich grassland contain such habitat because they have been harder to improve for alternative agriculture; they may be hard to access with modern machinery, seasonally flooded, or too small an area to be financially viable to farm in alternative ways. This implies that many areas of species rich grassland are also difficult to manage for conservation as well. As such, many are being lost through the development of scrub. Species rich grasslands within the National Park should all have a management plan and be in active management. This can be funded through schemes



such as conservation agreements, Environmental Land Management Scheme (ELMS), conservation covenants or Farming in Protected Landscapes (FiPL). The Authority will continue to develop and run projects to identify and secure long-term management for these grasslands.

### **Promote and support grassland habitat where it exists within other habitat mosaics.**

Species rich pastures and meadows provide approximately 1800 hectares of grassland habitat in the National Park, but species rich grassland can also exist in a mosaic with other habitats, such as woodland arable land and the urban environment. Increased awareness of the benefits of these grassland mosaics is needed, and consideration of these in management plans is necessary. Although species like gorse and bramble can be detrimental to grasslands if left unchecked, small areas of native scrub within a grassland can increase the biodiversity of the grassland, by supporting different bird, mammal, and invertebrate populations. Nature thrives on variety, and areas with a high diversity of plant species are most likely to support a high diversity of faunal species.

### **Use roadside verges to increase connectivity between species rich grasslands.**

Nearly half of the UK's wildflower species will grow in roadside verges<sup>15</sup>, and they can provide a refuge for many rare meadow species. The National Park has a large number of verges within, which can provide a large amount of habitat for these species.

Connectivity is also increasingly important as biodiverse areas becoming more fragmented, and roadside verges can provide physical links between habitats. It is therefore obvious that verges can be very important to nature recovery. The Authority has undertaken work on roadside verges in the past, and historically identified over 180 that were species rich, but this number has since decreased, as many have had incorrect management.

## **Steps to recovery**

- Fund research to ground truth species rich areas of grassland, through a combination of targeted research projects and student projects.
- Utilise funding to run projects to assess coastal and calcareous grassland on the coastal fringe, species rich grasslands on roadside verges and calcareous grasslands along the southern boundary of the National Park.
- Continue to run projects which include funding for conservation agreements and ensure that these agreements are secured for multiple years, where possible, whilst increasing likelihood of renewing agreements through regular contact with and support for land managers.
- Provide co-ordinated, bespoke farming advice to support management and creation of species rich grasslands.
- Support opportunities for grassland margins, including establishment of margins or buffer strips around arable and silage fields, and educate and promote nature friendly management of these areas.

---

<sup>15</sup> [Why road verges are important habitats for wildflowers and animals](https://www.nhm.ac.uk/our-work/conservation/why-road-verges-are-important-habitats-for-wildflowers-and-animals) | Natural History Museum (nhm.ac.uk)

- Ensure that grassland habitat is appropriately considered where tree planting is occurring and support the creation of new wood meadow/wood pasture habitat, as part of these schemes.

## Trees and Woodland

### Background

The National Park has around 22% woodland cover, and approximately 20% of this woodland is 'ancient' having been continuously wooded for 400 years. However, over half of these sites have been re-planted with conifers, mostly 50-60 years ago. These sites are a focus for restoration to native woodland as the soils and ground flora often retain good biodiversity. Two thirds of the woodland in the National Park is productive forestry, predominately conifer, with the majority of this being sustainably managed by Forestry England.

The National Park contains many veteran trees with oak as the predominant species. The Rye Valley in the southwest of the National Park is especially important and the veterans here support much rare wildlife. The woodlands across the National Park are home to a number of rare bird species including Goshawk, Nightjar, Turtle Dove, Crossbill and Honey Buzzard.

The Woodsmith Mine Section 106 agreement has secured funding for over 7,000ha of woodland creation over 100 years from 2017. This is being delivered by the Authority and 245ha of wooded habitat have been created as part of this scheme in its first 6 years. Funding from other partners also provides an opportunity to further increase woodland cover in line with the Management Plan ambition of 250ha/yr until 2032.

### Vision

Trees and woodlands play a leading role in supporting a resilient and sustainable landscape which delivers nature recovery as well as being important for carbon capture. Woodlands will be bigger, better and more joined up with no invasive non-native species. Woodland habitats are dynamic, with areas of deadwood, natural regeneration, varied structure, and biodiverse open space. Ancient features are protected and the creation of the next generation of veteran individuals is supported.

