Quantock Hills National Landscape

Nature Recovery Plan

April 2024

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Cover photo: by Tim Waring

CONTENTS - CHAPTERS

1. INTRODUCTION

The Quantock Hills National Landscape is a valuable place for wildlife. From bats, dormice and adders, to lichen, beetles, trees and wildflowers the Quantock Hills has a vast diversity of habitats and species in a relatively small land mass. This has been recognised in the fact that it was England's first Area of Outstanding Natural Beauty and protected by four Sites of Special Scientific Interest, a Special Area of Conservation, numerous Local Wildlife Sites and an Important Bird Area. All Areas of Outstanding Natural Beauty in the in England have been re-named National Landscapes to reflect their national importance.

As well as the importance of the core of the Quantock Hills for nature, it is strategically located to provide networks and corridors and support species in adapting to climate change by moving to a new climate space, whether a change in altitude and hydrology from the levels to the east and south to the hills and linking to the habitats of neighbouring protected landscapes such as Exmoor National Park.

However the story of the loss of our wildlife is well documented and understood, locally most recently with the Somerset State of Nature report (2023) - The Somerset State of Nature report 2023

For many years we have known that wildlife will need certain conditions to allow it to adapt to climate change. In 'Making Space for Nature: A review of England's Wildlife Sites and Ecological Network' (Lawton, 2010) identified that wildlife will need to be able to move to a new niche (ecological home), usually northwards to a new climate space. For this to happen there needs to be large 'core' areas of varied habitat, rich in different gradients and aspects offering new niches, and a robust nature network that allows wildlife to move across the landscape.

The 'Lawton Report' describes what we need to do to create a network that will allow wildlife to recover and adapt to climate change.

*"What needs to be done… can be summarised in four words**: more, bigger, better and joined**. There are five key approaches which encompass these, and also take account of the land around the ecological network. We need to:*

1. *Improve the quality of current wildlife sites by better habitat management*
2. *Increase the size of current sites.*
3. *Enhance connections between, or join up, sites, either through physical corridors, or through 'stepping stones'.*
4. *Create new sites.*
5. *Reduce the pressures on wildlife by improving the wider environment, including through buffering wildlife sites."*

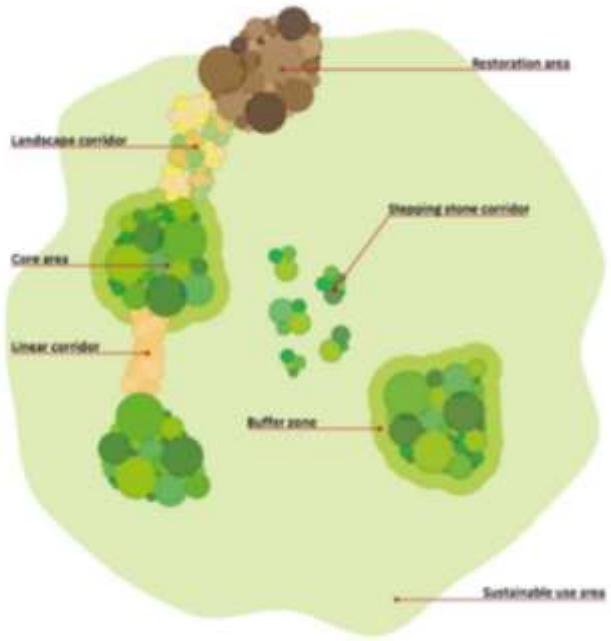


Figure 1: *Components of an ecological network*

Nature Recovery Plans are a key commitment of the Colchester Declaration, made by the country's National Landscapes in 2019. The plans aim to engage partners and inspire and inform positive action, to conserve what remains and reinstate what's been lost. The plans relate to National Landscape Management Plans as a spatial expression of our shared vision for beautiful, resilient landscapes rich in wildlife. Habitat and species recovery are addressed at a landscape scale; they also inspire and guide nature-friendly land management decisions at any place in these landscapes.

In 2020, the UK government set a challenging target, to enhance biodiversity by protecting and managing 30% of the land, rivers and sea by 2030 (Building Partnerships for Nature's Recovery) – part of a global effort known as '30 by 30'. A global 30 by 30 target was adopted at the UN Biodiversity Summit COP15 in December 2022, as part of an ambitious Global Biodiversity Framework. The Government has set out some mechanisms it believes will deliver this commitment including the formation of new Protected Landscapes, the delivery of its Environmental Land Management Schemes (ELMS), implementation of Biodiversity Net Gain and increases in blended finance to draw in greater private investment.

This Nature Recovery Plan has been produced by the Quantock Hills National Landscape Team in consultation with the Quantock Hills Partnership and other organisations or individuals with specific interest in nature recovery of the National Landscape area and the wider Quantock fringe. This plan was adopted by the Quantock Hills Partnership in April 2024. As such if forms part of a suite of documents that informs and supports the Statutory Management Plan for the Quantock Hills National Landscape. While this Nature Recovery Plan focusses on nature recovery the Management Plan takes a more holistic look at social, economic and environmental factors operating within the Quantock Hills landscape.

This Nature Recovery Plan is intended to provide a framework for action and improvement. It sets out some priorities and actions that are necessary, as well as urgent steps to ensure significant benefits for nature, climate change adaptation and people across the Quantock Hills National Landscape and our neighbouring areas. It is

intended to unlock pathways and funding for practical actions over the next decade that will achieve long-term positive change. Critically, as highlighted in the National Landscape Association's 2019 Colchester Declaration, change can only be achieved with the necessary powers and resources.

If the powers and resources are not provided, our actions, no matter how well we plan, will be limited.

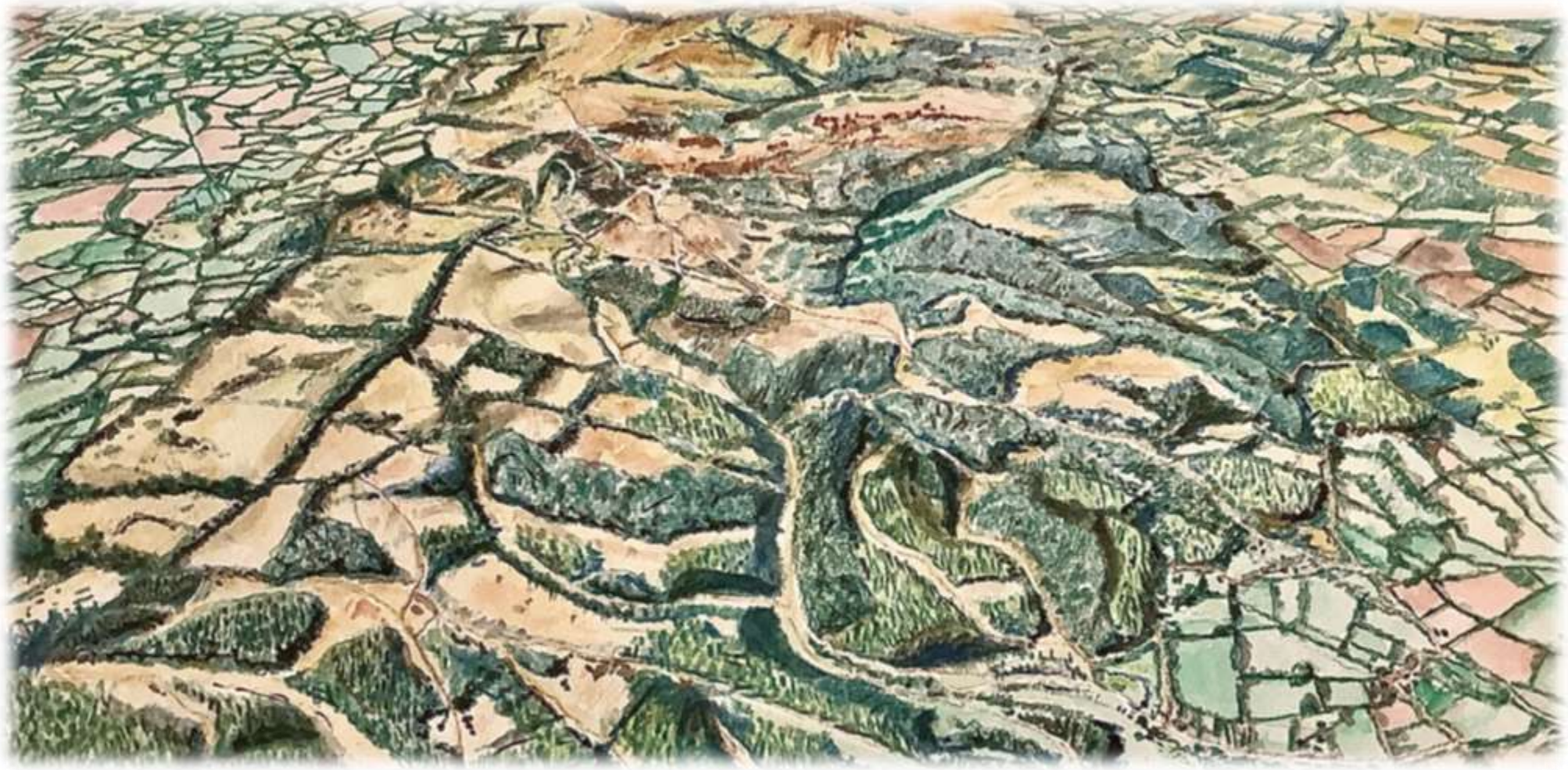


Figure 2: *Visualisation of a potentially nature rich northern Quantock Hills*

Water forget-me-knot (Myosotis scorpioides) typically found growing in wetland habitats including acidic mires

2. THREATS TO NATURE

Nature, and nature-based services (such as clean air, clean water, healthy soils, flood control and carbon storage), provide the essential basis upon which we all rely for our health and wellbeing and for the quality of landscapes. Due to a combination of factors, caused mainly by human activity over recent decades, nature is struggling. Globally, nationally and locally species and habitats are being lost or have deteriorated dramatically due to:

- changes in land, river and sea use and their management;
- development;
- resource extraction;
- pollution;
- invasive non-native species
- climate change and several other factors.
- Recreational pressures -encourage responsible use, behaviours,

These are all playing their part, compounded by the impact of a changing climate.

2.1 Changes to land use

Intensification of farming has had a catastrophic effect on habitats and wildlife. Technological innovation to maximise the productivity of farming began following the end of World War II. In the following 60 years successive governments promoted this approach as a priority with policies and funding aimed at incentivising a high input and high output farm production at a more industrial scale.

Herbicides to remove competing plants, insecticides, fungicides and other pesticides removed pressure of loss or damage to crops. Spraying and reseeding unimproved grasslands with a limited range of fast-growing grass species, fed with artificial fertilisers, or conversion to arable use led to the loss of significant of species-rich grasslands across the country, for example between 1960 and 2013, semi natural grasslands declined by 47% in England (Ridding, 2015) and dry acid grassland and heathland saw the greatest loss at 85%. Innovations in plant and animal breeding and in machinery have successfully further extended the growing seasons and the outputs of produce. Removal of hedgerows and other habitats to enlarge fields and maximise cultivation of land was encouraged in farmers who were grant aided by governments to do so. Farmers were expected to deliver these innovations and were very successful in achieving this, such that many of these approaches remain part of conventional agriculture.

Agricultural conversion of other habitats such as woodland, old orchards, parklands, marshes and ponds have also historically occurred. The pace of intensification has significantly slowed in the 21st century however habitats are now so fragmented, and nature so depleted that decline and extinction still occur both locally and nationally.

Many farmers of the Quantock Hills have avoided intensification, and preserved the historic landscapes and their habitats. Others have helped to redress the balance over recent years with use of Countryside Stewardship and other funds. However, other more fertile areas of the Quantocks have been more intensified over the same period and it is in these areas that potentially some of the

biggest wins for nature can be achieved whilst still practicing conventional agriculture.

2.2 Climate Change

Current modelling of the impacts of climate change show that the Quantock Hills are likely to get warmer, summers will continue to get warmer and drier, and winters will continue to get milder and wetter. Rainfall intensity is likely to increase with periods of heavy rain causing more frequent flood events. We are all aware that measures can be taken to mitigate and adapt toe climate change. All owners and managers of the land will also be seeking to reduce the impacts of climate change on their land and livelihoods. Building resilience to climate change is an increasing challenge for all farmers and also for the conservation of habitats and wildlife. Often there are common solutions to these issues. Building resilience of local habitats and wildlife to tolerate or adapt to climate change is addressed in this document.

Wildfires on the moorland, heaths and grasslands of the main plateaus of the Quantock Hills are expected to increase with changes in climate. These occurrences risk damage to grazing, harm to livestock, people and property. They can also severely impact fragile habitat and wildlife populations. Appropriate management of the heathland including fire planning is undertaken by many stakeholders including The National Landscape Team. This aims to reduce the likelihood of wildlife or limit the damage if wildlife does occur. The Partnership also undertake preventative measures during the summer including awareness raising campaigns and monitoring of the Fire Severity Index (FSI). In addition to reducing the threat of wildfire appropriate management of the heathland positively impacts the quality of habitat.

Figure 3:
Water run off at Aisholt Common 2020

2.3 Development and recreation

The status of the Quantock Hills as a National Landscape has helped to curb inappropriate development within and close to the boundary. However there has been significant growth in the population and housing provision in the towns and villages surrounding the National Landscape. The 2018 User Survey identified that 87% of users were from within the catchment (20 miles from the boundary). The consequence of this has been a

greater local population seeking recreational access to the National Landscape with the annual visitor number to the Quantock Hills in 2018 estimated at 769,200. The popularity of visiting open spaces such as the Quantock Hills has continued to increase over the years, and significantly increased after the Covid pandemic. This increased use of the outdoors has been beneficial for the health and wellbeing of the people of all our communities.

Figure 4: *Rhododendron removal on Middle Hill on Quantock Common by QCA 2005*

Increased usage of the Quantock Hills has brought with it an increase in some pressures and adverse effects on the landscape, the farming community and the unique habitats and wildlife, such as erosion, disturbance and littering. The number of incidents of worrying and attacks by dogs on livestock, particularly sheep has increased significantly, across the UK dog attacks on livestock were estimated to cost £2.4m in 2023 up nearly 30% from 2022. The Quantock Hills National Landscape Team has staff and volunteers who liaise with the public, patrol problem areas and link with stakeholders such as the police. As well as livestock worrying the increasing number of dogs in the Quantock Hills causes disturbance of sensitive wildlife, such as ground nesting birds during the breeding season. The National Landscape Team also works hard to promote responsible control of dogs during the breeding season.

2.4 Pests, diseases and invasive species

The National Landscape Team continues to work with partners such as Natural England and Forestry Commission in monitoring outbreaks or progression of pests and diseases such as ash dieback, heather beetle, livestock disease outbreaks and other issues that may impact farming, forestry, public safety or habitats and wildlife.

The most well-known invasive species effecting the Quantock Hills is rhododendron and its spread can quickly destroy valuable habitats and their species. Over the last 20 years many hectares of rhododendron have been removed and herbicide treated during capital works by the Quantock Hills National Landscape

Partnership, including the Team, Quantock Commoners Association, Forestry Commission and landowners to reduce its extent and limit its spread.

The sections below on '*Action for Our Priority Habitats'* set out in more detail work being done or planned for managing vegetation development including controlling invasive species.

Figure 5: *Chalara ash dieback in woodland. M Biddle, Forestry Commission.*

More recently tree diseases have had a significant impact on the Quantock Hills, especially Ramorum disease (Phytophthora ramorum) and Ash Dieback (Hymenoscyphus fraxineus).

Ramorum started appearing in larch and beech in the mid 2000's and has been found throughout the National Landscape. Of concern was the potential impact on Bilberry *Vaccinium myrtillus* (also referred to locally as Whortleberry)and heather species, with other parts of the UK losing significant areas to ramorum from 2010 onwards. The National Landscape Team with partners such as Forestry Commission and QCA undertook significant rhododendron control (removal and treatment) on Quantock Common and areas surrounding the SSSI from 2012 due to its ability to host but not be adversely affected by ramorum. Much of the larch woodland, usually associated with plantations in the central and northern areas of the Quantock Hills has been felled and replanted with other conifer species such as Sitka Spruce, over the last 15 years, impacting landscape.

The latest significant tree disease to impact the Quantock Hills is Chalara Ash Dieback. Since first discovered in 2012 this disease has spread rapidly westwards across the UK and was first reported in the Quantock Hills in 2015. By 2017 it was found at a number of locations throughout the National Landscape. The disease has a devastating impact on ash trees with high and relatively sudden mortality. Furthermore, due to the danger of sudden failure of the tree due to weakening of the core wood, where trees could pose a danger, such as roadside or next to high use paths, it is recommended they are felled. The disease has impacted the woodlands and landscape especially in the south of the Quantock Hills where there are more ash dominated woodlands, such as Cothelstone Hill or around Broomfield.

3. A VISION FOR NATURE'S RECOVERY

"By 2050 the Quantock Hills National Landscape will be a place where landuse, communities and nature thrive together. The mosaics of habitats will be strengthened through seamless integration with sustainable landuse providing homes for robust wildlife populations"

The vision for 2050 sets the pathway for short, medium and long-term actions within the plan. This plan also looks at targets and actions that will achieve significant improvements by 2030, linking with the Government's '30 by 30' commitment. It will also allow this plan and its incorporated versions to be regularly reviewed as part of the National Landscape Management Plan review cycle.

Our aspirations include:

3.1 Farming and land management

The Quantock Hills continue to be a thriving working landscape. Farmers, land managers and local communities are inspired and actively engaged and leading nature recovery. They adopt a farmer / land manager-led approach to nature recovery, finding new ways to collaboration.

Farm and other related businesses are protected, with opportunities for new ones created, with high value environmentally positive food production enhanced through environmental schemes and visitor / tourism enterprises.

Figure 6: *Grazing using regenerative agricultural principles, funded through agri-environment schemes.*

3.2 Habitats

Priority habitat management, restoration and creation is undertaken in accordance with the Lawton principles of more, bigger, better condition and better connected. Habitats will have more variation in vegetation structure and environmental conditions, securing wider opportunities for wildlife and greater resilience to adverse weather, climate change and natural vegetation development.

The increased size, quality and structural variation in the habitats creates even more diversity in food chains and food webs supporting more complex and rich ecosystems.

Figure 7:*Woodland management has created structural diversity in this oak-ash-hazel woodland*

Figure 8: *A combination of grazing, swaling and cutting creates different heathland vegetation types and different environmental conditions for wildlife*

3.3 Species

By achieving habitats that are bigger, in better condition and better connected, through the help of farmers and land managers much of our priority species and other valued wildlife will be thriving. Those species with particularly specific requirements will have action plans for the management or protection of habitats that support them, to secure their favourable conservation status.

Some habitats will be increased in size and./or in their ecological quality, which will increase their capacity to support larger populations of key species.

The measures to improve connectivity between habitats enable the greater permeability for wildlife to disperse between core areas across the landscape.

Figure 9: *Butterflies, such as the green hairstreak, can disperse more widely if habitats supporting their larval foodplants are more connected.*

With farmers taking steps towards improving connectivity of habitats on their land and with their neighbouring farmers' land, the movement of pollinator species along these routes increases.

Initiatives, such as the B-Lines approach (set out later in this report), increase the abundance and dispersal of species assemblages. This is achieved by partnerships between the National Landscape Team, farmers and relevant stakeholders such as Natural England and the National Trust.

Visualisations *– The visualisations below have been produced to illustrate potential actions and landscape features that could provide habitat to support assemblages of species. They identify features that will create corridors and stepping stones allowing the landscape to become more permeable to wildlife. The purpose of the illustrations is to allow discussions with landowners, farmers and stakeholders, to provide inspiration and context to a vision of a nature rich Quantock Hills in 2050*

Figure 10: *Bullfinch is a declining bird species of mixed farmland on the Quantock Hills. Provision of food sources as stepping stones allow bird species to move across landscapes.*

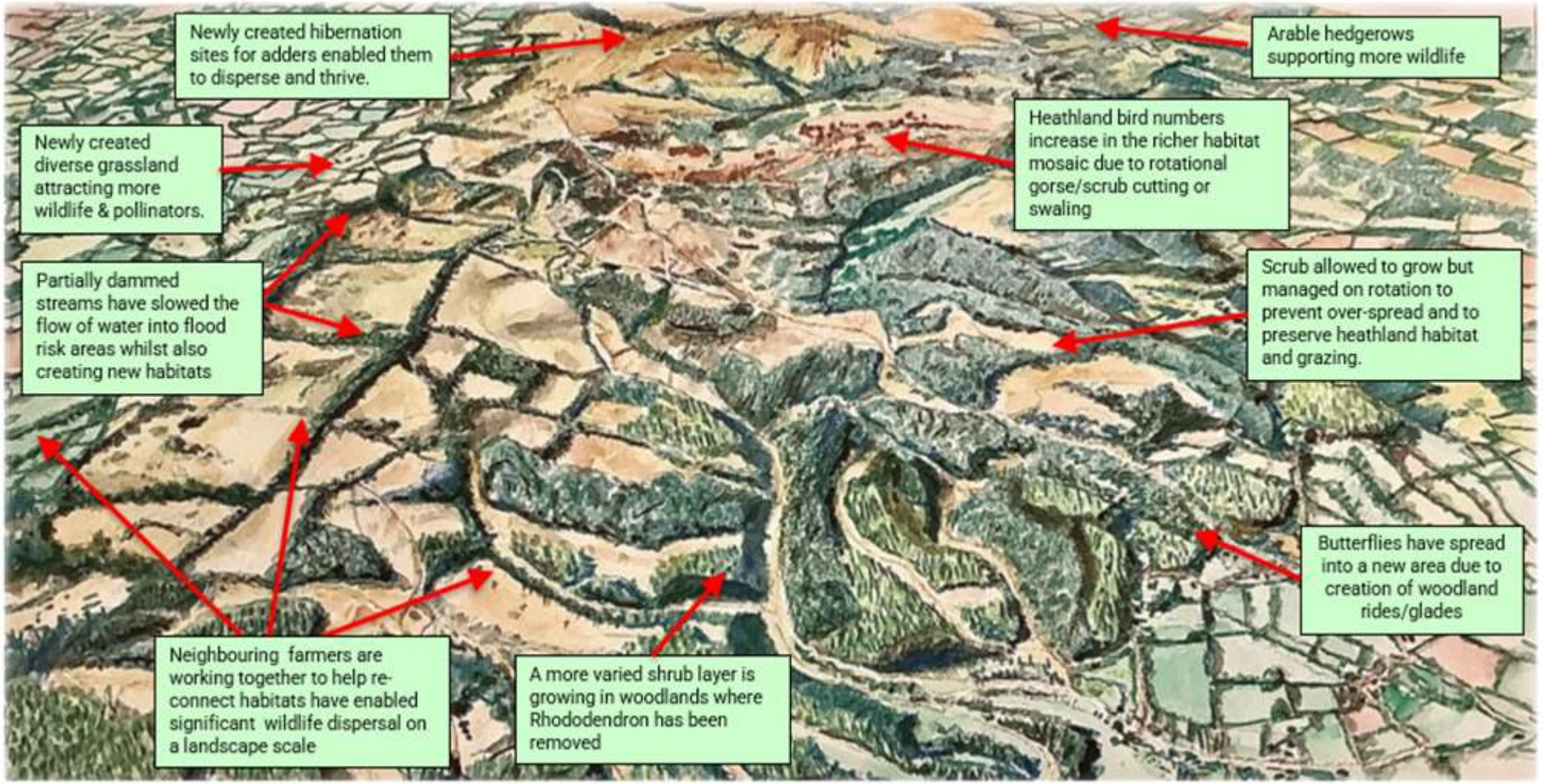


Figure 11: *VISUALISATION (Northern Quantock Hills). Minor changes* could have significant positive impacts for nature. For illustrative purposes only.*

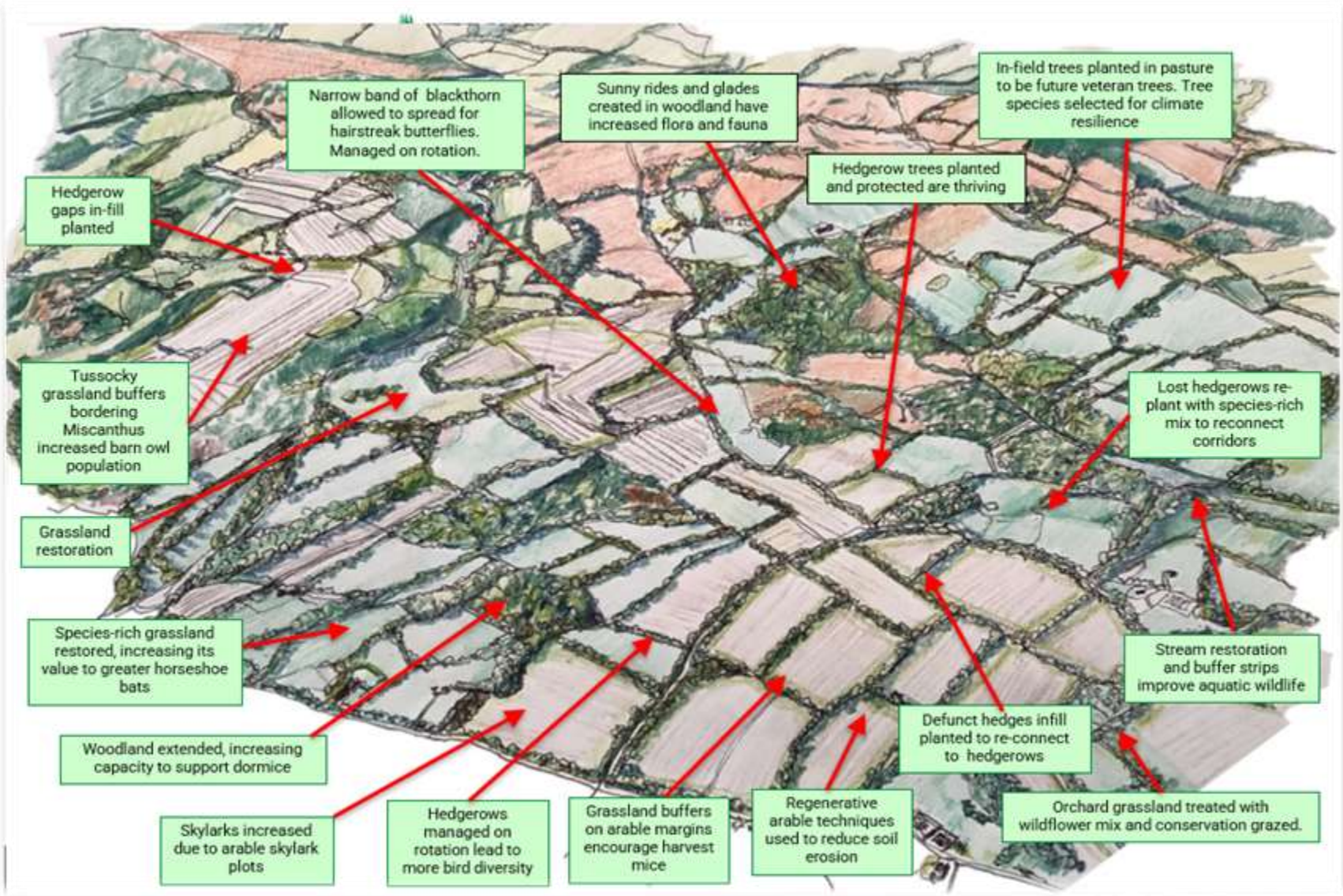


Figure 12: *VISUALISATION (Southern Quantock Hills). Minor changes* could have significant positive impacts for nature. For illustrative purposes only.*

3.4 People

Reinforcing people's relationship with nature, including the benefits they gain from it, is core to achieving nature's recovery. As recognised through the Colchester Declaration the National Landscapes will create opportunities for people to make emotional connections to nature.

The National Landscape Team undertake significant work to engage people from farmer cluster groups, stakeholders and an annual events programme for the wider public. In recent years the resource put into this workstream has increased significantly with specific projects such as Somerset Nature Connections Project and the Quantock Landscape Partnership Scheme.

Figure 13: *Somerset Nature Connections participant weaving a bird feeder*

With greater understanding and appreciation of the natural environment and the benefits that it can provide both to physical and mental health, people will value and help protect the Quantock Hills.

Nature & Wellbeing Project

Started in 2016 the project tackled some of the barriers that prevent groups and individuals from experiencing the health and wellbeing benefits from high quality natural environments found in National Landscapes. Over 2,300 people were engaged in nature and wellbeing activity sessions during the 4-year project. 100% of participants who undertook the end of project evaluation agreed or strongly agreed that the sessions / activities had improved their mental wellbeing.

"Being part of the group has improved my confidence so much. It game be hope and got me back into doing things again" Feedback from Working Well participant.

3.5 Climate resilience

When it comes to climate change, resilience is the ability to prepare and respond to disturbances and natural disasters resulting from climate change. Climate resilience can be achieved by understanding the risks and how climate change will impact an area and its communities, but also by implementing measures to improve resilience. Some of the most pressing risks are that of heavy rainfall events, draughts, and sea-level rise (Climate adaptation toolkit).

This report focuses on potential adverse impacts on our habitats and wildlife and measures that can be taken to reduce those effects. Some of the key potential impacts and measures to take are summarised in the sections below in this report on the key actions for our priority habitats and species. As the work of farmers and land managers is central to our plans for nature recovery there are strong links between climate resilience for nature and resilience for farming. There are a range of challenges and potential solutions for farmers and some of these include nature-base solutions that benefit both farming and nature.

Our vision for climate resilience is that our habitats and wildlife are able to continue to thrive despite gradual changes to our climate or to periodic weather extremes. The larger, more structurally varied, more diverse and better connected our habitats are the more resilience to change they and the wildlife they support will be.

Figure 14: *Wildfire on moorland near Greater Manchester, 2020. (image – BBC News).*

4. POLICY FRAMEWORK & STATEMENT OF PRIORITIES

4.1 National Legislative and Policy Framework

This plan needs to be seen in the context of numerous national and local laws, plans and policies. By far the most significant is the UKs withdrawal for the European Union which has the potential to bring the most significant changes to agricultural policy and support since the 1950s. Early changes have included the removal of the Basic Payment Scheme and the development of a new environmental scheme (currently called Environmental Land Management Scheme or ELMS). The Government is looking at the provision of public funding for the provision of public goods which as well as food and fuel production includes nature recovery, climate action, water quality, recreation, access and wellbeing .

The main relevant legislation and policies influencing this plan are shown opposite.

Legislation and policies relevant to the plan.
National Parks and Access to the Countryside Act 1949 – Established AONBs in the UK, including the purposes and duties.
Wildlife and Countryside Act 1981 – designation of SSSIs and protection of species
The Conservation (Natural Habitats, &c) Regulations 1994 (updated 2017, 2019) – Designation and protection of European Sites (SPAs & SACs)
Countryside & Rights of Way Act 2000 – protection of SSSIs and AONBs
Natural Environment and Rural Communities Act 2006 – priority lists for habitats and species
Agricultural Act 2020 – enables the awarding of subsidies and grants to farming
Environment Act 2021 – Sets pathway for improving the natural environment including the requirement to have Local Nature Recovery Strategies.
25 Year Environment Plan (2018) – Vision and proposals to improve the natural environment to
Environmental Improvement Plan (2023) – first review of the 25YEP setting outcomes and targets.
Taunton Deane Local Plan (2012) (Legacy)
West Somerset Local Plan (2016) (Legacy)
Sedgemoor Local Plan (2019) (Legacy)
Somerset Pollinator Action Plan (2018)
Somerset's Climate Emergency Strategy (2020) -
Somerset Tree Strategy (2023) – 10-year strategy to increase the country's tree cover from 8% to 13%
Quantock Hills AONB Management Plan 2019-2024 (2025) -
Somerset Local Nature Recovery Strategy – Due autumn 2024.

4.2 Colchester Declaration

In 2018 the National Association of Areas of Outstanding Natural Beauty facilitated the signing by all UK AONB Partnerships to the Colchester Declaration committing these designated landscapes to targets contributing to nature recovery, climate change action and access for health and wellbeing. The collective networks of AONBs have pledged to:

To enable an approach that creates opportunities within AONBs for people to make an emotional connection with nature
To prepare a Nature Recovery Plan for each AONB
To embed an ecosystem service approach into all AONB Management Plants
To ensure all AONB Management Plans include meaningful measures around climate change mitigation and adaption, including clear, measurable targets to support Net Zero
That at least 200,00Ha of SSSIs in AONBs will be in favourable condition
That at least 100,000Ha of wildlife-rich habitat outside of protected sites will have been created / restored in AONBs to further support the natural movements of plants and animals
That at least 36,000Ha of new woodland will have been planted or allowed to regenerate in AONBs following the principal of right tree in the right place
That, by each AONB immediately adopting a species on the threatened list and by preparing and delivering a Species Action Plan, at least thirty species relevant to AONBs will be taken off the list by 2030

Figure 15: *The Colchester Declaration – visual scribbling which took place during the conference © David Vignolli, Visual Scribbling*

4.3 Quantock Hills priorities for nature.

Reverse the loss of valued habitats and their species

Across the UK over 95% of species-rich grasslands have been lost in the last few decades including much of the wildlife that they supported. Large losses have also occurred for old hedgerows and their hedge banks, heathland and semi-natural woodland. These habitats are key to our landscape, our heritage, biodiversity and a healthy functioning countryside. We will work with landowners to encourage retention of these habitats and to access funding to make these viable natural assets.

Increase the quality and resilience of valued habitats and their species

An even wider range and area of habitats occur in the Quantock Hills that are also degraded from their former value. The plant and animal species that they support are now much more vulnerable or lost, as food chains and ecological systems have degraded. As habitats are degraded their capacity to support the specific food plants, or the prey species or the environmental conditions required by the myriad of species are slowly lost, sometimes irreversibly. The better the quality and the larger the size of our core habitats the more resilient they will be to some levels of natural or human damage, to extreme weather or to long term climate change.

The National Landscape Team will work with landowners and other partners to identify where and how degraded habitats can be recovered through, often, very simple changes in management.

