



Local Nature Recovery Strategy

for Hampshire
2025

Glossary



Acronyms and initialisations

25YEP:	25 Year Environment Plan
30by30:	Protecting 30% of the UK's land by 2030
ACB:	Areas that could become of particular importance for biodiversity
AGS:	Accessible Greenspace Standards
AONB:	Area of Outstanding Natural Beauty (now referred to as National Landscape)
APIB:	Areas of particular importance for biodiversity
BAP:	Biodiversity Action Plan
BNG:	Biodiversity net gain
BPS:	Basic Payments Scheme
CIL:	Community Infrastructure Levy
CLA:	Countryside, Land and Business Association
CS:	Countryside Stewardship
CSHT:	Countryside Stewardship Higher Tier
Defra:	Department for Environment, Food and Rural Affairs
EIP:	Environmental Improvement Plan
ELM:	Environmental Land Management scheme
EWCO:	England Woodland Creation Offer
FE:	Forestry England
FWAG:	Farming and Wildlife Advisory Group
GCN:	Great Crested Newt
GHG:	Greenhouse Gases
GI:	Green (and blue) Infrastructure
HBIC:	Hampshire Biodiversity Information Centre
HLS:	Higher Level Stewardship scheme
HMWP:	Hampshire Minerals and Waste Plan
HOA	Habitat Opportunity Area
HOS:	Hampshire Ornithological Society
IUCN:	International Union for Conservation of Nature
INNS:	Invasive Non-Native Species
LA:	Local authority
LBAP:	Local Biodiversity Action Plan
LCA:	Landscape Character Assessment

LNP:	Local Nature Partnership
LNR:	Local Nature Reserve
LNRS:	Local Nature Recovery Strategy
LPA:	Local Planning Authority
LURA:	Levelling Up and Regeneration Act 2023
LWS:	Local Wildlife Site
MHCLG:	Ministry of Housing, Communities and Local Government
MoD:	Ministry of Defence
MMO:	Marine Management Organisation
MPA:	Marine Protected Area
Nbs:	Nature-based Solutions
NCA:	National Character Area
NERC:	Natural Environment and Rural Communities Act 2006
NFM:	Natural Flood Management
NFU:	National Farmers Union
NFNPA:	New Forest National Park Authority
NM:	Nutrient mitigation
NNR:	National Nature Reserve
NPPF:	National Planning Policy Framework
NVZ:	Nitrate Vulnerable Zone
NRN:	Nature Recovery Network
NSN:	National Site Network
OS:	Ordnance Survey
PAWs	Planted Ancient Woodland
ReMeMaRe:	Restoring Meadow, Marsh and Reef habitat restoration initiative
RPA:	Rural Payments Agency
RSPB:	Royal Society for the Protection of Birds
RVEI:	Road Verge of Ecological Importance
s106:	Section 106 Legal Agreement
S41	Section 41 of the Natural Environment and Rural Communities Act 2006
SA:	Supporting Authorities
SAC:	Special Area of Conservation
SANG:	Suitable Alternative Natural Greenspace
SDNPA:	South Downs National Park Authority
SEMS:	Solent Marine Sites
SFI:	Sustainable Farming Incentive

SINC:	Site of Importance for Nature Conservation
SOA:	Strategic Opportunity Areas
SPA:	Special Protection Area
SPZ:	Groundwater Source Protection Zone
SSSI:	Site of Special Scientific Interest
SuDS:	Sustainable Drainage Systems
SWBGM:	Solent Wader and Brent Goose Mitigation
SWBGS:	Solent Wader and Brent Goose Strategy
WFD:	Water Framework Directive



Glossary

25 Year Environment Plan (25YEP)

The 25 Year Environment Plan, published in 2018, sets out government action to help the natural world regain and retain good health. It aims to deliver cleaner air and water in our cities and rural landscapes, protect threatened species and provide richer wildlife habitats. The Environmental Improvement Plan 2023 is the first revision of the 25YEP.

Protecting 30% of the UK's land by 2030 (30by30 or 30x30)

In 2020, the government committed to protecting 30% of the UK's land by 2030 (30by30). Subsequently, a global 30by30 target was adopted at the UN Biodiversity Summit COP15 in December 2022, as part of an ambitious Global Biodiversity Framework¹.

Accessible Greenspace Standards

The standards state everyone should have access to good quality green and blue spaces close to home for health and wellbeing and contact with nature, with an initial focus on access to green and blue spaces within 15 minutes' walk from home. The standards define good provision based on different size-proximity, capacity and quality criteria.

Action

In the context of nature recovery, an action sets out the primary activity to achieve the goal of habitat creation.

Afforestation

Growing or planting of new woodlands or forests.

Agroforestry

A land management practice that combines trees and shrubs with crops or livestock, promoting biodiversity, improving soil health, and providing additional economic benefits.

Ancient and veteran trees

Trees of interest biologically, aesthetically or culturally because of their great age, often in the last third and final stage of their life and that are old relative to others of the same species. See also veteran trees.

Ancient wood pasture

Areas of grazed pasture, heath or open hill with a scattering of open-grown ancient and veteran trees. Once a common feature of the landscape in some areas, they provided shelter, pasture and fodder for livestock, as well as wood products for local people.

Ancient woodland

Areas which have had woodland cover for centuries and are present on maps dating back to 1600AD.

Area of Outstanding Natural Beauty (AONB)

Areas of Outstanding Natural Beauty (AONB) are nationally important landscapes, designated under the 1949 National Parks and Access to the Countryside Act. Their primary purpose is to conserve and enhance natural beauty. Natural England is responsible for their designation and advising government and other organisations on their management. On the 22 November 2023, AONBs were re-branded as National Landscapes. They are still defined as AONBs in legislation and national planning policy.

1 <https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf>

Areas of particular importance for biodiversity (APIB)

In terms of the LNRS, areas of importance for biodiversity include:

- Internationally designated sites.
- Nationally designated sites.
- Local Nature Reserves (LNR).
- Local Wildlife Sites (in Hampshire referred to as Sites of Importance for Nature Conservation – SINC).
- Irreplaceable habitats. For Hampshire these are: ancient woodland, ancient and veteran trees, coastal sand dunes, spartina saltmarsh swards, and lowland fens.

Areas that could become of particular importance for biodiversity (ACB)

In terms of the LNRS, these are areas of opportunity that could become areas of particular importance for biodiversity (APIBs) or where the recovery or enhancement of biodiversity could make a particular contribution to other environmental benefits.

Assemblage of Species

An assemblage of species refers to a collection of different species found together in a particular habitat or ecosystem.

Basic Payment Scheme

The Basic Payment Scheme (BPS) payment is a single annual payment to a farmer who meets the scheme's criteria. Payment is based on the number and value of the farmer's payment entitlements. The scheme is now closed.

Biochar

A form of charcoal, sometimes modified, that is intended for organic use, as in soil. It is the lightweight black remnants remaining after the pyrolysis of biomass, consisting of carbon and ashes.

Beelines fund

Working with landowners across the South Downs, the South Downs National Park Trust's Beelines initiative is about planting new wildflower corridors to connect pockets of species-rich chalk grassland for the benefit of pollinator species.

Biodiversity

The variability among living organisms from all sources, including inter-alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part. This includes diversity within species, between species, and of ecosystems.

Biodiversity duty

A legal obligation imposed on public bodies to consider and integrate biodiversity conservation into their activities, policies, and decision-making processes. This duty requires these bodies to actively work towards preserving and enhancing biodiversity, ensuring that their operations and developments contribute positively to the natural environment and support ecological sustainability.

Biodiversity net gain (BNG)

An approach to development, land and marine management that leaves biodiversity in a measurably better state than before the development took place. Most developments, approved through the land use planning system, are required to deliver a minimum 10% BNG.

Biosecurity

Measures and protocols designed to protect ecosystems from the introduction and spread of harmful organisms, including invasive species, pests, and diseases.

Bird Aware Solent

An initiative that raises awareness of protected birds in and around the Solent and seeks to reduce recreational disturbance.

Blue infrastructure, habitats and spaces

Water-related natural and semi-natural features, including rivers, canals, lakes, ponds, wetlands and coastal waters, which support aquatic biodiversity and deliver other environmental, social and economic benefits. These benefits include water filtration, flood regulation, and recreational opportunities. Blue infrastructure is often included within the definition of green infrastructure (GI).

Buffer

Zones of natural or semi-natural habitat that provide additional space and resources for wildlife, often used to protect core habitats from adverse impacts of surrounding land use.

Carbon emitter

Sources, such as fossil fuel combustion or deforestation, that release carbon dioxide (CO₂) into the atmosphere, contributing to climate change.

Chalk down

Downland, chalkland, chalk downs or just downs are areas of open chalk hills, such as the North Downs. This term is used to describe the characteristic landscape in southern England where chalk is exposed at the surface.

Chalk stream

A very special type of river, almost unique to England. 85% of the 200 chalk streams in the world are in England. They are fed primarily by spring water from the chalk aquifer, not rain, which means they have clear, cold water and very stable flows. They are rich in minerals, especially calcium, and this base rich environment supports a very distinctive and rich ecology.

Coastal margin

The coastal margin is the land between the King Charles III England Coast Path National Trail and the sea, which provides new rights of access to the public for areas like beaches, dunes, and cliffs, thanks to the Marine and Coastal Access Act 2009. This area may extend inland from the path under certain conditions, but access is not granted to all land, as exceptions include buildings, gardens, and areas unsuitable for public access, such as mudflats or saltmarshes. The definition of a coastal margin is partly informed by the Countryside and Rights of Way Act 2000 (CROW Act).

Community Infrastructure Levy (CIL)

The Community Infrastructure Levy (CIL) is a charge which can be levied by local authorities on new development in their area. It is an important tool for local authorities to use to help them deliver the infrastructure needed to support development in their area.

Climate change

Climate change is a large-scale, long-term shift in the planet's weather patterns and average temperatures. Climate change in Intergovernmental Panel on Climate Change (IPCC) usage refers to a change in the state of the climate that can be identified (e.g. using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. It refers to any change in climate over time, whether due to natural variability or as a result of human activity.

Coastal sand dunes

Coastal sand dunes form where a beach is large enough to allow sand to completely dry out between high tides, and where onshore winds blow the dry sand landwards. The sand is then trapped by dune grasses which grow through the accumulating layers of hard, inorganic sand.

Coastal squeeze

The loss of coastal habitats, such as salt marshes and mudflats, due to rising sea levels and fixed landward barriers (e.g. sea walls), which prevent natural inland migration to these habitats.

Countryside

Land not in towns, cities, or industrial areas that is either used for farming or left in its natural condition.

Countryside Stewardship (CS)

This scheme rewards farmers for looking after and improving the natural environment. This includes increasing biodiversity, improving habitat, expanding woodland areas, improving water quality, improving air quality, and improving natural flood management.

Countryside Stewardship Higher Tier (CSHT)

Countryside Stewardship Higher Tier is an environmental land management scheme in England that provides payments to farmers and land managers for managing their land to protect, restore, and enhance the natural environment, support biodiversity, and mitigate climate change effects.

Department for Environment, Food and Rural Affairs (Defra)

The UK government department responsible for environmental protection, food production and standards, agriculture, fisheries, and rural communities.

Ecological status (of water bodies)

Provides a composite assessment of the quality of surface water ecosystems, reflecting the cumulative effects of various pressures like pollution, habitat degradation, and climate change.

Ecosystem

A natural unit consisting of all plants, animals and micro-organisms (biotic factors) in an area functioning together with all of the non-living physical (abiotic) factors of the environment.

Ecosystem services

The benefits provided by ecosystems in the form of goods and services that underpin our society/economy by producing value for people. These goods/services are classified along four functional categories:

- **Cultural services** - the non-material benefits such as recreation and aesthetic and spiritual enrichment.
- **Provisioning services** – products obtained such as fresh water, food, energy, timber and wood fuel.
- **Supporting services** – such as wildlife, nutrient cycle, water cycle and photosynthesis.
- **Regulating services** – protection from hazards such as the regulation of air quality, climate, flooding and erosion, water purification, disease and pest control, and pollination.

Ecotone

An ecotone is a transition area between two biological communities, where two communities meet and integrate. An ecotone can be very biodiverse.

Edge effects (heathland)

The increasing boundary edges of heathland habitat through progressive habitat fragmentation and the potential detrimental impacts of surrounding land use, e.g. urban development, across that edge.

Environmental Land Management (ELM) scheme

These schemes provide financial incentives, grants, subsidies or payments to landowners and managers who implement nature-friendly practices on their land.

England Woodland Creation Offer (EWCO)

A flagship grant scheme for farmers and land managers to encourage investment in woodland creation. The scheme is administered by the Forestry Commission and funded by the government's Nature for Climate Fund.

Environment Agency

A non-departmental public body sponsored by Defra, with responsibilities relating to the protection and enhancement of the environment in England. Its functions include the regulation of industrial processes, the maintenance of flood defences and water resources, water quality and the improvement of wildlife habitats.

Environmental Improvement Plan (EIP)

The EIP 2023 is the first revision of the 25 Year Environmental Plan (25YEP), 'A Green Future: Our 25 Year Plan to Improve the Environment'. The EIP reinforces the intent of the 25YEP. Where the 25YEP set out the framework and vision, the EIP sets out the plan to deliver.

Farm clusters

Groups of farmers working collaboratively within a specific geographic area to implement nature recovery measures, enhance biodiversity, and manage natural resources sustainably.

Farmland birds

Birds that feed in open farmland during the breeding season, even though they may nest in woodlands and hedges.

Fen

A low and marshy or frequently flooded area of land with a high botanical diversity, with mosses, rushes, sedges, wetland grasses and characteristic flowering plants. Fens can be easily affected by inputs of nutrients or by scrub encroachment.

Forestry Commission

The Forestry Commission is the non-ministerial UK government department responsible for protecting, expanding, and promoting the sustainable management of woodlands.

Geology

The study of the Earth's physical structure and substance, including rocks, minerals, and the processes that shape the planet's surface over time.

Grassland

Vegetation community consisting predominantly of grass species.

Green infrastructure

Networks of natural and semi-natural areas, including parks, gardens, forests, green roofs and street trees, designed and managed to provide a wide range of ecosystem services such as air and water purification, climate regulation and recreation.

Green spaces

Areas primarily composed of vegetation, such as forests, meadows and urban parks, that provide habitat for wildlife, recreational space for people and various ecological benefits.

Greenhouse gases (GHG)

Greenhouse gases, such as carbon dioxide, methane, nitrous oxide, and certain synthetic chemicals, trap some of the Earth's outgoing energy, thus retaining heat in the atmosphere.

Groundwater source protection zones (SPZ)

These identify areas of land through which water infiltrates into a groundwater borehole, well or spring that is used for public drinking water supply. These zones show the risk of contamination from potential pollution.

Gutters

Gutters provide shallow channels to hold or transport water through wet habitats and provide feeding areas for waders.

Habitat

The natural home of an animal or plant.

Habitat connectivity

The degree to which different habitats are linked to allow the movement of species and the flow of ecological processes, essential for maintaining biodiversity and ecosystem health.

Habitat Opportunity Areas

These are nature recovery opportunity areas where multiple habitats can be restored or created, are of strategic importance, and shown on the ACB and Measures maps. As with any other sites/areas shown on the Measures map, these areas also offer an uplift in the value of BNG biodiversity units (see Appendix 3). The methodology used to construct the habitat opportunity areas is provided in Appendix 6.

Habitat restoration

Efforts to return degraded or damaged habitats to a healthy, functioning state, often involving activities like reforestation, wetland rehabilitation and invasive species removal.

Hampshire Biological Information Centre (HBIC)

HBIC is a Local Environmental Records Centre (LERC) that covers the Hampshire area. HBIC carries out habitat surveys and brings together copies of data from a number of key species recording groups. Data maintained by HBIC supports the work of HBIC's partner organisations and also informs environmental assessment, land management and research by developers, utilities, landowners, students, local groups, and the public.

Herb rich ley

Sown pastures made up of a mix of grasses, herbs, and legumes. Together they deliver soil fertility, biology and structure, boost livestock health, encourage biodiversity and are productive with low rainfall.

Higher Level Stewardship (HLS) scheme

HLS is part of the Environmental Stewardship scheme. It is the predecessor to Countryside Stewardship, with some agreements still in operation.

Intertidal

The area of the shore between the highest and lowest tides.

Invasive Non Native Species (INNS)

Species that are introduced, intentionally or unintentionally, to regions outside their native range and that cause environmental, economic, or human health impacts.

Irreplaceable habitat

Habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity. They include ancient woodland, ancient and veteran trees, sand dunes, salt marsh, and lowland fen.

Landscape Recovery Scheme

These schemes will pay for bespoke, longer term, larger scale projects to enhance the natural environment.

Lawton principles

Guidelines for nature conservation articulated by Professor Sir John Lawton in the 2010 report Making Space for Nature. These emphasised the need for more, bigger, better and more connected habitats to create resilient and coherent ecological networks.

Layback land

Non-sensitive land where cattle can be moved to continue grazing in order to take pressure off designated habitat during the spring/summer (i.e. flowering season).

LNRS species longlist

A comprehensive list of species considered for inclusion in the Local Nature Recovery Strategy, encompassing a wider range of species before narrowing down to the priority shortlist.

LNRS priority species shortlist

A condensed list of species that have been identified as top priorities for nature recovery action within the Local Nature Recovery Strategy.

Local Nature Partnership (LNP)

A body, designated by the Secretary of State for Environment, Food and Rural Affairs, established for the purpose of protecting and improving the natural environment in an area and the benefits derived from it. For the Hampshire LNRS, the relevant LNP is the Hampshire and Isle of Wight Local Nature Partnership.

Local Nature Recovery Strategy (LNRS)

A statutory requirement, introduced by the Environment Act 2021, which is a strategic plan developed at a local level to guide actions for nature recovery, enhance biodiversity, and improve ecosystem services, involving collaboration among various stakeholders.

Local Nature Reserve

Declared by local authorities in consultation with Natural England, under Section 21 of the National Parks and Access to the Countryside Act 1949, a site with wildlife or geological features that is of special interest locally, which gives people opportunities to study, enjoy and have contact with nature.

Local Wildlife Site (LWS)

Non-statutory sites identified locally for their substantive nature conservation importance, either for wildlife and/or geology, and receive protection through Local Plan policy. In Hampshire these sites are referred to as Sites of Importance for Nature Conservation (SINC).

Marsh

An area of low-lying land which is flooded in wet seasons or at high tide, and typically remains waterlogged at all times.

Ministry of Defence (MoD)

The Ministry of Defence (MOD or MoD) is a ministerial department of the government of the UK. It is

responsible for implementing the defence policy set by the government and serves as the headquarters of the British Armed Forces.

Mudflats

Intertidal mudflats and sandflats are submerged at high tide and exposed at low tide. They form a major component of estuaries and large shallow inlets and bays in the UK but also occur extensively along the open coast and in lagoonal inlets.

National Character Area (NCA)

Areas defined at the national level, which describe the geographical, ecological and historical variations in landscape character that make one area different from another. Their boundaries follow natural lines in the landscape rather than administrative boundaries, making them a good decision-making framework for the natural environment.

National Landscape

Legally known as Areas of Outstanding Natural Beauty (AONB), National Landscapes are nationally important landscapes, designated under the 1949 National Parks and Access to the Countryside Act. Their primary purpose is to conserve and enhance natural beauty. Natural England is responsible for designating National Landscapes and advising government and other organisations on their management. As of the 22 November 2023, AONBs were re-branded as 'National Landscapes'. In legal terms they are still defined as AONBs under the 1949 National Parks and Access to the Countryside Act.

National Nature Reserve (NNR)

A statutory designation. NNRs contain examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats or to provide special opportunities for scientific study of the habitats, communities and species represented within them. This designation is for land areas; the equivalent

marine designation is Marine Nature Reserve. All NNRs are pre-existing Sites of Special Scientific Interest (SSSI).

National Park

Extensive tract of countryside designated under the National Parks and Access to the Countryside Act 1949 for reasons of its natural beauty and for the opportunities it affords for open air recreation. The designation supports the conservation and enhancement of its landscapes, wildlife and cultural heritage, and the promotion of understanding and enjoyment of its special qualities.

National Planning Policy Framework (NPPF)

Government policy framework that sets out planning policies for England and how they are expected to be applied. The NPPF provides guidance for local planning authorities and decision-takers, both in preparing development plans and in development management.

National Site Network (NSN)

Under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, SACs and SPAs in the UK no longer form part of the EU's Natura 2000 ecological network. The 2019 Regulations have created a national site network on land and at sea, including both the inshore and offshore marine areas in the UK.

Natural capital

Natural capital refers to those elements of nature, such as the stocks of forests, freshwater, land, and oceans, which either directly provide benefits or underpin human wellbeing. If properly managed, the living aspects of natural capital, can continue to provide these ecosystem services and benefits for people indefinitely. Natural capital underpins all other types of capital (manufactured, human and social) and is the foundation on which our economy, society and prosperity is built.

Natural England

A non-departmental public body sponsored by Defra, responsible for ensuring that England's natural environment, including its land, flora and fauna, freshwater and marine environments, geology and soils, are protected and improved. It also has a responsibility to help people enjoy, understand and access the natural environment.

Natural Flood Management (NFM)

NFM involves working with nature to reduce the risk of flooding for communities. It uses various techniques to restore or mimic the natural functions of rivers, floodplains, and the wider catchment.

Nature-based Solutions (NbS)

Nature-based solutions are actions to protect, sustainably manage, and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits. They target major challenges like climate change mitigation and adaptation, and flood risk reduction, and are critical to sustainable development. Many nature-based solutions will increase natural capital stocks and associated ecosystem services.

Nature-friendly farming

Agricultural practices that prioritise environmental sustainability and biodiversity enhancement, such as reducing pesticide use, maintaining hedgerows and creating wildlife habitats on farms.

Nature recovery

Efforts aimed at restoring and enhancing natural habitats and ecosystems to increase biodiversity, improve ecosystem services, and strengthen ecological resilience.

Nature Recovery Network (NRN)

An expanding, increasingly connected, network of wildlife-rich habitats supporting species recovery, alongside wider benefits such as carbon capture, water quality improvements, natural flood risk management and recreation. It includes the existing network of protected sites and other wildlife rich habitats as well as landscape or catchment scale recovery areas where there is coordinated action for species and habitats.

Niche

An ecological niche describes the functional role a species plays in its ecosystem, encompassing its interactions with biotic factors (other organisms, like predators or prey) and abiotic factors (non-living elements like temperature, water, and light). It includes everything from the resources an organism uses (food, shelter) to the environmental conditions it can tolerate and how it affects and is affected by other species within its habitat.

Nitrate Vulnerable Zone (NPZ)

NVZs are areas designated as being at risk from agricultural nitrate pollution. The designations are made by the Secretary of State.

Notable species

Species that are threatened or declining.

Nutrient mitigation

Mitigation provided to address the issue of pollution impacts from nutrients that arise from the way that land is used in areas close to water bodies (known as water catchments). Where sites are already in poor condition, extra wastewater from development, for instance, can make matters worse.

Open access land

The Countryside and Rights of Way (CROW) Act 2000 normally gives a public right of access to land mapped as open country' (mountain, moor, heath and down) or registered common land. These areas are known as 'open access land'. *[Also see definition of Coastal margin]*

Planted ancient woodland sites (PAWS)

Plantations on ancient woodland sites which are ancient woods that have been felled and replanted with non-native species. Typically, these are conifers, but it can also include broadleaved planting such as non-native beech, red oak, and sweet chestnut.

Potential measures

Actions to achieve agreed priorities of the Local Nature Recovery Strategy.

Priority habitats and species

Priority habitats and species are those identified as being of principal Importance for conservation, requiring specific action to prevent their decline. In England, these are listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and are essential for decision-makers, developers, and planners to consider, in order to protect biodiversity during development and conservation efforts. Examples in England include habitats like lowland fens, reedbeds, and woodland, along with species such as water voles.

Pyrolysis

The process of thermal decomposition of materials at elevated temperatures, often in an inert atmosphere without access to oxygen.

Ramial chipped wood

Ramial Chipped Wood (RCW) is fresh un-composted woodchip made from smaller diameter younger tree

branches. Nutritionally these are the richest parts of trees, with young tree branches containing as much as 75% of the minerals, amino acids, proteins, phytohormones and enzymes found in the tree.

Ramsar site

An internationally important wetland designated under the Convention on Wetlands of International Importance especially as Wildfowl Habitat (Ramsar, Iran) 1971 and, as a matter of government policy, are afforded the same protection as National Site Network (NSN) sites.

Restoring Meadow, Marsh and Reef (ReMeMaRe)

A habitat restoration initiative, which aims to reverse centuries of decline of three of our priority estuarine and coastal habitats: seagrass meadows, saltmarshes, and European native oyster reefs.

Riparian and river buffers

Vegetated areas along riverbanks that protect waterways from pollution, provide habitat for wildlife, function as flood-plain and help manage flood risks.

Road Verge of Ecological Importance (RVEI)

This is an initiative of Hampshire County Council, the local highway authority responsible for roads within its administrative area, except for motorways and trunk roads. Those road verges with important botanical communities are selected as Road Verges of Ecological Importance and their mowing regimes modified to protect and enhance their botanical value.

Rural Payments Agency (RPA)

The Rural Payments Agency (RPA) is an executive agency of Defra. Prior to Brexit, the RPA delivered the European Union (EU) Common Agricultural Policy (CAP) payments to farmers and traders in England, paying out over £2 billion in subsidies each year.

Saltmarsh

An area of coastal grassland that is regularly flooded by seawater and dominated by salt-tolerant grasses and herbs such as sea aster and sea lavender, which trap and bind sediments. Salt marshes provide valuable feeding and breeding areas for both wildfowl and waders.

Sandflats

Intertidal sandflats and mudflats are submerged at high tide and exposed at low tide. They form a major component of estuaries and large shallow inlets and bays in the UK but also occur extensively along the open coast and in lagoonal inlets.

Schedule 8

Schedule 8 of the Wildlife and Countryside Act 1981 lists protected plants, fungi, and lichens in England and Wales. It is an offense to intentionally pick, uproot, destroy, possess, transport, or sell these listed species without a valid licence. The statutory nature conservation agencies, along with the Joint Nature Conservation Committee (JNCC), review Schedule 8 every five years to recommend changes for protection.

Scrapes

Scrapes provide areas of bare ground, which may be designed to hold water in wet habitats or provide early successional areas in dry habitats.

Section 41 (S41)

Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 requires the Secretary of State to publish a list of habitats and species of principal importance for the conservation of biodiversity in England. This list, often called the "Section 41 list" or "S41 species and habitats list", guides decision-makers, including public bodies and local authorities, in their duty to conserve biodiversity

under Section 40 of the Act when carrying out their functions.

Section 106 Legal Agreement (s106)

Planning obligations under section 106 of the Town and Country Planning Act 1990 (as amended), commonly known as s106 agreements, are a mechanism to make a development proposal acceptable in planning terms, that would not otherwise be acceptable. They are focused on site specific mitigation of the impact of development. Planning obligations can secure delivery of necessary mitigation by the developer, or through payment of developer contributions.

Semi-natural habitat

A habitat that although altered by land management still sustains relatively natural communities of plants and animals.