### Priorities

#### Trees in the Landscape and Veteran Trees/future Veterans

Within the National Park, landscape trees are under recorded, and there are many concerns that, with the increasing prevalence of Ash die back, *Phytophthora ramorum* infections, and historic loss of Elm trees, the number and density of landscape trees is reducing considerably. Areas with scattered individual trees have been found to support greater levels of biodiversity than comparable areas without trees, and scattered trees are keystone structures for vertebrates, invertebrates, and terrestrial plants<sup>16</sup>. Research

---

<sup>16</sup> Prevedello, J. A., Almedia-Gomes, M., Lindenmayer, D. B. (2017) The Importance of Scattered Trees for Biodiversity Conservations: A Global Meta-Analysis. *Applied Ecology* 55 (1) 205-214.

also suggests that the majority of ancient and veteran trees are found in fields, hedgerows, and parkland, not in woodlands<sup>17</sup>. Ancient trees are an incredibly important biodiversity resource<sup>18</sup>. We are therefore losing both landscape trees, ancient trees, veteran trees, and future ancient/veteran trees. This decline must be reversed. The current Countryside Stewardship can fund veteranisation, which could support actions to accelerate the formation of veteran features within younger trees. with developing veteran features such as cavities, decay and deadwood where it is safe to do so is also imperative, as is the planting of new landscape trees.

### **Create, restore, and enhance different woodland habitat.**

During the technical engagement for the production of this Nature Recovery Plan, several woodland habitats were referenced as of particular importance within the North York Moors National Park. These were Ancient Woodland, Wet Woodland and Wood Pasture/Wood Meadows. Ancient Woodlands and ancient/veteran trees are considered in national legislation to be irreplaceable habitats.

Ancient woodlands are woodlands that have been continuously wooded since 1600 AD and are frequently more biodiverse than recently planted woodlands containing a high proportion of rare and vulnerable wildlife species<sup>19</sup>. These woodlands were all originally broadleaved, and typically comprised of Oak, Birch, Ash, Rowan, and Hazel. Over half of the ancient woodland sites within the National Park have been felled and replanted, mainly with coniferous trees, which do not support the same amount of ground flora<sup>20</sup>. In these locations, woodland management plans should be developed to set out a process for managing out conifers over time to shift towards a semi-natural woodland composition.

Habitats with scattered trees can contribute significantly more biodiversity than habitats without trees, and this is particularly relevant when considering wood pasture and wood meadows. Wood pasture is a commonly known habitat, and it is considered important for the ancient and veteran trees contained within, as well as grassland and fungi interest. Wood meadows are a much rarer habitat within the UK and have only recently been discussed as an important habitat to record and create within the National Park. With the fragmentation and loss of many of our species rich grasslands, and the constraints on securing their long-term management, habitats like wood meadow and wood pasture can be extremely important for securing both species rich grassland as well as landscape and veteran trees.

### **Increase the amount of standing and lying deadwood.**

Deadwood is an important component of woodland ecosystems, upon which many species depend. Dying and dead trees, both standing or fallen, and at different stages of decay, are valuable habitats (providing food, shelter and breeding conditions) for a large

---

<sup>17</sup> Nolan, V., et al (2020). The Ancient Tree Inventory: a summary of the results of a 15-year citizen science project recording ancient, veteran and notable trees across the UK. *Biodivers Conserv* 29, 3103–3129

<sup>18</sup> Putman, R., et al. (2011) Identifying threshold densities for wild deer in the UK above which negative impacts may occur. *Mammal Review*, 41 (3), 175-196

<sup>19</sup> Goldberg et al (2007) The ancient woodland concept as a practical conservation tool in Great Britain, *Journal for Nature Conservation*, 15 (2) 109-119

<sup>20</sup> K. J. Kirby, Changes in the Ground Flora under Plantations on Ancient Woodland Sites (1988) *Forestry: An International Journal of Forest Research*, 61 (4) 317–338

number of rare and threatened species<sup>21</sup> Native species provide the most valuable deadwood for biodiversity, especially in sections of 20cm diameter or more<sup>12</sup>. The UK Forestry Standard recommends a minimum average 20m<sup>3</sup> of deadwood is retained per hectare. Forest Research and the Woodland Trust both state that greater amounts should be retained, especially in high value wooded habitats<sup>22</sup> All planting proposals within the National Park should seek to create a minimum of 20m<sup>3</sup> of deadwood ≥20cm per hectare, and woodland management plans should reflect this. This can be achieved, even with new woodland planting, by choosing species which are short lived, or fast growing but which are not wholly suitable for the area they have been planted, such as planting Alder or Willow in dry areas, or even including English Elm in planting schemes.

Standing deadwood can pose a safety concern, and many landowners will remove it where possible. Of particular concern is Ash, as there are many along roadsides that are now dying due to Ash Die Back. The Authority will work with Highways, Tees Valley Combined Authority and North Yorkshire Council to support the retention of these trees where possible, and alternative deadwood habitat provided where possible. For example, instead of cutting these trees at ground level, they could be cut at one or two meters high, and the stump left, this can negate the health and safety impacts on roads, but still leave some standing deadwood habitat.

### **Invasive species**

Many woodlands in the National Park are currently being damaged due to the high numbers of invasive species. Deer are detrimental to tree establishment, as well as the diversity of woody species and ground flora in established woodland. As muntjac are not yet endemic in the North York Moors a zero-tolerance approach should be successful in keeping this damaging, non-native deer at bay. Additionally, control of other species of deer should be supported wherever practical. Where natural colonisation/regeneration is the aim a zero deer policy is recommended.