Linear habitats and connective corridors

Linear habitats include hedgerows, banks, ditches, waterways and grass verges. All of these can provide important wildlife routes for commuting, foraging and dispersing. For example, bats require natural cavities or buildings to roost and breed in but require hedgerows, woodlands and species-rich grasslands which support their insect prey. Amphibians may require ponds for breeding in spring but depend on grassland, hedgerow and woodland habitats for the rest of the year. The greater the connectivity between core habitat areas the more successful robust and resilient the populations of animals and plants can be. We will encourage land managers to work together on a landscape scale to improve connectivity between core habitats. This includes some of the more intensively farmed areas.

Work with Natural England and land managers to bring all protected habitats towards favourable condition

The Quantock Common Site of Special Scientific Interest is a single, unified SSSI of 2,507ha that covers most of the legally protected land in the National Landscape. Recent assessments have ascertained that 46% of land is in favourable condition. That leaves 54 % which is in unfavourable condition. This is a dramatic improvement on 2017, when only 16% of the SSSI was in favourable condition. However, some land remains unassessed and 18% remains in Unfavourable condition with no change or declining condition. Working with commoners, landowners and land managers and other partners we will support them to continue their good work to improve the condition and quality of habitats on the ground and aim for 100% land in favourable condition (or unfavourable but recovering) by 2030.

Support farmers with taking up Agri-Environmental schemes that meet Nature Recovery objectives

The way that land managers are supported by government funding is in transition, with greater emphasis on funding sustainable and nature-based farming solutions rather than intensive approaches. There are now extensive funding opportunities through these schemes targeted at improving biodiversity and increasing climate change resilience for those whose livelihoods depend upon this precious farmed and forested landscape. We will support farmers and other partners with advice, our own funding and developing collaborative solutions on a landscape scale.

Encourage flood resilience through regenerative farming and nature-based solutions

Increasing numbers of farmers within the National Landscape are adopting practices that further improve soil heath, minimise soil disturbance, maximise crop diversity, keep the soil vegetated and seek living roots all year. These and a range of other methods are used to increase water infiltration into the soil, slow the flow of rainfall from the higher ground into low lying river systems and urban areas. Such measures maximise water infiltration into and through the soil, reducing water run-off and erosion of soil material into river systems.

Regenerative agriculture adopts many of these principles and practices to increase biodiversity, build better soils, improve water catchment and enhance nutrient cycling. Regenerative farmers work with nature drawing from agroecological, organic and holistic management methods, aiming to capture carbon in soil and aboveground biomass.

Natural flood management not only reduces flood risk it can also achieve multiple benefits for people and wildlife, helping restore habitats, improve water quality and helping make catchments more resilient to the impacts of climate change. The Quantock National Landscape has and will continue to help, advise and support farm projects that increase flood resilience through nature-based solutions.

Photo: *Adder by Andy Harris*

5. QUANTOCK HILLS STATE OF NATURE

5.1 Introduction to the State of Nature

The State of Nature element of the Nature Recovery Plan focuses on describing the priority habitats and designated sites within the Quantock Hills National Landscape and, where appropriate, includes a wider area that extends beyond the National Landscape boundary. This wider area is based on the landscape character type where the high-quality landscape of the National Landscape extends beyond the statutory National Landscape boundary.

The State of Nature includes the main habitat features and focuses on the key facts and any pressures on these, particularly where this will influence nature recovery planning. It is impractical and not helpful to account for all of the smaller areas or small variations in habitats for this area of 99km^2. Some of the key species are referred to in the assessment, however the data focuses largely on the habitats that support the species of wildlife rather than the wildlife itself. The statements do identify key species that the partnership will concentrate actions on, particularly where these actions will benefit a range of species.

The presentation of mapping and figures for the report and particularly the priority habitats described below is dependent upon the data available. An immense amount of recording and mapping of habitats has taken place by the National Landscape Team and other organisations, such as Natural England, however some data may be incomplete, mapped at a large scale e.g. regional or nationally, or not up to date. There are inevitably gaps in the data and the filling of important gaps will be prioritised to enable future monitoring.

Quantock Hills key nature figures

28% woodland cover within the Quantock Hills NL

33% priority habitat cover within the Quantock Hills NL

32% Site of Scientific Interest cover within the Quantock Hills NL

37km of beech hedgebank within the Quantock Hills NL

Over 2,000Ha of the Quantock Hills is identified as an Important Bird Area (IBA)

5.2 Geodiversity and Landscape

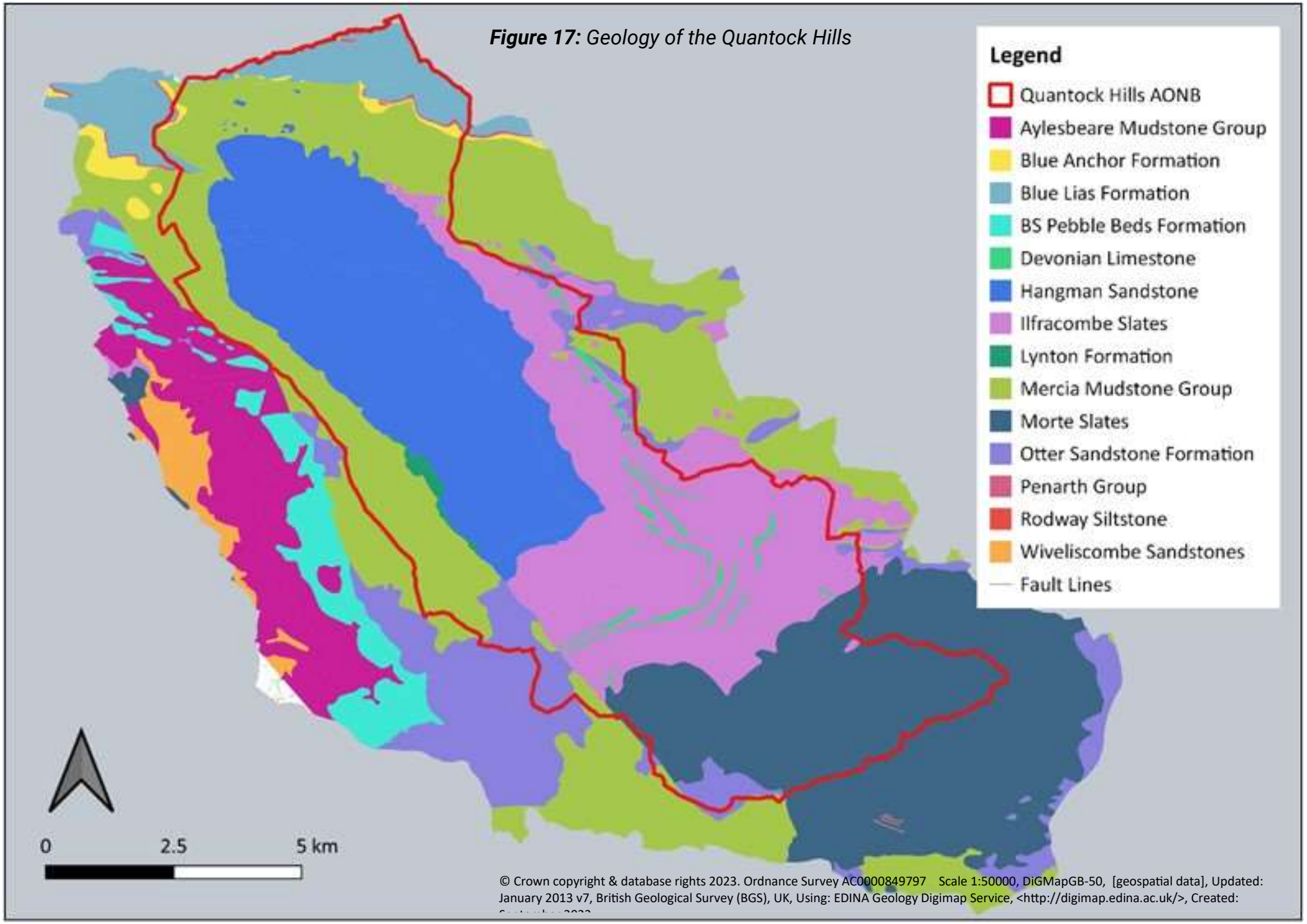
The landform of the Quantock Hills is a product of the underlying geology (see Figure 17). The rocks that form the Quantock Hills are largely from the Devonian Period of geological time, approximately 380 to 400 million years old. Geologically speaking the Quantock Hills fall neatly into three areas:

- The northern hills from West Quantoxhead via Dowsborough to Triscombe are formed of *Hangman Sandstones* which underlie the moorland summits.
- The southern hills encompassing Broomfield, Kingston St Mary and Kingscliff are composed of *Morte Slates*, which are less resistant than the sandstones and give rise to gently sloping topography.
- Between these areas stretching from Holford to Cothelstone and Enmore the hills are underlain by *Ilfracombe Slate* whose varied geology includes limestones and volcanic tuffs giving rise to varying topography dissected by steep-sided wooded combes.

For a relatively small area the Quantock Hills National Landscape and surrounding land comprise a remarkably diverse geology.

Figure 16: *The geology exposures at the Quantock Hills coast provide excellent examples of banded limestones and shales.*

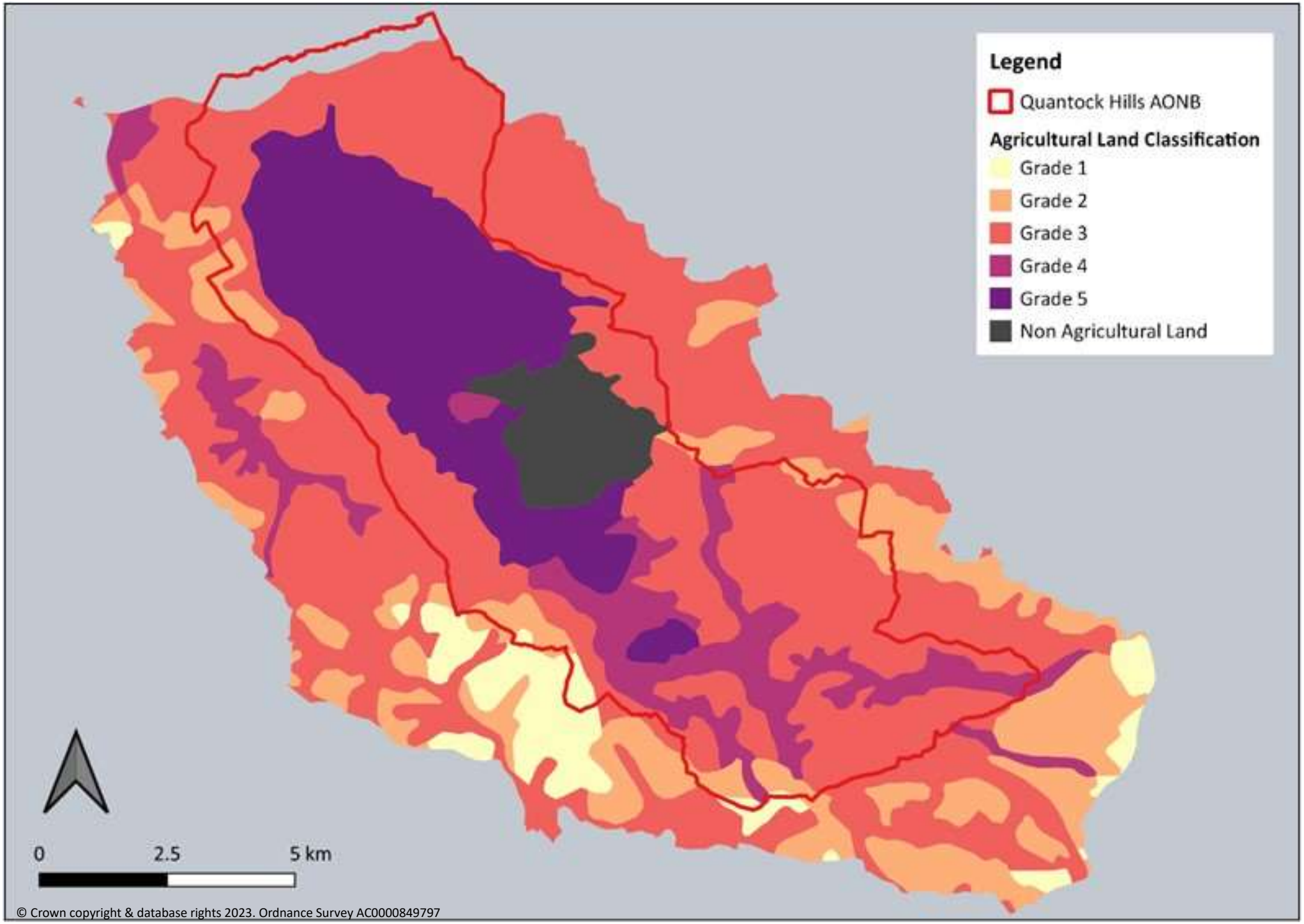
Figure 17: *Geology of the Quantock Hills*



The varied geology and subsequent landform have led to a wide range of soil conditions and substrate upon which the different vegetation, habitats and wildlife have colonised. This in turn has provided the basis for historically land use such as agriculture, which over time has modified the landscape. Many of the habitats present, such as grasslands, heathlands and hedgerows were created and maintained as the result of farming practices. With advances and innovations in farming techniques and technology over the last 70 years the increased efficiencies have also led to changes in the habitats including their loss and fragmentation. Equally some habitats, such as heathland have been well preserved by current farming practices.

The vale and fringing landscapes have deeper richer soils as can been seen from the Agricultural Land Classification map (Figure 19). It is on these deeper or richer soils that agricultural innovation has had the greatest impact on semi-natural farmland habitats, and this will be discussed later. All human landuse activities, both past and present, have created the diverse landscape that we have today.

Figure 18: *The geology has led to a rich diversity in landuses and habitats from heath, grassland to arable farming in the vales.*

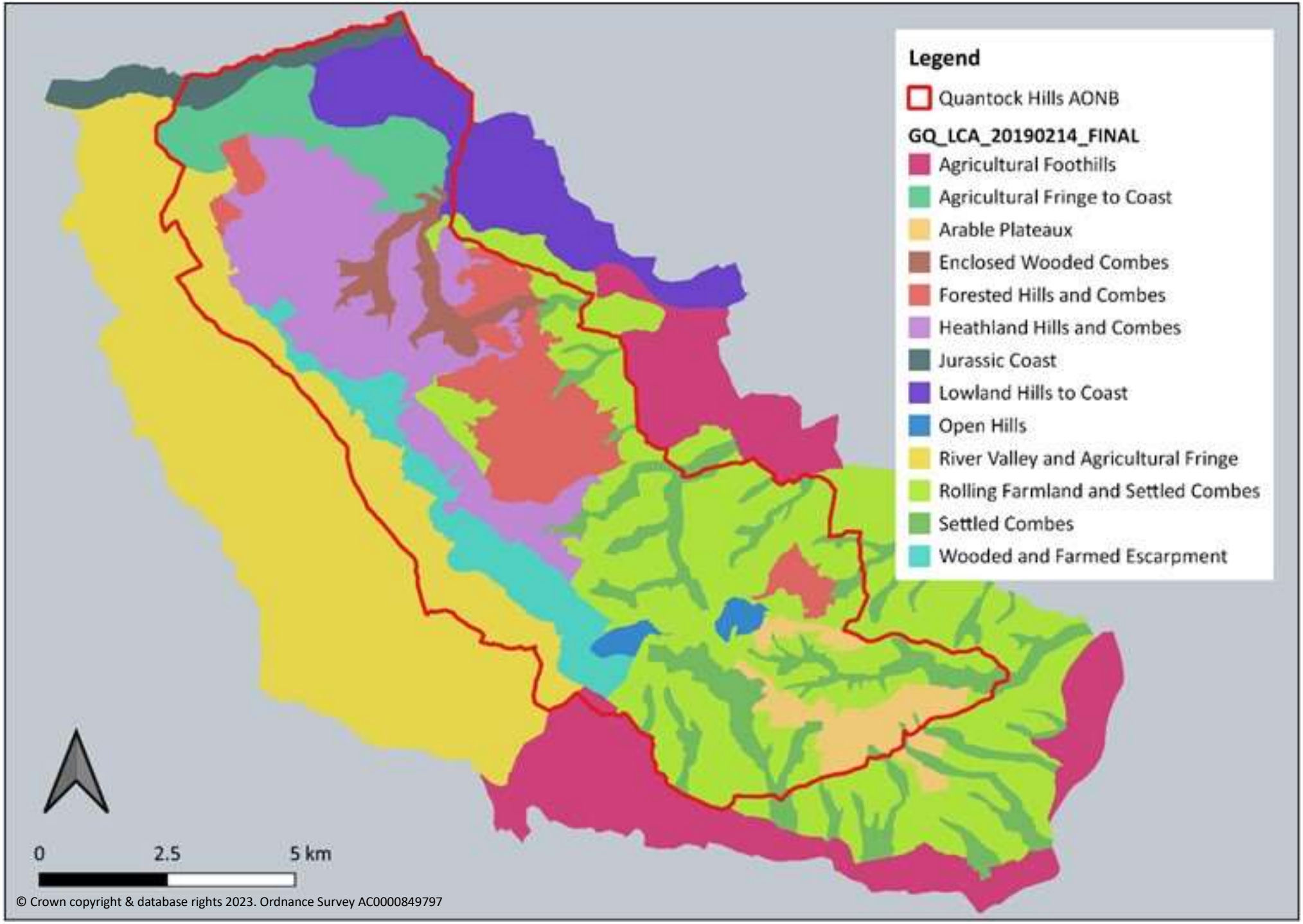


5.3 Landscape Character Areas

Landscape Character Areas (LCA's) are geographically unique areas, where a combination of factors such as topography, vegetation pattern, land use and cultural associations combine to create an area with a distinct recognisable character. Within the Quantock Hills and surrounding areas there are 13 LCA's (see Figure 20) - Quantock Hills Landscape Character Assessment 2019. This Landscape Character Assessment for the Quantock Hills was produced by the QLPS with funding from the National Lottery Heritage Fund.

By identifying social, economic and environmental pressures for change, the LCA allows a clear vision, or series of visions, to be established for planning and protecting the unique landscape features that make the Quantock Hills National Landscape so special.

There are some very clear correlations between the Landscape Character Areas and the underlying geology, the soil types, the types of historic and present-day land use and the habitats present. For this reason, the LCA's are used in strategic planning activities.



5.4 Priority Habitats and Species

Priority Habitats are the country's most important habitats. They are listed within the s41 of the Natural Environment and Rural Communities (NERC) Act 2006 and are also referred to as BAP Habitats or Habitats of Principal Importance. There are legal obligations on planning authorities and other responsible bodies to consider potential impacts on these habitats to ensure that they are conserved and enhanced.

Priority Species are also listed in the NERC (2006) Act and many of these Priority species occurring within the Quantock Hills National Landscape are supported by the Priority Habitats.

Some of the Priority Habitats are very similar and are often grouped together for simplicity, as in Table 1. It can be seen from Table 1 that a third of the National Landscape Area is Priority Habitat.

Figure 21 below shows in more detail the geographical extent and variety of these habitats.

Table 1: Areas of Priority Habitat in the Quantock Hills National Landscape

Priority Habitat type	Area (hectares)	% of Total Priority Habitat	% of NL
Deciduous woodland	1,408.58	42.98	14.23
Good quality semi-improved grassland	77.81	2.37	0.79
Grass moorland	87.84	2.68	0.89
Lowland calcareous grassland	0.81	0.02	0.01
Lowland dry acid grassland	47.64	1.45	0.48
Lowland heathland	302.12	9.22	3.05
Lowland meadows	30.68	0.94	0.31
Maritime cliff and slope	5.33	0.16	0.05
Mudflats	39.62	1.21	0.40
Purple moor grass and rush pastures	4.20	0.13	0.04
Traditional orchard	13.72	0.42	0.14
Upland flushes, fens and swamps	0.08	0.01	0.01
Upland heathland	1,258.97	38.41	12.72
Total	**3,283.12**		**33.12%**

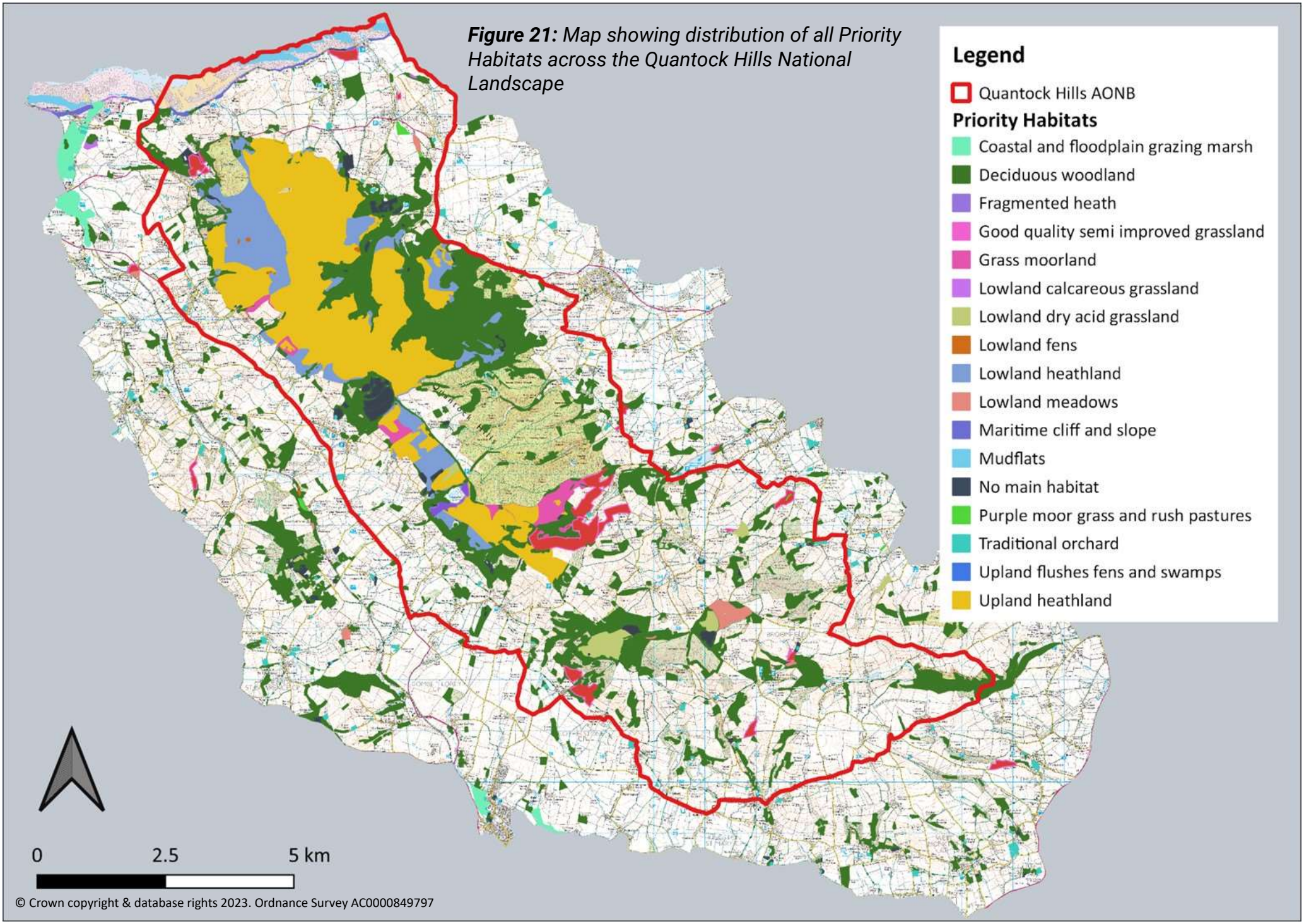


Figure 21: *Map showing distribution of all Priority Habitats across the Quantock Hills National Landscape*

There are a wide range of Priority Habitats shown in the above figure, some of which are quite similar to each other or occur together in mosaics. There are also continuous vegetation gradients between many of these habitat types. For simplicity of presentation and to avoid repetition several of these habitats are grouped together into three main Priority Habitat groups:

A - WOODLAND & WOODY HABITATS

B - HEATHLAND HABITATS

C - GRASSLAND HABITATS

For each of these groups some of the component habitats are highlighted, some key facts are provided and key pressures on the habitats are flagged.

5.4.A - WOODLAND & WOODY HABITATS – KEY FACTS & KEY PRESURES

5.4.A.1 Introduction to woodland & woody habitats

This very broad habitat category includes deciduous woodland, conifer plantation, copses, hedgerows, veteran trees, wood pasture, traditional orchards and scrub. Not all of these are priority habitats however they all provide varying degrees of habitat that support wildlife. Data is not available for all of these habitats. It can be seen from Figure 24 below that there are large blocks of contiguous broadleaved woodland and conifer plantation. There are also significant numbers and areas of small woodlands or copses widely distributed across the National Landscape.

Figure 22: *Ancient semi-natural woodland*

What is not shown in Table 1 and Figure 21 is the extensive network of many hundreds of kilometres of hedgerows that link many of the woodlands and other important habitats together. Data for hedgerow extent has been provided by Somerset Environmental Records Centre and is presented below in the hedgerow section.

Figure 23: *Native species hedgerow*

The data, where currently available for some of these woody habitats is presented below in Figures 24 - 37 and Table 2. As further data is obtained this will be incorporated into State of the National Landscape reports.

Table 2 below provides the numerical data for the quantity and proportions of the different categories of woodland shown below in Figure 24. Woodland cover (all types) amounting to at least 2,750ha is a significant quantity for a National Landscape and at 28% of the land area this represents a higher proportion of wooded habitat than most protected landscapes. Woodland cover in this National Landscape represents nearly 3 times the national level of 10%.

Table 2: *Woodland Inventory by category (Forestry Commission, 2018)*

Category	**Area (Ha)**	**%**	**% of NL**
Broadleaved	1,604.36	58.34%	16.21%
Mixed	82.79	3.01%	0.84%
Conifer	824.14	29.97%	8.32%
Shrub / young trees	69.64	2.53%	0.71%
Assumed woodland	15.20	0.55%	0.15%
Grassland / other	45.46	1.66%	0.46%
Felled	88.84	3.23%	0.90%
Ground prep / bare area	18.47	0.68%	0.19%
Road / urban	1.26	0.04%	0.02%
Total	**2750.17**		**27.78%**

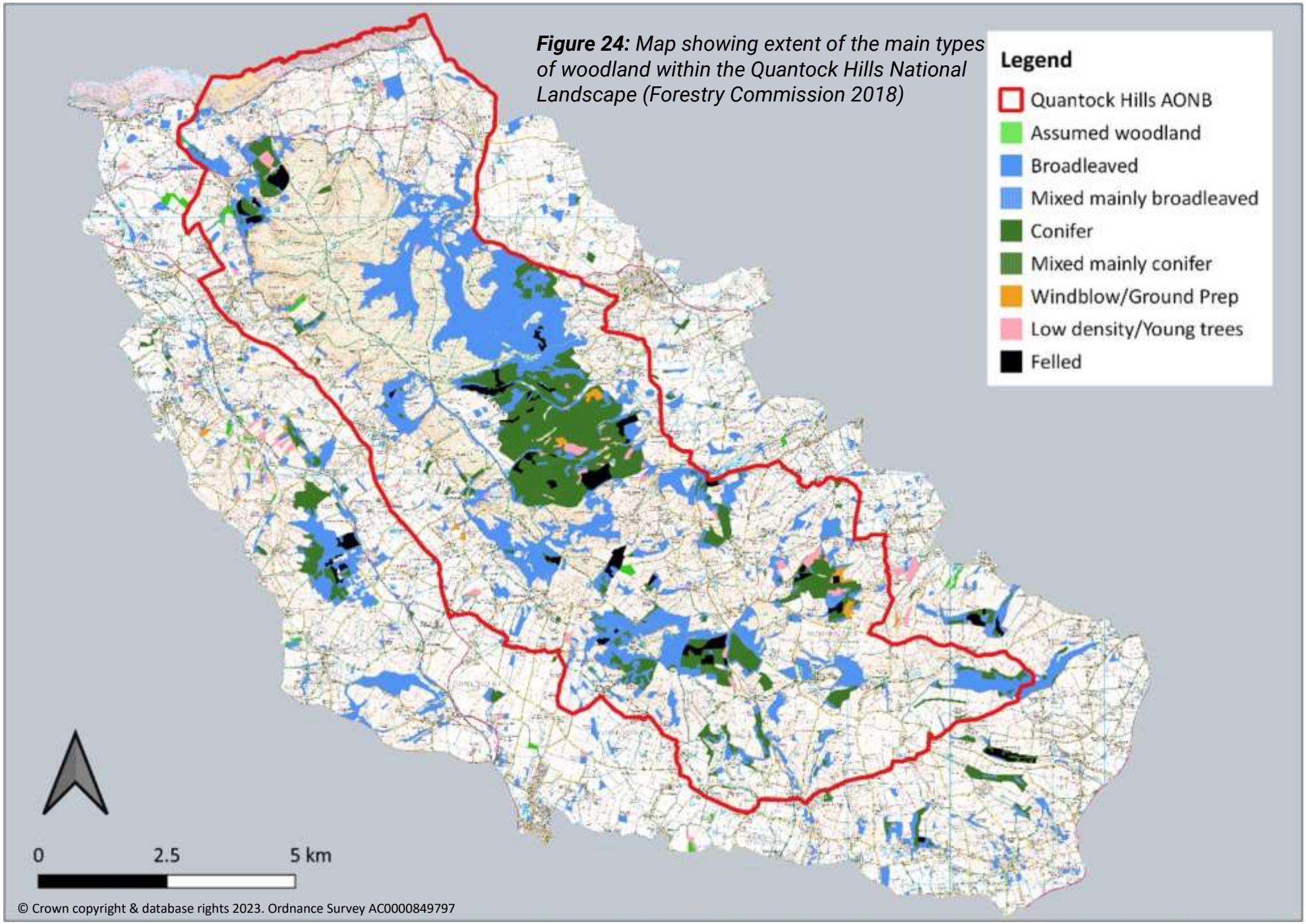


Figure 24: *Map showing extent of the main types of woodland within the Quantock Hills National Landscape (Forestry Commission 2018)*

5.4.A.2 Deciduous Woodland

Key facts

- The Quantock Hills National Landscape supports 1,409ha of deciduous woodland Priority Habitat which represents 43% of all Priority Habitats in the National Landscape and 14% of the total National Landscape area.
- Significant areas of this woodland type (416ha) are also classified as Ancient Woodland. These are woodlands which have been relatively continuously managed as woodland for at least 400 years. The high level of continuity in these areas has enabled complex and diverse vegetation and to build up, supporting a wide range of plants and animals. These include rare mosses, ferns and lichens and rare birds such as lesser spotted woodpecker, wood warbler, pied flycatcher, tree pipit and redstart. Mammals include dormice and several species of bat including some of the rarest species.
- Parts of the wooded combes around Holford are designated as Special Area for Conservation (SAC). This reflects the important sessile oak woodland habitat but most especially the breeding populations of the very rare barbastelle bat and to a lesser extent the Bechstein's bat.
- The dominant climax woodland type in the wooded combes of the Quantocks is Sessile Oak Woodland particularly on the more acid soils. Whilst sessile oak features in these woodlands, oak woodland in the lower lying areas and outside of the combes features more English oak.

Figure 25: *Redstart occur within oak woodlands and adjacent heath / scrub*

- Ash *Fraxinus excelsior* also predominates in many parts of the area, particularly in the more southern areas of the National Landscape, where the soils are less acid or are neutral. Many ash trees have succumbed to ash dieback disease.
- There is a mosaic of different types of deciduous woodland, with a range of different ages, tree species and different management regimes. These also form mosaics with other adjacent priority habitat such as heathland and grassland. Where these different vegetation types exceptionally for wildlife. This particularly the case where there are transitional habitats that are a mixture of the different vegetation types.
- Birch scrub is spreading from woodland and colonising areas of heathland. This scrub is an important habitat for

wildlife, particularly where it forms mosaics and vegetation that is transitional between woodland and heathland/grassland.
- The wide distribution of small woodlands and copses throughout the National Landscape already provide valuable steppingstones between the some of the core areas.

Deciduous Woodland - Pressures

- Early in the last century, as a consequence of the drive for conifer plantations over 800ha of the 1,308ha of ancient woodland was largely felled and replaced by conifer. Since that time the area of ancient woodland within the area has stabilised.
- As a habitat that has taken centuries to develop structure and biodiversity, ancient woodland is considered to be 'irreplaceable'. Our remaining ancient woodland can be enhanced by allowing woody vegetation and grassy vegetation to grow out from the edges. These edge habitats can be especially valuable for wildlife.
- Many of the oak woodlands have insufficient regeneration of young trees to replace the older trees and provide a healthy age range that secures longevity of the oak woodland. Whilst acorns are produced in abundance and successfully germinate, they are mostly grazed before the trees can fully establish. This is largely due to deer grazing and to a much lesser extent, livestock grazing.
- Many oak woodlands are being colonised by dense stands of young or maturing holly, beech or sycamore. These species are competing strongly with the regenerating oak and are better tolerating browsing by animals. Without some intervention measures the important oak woodlands and their high biodiversity value will be reduced in extent and quality. In recent years the National Landscape Team, through the Levels Up Project, reduced dense holly across 10Ha in oak woodlands.

Figure 25: *Beech saplings dominating the shrub layer in woodland at Quantock Common*

- A proportion of the colonising birch scrub needs to be allowed to grow in places to form transitional habitat. It also needs to be controlled to prevent it from displacing too much heathland or grassland priority habitat, or grazing resource. Rotational management of scrub over a period of years allows some scrub to grow, whilst controlling the spread. Getting that balance right is difficult and requires the needs of the commons graziers to be incorporated.
- The practice of planting rhododendron and laurel (which are invasive, non-native shrubs) within semi-natural woodlands is highly damaging to woodland structure and biodiversity due to the heavy shade caused by the dense evergreen foliage. Rhododendron has naturalised and spread widely into heathland and woodland areas. The National Landscape

Team discourages this practice and has supported land managers with the removal of these shrubs as part of wider ecological enhancement projects.