Silvopasture

Silvopasture systems comprise trees deliberately introduced into a forage production system (or, rarely, forage introduced into a tree production system). They are designed to produce a high-value tree component, while continuing to produce the forage and livestock component indefinitely or for a significant time.

Site of Importance for Nature Conservation (SINC)

SINCs, known nationally as Local Wildlife Sites, are locally designated areas which are recognised as being of particular importance to wildlife and biodiversity. Although a non-statutory designation, SINCs are afforded a high level of protection within the planning system.

Site of Special Scientific Interest (SSSI)

A site designated by Natural England under the Wildlife and Countryside Act 1981 (as amended)

(primarily by the Countryside and Rights of Way Act 2000) as an area of special interest by reason of any of its flora, fauna, geological, or physiographical features.

Soil erosion

The process by which soil is removed from the land by wind, water or human activity, leading to loss of fertile topsoil and degradation of land productivity.

Solent

The Solent is the strait that separates the Isle of Wight from the mainland of England. The Solent coastline is around 241 miles long on the mainland between Selsey Bill and Hurst Spit, and includes Chichester, Langstone and Portsmouth Harbours, Southampton Water, and the tidal extent of the main rivers.

Solent Marine Site (SEMS)

One of a number of European marine sites in the UK which are designated as internationally important sites for their habitats and species. SEMS covers the harbours, estuaries, areas of open coast and inshore waters around the Solent.

Solent Wader and Brent Goose Strategy (SWBGS)

The Solent Waders and Brent Goose Strategy (SWBGS) aims to protect the network of non-designated terrestrial wader and brent goose sites that support the Solent Special Protection Areas (SPA) from land take and recreational pressure associated with new development.

Source protection zone (SPZ)

Also referred to as groundwater source protection zone (SPZs), these identify areas of land through which water infiltrates into a groundwater borehole, well or spring that is used for public drinking water supply. These zones show the risk of contamination from potential pollution.

Spartina saltmarsh swards

Perennial pioneer grasslands of coastal salt muds, formed by *Spartina* or similar grasses.

Special Area of Conservation (SAC)

Sites identified under the EU Habitats Directive (92/43/EEC) supporting habitats or species listed within Annex I and II of that legislation, which form a network of internationally recognised sites across Europe alongside SPA and Ramsar sites. Following the UK withdrawal from the EU, these sites are provided equivalent protection under the UK transposition of this directive - The Conservation of Habitats and Species Regulations 2017 (as amended), as amended by the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019.

Special Protection Area (SPA)

Sites identified under the EU Directive on the Conservation of Wild Birds protecting sites supporting the habitats of migratory and other particularly threatened species of bird. They form a network of internationally recognised sites across Europe alongside SAC and Ramsar sites. Following the UK withdrawal from the EU, these sites are provided equivalent protection under the UK transposition of this directive - The Conservation of Habitats and Species Regulations 2017 (as amended), as amended by the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019.

Species priorities

Specific species identified as high priority for nature recovery efforts due to factors like their ecological importance, conservation status, or role in ecosystem functioning. In the LNRS for Hampshire, the species priorities section highlights priority measures to support species on the LNRS priorities species shortlist.

Spit

Narrow coastal land formation that is tied to the coast at one end. Spits frequently form where the coast abruptly changes direction and often occur across the mouths of estuaries; they may develop from each headland at harbour mouths.

Strategic Opportunity Areas for great crested newts (SOA)

In England, these are areas where the addition of new ponds would benefit great crested newt populations.

Succession (ecological)

The process of change in the species that make up an ecological community over time. For example, lowland grassland succession to woodland.

Supporting authorities

In the LNRS Regulations, a supporting authority for a Local Nature Recovery Strategy is:

- (a) Where the strategy area wholly or partly includes the area to which the authority relates, an authority listed in section 105(2)(a) to (e) of the Environment Act 2021.
- (b) Natural England.

Sustainable Drainage Systems (SuDS)

By mimicking natural drainage regimes, SuDS aim to reduce surface water flooding, improve water quality and enhance the amenity and biodiversity value of the environment. SuDS achieve this by lowering flow rates, increasing water storage capacity and reducing the transport of pollution to the water environment.

Sustainable Farming Incentive (SFI)

SFI rewards farmers for farming practices that help produce food sustainably and protect the environment.

Urban areas

Regions characterised by high population density and infrastructure development.

Water Framework Directive (WFD)

A directive for the protection and improvement of the quality of surface freshwater (including lakes, streams and rivers), groundwaters and any dependent ecosystems, estuaries, and coastal waters out to one mile from low water.

Wetland

Ecosystem where water saturates the soil, either permanently or seasonally, supporting distinctive plants and wildlife adapted to wet conditions.

Woodland Carbon Code

This code, developed by the UK government, provides a framework for certifying woodland creation projects that sequester carbon dioxide from the atmosphere.





Local Nature Recovery Strategy for Hampshire 2025

Part 1: Introduction and Description of Strategy Area

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Acknowledgements

Hampshire County Council would like to thank the following partners for working with us to help shape the Local Nature Recovery Strategy (LNRS) for Hampshire:



Hampshire County Council would also like to thank the many additional individuals and organisations who contributed significant time, energy and enthusiasm to the preparation of the LNRS through the sharing of their expertise, data, and more.



Forewords

“As the Leader of Hampshire County Council, I am proud to support our Local Nature Recovery Strategy. This initiative is crucial for preserving Hampshire’s rich biodiversity and ensuring a sustainable future for our communities. By working together, we can restore natural habitats, protect wildlife, and enhance the beauty of our countryside for generations to come.”

CLlr Nick Adams-King, Leader of Hampshire County Council

“The New Forest National Park Authority welcomes the production of the LNRS for Hampshire, which will help nature to recover through partnership working across the county. Hampshire’s natural environment delivers a wide range of benefits to local communities and businesses and the National Park Authority welcomes the targeted priorities set out in the Strategy.”

Alison Barnes, Chief Executive of New Forest National Park Authority

“Nature is in crisis and we only have a short time left to halt biodiversity decline and protect 30% of land and sea for nature by 2030. The Local Nature Recovery Strategy for Hampshire (LNRS) is a vital tool to drive real, urgent action, including influencing planning and investment decisions across the county. To succeed, the LNRS must be supported by robust delivery mechanisms, ambitious targets, and strong monitoring to track progress, along with clear accountability and good governance. We look forward to seeing the LNRS becoming a real road map to recovery, driving forward the restoration of ecosystems, improving the protection of our unique landscapes and supporting a resilient, prosperous, healthy nature-positive economy.”

Debbie Tann MBE, Chief Executive of Hampshire & Isle of Wight Wildlife Trust

“We really welcome this opportunity to contribute towards the formation of the first Local Nature Recovery Strategy for Hampshire. The National Park, a third of which is in Hampshire, has some very ambitious goals around nature recovery and turning the tide on biodiversity loss. But we know we can’t do it alone – and that’s why this Strategy is so important as we’ll only be able to make a difference by working together. Having a clear plan of action and a robust spatial strategy are absolutely vital to ensuring we have bigger, better and more joined-up habitats to bring about long-lasting nature recovery.”

Siôn McGeever, Chief Executive of the South Downs National Park Authority

“Being part of the process of creating the Local Nature Recovery Strategy has been hugely beneficial for the council. The partnership work and information sharing has been insightful and productive, and the end product ties in with our own Nature Improvement Plan (NIP) as part of our response to the Climate and Nature Emergencies as the council moves to become greener faster. Our own NIP will have meaningful, measurable and ambitious targets for nature recovery based on the LNRS.”

Rick Smith, Service Lead, Sustainability and Natural Environment at Winchester City Council

“East Hampshire District Council has worked closely with the County Council in our role as a Supporting Authority. It is important for the council to help shape the content of the LNRS based on the priorities within our local area and the key role we will have in helping to deliver the LNRS. We have provided local information to help inform the plan and, in turn, the LNRS will help inform the best places for Biodiversity Net Gain offsite habitat creation and enhancement in East Hampshire as well as nature recovery more widely.”

Julia Nethercott, Principal Ecologist at East Hampshire District Council

“The LNRS is key for providing a vision for nature recovery across Hampshire”

Jayson Grygiel, Planning Policy Manager at Gosport Borough Council

“The LNRS for Hampshire is there to help landowners, local authorities, developers and anyone else who manages land, to take action for nature. It is a thorough and well evidenced strategy, informed by the people and organisations who understand our local landscapes. It identifies areas and suggests measures to protect and enhance biodiversity, and Basingstoke and Deane Borough Council welcomes it as a useful aid to deliver actions under our Biodiversity Strategy 2023-29, such as achieving biodiversity net gain and wider nature recovery in the borough.”

Cllr Chris Tomblin, Cabinet Member for Climate and Ecological Emergency at Basingstoke and Deane Borough Council

“Southampton City Council is very proud to have supported Hampshire County Council in this extremely important piece of work. The LNRS will help deliver Southampton’s Green Infrastructure Strategy, guide BNG in areas of the city that most need it, and strengthen the message around the importance of nature and the urgency of nature recovery. I look forward to seeing the effects of this strategy in Southampton.”

Cllr John Savage, Cabinet Member for Environment and Net Zero at Southampton City Council





Executive Summary

Hampshire has a beautiful and varied landscape with an impressive diversity of unique and important habitats. These include ancient woodlands, wildflower meadows, iconic chalk streams, species-rich downland, important heathland mosaics including the New Forest, and coastal and marine habitats. The variety of habitat types within Hampshire is reflected in its rich flora and fauna. The description of the area’s natural environment, set out in this Local Nature Recovery Strategy (LNRS), confirms the importance and value of Hampshire for biodiversity and nature conservation.

- Like the rest of the UK, the natural environment and biodiversity across the area has declined significantly over the last 50 years and is under continued threat. There has been a decline in the quality, variety, and quantity of natural areas in Hampshire due to multiple pressures from a growing human population. These threats include increased development, agricultural and land use changes, invasive species, pollution, recreational pressure, and climate change.
- LNRSs, introduced by the Environment Act 2021, are a new system of plans for nature recovery. Their role is to provide a county-wide, practical solution for nature recovery. A total of 48 LNRSs have been developed mostly at the county level, which join seamlessly to cover the whole of England. They are a key mechanism for planning and delivering the National Nature Recovery Network.
- LNRSs are designed to be evidence-based, locally led, and collaborative, following statutory guidance and meeting LNRS Regulations. They create a network of shared strategies that public, private and voluntary sectors can all help to deliver.
- As responsible authority, Hampshire County Council has developed the LNRS for Hampshire by working closely with the supporting authorities¹. These include the local planning authorities of Portsmouth and Southampton City Councils, Hampshire district and borough councils, the

¹ The LNRS Regulations created the role of ‘supporting authority’ defined as other local planning authorities (including National Park Authorities) in the Strategy area together with Natural England.

New Forest and South Downs National Park Authorities, and Natural England. We also engaged with other local partners, stakeholders, agencies, organisations and communities to learn about their priorities and how they can support nature recovery.

- Engagement and consultation have included neighbouring responsible authorities to ensure that the LNRS for Hampshire integrates with adjacent LNRSs. These include the Isle of Wight Council, Dorset Council, Wiltshire Council, Royal Borough of Windsor and Maidenhead Council (acting for Berkshire), Surrey County Council, and West Sussex County Council.
- The aim of the strategy is to identify locations to create, restore and enhance habitats, providing the best opportunities to deliver nature’s recovery. This is determined based on the connectivity of existing habitats and where there are opportunities to improve this further. The strategy will help to target future effort and funding. It also provides a range of options and evidence to inform decisions in the form of recommendations for delivery. The LNRS does not dictate how land is used or limit the choices land managers have on their land.
- In delivering nature recovery, the Strategy also seeks to maximise wider environmental, social and economic benefits, such as flood protection, cleaner water, better air quality, carbon capture, and improved health and wellbeing.
- Using extensive mapping and data from a wide range of sources, this Strategy confirms existing **Areas of Particular Importance for Biodiversity** (featured on the APIB² map). It then identifies where there are opportunities for recovering and enhancing biodiversity through habitat creation, improved management and better ecological connectivity, known as **Areas that Could** become of importance for **Biodiversity** (featured on the ACB³ map). Potential measures (actions) that will deliver opportunities for nature recovery are set out in the Measures map⁴, which combines both ACBs and non-statutory APIBs that are known to be in poor condition
- Using this mapping and data, together with collective expert knowledge, the LNRS identifies where habitats can be, and are being, created or restored. These include woodlands, grasslands, heathlands, freshwater areas, river buffers, coastal zones, and urban habitats..
- Through extensive consultation, the LNRS has developed a set of priority outcomes (the nature recovery outcomes communities want to achieve) and suggest actions (potential measures) to deliver these priorities. These actions will help improve, connect and expand important natural areas. The LNRS provides guidance for organisations and individuals on where to focus their efforts, and what actions to take, and incentivises these actions to achieve nature recovery.
- ACBs comprise habitat opportunity areas, alongside other sites drawn from a variety of plans and strategies, and show where and how we can deliver the Lawton principles of “bigger”, “better” and “more connected” spaces for nature, to create resilient and coherent ecological networks. .
- Environmental Land Management (ELM) schemes, such as Countryside Stewardship schemes and Sustainable Farming Incentive, are available to assist farmers and landowners in implementing nature recovery initiatives. These schemes offer payments for a wide range of actions that support the local natural environment.

2 APIB map – Areas of Particular Importance for Biodiversity map (Part 2: Priorities and measures)

3 ACB map – Areas that Could become important for Biodiversity map (Part 2: Priorities and measures)

4 Measures map – provided in Part 2: Priorities and measures.

- Another important mechanism to support the delivery of the LNRS is biodiversity net gain (BNG). BNG provides developers and landowners the opportunity to contribute positively to the implementation of the LNRS. All sites mapped on the Measures Map offer an uplift in the value of BNG biodiversity units compared with other sites⁵. Additionally, nutrient mitigation funding and Solent wader and brent geese strategy mitigation funding are important delivery mechanisms for biodiversity projects.
- This LNRS presents a key opportunity to reverse the decline in the county's habitats and species. By providing the direction needed to create a biodiversity-rich environment, wildlife and people will mutually benefit from nature's recovery.



⁵ See Appendix 3 for more details.

1. Introduction



Introduction

What is the Local Nature Recovery Strategy for Hampshire?

The Local Nature Recovery Strategy (LNRS) for Hampshire is a vision for a joined-up network of terrestrial, freshwater, and coastal habitats where nature and people can thrive. The primary purpose of the Strategy is to identify locations to create, restore and enhance habitats, across Hampshire, that provide the best opportunities to deliver nature's recovery, and with a focus on areas outside of designated sites. This is based on the connectivity of existing habitats and where there are opportunities to improve ecological connectivity further. It is also about driving coordinated, practical action and investment to help nature recover.

England is widely considered to be one of the most nature-depleted countries in the world, following historic and ongoing declines⁶. The decline in the country's biodiversity⁷ is primarily due to habitat loss, fragmentation and degradation resulting from human land use competing with nature. These continuing threats include increased development, agricultural and land use changes, invasive species, pollution, recreational pressure, and climate change.

The government has made legally binding commitments to end these declines and to help nature recover. This is important for nature's own sake and for all the things that we rely on nature for, like fresh air, clean water and climate regulation, to food, medicines, and more. Nature recovery provides essential natural capital infrastructure to improve ecological, human and climate resilience. For nature to recover however, targeted, co-ordinated and collaborative action is required.

Local Nature Recovery Strategies (LNRSs), introduced by the Environment Act 2021⁸, are a new system of plans for nature recovery. They aim to provide a county-wide, practical solution for nature recovery. A total of 48 LNRSs have been developed at the county level, which join together seamlessly to cover the whole of England⁹. They are key to planning and delivering the National Nature Recovery Network¹⁰.

The Environment Act requires that each Strategy contains:

1. A statement of biodiversity priorities, including:
 - A description of the strategy area and its biodiversity.
 - Opportunities for recovering or enhancing biodiversity in the strategy area.
 - Priorities for biodiversity recovery or enhancement, considering contributions to other environmental benefits.

⁶ State of Nature: England (2023) -

<https://stateofnature.org.uk/wp-content/uploads/2023/09/TP26054-SoN-England-summary-report-v6.pdf>

⁷ Biodiversity refers to the variety of all life forms, including plants, animals, fungi, and micro-organism.

⁸ Environment Act 2021 - <https://www.legislation.gov.uk/ukpga/2021/30/contents>

⁹ [Map of local nature recovery strategy \(LNRS\) areas and responsible authorities](#)

¹⁰ The Nature Recovery Network - <https://www.gov.uk/government/publications/nature-recovery-network>

- Proposals for potential measures related to those priorities.

2. A local habitat map that identifies:

- Areas that are of particular importance for biodiversity (APIB): nationally and internationally designated sites, local wildlife sites known as Sites of Importance for Nature Conservation (SINCs), Local Nature Reserves (LNRs), and irreplaceable habitats such as ancient woodland, lowland fen and coastal saltmarsh and sand dune.
- Areas that could become of particular importance for biodiversity (ACB) and could make a contribution to other environmental benefits.
- Actions that are required to achieve the priorities mapped on the Measures map.

LNRs are designed to be evidence-based, locally led, collaborative, and follow statutory guidance¹¹, and meet LNRs Regulations¹². This creates a network of shared strategies that public, private, and voluntary sectors can all help to deliver. The relationship between LNRs, national policy and nature recovery objectives is set out in Appendix 1.

LNRs will have an important role in planning, with local planning authorities having a legal duty to have regard to the Strategy¹³. This means that the information within the LNRs may be a material consideration when developing plan documents and making planning decisions. Planning practice guidance¹⁴ advises that local planning authorities

should be aware of those areas mapped and identified in the LNRs, and the measures proposed in them, and consider how these should be reflected in their local plan. In doing so, they should consider what safeguarding would be appropriate to enable the proposed actions to be delivered. This will enable local planning authorities to support the best opportunities to create or improve habitat to conserve and enhance biodiversity, including where this may enable development in other locations. The LNRs can also inform the preparation of Neighbourhood Plans and Spatial Development Strategies.

LNRs do not designate land for specific uses. Instead, they highlight areas that may hold potential for enhancing biodiversity. This process does not restrict development, or prevent land from being used - it aims to support informed decision-making that balances environmental and development needs.

LNRs will also play a critical role in guiding Biodiversity Net Gain (BNG), supporting offsite gains to be delivered in a way that maximises biodiversity benefits. Areas in the LNRs with mapped measures carry 'strategic significance' within the BNG metric which provides additional unit value to those habitats identified. Local planning authorities therefore have an important role in preparing the LNRs for their area to help identify suitable offsite biodiversity gain sites.

Natural England has led the government's involvement and has worked alongside each of the 'responsible authorities'¹⁵ to help shape the strategies and ensure overall consistency of LNRs preparation across England. Hampshire County Council was appointed as the responsible authority for the LNRs for Hampshire. The preparation of each LNRs has also

¹¹ Local nature recovery strategy: what to include -

<https://www.gov.uk/government/publications/local-nature-recovery-strategy-what-to-include>

¹² The Environment (Local Nature Recovery Strategies) (Procedure) Regulations 2023 -

<https://www.legislation.gov.uk/ukxi/2023/341/made>

¹³ The Environment Act 2021 - <https://www.legislation.gov.uk/ukpga/2021/30/section/102>

¹⁴ Planning practice guidance - <https://www.gov.uk/guidance/natural-environment>

¹⁵ The Secretary of State for Environment, Food and Rural Affairs (DEFRA) has appointed 'responsible authorities' to lead the preparation of the strategy for each area.

been supported by the Environment Agency and the Forestry Commission, along with the local planning authorities.

The preparation of the LNRS for Hampshire has followed a systematic and rigorous approach. Figure 1.1, below, is an outline of the process undertaken to create and shape the LNRS for Hampshire’s priorities, measures and mapping, and follows the five step process proposed by Defra within LNRS regulations and statutory guidance¹⁶.

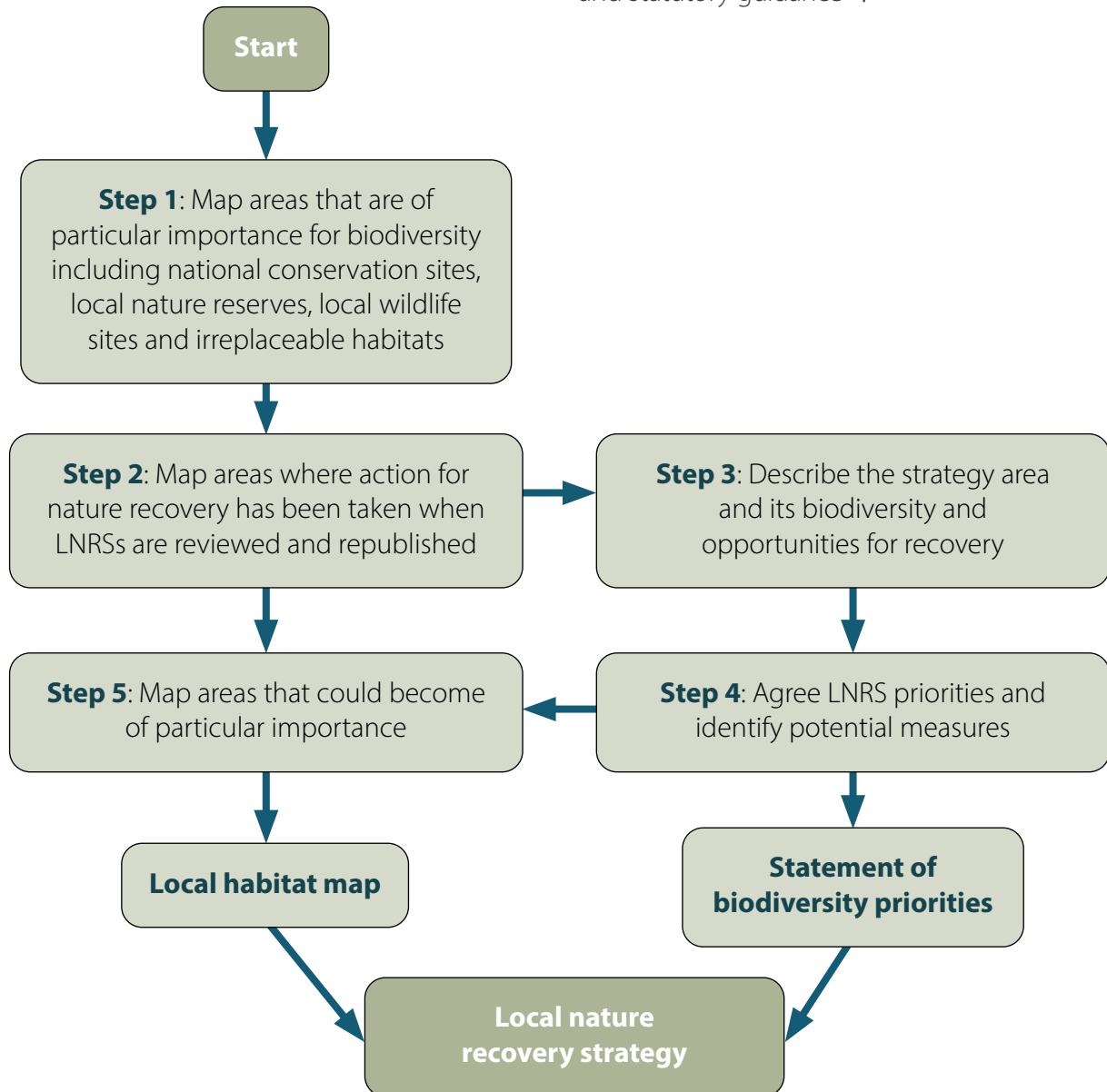


Figure 1.1: LNRS Regulations and Guidance process diagram

The geographical extent of this LNRS is the county of Hampshire. This includes the two cities of Southampton and Portsmouth and the parts of the

New Forest National Park and South Downs National Park within the county. As Hampshire has a coastline, the government has confirmed that the LNRS

¹⁶ Defra statutory guidance requires that LNRS follow administrative boundaries into the inter tidal zone only to mean low water. The Marine Management Organisation (MMO) will explore how spatial planning for marine nature recovery might develop in the future.

boundary extends to the intertidal zone as far as the mean low water mark¹⁷. The total LNRS for Hampshire area constitutes 385,435ha.

Nevertheless, Hampshire's marine environment is summarised in Sections 2.1 and 2.2. This is due to the importance of the Solent and Hampshire's estuaries and harbours for biodiversity, and the impact of land-based activities on the marine environment and vice versa.

As nature does not relate to administrative boundaries, in the preparation of the LNRS, full account has been taken of the natural environment and associated LNRSs of adjacent areas.

The LNRS for Hampshire is split into five parts as follows:

- Part 1: Introduction and description of the strategy area.
- Part 2: Priorities and measures.
- Part 3: Species recovery.
- Part 4: Technical Appendices.
- Glossary

The Statement of Biodiversity Priorities is contained in Parts 1 to 3, and the Local Habitat Map (consisting of a number of maps in static document form), is embedded within Part 2. The Local Habitat Map can also be viewed in an interactive online format on the LNRS webpages¹⁸. The map includes all geographically located measures.

17 Defra statutory guidance requires that LNRS follow administrative boundaries into the inter tidal zone only to mean low water. The Marine Management Organisation (MMO) will explore how spatial planning for marine nature recovery might develop in the future.

18 Local Habitat Map - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/hampshire-strategy>



Who has helped prepare the LNRS?

The County Council has developed the LNRS for Hampshire with key local partners and engaged with a wide range of experts, stakeholders, agencies, organisations and communities across Hampshire and adjacent areas who are interested in helping to deliver nature recovery.

As the responsible authority, the County Council has worked closely with the supporting authorities¹⁹ of Portsmouth and Southampton City Councils, local planning authorities in Hampshire, the New Forest National Park Authority, South Downs National Park Authority, and Natural England.

A list of the key stakeholders involved in the preparation of the LNRS is provided in Appendix 2.

The County Council undertook early engagement with key stakeholders through the delivery of a series of formal thematic and community-based workshops. Outputs from the workshops are available on the LNRS for Hampshire webpages²⁰. Additionally, informal and formal consultation has been undertaken with supporting authorities and other key stakeholders.

In conjunction with the workshops, a public survey was launched. It ran for three months and explored the views of Hampshire's communities about their priorities for nature recovery and where they would like to see improvements.

Neighbouring LNRS responsible authorities were consulted, including the Isle of Wight Council, Dorset Council, Wiltshire Council, Royal Borough of Windsor and Maidenhead Council (acting on behalf of the Berkshire unitary authorities), Surrey County Council, and West Sussex County Council. Detail of LNRS engagement, including the workshops and consultation exercises, is provided in Appendix 2.

The County Council is also a member of the London and South East England Responsible Authority Network which provides an opportunity for authorities to share information, expertise and best practice, during LNRS preparation and beyond.

Delivering the LNRS

The Strategy will be in place for between three and 10 years before it is updated. During that time, the responsible authority has an important role in delivering its priorities. This role includes:

- Leading and convening a partnership focussed on delivering the Strategy, building on existing governance and partnerships.
- Promoting the use of the Strategy in other policy development and decision making.
- Identifying, developing and publicising projects that will contribute to delivery of the Strategy.
- Tracking activities or projects that are delivering the Strategy's priorities that are being funded outside of public funding schemes and sharing this information with Natural England.