Grey Squirrels have been identified as a significant threat to woodland establishment and management. The damage to young trees is a major disincentive to creating productive broadleaved woodland. Grey squirrel control should also be encouraged wherever practical.

Common Rhododendron has substantial negative effects on woodlands within the National Park. There have been localised attempts made to control rhododendron since the 1980s, however these are frequently unsuccessful due to the scale of the problem, the limited capacity of the removal program, and the ability of rhododendron to regenerate. Therefore, all proposed rhododendron clearance should be focused in areas where eradication can successfully be achieved. Initial effort could be focused on ancient woodlands and designated sites.

Another non-native species that needs to be considered is pheasants. There is conflicting research published on the impacts of pheasant release on woodland sites,

---

<sup>21</sup> Lassauce, A., et al. (2011) Deadwood as a surrogate for forest biodiversity: Meta-analysis of correlations between deadwood volume and species richness of saproxylic organisms. *Ecological Indicators* 11(5) 1027-1039,

<sup>22</sup> Humphrey J. et al. (2012) Managing deadwood in forests and woodlands. Forest Research Publications, A UKFS Practice Guide, c. Forestry Commission.

with publications from the Game and Wildlife Conservancy Trust to suggest that the number of woodland birds increases where management for pheasant shooting is undertaken<sup>23</sup> contrasting with other research concluding that pheasant pens, feeding and high pheasant density correlates with reduced ground flora<sup>24</sup>. The Game and Wildlife Conservancy Trust (GWCT) has synthesised much of this data to produce guidance on woodland conservation and pheasants<sup>25</sup> including pen location, pheasant density etc. but there is no research on the number of shoots that follow this guidance. All shoots within the National Park should follow this guidance, and all shooting management should be undertaken following the best practise guidance.

Pests and diseases are also badly affecting trees, including (*Phytophthora ramorum*) in Larch, which means biosecurity remains of utmost importance.

## Steps to recovery

- Create an accurate record of ancient and veteran trees within the National Park and add to the Woodland Trust's Ancient Tree inventory where possible and protect them where possible to ensure a favourable environment by reducing compaction, eutrophication etc.
- Identify Ash trees that are not succumbing to Ash Die Back and collect seeds from them to grow on as local resistant stock. Grow Juniper locally to enhance previous conservation projects.
- To aid biosecurity, preference should be to plant only UK and Ireland sourced and grown trees but from a variety of sources, including further south, to ensure diversity.
- Improve resilience of all woodlands by increasing diversity of species, age and structure of the vegetation by natural processes as well as human intervention.
- Support farmers and landowners to plant new landscape trees through grants such as the Landscape Tree Scheme, as well as supporting them to retain and enhance existing in field, or boundary trees where possible.
- Identify trees which could become ancient trees in the future and ensure that they are appropriately protected.
- Identify additional species, which could be planted to replace Ash and Larch.
- Where predominately coniferous plantations are being created or replaced, broadleaved woodland and open spaces should be maximised to create high quality mixed woodland. A minimum of 10% of the plantation should be comprised of broadleaf species, and an additional 10% should be open space. These areas can be focussed around sensitive features such as watercourses to create wildlife corridors. Provision of a minimum of 20m<sup>3</sup> of deadwood >20cm per hectare should also be included.
- Where new broadleaf woodland is proposed, a minimum of 10% of area should be open space. Species selection should be carefully undertaken to also include a

---

<sup>23</sup> Draycott, A. et al. (2008) Effects of pheasant management on vegetation and birds in lowland woodlands. *Applied Ecology* 45 (1) 334-341

<sup>24</sup> Capstick, L. A., et al (2019) Ground flora recovery in disused pheasant pens is limited and affected by pheasant release density. *Biological Conservation*, 231, 181-188

<sup>25</sup> <https://www.gwct.org.uk/advisory/guides/woodland-conservation-and-pheasants/>

provision of a minimum of 20m<sup>3</sup> of deadwood >20cm per hectare once the woodland is established.

- Support the creation of new woodlands to help create bigger, better, more joined up woodland networks across the National Park.
- Restoration of Plantation on Ancient Woodland Sites (PAWS) to native broadleaf woodland should be prioritised, and funding should be secured to implement this. All PAWS areas should be managed to preserve and enhance ancient woodland features, reduce conifer cover and have an active woodland management plan.
- Ancient Semi-Natural Woodland to be brought into sustainable management through tackling threats such as browsing and invasives.
- Secure funding to create, enhance and conserve areas of wood pasture and wood meadow and promote the benefits to farmers, landowners, and the general public.
- Map the extent of rhododendron within the National Park, and support projects where eradication of rhododendron can be achieved.
- Implement a zero-tolerance strategy to muntjac deer. Actively encourage deer control, especially where damage to tree establishment or high ecological value woodland is occurring.
- Increase engagement and awareness of the importance of deadwood amongst land managers, Highways agencies, Tees Valley Combined Authority and North Yorkshire Council.
- Work with CLA, GWCT and other stakeholders to ensure that all pheasant shooting activities within the National Park follow the GWCT good practise guidance for biodiversity and habitat protection.