- Ash dieback disease continues to kill many ash trees each year. Those woodlands with a higher proportion of ash are at risk of significant change in structure and capacity to support the habitats and wildlife at the current levels. It is likely that many naturally disease-resistant trees (both mature and young) will survive, however this is difficult to predict. Other native tree or ultimately non-native species may need to be considered to provide more diversity within the tree assemblage. Greater tree species diversity is likely to improve resilience of effected woodlands in the short to medium term.
- Climate change may adversely affect deciduous woodlands. Strategies for climate change resilience in woodlands need to be developed.

Figure 26: *Sessile oak (Quercus patraea), a common species in the northern combes of the Quantock Hills*

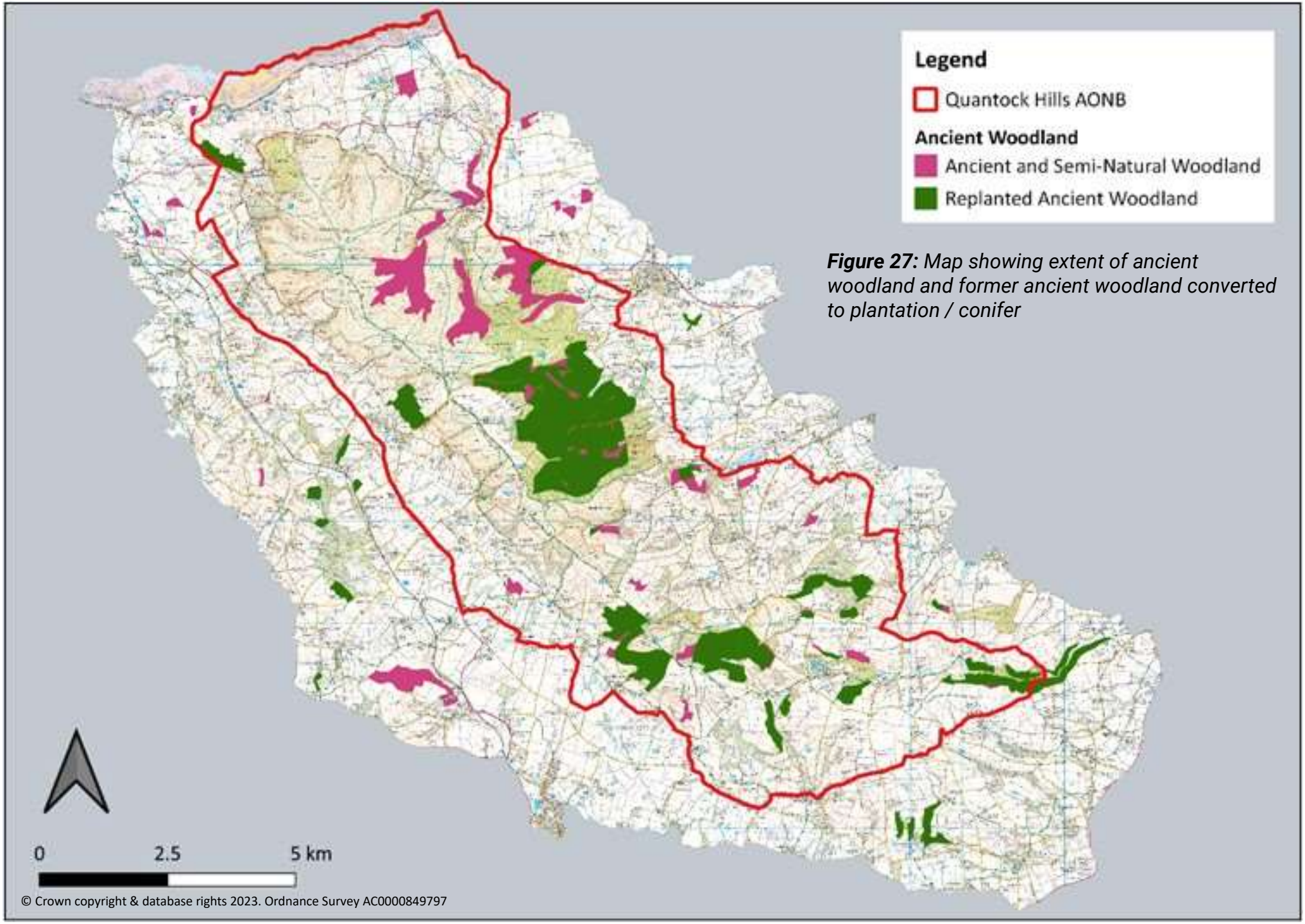


Figure 27: *Map showing extent of ancient woodland and former ancient woodland converted to plantation / conifer*

5.4.A.3 Conifer Woodland

Conifer Woodland - Key facts

- There is 824ha of conifer woodland within the National Landscape.
- Approximately 30% of woodland within the National Landscape is conifer plantation.
- Many of the larger blocks of conifer woodland are managed by Forestry England, whilst others are private woodlands. The Forestry England Forests in the Quantock Hills are managed primarily for timber production. However, where possible, consideration is given to public access & recreation and the management and creation of other priority habitats.
- In general terms conifer plantations are mostly non-native and densely planted woodlands which support a much-reduced range of habitats and wildlife than broadleaved woodlands.
- Conifer plantations in the National Landscape do support wildlife that prefer these habitats. The rotational felling programme creates a range of age stands that allows for species such as Nightjar.
- Previous monitoring has identified that Long-eared owls breed in some of the denser plantations.
- Goshawk, crossbills, fungi and much more, all benefit from some of the conifer plantations.
- Where permanent clearings or glades are created within conifer plantations the range of habitats and wildlife increases. The same applies to the presence of wide grassy rides along the sides of tracks, areas of less-dense planting and unshaded ponds.
- Much of the conifer plantation in the National Landscape was planted after World War II to provide a secure softwood timber resource. Most of this was planted on what was previously ancient semi-natural woodland (and heathland). These woodlands are known as Plantations on Ancient Woodland Sites (PAWS). The felling of this extent of native broad-leaved woodland (Figure 27) led to a reduction in the continuity of native woodland across the Quantock landscape, and the drastic loss of woodland habitats and wildlife.
- Some of the original remnant broad-leaved woodland still remains, particularly along streams at the valley bottoms and at the edges of some plantation areas.

Figure 28: *Great Wood – Mainly conifer plantation planted on land that was previously oak woodland.*

Conifer Woodland – Key Pressures

- There are no existential pressures in this landuse.
- Within a commercial forestry system any remnant broad-leaved habitat woodland or other habitat can be isolated within forestry blocks.
- The National Landscape Team are collaborating with Forestry England to explore the further creation of semi-natural habitats within conifer woodland.

- Measures are being considered to improve the connectivity between habitats within the plantations to other adjacent priority habitats in the wider landscape.
- Heathland and grassland habitats previously converted to conifer still support some remnant vegetation but this is usually greatly limited by the presence of dense conifer.

Figure 29: *new growth on Sikta spruce (Picea sitchensis), a common species in plantation woodlands throughout the Quantock Hills.*

5.4.A.4 Traditional Orchards

Figure 30: *Traditional orchards can support a wide variety of habitats and wildlife.*

Traditional Orchards – Key Facts

- Traditional fruit tree orchards provide very important habitats for a wide range of wildlife. They are orchards managed in a low intensity way, without the input of chemicals such as pesticides or inorganic fertilisers, and grazing or cutting for hay.
- With their combination of open-grown fruit trees, grasslands and hedgerow boundaries and scrub, traditional orchards resemble mini-parklands, wood pastures or woodland edge. They provide habitat for similar plants and animals, notably many invertebrate species that are characteristic of ancient wood pasture and dependent on decayed-wood habitats.

Figure 31: *Green woodpecker feeding in orchard ©Paul Newport*

- Fruit trees are generally short-lived trees compared to other hardwood species. This means that they begin to produce veteran tree features such as hollow trunks, rot holes, split bark, tears, lightning strikes and sap runs relatively quickly.
- Dead and decaying wood is usually in open, sunny locations because of the wide tree spacing in orchards. These conditions create good habitat for many insects and other invertebrate species which depend on these decaying wood habitats.
- Priority wildlife that can be supported by traditional orchards include dormouse, lesser spotted woodpecker, great crested newt, stag beetles and several species of bats.

Figure 32: *Stag beetle in orchard © Wildmedia / Shutterstock.com*

Traditional Orchards – Key Pressures

- Economic pressures have led to both the removal of orchards and the intensification of their management. Historically causes included decline in cider consumption, abolition of cider 'truck' (payment in cider to agricultural workers), decline of the substantial cider-making industry around the fringes of the National Landscape and agricultural conversion to (mainly) arable crops.
- Since 1950 Traditional orchards in England have declined by **63%** (Natural England 2011, Traditional Orchard Project in England Report NECR077) and the Southwest has been affected more than most other parts of the country. Research undertaken by the Quantock Hills Partnership and University of Bristol in orchard decline in the Quantock Hills (Fallen Fruits: Mapping Orchard Decline in the Quantock Hills at Parish Level with Tithe Record and Map Data[i], showed a 94% decline in area of orchard since 1840. Figure 8 below shows the extent to which traditional orchards were an important feature of the wider Quantock Hills landscape (shown in **red**) and the dramatic decline in those orchards to the present day shown in **blue**.
- Some orchards have been abandoned and the lack of appropriate management has led to a decline in their ecological value and ultimately a loss of the orchards.
- Some orchards have been subject to intensive management including use of pesticides, artificial fertilisers.
- The conservation of the remaining traditional orchards is a high priority for Natural England and for the National Landscape Team. The National Landscape Team provides funding through the Farming in Protected Landscapes Programme to assist land managers with the management or establishment of traditional orchards.

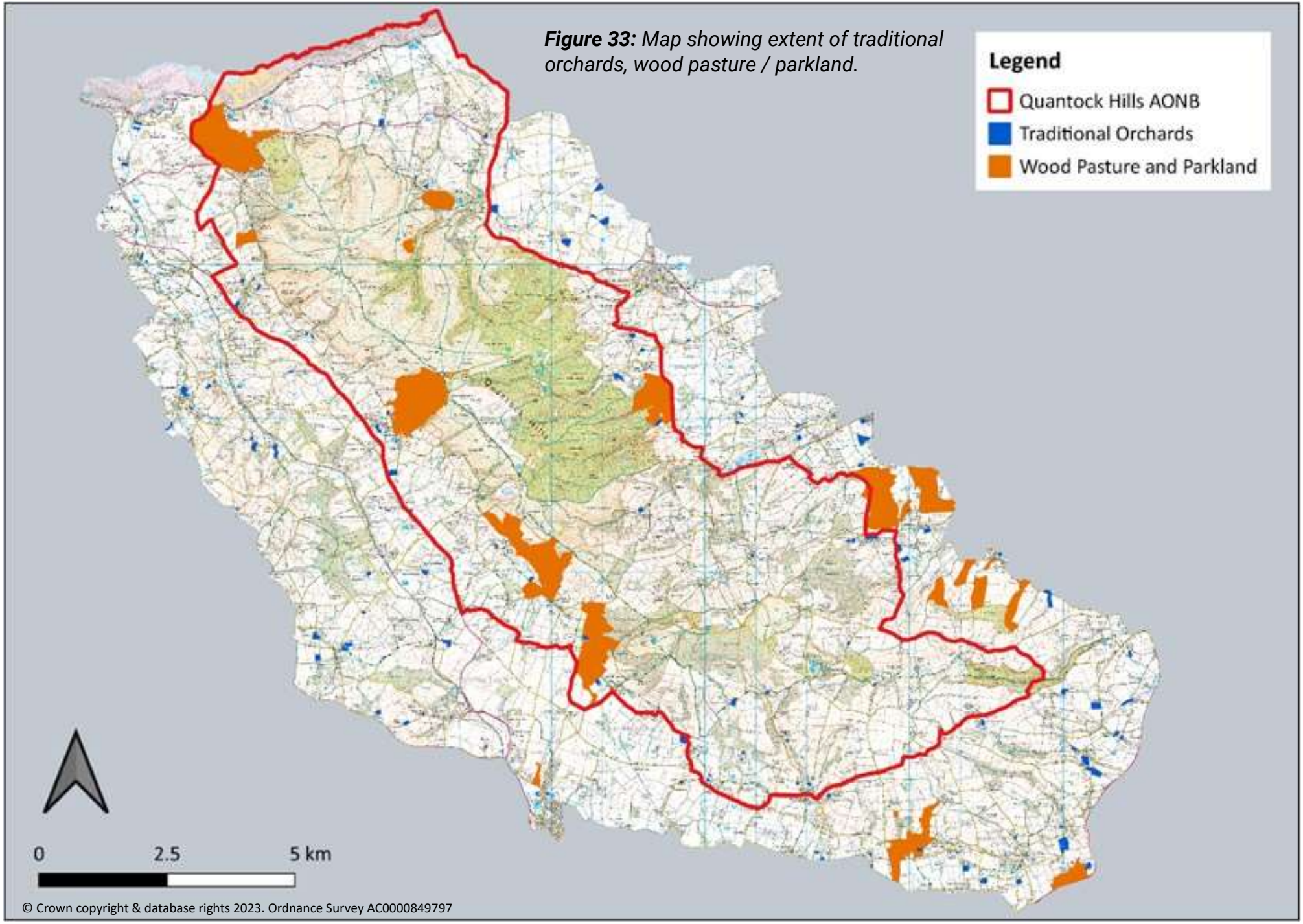


Figure 33: *Map showing extent of traditional orchards, wood pasture / parkland.*

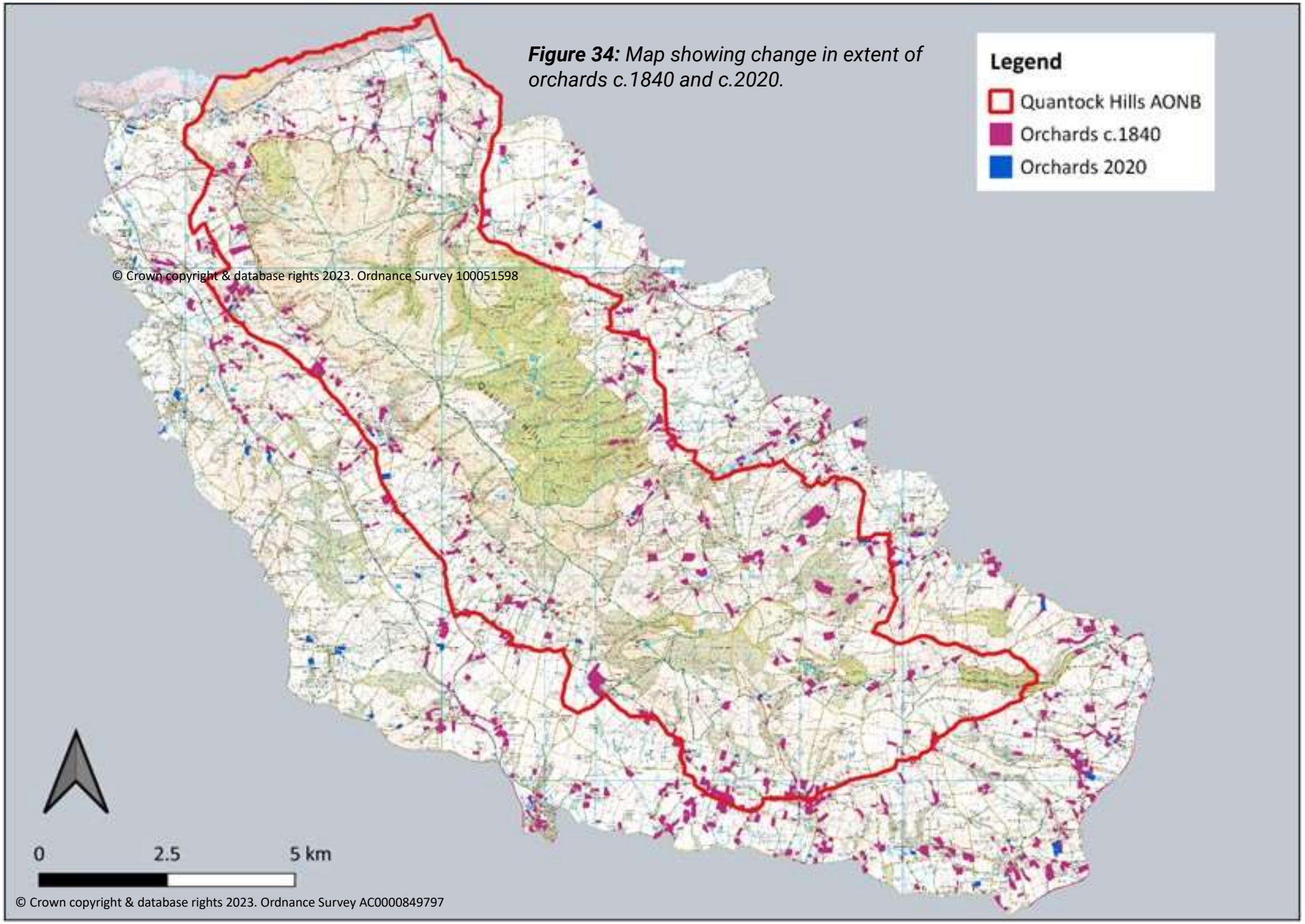


Figure 34: *Map showing change in extent of orchards c.1840 and c.2020.*

5.4.A.5 Parkland, Wood Pasture and Veteran Trees

Key Facts

- The priority habitat wood-pasture and parkland is described as 'areas that have been managed by a long established tradition of grazing allowing, where the site is in good condition, the survival of multiple generations of trees, characteristically with at least some veteran trees or shrubs. The tree and shrub component may have been exploited in the past and can occur as scattered individuals, small groups, or as more or less complete canopy cover.'
- The tree form may be a combination of mature standards or pollards.
- Other semi-natural habitats, including grassland, heathland, scrub etc, may occur in mosaic beneath the trees. While oak, beech, alder, birch, ash, hawthorn, hazel or pine are often the dominant tree species, a wide range of other tree and shrub species may occur as part of wood pasture systems.
- Traditional orchards may be considered a form of wood pasture.
- The ecological continuity provided by the wood decay inside veteran trees is not found in any other habitat. The value of dead wood in wood pasture systems is usually greater than dead wood found elsewhere because of the ecological continuity represented by the veteran trees.
- The main Parkland and Wood Pasture sites are shown in Figure7 above. Broadly these are also where the most veteran and ancient trees are known. The data available on these features is not complete and further work is required.
- The Quantock Landscape Partnership Scheme commissioned survey work at Alfoxton Park, Holford. The surveys were centred on specific groups of taxa utilising the veteran parkland trees. The study found the lichens, saproxylic (dead wood) invertebrates and moths to be exceptionally rich. This emphasises the importance of veteran trees in old parkland. The project is currently compiling further data on Parkland, Wood Pasture and Veteran Trees in the wider Quantock Hills area.
- Nectar sources, especially early spring flowering shrubs like hawthorn, are a vital food source for emerging adults of saproxylic beetle species. Maintaining a good mixed age population of scattered shrubs amongst and between the mature trees is also an important part of conserving a good parkland habitat.
- Agri-environment schemes have funded management plans for some important parkland sites. Parkland management plans, produced by Natural England through agri-environment schemes, are a valuable resource for parkland managers.
- The National Landscape Team has supported and funded projects within parklands.

Figure 35: *Parkland on the western scarp of the Quantock Hills*

Parkland, Wood Pasture and Veteran Trees – Pressures

- Some wildlife that is dependent upon these habitats, may currently be restricted to those areas. The populations are therefore isolated and vulnerable to other pressures.

- The removal of fallen dead wood removes an essential dead wood resource.
- Appropriate well-informed tree surgery including pollarding can help the health and longevity of veteran trees. Over-enthusiastic tree surgery can remove valuable features. wood resource.
- There is historic lack of replanting of trees to ensure future generations of veteran trees.
- Traditional grazing is an important part of the management of these habitats. If artificial fertilisers and pesticides are used in these areas the fragile and rare fauna and flora are severely impacted.

5.4.A.6 Hedgerows

Key facts

- Hedgerows can date back to medieval times and even earlier. For this reason, many have provided a continuous habitat within the landscape for many centuries.
- The extensive heathland plateau of the Quantock Hills is largely unenclosed and has few hedgerows. Except for some of the larger woodlands and open areas all other parts of the Quantock Hills and surrounding areas have a good network of hedgerows within the landscape. Figure 37 below shows the extent of hedgerow within the National Landscape. Data source: Somerset Environmental Records Centre (2018).
- Hedgerows provide one of the most important priority habitats in the National Landscape due to the ecological connectivity between other core habitats.
- One of the key landscape features of the Quantock Hills that distinguishes them from much of lowland England are the mature beech hedgebanks, which have grown into iconic lines of trees. They are of late 18th century origin, but many are planted on much older banks.
- Mature elm trees were a common feature of hedgerows but were killed by Dutch elm disease. Grants are available for planting disease resistant varieties.
- Hedgerows provide narrow woodland corridors, that due to their age support habitats and wildlife that are typical of ancient woodlands.
- The most valuable hedges are those with a wide range of shrubby species, have mature trees, are well-managed with a dense structure, have a have grassy or scrubby field margins.
- As hedgerow shrubs typically get plenty of light compared to those beneath woodland canopies, they can fully flower/fruit, providing food resources throughout much of the year.
- Hedgerows are protected by law under the Hedgerows Regulations (1997). Some of the wildlife that hedgerows support, such as dormice, bats, and yellowhammers, brown hairstreak butterflies are also rare or protected.
- Within the Quantock Hills many hedgerows grow on stone-faced or earth banks and together these features provide habitat for an even greater range of species.
- Some bat species forage for invertebrates along hedgerows, and with their echolocation abilities also use them as linear navigation features.
- Hedgerows are an important feature in slowing the flow of surface water from farmland, helping to prevent flooding and soil loss.
- A 2005 survey undertaken by the National Landscape Team and Natural England of the beech hedgebanks of the Quantock Hills identified 37.2km of beech hedgebanks within the National Landscape. The Quantock Landscape Partnership Scheme has been surveying many hedgerows over a wider area allowing a greater understanding of the extent and condition of hedgerows in the parishes surrounding the Quantock Hills.

- Some of the hedge banks on the Quantock Hills support mature beech trees, which as well as being a distinctive landscape feature also support a wide range of wildlife.
- Hedgelaying is a valuable management method for hedgerows but is expensive and its use has declined. Agri-environment grants are available to help with this.

Hedgerows - Pressures

- Over the past 50 years there has been dramatic loss of hedgerows due to policies for intensive farming, enlargement of fields and an increase in arable land.
- In recent years hedgerow loss has significantly reduced and with agri-environment schemes funding the planting and good management of hedgerows.
- Many newly planted usually hedgerows lack the variety of woody species, that would provide the most beneficial range of food sources for wildlife. Rarely are important species such as wild rose or field rose, purging buckthorn or climbers such as honeysuckle planted.
- Many hedgerows are in poor condition and are gappy, with large break points in these potential wildlife corridors.
- Some hedgerows are over-grazed by livestock due to lack of fencing, or other controls.
- Where cultivation of land occurs close to hedgerows there can be root damage, herbicide or insecticide spray drift in the hedge harming the structure of the habitat and the wildlife.
- Many hedgerows have had the mature trees removed and not replaced.
- Many hedgerows growing on banks are cut low to as little as 30cm high or have been removed.
- Most hedgerows are cut annually, when only cutting on a 2-4 year rotation is necessary (excluding highway hedges etc).
- Hedgerows in some historic hedge banks have not been managed and large mature (particularly beech) trees have grown. Whilst valuable for wildlife the roots of some of these trees are destroying the banks and the trees are collapsing
- Some of the mature hedgebanks are beyond restoration without felling and replanting. There are a range of challenges with the preservation and future management of these features that need to be addressed.

Figure 36: *Spindle in fruit in hedgerow*

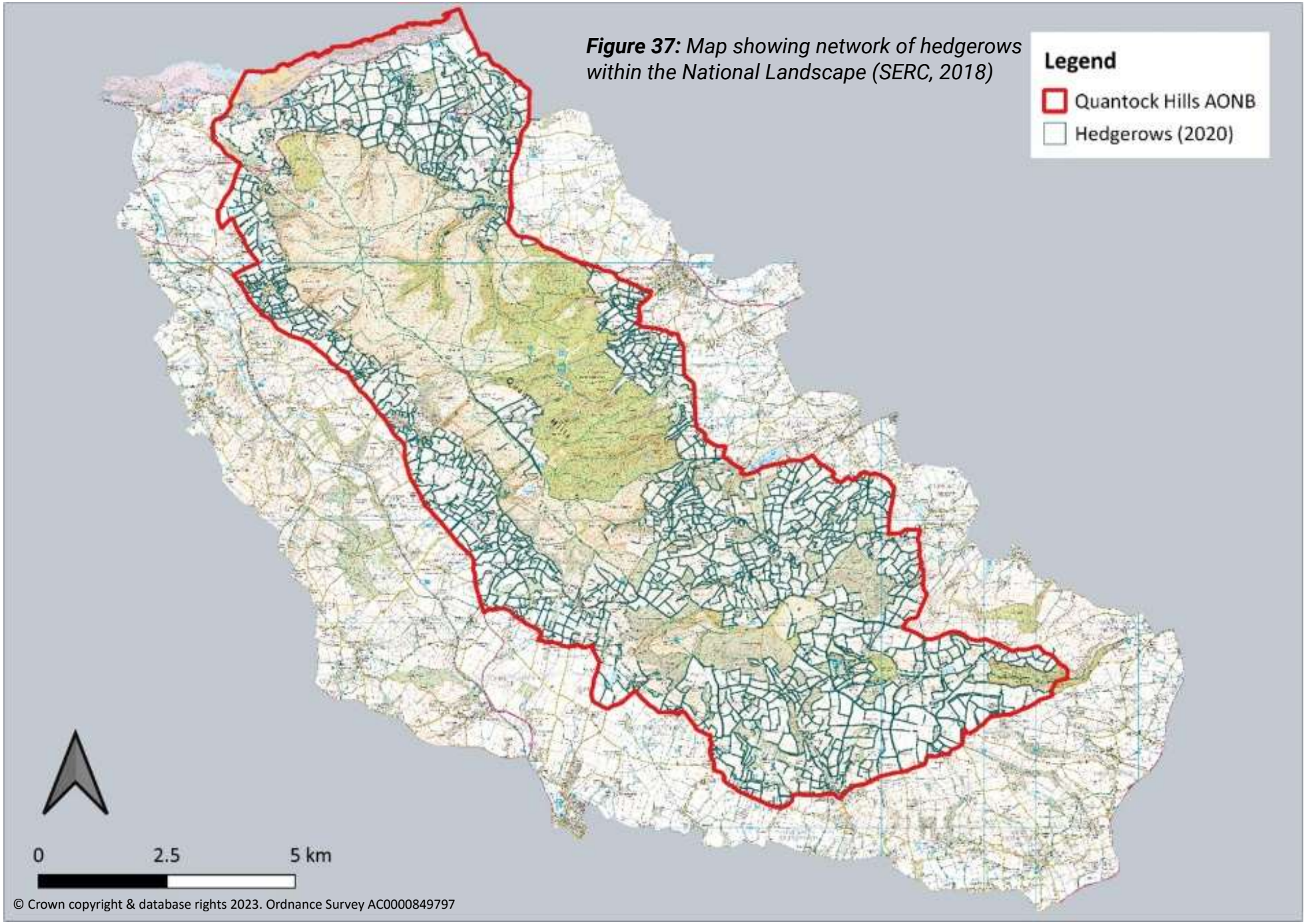


Figure 37: *Map showing network of hedgerows within the National Landscape (SERC, 2018)*

Note: Figure 37 has been generated from aerial photography and mapping. The National Landscape Team will be collating further data, including of the wider Quantock area to provide a more robust dataset for hedgerows

5.4.B - HEATHLAND PRIORITY HABITATS: KEY FACTS AND PRESSURES

5.4.B.1 Heathlands

Upland Heathland and Lowland Heathland

The heathlands of the Quantock Hills are a distinctive and iconic feature of the National Landscape. The National Landscape area comprises both Lowland and Upland Heath. Both are Priority Habitats and due to their similarities and the mosaics of both types occurring they will be discussed together. The extent of Upland and Lowland Heath are shown in Figure 10 below. There are approximately 1,600ha of heathland in the National Landscape.

Key Facts

- The heathlands are predominantly areas of plateau dissected by deep wooded and bracken covered combes. With much of site lying around the 200 - 300m elevation, there is a mix of both heathland types across the open common. The areas of upland heath are dominated by heather often with bell heather and Bilberry and underlain by mosses and lichens. Western gorse is a key component of these Western or 'Atlantic' heaths which often contain abundant Bristle bent grasses.
- Within the heathland there are small areas of wet or humid heath, which occur on thicker, damper peat, where Cross-leaved heath and purple moor-grass tend to replace bell heather and the acid grasses.
- On the lower slopes heathland grades into fragmented heath with acid grassland. In some areas scattered scrub, trees and bracken are frequent, and on the slopes dense bracken is often the dominant species.
- Scattered hawthorn, rowan and holly are characteristic of the landscape.
- The heathlands support several rare or declining species, including birds such as nightjar, tree pipit, skylark and Dartford warbler. Invertebrates include glow-worms, emperor moth, grayling butterfly and green hairstreak butterfly.
- The commons and other areas are grazed by the commoners using a low density of sheep, cattle and ponies. This helps to prevent over-encroachment of scrub.
- Compartments of heathland are also managed on rotation over a period of years, using cutting and swaling. Rotational management ensures that there remains a mosaic of different heathland types, which have differing height, structure and species-composition of plants. These different heathland vegetation types support different wildlife[ii].
- As with the other main priority habitats an important feature is transitional habitats. These are where natural vegetation succession is allowed to occur unchecked for a period of years. In the case of heathland this involves allowing some scrub and young woodland to develop. This vegetation is then managed on rotation to prevent too much loss of heathland. This vegetation is particularly valuable on woodland edge.

Key Pressures

- The Quantock Hills heathland is a fragile habitat with a relatively shallow peat layer of soil. The vegetation is easily eroded by recreational pressure and vehicle damage.
- The vegetation is constantly changing by natural succession. Without intervention a large proportion of the heathland would be lost to woodland and scrub. There are also competing priorities for landuse including the rights and needs of the commoners for grazing common land, nature conservation, fire risk management and recreational use.
- The livestock graze freely across the unenclosed common. The livestock will habitually choose preferred grazing areas. Some areas receive more grazing than others and this can create vegetation diversity. Equally in some areas there is inevitably some over-grazing and some under-grazing. The use of technology to monitor and control the distribution of the livestock are being considered by the commoners and the National Landscape Team.

- There are differing views about what the biodiversity of the heathland areas should look like and how this should be attained. Meeting the legal requirements (required by Natural England) of the large area designated as Site of Special Scientific Interest (SSSI) is an important driver in the management planning process.
- Excessive bracken growth is impacting the fragile habitats in protected landscapes across the country. Measures to control it include cutting, trampling, grazing, rolling and herbicide spraying. These and other measures have been trialled over the years and all have varying success rates, other effects on the biodiversity and different resource requirements. This work continues, but in places bracken is too widespread.
- Rhododendron is a non-native invasive shrub species which colonises heathland rapidly. This shrub has dense evergreen foliage which shades out the shrub and herb layers leading to loss of heathland vegetation and the wildlife it supports. Many resources have been put into clearing and poisoning the shrub and many areas have been relatively cleared of the plant. In other areas rhododendron remains abundant.
- Some heathland has previously been lost to other vegetation types. Figure 40 below shows the extent of loss of heathland over approximately the last 20 years.