19 The LNRS Regulations created the role of 'supporting authority' defined as other local planning authorities (including National Park Authorities) in the Strategy area together with Natural England.

20 <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/get-involved>

Defra has provided funding to enable work on the transition to delivery, to start following publication of the Strategy. Collaboration across Hampshire is well

established in this space, providing a good foundation to facilitate delivery of nature recovery projects across the county.

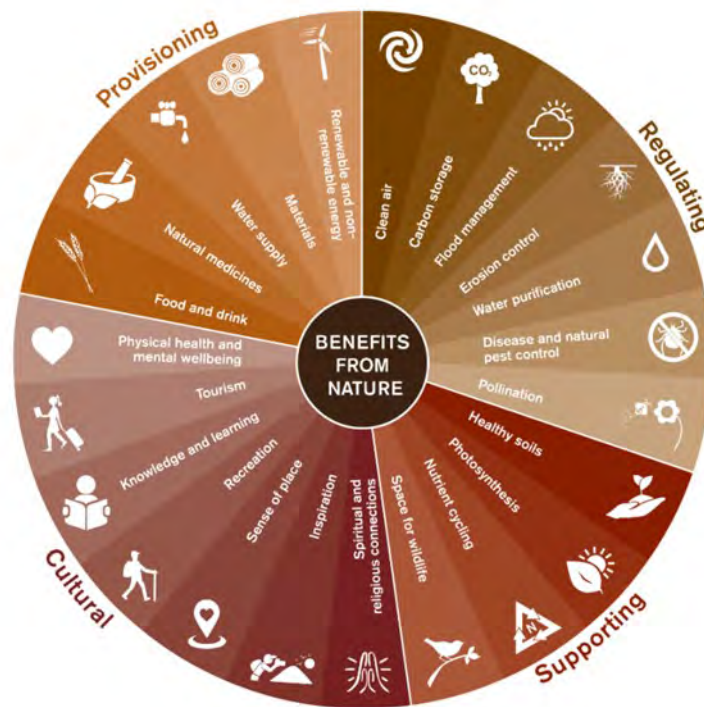
Delivering wider environmental benefits

In delivering nature recovery, the Strategy also seeks to deliver wider environmental, social and economic benefits, such as flood protection, cleaner water, better air quality, resilience to climate change, carbon capture, and improved health and wellbeing. In this LNRS, these will simply be referred to as wider environmental benefits. They are also referenced throughout the Strategy and are listed in detail in Part 2: Priorities and measures, against each priority outcome. As such, in addition to recovering nature,

the Strategy will contribute to thriving communities.

Nature recovery significantly enhances the ecosystem services (benefits that individuals and communities receive) from nature. Figure 1.2 shows the range of ecosystem services delivered by nature. Nature recovery also increases resilience to a number of environmental and man-made pressures and threats, for both people and wildlife.

Figure 1.2: Land ecosystem services wheel



Source: NatureScot website August 2025

Nature recovery provides opportunities to apply nature-based solutions (NbS) to a range of societal issues, such as flooding, by providing natural alternatives to engineered and artificial solutions,

including sustainable drainage systems (SuDS). Working with nature in this way provides a more cost-effective and sustainable approach, which at the same time helps to recover nature.

Restoring natural habitats boosts biodiversity, which in turn supports essential functions like pollination, water purification, and soil fertility. This biodiversity creates ecosystems that are better able to withstand environmental and man-made stressors such as climate change and pollution. Additionally, diverse plant communities:

- Sequester more carbon, helping to mitigate climate change.
- Regulate water cycles, which reduces flood and drought risk.
- Reduce soil erosion, which maintains productivity of farm businesses.
- Improves air quality, which benefits overall environmental health and human well-being.
- Provides cooling in periods of high temperatures.

Restoring degraded landscapes, urban and rural, through nature recovery transforms them into more

biodiversity-rich multifunctional spaces. These landscapes then offer recreational and educational opportunities, fostering community connections with nature and raising conservation awareness.

Greater access to nature provides significant health benefits, ranging from reduced stress to improvements in physical health. Additionally, by enhancing aesthetic, cultural and recreational values, nature recovery can promote ecotourism, which generates economic benefits while encouraging sustainable land use. Overall, nature recovery supports more resilient ecosystems and communities, helping to address global environmental challenges.

The nature recovery and wider environment benefits that the LNRS seeks to deliver are listed against each priority outcome in Table 1 of Part 2: Priorities and measures.

Enabling partners to deliver nature recovery

The Strategy will help to target future effort and funding. It therefore provides a range of options and evidence to inform decisions in the form of recommendations for delivery. The LNRS does not dictate how land is used or limit the choices land managers have on their land. It also does not provide new protections for the habitats, species or places that are collectively prioritised.

The LNRS will:

- Guide investment into local priorities for protection and enhancement.
- Help shape how future funding for farming and land management such as the Environment Land Management (ELM) schemes will be used.
- Map areas of opportunity for the use of nature-based solutions to wider environmental problems like flooding, climate change mitigation and adaptation or poor water quality.

- Guide the delivery of mandatory biodiversity net gain (BNG) investments across the strategy area (see Appendix 3).
- Provide a source of evidence for local planning authorities, helping these authorities understand locations important for conserving and restoring biodiversity.

For landowners and farmers, the LNRS:

- Identifies the highest priority areas for habitat restoration, creation and connectivity.
- Aids in pinpointing habitat opportunities across farmland, offering initial guidance on the most suitable habitat types for those areas.
- Provides guidance on actions to take forward on farmland and woodland to achieve nature recovery and to transition towards more

sustainable farming practices.

- Could provide a focus for ELM schemes²¹ such as the Landscape Recovery and Countryside Stewardship.

For community groups and individuals, the LNRS:

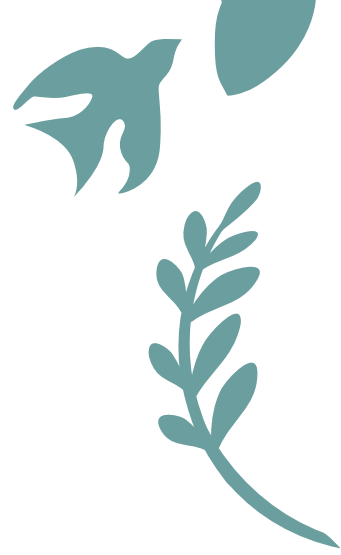
- Assists in pinpointing areas within the local community to prioritise for nature recovery efforts.
- Provides guidance for focusing on habitat creation and enhancement initiatives.
- Aids in aligning neighbourhood plans with their objectives.
- Can support funding applications for nature recovery projects.
- Aids in the establishment of new local community groups dedicated to nature recovery efforts.
- Provides health benefits and nature connection for wellbeing.

For local authorities, the LNRS:

- Helps in determining locations of on-site and off-site potential for BNG²², nutrient mitigation, and mitigation for important wader and brent geese sites that support the Solent Special Protection Areas (SPAs).
- Assists in aligning local plan green and blue infrastructure delivery with LNRS goals, contributing to a Hampshire-wide, collaborative plan between local authorities.
- Aids in planning and site allocation decisions through data-driven site identification for nature recovery.
- Helps in identifying sites for green and blue space delivery, assisting in meeting local targets.

²¹ Environmental Land Management (ELM) scheme – see Appendix 3

²² See Appendix 3



For environmental non-governmental organisations (NGOs), the LNRS:

- Prioritises areas for nature recovery.
- Aids in advancing the delivery of their projects.
- Fosters collaborative efforts across the county, generating greater ambition for nature recovery.
- Supports funded schemes such as ELM schemes, enabling large-scale positive changes for nature.
- Furthers the promotion of their efforts for nature and wildlife recovery.
- Facilitates the connection of long-term goals for nature's recovery.

For developers, the LNRS:

- Provides guidance on biodiversity priorities and measures to be incorporated into development projects.
- Provides support with delivering BNG²³, by

highlighting key land for nature recovery delivery, which could also be suitable sites for off-site BNG.

- Provides a series of potential measures for embedding nature into urban infrastructure. These can have multiple benefits for new developments, including stormwater management, climate resilience, urban cooling, and overall enhancing the quality and sustainability of built environments.

Some of the mechanisms available to help support developers, landowners, farmers, communities and others to improve biodiversity, are set out in Appendix 3.

The maps (Part 2: Priorities and measures) indicate where actions could be carried out that will restore, create, expand and connect existing spaces for nature. These maps are also available in an online interactive format on the LNRS for Hampshire website²⁴, providing greater detail.

Areas where nature recovery action has been or is being taken

Information from a range of sources has been used to identify areas where action for nature recovery within the strategy area has been, is being and will be taken. These sources have included information provided by a wide range of local partners, the outputs of the LNRS workshops, and published sources. Current projects and schemes across the strategy area are set out in Appendix 4. Those project and scheme areas where specific action is being taken are included in the Measures and ACB maps in Part 2: Priorities and Measures. Sources of evidence considered in the preparation of this strategy are set out in Appendix 5.

When this LNRS is reviewed, the actions (potential measures) proposed in this Strategy, which have been undertaken, will be included in the next iteration of the habitats map along with any new potential measures. This activity will be tracked and monitored by the responsible authority, although details of how this will be achieved are yet to be determined.

²³ See Appendix 3

²⁴ LNRS for Hampshire webpages -

<https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/hampshire-strategy>

2. Description of the strategy area and its biodiversity



2. Description of the strategy area and its biodiversity

2.1. Summary of Hampshire's natural environment

Hampshire has a beautiful and varied landscape with an impressive diversity of unique and important habitats. These include ancient woodlands, wildflower meadows, iconic chalk streams, wetlands, species-rich downland, heathlands and pasture woodland like those in the New Forest, and coastal and marine habitats²⁵. River valleys, ancient hedgerows, and flower-rich verges help provide a connecting network for wildlife. The variety of habitat types within Hampshire is reflected in a rich flora and fauna. However, whilst priority habitats cover 21% of Hampshire's area, 50% of which are woodlands, many sites are in poor condition and are fragmented.

Like the rest of the UK, the natural environment and biodiversity across Hampshire has declined significantly over the last 50 years and is under continued threat²⁶. There has been a decline in the quality, variety, and quantity of natural areas due to multiple pressures from a growing human population. These include increased development, agricultural

and land use changes, invasive species, pollution, recreational pressure, and climate change. Nature needs more space that is better connected as part of a Nature Recovery Network, to allow it to move, adapt, and thrive.

National Character Areas (NCA)

England is subdivided into 159 National Character Areas (NCAs). These are broad divisions of landscape that form the basic units of cohesive countryside character, on which ecological strategies can be based. NCAs are areas that share similar landscape characteristics, and which follow natural lines in the landscape, making them an effective decision-making framework for the natural environment. The

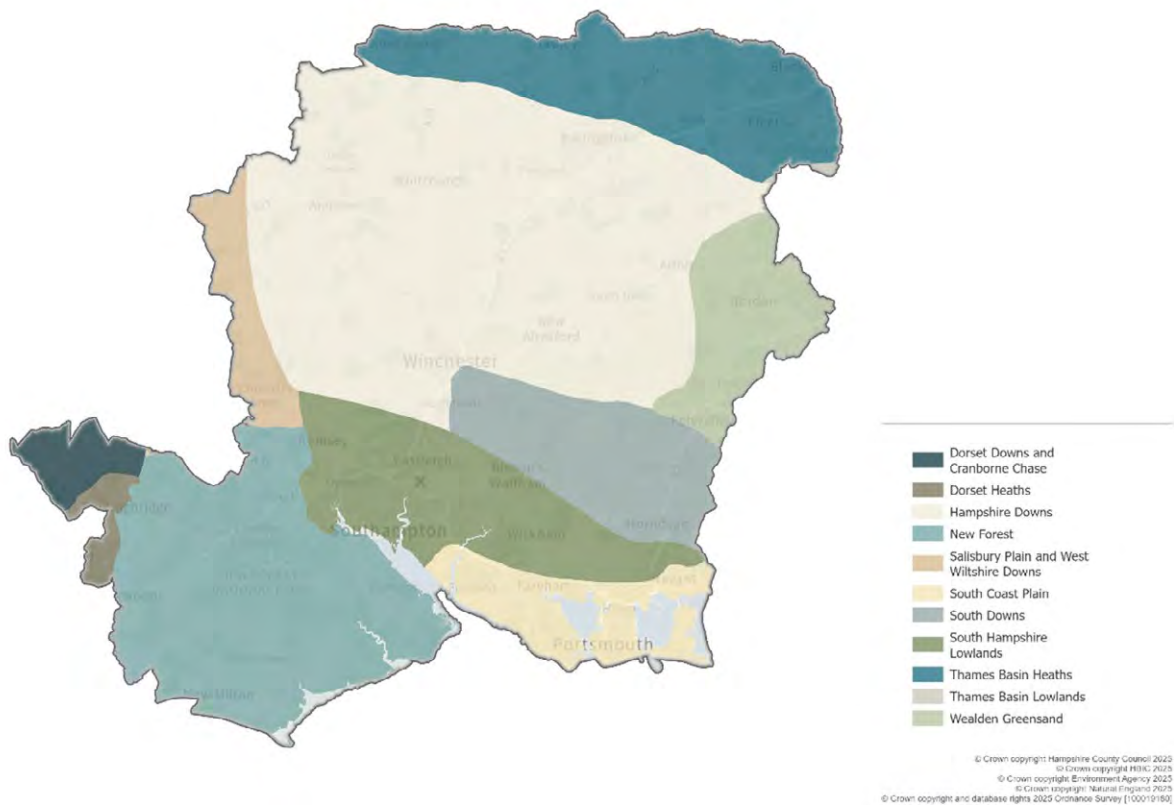
Character Area framework is used to describe and shape objectives for the countryside, its planning and management and is maintained by Natural England.

Within Hampshire, 11 areas have been defined by Natural England as NCAs²⁷. These can be seen in figure 2.1 and are:

25 Hampshire and Isle of Wight's Natural Wealth (2022) - https://hantswightlnp.wordpress.com/wp-content/uploads/2022/05/2022_04_natural-wealth_inp_final.pdf
26 State of Nature: England (2023) - <https://stateofnature.org.uk/wp-content/uploads/2023/09/TP26054-SoN-England-summary-report-v6.pdf>
27 National Character Area Profiles - <https://nationalcharacterareas.co.uk/>

- Dorset Downs and Cranborne Chase.
- Dorset Heaths.
- Hampshire Downs.
- New Forest.
- Salisbury Plain and West Wiltshire Downs.
- South Coast Plain.
- South Downs.
- South Hampshire Lowlands.
- Thames Basin Heaths.
- Thames Basin Lowlands.
- Wealden Greensand.

Figure 2.1: Distribution of National Character Areas across Hampshire



Sites designated for their nature conservation importance

Half of all priority habitat across Hampshire is designated as internationally important for nature conservation. This includes designated areas that comprise the UK's National Site Network (NSN) - Special Areas of Conservation (SAC) and Special Protection Areas (SPA), together with Ramsar sites. These include the New Forest, much of the Hampshire coastline, two of our chalk streams, the Thames Basin Heaths, Wealden Heaths, and several chalk grassland sites. The Mottisfont Bats SAC is designated for its population of rare barbastelle bats.

There are 125 nationally important Sites of Special Scientific Interest (SSSIs) in Hampshire. This makes up 13.2% of the county's land area, twice that of any other lowland county. 93% of these SSSIs are in favourable or unfavourable recovering condition. There have been no new SSSIs designated in Hampshire for nearly 20 years. Some of the best examples of SSSIs in the area are also designated as National Nature Reserves (NNRs), which represent some of the best SSSIs and additionally allow for sensitive public access.

Hampshire also has over 4,000 locally designated Sites of Importance for Nature Conservation (SINCs) covering 9.4% of the area. These are generically referred to as Local Wildlife Sites in national planning policy. Whilst SSSIs represent the best examples of a

range of priority habitats, many sites of similar quality have instead been designated as SINCs. 82% of SINCs support ancient and other native woodland, with species rich grasslands and fen only accounting for 8%. These account for less than 0.5% of Hampshire's land cover and remain our most threatened habitat types. 90% of grassland SINCs surveyed saw a decline in their condition between 2010 and 2019.

0.63% of Hampshire's land area is designated as Local Nature Reserves (LNRs). Local authorities or town and parish councils designate LNRs in their local areas and are responsible for their management. These sites are designated on the basis of their importance for wildlife, geology, education or enjoyment (without disturbing wildlife). Indeed the majority are already designated as SSSIs or SINCs. There are 72 individual LNRs across the area. The area also benefits from a number of Hampshire & Isle of Wight Wildlife Trust reserves and other private nature reserves.

Although much of Hampshire is covered by various nature conservation designations, this does not mean that this land is well managed for nature or that nature is recovering in these areas.

Designated sites across Hampshire are shown on the APIB (Areas of Particular Importance for Biodiversity) map in Part 2: Priorities and measures.

Protected landscapes and National Trails

Approximately 38% of Hampshire's land area is covered by statutory landscape designation, including two National Parks and three National Landscapes²⁸. These protected landscapes include areas of international, national and local importance for nature conservation, provide significant opportunities for biodiversity enhancement, and deliver landscape-scale nature recovery through the implementation of their statutory management plans.

Protected landscapes governance bodies have developed their own strategies and plans for nature recovery for their areas (see Appendix 5) and these have informed the preparation of this LNRS.

Protected landscapes relevant to Hampshire include the New Forest National Park, South Downs National Park, North Wessex Downs National Landscape, Cranborne Chase National Landscape²⁹, Chichester Harbour National Landscape, and the adjacent Surrey Hills National Landscape³⁰.

Long Distance Routes (now called National Trails in England and Wales)³¹ were introduced by the same legislation that led to the establishment of the country's network of protected landscapes. National Trails provide both access to nature for people and opportunities for nature recovery. National Trails pass through areas of nature conservation importance

and provide landscape scale ecological connectivity. Nature conservation is an important objective in their management. In Hampshire these include:

- South Downs Way - 100 miles (160 Km) long National Trail that follows the old routes and droveways along the chalk escarpment and ridges of the South Downs between Winchester, Hampshire and Eastbourne, East Sussex (30 miles (48 Km) of the National Trail is within Hampshire).
- King Charles III England Coastal Path – 2,700 mile (4,345 Km) long coastal path around England and the world's longest managed coastal path when finished (130 miles (208 Km) of the National Trail is within Hampshire).

The England Coastal Path is unique to other National Trails as its designation came alongside the Marine and Coastal Access Act 2009³², which created the coastal margin³³ – an area generally defined as the strip of land between the path and mean low water mark. This coastal margin also provides additional opportunities for nature recovery and ecological connectivity.

Figure 2.2 shows the location and extent of designated landscapes and National Trails across Hampshire.

28 On 22 November 2023 in England and Wales, AONBs were formally rebranded as 'National Landscapes'. These nationally protected landscapes are still referred to as AONBs in legislation, national planning policy and guidance, until such time as these are updated/amended.

29 Note: the full name of the Cranborne Chase National Landscape is 'Cranborne Chase and West Wiltshire Downs' National Landscape. The shortened version is used in most literature for convenience.

30 The Surrey Hills National Landscape currently abuts the eastern boundary of the county of Hampshire. As such, a small part of Hampshire is within the 'setting' of the National Landscape. A proposed minor extension of this National Landscape into Hampshire is currently being considered.

31 National Trails - https://www.nationaltrail.co.uk/en_GB/

32 Marine and Coastal Access Act 2009 - <https://www.legislation.gov.uk/ukpga/2009/23/contents>

33 England Coastal Path coastal margin - <https://www.nationaltrails.uk/news/coastal-margin-national-trails-in-local-nature-recovery-strategies-england>

Figure 2.2: Designated landscapes and National Trails across Hampshire



Please note: Some sections of the England Coastal Path are yet to be completed with the specific route of those sections yet to be confirmed.

Rivers and wetlands

Hampshire is intersected by an extensive network of river systems and other watercourses, which also includes eight chalk streams and their associated tributaries. 85% of all chalk streams in the world are found in the UK and a significant proportion of these are in Hampshire. Notable waterways include:

- Hampshire Avon.
- New Forest Rivers and Streams including the Lymington and Beaulieu rivers.
- River Test and its tributaries the Wallop Brook, Anton, Dever and Bourne Rivulet.
- River Itchen and its tributaries the Candover Brook, Arle and Cheriton Stream.
- River Meon.
- Rivers Loddon and Lyde, Whitewater and Hart.
- Basingstoke Canal, which runs for 51 km from Basingstoke in the west to Byfleet in Surrey in the east.
- River Wey.
- River Rother.
- Lavant catchment: Lavant Stream, River Ems and Hermitage Stream.
- River Enborne.
- River Alver.
- River Hamble.

The Hampshire Avon and River Itchen are internationally designated as SACs (and SSSIs) for their importance to nature conservation. The River Test, Lymington River and the Basingstoke Canal are designated as SSSIs. The rivers Meon, Whitewater, Loddon, Lyde, and Anton are designated as SINCs. The River Meon and River Test (and some of its tributaries) provide compensatory SAC habitat for protected features of the River Itchen SAC, which will suffer adverse impacts as a result of abstraction in drought situations. All rivers within the New Forest are within the New Forest SSSI, SAC, SPA and Ramsar.

These river systems provides rich habitats for wildlife, water resources for communities, opportunities for

flood management, cultural and artistic inspiration, and recreational opportunities.

In 2023, 75% of water in Hampshire's rivers, streams, and lakes (i.e. surface water) failed to reach good ecological status, as defined by the Water Framework Directive (WFD), compared with 84% in the UK. The overall ecological status of Hampshire's surface water has improved since 2016. However, there remain two watercourses which have bad ecological status and 14 that are poor. No watercourses have reached high ecological status. The issues preventing surface waters reaching good status in Hampshire are primarily ongoing physical channel modifications, agricultural pollution from rural areas, chemical contaminants from cities and towns, and associated wastewater.

Only 10% of Hampshire's river SSSIs and their associated wetland habitats are in favourable condition.

Figures 2.18 and 2.19 in section 2.2 below show the main river network and river catchments for Hampshire, respectively.

Hampshire has a wealth of wetland habitats alongside its important river network. Wetlands in good condition are amongst the most biodiverse habitats as they support an abundance of plant life, which in turn provide shelter, nurseries and breeding grounds for birds, mammals, fish, and insects. They also slow the flow of water, process excessive nutrients such as nitrates, and reduce flood risk downstream.

Furthermore, decaying plant material accumulating in the waterlogged conditions of wetlands is hugely important for sequestering carbon. However, the ability of a freshwater wetland habitat to capture carbon varies according to the condition of the wetland. Peatland habitats, such as fens, are incredibly important for storage and sequestration but until now very little had been mapped. In May 2025 Natural

England launched a new nationwide map of peat and peaty soils, the England Peat Map³⁴. The map has detailed coverage of peat depth drawn from a variety of sources including AI modelling and could be used in conjunction with local habitat based evidence for site-level decisions guided by the Measures map,

Good management is critical to ensuring that wetland habitat can store more carbon for years to come. It is also vital that these remaining high-quality habitats are protected, as it can take decades for restored wetlands to be able to draw down carbon at the same rate as natural wetlands. Draining wetlands releases substantial carbon trapped in the soil into our atmosphere. In some areas of the UK, we have lost over 90% of our wetland habitat. Between 2006 and 2012, over 1,000ha of wetland was converted to urban surfaces.

Across Hampshire, 39% of fen, marsh, and swamp SSSI habitats are in favourable condition and 55% in unfavourable recovering condition.

Hampshire's wetlands are subject to a number of threats and pressures. These include:

- Artificial drainage.
- Forestry and scrub encroachment.
- Declining or fluctuating water levels.
- Changes in rainfall pattern and extreme events.
- Saline intrusion and loss to sea level rise.
- Coastal erosion of coastal wetlands.

Further detail relating to Hampshire's river and wetland habitats and associated rivers and wetlands workshop is provided in the rivers and wetlands habitat theme in section 2.2..

Coastal and marine

Although Hampshire has a coastline, Department for the Environment, Food and Rural Affairs (Defra) statutory guidance requires that coastal LNRs follow administrative boundaries into the inter tidal zone only to mean low water mark. The Marine Management Organisation (MMO) will explore how spatial planning for marine nature recovery might develop in the future. Nevertheless, Hampshire's marine environment is referenced in this LNRs, due, in particular, to the importance of the Solent and county's estuaries and harbours for biodiversity, and the impact of land-based activities on the marine environment and vice versa. The Solent Seascapes project is a collaborative long-term initiative, working to restore multiple habitats across the Solent strait. They have recently produced a Solent State of Nature Report³⁵

230 miles (370 km) from Highcliffe in the west of the county to Chichester Harbour in the east. The components of this system include the Solent and its approaches; the eastern harbours of Portsmouth, Langstone and Chichester; Southampton Water; and other small tributary rivers such as the River Beaulieu, Hamble and Lymington. These waters form the Solent Marine Site (SEMS), designated for its international importance for habitats and species.

This coastline is dominated by sheltered mudflats and muddy gravels, with extensive areas of saltmarsh and grazing marsh. Interspersed within these habitats are stretches of shingle and sand, soft cliffs, and a small number of saline lagoons contained by spits or seawalls.

Hampshire's coastline stretches for approximately

34 A new peat map for England – Natural England

35 Solent State of Nature Report | Solent Seascape Project

All these coastal habitats are of national or international importance. The mudflats and saltmarshes are designated for their internationally important populations of overwintering waders and wildfowl, along with nationally important seabird colonies nesting on the shingle spits and offshore islands.

Saltmarsh and seagrass are important for carbon sequestration and storage. However, water quality within estuaries is a concern. High nutrient levels have been reported as a result of the use of fertilisers and from human waste. This has resulted in the proliferation of green algae, affecting the ecosystem balance. High levels of nutrients can limit the ability of saltmarsh and seagrass to sequester carbon.

Solent coastal habitats store about 4,000 tonnes of nitrogen and phosphorus every year, equating to £1.1

billion in environmental benefits³⁶.

Hampshire's marine environment provides significant benefits to the area's economy with commercial landings consisting of 50% crab and lobster, 25% finfish, and 25% other shellfish.

Over the last 70 years, the Solent has lost 65% of its saltmarsh and 85% of its oyster beds and reef habitats.

Further detail on Hampshire's coastal and marine habitats and associated coast and marine workshop is provided in the coastal and marine habitat theme in Section 2.2.

Woodland and Wood Pasture

Hampshire's woodlands represent an important part of the area's natural environment, providing a diverse range of woodland habitat types for many different species. It includes the internationally important East Hampshire Hangers and the New Forest. Key statistics on the area's woodlands include:

- 19.4% of Hampshire is wooded (circa 73,078ha), compared to 10% in England.
 - 19,333ha is managed by Forestry England.
 - 29,221ha is identified as ancient woodland (40% of all woodland in Hampshire).
 - Hampshire's ancient woodland is predominantly semi-natural (65%) with the remainder (35%) replanted.
 - 39% of native woodland SSSIs are in favourable condition, 58% in unfavourable recovering condition.
 - Hampshire's woodlands are growing at the rate of approximately 350,000 m³/yr, which is equivalent to 300,000 tonnes CO₂e³⁷ (harvested timber in long-term use provides additional carbon storage).
- Hampshire's ancient woodland includes nearly 5,000ha of unenclosed ancient wood pasture within the New Forest. There are also many oak-ash-hazel woods on the chalk, and the oak-birch woodland of the clays and sands in south and north-east Hampshire, and all surviving fragments of the Royal Forests that once covered Hampshire; the Forest of

³⁶ State of Hampshire's Natural Environment. Hampshire County Council (2020) -

<https://documents.hants.gov.uk/hampshire2050/StateofNaturalEnvironmentReport.pdf>

³⁷ CO₂e - means "carbon dioxide equivalent". CO₂e is a measurement of the total greenhouse gases emitted, expressed in terms of the equivalent measurement of carbon dioxide.