## **Rivers, Water and Wetlands**

### **Background**

Our rivers face a multitude of pressures, including impacts from intensive land-use, modifications, invasive non-native species (INNS), water pollution, and climate change. Resulting habitat degradation and fragmentation threatens local wildlife both within our rivers and across the wider landscape.

Rivers need to be considered as whole catchment systems, and include not only the channel itself, but the surrounding landscape too, including the upland moorlands and headwaters, woodlands, grasslands, wetlands, floodplains, and down to the intertidal zone and estuaries. Efforts to preserve the National Park's rivers therefore focuses on habitat restoration and creation at a landscape-scale; working with landowners to create long-term conservation agreements, INNS control programmes, addressing modifications that impede fish migration as well as natural function, and reconnecting communities to the natural world.

Improving water quality is included in the National Park Management Plan, with the aim of ensuring all waterbodies are in good ecological condition by 2027 and supporting the

improvement of the marine and coastal habitat. The below priorities have been identified as mechanisms by which the Management Plan objectives can be achieved.

## **Vision**

Clean, naturally functioning rivers and streams flow from the many and varied landforms and habitats of the National Park. Watercourses and wetland features are rich in biodiversity with minimal barriers to species movement, whilst rivers are connected to their floodplains, have pristine water quality, and space to function naturally. Biosecurity protocols are well understood and implemented around all wetland and watercourse features. Communities understand the river landscape and are engaged in protecting their riparian environment.

## **Priorities**

### **Eliminate water pollution, lower nutrient levels and sedimentation rates in watercourse.**

One of the biggest impacts on riverine health is water pollution. In the UK, Government reports that the main causes of this water pollution are agricultural activities and sewage outfalls. The impacts of these high nutrients are having a big impact on both habitats and species.

Diffuse pollution is a major issue for both water quality and land managers. Often driven by rainfall, diffuse pollution occurs when fertiliser, pesticides, chemicals, and soils are washed off the land and into our watercourses, and the effect of this pollution is cumulative. Even very small amounts of run off have a big impact when there are multiple fields contributing. The Ryevitalise Landscape Partnership Scheme is currently taking diffuse pollution in the western side of the River Rye catchment. This involves working with farmers to change land management to reduce this run off into watercourses. The National Park Authorities Management Plan proposes to have all waterbodies in 'good ecological condition' by 2030. A large part of this will require landscape scale changes to water friendly farming. The National Park Authority will continue to run projects such as the Ryevitalise Landscape Partnership Scheme, which helps farmers to farm in a way which will improve water quality and reduce pollution. By 2030 it is proposed that all farmers within the National Park will be able to access funding that will support them to farm in a way that does not cause nutrients and sediments to be released into watercourses.

A formal notice from Natural England in March 2022 stated that the Teesmouth and Cleveland Coast Special Protection Area, just north of the National Park, is in unfavourable condition due to the levels of nutrient enrichment, particularly nitrates, in the area. A small area of the National Park includes watercourses which drain into the Teesmouth and Cleveland Coast Special Protection Area. Improved sewage infrastructure, and the cessation of sewage discharging into watercourses, is imperative for nature recovery and the restoration of our riparian systems.

Yorkshire Water have identified 3 storm overflow drains within the National Park that will be upgraded (proving they have the funding) by 2030<sup>26</sup>. Whilst this is clearly insufficient to reduce the levels of outflow to acceptable levels within the next 7 years it is in line with the amount of funding the Water Services Regulation Authority permit Yorkshire Water to invest to improve their infrastructure. Currently storm overflow upgrades are being driven by Government targets to reduce overflows to less than 10 spills a year and are not related to specific site conditions or the level of environmental impact in that area. Partnership working is needed with Yorkshire Water and the Environment Agency to understand the impact of combined sewage overflows and drive proportional investment relating to mitigating this impact. Both the Water Services Regulation Authority and the Environment Agency have an increased Biodiversity Duty under the Environment Act to act to conserve and enhance biodiversity and investment and upgrades to infrastructure to stop point source pollution in sensitive water catchments should be a high priority.

### **Removal of in channel obstacles to fish movement.**

There is widespread concern regarding the loss of migratory fish, and in channel obstacles that they face when utilising British rivers. Migratory fish are important ecosystem components, and the watercourses in the National Park support Salmon and Sea Trout, which spend part of their life out at sea, and come into freshwater to spawn. The National Park has run several projects to remove obstacles to fish migration in the River Rye catchment and the Esk catchment. The ambition is to build on these projects to remove all significant barriers to fish migration within the National Park. Electrofishing surveys have been undertaken annually on the River Rye since 2021 to monitor the response to different removal techniques for in channel barriers and assess population dynamics within the wider catchment. This learning will be used to inform further projects and help identify locations where species would be expected but are not present.