Figure 38: *Bell heather (Erica cinerea) on Quantock Common*

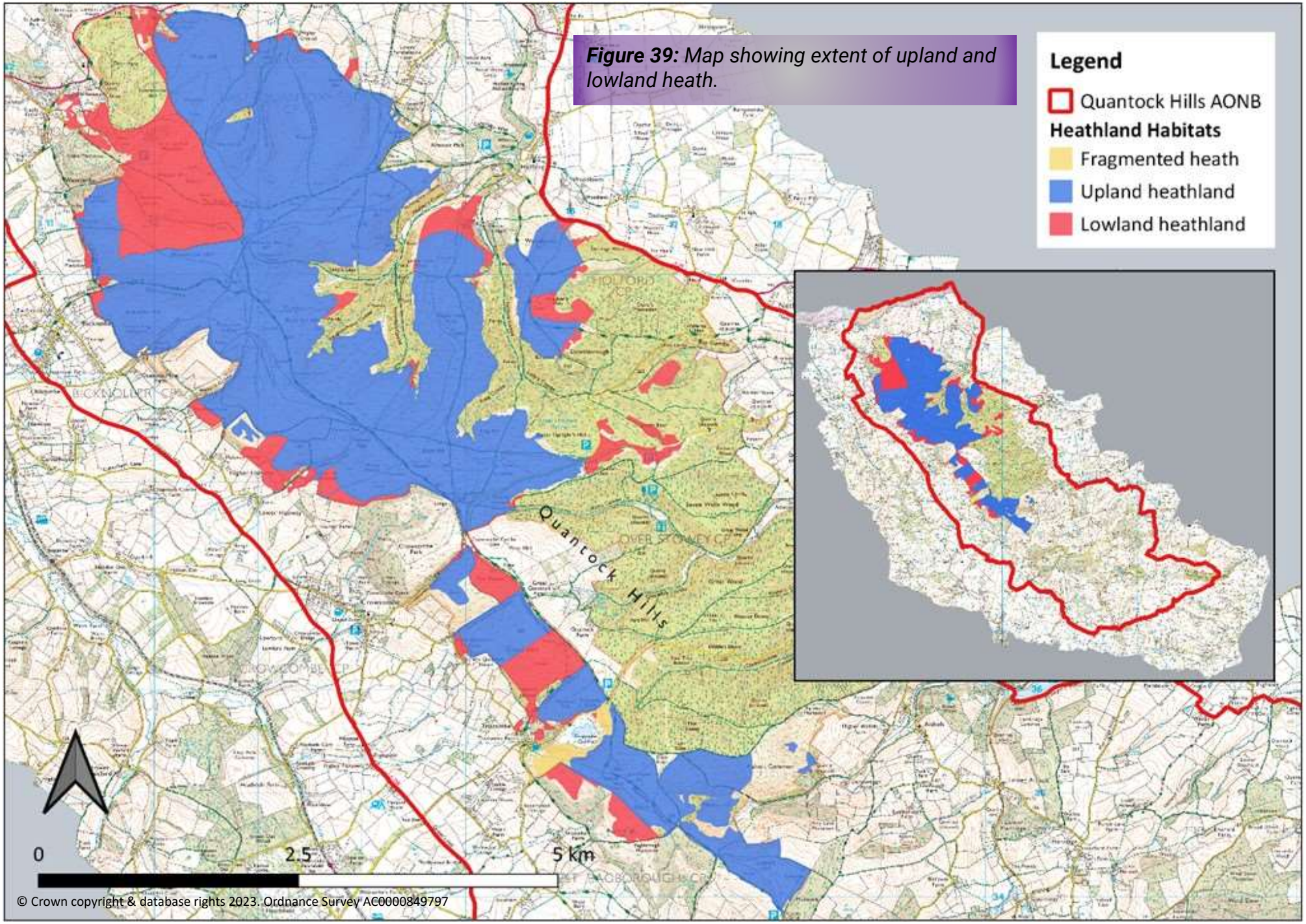


Figure 39: *Map showing extent of upland and lowland heath.*

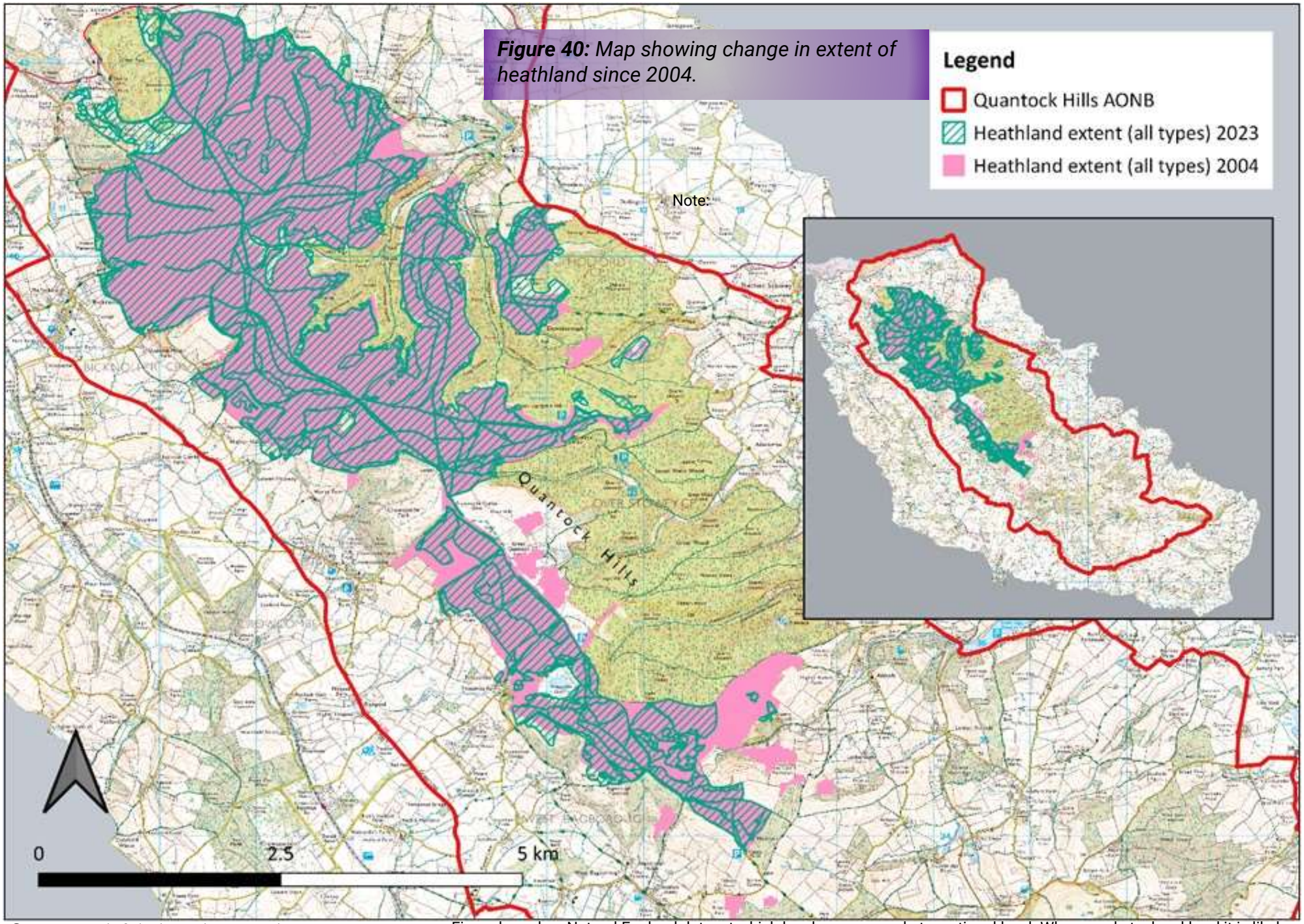


Figure 40: *Map showing change in extent of heathland since 2004.*

 Figure based on Natural England dataset which has been mapped at a national level. When used at a local level it is likely that there will be some inaccuracies. The National Landscape Team is seeking further data to update and increase the accuracy of the mapping.

5.4.B.2 Upland flushes, fens, and swamps

This group combines a wide range of separate priority habitats. The main component of this group that is present in the Quantock Hills National Landscape is acid mire habitat. As most of the acid mires present on the Quantock Hills occur within heathland habitats, they are included within this habitat grouping. They do also occur on the edge of woodland and among acid grassland.

Key Facts

- These are peat or mineral-based terrestrial wetlands usually in upland situations, which receive water and nutrients from surface and/or groundwater sources as well as rainfall. The soil is typically peaty and is waterlogged. These occur close to the headwaters of many of the streams that originate from peaty heathlands and acid grasslands of the northern Quantock Hills.
- They support a wide range of plants found almost nowhere else on the Quantock Hills including a range of mosses such as sphagnum mosses and bog plants such as bog asphodel, sundews and heath spotted orchid.
- It is known that the extent of this habitat was previously under-estimated. An updated survey of the acid mires was undertaken in 2023 by Friends of the Quantocks. The mapping below (Figure 7) indicates the extent of the acid mire habitat from previous records, and this will be updated with new data in due course. The new data will further inform planning and conservation management.

Key Pressures

- The acid mires on the Quantock Hills are all relatively small and isolated due to their occurrence at the headwaters of the different valleys. This makes their capacity to support some plant and animal populations quite tenuous.
- These wet boggy habitats are very fragile. If there is too much trampling of these areas by livestock or deer the habitat can be damaged. Deer sometimes use these mires as wallows.
- Encroachment by other, more vigorous vegetation such as some grasses, bracken, scrub or woodland can outcompete the mire vegetation. Light grazing by livestock at the right time of year can significantly help to prevent this encroachment. Controlled livestock grazing is therefore a valuable conservation management tool, which has been deployed by Friends of the Quantocks on Over Stowey Custom Common with the help of the graziers.
- Increasing occurrence of temperature extremes and droughts, due to climate change are likely to adversely affect this priority habitat. Measures need to be considered to mitigate for this where possible.

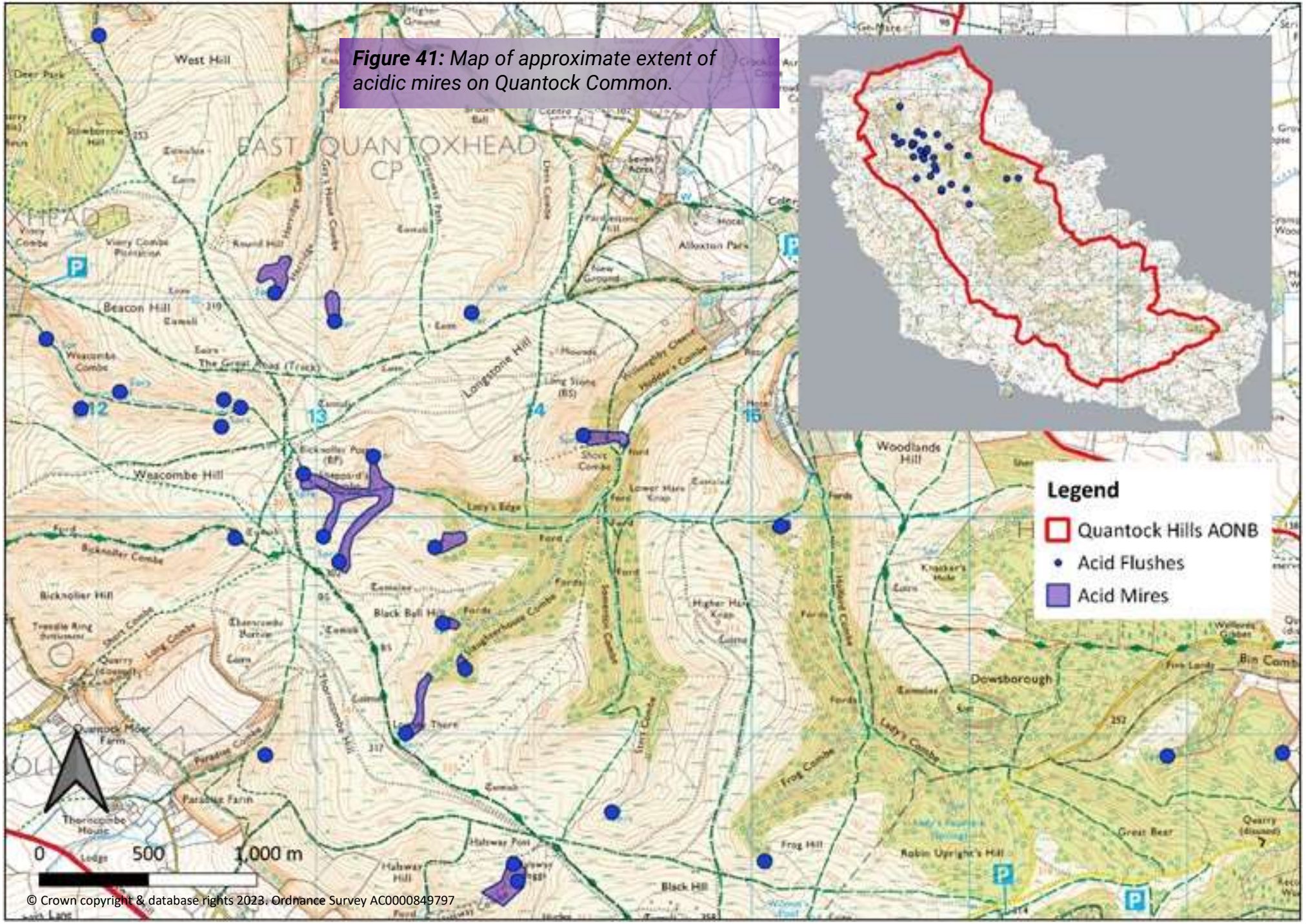


Figure 41: *Map of approximate extent of acidic mires on Quantock Common.*

5.4.C - GRASSLAND PRIORITY HABITATS: KEY FACTS AND PRESSURES

5.4.C.1 GRASSLAND HABITATS

There are a wide range of types of grassland in the Quantock Hills National Landscape. Some of these different types are present due to the geology, underlying soils or topography. In other cases, they are due to the particular type of management. In most cases there is some form of management or intervention that prevents the grasslands from developing into scrub or woodland.

As with some of the woodland and heathland habitats there is considerable overlap between some of the categories and many of these occur together in mosaics which cannot mapped at this scale. For example, there is a considerable amount of grass moorland or grass heath which occurs on the heathland plateau where heathland habitats are more dominant and as a result this mixed vegetation is categorised as heathland.

Parkland and Wood Pasture also contains a considerable amount of ecologically valuable grassland, which is quantified in the above categories but not in this section. Table 3 shows the areas of the main grassland priority habitat.

This report refers to grassland with different levels of agricultural modification. Unimproved grassland is grassland that has typically been traditionally managed (for pasture or hay or both) for many decades or even centuries and has received little or no ploughing, cultivation, artificial fertilisers or pesticides. As a result of continuous traditional management these grasslands usually comprise a wide range of native species of grasses, which support a very diverse flora and in turn supports a very wide range of fauna.

Semi-improved grasslands differ from the above in that some modern agricultural interventions have taken place such as some cultivation, attempt at reseeding, application of artificial fertilisers or pesticides, but that some floristic diversity still occurs over and above just the usual persistent 'weeds' such as creeping thistle, broad-leaved dock etc. These can sometimes still support a moderate valuable plant and animal assemblage and have greater potential for ecological enhancement.

Improved grassland is modified grassland where the original native grassland has been replaced by a reseeded mix of grass species such as rye-grasses (*Lolium spp),* following ploughing and applications of pesticides and artificial fertilisers. These grasslands may be grazed but also provide several cuts of silage during the growing season. They are very low plant diversity other than the most persistent 'weeds'. The grasses support a limited range of invertebrates. The unintentional consequence of frequent cutting for silage is that ground nesting birds such as skylark fail to successfully rear young due to destruction of nests.

Table 3: *Priority grasslands within the Quantock Hills National Landscape*

Priority Habitat type	Area (Ha)	% of Total priority habitat	% of NL
Good quality semi-improved grassland	77.81	2.37%	0.79%
Grass moorland	87.84	2.68%	0.89%
Lowland calcareous grassland	0.81	0.02%	0.01%
Lowland dry acid grassland	47.64	1.45%	0.48%
Lowland meadows	30.68	0.94%	0.31%
Purple moor grass and rush pastures	4.20	0.13%	0.04%
	248.98	**7.59%**	**2.52%**

Key Facts

- Species rich grasslands are extremely important for wildlife and for pollinators.
- On Quantock Common and some other areas, the more species-rich grassland has fared better due to a long history of traditional land management practices being used.
- Some of the older parklands and estates have retained important grasslands of high ecological value.
- On the lower slopes of Quantock Hill fringe, particularly where there are deeper soils a higher proportion of the farmland is now arable or agriculturally improved grassland.
- In general terms the majority of grassland present is on acidic or neutral soils due to the geology and landscape. The area of calcareous (alkaline) soils that overlie limestone is quite limited to the band of land along the coastline. Much of the former species-rich calcareous grassland in that area has been lost through conversion to arable farming, although a few small remnant pockets of this remain along the coast adjacent to the cliff edges. Some arable farmers along the coast have taken up agri-environment schemes to help reverse this trend.
- Some grassland in the Aisholt area is particularly rich in species, having a seam of Devonian limestone beneath it and due to long-term traditional management. The grazing management aims to further increase the floristic diversity, and wildflower seed is harvested for enabling other landowners to create flower-rich grasslands elsewhere.
- Previously widespread, species-rich lowland meadows and rush pastures still occur in very small pockets of land. These remnants of Priority Habitat are fragmented and isolated from other grasslands of similar ecological quality.

- The National Landscape provided funding under the Farming in Protected Landscapes (FiPL) scheme to enable wildflower seed to be introduced to land adjacent to a lowland meadow SSSI near Kilve. This will help to build up resilient populations of grassland wildlife within the wider landscape.

Figure 42: *Yellow rattle (Rhinanthus minor)*

Figure 43: *Bincombe Green road verge*

Some road verges have rich grassland assemblages. The above figure shows Bincombe Green, Over Stowey which supports some moderately species-rich grassland. Much of this has been damaged in recent years by ground works, although some remnants remain providing a small but valuable stepping stone for wildlife. Road verges are at risk of unintentional damage from highway and utility works. The ecological value of road verges is briefly referred to in the Somerset Highways Biodiversity Manual[iii]. The extent of species-rich grass verges has not been fully assessed and further data and protection is required.

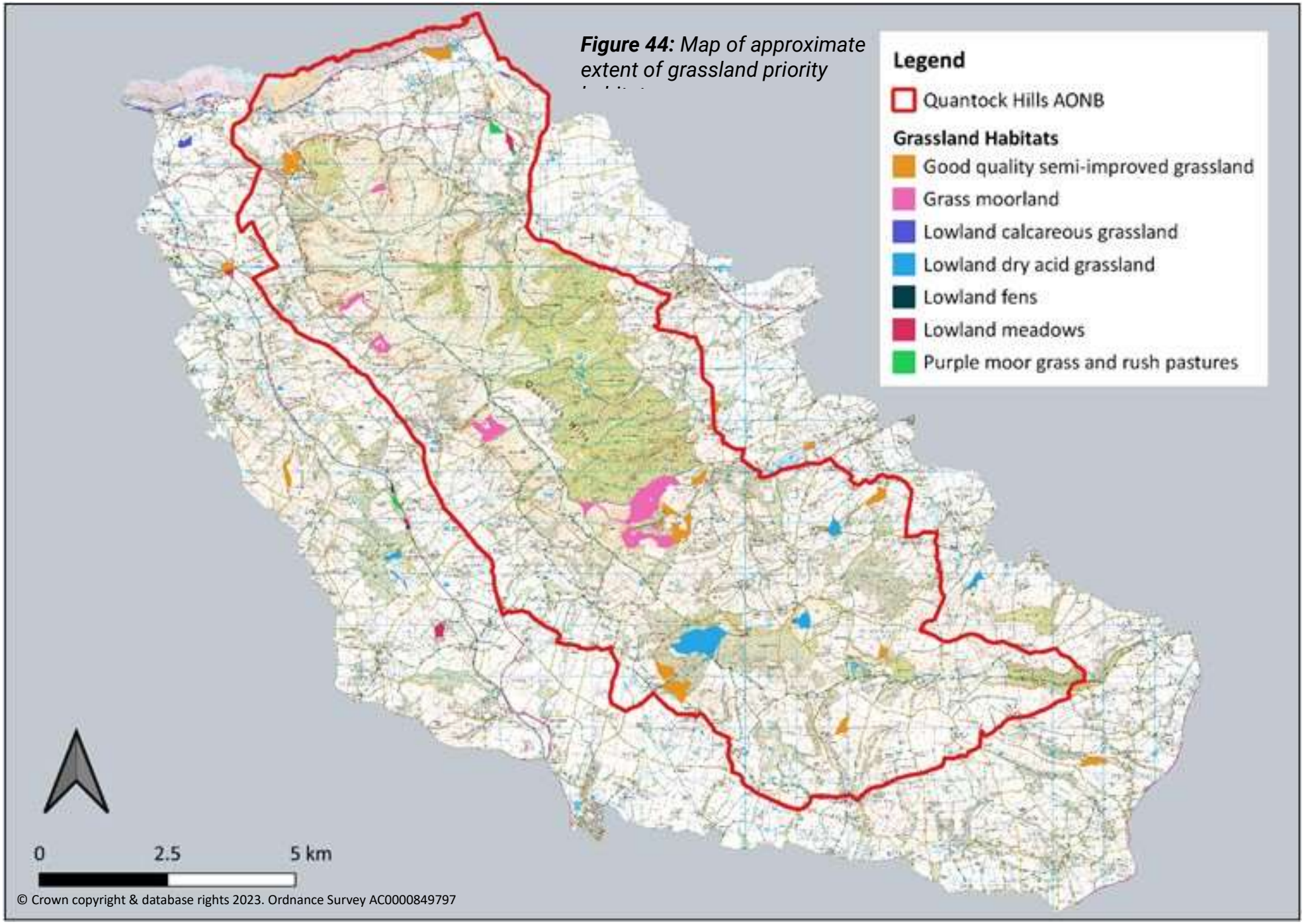


Figure 44: *Map of approximate extent of grassland priority*

Key Pressures

- Over 95% of species-rich grasslands have been lost nationally.
- Loss of species rich grasslands is mainly due to agricultural intensification with the use of herbicides and artificial fertilisers and the conversion of traditional grasslands to arable or species-poor grassland, including temporary leys.
- Traditional hay meadow management with a single cut allowed wildflowers to proliferate and seed and ground nesting birds such as skylark or lapwing to breed without disturbance. The intensive management of such meadows including reseeding and cutting for silage several times during the growing season eliminated food sources for wildlife and leads to failure by ground nesting birds.
- On Quantock Common livestock roam freely allowing them to graze where they choose. Controlling where grazing takes place and to avoid too much or too little grazing is challenging for commons graziers.
- The National Landscape Team are working with the commoners to find technological solutions to the monitoring of free ranging livestock and controlling where and when they graze areas.
- Bracken on acid grasslands is hard to eliminate though it can be reduced through cutting, bruising and rolling.
- In places intensive grassland management is leading to less healthy soils that lack organic matter, mycorrhizal diversity, nutrient retention and optimal water infiltration rates. This results in lower resilience droughts, flooding and other consequences of climate change.
- The National Landscape Team is supporting training in approaches to farming that put soil health at the centre of farming practices. It has set up a regenerative farming cluster group to enable farmers to meet and share good practice in this.
- There is currently business uncertainty for farmers and the financial incentives are not high enough for those considering the risk of moving to more regenerative approaches.

Figure 46 below gives a visual impression of the proportion of arable land (purple) and agriculturally improved grassland (green). The improved grassland areas are productive, but have lower biodiversity value, however there is high potential to make significant ecological enhancements to these areas, such as wider and well-managed field margins.

Figure 45: *Heath bedstraw (Galium saxatile)*

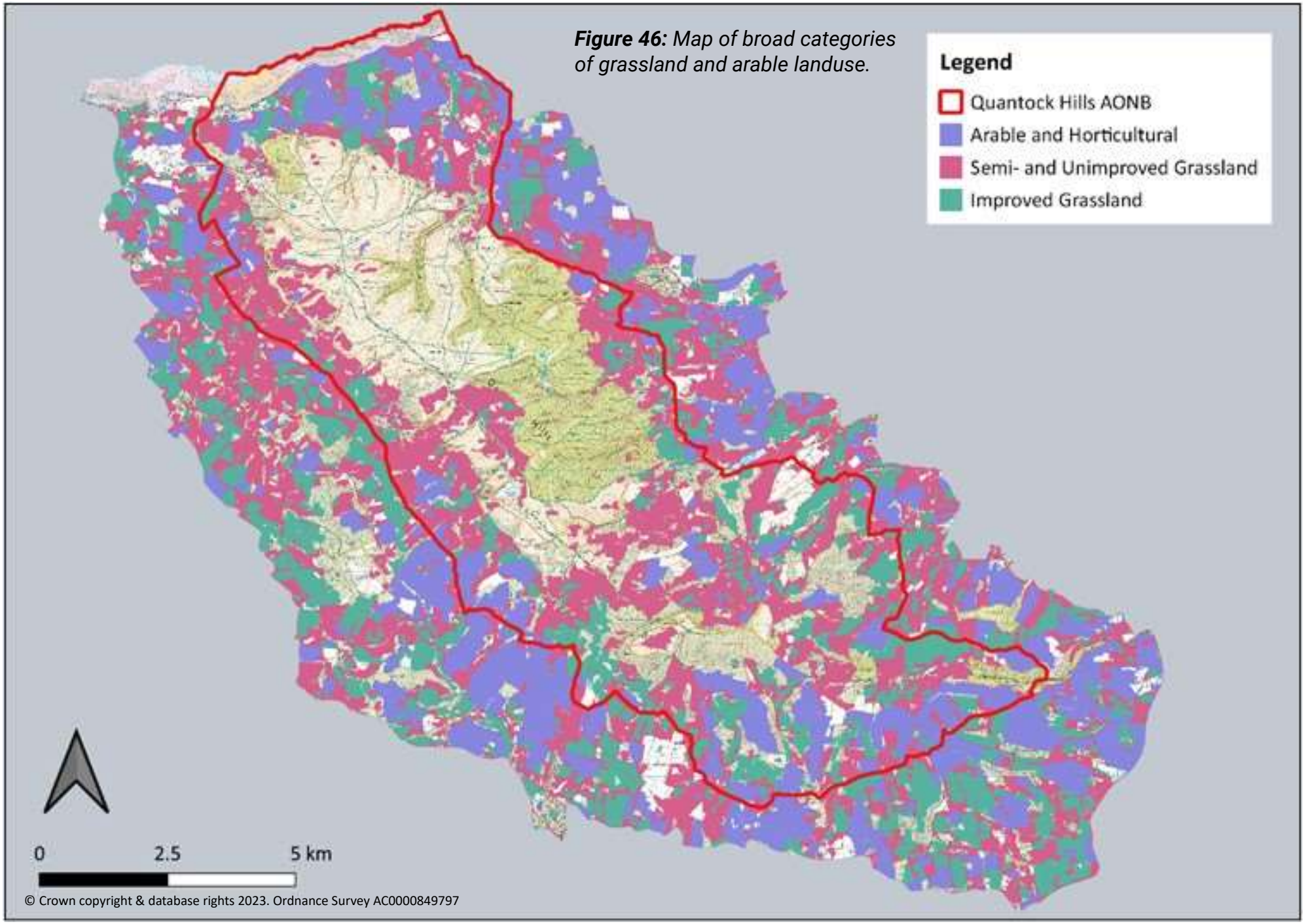


Figure 46: *Map of broad categories of grassland and arable landuse.*

5.5 Statutory Designated Sites

Statutorily designated sites are legally protected areas, which have been designated by the government for their high nature conservation value. The two types of designated sites occurring within the Quantock Hills National Landscape are Sites of Special Scientific Interest (SSSIs) and Special Areas of Conservation (SACs). SSSI's are the country's very best wildlife and geological sites. SACs are sites that are internationally important for their biodiversity. Many SACs are also SSSIs. Such sites are designated by and overseen by Natural England. For each site Natural England specifies what activities are allowed and which potentially damaging operations are not allowed on the site. There are usually management agreements for nature conservation in place. Figure 48 below shows the location and extent of the designated areas within the Quantock Hills National Landscape.

Quantock Common SSSI

A single unified SSSI of 2,507ha that covers most of the protected land on the Quantock Hills. The site is designated for being among the most extensive areas of priority habitat in southwest England. The designation recognises the wide variety of habitats present in close association, including dry heathland, wet heathland, acid mires, ancient and semi-natural woodland and a range of grassland habitats. Natural England periodically assess the condition of the SSSIs. Table 4 shows the results of recent condition assessments, which in general show an improvement in condition, with an increasing proportion of the site in, or heading towards Favourable Condition.

Table 4: Recent condition assessments of Quantock Common SSSI

SSSI Condition	2009 % of SSSI	2017 % of SSSI	2022 % of SSSI	Change (2009-22)
Favourable	15	16	46	↑ 31
Unfavourable recovering	61	75	30	↓ 31
Unfavourable no change	18	7	7	↓ 11
Unfavourable declining	5	2	11	↑ 6
Not Assessed	0	0	3	↑ 3
Total	**100**	**100**	**100**	

Blue Anchor to Lilstock Coast SSSI

This is a 675ha geological SSSI because of its outstanding series of sections repeated affected by faulting through the Early Jurassic Lower Lias and Triassic cliffs that support a wide variety of fossils. As this is a geological SSSI this is not discussed in this document.

Ge-Mare Farm Fields SSSI

A 4.1ha unimproved species-rich flood pasture with interest enhanced by the presence of a wetter area supporting a lowland mire. These habitats are rare both nationally and within the county of Somerset.

Exmoor & Quantock Oakwoods SAC

This site is focussed on two separate areas: Exmoor and Quantock Hills. The part of the SAC within the Quantock Hills supports extensive tracts of old sessile oak woods in conjunction with heath. They are rich in bryophytes, ferns (including Dryopteris aemula) and epiphytic lichens. Alluvial forests with alder and ash which occur in some of the valley bottoms are also present. The primary reason for designation (within the Quantock Hills part) is the important breeding populations of the rare barbastelle bat. Another qualifying species referred to in the citation is the rare Bechstein's bat. Wider zones of influence are set out for SACs.

In the case of the Exmoor & Somerset Oakwoods a zone of influence on barbastelle bats is applied. A Juvenile Sustenance Zone (JSZ) – figure 48 is set out for barbastelles in the document *'Barbastelle Bats Exmoor and Quantock Oak Woodlands SAC Guidance on Development v1.2 April 2018'*.

Note that the National Landscape's Landscape Partnership Scheme has undertaken further barbastelle bat surveys in recent years and the data from this will inform an extending of the JSZ. As such Figure 48 below is now out of date and will be updated in due course.

Other statutory designated sites outside the National Landscape

The following designated sites are outside of the Quantock Hills National Landscape, although within the greater Quantock area.

- Roebuck Meadows SSSI
- Hestercombe House SAC

These areas are not discussed further in this report but will be considered within subsequent nature recovery planning to seek enhanced connectivity with the core landscapes and habitats of the National Landscape area.

Figure 47: *Woodland near Holford forms part of the Exmoor & Quantock Oakwoods SAC.*

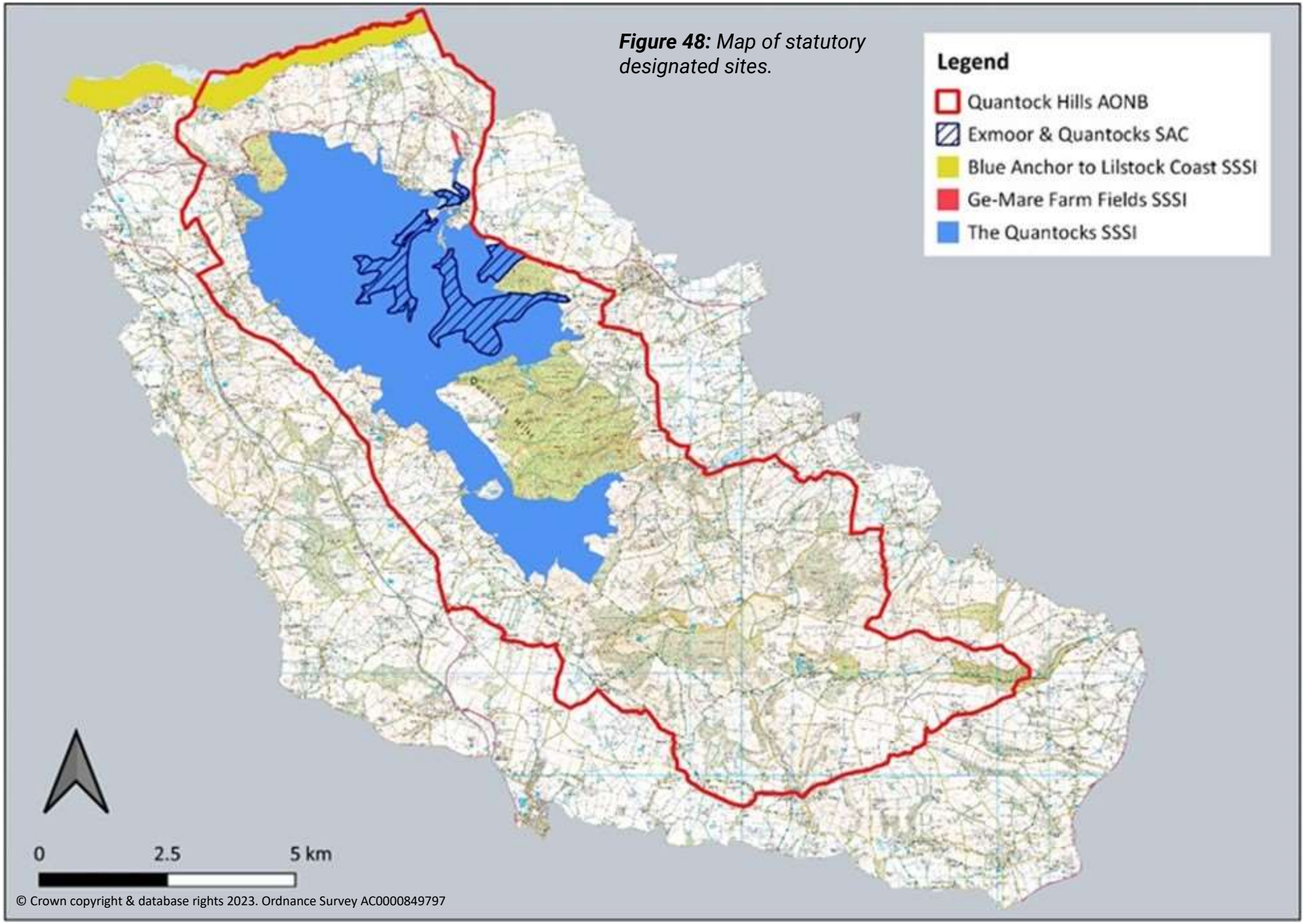


Figure 48: *Map of statutory designated sites.*

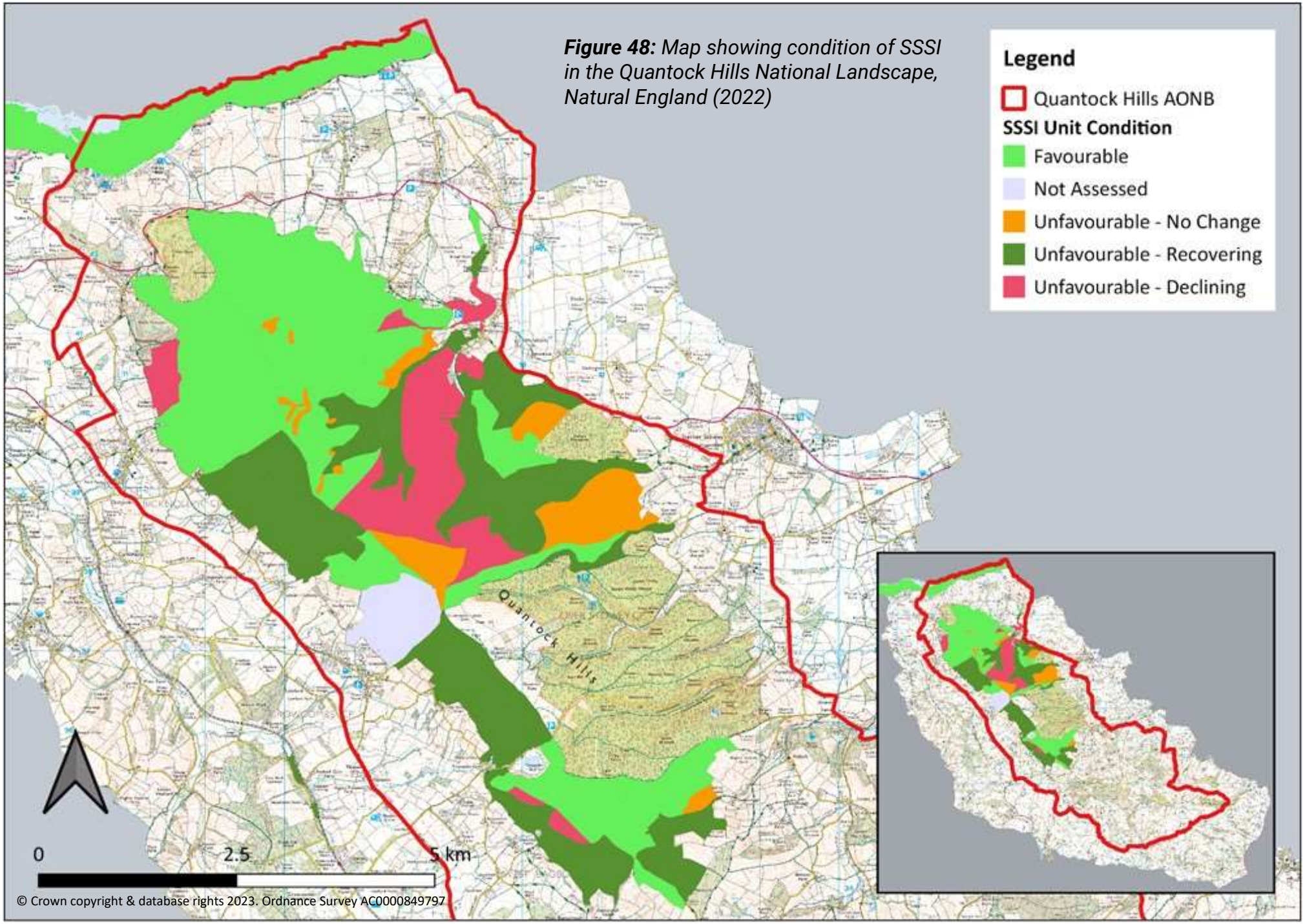


Figure 48: *Map showing condition of SSSI in the Quantock Hills National Landscape, Natural England (2022)*