Bere, Woolmer, Chute, Pamber etc. The extent of woodland in the area appears relatively stable, with small losses offset by gains through new planting and natural regeneration.

Woodlands and wood pasture provide important ecosystem services for the Hampshire area. These include carbon storage and sequestration, air and water quality improvements, soil stabilisation, flood risk management, the provision of important biodiversity, cultural and tourism benefits, and a supply of home-grown, renewable products like food, timber, fuel, and a range of coppice products for agricultural, horticultural and domestic uses.

Woodland and coppice products include: fenceposts, ramial woodchip (mulch/soil improver), biochar (soil improver), beanpoles and hurdles for gardens and allotments, and brash bundles ('faggots') as nature-based solutions to flood and pollution runoff issues. Other coppice products like thatching spars, hedging stakes and binders also support allied trades such as hedge laying and thatching.

However, the area's woodlands face many threats, including:

- Recreational pressures.
- Lack of or inadequate management.
- Deer and grey squirrel damage.
- Pests and disease.
- Additional and compounding stresses of climate change.

Climate change increases the vulnerability of woodlands through changes in temperature, rainfall and the frequency and severity of storm events. The arrival of many new pests and diseases have far reaching consequences, changing the future composition of the area's woodlands.

Further detail of the environmental value of Hampshire's woodlands for nature, and the outputs of the woodlands and forestry workshop, is provided in the woodland and forestry habitat theme in section 2.2.



Heathlands

Lowland heathland is characterised by open expanses of heather and gorse on acidic soils. Hampshire’s lowland heaths are of international importance comprising about 13% of the heathland left in Europe and 30% of the UK total. The most significant areas of heathland in Hampshire are the Thames Basin Heaths, Wealden Heaths and New Forest. Heathland sites have a good level of protection from development through their nature conservation designations. However adverse impacts from recreational use, lack of appropriate management, fragmentation, and isolation remain. Policies for the provision for alternative natural greenspace have successfully been implemented in recent years. These aim to reduce disturbance to sensitive species such as ground nesting birds.

The New Forest, Thames Basin Heaths, and Wealden Heaths are designated SPAs with their lowland heaths supporting internationally important populations of Dartford warbler, nightjar and woodlark, all of which are vulnerable ground-nesting birds.

Heathlands that fall outside the SSSI and SPA networks are smaller and less well protected or managed. They are therefore the most vulnerable to development and degradation, in particular from edge effects and succession. Traditional management techniques are also much harder to re-establish and sustain. The commoning system that has operated successfully in the New Forest over generations is vital to the survival of the heaths there.

Hampshire’s heathlands support biodiversity, unique cultural heritage, tourism, carbon storage and sequestration, and flood risk management

Across Hampshire, 71% of heathland SSSIs are in favourable condition and 26% in unfavourable recovering condition.

Further detail about heathland habitats is provided in the area description in section 2.2, particularly: Thames Basin and Wealden Heaths, and New Forest and Eastern Dorset Heaths.

As part of the programme of LNRS engagement, area-based workshops were held for the Thames Basin and Wealden Heaths, and the New Forest and Eastern Dorset Heaths. The workshop reports are available on the LNRS webpages³⁸. The workshops brought together a wide range of key stakeholders and individuals interested in the biodiversity and land management of these areas. Key issues for nature and opportunities for nature recovery identified in the workshops are set out in the ‘Thames Basin Heaths and Lowlands and Wealden Heaths’, and ‘New Forest and Eastern Dorset Heaths’ area descriptions in section 2.2.

38 Thames Basin and Wealden Heaths workshop and New Forest and forest fringes workshop (February 2024) - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/get-involved>

Grasslands

Species-rich unimproved grassland is one of the rarest habitats in the UK. During the 20th century, 90% of lowland grasslands were lost. In Hampshire, lowland grasslands are either calcareous, neutral, or acidic, and can be wet or dry, often occurring as mosaics, with each type supporting their own specific plant and invertebrate communities. For example, the Duke of Burgundy butterfly, whose larval food plant the cowslip, is found in unimproved chalk grassland, where rough grassland and scrub provide important shelter. Collectively, grasslands support a wide range of native plants and provide valuable food and shelter for many species of birds, invertebrates, and small mammals.

The greater variety of plants from traditionally managed lowland meadows provide high quality herbage for livestock. Flower-rich meadows are important for pollinators, and the additional species diversity they support increases crop resilience to agricultural pests and disease. Grasslands also provide soil stabilisation and numerous cultural benefits.

UK grasslands are often overlooked as carbon stores, but they have huge potential. This is not only within the plants, but also through the relationships between the plants, fungi, bacteria and other species which help enrich the soil and humic layers. However, these relationships are vulnerable to disturbance. When managed carefully, for instance through the maintenance of herb-rich leys and sensitive grazing, grasslands can both lock in carbon and boost biodiversity.

It is also worth noting that while the total carbon storage and sequestration for improved grassland looks impressive, there could still be significant gains to be made by restoring this habitat to flower rich grassland. If we converted all improved grassland to flower rich grassland across Hampshire and the Isle of Wight, we could sequester an additional 239,145 tonnes of CO₂ per year³⁹.

Road verges are an increasingly important source of grassland species. There are over 10,000km of

highway verges across Hampshire. Some 225 of these verges have been designated as Road Verges of Ecological Importance (RVEI) for supporting flower-rich grassland communities and rare invertebrate species such as the striped lychnis moth, a Hampshire stronghold.

In Hampshire, 37% of neutral grassland, 34% of calcareous grassland and 28% of acid grassland SSSIs are in favourable condition. 23% of neutral grassland, 65% of calcareous grassland and 69% of acid grassland SSSIs are in unfavourable recovering condition.

Across Hampshire, grasslands are subject to a range of threats and pressures including:

- Fragmentation and edge effects.
- Decreasing size and isolation.
- Enrichment from agricultural practices and run-off.
- Inadequate or absence of appropriate grazing.
- Abandonment.
- Disturbance.
- Sub-optimal road verge management.

Further detail about grassland habitats, including key issues for nature and opportunities for nature recovery, is provided in the area descriptions in section 2.2.

³⁹ Hampshire and Isle of Wight's Natural Wealth (April 2022) -

https://hantswightlnp.wordpress.com/wp-content/uploads/2022/05/2022_04_natural-wealth_lnp_final.pdf

Farmland

Agriculture is the largest land use in Hampshire, making up to 70% of total land cover. Arable land forms around 40% of the farmed lowland mosaic, with large arable farms dominating the landscape across the centre of Hampshire in particular⁴⁰.

Over time, features such as hedgerows, copses, and ponds have been removed making it more difficult for wildlife to move and thrive in agricultural landscapes. Intensive farming practices have resulted in diminishing soil quality and declines in soil-dwelling organisms such as earthworms and beneficial bacteria. Associated increase in fertiliser use have led to nutrient run-off into the area's river systems, causing eutrophication and pollution problems downstream.

However, changes to farming practices, such as minimum tillage and low input approaches, combined with onsite enhancements, can all benefit wildlife. In fact, farmland is where some of our rarest species can be found, such as rare arable flora which grow on the field margins. Hedgerows are home to farmland birds such as yellowhammers, while fields are vital spaces for ground nesting birds such as skylarks and stone curlews.

Farmland birds are an important part of the grassland and farmland ecosystems. Their prevalence is considered to reflect the general environmental quality of the farmed environment. A total of 19 species have been identified nationally as farmland birds for the purposes of the UK Farmland Bird Indicator⁴¹. These birds are generally not able to thrive in other habitats. Like the country as a whole, many of Hampshire's farmland bird species are in general decline, reflecting changing practices in the management of farmland.

Considering this dramatic decline in farmland birds locally and nationally, there is a real opportunity for nature-friendly farming methods. These can improve biodiversity which has the potential to reverse the decline of all our farmland bird species and many other species such as small mammals and insects. Management with wildlife in mind can also bring added benefits such as flood attenuation, nutrient capture, soil stability, and carbon storage. Recent research has found that hedgerows hold and sequester a significant amount of carbon.

Across Hampshire, farmland is subject to a range of threats and pressures including soil erosion, pollution, development pressure for housing and alternative energy, agricultural intensification and habitat fragmentation.

Further detail about farmland habitats, including issues for nature and opportunities for nature recovery, identified in the workshops, is provided in the area descriptions in section 2.2.

⁴⁰ State of Hampshire's Natural Environment 2020 -

<https://documents.hants.gov.uk/hampshire2050/StateofNaturalEnvironmentReport.pdf>

⁴¹ <https://jncc.gov.uk/our-work/ukbi-birds-of-the-wider-countryside-and-at-sea/#:~:text=Notes%20about%20Figure%203,7%20species%20are%20farmland%20generalists.>

Open mosaic habitat on previously developed (brownfield) land

Open mosaic habitat on brownfield sites can be extremely diverse, supporting a wide range of terrestrial and aquatic habitats and associated species. This diversity has made them increasingly important within ecological networks for rare and scarce invertebrates as well as lichens, plants, birds, reptiles and amphibians, of conservation concern. The importance of these habitats for the LNRS was confirmed at the opportunity mapping prioritisation workshop held on 4 December 2024 (see Appendix 2).

Brownfield sites with open mosaic habitat show evidence of previous disturbance, either through soil being removed or severely modified by previous use, or the addition of materials such as industrial spoil, with spatial variation developing across the sites. Such habitats may occur on a wide range of brownfield sites, such as railway sidings, quarries, landfill sites and former industrial works, and can be found across Hampshire.

The altered nature of open mosaic habitats leads to fine-scale changes in hydrology, pH and topography, allowing a range of habitats to develop alongside each other. This diversity of habitats is ideal for species which require two or more habitats in close proximity to complete their life cycle, while also attracting specialist and pioneer species for each habitat type alongside more generalist species.

Of particular importance is the presence of bare ground, which creates warm microclimates for thermophilic invertebrates to bask, including those at the northerly limit of their range. Bare areas also provide nesting opportunities for ground nesting species and areas for active predators to hunt. Low nutrient sites tend also to have a strong assemblage of nectar-rich, stress tolerant annuals, which provide an abundance of forage. An absence of management provides yet further opportunities by allowing invertebrates to overwinter in seeds, flower heads, leaves and stems, which is increasingly difficult in the modern day highly managed landscape.

The rich assemblages of invertebrates supported by these habitats has led to 'open mosaic habitats on previously developed land' being added to the UK Biodiversity Action Plan (UK BAP) as a Priority habitat listed on Section 41 of the Natural Environment and Rural Communities Act 2006 (NERC Act)⁴².

42 NERC Act 2006 - <https://www.legislation.gov.uk/ukpga/2006/16/contents>.

Species

The variety of habitat types within Hampshire is reflected in the area's rich flora and fauna with 23,462 species recorded⁴³. For example, Hampshire supports all 12 of the UK's species of native amphibians and reptiles. 20% of the 11 million species records held by the Hampshire Biodiversity Information Centre are of notable species i.e. are rare, threatened, or declining.

Hampshire's insect and pollinator fauna is extremely diverse. Due to the mild southern climate and varied habitat, Hampshire is one of the best areas for butterflies in the UK, with a total of 46 resident butterfly species recorded. 19 of these species are, however, in decline.

The British Trust for Ornithology (BTO) Wild Bird Indicators⁴⁴ have shown that there continues to be an overall decline in UK breeding bird populations. This includes more substantial declines for breeding bird populations associated with farmland, woodland, wetlands and waterways, and for wintering waterbirds.

Overall, 48% of a monitoring sample of 50 of Hampshire's most notable species are in decline⁴⁵.

Further details about why Hampshire supports such a rich diversity of species can be found in Section 2.2. The prioritisation of species for recovery is detailed in Part 3: Species Recovery.



⁴³ Records held by the Hampshire Biodiversity Information Centre (HBIC) -

<https://www.hants.gov.uk/landplanningandenvironment/environment/biodiversity/informationcentre>

⁴⁴ British Trust for Ornithology (BTO) Wild Birds Indicator -

https://www.bto.org/our-science/publications/developing-bird-indicators#all_species

⁴⁵ HBIC Annual Biodiversity Monitoring Report -

<https://www.hants.gov.uk/landplanningandenvironment/environment/biodiversity/informationcentre/whatwedo/reports>

2.2. Workshop-focused areas, habitats and themes

This section builds upon the summary of Hampshire's natural environment, above, but considers in greater detail the geographical area subdivisions and cross-cutting habitats and themes that formed the focus of the programme of LNRS workshops (see Appendix 2 for more detail). Each of the sections below include the key issues for nature and opportunities for nature recovery identified through engagement.

It should be noted that the key issues for nature and opportunities for nature recovery included with the area/theme descriptions, below, are the views of workshop attendees and may not always align with the scope and ambition of the LNRS.

For the area descriptions, Hampshire's natural environment is described in more detail based upon the National Character Area (NCA) system. In the area-based workshops NCA elements have been combined to form these area sub-divisions to represent the objectives and outputs of the series of area-based workshops set out in Appendix 2, as follows:

- **Thames Basin Heaths and Lowlands, and Wealden Heaths**
Part of NCA 129: Thames Basin Heaths; NCA 114 and NCA 120: Wealden Greensand.
- **Central Chalk Belt**
Part of NCA 125: South Downs; NCA 130: Hampshire Downs; NCA 132: Salisbury Plain and West Wiltshire Downs; and NCA 134: Dorset Downs and Cranborne Chase.
- **North Hampshire**
Part of NCA 129: Thames Basin Heaths.
- **New Forest and Eastern Dorset Heaths**
NCA 131: New Forest, and part of NCA 135: Dorset Heaths.
- **South Hampshire Lowlands and South Coast Plain**
Part of NCA 126: South Coast Plain and NCA 128: South Hampshire Lowlands.

Supplementing the area descriptions, further descriptions by habitat/theme are included, to represent the objectives and outputs of the series of cross-cutting habitat and theme-based workshops set out in Appendix 2, as follows:

- Rivers and wetlands.
- Coastal and marine.
- Woodlands and forestry.
- Greenspace, health and access to nature.
- Species recovery.

Thames Basin Heaths and Lowlands and Wealden Heaths

Area of NCAs (within the LNRS boundary)	62,812ha
Key priority habitats present	Lowland heathland (wet and dry), acid grassland and valley mire, fragments of chalk grassland, chalk streams, ancient woodland, ancient hedgerows and parkland, and ancient meadows.
'Crown jewel' sites	Thames Basin Heaths SPA including the wetlands at Eelmoor Marsh SSSI and Castle Bottom SSSI, and the Wealden Heaths Phase II SPA which includes Woolmer Forest SSSI/SAC. Also Shorth Heath Common SSSI and the East Hampshire Hangers SAC.
Priority species	Dartford warbler, nightjar, woodlark, adder, natterjack toad, grayling butterfly, field cricket, sand lizard, smooth snake, brilliant emerald dragonfly, blunt-leaved pondweed, marsh clubmoss, pillwort, and ancient woodland indicator species.
Potential opportunities for nature recovery	<p>Restoration, expansion and linkage of heathland / acid grassland mosaic.</p> <p>Enhancement of chalk rivers, non-chalk rivers and the Basingstoke Canal as wildlife corridors.</p> <p>Creation of riparian buffer strips.</p> <p>Reduction in fragmentation of semi-natural habitat and enhanced ecological connectivity with the planting of new woodlands.</p> <p>Improved woodland management.</p> <p>Species-rich chalk grassland restoration, expansion and linkage.</p> <p>Expanding and connecting networks of species-rich hedgerows.</p> <p>Enhancing public green space and recreational opportunities for local communities to mitigate impact on SPAs</p>

Part of National Character Areas 129: Thames Basin Heaths⁴⁶ (east of Hook); 120: Wealden Greensand⁴⁷; and 114: Thames Basin Lowlands⁴⁸.

⁴⁶ Thames Basin Heaths NCA profile - <https://nationalcharacterareas.co.uk/Thames-Basin-Heaths/>

⁴⁷ Wealden Greensand NCA profile - <https://nationalcharacterareas.co.uk/Wealden-Greensand/>

⁴⁸ Thames Basin Lowlands NCA profile - <https://nationalcharacterareas.co.uk/thames-basin-lowlands/>

Figure 2.3: Area boundary

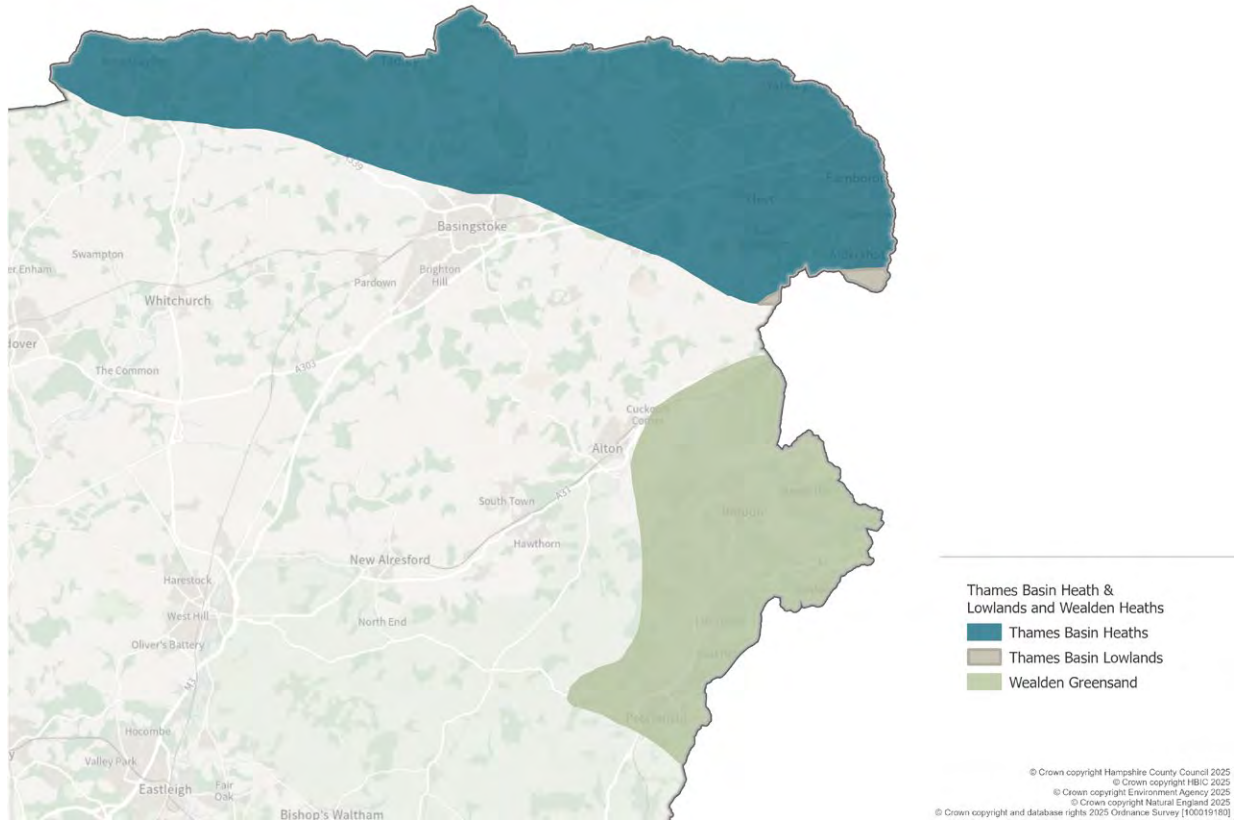


Figure 2.4: Nature conservation designations

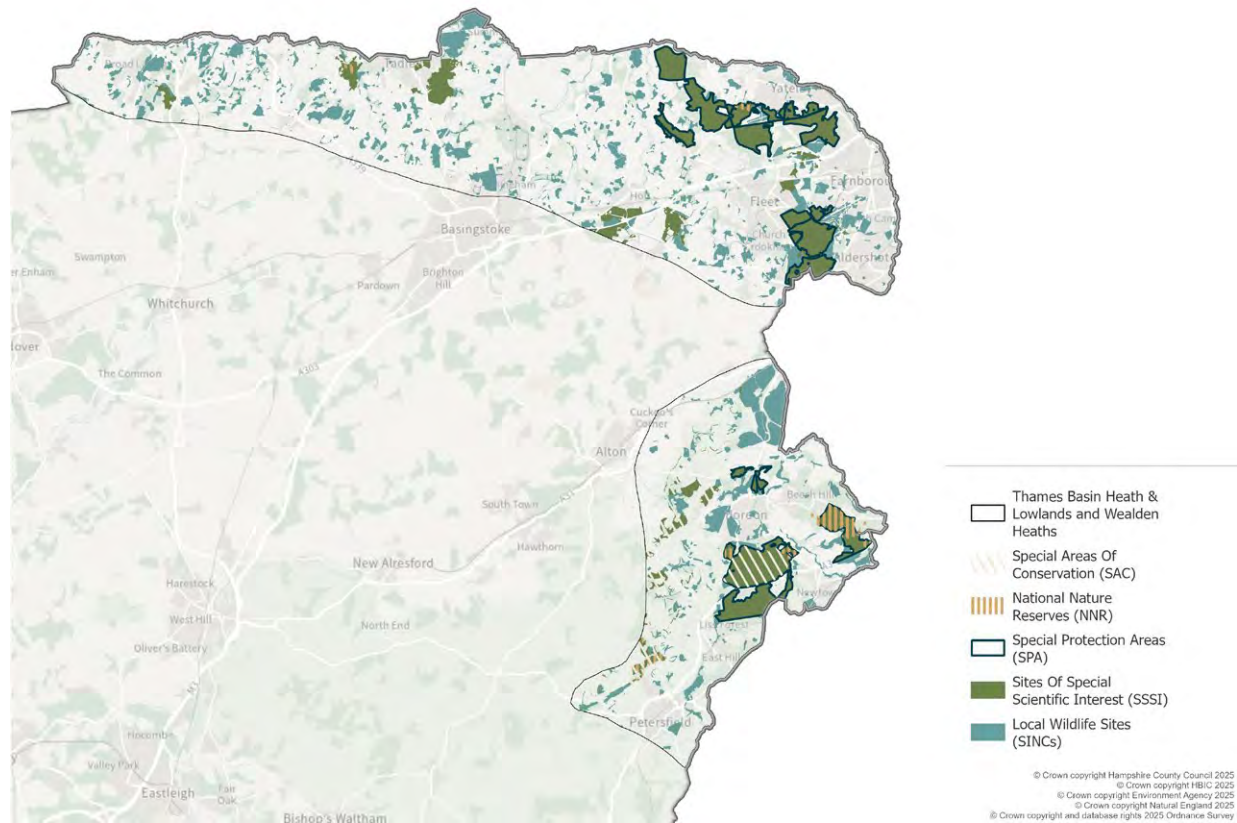
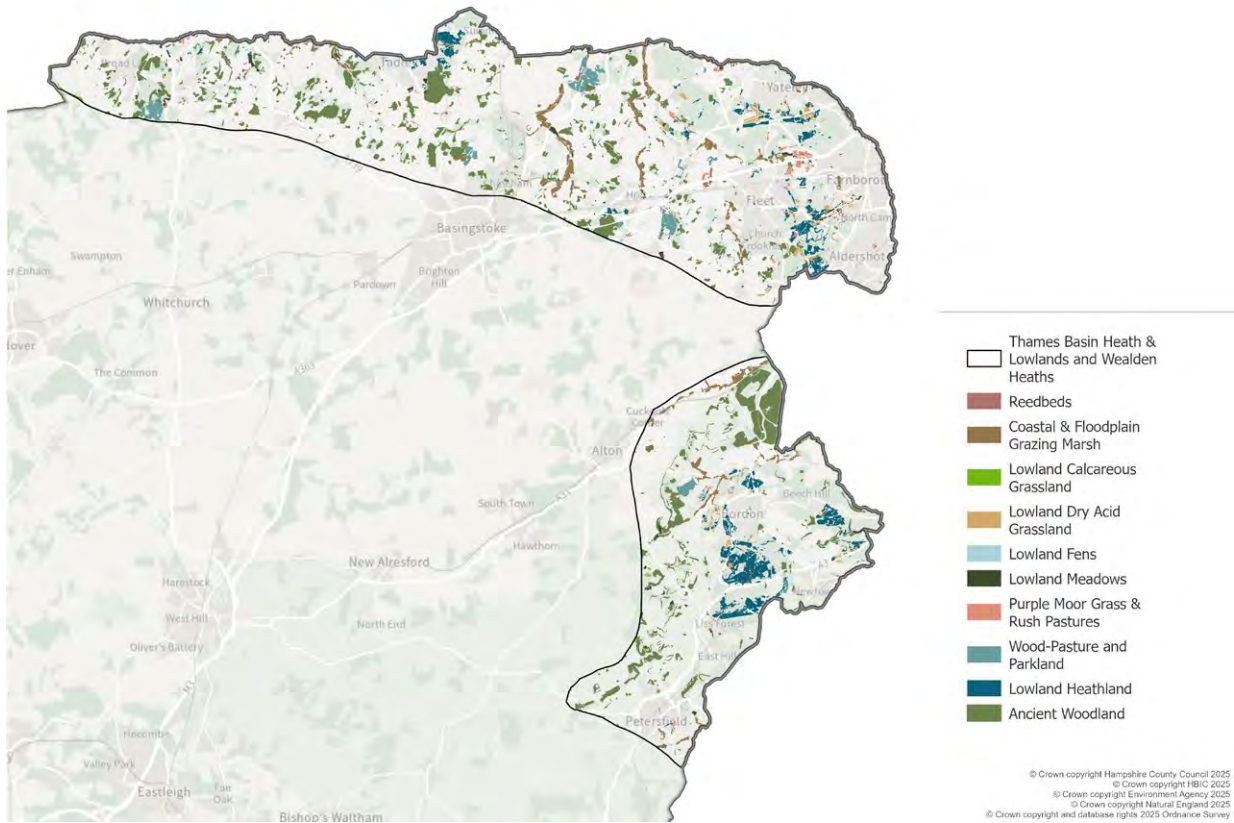


Figure 2.5: Priority habitats including ancient woodland



Description and current value to nature

Thames Basin Heaths

The Thames Basin Heaths is a plateau of Tertiary sands and gravels in the London Basins, with intervening valleys floored by London Clay. It has high woodland cover, where conifer plantations on former heathland are dominant features, along with large areas of open heath and scrub. Heather, gorse, oak, and birch all thrive in this landscape.

Beyond this, there is a patchwork of small fields with ancient woods, ancient hedgerows, and parkland. Ancient meadows and improved pasture remain as fragments along watercourses.

Key sites include the Thames Basin Heaths Special Protection Area (SPA), which protects internationally important populations of woodlark, nightjar, and Dartford warbler.