### **More space for rivers.**

Rivers need space to move and connections to their floodplain. Historically infrastructure such as larger banks, culverting, straightening, and removal of side channels have been implemented to control rivers and limit localised flooding, but these have had a negative impact on the quality of rivers, and in some places, have increased flooding downstream. The homogenised rivers often support lower biodiversity due to lack of areas for specialised species, competition from generalist species and invasive species, and a reduced number of microhabitats. It is important when thinking about river conservation to allow rivers space to interact with their natural floodplain and allow natural processes to be undertaken. This will increase the number and variety of microhabitats, as well as improve resilience of watercourses to extreme high and low water events. Methods of reconnecting rivers to the floodplain, and allowing rivers space to move include re-meandering, removing dykes and reopening subsidiary channels. The Authority will build on existing projects, such as the Ryevitalise Landscape Partnership Scheme, to

---

<sup>26</sup> [https://www.yorkshirewater.com/media/kukjz3f/yky43\\_winep-enhancement-case.pdf](https://www.yorkshirewater.com/media/kukjz3f/yky43_winep-enhancement-case.pdf)



undertake works to restore watercourses, and facilitate more naturally functioning rivers and processes.

### **Invasive non-native species control and stricter biosecurity protocols across the National Park.**

Non-native species are a particular threat for watercourses and riparian systems, both floral and faunal. Himalayan Balsam, Giant Hogweed, Yellow Skunk cabbage, New Zealand Pygmyweed, and Montbretia have all been recorded along watercourses within the National Park and can all have incredibly detrimental effects on our natural habitats. Shading out of native flora is a large concern with many of these species, as well as the potential for soil erosion and bankside collapse when these species die back over winter. With the impacts of climate change, and international movement, the impacts of invasive species are predicted to increase<sup>27</sup>. Research has identified that once a species is present within the country, one of the major causes of their spread is due to human movement and recreation<sup>28</sup>. A global meta-analysis concluded that the abundance and richness of non-native species are significantly higher in sites where tourist activities take place than in places without recreation<sup>29</sup>. It is therefore imperative that an increased awareness of invasive species and biosecurity protocols is established amongst everyone who lives within and visits the National Park. All areas with the National Park with high footfall, or promoted routes, should have boot washing facilities at the start and end of the walk. Communications on the impacts of non-native species, and the role that public access has in their spread, need to be published regularly, alongside the Check-Clean-Dry message.

### **Steps to recovery**

- Identify areas where soil is being lost into watercourses, and fund restoration of these areas to prevent soil erosion.
- Continue to build on projects e.g. Blue Corridors and Ryevitalise Landscape Partnership to leverage external funding for removal of in channel barriers.
- Reconnect more of our rivers to the floodplain, through targeted interventions such as re-meandering or raising the water profile.
- Increase awareness of invasive species amongst those that live and visit the National Park, and their personal responsibility to prevent the spread.
- Work with stakeholders to install boot stations at all flagship and high footfall sites.
- Work with volunteers to survey watercourses in the National Park and identify areas which have higher pollution levels or are particularly sensitive to water quality (such as the River Esk).
- Continue to work with Yorkshire Water to lobby for improve wastewater infrastructure within the National Park

---

<sup>27</sup> Bertelsmeier, C. et al. (2013) Increase in quantity and quality of suitable areas for invasive species as climate changes. *Conservation Biology* 27(6) 1458-1467

<sup>28</sup> Anderson L. G., (2014) Biosecurity and Vector Behaviour: Evaluating the Potential Threat Posed by Anglers and Canoeists as Pathways for the Spread of Invasive Non-Native Species and Pathogens. *PLOS ONE* 9(4)

<sup>29</sup> Anderson L. G., et al. (2015) The Role of Tourism and Recreation in the Spread of Non-Native Species: A Systematic Review and Meta-Analysis. *PLOS ONE* 10(10)

- Continue to roll out projects which offer flexible funding for farmers and land managers focused on improving water quality.

## Marine and Estuarine

The priorities and vision for the marine habitat are still to be completed, following the findings of the Yorkshire Marine Nature Partnership Nature Recovery Consultation and Plan.

## Species Targets

### Background

Much of nature recovery in the last few years has focused on delivering habitat improvements, rather than a focus on species. However, it is important not to forget about the rare, endangered, and important species that are found within the National Park. Moorland within the National Park supports 3% of the breeding population of Golden Plover and Merlin within Great Britain, alongside a suite of other important and rare wading birds, such as Curlew and Lapwing the River Esk supports Yorkshire's only population of Freshwater Pearl Mussel and our grasslands and moorlands support rare and endangered butterfly species. Natural England reports that "species reintroductions can play a key role in restoring biodiversity and in building the resilience of ecosystems to climate change and other human pressures", and it's important to include species within this Plan. The species targets and priorities identified are not exhaustive but represent the species that have been identified during early stakeholder engagement as of particular importance within the National Park.

### Vision

The National Park supports healthy, diverse, and resilient populations of native species. A range of raptor species are breeding at stable numbers, and beavers have been reintroduced to select catchments. Newly restored and enhanced habitats support a range of species, with interconnected populations supporting genetic diversity.