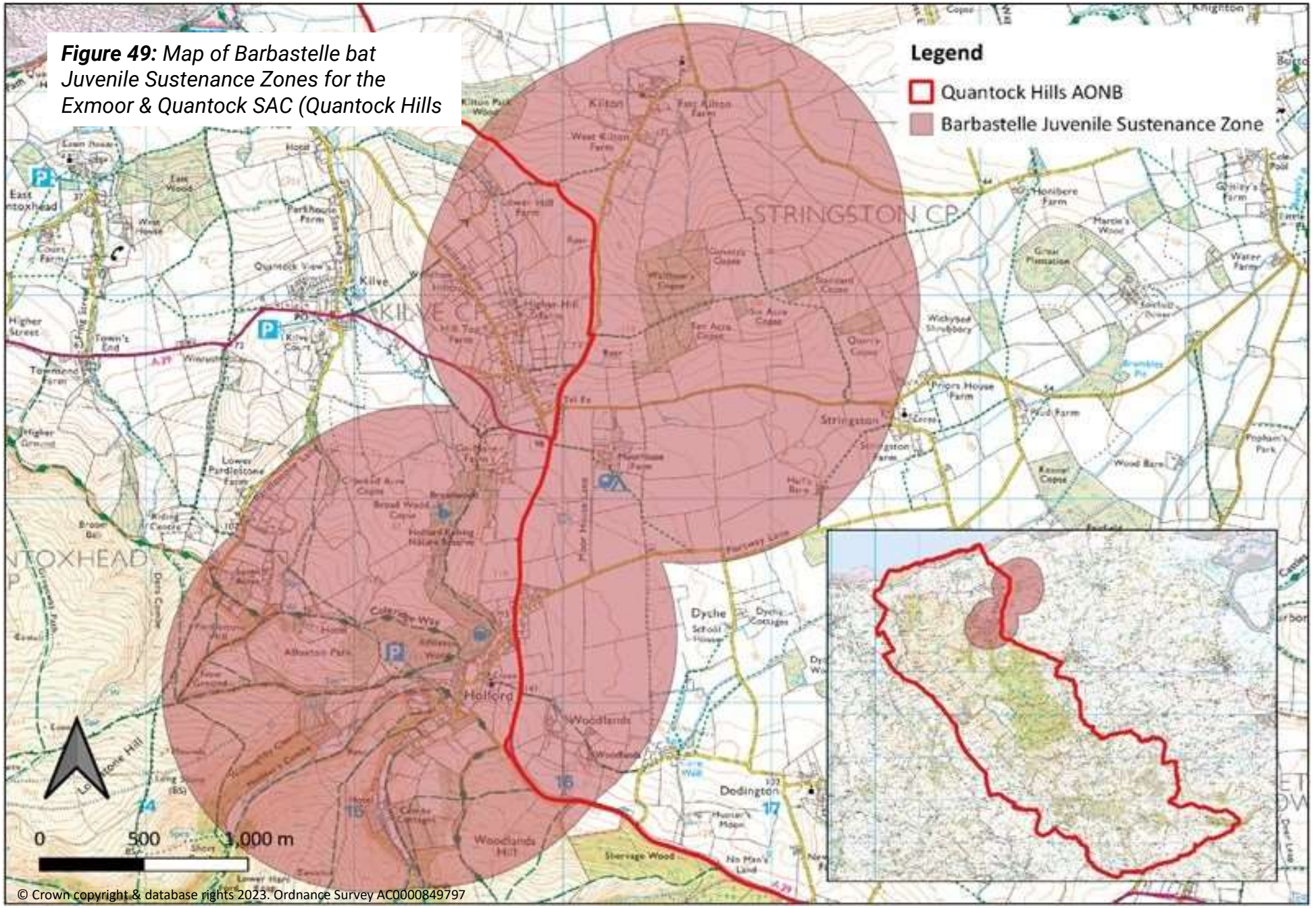


Figure 49: *Map of Barbastelle bat Juvenile Sustenance Zones for the Exmoor & Quantock SAC (Quantock Hills*

Pink waxcap *Porpolormopsis calyptriformis*

6. MANAGEMENT ACTIONS FOR NATURE

The set of priorities in this section provides guidance to all stakeholders including statutory bodies, farmers, landowners, interested organisation on the actions they can take to conserve and enhance nature on land in the Quantock Hills National Landscape. The actions are designed to:

- reduce or mitigate for pressures.
- halt further habitat loss.
- increase habitat extent and resilience.
- increase habitat quality & species-richness.
- increase transitional habitats & mosaics.
- increase habitat connectivity and landscape permeability.
- measures to support priority species dependant on these habitats.

To avoid repetition the State of Nature report grouped together some of the very similar priority habitats into 3 broad habitat types:

- **Woodland and woody habitats**
- **Heathland habitats**
- **Grassland habitats**

There are even habitat overlaps between the above three main categories due to the continuous nature of vegetation succession and variations in land management, however each of these three categories will be used below to outline the key actions required for conserving these habitats.

The tables below address some of the main pressures as outlined in the State of Nature section providing a range of potential further actions which aim to build the size, quality, structural diversity and resilience of the habitats, so supporting a larger, more diverse and resilient populations of plant and animal life.

The statements are centred around key priority habitats however they also include related, intermediate, or transitional habitats which are still of importance to nature. The actions required are drawn from the data, key facts, pressures and mapping set out in the State of Nature in Section 5.

When considering opportunities for habitats we use the principles of core areas, buffers and stepping stones. In 2020 a partnership including Somerset Wildlife Trust, Somerset County Council and Somerset Environmental Records Centre produced habitat opportunity mapping for the four main types of priority habitats for Somerset. Using the BEETLE least-cost network model – developed by Forest Research (Watts et al, 2010) – the Somerset EcoNet models the basic, joined up infrastructure of existing and future habitat needed to allow populations of species and habitats to survive in fluctuating conditions.

Using EcoNet we are able to understand where the best opportunities for habitat management and creation exist to allow targeting of resources. As with many models EcoNet is seen as the first step and should be used in combination with data relating to other elements of the landscape that are likely to influence the functioning and resilient of the ecological network.

6.1 WOODLAND & WOODY PRIORITY HABITATS – ACTIONS, SPECIES, OPPORTUNITIES

Table 5. Actions for Nature Recovery in woodland / woody habitats

	Pressure	Actions for the National Landscape Partnership
Ancient Semi-Natural Woodland		
W1	Historic loss of ancient semi-natural woodland due to replanting with conifer forestry.	Encourage reversion of some plantations on former ancient woodlands (PAWS) back to original tree/shrub species mix.
		Identify opportunities to extend areas of ancient woodland with new native planting or natural succession, particularly where it reconnects existing fragmented ancient woodlands.
W2	Poor regeneration of native tree species in semi-natural woodlands due to deer grazing.	Use deer survey data, including trial use of drone thermo-imaging to better understand the trends in distribution and abundance of deer
		Identify workable solutions to protect key areas from deer grazing.
W3	Poor regeneration of oak trees within oak woodlands due to the dense canopy of even-aged oak, but also competition from more successful seedling growth by species such as beech and holly.	Identify key problem areas and determine site specific actions in conjunction with land managers.
W4	Birch scrub colonisation. This provides a transition habitat between woodland and heathland that is of high value to foraging wildlife, including priority woodland and heathland bird species such as tree pipit, redstart, linnet and yellowhammer. Birch scrub does however need monitoring and controlling in places to prevent loss of species-rich heathland or grassland.	Monitor the spread of birch colonisation (see recommendations below on use of drones). Determine in conjunction with land managers (particularly commoners) where birch should be rotationally managed and where it should be prevented from colonising.
W5	Spread of non-native invasive species (e.g. rhododendron, laurel & Himalayan balsam) due to planting and naturalisation.	Work with land managers to ensure that these species are monitored and controlled as an obligation of SSSI agreements, agri-environment schemes or woodland and forest management plans. Provide support where necessary for significant control issues.
W6		Continue the process of monitoring and controlling the spread of holly within woodlands of high ecological value.

	Pressure	Actions for the National Landscape Partnership
	Localised spread of dominant native species, such as sycamore, holly or beech, causing loss of diverse ground flora, shrub layer and threats to tree regeneration.	Generate awareness in land managers of the need to monitor trends in regeneration, and to identify measures to prevent beech or sycamore from replacing semi-natural oak woodland.
W6	Localised spread of dominant introduced species, such as rhododendron or laurel shade out the ground flora, shrub layer and tree seed gemination, causing loss of diverse ground flora, shrub layer and threats to woodland longevity.	Recommend removal and treatment of shrubs such as rhododendron and laurel from semi-natural woodlands. Provide funding or signposting to funding where applicable.
W7	Loss of ash trees due to ash dieback disease.	Consider alternative tree species to replace ash trees, where applicable and where ash loss is having a significant adverse impact on the woodland structure and biodiversity.
		Allow natural regeneration of ash in some affected woodlands due to the prevalence of disease tolerant individuals within the ash population.
W8	Climate change affecting natural distribution of native species either directly or indirectly by the spread of new plant pathogens.	Work with land managers to monitor any die back or losses of particular tree and shrub species, or the increase of certain species.
		Develop approaches to climate resilience with native woodlands. Consider non-native species where essential.
W9	Temperate rainforest is a rare feature within the Quantock Hills, but its extent is not fully known. This limits opportunities to conserve and enhance this habitat.	Determine approaches to surveying for temperate rainforest indicator species and other features. Based on data obtained develop conservation recommendations in partnership with landowners/managers.
W10	Many woodlands that were previously coppiced may in some circumstances benefit from introduction of a re-coppicing programme to benefit biodiversity. Species such as dormice and many woodland butterfly, moth and plant species can benefit from this management.	Highlight the value of coppice management to land managers, whilst signposting appropriate advice to ensure that key species are not adversely affected, recommending careful assessment of woodlands to weigh up benefits and adverse effects on wildlife
W11	Many semi-natural woodlands lack open areas such as rides and glades which could support a wider variety of flora and fauna.	Encourage woodland managers to consider creation of open habitats within woodlands where appropriate and based on specialist advice. Provide or signpost funding opportunities.

	Pressure	Actions for the National Landscape Partnership
W12	Many semi-natural woodlands contain ponds which are shaded by the canopy. Wildlife within ponds thrive within woodlands where the canopy is open.	Encourage woodland managers to consider open up the woodland canopy above ponds to attract wildlife where appropriate and based on specialist advice.
Conifer woodland		
W13	Conifer plantations on former Ancient Woodland Sites (PAWS).	Reversion of a proportion of some PAWS back to semi natural woodland, where remnant features of the prior ancient woodland still occur e.g. pockets of ancient woodland, individual remnant trees, original standing dead trees or dead wood, original banks and hedgerows or remnant flora and fauna indicative of ancient woodland.
		Create forestry clearings or glades adjacent to remnant features to allow spread of vegetation natural and or other species.
W14	Fragmentation of remnant areas of ancient woodland	Create felled forestry clearings or corridors that reconnect fragmented plots of ancient woodland. Encourage natural colonisation of native vegetation to enhance the connectivity.
W15	Lack of other large-scale semi-natural habitats within some of the woodlands	Work with Forestry England to identify and fund opportunities to create or manage more diverse habitats including glades, rides, ponds and woodland edge management
W16	Some conifer plantations planted on former heathland or grassland, still support some remnant heathland/grassland understorey.	Work with Forestry England and other land managers to consider opportunities to manage selected areas to allow the heathland vegetation to thrive and where possible reconnect with other core heathland blocks.
		The Quantock Forest Plan[4] includes provision to create new open areas during the forestry cycle. These open areas do not need to be amenity grassland but can be managed to create a range of habitats or restore remnant habitats. Habitats can include semi-natural grassland, heathland, scrub,
Traditional Orchards		
W17	Drastic historical loss of traditional orchards, due to conversion to arable use and development around villages	Slow the decline of traditionally managed orchards through promotion of their cultural, landscape and wildlife value.

	Pressure	Actions for the National Landscape Partnership
		Provide or signpost funding for renovation or management of traditional orchards, including agri-environment funding.
		Provide or signpost funding for creation of new orchards and their sustainable management.
W18	Abandonment & lack of management due to low commercial value, leading to decline of ancient trees, species rich grasslands and other features supporting high biodiversity value in orchards. Intensification of management including use of artificial pesticides and fertilisers.	Slow the decline of traditionally managed orchards through promotion of their economic, cultural, landscape and wildlife value.
		Promote community participation in the management of orchards.
		Signpost funding streams, including agri-environment schemes sustainable management of orchards.
		Facilitate a traditional management support group to share good practice, expertise, sustainable solutions and encourage creation of new traditional orchards.
		Encourage continued presence of scattered nectar sources, especially early spring flowering shrubs like hawthorn, amongst parkland trees, as food sources for emerging saproxylic beetles.
Parkland, Wood Pasture and Veteran Trees		
W19	Mapping and assessment of all traditional parklands is incomplete.	Work in partnership with land managers of parklands and wood pastures to share mapping and knowledge and to enhance the biodiversity value of these important areas.
W20	The Quantock Landscape Partnership Scheme delivered a Hedgerow & Veteran Trees project [5] which laid a strong foundation for further survey, conservation and monitoring work.	Work with partners to determine steps to take his work forward from 2025 onwards.
W21	There has been a historical loss of parklands and wood pasture due to intensification of farming and forestry practices.	Reduce further loss of parkland and wood pasture by supporting land managers. Facilitate a parkland management support group to share good practice, expertise, sustainable solutions, biodiversity enhancement and encourage creation of new parklands.

	Pressure	Actions for the National Landscape Partnership
W22	Intensification of traditional permanent pasture within parkland and conversion to temporary grassland or arable	Highlight the biodiversity value of parklands and wood pasture to land managers and provide support and funding or signpost funding to support the viability of this form of land management.
		Encourage continued presence of scattered nectar sources, especially early spring flowering shrubs like hawthorn, amongst parkland trees, as food sources for emerging saproxylic beetles
W23	Inadequate protection of in-field trees has led to livestock and deer damage to trees.	Highlight the value of tree protection for newly planted trees and mature or veteran trees.
W24	Felled in-field trees are rarely replaced	Encourage the planting of new in-field trees as future parkland trees. Signpost or provide funding for tree planting and protection.
W25	Overgrazing of permanent pasture in parkland or wood pasture	Work with land managers to support and promote grazing management to enhance biodiversity value.
W26	Over-management of veteran trees	Work with land managers to support and promote appropriate levels of veteran tree management to enhance biodiversity value.
W27	Lack of pollarding of traditionally pollarded trees	Work with land managers to encourage pollarding of trees where appropriate to the landscape setting and the biodiversity value.
W28	Lack of retention on site of fallen trees or branches hampering ecological continuity of habitat for specialist wildlife e.g. Stag beetle.	Promote among land managers the retention of fallen or felled trees/branches of veteran trees.
		Promote the value of veteran or ancient trees and the important wildlife that they support.
W29	Mapping and assessment of veteran or ancient trees is incomplete.	Identify opportunities to obtain more comprehensive data on the location and distribution of veteran trees.
W30	Historic lack of replanting of trees to ensure future generations of veteran trees.	Encourage the planting trees as future veteran trees. Signpost or provide funding for tree planting and protection.

	Pressure	Actions for the National Landscape Partnership
W31	Limited local expertise in specialist species associated with veteran trees e.g. in bryophytes, liverworts and invertebrates. Limited sharing of data to inform monitoring and future management.	Encourage collaborative work by specialists and key partners to collect and share data that will inform monitoring and future management.
W32	Iconic ancient beech trees in the Quantock landscape are prone to windblow due to large canopy and instability of hedge banks.	Continue to trial work by National Landscape Team with different approaches to tree care and hedgerow management on these trees.
W33	Felling of standing dead trees where this is not essential.	Encourage land managers to retain and protect standing dead veteran trees where applicable.
W34	Felled or fallen timber from veteran trees not retained in situ	Promote the exceptional value to wildlife of retaining felled or fallen timber from veteran trees.
Hedgerows		
W35	Significant historical loss of hedgerows and hedge banks particularly around the outlying areas of the National Landscape	Encourage land managers to reinstate or plant new diverse hedgerows through funding, signposting, and promotion
W36	Historical loss of mature elm trees in hedges due to Dutch Elm disease. This has led to widespread extinction or population fragmentation of species dependant on mature elm trees e.g. White-letter hairstreak butterfly	Coppice maturing elms in elm dominated hedgerows (with a history of disease susceptibility) to prevent suitable conditions for the disease vector, the elm beetle.Trial use of disease resistant elm varieties to bring back elm into the farmed landscape. Re-connect remnant populations of naturally disease-free elm.
W37	Hedgerow structure damaged by livestock due to lack of fencing or other controls.	Encourage use of fencing or other methods to reduce the over-grazing of hedges bases
W38	Erosion of hedge banks by livestock or deer.	Encourage use of fencing or other methods to reduce the access to hedgebanks.
W39	Many hedges lacking vegetation at base due to heavy cutting or grazing	Promote the good management of hedgerow structure.
W40	Much hedgerow wildlife, such as the brown hairstreak butterfly, has declined due to annual flailing.	Promote among land managers the use of rotational cutting of parts of some hedges every 3 – 5 years, especially on south facing hedgerows.

	Pressure	Actions for the National Landscape Partnership
W41	Field cultivation of land too close to hedgerows can cause root damage to trees/shrubs	Promote the creation of wider field margins. Signpost incentives for hedgerow management through agri-environment schemes.
W42	Narrow field margins removing dense grassy habitat of high value to hedgerow wildlife.	Promote the creation of wider field margins. Signpost incentives for creating and managing wider grassy field margins through agri-environment schemes.
W43	Hedgerow planting schemes lack the wide variety of woody species that would benefit the widest variety of wildlife.	Encourage and provide advice on ambitious planting of the widest and most locally appropriate range of woody species, to always include trees, shrubs and climbers where applicable. Include this requirement in grant schemes managed by the National Landscape service and in partnership programmes,
		Any grant schemes or direct funding managed by the National Landscape service for hedgerow planting will require a diverse and locally appropriate species mix, including trees, shrubs and climbers, unless not feasible.
W44	Felled hedgerow trees are rarely replaced.	Promote the benefits of hedgerow trees in the landscape
		Signpost funding for planting hedgerow standard trees
		Any direct National Landscape funding for hedgerow planting will require the planting and protection of a range of appropriate tree species
W45	Several priority or valued hedgerow butterfly species require 'master trees' to congregate at for display and mating before dispersing along hedgerows. Many hedgerows no longer have these mature trees to use as 'master trees', which are an essential feature to enable breeding by key butterfly species.	Promote the benefits of mature hedgerow trees to wildlife
		Signpost funding for planting standard trees in hedgerows
		Any direct National Landscape funding for hedgerow planting will require the planting and protection of a range of appropriate tree species
W46	Young or semi-mature hedgerow trees are often accidentally flailed preventing development of mature trees.	Promote the temporary marking of young trees in hedgerows prior to trimming works
W47	Hedgerows growing on banks are often cut low or removed due to the banks acting as a boundary	Encourage land managers to allow all hedgerow shrubs and trees to grow a natural height
W48	Trees on historic stone-faced hedgerow banks have overgrown due to lack of management and are collapsing	Continue to experiment with different management approaches to overgrown trees and share findings with land managers.

Table 6. Priority / valued species of woodland / woody habitats

Taxa	Species
Mammals	Barbastelle bat
	Bechstein's bat
	All other bat species
	Dormouse
Birds	Wood warbler
	Lesser-spotted woodpecker
	Pied flycatcher
	Tree pipit
	Redstart
	Goshawk
	Spotted flycatcher
	Yellowhammer (hedgerows)
Reptile	Adder (wood pasture, open forestry areas)
	Slow-worm
	Common lizard (hedgebanks)
Invertebrates – butterflies	Brown hairstreak
	Green hairstreak
	Wall
Invertebrates – beetles	Stag beetle
Invertebrates – various	Species restricted to veteran or ancient trees
Plants	Mosses and bryophytes characteristic of temperate rainforest.

6.1.1 Opportunity for actions for nature recovery in woodlands and woody habitats

Figure 51 shows the core areas, buffer and stepping stones for woodlands. Tree planting for nature recovery is best carried out in this National Landscape where there is a strategic benefit to do so. This includes:

- Enlargement of existing core areas
- Increasing the number of stepping stone woodlands
- Increasing the number of connective corridors between core woodland areas
- Remedial work within core woodland areas

The buffer zones shown in figure 51 indicate potential areas for expansion of existing core woodland areas. These buffers are shown for guidance only and may for various reasons not be suitable. It is important that other core priority habitat, such as heathland is not lost as a result of planting woodland. There are large areas of heathland immediately adjacent to broadleaved woodland. To plant new woodland or woody features in woodland buffer zones at the expense of heathland would need to have a strong ecological justification. Since most of the heathland falls within the SSSI there would be other legal permissions required. The same would apply to losing any priority grassland habitat, particularly if it is species-rich and/or within the SSSI.

As discussed in earlier sections of this report any measures that improve the condition of core woodlands such as creation of structural diversity, sunny glades and rides, ponds, a graded woodland edge are likely to benefit the range of conditions within the woodland and hence the diversity of species. Areas that are part of the SSSIs would require consultation with Natural England before changes in management.

Good management of the stepping stone pockets of woodland is important for maximising their value for connectivity between the core woodlands. The planting of new stepping stone woodlands to increase connectivity is encouraged. As with all planting schemes it is important to use an appropriate mix of native species that are typically found in the landscape and to ensure that plants are UK grown and ideally locally grown. Using imported stock significantly increases the likelihood of introducing pests and pathogens.

Whilst the retention or creation of new areas of these other woody habitats will probably support varying plant and animal communities, they can still contribute to the connectivity between the core woodland areas.

See the comments in the Heathlands section below regarding the active management of scrub encroachment on heathland and managing the boundaries between woodland and heathland.

Figure 50: *The Quantock Hills hedgerows provide connectivity between woodlands.*

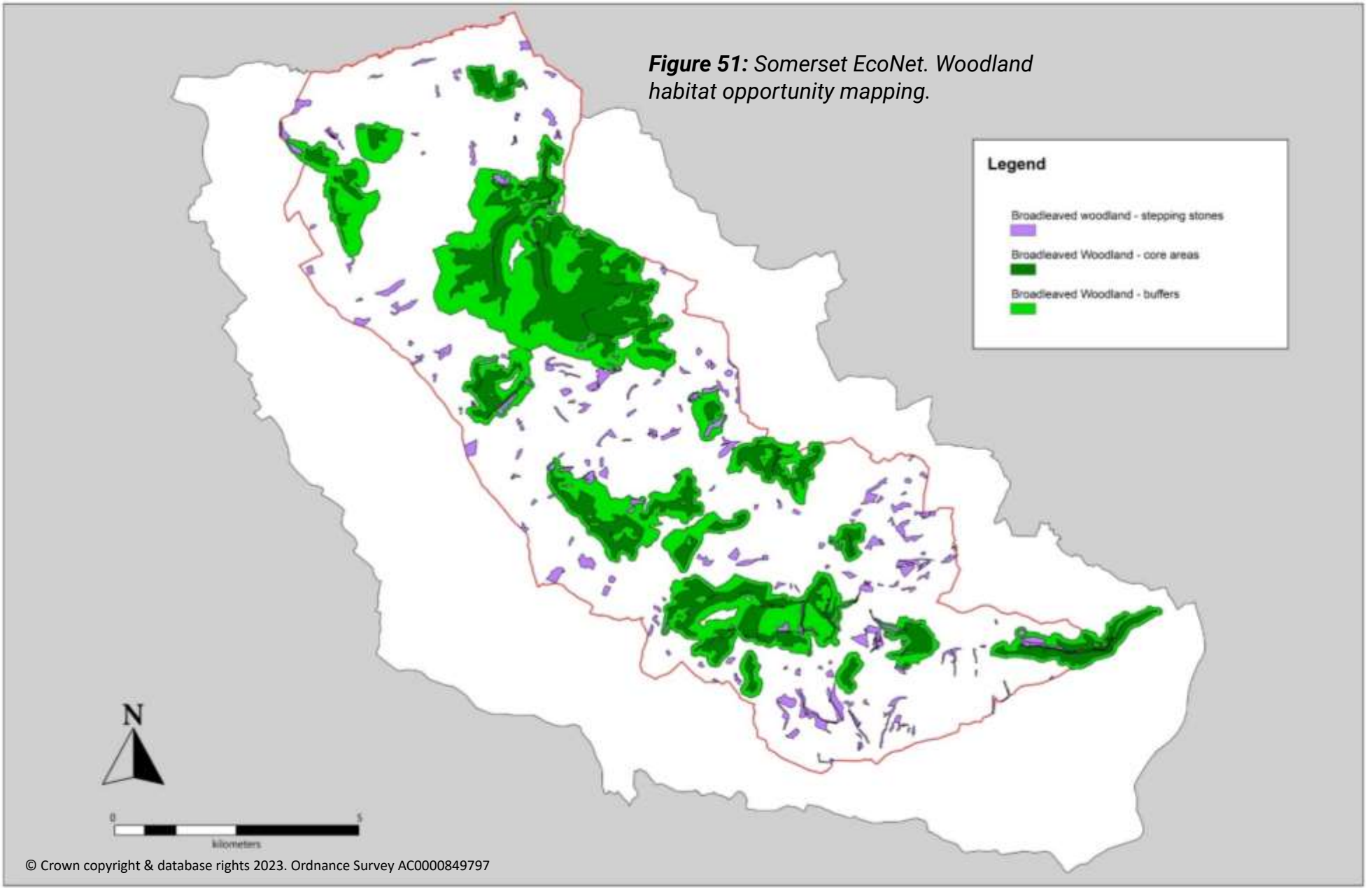


Figure 51: *Somerset EcoNet. Woodland habitat opportunity mapping.*

Hedgerows are an important feature of much of the Quantock Hills landscape which can support an assemblage of wildlife and well as providing vital connective corridors between other core habitats, especially woodland. They occur across the majority of the Quantock Hills except some of the open commons on the northern plateaus, which have been traditionally open due to type of landuse, and also historic open parklands.

In some of the other areas where intensive agriculture has been predominant for several decades many fields have been enlarged by the removal of hedgerows. This rarely occurs now, and hedgerows are protected by law. In places the hedgerow network is still sparce and poorly connected. In these areas reinstatement of some of the key hedgerows that will help to link up the whole of the Quantock landscape.

As well as the extent of the hedgerow network, the habitat quality and condition of the hedges will determine the value to wildlife. Through adopting a slightly less regular trimming of hedgerows, where some (non-highway) lengths are left uncut for a year or two on a rotational basis, land managers can achieve exceptional benefits to wildlife, for limited effort. With this approach hedges will still be actively managed, however some hedges will receive a year or so of cut-free growth allowing full exploitation by wildlife of the fruit and seed resource throughout autumn, winter and early spring[6].

Figure 52: *Hedgerows with grassy margin. Management such as reduced cutting frequency and widening the margin will encourage reptiles and brown hairstreak butterflies.*

By allowing wide, grassy field margins to develop either side of the hedgerows, land managers are providing a buffer from sprays and other potentially damaging operations. Most importantly it provides both grassland and hedgerow connectivity across the landscape. An even more valuable approach is to select some grassy margins, especially where its closest to the hedge, to be only cut every 3-5 years, allowing tussocky grass and some low scrub to develop.

Figure 53: *A hedgerow left for two years to allow full flowering, fruiting and some lateral growth, including some bramble benefits species such as harvest mice and hedgehogs..*

The National Landscape Team can facilitate to help cooperation between neighbouring farmers to ensure habitat connectivity between landholdings. Many of the practices illustrated above attract SFI or Countryside Stewardship funding.

Figure 54 shows hedgerows within the National Landscape boundary. The figure does not include other woody habitats, such as orchards, which would all also be of immense value in providing connectivity between the core woodland areas.

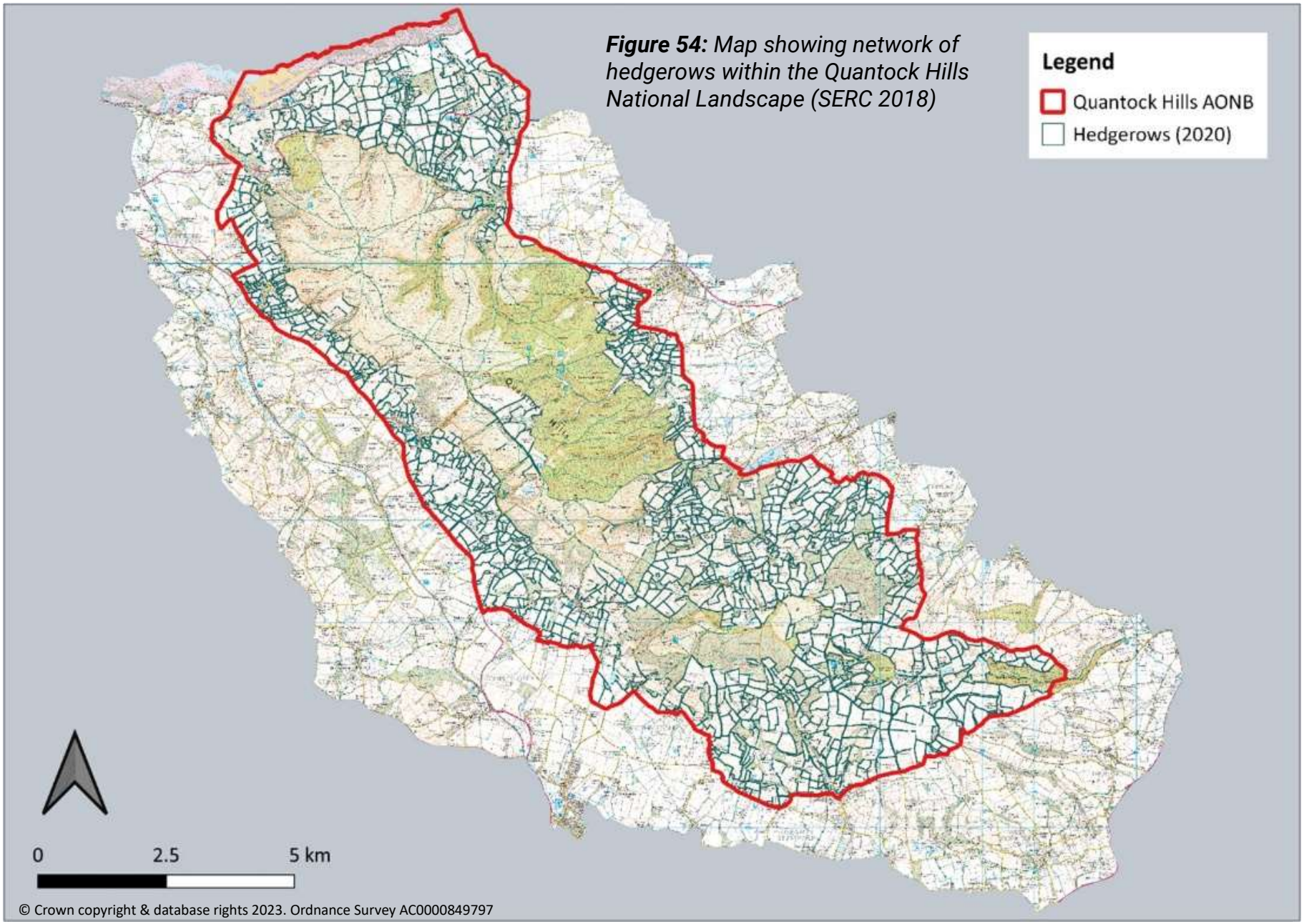


Figure 54: *Map showing network of hedgerows within the Quantock Hills National Landscape (SERC 2018)*

6.2 HEATHLAND PRIORITY HABITATS – ACTIONS, SPECIES, OPPORTUNITIES

Table 7. Actions for Nature Recovery in heathland habitats

Ref	Pressures	Actions for the National Landscape Partnership
Upland and lowland heaths		
H1	Historic loss of heathland in parts of the Quantock Hills in the late 20th century by conversion to conifer forestry plantation.	Work with Forestry England to continue experimental management of selected clear fell areas for encouraging heathland regeneration
		Continue close working with Forestry England to manage selected forestry clear-fell areas with potential for heathland restoration, such as St Audries and Ramscombe.
		Work with Forestry England to identify additional opportunities to reconnect fragmented heathland areas with managed heathland corridors
H2	Historic loss of heathland in parts of the Quantock Hills in the late 20th century by conversion to grassland by agricultural improvement.	Work with farmers to identify opportunities (and funding) to recreate areas of former heathland where feasible.
H3	The heathland areas of the Quantocks are part of the working landscape and are grazed by sheep, ponies and cattle. Getting the balance right between the rights and/or needs of graziers and the needs of nature conservation is difficult to always get right.	Continue the close working partnership between the National Landscape Team, the graziers of heathland (particularly the commoners), Natural England other key stakeholders.