Wealden Heaths

The Wealden Heaths is a more undulating landscape situated on the greensand with outcrops of Upper Greensand, Gault Clay, and Lower Greensand. Extensive areas of ancient mixed woodland and distinctive fragments of chalk grassland occur within the East Hampshire Hangers reflecting the diverse geology.

Agricultural land comprises a mosaic of mixed farming, with pasture and arable land set within a wooded framework. Orchards are present near Selborne.

Key sites include the Wealden Heaths Phase II SPA, which comprises several distinct areas of wet and dry heathland, valley bogs, broad-leaved and coniferous woodland, acid grassland and open water. These support internationally important populations of woodlark, nightjar and Dartford warbler.

Thames Basin Lowlands

The Thames Basin Lowlands is a low-lying plain within the London Basin, stretching from the London suburbs through the Surrey and Hampshire border into southern Aldershot. The landscape is generally flat but in places is gently undulating. The underlying geology is predominantly London Clay with small outcrops of Bracklesham and Barton Group sand, silt and clay.

This is a highly urban area, with most of the NCA within Hampshire including urban Aldershot. The area also hosts small-scale farmed landscapes interspersed with woodlands, parklands and remnant commons and includes short stretches of the rivers Blackwater and Wey.

As part of the programme of LNRS engagement, a Thames Basin and Wealden Heaths farming and conservation workshop was held on 28 February 2024. The workshop report is available on the LNRS webpages⁴⁹. The workshop brought together a wide range of key stakeholders and individuals interested in farming, land management and conservation across the area.

The workshop identified a number of key issues for nature and opportunities for nature recovery, included below. It should be noted, however, that these issues and opportunities are the views of workshop attendees and may not always align with the scope and ambition of the LNRS..

Key Issues for nature identified through engagement

Climate change

Climate change poses a significant threat to biodiversity and is a major driver in net biodiversity decline. Climate change exacerbates many of those issues for the area's biodiversity listed below.

Heathland management

Management of heathland by grazing alone is problematic. Having the right grazing infrastructure, and the ability to include other management techniques such as mechanical cutting, are important to retain species and habitats. Management for some species does not suit others, for example birds and reptiles can have conflicting management requirements on the same habitat.

There is a shortage of suitable graziers and it is difficult to move cattle across sites due to bovine tuberculosis restrictions. Land ownership is also complex in this area, with common land, mixed ownership, and a high percentage of small holdings making coordinated management difficult.

Farming and conservation context

There has been a significant reduction in farm incomes since 2021, with the progressive loss of the Basic Payment Scheme. Agricultural input costs have increased significantly since Brexit and the beginning of the war in Ukraine. This has resulted in financial vulnerability for many farms. Defra grant schemes are perceived by many farmers and land managers to be complex and difficult to access.

49 Thames Basin and Wealden Heaths farming and conservation workshop (February 2024) - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/get-involved>

Trees and woodland management

Lack of appropriate management is a significant issue for the maintenance, enhancement and expansion of the area's woodlands, coupled with large numbers of deer in the area.

Habitat fragmentation

Habitat fragmentation is a significant issue across the area. This includes the fragmentation of heathland habitat and ancient woodland, such as at Heron's Wood SINC.

Species recovery

There are threats to populations of notable species and their habitats from development pressures, lack of management, recreational access and disturbance, and associated wildfire risks. Residential pets, particularly cats, can have a significant detrimental effect on local heathland wildlife, through predation.

Lack of collaborative working

There are many small projects doing good work for nature recovery, but there is a lack of an overarching connection and effective communication between them. Equally, there is a lack of effective linkage between the many private landowners, tenants and commoners in the area. This does not encourage partnership and collaboration through, for example, farmer clusters.

Leadership and targets

Clear targets and action plans are considered crucial to deliver the Strategy.

Flooding

Poorly designed drainage schemes have led to a lack of water retention in the catchment and excessive flooding.

Funding

A lack of long-term funding and a shortfall in payments for heathland options in Countryside Stewardship are considered threats to nature recovery in this area.

Dark skies

The detrimental impact of light pollution on light-sensitive species was raised as an issue in the workshop for this area.

Recreational impacts

Recreational impacts, both habitat damage and species disturbance, is seen as a significant issue, particularly for areas of heathland and areas of habitat within or close to urban areas.

Opportunities for nature recovery identified through engagement

Farmer support

Farm clusters support farmer-to farmer learning and showcase existing best practice.

Low-input farming, which includes funded actions to help nature, can be a good choice for farms. This approach is beneficial both environmentally and economically and many farms are already doing this. Support is needed to ensure the right options are chosen for each farming business. Support should be accessible and fit alongside food production.

Ensuring that farmers feel properly engaged in the LNRS process is crucial. Communication is key to this.

Woodlands

Additional incentives for woodland management are needed. Upskilling people in rural crafts and woodland skills, and support for community woodlands, small woods and new woodlands were also mentioned as opportunities by participants.

Grazing management

Local grazing partnerships could support mixed species grazing and better management of heathlands. For example, the Hampshire & Isle of Wight Wildlife Trust is reintroducing grazing near Bordon.

Connectivity and habitat expansion

Connecting and extending habitats was considered crucial to the success of the LNRS. Examples include:

- Heathland restoration, expansion and linkage.
- Species-rich downland restoration, expansion and linkage.
- Improving the ecological value of the Basingstoke Canal and achieving favourable condition for this SSSI.
- Expanding and connecting the network of species-rich hedgerows.
- Adding Pamber Forest and Silchester Common to the SPA.
- Linking SPAs with wildlife corridors.
- Turning forested parts of the SPA back into heathland.
- Creating a corridor from Broxhead to Headley.
- Creating functional ecological corridors across the urban landscape of south Aldershot. Particularly in relation to restoring and enhancing connectivity between the River Blackwater and:
 - Sand and gravel extraction wetlands in its floodplain to the east.
 - Sand and gravel extraction wetland around Tice's Meadow Nature Reserve to the south.

River catchments

Rivers include a wide range of important habitats and species and provide significant opportunities for nature recovery. They are considered to be important wildlife corridors, particularly where they are close to protected sites. Protecting rivers with habitat buffers (riparian strips) and enhancing their floodplains not only benefit biodiversity but also provide many wider environmental benefits, such as the provision of clean

water and reduced flood risk.

There is an opportunity to involve local communities and volunteers in large scale river catchment projects, which could enhance knowledge and encourage participation, for example on the headwaters of the River Loddon.

Greenspace and access to nature

Ensuring that urban development is sustainable by focusing on access to public greenspace, e.g. to meet the needs of south Aldershot residents and to provide functional and connected SANG land for the broader protection of the adjacent Thames Basin Heaths SPA.

It was also suggested that SANG areas should be part of an integrated whole, rather than just isolated spaces. North Hart and north-east Basingstoke were mentioned as areas of low development and recreational pressure, with opportunities for nature recovery.

There are opportunities to enhance local community's access to nature, in particular around the built-up areas of north-east Hampshire (e.g. Aldershot, Fleet, Farnborough, Yateley), and north Basingstoke.

Creating and enhancing habitats within and adjacent to urban areas, including urban greenspace and the provision of street trees, will improve the resilience of communities to the effects of climate change. This is particularly relevant to increasing summer temperatures and risk of flooding. These habitats also provide stepping stones across urban areas that provide connectivity with important habitats beyond the urban fringe.

Cross-border approaches

Opportunities to work across the county boundary were considered important, particularly for scarce heathland habitats. This includes working with the Berkshire and Surrey LNRSs.

Private finance

BNG contributions and other sources of private finance were seen as an opportunity to deliver nature recovery.

Community stewardship

Local communities and landowning estates should be encouraged to celebrate their local habitats and take action to protect them.

Species reintroductions

Field cricket reintroductions have taken place on Shortheath Common, and their reintroduction has been proposed at Broxhead Common. There have

also been reintroductions of natterjack toads at Blackmoor, grey partridge at Rotherfield, and marsh fritillary butterflies at Foxlease Meadows, with further opportunities for species reintroductions. Suitable habitat management is crucial to maintain and enhance reintroduced populations.

Access to nature

The tranquillity of the river valleys, and their historic environment, is a magnet for informal outdoor recreation. This provides opportunities for contact with nature, as well as increased awareness of the potential threats to the environment and the behavioural changes needed to mitigate them.



Central Chalk Belt

Area of NCAs (within the LNRS boundary)	188,008ha
Key priority habitats present	Chalk grassland, chalk streams, fen meadow, and ancient woodlands
'Crown jewel' sites	Old Winchester Hill NNR, Beacon Hill NNR at Warnford, Beacon Hill SSSI at Burghclere, Ladle Hill SSSI, St Catherine's Hill SSSI, Martin Down NNR, Butser Hill SAC/NNR, Porton Down SPA, Salisbury Plain SAC, rivers Avon SAC, Test SSSI (and River Test Compensatory SAC habitat), Itchen SAC and Meon SINC and Compensatory SAC habitat.
Priority species	Farmland birds including the stone curlew, rare arable plants such as ground pine and pheasant's-eye, rare bryophytes such as curly beardless-moss and sterile beardless-moss, Duke of Burgundy butterfly, silver spotted skipper, Adonis blue, barred tooth-striped moth, narrow-bordered bee hawkmoth, brown-banded carder bee, southern damselfly, hazel dormouse, cheese snail, white-clawed crayfish, otter, water vole. salmonids, eel, brook lamprey and bullhead,
Potential opportunities for nature recovery	Species-rich chalk grassland restoration, expansion and linkage. Enhancement of chalk rivers and their floodplains as wildlife corridors. Creation of riparian buffer strips. Improved woodland management. Expansion of the farmer cluster network. Species recovery programmes for iconic species. Better linkages in the network of hedgerows and ponds. Introduction of beaver to waterways and wetlands. Removal of non-native invasive species from waterways and wetlands

Part of National Character Areas 125: South Downs⁵⁰; 130: Hampshire Downs⁵¹; 132: Salisbury Plain and West Wiltshire Downs⁵²; and 134: Dorset Downs and Cranborne Chase⁵³.

50 South Downs NCA profile - <https://nationalcharacterareas.co.uk/South-Downs/>

51 Hampshire Downs NCA profile - <https://nationalcharacterareas.co.uk/Hampshire-Downs/>

52 Salisbury Plain and West Wiltshire Downs NCA profile - <https://nationalcharacterareas.co.uk/Salisbury-Plain-and-West-Wiltshire/>

53 Dorset Downs and Cranborne Chase profile - <https://nationalcharacterareas.co.uk/Dorset-Downs-and-Cranborne-Chase/>

Figure 2.6: Area boundary

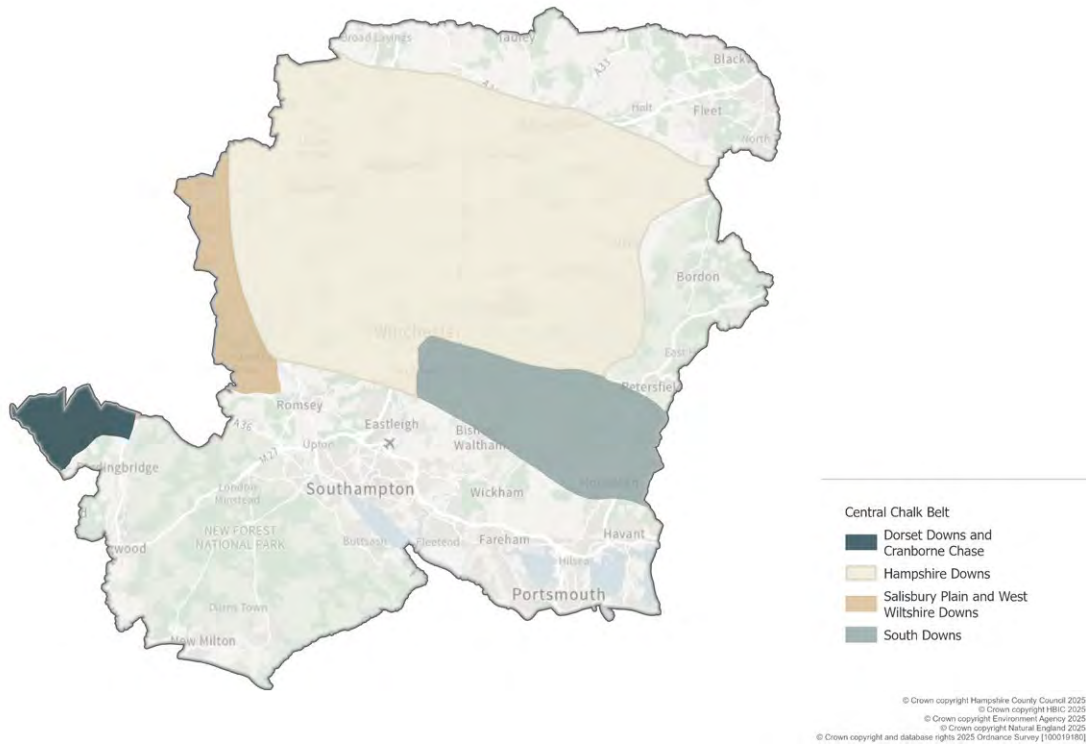


Figure 2.7: Nature conservation designations

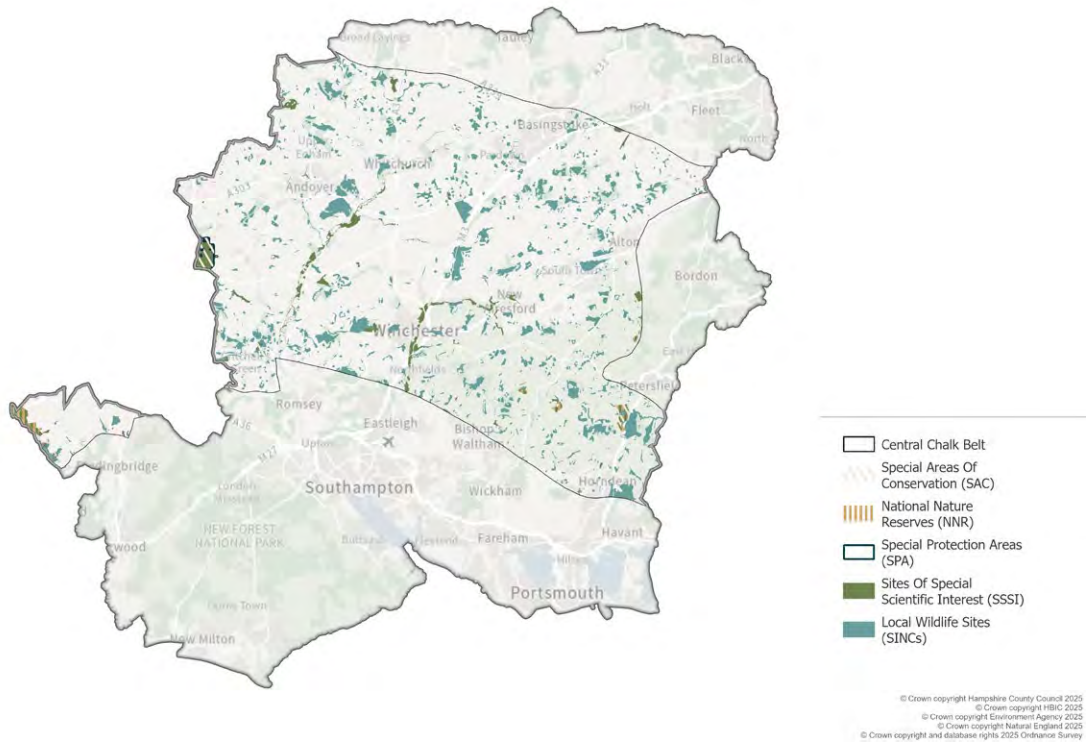
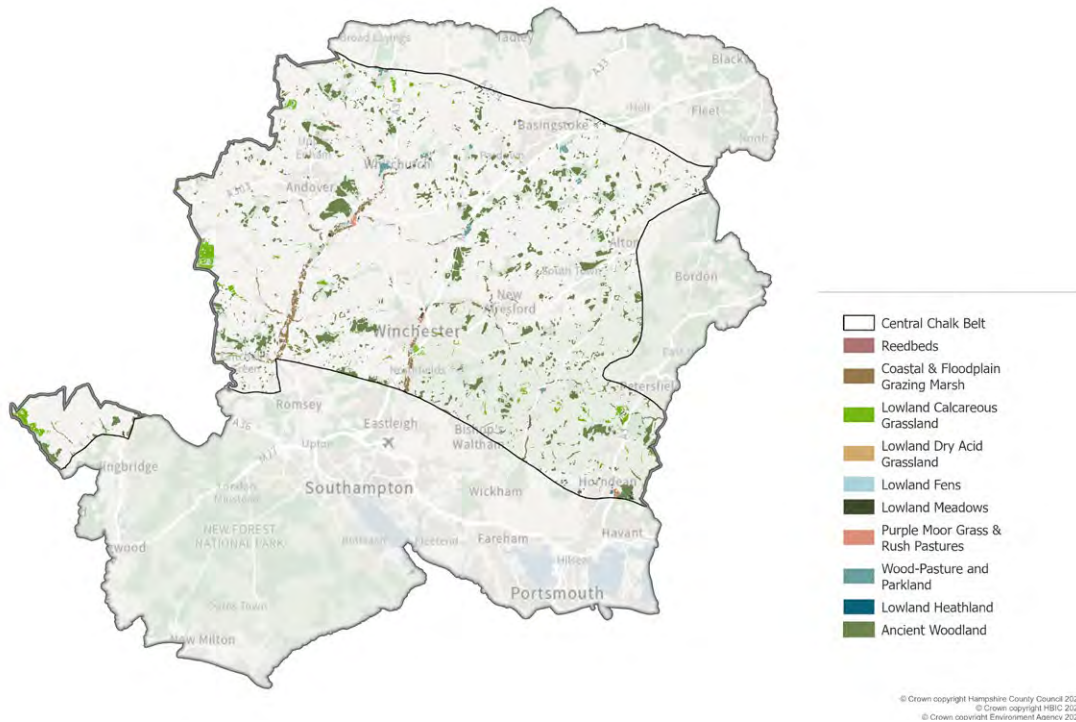


Figure 2.8: Priority habitats including ancient woodland



Description and current value to nature

The area forms part of the central southern England belt of chalk. This comprises an elevated, open, rolling landscape dominated by large arable fields with low hedgerows on thin chalk soils, scattered ancient woodland (mostly on clay-with-flint-caps), and shelterbelts. Flower and invertebrate-rich remnants of calcareous grassland remain, mostly along the northern and eastern scarps and where Salisbury Plain connects with the county’s western boundary. A large section of the eastern portion of the area lies within the South Downs National Park. Part of the north-west portion of the area lies within the North Wessex Downs National Landscape. A small portion of the western tip of the area lies within the Cranborne Chase National Landscape.

Cutting across this landscape are numerous chalk rivers and streams, including the Test, Itchen, and Meon, and their associated tributaries and wetland habitats. The chalk is a large and important aquifer. Because of this, groundwater protection and source vulnerability designations cover much of the area, with catchment sensitive farming to control pollution, run-off and soil erosion.

As part of the programme of LNRS engagement, a Hampshire central chalk farming and conservation workshop was held on 21 February 2024. The workshop report is available on the LNRS webpages⁵⁴. The workshop brought together a wide range of key stakeholders and individuals interested in farming, land management and nature recovery across the area.

54 Hampshire central chalk farming and conservation workshop (February 2024) - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/get-involved>

The workshop identified a number of key issues for nature and opportunities for nature recovery, included below. It should be noted, however, that these issues and opportunities are the views of workshop attendees and may not always align with the scope and ambition of the LNRS.

Key issues for nature identified through engagement

Climate change

Climate change poses a significant threat to biodiversity and is a major driver in net biodiversity decline. Climate change exacerbates many of those issues for the area's biodiversity listed below.

Land use pressures and farmer recognition

Balancing food production and management for wildlife is a key consideration for farmers. Many farmers feel that their efforts to recover nature are currently going unrecognised. Unfunded farm clusters are unable to contribute data to feed into national statistics on the impact of their work.

There has been a large reduction in farm incomes since 2021 with the progressive loss of the Basic Payment Scheme. Agricultural input costs have increased significantly since Brexit and the beginning of the war in Ukraine. This has resulted in the financial viability of many farms to be vulnerable. Defra grant schemes are perceived by many farmers and land managers to be complex and difficult to access.

Lack of incentives to manage woodlands

42% of woodlands were cited as being unmanaged. There is a shortage of woodland management skills, and a lack of financial incentives to manage woodlands effectively. Workshop participants raised the issue of a lack of deer control contributing to poor woodland habitat status.

Accessibility of government schemes

The Rural Payments Agency (RPA) was singled out as being a barrier to farmer uptake of schemes, which have been rolled out too slowly in the face of the loss of the Basic Payment Scheme (BPS). The threat of penalties, the complexity of schemes, and the lack of guidance and support in applying for the right options were all cited as threats to the provision of profitable nature-friendly farming.

Grazing management

A shortage of graziers, and the right kind of livestock to graze certain habitats (e.g. cattle) was raised as an issue. There was a reluctance amongst farmers to graze conservation sites with public access, owing to the potential dangers to livestock from people and dogs. A shortage of layback land was also mentioned as a barrier to effective downland grazing.

Habitat fragmentation and non-native invasive species

Habitat fragmentation was cited as a cause for serious concern, particularly for species rich downland and rivers and wetlands. Also of concern is the risk of non-native species outcompeting native flora and fauna, particularly in the area's waterways and wetlands.

Planning and development

The intensification of farming and continued high levels of population and economic growth in urban areas are considered threats to biodiversity. This includes the associated demands for water, and traffic levels on major trunk roads, including those crossing the South Downs.

Several actions to improve habitats for wildlife, such as creating ponds and butterfly banks, require planning permission, which acts as a barrier to these activities. In contrast, there was thought to be inappropriate development on greenfield sites.

Water quality and quantity

Participants raised the issue of the impacts of water pollution, including nutrients, from wastewater treatment works and run-off into watercourses, particularly impacting the Solent and Rivers Test and Itchen (and their tributaries), as well as over-abstraction. In addition, the impacts of drought and flooding on sensitive habitats was cited as a significant issue, with water meadows and chalk streams specifically mentioned.

Light pollution

Light pollution impacts a number of important species. This was cited as an issue in the South Downs National Park and Butser Hill SAC/NNR.

Baseline data

The current status of many species in the area is not known due to a lack of survey work and baseline data. There is a fear among landowners that finding rare species might result in a restrictive designation.

Opportunities for nature recovery identified through engagement

Farm clusters

Farm clusters were seen as a key way to exchange ideas, carry out practical projects, and achieve real benefits for farmers and wildlife. The idea of a super-cluster was raised, to improve communication between clusters. Participants felt that building on the existing clusters in the area should be a key opportunity supported by the LNRS.

Farmer support

Farm clusters support farmer-to farmer learning and showcase existing best practice.

Low-input farming, which includes funded actions to help nature, can be a good choice for farms. This approach is beneficial both environmentally and economically, and many farms are already doing this. Support is needed to ensure the right options are chosen for each farming business.

Private finance

BNG contributions and other sources of private finance were seen as an opportunity, and the Environmental Farmers Group⁵⁵ was cited as an example of this type of work in action.

Farmer engagement

Working more closely with farmers was considered a key opportunity. This should include offering support from trained ecologists, and linking farmers with partner organisations delivering the LNRS. Making stronger links between public procurement and local food producers, so that 75% of food in council offices, schools and hospitals is sourced locally, was also recommended.

Large-scale projects

Large-scale projects were suggested, which could incorporate work by local communities and volunteers in citizen science and project delivery. This would enhance knowledge of farming and the natural environment. It would also encourage participation in projects, leading to better outcomes. Additionally, it would help mitigate the impacts of public access by educating residents and visitors. It was pointed out that pollinators thrive in villages and towns, and that new build developments could support 30% tree cover. Connecting the North Wessex Downs with the South Downs via habitat creation and restoration, for example through the Big Chalk project, was suggested.

⁵⁵ Environmental Farmers Group - <https://www.environmentalfarmersgroup.co.uk/>

Woodland management

Improving the management of ancient woodlands, to restore habitats and retain carbon, was seen as an opportunity in the area. The addition of trees to pastures (silvopasture) to improve productivity and animal welfare was also mentioned. Supporting woodland-based businesses, for example producing woodchip or fencing materials, was suggested as a way to make woodland management profitable. Coordinated deer control was also a key opportunity but requires a collaborative approach.

Habitat creation, restoration and connectivity

Joining up habitats like hedgerows, ponds, riparian buffer strips, managed road verges, and improving access via a well-maintained footpath network are ways to increase connectivity in the landscape and urban areas. There was a suggestion to link the South Downs National Park and the North Wessex Downs National Landscape through habitat creation and linkage.

Participants cited the need to restore, create and link important habitats in the area to enhance biodiversity and improve the sustainability of such habitats, in particular species-rich downland and flower-rich margins. This would also increase and sustain populations of pollinator insects for the benefit of agricultural productivity.

Species projects

Projects supporting species that are iconic to the area could create enthusiasm from a range of stakeholders to drive nature recovery. For example, the stone curlew was mentioned as a species that could benefit from a targeted approach in the project area. Projects for this species have been supported by farmers and are monitored by the RSPB and the Hampshire Ornithological Society (HOS), showing the benefits of this kind of approach. Other species mentioned include juniper, the corn bunting, the grey partridge, red helleborine, sword-leaved helleborine, and rare arable plants in general. Beaver re-introduction or colonisation from adjacent areas was also cited as a potential benefit for nature recovery in this area.

Access to nature

The tranquillity of the downs and river valleys, and their historic environment, is a magnet for informal outdoor recreation. This provides opportunities for contact with nature, as well as increased awareness of the potential threats to the environment and the behavioural changes needed to mitigate them.

North Hampshire

Area of NCA (within the LNRS boundary)	41,846ha (note, it was primarily the western portion of this area that was considered in the workshop).
Key priority habitats present	Ancient oak woodland, wood pasture, ancient meadows, heathland and acid grassland, rivers and wetlands.
'Crown jewel' sites	Ashford Hill NNR, Highclere Park SSSI, Beacon Hill SSSI, Pamber Forest and Silchester Common SSSI.
Priority species	Adder, great crested newts, dormice, tree pipit, marsh tit, beaver (re-introduction), olive earthtongue, green-flowered helleborine.
Potential opportunities for nature recovery	Expansion and restoration of woodland, hedgerows and lowland meadows to better link the North Wessex Downs and South Downs. Restoration and expansion of heathland and acid grassland Enhancement of road and rail verges/embankments to provide linear habitat corridors. Use corridors of green and blue spaces to link Basingstoke and the countryside for people and nature.

Part of National Character Area 129: Thames Basin Heaths⁵⁶ (west of Hook).