### Make progress towards beaver reintroduction.

Beavers have been identified by multiple stakeholders for the benefits that they could bring to courses and wet habitats. Beavers are considered to be 'ecosystem engineers' as their activities can change the structure and function of an area. They can increase ground water storage, stabilise flows, reduce downstream flooding, and create additional habitats that many species of plants, insects, and animals use. Research conducted by Stringer and Gaywood (2016) looked at the positive and negative influences of beavers across 49 separate studies and concluded that "overall beavers have an overwhelmingly positive influence on biodiversity"<sup>30</sup>. Following initial engagement with farmers and landowners it was clear that, in the National Park, people are unaware of the benefits that beavers can bring and are concerned about impacts on their own land and flooding.

---

<sup>30</sup> Stringer, A. P., & Gaywood, M. J. (2016) The impacts of beavers *Castor* sp. on biodiversity and the ecological basis for their reintroduction to Scotland, UK. *Mammal Review* 46(4) 270-283

Reintroducing beavers would need a co-ordinated approach from national and local governments, as well as farming and land-owning organisations, and it is clear that we are still a long way from this. Further education and engagement on the pros and cons of beavers is needed amongst the farming and landowning communities within the National Park. An evidence-based approach for reintroduction will be needed, and it is an important first step to share that evidence with all stakeholders to empower them to make an informed choice for reintroduction.

### **Support larger and more connected populations of Large Heath Butterfly**

Large Heath Butterfly are a charismatic species of wet bog and moor, utilising sites typically less than 500m in altitude. Of high conservation priority in the UK, and considered vulnerable across Europe, populations of Large Heath have reduced due to loss of habitat and site fragmentation as their wet habitats have been drained, planted or agriculturally improved.

Whilst the North York Moors population is towards the very southeast of their UK range, there is significant potential for restoring valuable habitats for Large Heath through peatland and moorland rewetting and improving connectivity with existing known sites, which can help to the species to stabilise and rebound in the National Park. Using Large Heath as a flagship species to attract funding, may also support further efforts for restoring these habitats, particularly where on shallow peat, and also support efforts for species monitoring and/or reintroductions of suitable plant species where appropriate, improving the diversity and condition of sites, many of which are internationally designated.

### **Eliminate raptor persecution, and greater raptor numbers.**

The habitats in the North York Moors should support a diverse number of raptor species, including Hen Harriers, Red Kites, Osprey and others. Over Britain as a whole, most raptors have increased and expanded considerably since the 1970s, in response to reduced killing and nest destruction, and the diminished impacts of organo-chlorine pesticides; however, in recent decades the populations of some species have declined on and around grouse moors. Newton (2021)<sup>31</sup> provides a comprehensive analysis of the causes of declines for raptors within Britain and discussed mechanisms for preventing further persecution. He concluded that raptor killing is the main issue that divides grouse moor managers and conservation organizations in Britain, which otherwise have much in common and it is difficult to see how to resolve this issue in a satisfactory manner, as both sides have reasoned arguments, both have taken entrenched positions, and legislation is extremely difficult to enforce and is being increasingly ignored. Only dialogue, mutual understanding and compromise are likely to lessen this conflict. The Authority will work with partner organisations, including other Protected Landscapes, North Yorkshire Police and Operation Owl, to raise awareness and increase reporting of raptor persecution incidents. We will continue to engage with moorland managers to

---

<sup>31</sup> Netwon, I. (2021) Killing of raptors on grouse moors: evidence and effects, *IBIS International Journal of Avian Science* 163 (1) 1-19

share up-to-date unbiased scientific evidence, support diversification of income streams, and upskill young people working in moorland management.

### **Monitor farmland and wading bird assemblages and continue to run projects to enhance their numbers.**

The Authority is currently a main partner in a project funded through National Lottery Heritage Fund hosted by the North York Moors Trust to create and restore habitat for Turtle Dove, Yellowhammer, Song Thrush, and Redstart. In 2022 the UK farmland bird index was 60% below its 1970 value<sup>32</sup>, with 53% of species declining and 16% showing little or no change. The Authority works with Natural England to commission regular surveys of moorland and farmland wading birds within the National Park, and the picture here is more stable, with declines in numbers recorded in the most recent farmland survey but higher numbers reported in the late 2010s. The Authority will continue to monitor species, in partnership with Natural England, and other organisations, through a combination of volunteer surveys and commissioned surveys, as well as working with external partners such as the BTO to expand on existing surveys.

### **Support a recruiting population of Freshwater Pearl Mussel**

Freshwater Pearl Mussel are a critically endangered mollusc. The River Esk supports the only Yorkshire population of Freshwater Pearl Mussels, and one of only 7 rivers nationally to support this species. Their decline is linked to a number of factors, including poor water quality, loss of gravel beds in the bottom of rivers, and reductions in the number of Atlantic salmon and Sea/Brown Trout, which are a host species for part of their lifecycle. The Freshwater Biological Association have bred a captive population of the Freshwater Pearl Mussel from members of the Esk population of Freshwater Pearl Mussel, which are ready to be released. This species is an indicator of good quality riverine systems, and therefore having a healthy, recruiting population of freshwater pearl mussel, is a strong indicator of the overall health of the river. Work to restore and enhance watercourses to facilitate the introduction of the captive bred population, and expansion of the existing population is a priority.