H4	The core heathland areas comprise a mosaic of vegetation including: • lush, young-growth dwarf shrubs (heathers, bilberry and gorses) including a range of other flora. • More mature, denser and taller heather and gorse. • Over-mature heather and gorse vegetation that is tall, gappy and liable to collapsing. The wide range of specialist heathland wildlife depends upon these different stages of growth. For example, the Dartford Warbler depends on a mixture of all of these stages for invertebrate food sources, shelter (especially during cold winters[7]) and nesting habitat. As the vegetation ages it develops into different stages of growth. To maintain this mosaic, a range of vegetation management methods are used including a combination of cutting, swaling, grazing and non-intervention.	Assist the graziers to trial the use of GPS technology to monitor and control the distribution of livestock. Use findings of trial to develop landscape scale strategies for control, monitoring and management of grazing areas and densities.
H5	Monitoring this vast expanse of heathland and managing the ever-developing vegetation is time-consuming and challenging for both graziers and the National Landscape Team.	Trial the use of drone aerial photography to survey and monitor heathland vegetation change more effectively. This will better inform the outcomes of grazing activity and progress on improving SSSI condition status.
H6	Localised livestock overgrazing of heathland areas reducing the biodiversity of these areas	Work with commoners to trial use of fenceless collars for selected livestock herds to manage grazing more effectively.
H7	Localised livestock under-grazing of heathland areas leading to uncontrolled scrub encroachment in places. Transitional habitats such as scrub (such as gorse, birch and other trees and shrubs) are highly valuable but without monitoring and localised control will lead to loss of valuable heathland habitat	Work with commoners to trial use of fenceless collars for selected livestock herds to manage grazing to keep the balance heathland and successional habitats. Use the results of drone aerial photography to monitor changes in vegetation more effectively and inform management planning with partners.

H8	Risk of wildfires from unauthorised or unplanned fires can cause significant harm to wildlife, habitats, the soil environment, livestock and people. Main causes of wildfire are lack of periodic rotational management of heathland areas leading to poor heath vegetation health and excess buildup of dead material. Climate change is expected to result in a greater frequency of extreme weather including droughts, increasing the risk of wildfires.	Increase the number, width and management of firebreaks to slow down the spread of wildfires, in line with the Moorland Implementation Plan.
		Continue to carry out controlled winter swaling as per the Moorland Implementation Plan.
		Trial novel methods of vegetation management to reduce fire risk.
		Use the results of drone aerial photography to inform risk assessment of wildfire outbreaks.
		Continue to work closely with the Fire & Rescue Service to increase the prevention, planning and response to wildfires.
H9	Historic loss of extensive heathland due to encroachment by bracken	Trial the use of drone aerial photography to more effectively survey and monitor the extent of bracken and the impacts of bracken control methods.
		Work with farmers (particularly commoners) to continue traditional bracken control methods (grazing, trampling, rolling) but also develop novel methods (including cut & collect for bioenergy or other uses) to control the spread of bracken.
		Evaluate the use of remote cutting machinery for controlling bracken on very steep slopes.
H10	The spread, or post-treatment re-occurrence of Rhododendron	Trial the use of drone aerial photography to survey and monitor the extent of rhododendron and prioritise any remaining larger blocks for treatment.
		Work with the commoners to help control Rhododendron in the areas previously cleared of rhododendron
		Continue to seek funding and enable control of any significant outbreaks of rhododendron where they are beyond the responsibility of the commoners or other land managers.

H11	The numbers and distribution of adders on the heathland is partly limited by the sparce availability of hibernacula (hibernation sites).	Create new artificial hibernacula in suitable locations to enable wider dispersal, breeding and winter survival of adders.
H12	Survey records on the distribution of adders is largely limited to known, visible hibernacula features, leading to an incomplete assessment of adder distribution. Whilst regular monitoring of known populations closely associated to known hibernacula is of great value as an indicator of population trends, a fuller picture of wider adder distribution is also important.	Work with partner organisations to develop a more comprehensive dataset. Encourage submission of adder records through public engagement, citizen science and use of iNaturalist.
H13	Recent and predicted climatic warming is benefitting the Dartford warbler in England, driving an expansion of both its range and population size. Across its full European range, climate change poses a threat, with substantial losses in the climate suitability in its core areas of France and Spain. The UK is therefore becoming more important for the conservation of this species in Europe [8].	Ensure that a large proportion of heathland habitat is well-managed in terms of structural diversity to provide the carrying capacity to support higher populations of this species.
H14	English Dartford warbler populations suffer dramatically in extremely cold winters and take many years to recover [9]. Climate change will bring greater extremes in weather including occasional cold winters. Building larger, more populations is important to develop resilience to population crashes due to periodic very cold winters.	Determine methods to improve the condition of the poorer quality heathland and to more widely increase structural diversity to increase the Quantock Hills' carrying capacity for Dartford warbler.
H15	Climate change may affect upland and lowland heathlands in other ways than those already referred to above. Drier summer ground conditions, because of climate change may lead to the wet heath components of the heathland ecosystem to be reduced.	Determine methods to monitor changes in the extent of wet heath. Devise management strategies to increase soil water retention and reduce surface water run-off in wet heaths.
H16	Warmer winters as a result of climate change may lead to increased threat from pests such as heather beetle [10].	Monitor vegetation change as referred to above.
H17	Wetter winters as a result of climate change may make conditions unsuitable for winter/early spring swaling [11]	Develop potential alternative strategies for rotational vegetation management that do not rely on swaling.

H18	Areas of bare ground are of high value to many invertebrates on heathland SSSIs [12] including the grayling butterfly and the green tiger beetle. The distribution and extent of suitable bare ground is not currently recorded or monitored.	Trial the use of drone aerial photography to assess the distribution and extent of suitable bare ground and determine any interventions required to create more or improve the habitat quality of this feature.
Acid Mires		
H19	Acid mire occurs in small, isolated pockets close to the head of many of the combes. Their small size and isolation make them vulnerable to incursions of dominant vegetation including scrub, woodland and rhododendron.	Ensure that periodic grazing is available to livestock to keep woody vegetation in check. Removal of rhododendron from mire areas.
H20	Excessive trampling of acid mires by livestock can damage the fragile bog vegetation.	Where this occurs, consider (in conjunction with graziers) feasibility of methods to control more effectively the use of acid mires by livestock.
		Assess feasibility of fenceless collars for controlling the use of acid mires by livestock.
H21	Damage of some acid mires by wallowing deer, mainly during autumn the rut but also spring and other times in the year.	Assess the impact of deer wallows on acid mires and prioritise the most important mires requiring intervention for this. Identify potential solutions on a case-by-case basis.
H22	The smaller mires are particularly vulnerable to drought. Climate change further increases probability of weather extremes, including drought. Extended periods of drought lead to dieback of bog species and encroachment by bracken and a range of grasses or other plant species.	Identify individual mires most at risk of drought and consider feasibility of methods to increase water retention and resilience to drying out.
H23	The condition of mires can change rapidly with hydrological changes, livestock and deer access and vegetation encroachment	Work with land managers and partners to ensure regular monitoring of acid mires, particularly those that are identified as at risk.

Table 8. Priority / valued species of heathland habitats

Taxa	Species
Birds	Nightjar
	Skylark
	Dartford warbler
	Tree pipit
	Redstart
	Whinchat
	Linnet
Reptiles	Adder
	Slow-worm
	Common lizard
Invertebrates - moth	Emperor moth
Invertebrates - butterflies	Grayling
	Wall
	Green hairstreak
Invertebrates - beetle	Glow-worm
Invertebrates - bee	Bilberry bumblebee
Plants	Cowberry
	plants of acid mires

6.2.1 Opportunity for actions for nature recovery in heathland habitats

The Quantock Hills National Landscape benefits from large and cohesive blocks of heathland. These heathlands are largely part of the Quantock Common SSSI designation. As a result, much of the heathland is well connected. Some of the heathland areas in the southern Quantocks are more fragmented and isolated (see figure 56). Figure 56 also identifies buffer and stepping stone opportunities for heathland habitat.

As much of the heathland is adjacent to other priority habitat, such as ancient sessile oak woodland, there is limited scope to extend the heathland habitat. However, some of the oak woodland edge does support a ground vegetation that is a mix of woodland plants but also heathers and bilberry. This does provide some limited level of heathland connectivity through some of the woodland. Where opportunities arise to strengthen this connectivity through some tree thinning this may be considered in partnership with Natural England and other key stakeholders.

Large areas of former heathland were lost to conifer plantation in the middle of the last century and remnants of this vegetation still exist within the forestry areas. The National Landscape Partnership is working closely with Forestry England to convert some recently clear-felled plots into permanently open areas enabling heathland to regenerate. Initial works on this work at St Audries have been a success with some heathland vegetation returning and some keystone species such as Dartford warbler and nightjar breeding in these new open areas.

These areas are to be managed in plots on a rotation to control conifer regeneration but also so that there is always natural vegetation of different ages, some of which will be heathland and some of which will have young birch scrub. This mosaic of different

vegetation types and heights is exceptionally valuable in supporting a wide range of heathland, woodland, grassland and farmland species. These mosaics of different habitats allow species that depend on each of these different habitats to be able to disperse and extend their range into other core areas.

The National Landscape Team continue to work with partners such as Forestry England and the National Trust to explore opportunities for creation or enhancement of heathland corridors to connect the existing core areas.

Former heathlands which have been converted to grass pasture are often difficult to return to heathland due to the changes in soils that occur however the National Landscape Team is looking to work with farmers and land managers to pilot methods for the reseeding of former heathlands with harvested heathland seed mixes. .

Figure 55: *The bilberry bumble bee (Bombus monticola) is a priority species that depends on well-connected and diverse heathland*

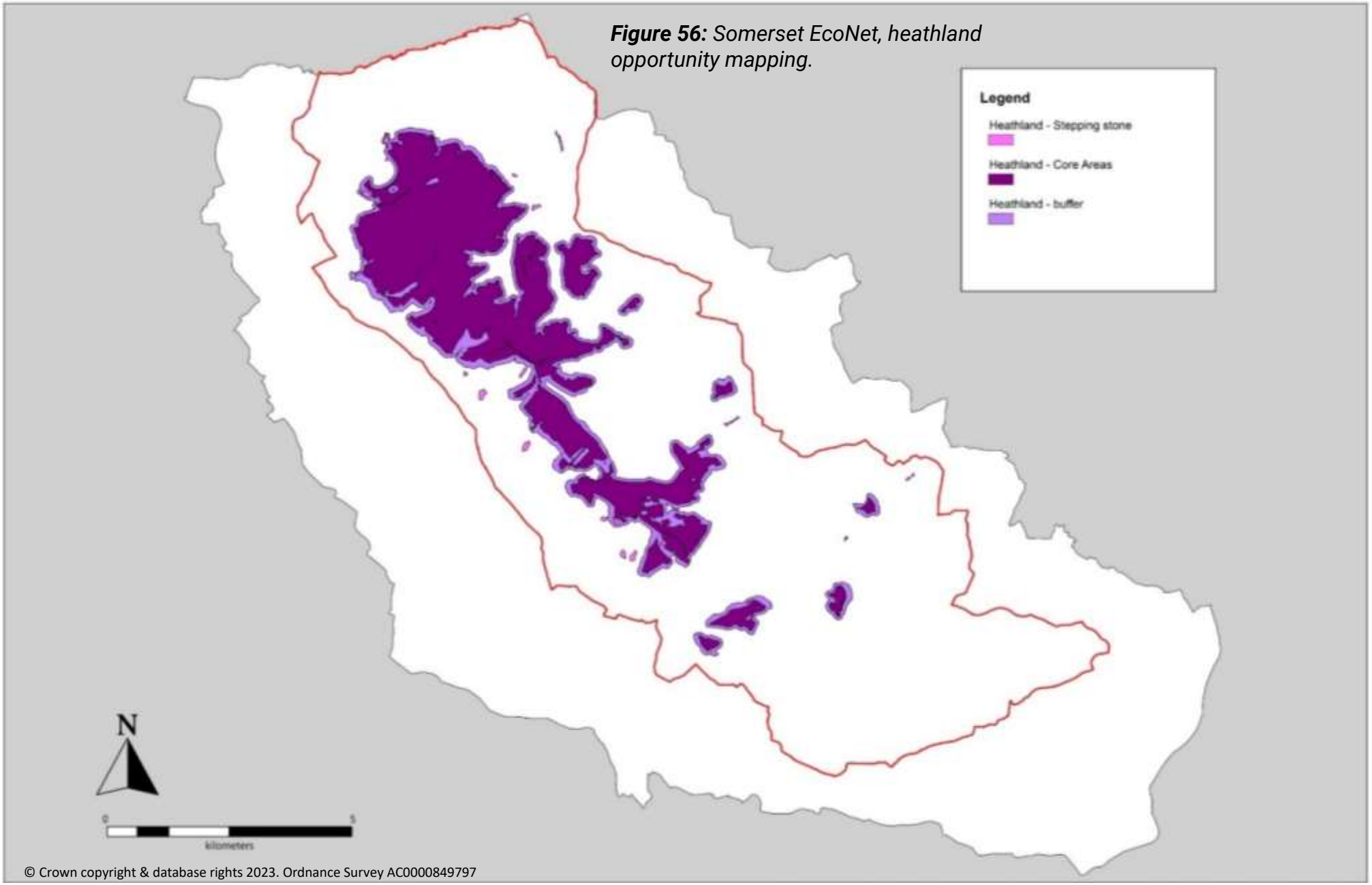


Figure 56: *Somerset EcoNet, heathland opportunity mapping.*

6.3 GRASSLAND PRIORITY HABITATS – ACTIONS, SPECIES, OPPORTUNITIES

Table 9. Actions for Nature Recovery in grassland habitats

Ref	Pressures	Actions for the National Landscape Partnership
Species rich grassland		
G1	Historical, significant loss of most species-rich or unimproved grasslands in Somerset and in many of the fringe areas of the Quantock Hills over the last 50 years. Grasslands included grazed pasture, hay meadows, or a combination of both. Many grasslands converted to arable or temporary grass leys. Ancient species-rich pasture and meadows sprayed off and reseeded with a limited range of more highly productive grass species.	Reduce any further losses by working with farmers through advice and networking with other farmers of ecologically rich grasslands. Signpost funding opportunities.
		Encourage farmers managing agriculturally improved grasslands to ecologically enhance at least a small proportion of that improved grassland, through changes in management or wildflower seeding projects.
		Encourage farmers utilising grass leys to revert at least a small proportion of that grass to permanent grassland and/or species rich grassland. Signpost or provide funding.
		Encourage farmers with arable land to convert at least a small proportion of arable to permanent and/or species-rich grassland.
G2	There is a huge opportunity here to get more of the grasslands of the Greater Quantock Hills area into a condition where it is delivering more for nature whilst still being agriculturally productive.	Provide support and advice to farmers to help to value the wildlife quality of their landholdings and the potential to improve this further with minimal cost or changes in farm practice.
G3	The data on the extent and quality of unimproved or species-rich grassland in the Quantock Hills is in places out of date or is inaccurate having missed important grasslands	Appeal to farmers to share information on extent of species-rich grasslands to build up a more accurate and up to date mapping of these habitats. This will enable more opportunities to reconnect isolated grasslands.
G4	Nationally 95% of traditional hay meadows have been lost.	Identify existing semi-improved meadows that still have potential for ecological enhancement.
G5	Nationally 85% of traditional hay meadows have been lost.	Identify existing semi-improved pastures that still have potential for ecological enhancement.

Ref	Pressures	Actions for the National Landscape Partnership
G6	Reversion to silage making (enabling more frequent grass cuts) has eliminated the capacity of the grassland to support many plant and animal species such as skylark, barn owl wildflowers and wide range of invertebrates.	Work with farmers to identify where silage fields are still only partly agriculturally improved and have potential for reversion to hay meadows.
G7	There remains an urgent need and high potential to recreate species-rich meadows or pasture.	Build on the work and lessons of the Greater Quantock Landscape Development Fund, Farming in the Protected Landscapes and the Quantock Landscape Partnership Scheme project on creating new meadows[13]
		Develop and promote a programme of enhancing existing semi-improved grasslands with appropriate seed mixes and support in partnership with farmers, local wildflower seed suppliers.
G8	Locally grown wildflower meadow seed is currently available but limited in quantity to support landscape scale reseeding	Work with current suppliers to increase wildflower seed production capacity.
		Provide funding, support or advice to farmers with maximising the biodiversity benefit of areas treated with wildflower seed.
G9	Regenerative farming approaches are becoming more commonplace in some of the core areas of Quantock Hills benefitting biodiversity and soil health.	Encourage more farmers to adopt regenerative farming approaches or at least low input & low pesticide approaches to grassland production. Continue to promote and support regenerative farming through farmer-led cluster groups & networks.
G10	Most grasslands (under any kind of management regime) lack the structural diversity that supports the most wildlife.	Provide advice and support on developing a small proportion of grasslands with different frequencies and/or timings of cutting/grazing to benefit different plant and wildlife species.
G11	Traditionally grazed grasslands on Quantock Common and other adjacent areas are being adversely affected by the spread of bracken.	Work with the commoners and other land managers to address the spread of bracken. Set targets for the treatment of bracken though rolling, cutting and other novel methods to reverse the loss of grassland to bracken in line with the Moorland Implementation Plan and the Quantock Hills Management Plan.
		Improve the monitoring of changes in the extent of grassland and bracken through trialling the use of drone technology.

Ref	Pressures	Actions for the National Landscape Partnership
G12	Some Quantock grasslands support nationally important populations of the very colourful waxcap fungi.	Promoting the value of waxcap fungi as indicators of important semi-natural grasslands.
		Encourage citizen science recording of waxcaps by local communities, on publicly accessible land, through further public engagement and training events.
		Trial the use of eDNA testing of soils to increase baseline data on diversity and distribution of waxcaps and other species that are target indicators.
G13	There are gaps in records of ancient grasslands (especially marshy grasslands) in the lowland and fringe areas of the Quantock Hills.	Encourage farmers and land managers and local communities to identify fields that may support old or species-rich grasslands.
		Help farmers and other people to categorise different types of grasslands and identify their species.
G14	Some old grasslands lack areas of bare ground that can support sun-basking animals such as adder, common lizard, and a range butterflies, beetles and other invertebrates.	Where necessary encourage creation or maintenance of small areas of bare ground in permanent pasture.
G15	There are few records of calcareous grasslands (which grow on alkaline soils). These are mostly located along the coastal belt where grassland grow in soils overlying limestone and also where there are small outcrops of limestone within core areas of the Quantocks, often revealed by the presence of old lime kilns.	Work with farmers and land managers to identify pockets of grassland that support wildlife typical of limestone grassland.
		Promote to the public some of the more attractive species found in limestone grasslands, to encourage further recoding of this habitat on publicly accessible land and rights of way.
Road Verges		
G16	Some road verges that have not been modified or sprayed for decades can support rich plant and animal communities. These are under threat from inappropriate management.	Follow on from the aspirations of the Quantock Landscape Partnership Scheme[14], to identify further verges that support rich plant and animal communities, with the help of local knowledge/expertise and community engagement.
		Work with farmers, land managers, Somerset Council Highways Team and/or residents to prioritise appropriate management of valuable verges.

Ref	Pressures	Actions for the National Landscape Partnership
		Develop local interest and 'ownership' of particular road verges through community involvement in surveying and monitoring.
		Encourage a wider awareness of highway verges among local communities.
		Work with Somerset Council's ecology team to update the 'Special Road Verges' register and map through site checks, potentially with the help of volunteers and local communities.
G17	There is a need to reverse the loss of species-rich grass verges	Pilot the enrichment of suitable grass verges with grassland wildflower seed mixes from local donor sites.
Field Margins		
G18	The area between grasslands and adjacent hedges or woodland are potentially exceptionally valuable areas for wildlife when managed sensitively. Tall grassy or slightly scrubby field margins can be managed by rotational cutting every 3-5 years. These should be at least 2 metres. This vegetation type is ideal for declining priority species such as hedgehog and harvest mouse which feed and nest in these areas.	Encourage farmers and land managers to take up SFI or countryside Stewardship payment options to manage field margins for wildlife.
		Encourage neighbouring farmers or land managers to collaborate to help build a network of connected grassy field margins across the landscape.
G19	By allowing these grassy field margins to remain uncut for 2-5 years such low scrub will develop. If this is cut back on rotation it remains in management control and creates grassy and scrubby vegetation of a range of heights, all supporting different wildlife. Much wildlife is supported in these areas including harvest mice, hedgehogs, reptiles, farmland birds, insects including brown hairstreak butterfly and many moth species. Most of these species are in decline	Promote to farmers and land managers the particular value of allowing a narrow strip of low scrub to develop in places along field margins, cut back every few years to keep under control. This simple procedure has immense value for wildlife.

Ref	Pressures	Actions for the National Landscape Partnership
Grassland in Parkland & Wood Pasture		
G20	Some historic parklands support a large proportion of permanent pasture of which some is ancient and species-rich. Areas of wood pasture also support these habitats (see also woodland habitats section above). Commercial pressures have led to some of these being ecologically degraded by overgrazing, under-grazing, or use of artificial fertilisers or herbicides.	Work with parkland owners/managers to continue the work of the Quantock Landscape Partnership Scheme, to record and map key habitat features and species within historic parklands.
G21	Areas of wood pasture can support a unique range of grassland flora and fauna.	Work with landowners/managers to record and map key habitat features and species within Wood Pasture
		Work with parkland owners/managers to encourage conservation management of parkland meadows or pasture to further enhance their unique value and connectivity with the wider landscape.
Grassland and Bats		
G22	Greater horseshoe bats roost in caves, tunnels and some old buildings, however some of their moth food prey are found in grasslands. The more diverse the grassland flora, the greater the range and number of moths. So, species-rich grasslands are essential for bats (preferring pasture in spring and meadows in summer[15]). The 85% loss of grassland has impacted bat populations too. Greater horseshoe bats also need to feed on dung beetles in grazed pasture. The indiscriminate use of Avermectin against livestock parasites has decimated this essential food source for larger bats using this pastureland. To reduce this impact livestock can be temporarily held in other areas, to allow dunging (with drug residues) to occur away from key bat foraging areas.	Work with farmers to encourage the conservation and enhancement of meadows and pastures
		Works with farmers and land managers to encourage collaboration to connect up valuable grasslands across the landscape.
		Where Avermectin-type drugs/pesticides are used by farmers encourage the treatment of livestock when livestock are held in housing or not in open grassland areas (i.e. avoiding where greater horseshoe bats forage on dung beetles).

Table 10. Priority / valued species of grassland habitats

Taxa	Species
Birds	Skylark
	Tree pipit
	Barn owl
	Yellowhammer
Mammals	Harvest mouse
	Brown hare
	Hedgehog
	Greater horseshoe bat
	Barbastelle bat
	Other bat species
Reptiles	Slow-worm
	Common Lizard
	Adder
Invertebrates - butterflies	A range of non -priority butterfly species including: Green hairstreak Marbled white Grayling Wall priority butterfly - brown hairstreak (needs field margins with young blackthorn)
Invertebrates - beetle	Glow-worm
Invertebrates, other	A wide range of pollinator species.
Plants	Various mosses & Lichens
	Orchids
	A range of uncommon/localised plants
Fungi	Waxcaps and related species

6.3.1 Opportunity for actions for nature recovery in grassland habitats

Priority grassland are species-rich, largely acid grasslands, growing adjacent to or in mosaics with heathland and grass-heath areas. Some of these are relatively fragmented but there are opportunities to reconnect them. Many of these areas are within the Quantock Common SSSI.

Figure 57: *Marbled white butterfly (Melanargia galathea) feeding on Greater knapweed*

Figure 60 shows the extent of priority grassland habitat within the Quantock Hills. It also shows the potential buffer areas where it would be most beneficial to extend species-rich rich grassland. The current stepping stone areas of existing priority grassland are very limited and the opportunities to extend the core acid grassland are generally limited due to the other adjacent priority habitats referred to above. The solutions to reconnecting the most valuable priority grassland habitats potential may lie with focussing on the extent of semi-improved (non-priority) grassland habitat and the opportunities to enhance that.

Figure 58: *Species rich pasture.(c) Sam Arthur*

The clifftop grassland and field margins along the north coast support pockets of species-rich calcareous grassland on the thin soils overlying limestone. Calcareous grasslands are uncommon within the National Landscape boundary due to the location of limestone bedrock largely only occurring in the north and coastal areas.

Due to the isolated and very fragmented state of calcareous grassland they possess limited capacity to support some of the more iconic wildlife typically found in larger areas of this habitat, such as the Mendip Hills National Landscape.

There are opportunities to build a more resilient and coherent network of calcareous grassland along the Quantock coastal belt, connecting eastward with species rich grasslands towards Hinkley Point and potentially beyond to Berrow, Brean and Weston to the limestone-rich Mendip Hills National Landscape.

Figure 59: *Bee orchid in calcareous grassland*

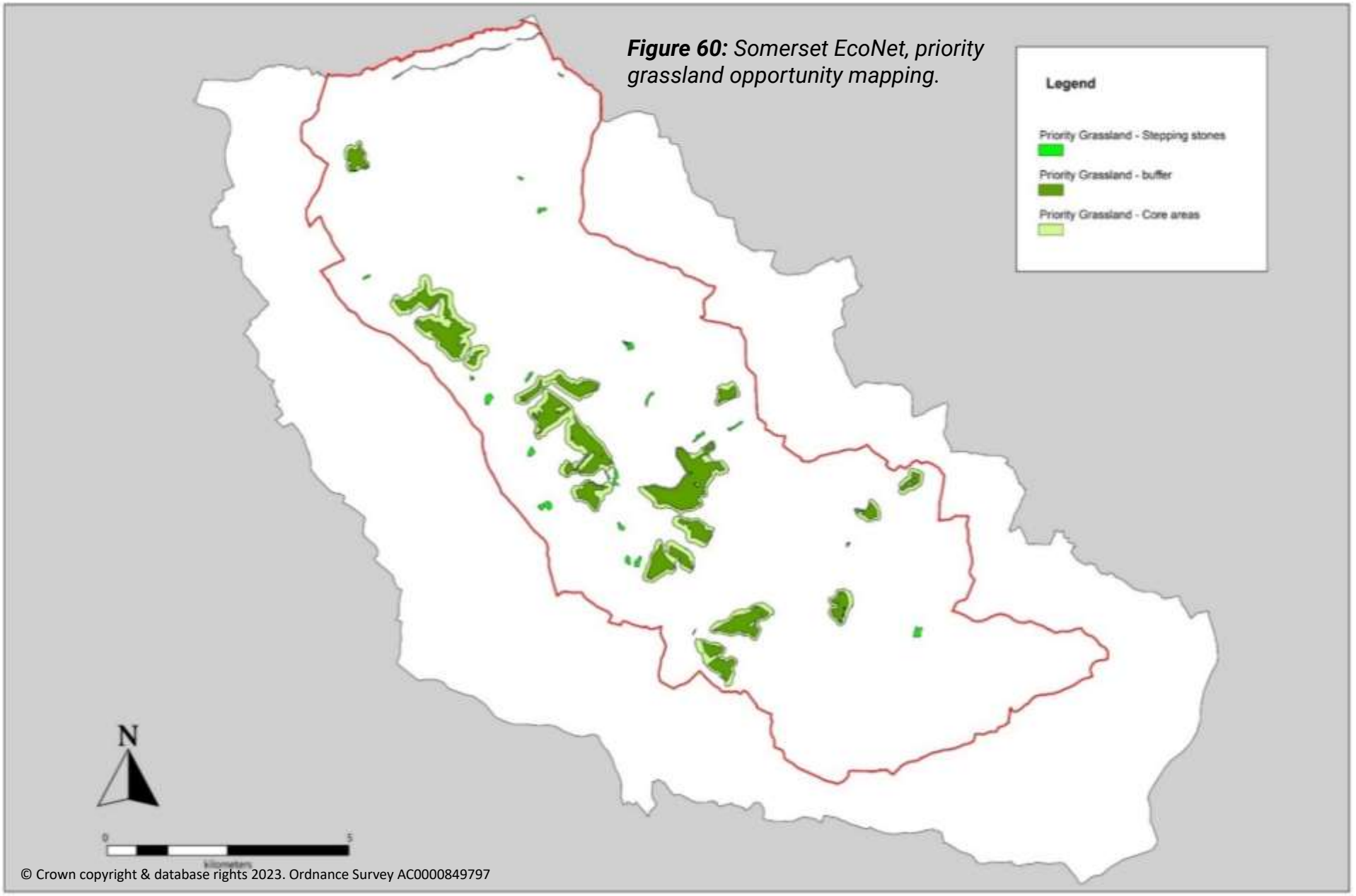


Figure 60: *Somerset EcoNet, priority grassland opportunity mapping.*

6.4 NON PRIORITY GRASSLAND

6.4.1 Semi-improved grassland

Semi-improved grassland is grassland that has received some level of conventional agricultural improvement such as some artificial fertiliser or reseeding but sometimes still supports a moderate to moderate to good variety of grass and broad-leaved species. These are much more widespread in the general countryside including in the Quantock Hills. They have some potential as stepping stone sites or corridors between the richer grasslands. With the right treatment and management (e.g. reducing fertiliser inputs or adjusting the timing of cuts/grazing) these grasslands can be significantly enhanced for floristic and invertebrate value. Providing the grasses are not dominated by competitive species such as rye-grass etc the introduction of locally sourced wildflower seed can be very successful. The use of plant plugs can also have a high success rate.

6.4.2 Improved grassland

Agriculturally improved grasslands are those where the previous vegetation is removed by mechanical and/or use of herbicides. A new grass sward is seeded using a limited range of fast-growing grass species such as rye-grasses. The use of natural or artificial fertilisers may be included and subsequent herbicide used if required. These highly productive grasslands support a much-reduced plant or animal life Even larger sized improved grasslands can support wildlife such as breeding skylark and meadow pipit, (although if silage is taken the high frequency of grass cuts destroys the nests).

This is partly because of the large and connected area of improved grassland and because even small changes across this landuse type would have far-reaching positive impacts on nature. Small modifications to current practices in agriculturally improved grassland can provide significant benefits for wildlife[16].

A range of minor measures could be introduced including enhanced field margins, legume rich grass leys, modified hedgerow management, field corner enhancement and a wide range of other changes. The scale of these enhancements can be tailored by farmers to match with their willingness to contribute to connecting their habitats to those of their neighbours and to improving their habitats, balanced with their commercial constraints.

Figure 64 shows distribution of grasslands, including semi-improved and improved grasslands as identified in the Quantock Hills State of Nature section. It can be seen that small

enhancements such as semi-natural grassy field margins to agriculturally improved grasslands would bring many miles of enhanced wildlife corridors between the core habitats of the Quantock Hills to the fringes of the National Landscape and beyond. Many farmland species would benefit including the glow-worm, a priority species.

Figure 62: *Glow worm found in tussock grasslands*

Tussocky field margins can also provide habitat for a range of small mammals such as voles but also priority species such as hedgehogs, harvest mice and dormice (see below). By allowing the grassy field margins to grow uncut for approximately 3-5 years tussocky grassland species will form the ideal vegetation structure for small mammals. Sections of tussocky field margins are cut on a 3-5 year rotation to maintain the habitat as grassland.