⁵⁶ Thames Basin Heaths NCA profile - <https://nationalcharacterareas.co.uk/Thames-Basin-Heaths/>

Figure 2.9: Area boundary

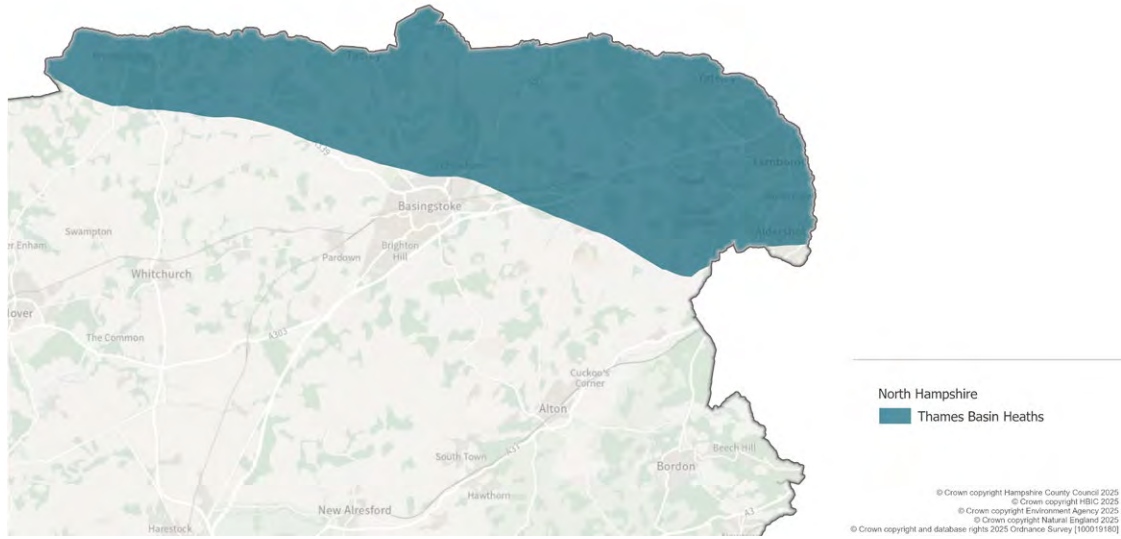


Figure 2.10: Nature conservation designations

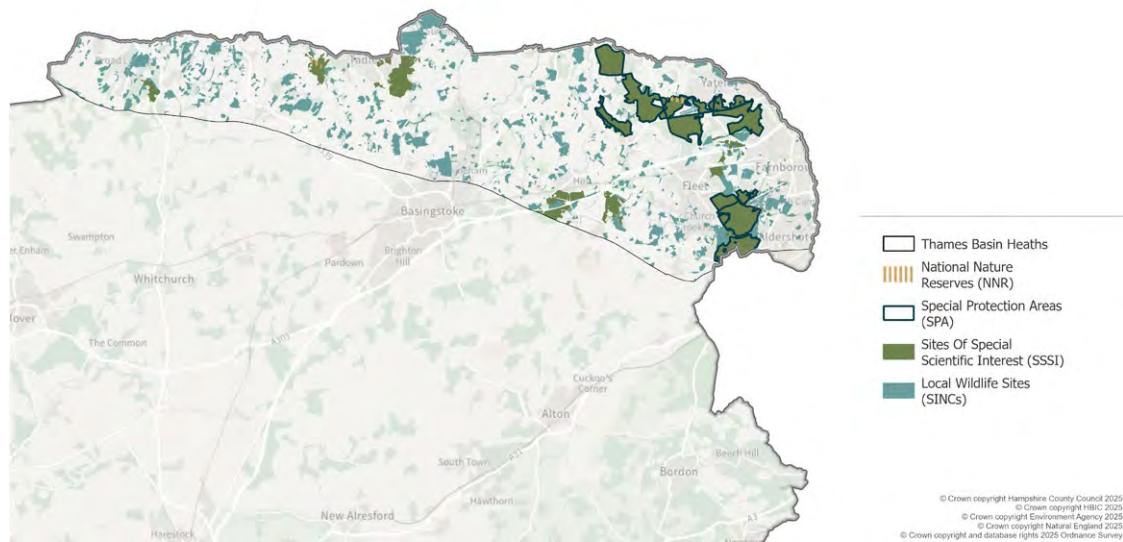
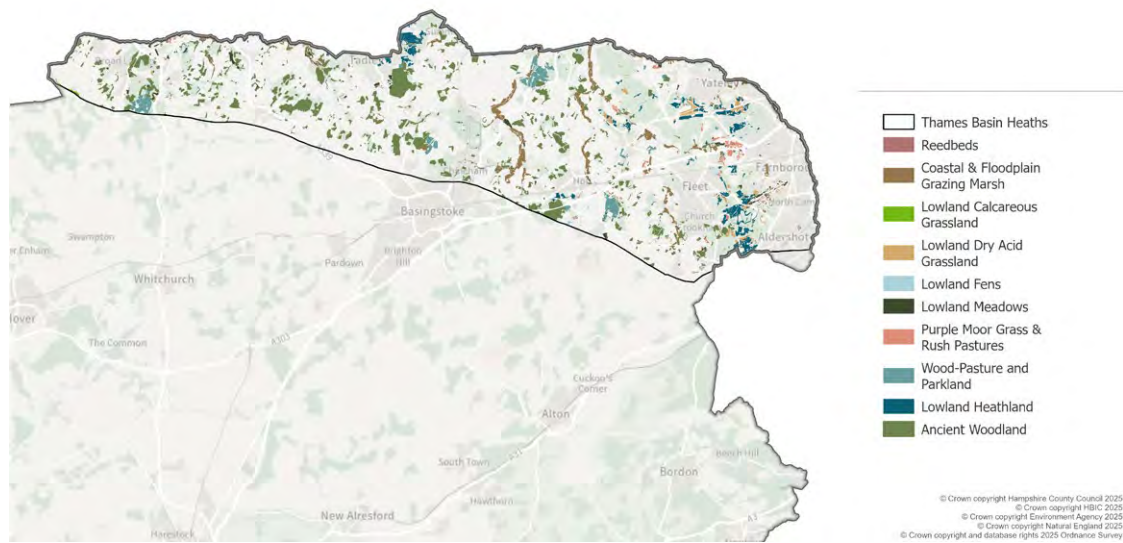


Figure 2.11: Priority habitats including ancient woodland



Description and current value to nature

Sitting on the more acidic clays and sands, this area of north Hampshire seems to get very little attention. It supports a diverse patchwork of ancient oak woodlands, hedgerows, wood pasture, heath, ancient meadows and wetlands. These habitats support a rich flora and fauna.

The area is bordered to the north partly by the River Enborne and has numerous streams, including the Loddon and Whitewater to the east. The North Wessex Downs National Landscape covers the western end of the area.

As part of the programme of LNRS engagement, a North Hampshire workshop was held on 17 January 2024. The workshop report is available on the LNRS webpages⁵⁷. The workshop brought together a wide range of key stakeholders and individuals interested in farming, land management and nature recovery across the area.

The workshop identified a number of key issues for nature and opportunities for nature recovery, included below. It should be noted, however, that these issues and opportunities are the views of workshop attendees and may not always align with the scope and ambition of the LNRS.

Key Issues for nature identified through engagement

Climate change

Climate change poses a significant threat to biodiversity and is major driver in net biodiversity decline. Climate change exacerbates many of those issues for the area's biodiversity listed. Drier summers, in particular, were highlighted as a threat to nature recovery on the heathland in this area.

57 North Hampshire workshop (January 2024) - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/get-involved>

Level of engagement with the farming community

Farmers and landowners are key to delivering nature recovery in North Hampshire. The short-term nature of government funding, and the complexities of accessing it, were reported to be barriers to farmers engaging with the new grant schemes. Several participants cited the loss of professional expertise and face-to-face advisors as a barrier to uptake of new schemes. Funding streams and project funding were also considered too short-term.

Land use tensions between productive arable land and rewilding or horse grazing were mentioned. However, farm clusters were cited as a proven and effective way to deliver environmental benefits.

Water – abstraction and pollution

Several participants referred to the impacts of over-abstraction and pollution on the health of rivers. Water companies, commercial properties, agricultural businesses and domestic properties were all cited here, with engagement with the water industry considered key to successful improvement of water quality.

Public awareness

A lack of awareness of the environment, farming and food production among the general public were felt to contribute to threats to nature recovery. The negative impacts on wildlife from public access were cited, as were the impacts of increased vehicular traffic, and a lack of understanding of rural issues in the urban population.

Species issues

Participants mentioned a lack of accurate baseline and abundance data for many species.

Opportunities for nature recovery identified through engagement

Farm clusters

Farm clusters were seen as an excellent opportunity for nature recovery. They provide access to peer-to-peer learning, active facilitators and grant scheme assistance, and encourage effective habitat linkage between farms. It was felt that the LNRS could have an active role in celebrating sustainable agriculture and promoting the good work already being carried out by farmers in the area.

Habitat connectivity

This was considered to be a key opportunity for the LNRS across a variety of habitats, including hedges, ditches, ponds, and watercourses. There were several specific geographical examples cited:

- Habitat creation and restoration to connect habitats on acid soils from west to east of the area, e.g. Greenham and Crookham through Ashford Hill, Pamber and Silchester, on towards the Thames Basin Heaths SPA.
- Use linear features to join up habitats, e.g. Roman roads from Silchester, railway lines, and motorway verges.
- Link the “string of woodland pearls” west of Basingstoke and establish corridors of mixed green and blue space, allowing nature and people to better interface between town and country.
- The former railway line to the south, becoming the A34 could be a good linking feature at Old Burghclere.
- Ensure that green and blue infrastructure plans are prepared for new development that deliver connectivity within development and out into the wider countryside.

Access to funding and grant schemes

To improve the ability of landowners and communities to access funding and grant schemes, it was felt that a “one-stop-shop” of information, or greater access to trained advisors and facilitators, could help provide opportunities for more uptake of schemes.

Cross-border approaches

Opportunities to work across the county boundary were considered important, particularly for scarce heathland habitats. This includes working with the Berkshire and Surrey LNRs.

River catchments

Prioritising river restoration and wetland creation in the upper reaches of river catchments provides opportunities to address nutrient issues, general water quality and water storage. Beavers could be used as keystone species to achieve wetland creation and improve water storage.

Nature-based solutions at wastewater treatment works, e.g. settlement lagoons and reedbeds were seen as a sustainable way to mitigate the impacts of development on the area’s watercourses.

Woodlands

Water industry commitments to planting trees and maintaining woodlands on land holdings were seen as an opportunity for woodland creation and BNG. Better woodland management could include a soft edge (transition) between field and woodland, rather than an impenetrable edge that species cannot easily cross.

Recreational impacts

Additional greenspace for people to access nature is seen as an opportunity to reduce pressure on existing designated wildlife sites, e.g. more SANG-like areas to attract dog walkers. Better management of existing rights of way is also seen as a way of reducing recreational pressure on sensitive areas.

Opportunities for species work

The use of umbrella species to drive nature recovery and public interest was considered a key opportunity.

Provision of artificial breeding sites for a range of species, especially birds, is an opportunity for species recovery. However, benefits and impacts need to be quantified and related to wider habitat management actions.



New Forest and Eastern Dorset Heaths

Area of NCAs (within the LNRS boundary)	70,648ha
Key priority habitats present	Wetlands, ancient woodland and wood pasture, lowland heathland, lowland dry acid grassland, fen and valley mire, lowland meadows, lowland fens, purple moor grass and rush pasture, reedbeds, coastal and floodplain grazing marsh, maritime cliff and slope, saltmarsh, shingle and saline lagoons.
'Crown jewel' sites	New Forest SPA/SAC/Ramsar, Dorset Heaths SAC, Dorset Heathlands SPA/Ramsar, Avon Valley SPA/Ramsar, River Avon SAC, Solent Maritime SAC and Solent and Dorset SAC, Ebblake Bog SSSI and Ringwood Forest SINC
Priority species	Honey buzzard, nightjar, woodlark, Dartford warbler, goshawk, hawfinch, breeding curlew, common snipe and seabird colonies, pine marten, smooth snake, sand lizard, adder, otter, water vole, beaver, shoulder-striped clover moth, speckled footman moth, black sweep moth, southern damselfly, New Forest cicada, 13 bat species, and rare lichen, bryophyte, fungi and beetle assemblages, great crested newt. Salmon, sea trout, eel, brook lamprey, bullhead.
Potential opportunities for nature recovery	<p>Heathland and acid grassland mosaic restoration.</p> <p>Lowland Meadow restoration.</p> <p>Tree planting and hedgerow creation in the New Forest fringes.</p> <p>Creation of wildlife corridors to link areas of high nature value, e.g. Forest to Coast and Avon Valley, and Ringwood Forest to the Dorset Heaths</p> <p>Creation and management of new ponds, wetlands and reedbed habitat.</p> <p>Restoration of the Avon Valley Floodplain.</p> <p>Restoration and enhancement of the area's rivers and streams for habitat and water quality, including buffer strips and shading.</p> <p>Development of more farm clusters.</p> <p>Better management of visitors to reduce disturbance to sensitive habitats and species.</p>

Part of National Character Areas 131: New Forest⁵⁸ and 135: Dorset Heaths⁵⁹.

58 New Forest NCA profile - <https://nationalcharacterareas.co.uk/New-Forest/>

59 Dorset Heaths NCA profile - <https://nationalcharacterareas.co.uk/Dorset-Heaths/>

Figure 2.12: Area boundary

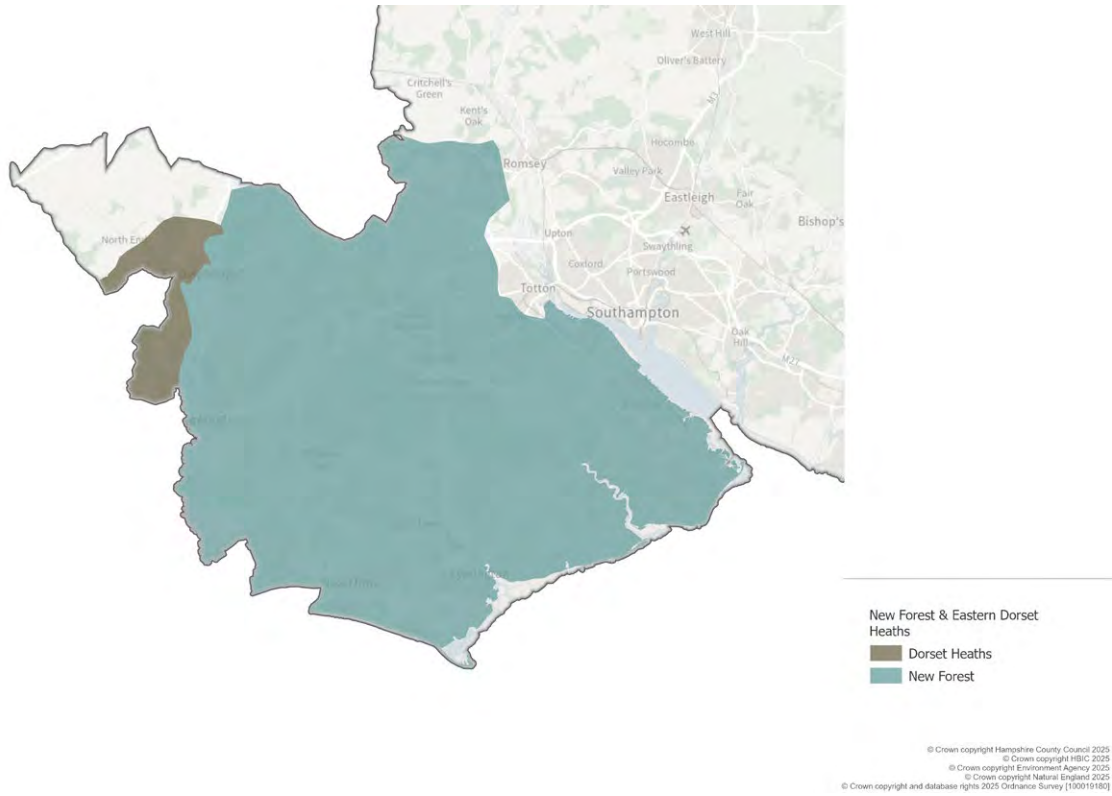


Figure 2.13: Nature conservation designations

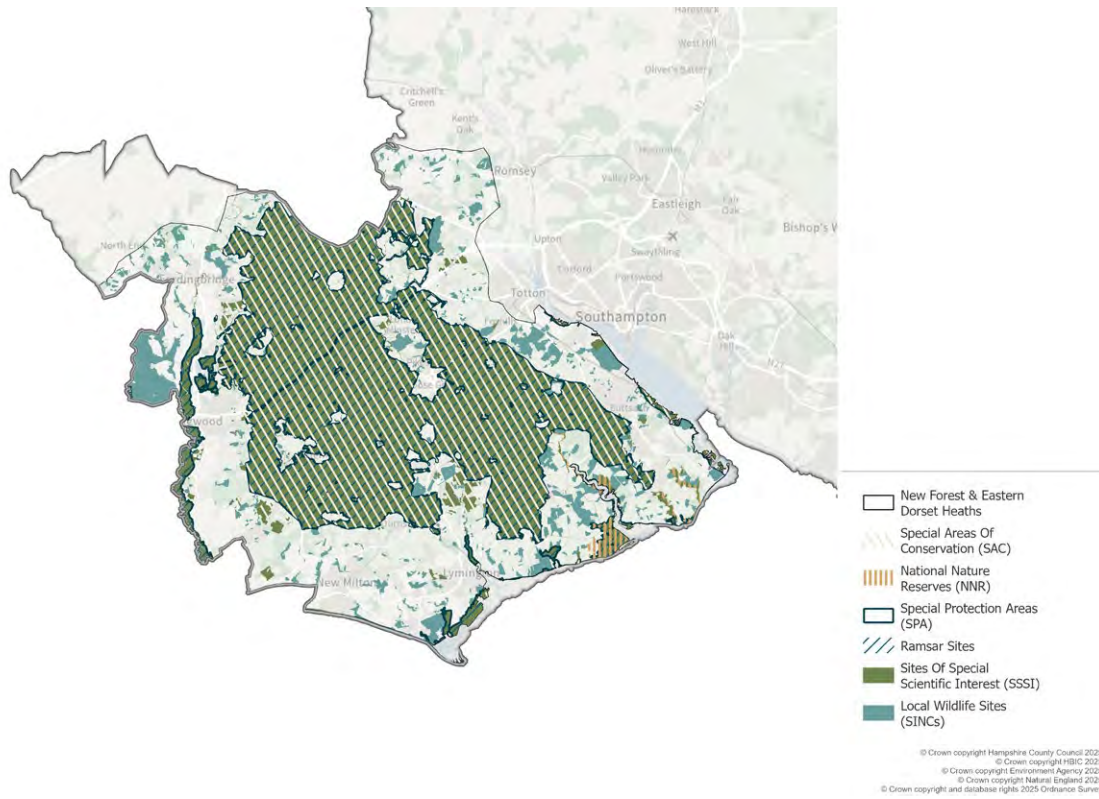
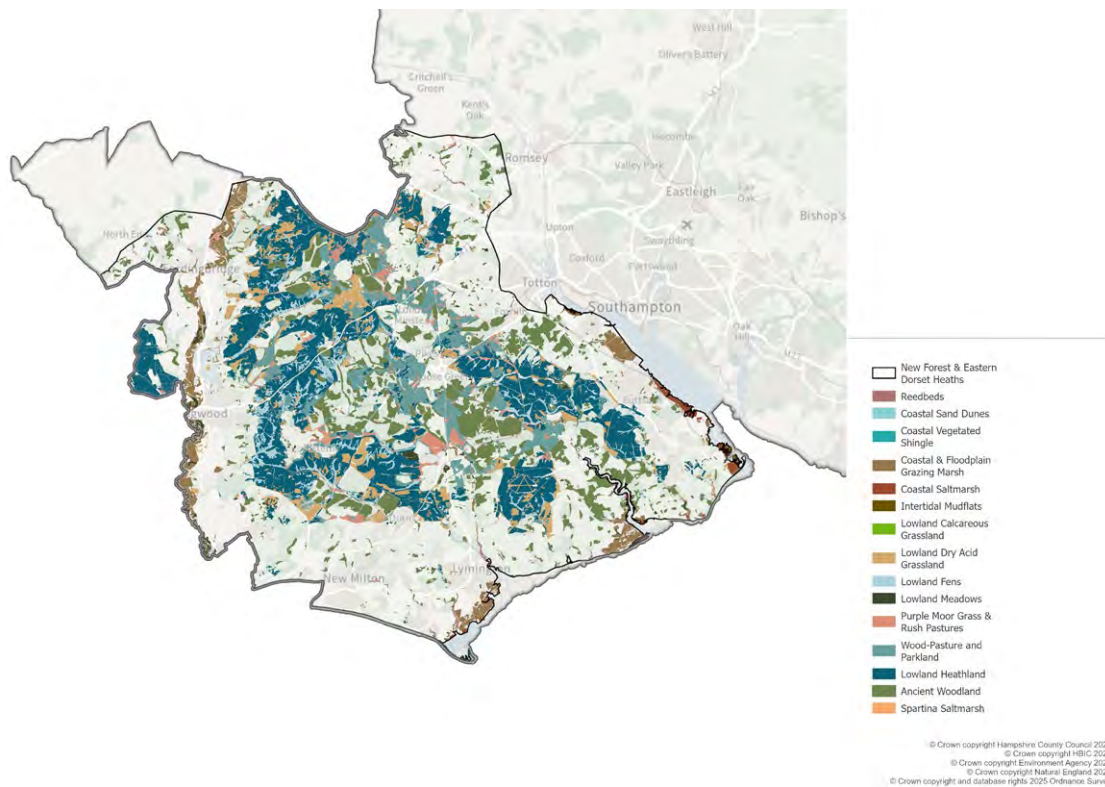


Figure 2.14: Priority habitats including ancient woodland



Description and current value to nature

New Forest

75% of the New Forest NCA is the New Forest National Park. It also includes the lower Hampshire Avon Valley, which forms the western boundary. To the east is the urbanised waterside from Totton to Fawley, with major oil, energy, and port-related industry alongside Southampton Water.

The area is a plateau, which averages around 80-100 metres above sea level, formed of Palaeogenic deposits. They are also overlain by Quaternary gravels in river terraces which retain evidence of prehistoric settlement. The gravels create the acid soils which support the habitats and species found in the New Forest which is designated as internationally important and is one of the most important and extensive habitats of this type in lowland Europe. These habitats have been kept largely undisturbed by agriculture with the survival of grazing and commoning as part of an important pastoral tradition, due to the area’s designation as a medieval royal hunting forest, imposition of ancient forest law, and more recent conservation policies.

Along its Solent shore, the soft geology forms low cliffs and extensive marine deposition features. The deposits exposed along the coast are internationally recognised fossil fauna. These spits, salt marshes and mudflats are designated as internationally important. The Avon Valley is distinctly different. It is a wide, flat valley bottom of mostly derelict water meadows, pasture, arable land, and a braided chalk river. It is linked with the New Forest through grazing tradition.

The core of the NCA is an area of contrasts. It has open heath, woodland and unenclosed wood pasture, which is characterised by ancient oak and beech, with New Forest ponies, cattle and pigs roaming free. There are also areas of enclosed pasture in historic field patterns with commoners’ farmsteads,

and small settlements. Together they evoke a special sense of place. Much of this area is open access and has long been a popular destination for holidays and outdoor recreation, predominantly walking, horse riding, cycling, camping and caravanning. There is also a long tradition of wildlife study and collecting. The coastal area has more limited access. However, the Solent Way, shingle beaches, and marshes are also a popular destination, with sailing centres at Beaulieu, Lymington, Mudeford, and Keyhaven. The New Forest National Park was designated in 2005.

The mires, bogs, ponds and streams, along with the wet heaths, wet grasslands and wet woodlands, are among the New Forest's most precious qualities. They form part of the New Forest SSSI and are a key reason large areas of the New Forest are also protected under international legislation. In terms of wetland habitats, the New Forest supports one of only four significant sites of bog woodland in the UK, as well as one of the six best sites of riverine woodland. Together with other scarce wetland habitats, the Forest also contains the most extensive lowland valley mire systems in north-western Europe⁶⁰.

As it lies between two major areas of planned economic growth, the effects of new development since the 1970s have heavily impacted the New Forest. Combined with trends, like the popularity of rural lifestyles and increased demand for outdoor recreation and tourism, the landscape is under intense pressure. Together with changing farming economics, this has affected the viability of commoning, which is essential for retaining critical landscapes, and underpins the ecological processes which support the biodiversity of the New Forest Commons.

Around the fringe and within the forest core, there are areas of enclosed back-up farmland, mixed woodland, heath-associated pasture, and dispersed farmsteads, villages and hamlets. These areas have a more intimate character of small pastures and paddocks,

enclosed by high hedgerows with many mature hedgerow trees and a network of narrow, winding, often sunken, lanes. An important area of enclosed land is detached from the main area to the north of the A36 in southern Test Valley.

There is an undeveloped open, marshy coastal strip with shingle beaches and spits, occasionally backed by low, crumbling cliffs, with visually prominent clusters of stunted oak and pine.

Much of the New Forest NCA is designated as SAC, SPA, and Ramsar.

Dorset Heaths

A small part of the Dorset Heaths NCA is within the strategy area.

The landscape of the Dorset Heaths is predominantly low relief. In places, erosion has left incised but shallow valleys, now dry or holding small watercourses, sometimes with associated mires.

There are large tracts of gently undulating, less-fertile marginal land dominated by conifer plantations or by heathlands of international importance (SPA, SAC and Ramsar). The area is internationally important due to its populations of nightjar, woodlark, Dartford warbler, sand lizard, smooth snake, and Dorset heath, as well as a rich assemblage of heathland, mire invertebrates, and lower plants. The heathlands can provide a sense of remoteness, bleakness or tranquillity, depending on the weather conditions.

At the eastern end, just within Hampshire, lies Ringwood Forest, one of the largest SINC's in Hampshire, comprising mostly of woodland plantation established on former heathland, and ancient woodland, and supporting a nationally important metapopulation of sand lizard. This is managed by Forestry England with plans to restore more areas to

60 NERR148 Edition 1 New Forest SAC Management Plan Version II (February 2025) - <https://publications.naturalengland.org.uk/publication/5661861545246720>

heathland, wooded heath and valley mire. This is also an area where the underlying geological gravel and sand deposits have and are being exploited in the form of quarrying, with each development required to undergo restoration on phased completion.

The soils are predominantly sandy, susceptible to erosion and relatively unproductive. Agriculture is largely pasture, with fields bounded by hedgerows or fences. There is some arable cropping, especially maize.

As part of the programme of LNRS engagement, a New Forest and forest fringes workshop was held on 1 February 2024. The workshop report is available on the LNRS webpages⁶¹. The workshop brought together a wide range of key stakeholders and individuals interested in farming, land management and nature recovery across the area.

The workshop identified a number of key issues for nature and opportunities for nature recovery, included below. It should be noted, however, that these issues and opportunities are the views of workshop attendees and may not always align with the scope and ambition of the LNRS.

Key Issues for nature identified through engagement

Climate change

Climate change poses a significant threat to biodiversity and is a major driver in net biodiversity decline. For example, the impact of climate change on flows and temperatures in the New Forest streams and the associated impacts on ecology, specifically fish and invertebrate communities. Climate change exacerbates many of the issues for the area's biodiversity listed below.

Recreation and access

A recurring theme in both the general and location-specific responses was the impact on nature from public access and recreation, particularly the damage caused by dogs (both on the coast and in the forest). Inappropriately located car parks were also cited as a threat.