### **Support recovery of our water vole populations outside of currently identified core areas.**

Water voles have been surveyed in the National Park since the 1990s and the population has shown a marked decrease over the last 25 years. Core areas around Newtondale and Langdale Forest still remain, but the extent of watercourse occupied has decreased. Historically water vole decline has been attributed to predation by invasive American Mink and loss of foraging habitat along watercourses; however American Mink numbers within the National Park are thought to be lower than elsewhere in the country. As such, causes of the loss of water voles from much of the National Park are not well understood. It is currently thought that it could be attributed to a lack of variety of emergent vegetation for the water voles to eat or due to the flashy nature of our upland watercourses, where heavy rain can result in high, fast flowing watercourses for short periods of time. The Authority will continue to run projects focused on trailing methods

---

<sup>32</sup> Wild bird populations in the UK, 1970 to 2022 - GOV.UK ([www.gov.uk](http://www.gov.uk))

to expand water vole populations, such as planting of emergent vegetation or reprofiling ditches to cope better with water level fluctuations.

## **Steps to recovery**

- Educate and engage landowners and farmers within the National Park on the benefits, and potential issues, of beaver reintroduction. Identify barriers to beaver reintroduction within the National Park, and methods to overcome these.
- Monitor Large Heath populations and undertake habitat interventions where appropriate measures are identified to encourage population links.
- Continue to work with North Yorkshire Police, Natural England and partner agencies to raise awareness of raptor persecution and seek solutions to stopping this illegal practice.
- Undertake annual surveys of farmland passerine birds and wading birds with landowners/volunteers to increase understanding of our existing species assemblages.
- Build on projects such as Birds on the Edge to leverage funding for interventions to support farmland birds and expand on these to look at projects supporting wading bird assemblages.
- Survey the extent of existing Freshwater Pearl Mussel beds, identify potential reintroduction areas and monitor changes in distribution.
- Continue to seek funding to enable restoration and enhancement of rivers, to support a recruiting population of Freshwater Pearl Mussel.
- Reintroduce the captive bred Freshwater Pearl Mussel population to the River Esk catchment.
- Continue to survey water vole distribution within the National Park, and trial methods to expand their population from core areas into new watercourses.

## Timetable of actions

Short term priorities	Medium term priorities	Longer term priorities
<b>Landscape scale</b>		
<ul style="list-style-type: none"> <li>• Support research into soil health, conservation, and enhancement within the National Park.</li> <li>• Consider soil with every habitat creation scheme proposed, and support proposals for soil inoculation where suitable.</li> <li>• Investigate funding for research into functionally linked land within the National Park</li> <li>• Increase awareness amongst residents and visitors of the dark skies in the National Park</li> <li>• Continue to deliver lighting improvement projects to demonstrate good practice</li> <li>• Prioritise transitional habitat where it can be created.</li> </ul>	<ul style="list-style-type: none"> <li>• Work with Natural England to enable flexible management of the designated sites, to ensure that they are doing the maximum to support nature recovery and biodiversity.</li> <li>• Buffer designated sites</li> <li>• Deliver the objective of increasing the International Dark Sky Reserve Core Zone by 20%</li> <li>• More wet habitats of all types within the National Park</li> <li>• Targeted tree tube removal and recycling program</li> </ul>	<ul style="list-style-type: none"> <li>• Designate local wildlife sites</li> <li>• All villages within the National Park are transitioning to dark skies friendly lighting.</li> <li>• Partner with surrounding authorities and protected landscapes to protect regional nocturnal connectivity</li> <li>• All materials and products used as part of Nature Recovery Projects are sustainable</li> <li>• Nowhere in the National Park is more than 500 from a freshwater source</li> <li>• All tree tubes are removed at suitable time post planting/all tree tubes are biodegradable/nature friendly</li> </ul>
<b>Farming</b>		
<ul style="list-style-type: none"> <li>• Secure funding for in house farming advisors to provide bespoke, comprehensive farming advice.</li> </ul>	<ul style="list-style-type: none"> <li>• Expand on grazing diversification trials to include more land managers, and support innovation.</li> </ul>	<ul style="list-style-type: none"> <li>• Secure long-term funding for in house farming advisors to allow for building good working relationships between advisors and the community.</li> </ul>