Figure 63: *Harvest mouse and dormouse nests in cock's-foot tussocks © Laura Snell Cornwall Wildlife Trust*

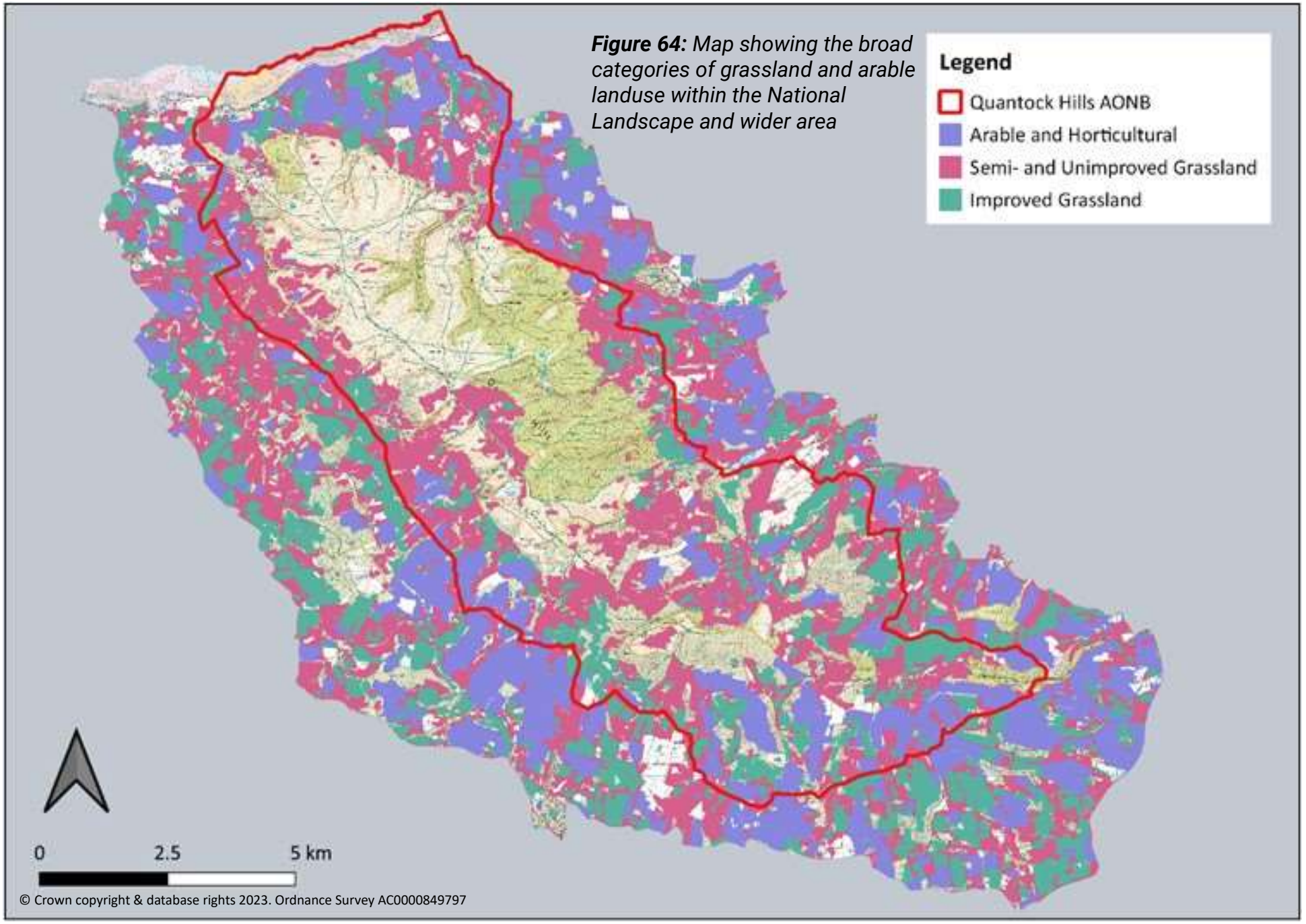


Figure 64: *Map showing the broad categories of grassland and arable landuse within the National Landscape and wider area*

6.5 Other Valuable Habitats

The Nature Recovery Plan intentionally focuses on the major habitats across the National Landscape i.e. those falling into the very broadly defined categories of woodland and woody habitats, heathland habitats and grassland habitats. Together these habitats do cover a significant proportion of the landcover of the Quantock Hills National Landscape.

There is now an urgent and paramount need to address nature recovery at a landscape scale to make the most significant difference in reversing the historical decline of key habitats, and to make the best use of funding opportunities as they arise. Focussing on these habitats will enable the greatest impact.

However, there are other valuable habitats present within the National Landscape that are not covered within the Nature Recovery Plan. There are various reasons for this including lack of cohesive or up to date data, insufficiently developed conservation strategies, or the small size or relative importance of certain habitats.

Habitats falling into one or more of these categories include: streams, ponds, wetlands, unimproved arable fields, coastal littoral zone and coastal cliff habitats[17]. This does not mean that these other habitats were previously or will in the future be excluded from nature recovery activities. They just do not currently feature in this document.

For those habitats where there is poor data and mapping on the different vegetation types, physical conditions and species present opportunities to increase the baseline data and high-resolution mapping will be sought.

For those habitats where the National Landscape team has limited influence or where there are insufficiently developed and documented conservation strategies, this will be addressed where appropriate in partnership with relevant organisations and land managers.

Figure 65: *Ponds and other waterbodies are key habitats within the Quantock Hills National Landscape which could provide nature recovery opportunities.*

6.6 Arable & other Intensive Farming Systems

The historical increase in intensive arable farming and the conversion from other farming types over recent decades has led to significant loss of a range of semi-natural habitats including meadows, pasture, traditional orchards, woodlands, copses and hedgerows. Whilst habitat loss and fragmentation has been high, arable farming remains an important and highly productive part of the local economy.

Arable and other intensive farming still continue to support some valuable habitats and wildlife. As with agriculturally improved grassland referred to above, there is also the greatest potential to further enhance the wildlife value of conventionally farmed arable land.

"This nature recovery plan does not aim to turn the clock back on agriculture, but to work with farmers and land managers to enable more habitats and wildlife to co-exist with conventional farming practice wherever possible"

Intensively farmed arable land can support valuable wildlife such as breeding skylark, lapwing and overwintering finches or buntings utilising fodder crops and stubble. There are excellent opportunities to boost the range, quality and connectivity of habitats on the boundaries of arable land with little or no economic impact.

Figure 66: *Skylark plots in arable land are simple to create and increase skylark breeding success due to improved food sources within the plots. Photo: Mark Hamblin. RSPB-images.com*

Simple steps to improving wildlife on arable / intensive farms:

- ✓ Wider grassy field margins ideally cut on a 2 to 3-year rotation allowing taller grasses and low scrub to develop.
- ✓ Trim hedgerows on a-2 3-year rotation to allow some bushier growth, good flowering/ fruiting, but kept under control by the rotational trimming.
- ✓ Some winter stubble
- ✓ Some spring sown crops
- ✓ Some summer sown crops
- ✓ Crop rotations that provide some food resource (seeds or invertebrates) at all times of year.
- ✓ Sown narrow strips of bird seed mixes.
- ✓ Skylark plots.
- ✓ Identify opportunities for previously removed hedgerows to be replaced again where this does not impact on commercial operations.
- ✓ Plant and protect trees in hedges
- ✓ In-fill plant hedgerow gaps with a diverse mix of native hedge shrubs, trees and climbers.

All of the above enhancements and a large range of other initiatives can attract funding from the Environmental Land Management Schemes such as Countryside Stewardship. See[18] Technical annex: The combined environmental land management offer - GOV.UK (www.gov.uk), which is in addition to any previous recent agreements already in place.

These enhancements can be tailored to suit different types or sizes of land use and different preferred levels of intervention or impacts on farm operations.

Figure 67: *Harvest mouse (Micromys minutus) breeding in a tall grassy field margin ©Anna Dean*

Figure 67 shows some of the main areas within the national landscape boundary that would benefit from enhancements to arable and other intensive farmland. With the farmland outside of the National Landscape boundary having a higher proportion that is more intensively managed initiatives and actions here would have a significant positive impact as well as link the Quantock Hills with the wider landscape.

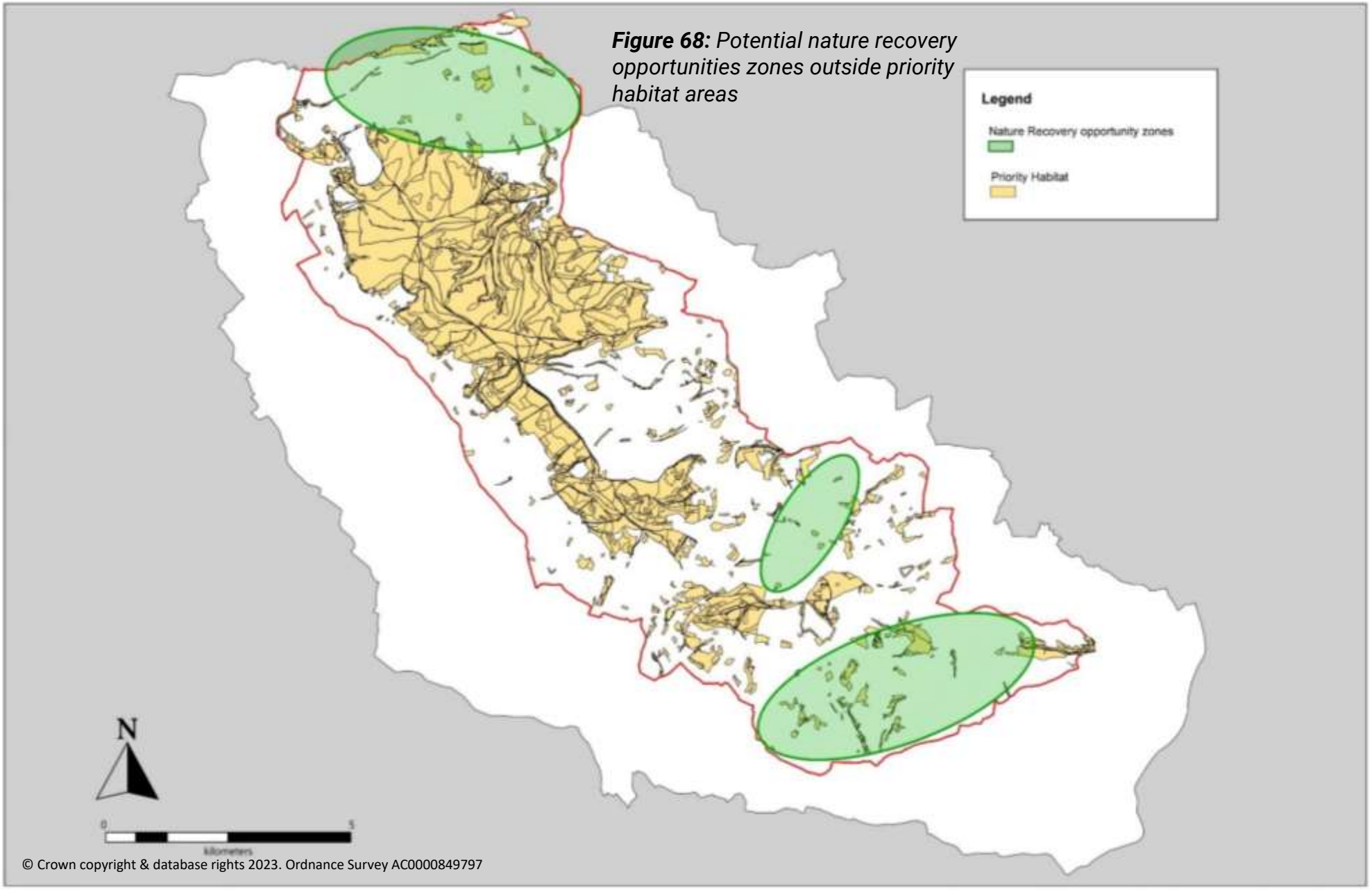


Figure 68: *Potential nature recovery opportunities zones outside priority habitat areas*

7 NATURE RECOVERY BEYOND THE QUANTOCK HILLS

While the Nature Recovery Plan is concerned with the National Landscape, it needs to recognise the importance of the linkages and corridors with the wider landscape. As such the National Landscape Partnership should ensure that where opportunities existing to enhance nature recovery across the boundary of the National Landscape that these should be taken.

Already the National Landscape Team is taking this approach through collaborative working with partners such as Somerset Council (Somerset Tree Strategy) and neighbouring protected landscapes such as Exmoor National Park and Blackdown Hills National Landscape.

A key opportunity exists through prioritisation of enhancement and creation of habitat corridors to the Brendon hills. These are located between the protected landscapes of the Quantock Hills and Exmoor National Park. There is significant potential to better connect the countryside of the Quantock hills and land to the west of the boundary including the Donniford river valley and West Somerset Vale. If succeeded this would strengthen landscape connectivity with the landscapes of West Somerset and Exmoor National Park.

Similarly an opportunity to work with partners to promote nature recovery actions in the Vale of Taunton, connecting the Quantock Hills to the Blackdown Hills National Landscapes. This presents benefits to engage with significant populations in the settlements of Taunton and Wellington. Figure 68 identify the zones of interest for the National Landscape Partnership in relation to nature recovery beyond the boundaries of the Quantock Hills.

Another mechanism to influence nature recovery in the wider landscape is through the emerging Somerset Local Nature Recovery Strategy. These are statutory documents to be produced by Responsible Authorities (Somerset Council) will agree the priorities for an area and identify practical, achievable proposals to restore nature. The National Landscape Team are a key partner and it is acknowledged that the Nature Recovery Plan will feed into the LNRS in a greater depth to allow linkages to be made with proposals and initiatives outside of the National Landscape.

A key opportunity exists through the farmer cluster group. Many members manage land on the fringes or outside the Quantock Hills presenting opportunity to include these members in initiatives that can operate outside the National Landscape. For example, the previous Greater Quantock Landscape Development Fund provided grant funding to landowners outside of the National Landscape – the Fund area was three times the size of the National Landscape and included an area of West Somerset and Sedgemoor – and this could be targeted towards nature recovery actions. In this example the National Landscape Team delivered the fund but in future the Team may influence or support other organisations in the delivery if appropriate.

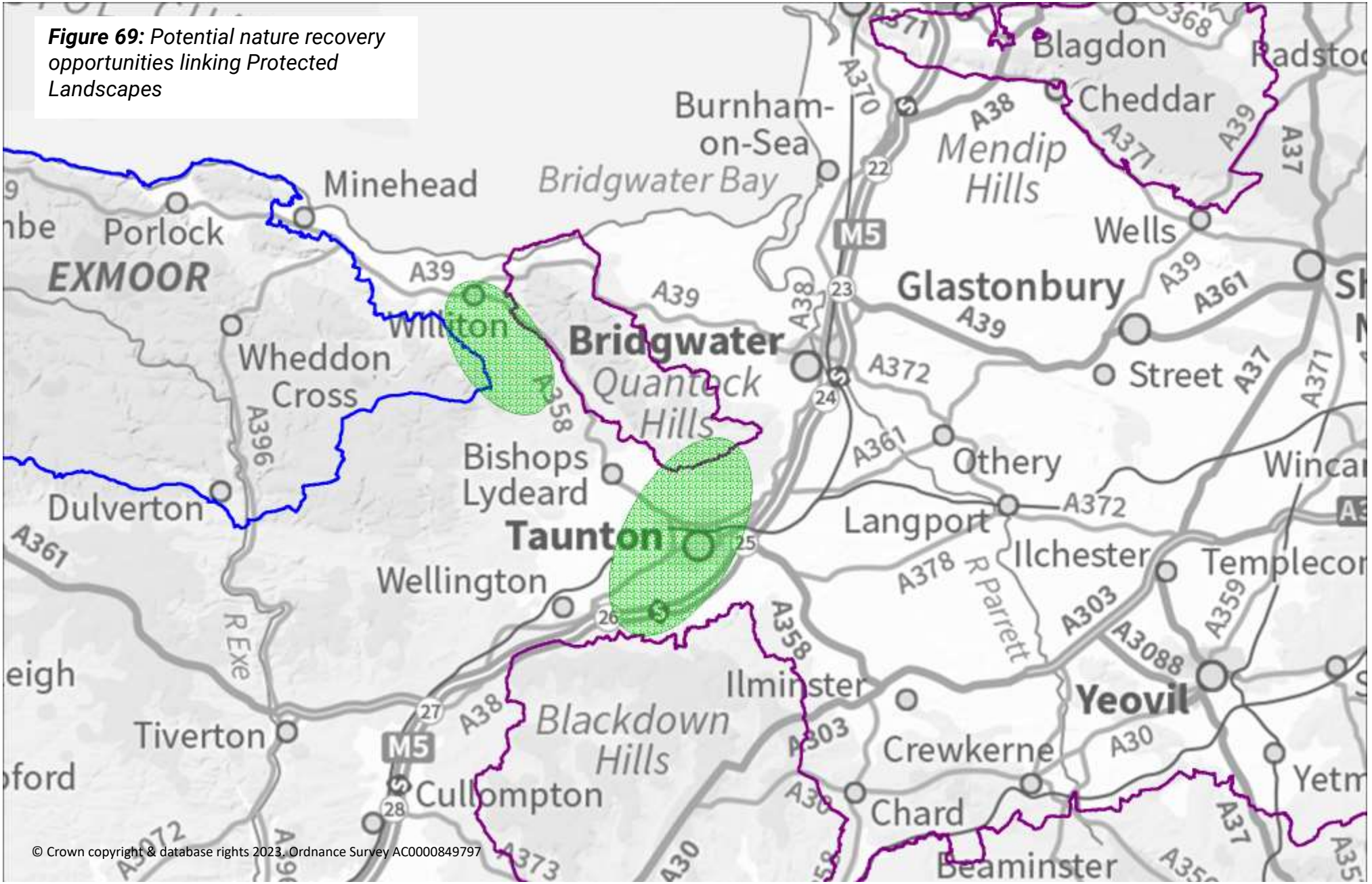


Figure 69: *Potential nature recovery opportunities linking Protected Landscapes*

8. CASE STUDIES

Section 6 identifies the actions and activities the Partnership need to take to achieve Nature Recovery within the Quantock Hills National Landscape. The following case studies identify projects that have been undertaken by partners within the last ten years that have delivered actions for nature recovery.

No individual farmer / landowner case studies are identified here but the impact of actions by farmers and land managers needs to be recognised. Either as part of their farming systems or through agri-environmental funding such as Countryside Stewardship, farmers collectively in the National Landscape have achieved significant positive action for nature. The latest figures (2021) show that 39% of the National Landscape, or 56% of the usable agricultural land, is within agri-environment schemes.

The case studies provide examples of how partners have and can work collaboratively to achieve nature recovery, potential funding sources and considerations for maximising benefits for nature into the future.

CREATION OF SPECIES-RICH GRASSLAND

The Quantock Hills National Landscape Team supported a farm to enhance its grassland to create species-rich pasture.

Funding was through the National Landscape's Farming in Protected Landscape (FiPL) scheme and supported purchase of local wildflower seed from another Quantock Hills farm, and livestock fencing.

Guidance was provided on application of seed and subsequent management.

Quantock Hills National Landscape

Department for Environment Food & Rural Affairs

Farming in Protected Landscapes programme

RESULTS

The plants are establishing well and continue to increase.

The sensitive management of livestock numbers and timings of grazing are enabling good benefits to further germination of new species, flowering success, seed production and a range of different vegetation heights.

Increased Invertebrate abundance and diversity is already evident.

More bird's-foot trefoil plants

Larval foodplant for common blue and green hairstreak butterflies

BIODIVERSITY IMPACT

- More plant species
- Introduced yellow rattle reduced grass competition
- More butterfly & other insect species
- More year-round food for farmland birds
- More predator species
- Increased resilience to effects of climate change
- A stepping stone between core habitats
- Supports the B-Lines project for pollinators

NATURE RECOVERY

"The greatest value of this project has been the success of this landowner in helping to strengthen connections between other existing core habitats including part of the Quantock Hills SSSI, the Ge-Mare Farm Fields SSSI and part of the Exmoor & Quantock Oakwoods SAC. "

AGRICULTURAL IMPROVED GRASSLAND

In March 2024 the Quantock Hills National Landscape Team took ta over management of New Stowey Farm, a 45Hs pastural farm, on behalf of Somerset Council.

The partners aim to restore nature through utilising regenerative agricultural systems, to use the farm to demonstrate this in farming systems and to provide opportunities for engagement and training for communities.

Quantock Hills National Landscape

Somerset Council

More insects

Greater abundance of prey for Yellowhammer young and Barbastelle bats

OBJECTIVES

Improve grassland biodiversity including increases species, soil organic matter

Improve hedgerow biodiversity through varied management techniques such as laying, coppicing, increasing widths, increase number of hedgerow trees

Improve woodland and tree biodiversity through increasing broad-leaved woodland cover, orchard creation, planting of in-field standard trees, increase range of species

Improve wetland biodiversity through pond restoration and creation, creation of marsh / flood margins to waterways and install natural flood management systems

BIODIVERSITY OBJECTIVES

- More plant & tree species
- Introduced yellow rattle reduced grass competition
- More butterfly & other insect species
- Enhanced habitat for bat species
- More predator species such as owls
- Increased soil carbon stock and stores over holding
- Connectivity to adjacent farms / habitats
- Supports the B-Lines project for pollinators

SECONDARY OBJECTIVE

- Provide volunteering opportunities
- Increased access opportunities
- Rural skill training site
- Local community led activities

HEATHLAND / GRASSLAND CREATION

A partnership between Forestry England and the National Landscape Team has undertaken acidic grassland / heathland creation on 18Ha of land which was previously conifer plantation. Forestry England included the land as open space in their Forest Management Plans and removed the conifer with the National Landscape Team securing funding from HPC s106 agreement for priority habitat creation / enhancement.

Quantock Hills National Landscape

Forestry England

Quick colonisation by heath plant species

Greater abundance of seeds and prey for green tiger beetles and Dartford Warblers

MANAGEMENT ACTIONS

Removal of conifer trees by Forestry England

Stump grinding to allow for future management such as toppin

Windrowing brash to create bare areas, with woody debris micro-habitats

Cut & collect on re-growth to reduce nutrient levels

Invasive species removal especially of rhododendron

BIODIVERSITY OBJECTIVES

- Change of habitat from conifer plantation to acidic grassland / heathland
- Increased diversity of plant and animal species
- Connectivity of priority heathland beyond core area of Quantock Common
- Reduction of invasive species e.g. rhododendron

CONTINUING MANAGEMENT

- Exploring grazing options with neighbouring landowners to create larger management blocks
- Cut & collect

HEATHLAND ENHANCEMENT

In 2002 the Quantock Commoners Association started a Countryside Stewardship Scheme to conserve and enhance the heathland of the northern part of Quantock Common, an area approximately 1,585Ha in extent.

Led by the Quantock Commoners Association with support from the National Landscape Team, the National Trust and FWAG-SW the scheme was, at the time, the largest heathland CS scheme in the south-west.

Quantock Hills National Landscape

Quantock Commoners Association

MANAGEMENT ACTIONS

Restored or installed stock fencing along xxkm commons boundary

Enhance grazing regime through reducing stock numbers in winter and introducing cattle grazing

Improve heathland structure through agreed scrub control programme (cutting, swaling)

Cutting and treating of approx. 120Ha of Rhododendron

Spraying, bruising and cutting of approx. 800Ha of bracken (where dominant).

Cutting of scrub / tree cover including holly and birch

BIODIVERSITY OBJECTIVES

- Increased extent of species of interest (heath)
- Increased diversity of age structure of heath plant species
- More butterfly & other insect species
- Increased soil carbon stock and stores over holding
- Connectivity of priority heathland across Quantock Common
- Reduction of invasive species e.g. rhododendron

More insects & spiders

Greater abundance of prey for adders and nightjars

CONTINUING MANAGEMENT

- Enhanced grazing including diversifying stock
- Scrub (tree) management and removal
- Continued scrub management through cutting / burning
- Invasive species control e.g. rhododendron

WOODLAND ENHANCEMENT

With funding from the Green Recovery Challenge Fund the National Landscape Team undertook or funded woodland enhancement across three different woodland sites in the Quantock Hills including mixed ash broadleaved, sessile oak dominated and conifer plantation. The projects aimed to increase the resilience of existing areas of core woodland as well as expand the extent of woodland.

Quantock Hills National Landscape

Department for Environment Food & Rural Affairs

MANAGEMENT ACTIONS

Removal of conifer trees by Stowey Green Spaces Group from Stowey Woods

Thinning of holy from 165Ha of sessile oak woodlands (Special Area of Conservation) in the northern combes of Quantock Hills.

Thinning 2Ha of dominate species such as sycamore / beech in mixed ash woodlands at Cothelstone Hill.

Planting 2Ha of new mixed broadleaved woodland to join existing woodland areas at Cothelstone Hill.

BIODIVERSITY OBJECTIVES

- Increased diversity of tree species in existing broadleaved woodland
- Conversion of conifer to broadleaved woodland
- Connectivity of priority woodland habitat
- Reduction of dominate / invasive species e.g. holy rhododendron

Increase light to woodland benefits lichens

Wood anemone provides food for many insects / fly species

CONTINUING MANAGEMENT

- Pursue woodland corridors between existing woodland areas
- Continue to remove conifer and replant with diverse broadleaved species
- Increase tree species diversification in existing woodland

NATURE RECOVERY CASE STUDY: Cirl Bunting in Somerset.

Cirl buntings were once a common bird thriving in the mixed coastal farmlands of the south of England. Numbers declined due to habitat and food resource loss arising from conventional agriculture. In the 1990's the species almost became extinct with only few pairs breeding in south Devon. A species recovery programme called "Back From the Brink' worked with farmers to integrate those missing habitats features into conventional agriculture, saving the species from UK extinction. Introduction of the birds to Cornish and other Devon sites has enabled further but limited spread of breeding populations.

Cirl buntings gather in flocks often with linnets, during winter and they are increasingly recorded wintering along coastal farmland in Somerset (see RSPB data below).

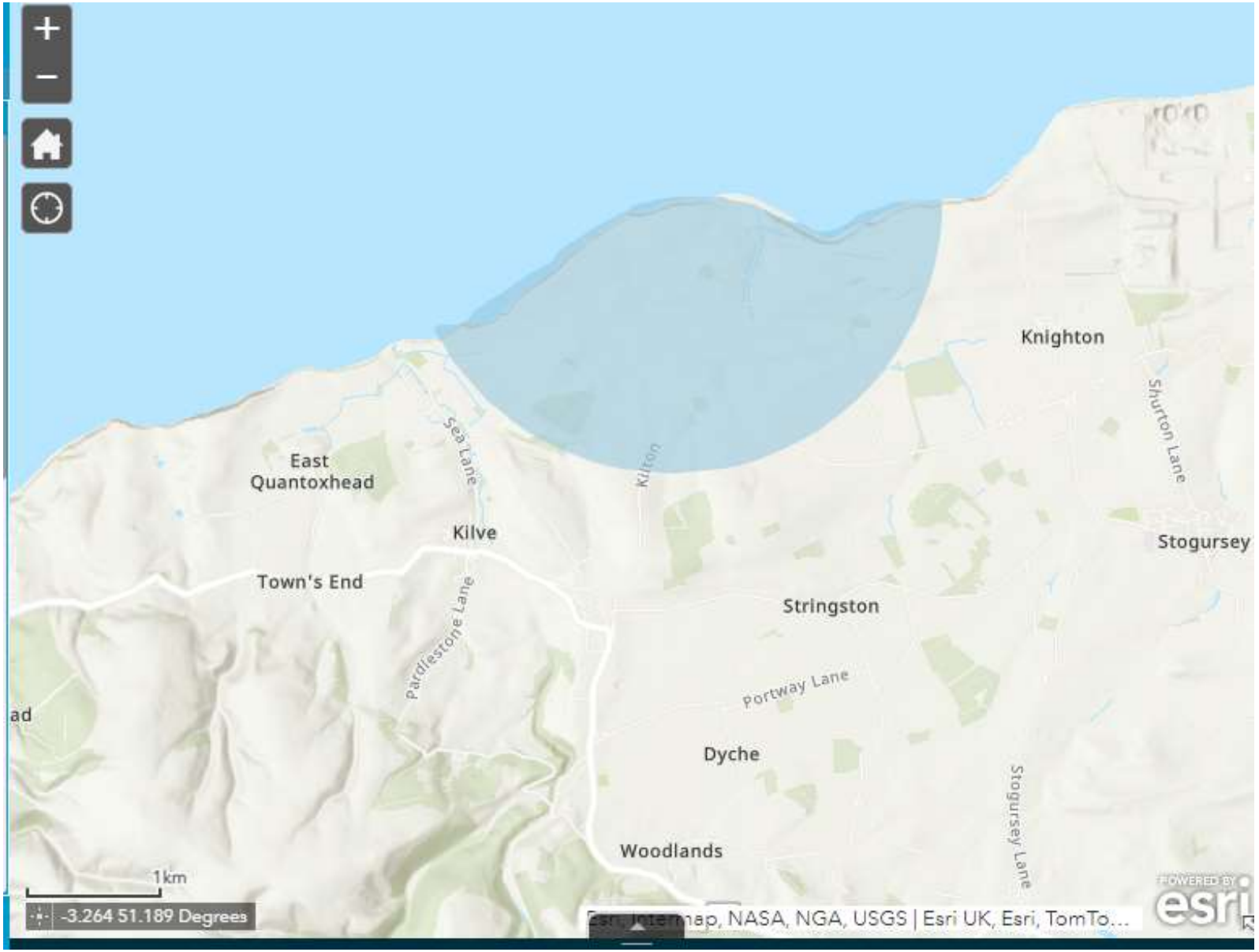
If the right farmland habitats and features are created along the coastal belt of the Somerset coast within the National Landscape boundary and also further westwards and eastwards along the coast this would increase the area's capacity to support wintering birds. There is also potential for cirl bunting to develop viable breeding populations along the Somerset coast.

Figure 70: *A flock of wintering linnets along the Somerset coast*

The Quantock Hills National Landscape Team has started approaching land managers along the coastal belt to undertake actions favourable to Cirl Buntings in terms of habitat and foraging areas. Through dedicating resource to source funding the Team will be able increase its collaborative work with farmers and other partners to support the wintering cirl bunting population and to encourage a viable breeding population.

As with many projects, success for the Cirl Bunting will provide additional benefits to a wide range of other farmland wildlife.

Figure 71. *Cirl bunting wintering zone between Kilve and Hinkley Point. Courtesy of RSPB. The map below identifies Cirl Bunting potential wintering zone (blue shading) with a 2km buffer.*



NATURE RECOVERY CASE STUDY: Pollinators in arable farmland

Wild pollinators in the UK include bumblebees and other bees (250 species), butterflies and moths (2,200 species), flies (6,700) and various other insects such as beetles, wasps and thrips.

The loss of pollinators due to habitat loss is a concern both economically and environmentally on a national scale. The National Pollinator Strategy for England[19] sets out a 10-year plan to help pollinating insects survive and thrive across England. It outlines actions to support and protect the many pollinating insects which contribute to our food production and the diversity of our environment.

Buglife, a national charity has developed proposed network across the UK, called B-lines, to reconnect the landscape for pollinators. [20] B-Lines are a series of 'insect habitat corridors' running through our countryside and towns, which potentially link existing wildlife areas together, creating a network across the UK landscape.

Pollinators can still thrive within a conventionally farmed landscape and disperse between landscapes if some pesticide-free habitat corridors are created or retained and they are connected to other adjacent wildlife corridors

Figure 71 shows the B-line network that links the Quantock Hills to the coastal landscape, to Exmoor National Park, the Mendip Hills National Landscape and the Blackdown Hills National Landscape. The two subsequent maps show the optimal routes through the Quantock Hills to create the local links necessary. These optimal routes generally include areas of existing high-quality habitat such as woodland or heathland, however this is not sufficient as many pollinators are dependent on grasslands and other farmland habitats. For this reason, the help of the arable and other conventional farming community is requested.

The Quantock Hills National Landscape Team will prioritise areas within these B-Lines when taking forward projects or initiatives that are beneficial to pollinators.

Figure 72: *Part of the national B-Lines interactive mapping showing importance of the Quantocks in linking other Protected Landscapes*[21]

9. ENGAGEMENT & AWARENESS RAISING

9.1 Farmers and land managers

The National Landscape team has always worked closely with the local farming and land management community and organisations such as the Farming & Wildlife Group (FWAG), Quantock Commoners Association (QCA), Country Land and Business Association (CLA) in partnership to protect the special heritage and wildlife of this important working landscape. This partnership is more important than ever to ensure that the farming community is supported and listened to.

With the government's ELMS funding now launched, incorporating Countryside Stewardship, SFI and other payment schemes, the financial support is now in place to reward farmers and land managers to carry out work that significantly benefits the habitats and wildlife of the National Landscape area.

The Quantock Hills National Landscape Team will further consult with and liaise with the farming community and related organisations to ensure that there is a joined-up approach to environmental improvements. This will involve farmers aiming to ensure that there are links between works on their landholdings with other neighbouring landholdings. This landscape scale approach is particularly important to ensure that the habitats created or managed are well connected across the landscape whether this is woodland/woody habitats, heathland habitats or grassland habitats.

The Quantock Hills National Landscape Team's Farming in Protected Landscapes (FiPL) programme has supported farmers and land managers with a wide variety of projects over the last three years. There are four main themes to this programme: Nature, Landscape, People & Place. Many projects have met the Nature theme and their outcomes have contributed to the National Landscape Team's work towards nature recovery. The FiPL programme also helps to connect farmers with each other with different approaches. It has already developed a successful and growing farmer-led cluster group for regenerative farming to share good practice such new innovations in soil health and nature-based solutions.

Figure 73: *A site visit of the Quantock Cluster farmer group looking at regenerative farming systems.*

The National Landscape team plans to develop other cluster groups in collaboration with the farming community, where there is demand. This will be expanded to cover landscape scale nature recovery and other topics where farmers can actively collaborate.

The Quantock Hills National Landscape Team have often worked with partners to provide farmers and land managers with events to share the nature recovery vision and to set out how farmers can play their part and attract different types of funding. This sharing of good practice is valuable allowing farmers to realise funding opportunities but also allows collaborative working.

As well as core events the FiPL programme has allowed a series of events for farmers and events by farmers for the wider public. The National Landscape Team will continue to organise events for farmers to share good practice and address constraints and solutions for nature recovery in farming. More farm events will also be organised to foster more understanding in the public of the varied work and challenges for farmers.

The work of the Quantock Hills National Landscape service is governed by the National Landscape Partnership, formerly constituted as a Joint Advisory Committee. The partnership includes representatives from a wide range of organisations and interests, including representatives from the farming and land management community.

The Quantock Hills Partnership and Team are fortunate to have good working relationships with a number of farmer led organisations, such as FWAG-SW, and will continue to promote event opportunities to its farming community from these organisations.

Figure 74: *A public 'meet the farmer' event at Lilstock to learn about technological innovations being used to reduce fertiliser inputs and increase soil health.*

9.2 Community Engagement

Whilst the Quantock Hills National Landscape is a working landscape of farming, forestry and other enterprise it provides many opportunities for people to enjoy nature. From the scenic beauty of travelling through, to exploring in more depth, the Quantock Hills has long been a place that people come to engage in nature. With nearly 30% of the National Landscape being designated Open Access Land and over 241km of rights of way there is ample opportunity to explore the Quantock Hills.

However we know from visitor and user surveys undertaken by the National Landscape Team that there is a significant proportion of the population within our catchment that do not access the Quantock Hills. With the overwhelming evidence of the positive impact of emersion in nature of both mental and physical well-being it can be seen that engagement with an increased diversity of the population within out catchment will be beneficial. As well as beneficial to the individual, through an understanding of nature, communities will develop a greater appreciation of nature and its role and public benefit.