It was suggested that dedicated dog parks could alleviate pressure on high nature value areas. It was also proposed that signs should be more user-friendly and avoid acronyms to encourage people to stop their dogs from disturbing wildlife.

Water quality and quantity

The poor condition of the area's rivers and streams and pollution in other water bodies was a key issue raised by participants. Threats include inappropriate river restoration and hard engineering in the past, historic drainage of the wetland for forestry and tree production, and the impact of sewage and agricultural run-off, for example from intensively managed fruit farms east of the New Forest.

Refinery operator(s) should maximise their investment in the local environment through nature recovery projects, above and beyond their regulatory obligations to monitor pollution outputs.

Air quality and light pollution

Air quality is a significant issue in the New Forest, particularly for pollution sensitive rare lichen species that grow on old forest trees.

Light pollution was also raised as an issue for nocturnal species in the area.

⁶¹ New Forest and forest fringes workshop (February 2024) - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/get-involved>

Loss of grazing and commoning culture

Several participants cited the threats to the traditional commoning culture of the New Forest, with loss of layback land for grazing and an increase in the use of land for recreational equestrian activities. There was seen to be a lack of support for commoners to continue traditional practices that are intrinsic to the management of the area's special habitats.

Baseline data

The current status of many species in the area is unknown due to a lack of recent survey work and baseline data.

Species

One participant suggested the future of coniferous woodland is under threat insofar as this habitat supports species such as goshawk, crossbill, and hawfinch. The Dartford warbler was noted as an important species in the area that would take advantage of habitat restoration work.

It was suggested that SSSI designations should be reviewed to include new species coming in such as egrets and avocets.

Landscape character and sense of place

Participants suggested that it was important that the New Forest was appreciated as an iconic landscape, with varied habitats and multi-faceted values for people and nature. Preserving these unique senses of place was key, rather than addressing the area in a one size fits all way.

Opportunities for nature recovery identified through engagement

Grazing and commoning

The traditional commoning culture of the New Forest should be celebrated and supported along with the provision and protection of layback land for

commoners. These traditional practices are intrinsic to the management of the area's special habitats, and are important to maintain and enhance the New Forest's internationally important nature conservation value.

Ecological connectivity

Connecting habitats, and the theme of habitats being "bigger, better and more joined-up", was a recurring theme in participants' contributions in this section of the workshop.

Tree planting and hedgerow creation were seen as key opportunities for the New Forest and forest fringes. Several specific locations were provided, including tree planting at the Horticultural Research Station at Lower Pennington, and new woodlands, orchards, and ponds on Hampshire County Council land at Newbridge. Green bridges were suggested to improve connectivity either side of the A326. In addition, there is the potential to create and improve habitat connectivity with the Franchises Wood RSPB Reserve over the border in Wiltshire.

The creation of wildlife corridors to link areas of high nature value, e.g. forest to the coast, is an opportunity to sensitively manage and restore roadside verges. This would provide more diverse flora and habitats for insects and larger animals. 'Wood meadows' which combine both habitats, were also cited as a possibility.

Opportunities to restore mineral extraction developments, particularly in the Avon Valley and Ringwood Forest areas, in line with LNRS habitat and species priorities and provide better connectivity with sites designated for their international and national nature conservation value.

Waterway and wetland restoration and pond creation

The creation and management of new ponds, wetland and reedbed habitats to store water and provide natural filtering of pollutants was seen as an opportunity for the LNRS. Suggested locations included the restoration of habitats in the Avon Valley floodplain. The restoration of rivers and streams to tackle habitat and water temperature issues was considered very important.

Cross-border approaches

Opportunities to work across the county boundary were considered important, particularly for scarce heathland and acid grassland mosaic habitats. This includes working with the Dorset and Wiltshire LNRSs.

Education and community engagement

Community engagement was seen as a key opportunity, with ideas including citizen science projects, planting trees in memory of loved ones on local authority owned land, and introducing wildflowers into cemeteries. The large student population in Southampton was mentioned as an opportunity for engagement with nature recovery. Another suggestion was that Hampshire includes the Natural History GCSE in school curricula.

Including under-represented groups, youth groups and other community groups, in planning and delivering actions for nature recovery was suggested as a key role for the LNRS.

Local authority collaboration and landowner liaison

Better collaboration and join-up of local authorities and key decision makers was considered crucial to the success of the LNRS. It was also considered vital that landowners were brought on board with the process. The development of more farmer clusters, especially on the forest fringes, was suggested as a way to facilitate this. The point was made that commoners and tenants needed a clear route to be supported by environmental schemes. The Environmental Farmers Group (see current projects in Appendix 4) was also cited as a way to expand and support farmer clusters.

Species

Swifts could be supported in new developments and renovations through the mandatory inclusion of swift bricks.

South Hampshire Lowlands and South Coast Plain

Area of NCAs (within the LNRS boundary)	55,400ha
Key priority habitats present	Ancient woodland, lowland meadows, purple moor grass and rush pasture, coastal and floodplain grazing marsh, saltmarsh and mudflats, sand dunes and coastal vegetation shingle, saline lagoons, chalk streams, and soft rock cliffs.
'Crown jewel' sites	Portsmouth Harbour SPA, Chichester and Langstone Harbours SPA, Solent and Southampton Water SPA, Solent Maritime SAC, River Itchen SAC, River Meon Compensatory SAC, and Titchfield Haven NNR. Botley Wood SSSI, Upper Hamble Estuary and Woods SSSI, The Moors SSSI and Portsdown Hill SSSI
Notable species	Dormice, great crested newts, southern damselfly, Bechstein's bat, little robin, nottingham catchfly, green-winged orchid, brent geese, and breeding seabird colonies (ringed plover, black-headed gull, oystercatcher, Mediterranean gull, common tern, little tern and Sandwich tern), water vole, otter, salmonids, salmon and sea trout in the River Meon, eel, brook lamprey, bullhead.
Potential opportunities for nature recovery	Greater uptake of nature friendly farming measures. Ancient woodland and lowland meadow restoration. Green infrastructure delivery integrating with habitat networks. Creation of riparian buffers to improve water quality. Coastal habitat creation and enhancement to off-set coastal squeeze and coastal erosion including restoration and creation of coastal floodplain grazing marsh River restoration and the removal of barriers to fish migration.

Part of National Character Areas 126: South Coast Plain⁶² and 128: South Hampshire Lowlands⁶³.

⁶² South Coast Plain NCA profile - <https://nationalcharacterareas.co.uk/South-Coast-Plain/>

⁶³ South Hampshire Lowlands - <https://nationalcharacterareas.co.uk/South-Coast-Plain/>

Figure 2.15: Area boundary

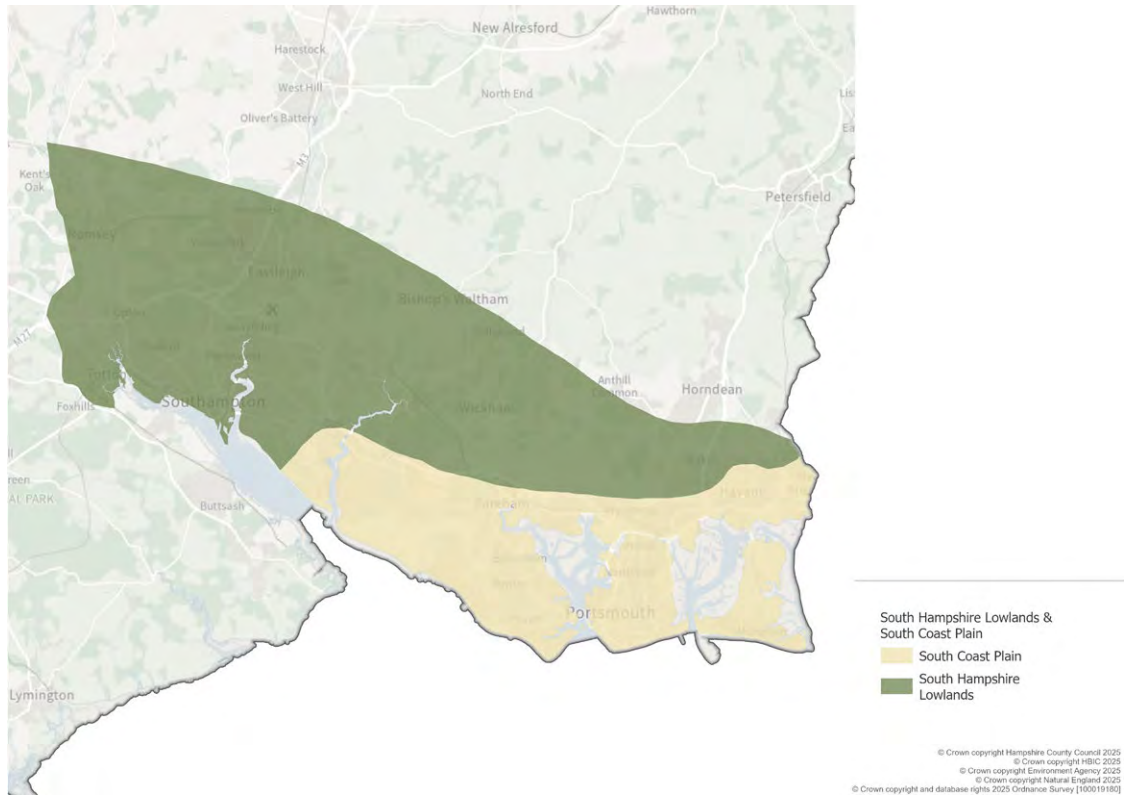


Figure 2.16: Nature conservation designations

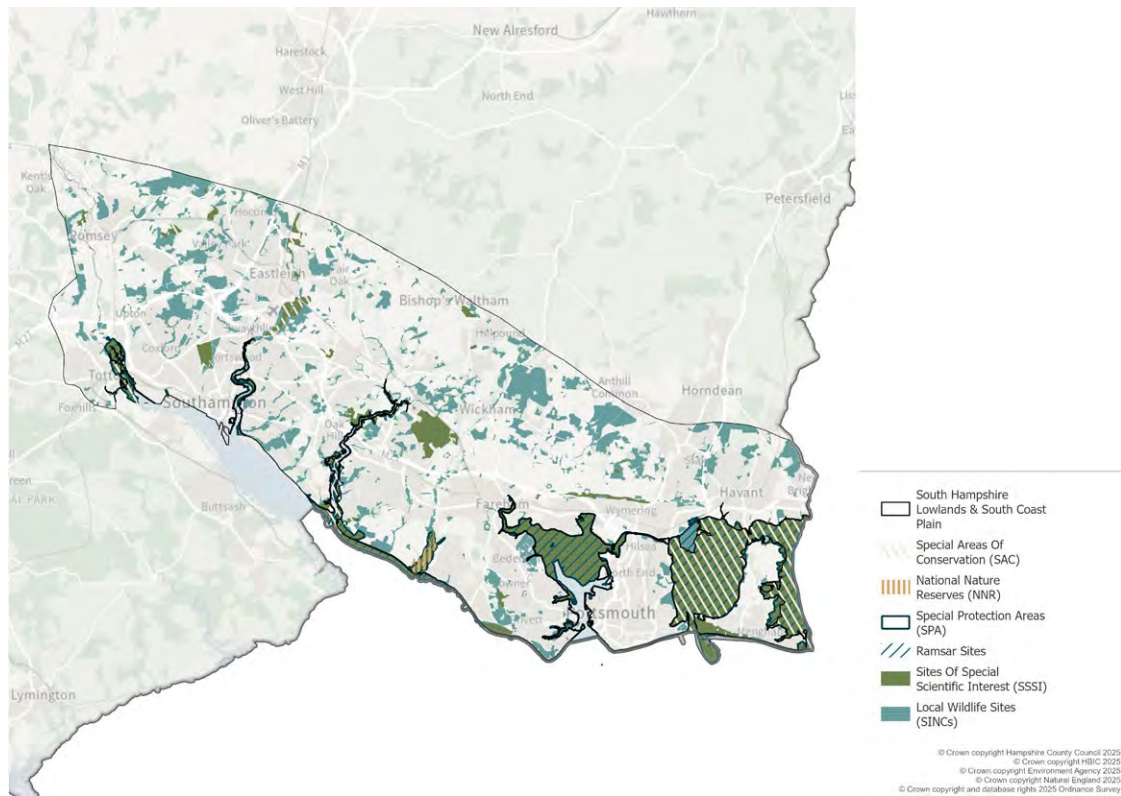
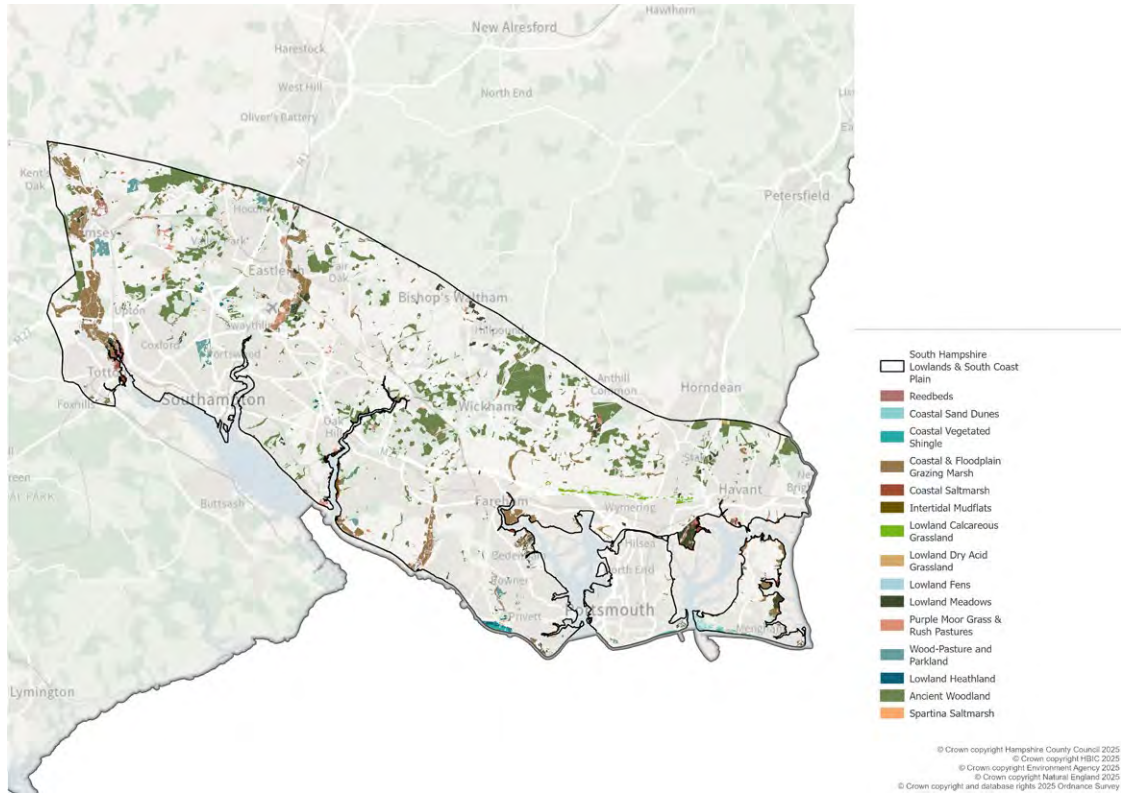


Figure 2.17: Priority habitats and ancient woodlands



Description and current value to nature

The South Hampshire Lowlands is a low-lying, undulating plain between the chalk hills of the Hampshire Downs and South Downs, and Southampton Water. Its highest point is an outlying chalk ridge, Portsdown Hill. The bedrock geology is mostly open marine, estuarine and freshwater Tertiary gravels. The area is dominated by the city and port of Southampton and its adjoining towns and suburbs. 29% of the area is urban. In the more rural areas, it is a mixture of farmland, particularly pasture, and woodland. Soils over much of the area are heavy and clayey with localised pockets of more freely draining soils on higher land. The foothills of the South Downs, along the northern boundary, fall within the South Downs National Park

The South Coast Plain is a flat, coastal landscape with an intricately indented shoreline. It lies between the dip slope of the South Downs and South Hampshire Lowlands and the waters of the English Channel, Solent, and part of Southampton Water. The area is

dominated by the city and port of Portsmouth and its adjoining towns and suburbs. The coastline includes several major inlets which have particularly distinctive local landscapes and intertidal habitats of international environmental importance for wildfowl and waders. These include Portsmouth, Langstone, and Chichester Harbours. Chichester Harbour National Landscape lies within the NCA..

Portsmouth Harbour SPA, Chichester and Langstone Harbours SPA/Ramsar, Solent and Southampton Water SPA/Ramsar, Solent Maritime SAC, and Solent and Isle of Wight Lagoons SAC are internationally recognised for their habitat and species value, including overwintering coastal birds. Every winter, the Solent hosts over 125,000 overwintering and migratory ducks, geese and wading birds. The extensive intertidal mudflats, coastal lagoons, seagrass beds, shingle, and saltmarsh provide vital feeding and roosting grounds for these.

The shingle banks provide important breeding grounds for terns and gull species, including Mediterranean gulls. The Solent also supports 10-13% of world's population of dark-bellied brent geese. This is 30% of the UK population.

Collectively, the area encompasses two cities and the surrounding urban areas, and is fragmented by major transport links. But it also supports a diverse patchwork of ancient oak woodlands, wood pasture, hedgerows, species-rich meadows, and wetlands set within an enclosed, mostly pastoral landscape.

In between urban settlements, the coastal plain leans more towards larger arable fields and open fields important for overwintering waders and Brent geese.

SSSIs include the lower reaches of the River Test and River Itchen, Portsdown Hill, Botley Wood, Southampton Common, and many stretches of the coastline, including Portsmouth, Langstone, and Chichester Harbours. The area is bordered to the north by the rising downland of the South Downs National Park. The whole area is traversed by numerous rivers and streams including the River Meon. These provide water resources, including recreation, flood management, and are rich habitats for wildlife. 12% of Hampshire's coastal SSSIs are in favourable condition in Hampshire, with 49% in an unfavourable recovering condition.

As part of the programme of LNRS engagement, a South Hampshire farming and conservation workshop was held on 14 February 2024. The workshop report is available on the LNRS webpages⁶⁴. The workshop brought together a wide range of key stakeholders and individuals interested in farming, land management and nature recovery across the area.

The workshop identified a number of key issues for nature and opportunities for nature recovery, included below. It should be noted, however, that these

issues and opportunities are the views of workshop attendees and may not always align with the scope and ambition of the LNRS.

Key issues for nature identified through engagement

Climate change

Climate change poses a significant threat to biodiversity and is a major driver in net biodiversity decline. Climate change exacerbates many of the issues for the area's biodiversity listed.

Habitat fragmentation and competing land use

There is already considerable habitat fragmentation in this part of Hampshire, with the loss of hedgerows and riparian habitat, woodlands, and species-rich grasslands. Scrub is an important wildlife habitat, but its conservation is often overlooked in favour of grassland.

Many SINC's are small and in poor condition, making them difficult to manage effectively. Some SANGs may need changes to public and/or dog access to provide better opportunities for nature recovery. However, this may prove difficult as the purpose of SANGs is to mitigate the impact of recreational pressures from residential development on sensitive sites.

On the coast, large urban areas offer less opportunity for habitat retention and creation.

64 South Hampshire farming and conservation workshop (February 2024) - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/get-involved>

Development pressure and recreational disturbance

Urban and sub-urban developments have caused cumulative habitat and species losses, and the pressures of new development are significant in the south Hampshire area. Several participants mentioned the need for a south Hampshire green belt to try to mitigate some of the development pressures.

Light pollution appears to have had a significant impact on moth populations.

It is felt that the south coast is heavily urbanised with relatively little space for nature remaining. Sustainable urban planning is required to prevent further natural spaces from being developed. Where new development is implemented, efficient biodiversity offsetting and recreational access needs to be fully considered, which must be monitored to ensure success.

The coastal area is extremely important for many wading birds and other coastal bird species. Disturbance is arguably the main barrier to species recovery, impacting on the breeding success of species such as ringed plover, oystercatcher, and redshank. Dog walking and other recreational activities increase levels of disturbance further.

Agri-environment funding is difficult to access

The number of different funding schemes, their complexity, and perceptions of harsh penalties for non-compliance are preventing farmers from accessing support for actions to assist nature recovery. Most schemes require financial outlay from the farmer before money can be claimed back, and many are not available to tenant farmers. Many schemes are relatively new and untested, and there have been several iterations in recent years, leading to uncertainty in the farming community. The LNRS must complement and augment these schemes, not add to their complexity.

Fragile farm business finances

High input costs, extreme weather, and short-term tenancy arrangements are making farms increasingly vulnerable, both environmentally and financially. Farmers must balance food production, biodiversity, and profitability.

Soil compaction and soil loss through run-off and erosion means that farms are increasingly unable to maintain healthy crops and livestock without unsustainable outside inputs of nutrients, pesticides, insecticides, and soil and therefore it is difficult to maintain profitability and environmental quality.

Freshwater habitats and species under threat

Freshwater watercourses are suffering from a range of impacts resulting in habitat and species loss. These include:

- Poor water quality.
- Over-abstraction.
- Acoustic disturbance from industry (e.g. in Southampton Water).
- Sedimentation of breeding areas.
- Sewage discharges.
- Agricultural run-off.
- Pollution incidents.
- Nutrient loading.
- Channel modification.
- Sport fishing.
- Barriers to fish migration.

Species impacted include salmon, brown trout, eel, white-clawed crayfish, otters, and water voles.

Opportunities for nature recovery identified through engagement

Key species and habitats protected and enhanced

Habitat restoration provides significant benefits for nature recovery, including the Beneficial use of

Dredged Sediment (BuDS) - the reuse of material removed during dredging for constructive purposes, such as habitat restoration, coastal defence, and land reclamation.

Focusing on key species and habitats which are recognisable and understandable for landowners and managers, such as the creation, enhancement or restoration of saltmarsh, will help to build a roadmap to recovery. Prioritising the recovery of existing habitats, such as SSSIs and SINCs, then building out from those and linking them where possible, should be a key role of the LNRS. It is considered crucial to maximise the biodiversity value of greenspaces and roadside verges across the area.

Nature-friendly farming

The LNRS could support farmers to improve soil health and support habitats and species through nature friendly farming practices. These could include:

- Autumn/winter cover crops.
- Winter feed for farmland birds.
- Insecticide-free farming practices.
- Enhancing unfarmed areas around ponds, ditches, rivers and hedgerows.

Supporting farmers and landowners through the formation of farm clusters, appropriate use of BNG contributions, and pragmatic support from Defra were seen as key to this. It was also highlighted that high-quality produce from these farms should receive a fair price, rather than being viewed as a commodity.

A specific example was given of an area where there is an opportunity for farmer-led nature recovery. This is the area between Keyhaven (on the coast) and Efford to the north along the Efford Valley area, including The Pans and either side of Avon Water. There are no Landscape Recovery projects in the area, so this is an opportunity that could be supported by the LNRS.

Water Environment

Prioritising river restoration and wetland creation in the upper reaches of river catchments provides opportunities to address nutrient issues, general water quality and water storage, critical to the Solent.

River, stream, and ditch corridors exhibit naturally connected habitat that can be enhanced for nature recovery, as well as support networks of other waterbodies.

Sea trout and eel priority species recovery and umbrella and landmark species are important in raising the ecological status of south Hampshire watercourses.

Cross-border approaches

Opportunities to work across the county boundary were considered important, particularly for important coastal habitats. This includes working with the Dorset and Sussex LNRSs.

Appropriate development controls

All new development should deliver green infrastructure, and new developments should take place around habitat networks, rather than the other way round. Incorporating small-scale biodiversity enhancements into new developments, e.g. swift bricks, was also suggested. BNG from development must help to meet targets at a local level aimed at priority species and habitats.

Nature-based solutions at wastewater treatment works, e.g. settlement lagoons and reedbeds are seen as a sustainable way to mitigate the impacts of development.

The creation of areas where access is restricted may help to mitigate recreational disturbance on wading birds and other coastal species. Unfortunately, this would be unpopular with the public.

Better use and management of the area's rights of way network, including National Trails, was cited as a potential contribution to reducing recreational disturbance on sensitive areas.

Public engagement

The LNRS should support meaningful public engagement and efforts to reach under-represented communities who would benefit from nature's recovery the most. Linking with wider strategies

such as the government's 30by30 initiative and the Hampshire & the Isle of Wight Wildlife Trust's Wilder 2030 strategy could help with this. It should also use existing volunteer groups with local knowledge and engage with the public at parish level to ensure understanding of opportunities. Supporting more school visits to farms was also suggested to create public support and raise awareness of farm biodiversity schemes.



Rivers and wetlands

Area (within the LNRS boundary)	Whole of Hampshire.
Key priority habitats present	Chalk streams, floodplain grazing marsh, reedbeds, fen and valley mire.
'Crown jewel' sites	Hampshire Avon, the rivers Test, Itchen, Meon and Whitewater, the Lymington River and Beaulieu River and associated wetlands of the new Forest, other wetlands such as Stockbridge North Fen, Bransbury Common, Greywell Fen and the Moors at Bishop's Waltham.
Notable species	European eel, bullhead, brook lamprey, Atlantic salmon, brown trout, sea trout, grayling, white-clawed crayfish Otter, water vole, water shrew, bittern, marsh harrier, bearded tit, kingfisher and Desmoulin's whorl snail.
Potential opportunities for nature recovery	Riparian buffers. Improving in-channel habitat and water quality. Connecting rivers to floodplain and restoration of floodplain grazing marsh. Restoring/expanding fen habitat and reedbed. Creation of pond clusters.