Short term priorities	Medium term priorities	Longer term priorities
<ul style="list-style-type: none"> <li>• Undertake grazing diversification trials on areas of the moorland.</li> <li>• Secure funding for flexible conservation schemes for farmers and landowners.</li> <li>• Share all learning from nature friendly farming schemes undertaken in the National Park.</li> <li>• Support all farmers to transition to lower impact systems in relation to air quality and water pollution.</li> <li>• Increase understanding of nature friendly management of hedgerows.</li> </ul>		<ul style="list-style-type: none"> <li>• There is a wide range of grazing intensity and species throughout the National Park offering a range of habitat for wildlife.</li> <li>• Secure long-term funding for flexible conservation schemes for farmers and landowners</li> <li>• Be at the forefront of nature conservation in the UK, running innovative conservation schemes which are delivering for wildlife and land managers, and sharing these findings with conservationists throughout the UK.</li> <li>• All hedgerows in the National Park managed in a variety of nature friendly ways.</li> </ul>
<b>Moorland</b>		
<ul style="list-style-type: none"> <li>• Research areas of shallow peat within National Park.</li> <li>• More areas of moorland are being managed using smaller burns/cuts on longer rotations.</li> <li>• Raise awareness of raptor persecution, work with partners to seek solutions, and empower communities</li> </ul>	<ul style="list-style-type: none"> <li>• Produce restoration plan for all shallow peat.</li> <li>• Buffer moorland edges and increase awareness and planting of soft edges, transitional habitat and woodland scrub.</li> </ul>	<ul style="list-style-type: none"> <li>• All moorland in the national park is in active restoration.</li> <li>• No raptor persecution in the National Park.</li> </ul>

Short term priorities	Medium term priorities	Longer term priorities
to report instances of illegal persecution.		
<b>Grassland</b>		
<ul style="list-style-type: none"> <li>Secure funding for research to ground truth species rich areas of grassland, through a combination of targeted research projects and student projects.</li> <li>Secure funding for landscape scale pollinator connectivity project.</li> <li>Educate and promote on the creation and nature friendly management of buffer strips.</li> <li>Include species rich grassland in habitat creation mosaics.</li> </ul>	<ul style="list-style-type: none"> <li>Use findings of research to protect all areas of existing species rich grassland.</li> <li>Assess coastal and calcareous grassland on the coastal fringe.</li> <li>Support opportunities for grassland margins, including establishment of margins or buffer strips around arable and silage fields.</li> </ul>	
<b>Trees and woodland</b>		
<ul style="list-style-type: none"> <li>Create an accurate record of ancient and veteran trees within the National Park.</li> <li>Identify Ash trees resistant to Ash Die Back and collect seeds from resistant trees to grow on as local resistant stock.</li> <li>Promote importance of deadwood with land managers, Highways etc.</li> </ul>	<ul style="list-style-type: none"> <li>Identify trees which could become ancient trees in the future and ensure that they are appropriately protected.</li> <li>All shooting in the National Park follows best practise guidance.</li> <li>Promote wood pasture and wood meadow creation.</li> </ul>	<ul style="list-style-type: none"> <li>Eradicate rhododendron from areas of the National Park.</li> <li>Deer control undertaken across the National Park.</li> </ul>



Short term priorities	Medium term priorities	Longer term priorities
<ul style="list-style-type: none"> <li>• Map extent of rhododendron within the National Park.</li> <li>• Zero tolerance policy on muntjac deer.</li> <li>• Plant landscape trees.</li> <li>• Carry out PAWS restoration.</li> </ul>		
Water and wetlands		
<ul style="list-style-type: none"> <li>• Identify areas where soil is being lost into watercourses.</li> <li>• Increase awareness of invasive species amongst those that live and visit the National Park, and their personal responsibility to prevent the spread.</li> <li>• Identify all areas of watercourses which are being polluted and keep a record of all pollution instances.</li> </ul>	<ul style="list-style-type: none"> <li>• Secure and fund restoration to prevent soil entering watercourses.</li> <li>• Install boot cleaning stations at all flagship and high footfall sites.</li> </ul>	<ul style="list-style-type: none"> <li>• Work with Yorkshire Water and other partners to facilitate the upgrades of all wastewater infrastructure to reduce pollution incidents.</li> </ul>
Species		
<ul style="list-style-type: none"> <li>• Continue moorland and farmland wading bird surveys.</li> <li>• Work with partners to expand bird surveys with the National Park to farmland and coastal bird communities.</li> <li>• Collaborate and share research on the pros</li> </ul>	<ul style="list-style-type: none"> <li>• Include interim volunteer surveys for wading birds between scheduled surveys.</li> <li>• Reintroduce the captive bred Freshwater Pearl Mussel population to the River Esk catchment.</li> </ul>	<ul style="list-style-type: none"> <li>• A healthy, breeding assemblage of raptors across the National Park</li> <li>• A functioning and resilient population of wading bird species</li> </ul>

Short term priorities	Medium term priorities	Longer term priorities
<p>and cons of beaver reintroduction.</p> <ul style="list-style-type: none"> <li>• Monitor Large Heath populations and undertake habitat interventions where appropriate measures are identified to encourage population links.</li> <li>• Survey the extent of existing Freshwater Pearl Mussel beds, identify potential reintroduction areas and monitor changes in distribution.</li> <li>• Continue to seek funding to enable restoration and enhancement of rivers, to support a recruiting population of Freshwater Pearl Mussel.</li> <li>• Continue to survey water vole distribution within the National Park, and trial methods to expand their population from core areas into new watercourses.</li> </ul>		