Agri-environment funding such Countryside Stewardship, available to farmers and other land managers is public money. While access enhancements have long been fundable from agri-environment schemes the recent changes to funding Government have moved towards the concept of public funds to pay for public goods. Access to nature is a public good and significant numbers of farmers / land managers have looked at opportunities to increase access for the public.

One of the roles of the National Landscape Team is engagement of the wider public to inform and enthuse them about the special qualities of the Quantock Hills, which of course includes its nature. As such for many years the Team have undertaken projects, such as the Quantock Education (QEd) project, which engage the

Figure 75: *A public event organised by the National Landscape's FiPL Officer to highlight different approaches to farming*

communities within the catchment of the Quantock Hills. This has been supplemented with events programmes. Recently the National Landscape led Quantock Landscape Partnership Scheme (QLPS) has successfully delivered significant engagement projects working with communities both inside and outside the Quantock Hills and has targeted groups that have not previously visited or had an awareness of the Quantock Hills.

Figure 76: *QLPS events have included Quantock experience days for communities in neighbouring urban centres such as Taunton and Bridgwater*

Somerset Nature Connections is a partnership project between the three main Somerset National Landscapes (Quantock Hills, Blackdown Hills and Mendip Hills) and Somerset Wildlife Trust. It has utilised nature to work with people with poor mental health and well-being. The project has been incredibly successful and the National Landscape Teams are currently identifying mechanisms to bring the activity into their core work.

Figure 77: *Participant on Somerset Nature Connection event, where activities are based on the five pathways to wellbeing.*

Citizen science is a valuable and efficient way of obtaining large amounts of data about habitats and wildlife, which can contribute to baseline data and to monitoring local populations of particular species. Not only is this inclusive but it provides everyone with the opportunity to take more responsibility for conserving our biodiversity heritage. The National Landscape Team have a core biodiversity monitoring programme that includes adders, bats, butterflies, deer, dormice, nightjars and pied flycatchers. The Team also commission or work in partnership to undertake other biological monitoring such as the Summer Heathland Breeding Bird Survey, which occurs every six years.

In 2022 the National Landscape Team worked in partnership with the Friends of the Quantocks to launch the Quantock Wildlife Watch Project. Using iNaturalist - A Community for Naturalists · iNaturalist - the project encourages local communities and visitors to collate sightings of nature that they see within the Quantock Hills using a smartphone / tablet app. In the 18 months the initiative has been active it has logged nearly 11,000 observations of 2,128 species. The teams have found the use of digital apps has been particularly successful at engaging younger people, often sparking the first interest in nature.

Through the projects and initiatives, it is apparent that there needs to be dedicated engagement resource to build upon the success of the QLPS and other projects such as Somerset Nature Connections.

9.3 Visitors and Users

The number of people accessing the Quantock Hills National Landscape is increasing with the last User survey in 2018 estimating number of visits at 1,500,000 per year. The Quantock Hills have significant areas of open country most of which is designated as access land through the Countryside & Rights of Way Act (CROW Act) 2000. These open access areas are valuable in enabling people to enjoy the dramatic landscapes that are characteristic of the Quantock Hills. However heavy use of these areas by visitors and users has the potential to not only spoil the peace and tranquillity but also cause damage to habitats and disturbance to wildlife.

Whilst some wildlife can be tolerant of disturbance, much wildlife, including some of the area's rarest species are highly vulnerable to disturbance at certain times of the year particularly during the breeding season. Particular groups of wildlife that are susceptible to disturbance are:

- Ground nesting birds such as skylark and nightjar in open commons or wood warbler and willow warbler can be easily deterred from breeding in disturbed areas. The presence of dogs off leads adds a significantly higher level of disturbance or even harm to these birds and their young.
- Reptiles such as adder need to bask undisturbed in order to heat up to be able to function. Disturbance leads to them taking cover in denser vegetation or underground. If this occurs frequently the reptiles are too sluggish to hunt for food and risk starvation.

There are various mechanisms that are designed to reduce the impact of disturbance by users / visitors on wildlife. One of the most important is the control of dogs. Through the CROW Act 2000 dogs are required to be kept on leads on Open Access land. Whilst many dog owners abide by this, a significant number are either unaware of the impacts during the breeding season or the legislation.

There are two aspects to managing visitors and users, the first being engagement and the second the use of legislation. With regard to engagement of visitors and users the National Landscape Team have staff and volunteer roles dedicated to undertaken this and it continues to be an important aspect of its work with the Team looking to increase resource allocated to its engagement work.

When it comes to the use of legislation, the National Landscape Team is not an enforcement body, such as the police or Natural England. The Team does work with and through these enforcement organisations by provision of information and by lobbying for enforcement resources to target the main issues.

10. QUANTOCK HILLS CHAMPION SPECIES

The National Landscape Partnership has selected a number of Champion Species that represent the 3 broad habitat categories. These species will typically but not exclusively be Priority Species, iconic, charismatic or particularly well-known species. These species were selected through a consultation process undertaken in 2023 with a range of stakeholder organisations. Whilst these species will be used to help engage public interest in the Quantock Hills a wide range of other habitats and species will also be highlighted as our nature recovery planning and partnerships develop.

Public interest and support in conserving and enjoying nature is essential. We will engage with local communities to strengthen their understanding of this precious farmed and forested landscape, to involve them in its conservation and to help monitor our progress through citizen science. We will be targeting a wide range of rare or valued species in our nature recovery plans, however we will also be using Champion Species that are typical of the main habitats present to help us engage and involve the public.

Champion Species are a selection of species that occur within the National Landscape, which are typically in decline, are charismatic and have potential to provide a valuable tool for public engagement with nature recovery. The initial list has been selected by looking at available data, such as the S41 species and SERC species data. Section 41 species are the species of principal importance in England and include 56 habitats and 943 species first identified in the UK Biodiversity Action Plan published in 1994. Natural England have produced lists of Section 41 species that are present in National Character Areas (NCAs) in England. The Quantock Hills NCA (No 144) is very similar in geographical scope and area to the National Landscape and a useful proxy to understand which English species are relevant to the National Landscape. Table 11 shows Natural England's assessment of S41 species present in the Quantock Hills.

It is obvious from the list provided by Natural England that there is significant data gap in both the monitoring of species but also the reporting back at a national level of local surveys / monitoring. For example, we know that Song Thrush are present on the Quantock Hills and are a S41 species but they are absent from the national records. Table 12 identifies some species that have been recorded locally, however we are aware that many surveys, monitoring schemes, have not been captured. As such a priority action is to work with partners to capture the data that does exist, collate this for relevant partners to be able to use to determine relevant land management actions.

Figure 78: *Bechstein bat. Breeding populations have been found at multiple locations in the Quantock Hills, yet the species is not on Natural England's S41 list. Photo: Paul Kennedy*

The final list of six Champion Species were largely determined through consultation activities. There is no correct or incorrect list, however these species were found to be among the most popular and appropriate to the purpose. Other species will also be used for engagement purposes where local or Quantock-wide opportunities arise or where a specific response or project is developed. An example would be the cirl bunting – see section 8.

Table 11. Section 41 species present in the Quantock Hills NCA.

Common Name	Scientific Name		Importance
Great Crested Newt	Triturus cristatus	Amphibian	Present. National significance of population unknown
Bullfinch	Pyrrhula pyrrhula subsp. pileata	Bird	Present. National significance of population unknown
Common Cuckoo	Cuculus canorus		Present. National significance of population unknown
Dunnock	Prunella modularis subsp. occidentalis		Present. National significance of population unknown
House Sparrow	Passer domesticus		Present. National significance of population unknown
Lesser Redpoll	Carduelis cabaret		Present. National significance of population unknown
Lesser Spotted Woodpecker	Dendrocopos minor subsp. comminutus		Present. National significance of population unknown
Linnet	Carduelis cannabina subsp. autochthona/cannabina		Present. National significance of population unknown
Marsh Tit	Poecile palustris subsp. palustris/dresseri		Present. National significance of population unknown
Nightjar	Caprimulgus europaeus		Top 10 NCA in the country for this species
Skylark	Alauda arvensis subsp. arvensis/scotica		Present. National significance of population unknown
Spotted Flycatcher	Muscicapa striata		Present. National significance of population unknown
Starling	Sturnus vulgaris subsp. vulgaris		Present. National significance of population unknown
Tree Pipit	Anthus trivialis		Present. National significance of population unknown
Wood Warbler	Phylloscopus sibilatrix		Top 10 NCA in the country for this species
Yellowhammer	Emberiza citrinella		Present. National significance of population unknown
Brown Hairstreak	Thecla betulae	Butterfly	Present. National significance of population unknown
Barbastelle Bat	Barbastella barbastellus	Mammal	Present. National significance of population unknown
Brown Long-eared Bat	Plecotus auritus		Present. National significance of population unknown
Hazel Dormouse	Muscardinus avellanarius		Top 10 NCA in the country for this species
Lesser Horseshoe Bat	Rhinolophus hipposideros		Present. National significance of population unknown
Noctule Bat	Nyctalus noctula		Present. National significance of population unknown
Otter	Lutra lutra		Present. National significance of population unknown
Soprano Pipistrelle Bat	Pipistrellus pygmaeus		Present. National significance of population unknown
Chamomile	Chamaemelum nobile	Vascular Plant	Present. National significance of population unknown

Table 12. Section 41 species present in the Quantock Hills (not on NE national list)

Common Name	Scientific Name		Source
Common Toad	Bufo Bufo	Amphibian	Hawkridge Reservoir Toad Surveys
Adder	Vipera berus	Reptile	Quantock Hills & QLPS Adder surveys
Grass snake	Natrix natrix	Reptile	iNaturalist (Quantock Wildlife Watch)
Common Lizard	Zootoca vivipara	Reptile	iNaturalist (Quantock Wildlife Watch)
Slow worm	Anguis fragilis	Reptile	Somerset Environmental Records Centre
Bechstein's Bat	Myotis bechsteinii	Mammal	Quantock Hills bat monitoring programme
Greater Horseshoe Bat	Rhinolophus ferrumequinum	Mammal	Quantock Hills bat monitoring programme
Common Hedgehog	Erinaceus europaeus	Mammal	iNaturalist (Quantock Wildlife Watch)
Wood Warbler	Phylloscopus sibilatrix	Bird	NE Woodland Survey / iNaturalist (Quantock Wildlife Watch)
Song Thrush	Turdus philomelos subsp. clarkei	Bird	
Sky Lark	Alauda arvensis subsp. arvensis	Bird	Summer Breeding Bird Survey (2018)

Quantock Hills Champion Species (1)

Yellowhammer

A brightly coloured bird associated with hedgerows, farmland, heathland and scrubby grasslands. Relatively high populations on Quantock Hills. Easy to hear, see and identify. Good potential for wider public engagement and citizen science. Sensitive management of hedgerows and field margins can significantly boost the population

Barbastelle bat

Associated with woodlands but with a long commute (up to 12km a night) between roosts and feeding areas. Easily affected by fragmented landscapes. Currently monitored through the QH Bat Monitoring and NBMP which has identified wider presence than previously thought. Good opportunity for public engagement and visualisation of landscape scale conservation. QLPS looking to further monitor through specific project including undertaking engagement and citizen science type activity.

Adder

A small stocky snake found in rough grassland, heathland and open woodland. They are easy to identify, usually greyish with a dark and zig-zag pattern down its back and red eyes. Widespread across the UK, their populations have declined, due mainly to habitat loss. On the Quantock Hills regular monitoring is undertaken which have identified a wide distribution but relatively low population numbers. Research also identified that the adder populations on the Quantock Hills were smaller than national populations.

Quantock Hills Champion Species (2)

Brown hairstreak

Associated with woodlands and scrub type habitat the brown hairstreak has suffered a huge decline. They depend upon young blackthorn for their larval foodplant, where they lay their eggs on the young shoots. They also typically congregate around a nearby 'master' ash tree to mate. Quite distinctive and easy to survey in late summer for adults and in winter for eggs. Butterflies are quite engaging to the general public and would be an ideal citizen science subject.

Nightjar

One of the later summer migrants to arrive on the Quantock Hill each year. They are associated with heathland and open ground habitats, including forestry clearfell and young conifer plantations. Quantocks have good population and monitoring has been carried out over a number of years allowing trend data. Relatively easy to identify and good opportunities to engage wider public

Lesser-spotted woodpecker

Smallest and least common of the three resident woodpecker species in the UK. Distinctive black and white pattern with the males having a red cap. Very similar in pattern and colour to the Greater Spotted Woodpecker but significantly smaller. Found in open woods, copses, parkland and orchards. Mainly found in the southern part of the UK and numbers are rapidly declining. Some records in the Quantock Hills, especially in the oak woodlands in the northern combes. They typically prefer to nest in mature birch trees.

11. RESILIENCE TO CLIMATE CHANGE

Throughout this document references have been made to climate change resilience. There are 3 levels of responsive adaption in relation to climate change:

1. Build resilience – **against** climate change
2. Reshaping - **with** the climate trajectory
3. Nature recovery → climate smart nature conservation

In the context of this report, it means:

- taking measures to reduce the impact of climate change on the habitats and wildlife within the National Landscape.
- preventing or slowing changes that impact nature.
- expanding core areas to increase population size and resilience.
- strengthening networks to increase mobility of species or habitats.

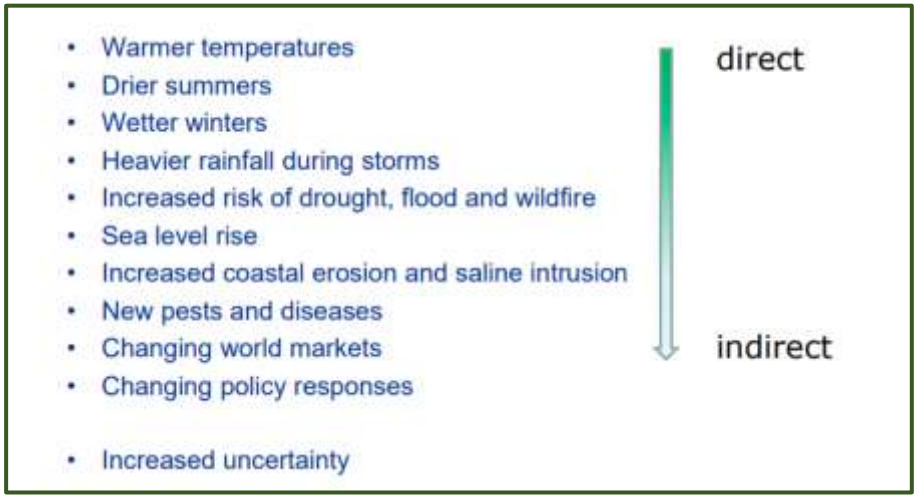
In the longer term the National Landscape Partnership will have to build into its management planning:

- Anticipating future scenarios in a changed climate.
- Being responsive to the need to change nature conservation objectives to reflect the more dynamic changes of species, habitats and even landscapes, as they arise.

Those longer-term needs cannot be fully addressed in this Plan but will be incorporated into the Management Plan review processes. There are other aspects of climate change resilience which refer to preventing climate change itself, such as sequestering carbon. These are important themes but fall outside the remit of this report. Further policies relating to wider climate change solutions will be issued separately in line with the next Quantock Hills Management Plan, currently in development.

The illustration below[22] (Figure 76) sets out some of the main features of climate change that will directly or indirectly impact on nature.

Figure 79: *Impacts of climate change on nature*



As a result of the above climate change features there will be both losses and gains for some habitats and species. For example, Dartford warblers are an iconic species breeding on the Quantock Hills. The Dartford warbler reaches the northern limit of its range in the UK and is highly sensitive to cold winters. Recent climatic warming is benefitting the species in England, driving an expansion of both its range and population size[23]. Across its full European range, climate change poses a threat, with substantial losses in the climate suitability in its core areas of France and Spain. The UK will therefore become more important for the conservation of this species in Europe.

Figure 80: *British populations of Dartford Warblers may become more important for the European population due to climate change*

Ensuring the optimum management and protection of its core sites will help to support even higher populations within the Quantock heathlands providing more resilience to occasional adverse winters.

By contrast more extreme weather, as a result of climate change, such as longer and more severe droughts is likely to impact not just individual species but entire habitats such as wet heath, acid mire and other wetter habitats that are sensitive to hydrological change. Measures can be taken to increase the resilience of sensitive habitats such as these by managing the areas carefully to ensure greater natural infiltration and storage of water within the soil/peat, or as standing water, or measures to slow the flow of spring water close to source.

Figure 81: *Bog asphodel and a range of other plants are dependent on wet acidic conditions and may be at risk from periods of extended drought*

The rate of these climate changes and changes in habitats or species distribution are not easy to predict and depend on many interacting climate, weather and soil variables over time. With any habitats that are sensitive to changes in climate conditions there are some key measure to take:

- Regular monitoring of key habitats and species to detect changes occurring and respond accordingly.

- Create larger of more joined up areas, so that if some is lost there is still a sufficient cover of that habitat remaining with the carrying capacity to support key wildlife populations.
- Manage habitats to create variations in conditions such as different hydrological conditions or different levels of light/shade, or different grazing regimes so that whilst some areas may be adversely affected other areas may thrive.

In addition to new arrivals of wildlife to our shores there will also be new diseases, pathogens, defoliators, grazers and predators of habitats/wildlife. Working together and sharing data with the other National Landscapes, National Parks, statutory and non-statutory organisations and other partners, measures to reduce the likelihood of these occurrences will be addressed. This way national and regional responses to arising climate-based issues can be coordinated.

12 PLANNING & DEVELOPMENT

When it comes to planning and development National Landscapes have additional levels of scrutiny, specifically in relation to the purposes of National Landscapes. Through the Countryside & Rights of Way Act 2000 a new duty was placed on statutory undertakers, including local planning authorities, to have due regard to the purposes of National Landscapes. With regard to planning and development this was defined through the National Planning Policy Framework, where adverse / negative impacts of planning should be avoided or mitigated against.

The Levelling Up and Regeneration Act 2023 became law on 26th October 2023. Section 245 of the LURA sets out several measures that are intended to '*ensure the homes we need are built where they are needed in urban areas rather than concreting over the countryside*' and to '*enhance our national network of beautiful, nature-rich protected landscapes*'. These include a strengthened statutory duty on 'relevant authorities', in exercising or performing any functions in relation to, or so as to affect, land in protected landscapes in England, to seek to further the purpose(s) of designation of the protected landscape (the 'seek to further' duty). Guidance on the 'seek to further' duty is expected to be published in 2024. It is expected that this will expand on the biodiversity duty on relevant authorities in respect of National Landscapes.

The Statutory Quantock Hills National Landscape Management Plan, currently under review, sets management objectives to be adopted by the local planning authorities and other partners. The changing legislation with the new duties will provide opportunities to include objectives that will enhance planning and development happening in the National Landscape as well as target actions to deliver elements of the biodiversity duty.

When it comes to Designated Sites, such as SSSIs or SACs, Natural England is consulted with regard to any potential impacts. Somerset Council's Ecology Team also assess planning applications for their impacts on Priority Species/Habitats, or other features covered under current planning law, policy and frameworks. The Quantock Hills National Landscape Team have been active participants in the development of the Somerset Local Nature Recovery Strategy. As a result of this there are strong links between this Nature Recovery Plan for the Quantock Hills with the equivalent strategy for Somerset. In line with the National Planning Policy Framework[24] which states LNRS need *"To protect and enhance biodiversity and geodiversity, plans should:*

(a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and

(b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."

A consequence of the above is that development applications which will need to identify mitigation or management of any potential adverse effects. Where a relevant planning authority do not believe this has been done to a sufficient level they may challenged.

PLANNING CASE STUDY: Night skies & bats.

In October 2023 the National Landscape Partnership adopted a dark skies position statement. This highlighted the issue of the pressures of lighting in developments on the relatively dark skies of the Quantock Hills. The Position Statement aims to achieve a consistent approach to conserving and enhancing dark skies by using recognised and respected standards developed by the Institution of Lighting Professionals (ILP)and the Commission for Dark Skies. The Statement is also intended to be used to help secure appropriate policies on this issue in the local development and Neighbourhood Plans of the local authority.

This policy also reinforces the need to prevent light pollution from adversely effecting populations of wildlife. Several of our wildlife species are nocturnal and can be adversely affected by light pollution. This particularly applies to bats[25]. With a few exceptions most bat species are highly sensitive to artificial light, as this interferes with their navigation systems and can act as a barrier to their breeding places, their hibernation sites, and their feeding areas such as grasslands and woodlands.

Some of the woodlands, grasslands hedgerows and streams around the Holford area are designated as Special Areas for Conservation, which legally protects greater horseshoe bats and barbastelle bats and their habitat. With the high legal status attached particularly to these two species, and to a lesser extent the other bats species, it is imperative that light pollution is not allowed to impact on the status of bats. Nor should it be allowed to impact the work by the National Landscape Team or other partners to enhance bat diversity and populations through implementing the Nature Recovery Plan. Through building in robust objectives in the statutory National Landscape Management Plan the partnership will be able enhance the dark skies through influencing planning decisions and delivering projects that enhance lighting schemes to benefit bats and other nocturnal species.

"Dark skies are important for humans, for our connection with the landscape and essential for some of our most threatened wildlife"

13 DELIVERING NATURE RECOVERY

Section 6 identified actions that can be taken forward that will deliver nature recovery across the main habitat types of the Quantock Hills National Landscape and beyond. Within the Quantock Hills a significant proportional of land is owned and managed by a wide range of sympathetic landowners some with a remit to conserve nature.

This section sets out potential mechanisms for delivering nature recovery in the Quantock Hills:

- Conservation ownership
- Environmental Land Management Schemes (ELMs)
- Farming in Protected Landscapes Programme
- Regenerative Agriculture
- Targeted nature recovery projects
- Protected sites and regulation
- Local Wildlife Sites and advice
- Protection and benefits through the planning system
- Action by communities and individuals.

13.1 Conservation ownership

Making up a small proportion of the National Landscape, ownership of land by organisations with a duty or remit for nature provides an important mechanism to protect and enhance nature at some of the most important areas of the Quantock Hills. These sites include land on and adjacent to Quantock Common, Great Wood and Fyne Court. Ownership gives a high degree of control but there can be other legal interest, such as rights of common. Organisations such as the National Trust, Forestry England, Friends of the Quantocks as well as to a smaller extent Somerset Wildlife Trust own land for conservation in the Quantock Hills. It is likely that the amount of land owned for conservation will remain modest.

The National Landscape Team has taken on the land management of land holding by entering into agreements with local authorities. Since the early 1980s the National Landscape Team has undertaken the day-to-day management of Cothelstone Hill. This 80Ha site is a mix of broadleaved woodland and open extensive grassland. Management of the land holding is through National Landscape Team staff and volunteers. In 2024 the National Landscape Team took over the management of a 44Ha farm outside Nether Stowey. The farm will be managed using regenerative agricultural systems such as mob grazing and will enhance the habitats on the holding such as hedgerows, planting of wood pasture and orchards.

Mob grazing is a farming practice that involves short-duration, high-density grazing followed by a longer grass recovery period. This extended recovery time allows grassland to flourish, promoting leafy growth and building strong root structures. As a result, soil health improves, leading to better water-holding capacity during dry spells and improved drainage when it's wet. There are also benefits to cattle health, reducing costs and increased wildflower diversity[26].

13.2 Environmental Land Management Schemes (ELMs)

In terms of resources ELMS, or agri-environment schemes, are the most important mechanism for achieving nature recovery in the National Landscape. Uptake of previous schemes has been very high with 56% of the useable agricultural area of the Quantock Hills covered by agri-environment schemes in 2021, comparing to the England average of 17.6%.

From 2021 the new elements of ELMs have been launched with Sustainable Farming Incentive (SFI), Countryside Stewardship (CS), Landscape Recovery (LR) being piloted and going live at different

stages. The uptake of SFI has been encouraging and the transfer from legacy schemes, such as Higher Level Stewardship, to the new Countryside Stewardship has been increasing. This has been encouraged by uplift in grant amounts in SFI and CS rates that occurred in late 2023 and in January 2024.

The Partnership undertakes a number of actions designed to encourage the uptake of schemes. This includes supporting farmer cluster groups, running events on the new schemes and supporting the development of larger schemes such as a Landscape Recovery application.

13.3 Farming in Protected Landscapes Programme

Launched in 2021 as part of the Agricultural Transition Programme FiPL operates in protected landscapes (National Landscapes and National Parks) and provides grants to farmers to deliver public goods across the themes of nature, climate, people and place. Managed by the local National Landscape Team FiPL provides grants and advice to farmers / land managers for activity that fall outside the scope of ELMs schemes, such as Countryside Stewardship. During the period of agricultural transition FiPL has been very positive in delivering outcomes for nature and due to the local delivery team within the core National Landscape Team has been able to enhance collaborative working across land holdings. FiPL is currently due to end in March 2025.

13.4 Regenerative Farming Systems

Regenerative farming systems focus on creating stable and resilient food production systems that make best use of nature's good and services without damaging these resources. When thinking about regenerative farming we need to think beyond farming system being linear systems in which inputs lead to output of food yields. We need to treat farmland as complex webs of ecological interactions. Regenerative farming practices can be applied to small and larger farms and can be applied across whole holdings or just on part of a holding.

Figure 82: *Mob grazing systems where livestock graze small parcels of land on quick rotation can improve sward quality and reduce pest burden.*

Priorities of regenerative agriculture for the Quantock Hills would include improving soil health and organic matter content, reducing pesticide / herbicide use, increasing tree cover through agro-forestry and for livestock lowering the intensity of systems, reducing antibiotic use and reducing reliance on feed crops.

A farmer cluster group has started, support by FiPL staff, which is looking at regenerative agriculture. Through continued support of this group it is hoped to increase the reach of the network and peer to peer working as well as provide opportunities to learn from examples outside of the Quantock Hills.

13.5 Targeted nature recovery projects

As can be seen in the case studies there have been a number of specific projects that aim to delivery outcomes for nature, such as the Landscape Improvement Scheme, Greater Quantock Landscape Development Fund and Levels Up. There are significant opportunities for partners to join in the development and delivery of projects. These types of externally funding streams work well with targeted habitats or species and examples include - such as

- Natural England's Species Recovery Programme Capital Grant Scheme. Short term programme to restore or create priority habitats benefitting priority species (section 41 species).
- Species Survival Fund. Habitat creation or enhancement at scale.
- People's Trust for Endangered Species Grant. Small scale grants for the protection of endangered species.
- National Lottery Heritage Fund. Offering a number of programmes for smaller and larger projects the NLHF can fund activity that will enhance nature.
- Trusts. A number of Trusts will provide grant funding for species / habitat projects. These tend to be smaller and time limited grants but some, such as Esme Fairbairn Foundation can provider larger grants.

The National Landscape Partnership have a proven track record in securing funding from various grant providers. However it is worth noting that the application windows for many of the funding programmes are relatively short, for example the Species Survival Fund application for grants between £250,000 - £3million had a three week application window. Taking this into account the National Landscape Team and partners should look to ensure there is resource to create 'shovel-ready' projects and to be able to work on applications in short timeframes.

13.6 Protected sites and regulation

Legal regulation mechanisms support nature recovery include:

- Consents and protection regimes for SSSIs
- Environmental Impact Assessment (EIA) regulations especially in respect of SACs
- Hedgrow Regulations
- Wildlife crime laws
- Water and air pollution laws and regulations for modifying watercourses

Enforcement and regulation should be used proportionately and after other approaches such as advice and support have been tried. However, mechanisms need to be used when appropriate in order to have credibility. Promoting to the wider public the successful prosecutions of wildlife crimes has been shown to have greater impact than advice through measures such as on site posters.

13.7 Local Wildlife Sites and advice

Often adjoining other sites of nature value local wildlife sites, sometimes referred to as County Wildlife Sites, provide valuable stepping stones or corridors for wildlife in the landscape. They are a voluntary arrangement and rely on resource to be able to provide advice to landowners. Somerset Wildlife Trust is currently assessing potential to reinvigorate the LWS in Somerset through the setting up of volunteer advisors.

13.8 Protection and benefits through the planning system

The planning system, as discussed above, has an important role to play in protecting important habitats. Using the National Landscape Nature Recovery Plan and Management Plan along with the higher level Somerset Local Nature Recovery Strategy planners are able to assess the likely impacts of development on habitats and species.

With regard to enhancement of habitats and species there is opportunity through Biodiversity Net Gain. This is a new requirement for developments over a certain size to increase the overall biodiversity of the site of development by at least 10%. The biodiversity enhancement would ideally be undertaken on the site but where this is not possible the planning authority can authorise for biodiversity enhancement to occur off-site. There are metrics that local planners can use to assess the amount of habitat needed to off-set the biodiversity lost through any development. While there will be opportunities for positive actions for nature through biodiversity net gain, due to the limited development within the National Landscape and the requirement to look to achieve BNG on-site it is not believed this will be a significant mechanism for delivery of the nature recovery plan. Its potential should be used to best advantage and the National Landscape Team will continue to engage in the LNRS and BNG processes.

13.9 Action by communities and individuals.

Community groups are increasingly becoming involved in nature recovery. Action at the community level are good for engagement, awareness raising and strengthening peoples connection to nature, which is shown to be linked to further pro-nature behaviours[31] . Many small community groups in the National Landscape look after areas of amenity or community land, for example Stowey Green Spaces Group. The National Landscape Partnership has supported the work of these groups and should look to continue to do this. An aspect that could increase the sustainability of these groups is the provision of land management training. Recently a number of parishes have started 'Wilder' initiatives, such as Enmore. These are great ways to engage the community of the parish often developing lots of small initiatives that collectively will have significant positive impacts for nature. The National Landscape has been able to support some of these groups through provision of grants, advice and support in aspects such as monitoring.

Overall the land area managed by these groups across the National Landscape is small but the influence and engagement is significant, being able to reach the communities in the National Landscape.

As has been discussed previously there is a strong element of citizen science surveys happening already within the Quantock Hills. Some of these are led by the National Landscape Team, others are part of local or national monitoring schemes. These play a vital role in the understanding of wildlife and working with partners there is great opportunity to expand the scope and collaboration of these groups in the future.

Figure 83: *young person taking part in the Quantock Hills Bat Monitoring Programme*

13.10 The Nature Recovery Plan next steps

Adopted by the Quantock Hills National Landscape Partnership the Nature Recovery Plan sets the framework for nature recovery actions by the Partnership. These actions will be built into the Statutory National Landscape Management Plan review due to be completed by April 2025. The Nature Recovery Plan will feed into the Local Nature Recovery Strategy allowing a greater level of detail across the Quantock Hills National Landscape.

As well as influencing strategy the plan will be used to target funding as well as providing evidence for applications such as the Landscape Recovery element of ELMs. It will be used to target existing funding streams such as FiPL and to influence delivery of elements such as Countryside Stewardship.

The Plan will be used as evidence when looking at the apportionment of targets as part of the national Protected Landscapes Targets and Outcomes Framework. Coming from the Environmental Improvement Plan (EIP (2023) and aiming to achieve Governments and our own ambitions for meeting 30 by 30 the targets have been set at a national level and during 2024 will be further derived to be incorporated into individual Protected Landscape's Management Plans.

Government expect Protected Landscape bodies and partners to increase the amount of land in favourable management through meeting the following targets –

- Target 1 – Restore or create more than 250,000 hectares of a range of wildlife-rich habitats within Protected Landscapes, outside protected sites by 2042 (from a 2022 baseline)
- Target 2 – Bring 80% of SSSIs within Protected Landscapes into favourable condition by 2042.
- Target 3 – For 60% of SSSIs within Protected Landscapes assessed as having 'actions on track' to achieve favourable condition by 31 January 2028.
- Target 4 – Continuing favourable management of all existing priority habitat already in favourable condition outside of SSSIs (from a 2022 baseline) and increasing to include all newly restored or created habitat through agri-environment schemes by 2042.
- Target 5 – Ensuring at least 65% to 80% of land managers adopt nature friendly farming on at least 10% to 15% of their land by 2030.

Protected Landscape are also recognised for the role they can and should play in achieving net zero at a landscape scale. Government believe action is needed to increase their resilience and that of the communities within them, mitigating climate risks through nature-based solutions and adapting to the unavoidable impacts.

- Target 6 – Reduce net greenhouse gas emissions in Protected Landscapes to net zero by 2050 relative to 1990 levels.
- Target 7 – Restore approximately 130,000 hectares of peat in Protected Landscapes by 2050.
- Target 8 – Increase tree canopy and woodland cover (combined) by 3% of total land area in Protected Landscapes by 2050 (from 2022 baseline).

The final two targets related to the other purposes of Protected Landscapes –

- Target 9 – Improve and promoted accessibility to and engagement with Protected Landscapes for all using existing metrices in the Access for All programme.
- Target 10 – Decrease the number of nationally designated heritage assets at risk in Protected Landscapes.

The Quantock Hills National Landscape Partnership realise that a step change in ambition and action on the ground is required to achieve the outcomes necessary for nature to recover. This Plan is the first step in that process and through embedding it in the Statutory Management Plan will provide the mechanism to drive delivery by the National Landscape Team and other Partners. It will also ensure that the plan is reviewed and updated regularly ensure it remains fit for purpose.

Resourcing Nature Recovery

There are many organisations and partners who will be delivering nature recovery actions in the Quantock Hills. The role of the National Landscape Partnership and Team will be to enable, coordinate, build collaboration and funding streams to allow partners to deliver actions. There are a number of workstreams within the Partnership / Team that will need resourcing to enable this to occur including:

1) Dedicated staff resource to seek and secure funding, to draw together collaboration working with farmers and land managers. Building on the success of FiPL develop a FiPL 'plus' approach that increases resources to enable farmer / land manager collaboration at a landscape scale.
2) Dedicated resource to engage communities, users and visitors to increase understanding and appreciation of the special characteristics of the Quantock Hills and change negative behaviours

The National Landscape Partnership / Team receives core funding from Defra, Somerset Council and other sources. Prioritisation of how the core funding is allocated is driven by the Defra Grant Agreement, due to be renewed in 2025, and the National Landscape Management Plan. The Partnership / Team will seek to impress upon its core funders the need for adequate additional resource to be able to successful drive nature recovery forward.

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