Figure 2.18: Hampshire's main river systems

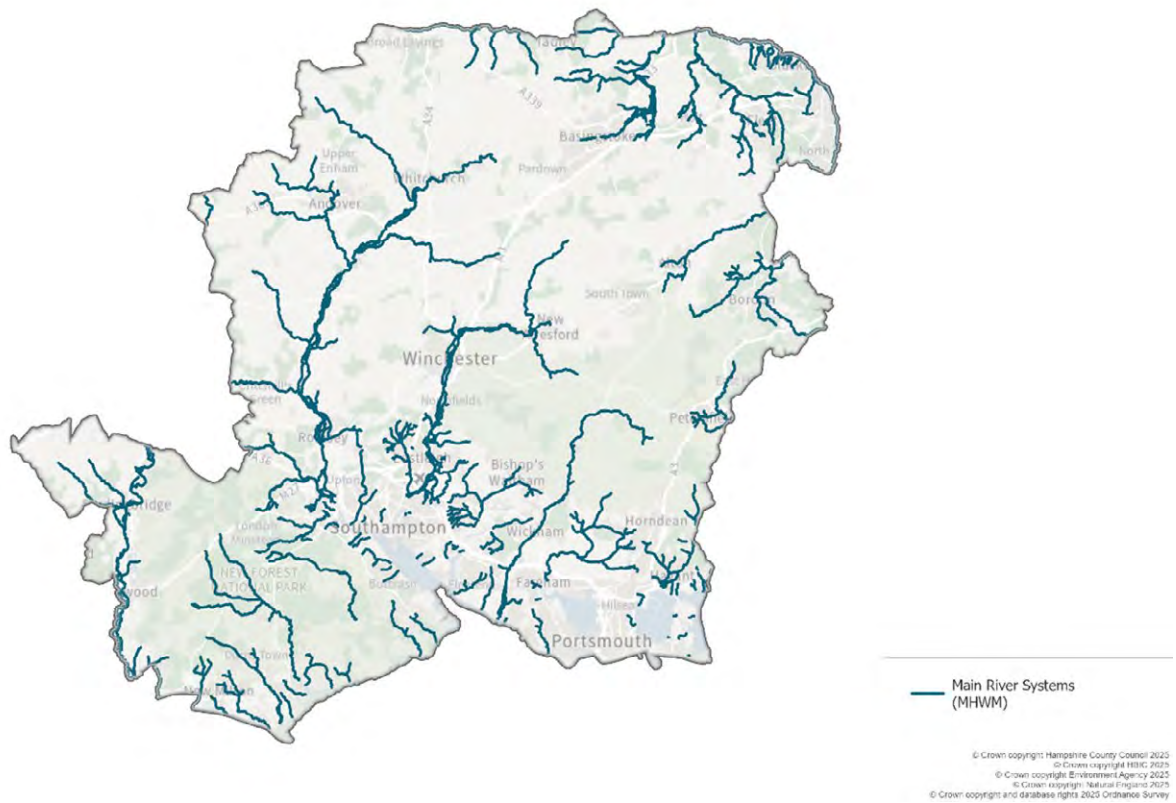


Figure 2.19: Hampshire's river catchments



Description and current value to nature

As described in Section 2.1, Hampshire has a vast network of watercourses that supply homes with water and wastewater services, provide recreational resources, and important habitats for wildlife. It is a coastal county that contains whole river catchments within its boundaries and is home to internationally important chalk streams.

In England there are 160 chalk streams of which eight can be found in Hampshire; the Hampshire Avon in the west; the River Test (and its tributaries the Wallop Brook, Anton, Dever and Bourne Rivulet); the River Itchen (and its tributaries the Candover Brook, Arle and Cheriton Stream); the River Loddon and Lyde, River Whitewater, River Wey and the River Meon in the east.

Chalk streams are fed by water filtered through chalk aquifers, resulting in exceptionally pure, clear, and mineral-rich water. The water maintains a relatively constant temperature year-round, which is beneficial for many species. The stable water conditions and mineral content support a wide variety of aquatic plants, including various water-crowfoot and water star-wort species. The abundant plant life and good water quality provide a food source and habitat for numerous invertebrates, fish, and other species. Chalk streams are crucial for fish populations like brown trout, bullhead, brook lamprey, and Atlantic salmon, which rely on the clean gravels for breeding, and they provide refuge for the threatened white-clawed crayfish, now only found in the upper reaches of the Itchen.

Our river systems, including those which are not chalk streams, are important for nature and provide essential services from water purification to flood management and from biodiverse landscapes to recreational pursuits such as angling. Freshwater habitats regulate water flow and flooding through connectivity of ground water stores, running water and other waterbodies; and through floodplain water storage where sites store excess water from rainfall.

Associated wetlands include many rich valley fens which have survived in Hampshire some as common land, some in the main river valleys, and others around calcareous spring lines. The internationally important valley mires and bogs of the New Forest are dealt with in the New Forest section. Similar but smaller valley mires can be found in north-east Hampshire at Hazeley Heath, Castle Bottom and Eelmoor Marsh.

As part of the wider 'Rights of Nature' movement, the concept of river rights has emerged where rivers are being recognised as legal persons, in a similar way to corporations. Drawing on international models, where rivers are recognised as legal entities with rights informed by the Universal Declaration of the Rights of Rivers⁶⁵, Lewes District Council determined to support the principles within the Rights for River Ouse Charter⁶⁶, co-developed with Love Our Ouse and partners. This is the first time in the UK that a Council has signed up to a River Rights Charter.

Within Hampshire, Basingstoke and Deane Borough Council, Southampton City Council and Test Valley Borough Council have passed motions to formally recognise the Declaration and the principles of rights of rivers within their administrative areas. This growing movement is likely to have positive implications for the protection of the intrinsic value of Hampshire's rivers, and for wider nature recovery.

⁶⁵ Universal Declaration of the Rights of Rivers - <https://www.earthlawcenter.org/river-rights>

⁶⁶ Lewes District Council Decision - <https://democracy.lewes-eastbourne.gov.uk/ieDecisionDetails.aspx?Id=1106>

As part of the programme of LNRS engagement, a cross-cutting rivers and wetlands workshop was held online on 24 January 2024. The workshop report is available on the LNRS webpages⁶⁷. The workshop brought together a wide range of key stakeholders and individuals interested in Hampshire's rivers and wetlands.

The workshop identified a number of key issues for nature and opportunities for nature recovery, included below. It should be noted, however, that these issues and opportunities are the views of workshop attendees and may not always align with the scope and ambition of the LNRS.

Key issues for nature identified through engagement

Water quality

Water quality was a key theme in comments from participants. Most frequently cited sources of pollution were nutrients from wastewater and diffuse agricultural pollution, including sewage, toxic run-off from roads and car parks, and agricultural chemicals. Nutrient enrichment can cause eutrophication and algal blooms, which impacts habitats and species abundance/diversity. Sediment run-off from eroded soils close to watercourses, caused by grazing stock, public access or inappropriate cultivation practices, was also cited as impacting on riverbed gravels and water quality.

In addition to the effects these pollutants have on the watercourses themselves, there is the wider issue of the contribution this has on the coastal and marine habitats into which the watercourses eventually drain.

Water quantity

There were a range of comments relating to low flows and the impact of flooding. Participants described how the disconnection of rivers from their flood plains and artificial straightening of river channels contributes to downstream flooding, with over-abstraction and lack of protection for wetland habitats causing low flows and loss of habitat for freshwater species. Possible solutions include effective mapping to target natural flood management (NFM), reconnection of watercourses to their flood plains through restoration work, and education of the public to limit mains water use (e.g. installing water butts).

Public awareness

A lack of awareness of the ecology of freshwater environments, and the impacts of human activity, were cited by several participants. Recreational access, including wild swimming, canoeing, and paddle-boarding, can damage sensitive habitats. Disturbance by humans and dogs can have a detrimental impact on freshwater ecosystems. Education from school-age onwards was considered key to increasing public awareness and improving the balance between connecting people to these important habitats and protecting the sites from damage.

Opportunities for nature recovery identified through engagement

Physical habitat priorities

Tree planting and the provision of riparian buffer strips were suggested by many participants as a key opportunity for improving water quality, reducing water temperature and providing habitat corridors and connectivity. Removal or bypassing of barriers to fish passage was also considered important for fish migration, particularly relevant on the Rivers Wey and Loddon.

⁶⁷ Rivers and wetlands workshop (January 2024) - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/get-involved>

Local authorities

It was felt that local authorities could be a driver of nature recovery for rivers and wetlands. They, like the water companies, have statutory responsibilities in relation to these habitats, e.g. as Lead Local Flood Authorities. Actions that could be taken include building river recovery strategies and action plans into local plans, and creating policies that protect river and wetland ecosystems. Consideration should be given to the impacts on the water environment before council decisions are made, as they currently are for

climate change impacts. An example of this could be to create no build buffers around all rivers, as there are currently for ancient woodland.

Local planning authorities could also create river restoration projects that will contribute to developers' biodiversity net gain (BNG) watercourse units.

Participants considered it essential that spatial planning at all scales is focused around green and blue infrastructure.



Countryside Stewardship and other funding

Recent uplifts to Countryside Stewardship funding include a forthcoming floodplain meadows option paying £1,070/ha, alongside options for low-input grassland management and woodland creation and restoration. These could be effective incentives for improved riparian management. BNG and the Local Nutrient Mitigation Fund also offer funding opportunities to help rivers and wetland habitats. There was a suggestion that chalk streams should be classed as strategically significant for BNG, and that all chalk streams should be designated SSSIs.

Collaboration and landowner liaison

Better collaboration and the join-up of existing projects and funding was seen as an opportunity that could be facilitated through the LNRS. Other suggestions include:

- Gathering data at a central accessible resource, e.g. through the Hampshire Biodiversity Information Centre (HBIC).
- The use of citizen scientists and volunteers.
- The training of facilitators to help with landowner liaison.
- Better integration with marine work and other projects (see list of current projects in Appendix 4).
- Better monitoring of and liaison with operators of wastewater treatment works, land managers and industry in relation to effluent discharge, and other point source and diffuse pollution.

Flood plain management

Participants highlighted the importance of sensitively managing flood plains to conserve wildlife habitats, enhance flood storage, and protect their fragile alluvial soils. There are only 1100ha of species-rich flood plain plant communities in England and Wales. These need greater protection and increased incentives for appropriate management. Floodplain habitats become more dynamic where beaver are reintroduced and, in some areas, aiming for a wetland mosaic would be more appropriate than specifically defined habitats.

Coastal and marine

Area (within the LNRS boundary)	c24,000 ha coastal and intertidal.
Key priority habitats present	Saltmarsh, mudflats, vegetated shingle, coastal grazing marsh, soft rock cliffs, saline lagoons, sea grass beds.
'Crown jewel' sites	Portsmouth Harbour SPA, Chichester and Langstone Harbours SPA, Solent and Southampton Water SPA, Solent Maritime SAC, North Solent SSSI/NNR, Titchfield Haven NNR.
Notable species	Priority seabird assemblages including ringed plover, black-headed gull, Mediterranean gull, oystercatcher, avocet, common tern, little tern and Sandwich tern, dark-bellied brent goose and black-tailed godwit, Also priority species assemblages for coastal grazing marsh and upper saltmarsh, saline lagoons and maritime soft cliffs. The Gilkicker weevil.
Potential opportunities for nature recovery	Restoration and expansion of saltmarsh and mudflats through managed realignment and coastal defence works and use of beneficial dredgings. Restoration of seagrass meadows through the planting of new seagrass beds. Management of disturbance and predation to improve the breeding success of ground nesting seabirds.

Description and current value to nature

As described in Section 2.1, Hampshire has an extensive and internationally important coastline and associated marine environment. All of it is designated as SPA or SAC (if you count the marine elements) and a large proportion designated as SSSI. A few remaining areas of vegetated shingle and soft rock cliff are designated as SINCs.

All of the Hampshire coast and associated marine areas are an integral component of the Solent, a large marine channel between the Isle of Wight and mainland Britain, spanning 51,000 ha, from Hurst Beach in Hampshire and the Needles (Isle of Wight) in the west to a line between Black Rock (Isle of Wight) and Selsey Bill (West Sussex) in the east. The major ports of Southampton and Portsmouth are situated in the Solent, and it is a major shipping lane for military, freight and passenger vessels as well as a popular location for recreational activities and water sports,

including sailing, walking, angling, swimming and paddle sports.

The Solent forms the largest estuarine system of the south coast of the UK, containing over 11,000ha of intertidal habitats including over 8,300ha of intertidal mudflats (50% in Hampshire), and over 2,100 ha of declining and threatened saltmarshes (45% in Hampshire) made up of 400ha of ancient saltmarsh and nearly 1,800ha of *Spartina* marsh. Rarer habitats include just under 150ha of kelp beds mostly located off Hayling Island in Hampshire and some 350ha seagrass beds.

Other specific shoreline habitats include grazing marsh, vegetated shingle, soft rock cliffs, estuarine woodland and saline lagoons. This includes unusual examples of natural gradations from maritime to coastal and marine habitats that have been lost from

other areas of the south coast through development and coastal defence works.

The Solent region supports one of the largest wintering populations of dark-bellied Brent geese in the UK and is of international importance for this species. By January each year, around 28,000 individuals, or 6 per cent of the world's population, can be found in the Solent.

The mudflats are rich in invertebrates and are consequently important feeding grounds for waterfowl and waders. There are also many adjacent terrestrial habitats and rivers which are important to birds and other animals which use these coastal and marine areas. For example, wading birds and waterfowl such as Brent geese also forage and rest in the adjacent fields, grazing marshes and urban parks. A Solent-wide project identifying such important terrestrial areas has mapped 3,600 ha of such fields and grassland next to the Solent's marine and coastal habitats. In addition, there are several species of fish such as Atlantic salmon which migrate between the sea and the Solent's rivers.

The Solent region supports one of the largest wintering populations dark-bellied Brent geese in the UK and is of international importance for this species. By January each year, around 28,000 individuals, or 6 per cent of the world's population, can be found in the Solent.

Most of the coastal and marine habitats in Hampshire and the wider Solent are under significant pressure from human activities, particularly those in the intertidal and splash zones. Notably, many of the habitats created by shellfish or plants have seen dramatic declines and degradation, primarily due to destructive fishing activities, water pollution, land claim and diseases. Hampshire's rivers that discharge into the Solent are significant sources of pollutants including nitrates and phosphates. The Solent SeascapeProject is restoring and reconnecting

seagrass, oyster reefs, saltmarsh and seabird nesting habitats across the Solent.

The Marine Management Organisation (MMO) is responsible for marine nature recovery beyond Hampshire's mean low water mark.

The King Charles III England Coastal Path National Trail provides 208km of public access along Hampshire's coastline, as part of the coastal path's 4.345 km national extent, when completed. The 'coastal margin' between the Trail and the sea, increases the ability of the access network to deliver nature recovery (see Protected Landscapes and National Trails section in 2.1 for more information, above, and the Greenspace, health and access to nature section, below).

As part of the programme of LNRS engagement, a coast and marine workshop was held on 16 January 2024. The workshop report is available on the LNRS webpages⁶⁸. The workshop brought together a wide range of key stakeholders and individuals interested in Hampshire's coastal and marine environment and its future.

The workshop identified a number of key issues for nature and opportunities for nature recovery, included below. It should be noted, however, that these issues and opportunities are the views of workshop attendees and may not always align with the scope and ambition of the LNRS.

68 Coast and marine workshop (January 2024) - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/get-involved>

Key issues for nature identified through engagement

Delegates raised the issue of the importance of wider environmental conditions and the need to address these for recovery to be successful such as water quality, sedimentation, non-native species and recreational disturbance. The Solent, for example, is a heavily populated and well used area and there are many local demands on it and global and regional terrestrial drivers that influence it, such as nutrient import and climate change.

Climate change

Climate change poses a significant threat to biodiversity and is a major driver in net biodiversity decline. Climate change exacerbates many of the issues for the area's biodiversity listed.

Pollution and water quality

Within the Solent, for example, the water quality of the inshore waters and estuaries is a serious concern. High nutrient levels have been reported due to the use of fertilisers and from human waste, and associated inputs from the areas watercourses. High nutrient levels in the Solent results in an increase of green alga, which smothers the sensitive habitats and impacts the wider ecology. It is recognised that substantial work has been undertaken by the Solent authorities to address these issues.

Coastal erosion and squeeze

There has been a general trend of rising sea levels over the past 40 years. Between 1962 and 2008, the sea level at Portsmouth has risen by 132mm, an average rise of 2.9mm per annum.



Relative sea level rise, increased erosion rates due to stormier weather, climate change, and coastal squeeze (increased erosion rates behind hard structures such as sea walls) threaten coastal habitats. Continuing erosion of foreshores, and die-back and erosion of cordgrass (*Spartina*) saltmarsh leaves upper foreshores, cliffs, and coastal defences increasingly exposed.

In a developed coastline, there are few areas where the natural processes of sedimentation and deposition can take place to rebuild new habitats lost due to coastal dynamics.

Recreational pressure and disturbance

Increasing recreational pressure at the coast due to population growth and tourism, together with declining water quality, non-native species, climate change, and dredging, pose some of the greatest risks to the coastal and marine environment. Hampshire's coast is a major centre for watersports, recreational boating, commercial shipping, and sport and commercial fishing. Dog walking and other recreational activities increase levels of disturbance further. As such, the area is under constant pressure and subject to the conflicting needs of wildlife and people.

The coastal area is extremely important for many wading birds and other coastal bird species. Disturbance is arguably the main barrier to species recovery, impacting on the breeding success of species such as ringed plover, oystercatcher, and redshank.

Monitoring

Ensuring effective monitoring of nature recovery work is a challenge, both in terms of monitoring nature recovery delivery and monitoring deterioration in existing sites. Inadequate monitoring, often linked to lack of budget, can lead to undesirable public behaviour in sensitive areas as individuals believe they will not be challenged.

Habitat restoration, creation and mitigation

Along the Solent coastline, for example, there is a lack of available coastal land and land values are high. Much of the Solent shoreline is privately owned, and identifying landowners and land and asset managers to source restoration sites can be challenging. On the coast, large urban areas offer less opportunity for habitat retention and creation.

Development is difficult to implement if land for mitigation cannot be sourced including environmentally beneficial projects, such as decarbonisation work, which is essential to tackling climate change.

Restoration and nature recovery are long term challenges and factors such as climate change and sea level rise need to be factored in when planning work to ensure it has longevity. The provision of appropriate practices, behaviour and personnel, with buy-in, is crucial. Individual organisations may have insufficient expertise and may experience rapid staff turnover, so partnership working is crucial for success.

Licenses and consents are still prohibitively expensive with no 'restoration' discounts. Monitoring costs can also be prohibitive.

Opportunities for nature recovery identified through engagement

Freshwater inputs

Prioritising river restoration and wetland creation in the upper reaches of river catchments provides opportunities to address nutrient issues, general water quality and water storage, critical, for instance, to the Solent.

Cross-border approaches

Opportunities to work across the county boundary are considered important, particularly for important coastal habitats. This includes working with the Dorset and Sussex LNRs.

Appropriate development controls

All new development should deliver green infrastructure, and new developments should take place around habitat networks, rather than the other way round.

Nature-based solutions at wastewater treatment works, e.g. settlement lagoons and reedbeds are seen as a sustainable way to mitigate the impacts of development of the coastal and marine environment.

The creation of mitigation areas to divert public access away from sensitive coastal areas is thought crucial. Bird Aware Solent has and is doing significant work to raise awareness of the issue of recreational disturbance on coastal bird populations in Hampshire (see Appendices 3 and 4). Better management and increased provision of rights of way is also seen as a way of reducing recreational pressure on sensitive areas. See also information relating to the King Charles III England Coastal Path in the Greenspace, health and access to nature section below.

Restoration, creation and mitigation

Restoration benefits from having an individual or body lead across an area to drive delivery. In the Solent this could be the Solent Seascape Project. Restoration also needs to be undertaken at a large scale i.e. landscape or seascape intervention rather than site specific.

It would be beneficial to better understand habitat connectivity across the terrestrial, intertidal, and subtidal interface. With such a shortage of land in the Solent it may be better to identify sites that are available for restoration and look to enhance them rather than focus on individual habitats and species and searching for sites for them with the right environmental conditions. For any restoration on the coast it is important to build in how this connects to both the terrestrial and marine habitats. Passive restoration should be a key focus across the wider Solent, removing habitat pressures.

Regulators could help with trials and pilots by waiving fees for licences and consents. Resourcing of government organisations is a key challenge. Simplifying processes could enable work to happen faster, using the huge amount of local passion and expertise.

It is felt that there has been a focus on Langstone and Chichester Harbours and that there should also be a focus on the potential of the Western Solent, Portsmouth Harbour and the Isle of Wight.

Some SANGs provide opportunities for nature recovery, but this may prove challenging as their main purpose is to mitigate the impact of recreational pressures from residential development on sensitive sites by providing recreational greenspace.

Awareness and communication

Communication is important to ensure that the public and politicians are onboard and that expectations are managed. People can help with passive restoration by changing their behaviour and should be encouraged to think long-term.

We need people and organisations to report and record projects that are finished and successful. This helps to convince the public and politicians their resourcing was worthwhile. The Solent Seascape Project has produced two excellent videos on their work.

Mapping

The Solent Seascape Project will be producing a mapping portal that will include both coastal and marine habitats, this will be useful in the long term especially for marine data but there needs to be consideration of its long term legacy. It would be helpful if the MMO marine plan explorer could include local data in addition to national data sets.

Mapping needs to be accessible to all and data produced in standard formats so that it can be uploaded to different systems. Where mapping is not available, we need to use the best data that we have and also have a bank of local experts to ask.

There is a need to map habitat condition and condition assessment findings in addition to habitat location. Non-native species need to be mapped to monitor their extent and spread. We also need to record byelaws and management measures as data layers.

A data layer showing where public use is impacting on sensitive areas could help target protection and nature recovery.

Resources

Volunteers are a great resource, although management and satisfying the risk assessments for fieldwork can be time consuming and challenging. Volunteers could prove a useful resource for monitoring of sites, which is often lacking from schemes due to budget constraints.

Monitoring can be mediated by partnership working with further education, utilising the student resource.

Coastal erosion and flood management

The Hurst Spit to Lymington Flood and Coastal Risk Management (FCRM) Strategy, being developed by the Environment Agency, in partnership with New Forest District Council, Hampshire County Council and Natural England, aims to recommend options to manage flood and erosion risk that are sustainable and adaptive over the next 100 years, with the aim of having a completed and approved Strategy in place by summer 2026. On adoption of the Strategy a clear programme of projects will be established to deliver the strategy.

Woodlands and forestry

Area of NCA (within the LNRS boundary)	Whole of Hampshire.
Key priority habitats present	Native deciduous woodland.
'Crown jewel' sites	The New Forest SAC, East Hampshire Hangars SAC, Botley Wood SSSI, Bouldsbury Wood SSSI, North Solent woods, Pamber Forest SSSI, Selborne Common SSSI, Harewood Forest SINC, West Walk SINC.
Notable species	Pearl-bordered fritillary, drab looper, hazel dormouse, pine marten, red helleborine, narrow-leaved helleborine, green-flowered helleborine, violet helleborine, bastard balm, bird's-nest orchid, western barbastelle, Bechstein's bat, tree pipit, hawfinch, lesser spotted woodpecker, woodcock, nightingale, spotted flycatcher, wood warbler, marsh tit, red-horned cardinal click beetle, blackening chanterelle, bitter tooth, velvet tooth, dusky bolete, gilded bolete, pale bolete, devil's bolete, oak polypore, coral tooth, violet crowncup, old man of the woods.
Potential opportunities for nature recovery	Resumption of active management to improve structural diversity through coppicing, thinning, opening up rides and glades. Improving connectivity between woodlands through new planting, creation of scrubby areas, hedgerows and soft edges between woodland and farmland.

Description and current value to nature

Hampshire's woodlands represent an important part of the county's natural environment, providing a diverse habitat for many different species. Some 7 per cent of UK species of conservation concern rely on native trees as a habitat or as a food source. Hampshire is one of the most wooded counties in England and holds 5% of the UK's ancient semi-natural woodland. This includes nearly 5000 ha of unenclosed ancient oak-beech wood pasture of the New Forest, plus the innumerable oak-ash-hazel woods of the chalk, the oak-birch woodland of the clays and sands in south and north-east Hampshire, and numerous wet woodlands in the river valleys. Hampshire's ancient semi-natural woodlands are especially famous for their carpets of bluebell, a feature almost unique to the UK.

The extent of woodland in Hampshire appears relatively stable, with small losses offset by gains through new planting and natural regeneration. However, it is likely as many as 80- 90% of our ash trees will eventually be lost as a result of Ash dieback,

with associated implications for canopy cover, timber stocks, biodiversity and ecosystem services. Ash is the UK's third most common tree and a key component of most of Hampshire's woodland and hedgerows. Young trees succumb very quickly whilst older trees

can survive with the infection for longer. In terms of biodiversity there are at least 100 species of insect, fungi, moss and lichen that are highly reliant on ash and at risk.

Outside the SSSI network there is little quantitative evidence available on the condition of our woodlands. Research on long-term ecological change (Kirby, K.J. et al, 2005⁶⁹) found that woodlands are becoming less structurally diverse and less species rich. Repeat surveys of woodland over the past 30 years by the Hampshire Biodiversity Information Centre have shown a decline in structural and floristic diversity mainly because of lack of management, deer pressure, the impact of invasive species and, in some cases, recreational disturbance.

Woodland butterflies, especially the fritillaries, have fared particularly badly, with most showing more than 50 per cent range contraction since 1980. The small pearl-bordered fritillary was not recorded in Hampshire in 2021 and could now be considered extinct. Similarly, for many woodland bird species including willow tit and lesser spotted woodpecker. The willow tit is generally regarded as the fastest-declining resident bird species in Britain and very rare in Hampshire. This decline is primarily due to habitat loss and degradation, and climate change. The lesser spotted woodpecker has contracted in range by 54 per cent since 1991

As part of the programme of LNRS engagement, a woodlands and forestry workshop was held on 10 January 2024. The workshop report is available on the LNRS webpages⁷⁰. The workshop brought together a wide range of key stakeholders and individuals interested in Hampshire's woodlands and forestry.

The workshop identified a number of key issues for nature and opportunities for nature recovery, included

below. It should be noted, however, that these issues and opportunities are the views of workshop attendees and may not always align with the scope and ambition of the LNRS.

Key issues for nature – identified through engagement

Lack of appropriate active woodland management

Inadequate management results in poor woodland structure that leads to closed canopy, simplified field and shrub layers, even-aged trees, and few open areas. This has serious consequences for woodland biodiversity.

Tree pests and pathogens

Tree pests and pathogens pose a serious threat to the sustainability of woodlands. Forest Research currently list 53 pests and diseases that are present in the UK, or may be in the near future.

Deer and grey squirrel control

Several participants stressed that without adequate control of deer and grey squirrels, it would be difficult to achieve natural regeneration and successful tree planting schemes. The detrimental impact of grey squirrels on woodland birds (e.g. the song thrush) was also highlighted.

The impact of residential areas and recreational use on woodland wildlife

Conflicts between wildlife and recreational activities were recognised, whilst acknowledging that trees in urban and semi-urban areas were important for a

69 Changes in the tree and shrub layer of Wytham Woods (southern England) 1974-2012: local and national trends compared: <https://scispace.com/pdf/changes-in-the-tree-and-shrub-layer-of-wytham-woods-southern-1ahlf53mvx.pdf>

70 Woodlands and forestry workshop (January 2024) - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/get-involved>

host of reasons. Impacts on woodland wildlife can include soil compaction, trampling of ground flora, eutrophication (dog waste), disturbance, and increase in fire risk.

Residential pets, particularly cats, can have a significant detrimental effect on local woodland wildlife, through predation.

Care of veteran trees and Ancient Semi Natural Woodland (ASNW)

The fate of veteran trees, and the irreplaceability of ASNW was cited as a serious cause for concern.

Opportunities for nature recovery identified through engagement

Connectivity

Possibly the most consistent comment, both as an issue and an opportunity, was connectivity. Improving the connections between habitats, through hedgerow planting, strategic land purchase, landowner liaison and woodland restoration, was considered key. Additionally, participants cited that coastal and urban areas should also be better connected to woodland.

“Right tree, right place”

The appropriate choice of tree species in planting schemes was highlighted, with many participants considering this an important issue for woodland and tree planting schemes.

Priority species

Some participants listed species, or umbrella species, that could be a focus for woodland biodiversity enhancement. Such species included: lesser spotted woodpecker; spotted flycatcher; hawfinch; woodcock; wood warbler; willow tit; redstart; purple emperor; white admiral; bluebells; wild garlic; woodland orchids; and green forest hoverfly.

The reintroduction of species, such as the pine marten, was also mentioned.

Although many of these are not LNRS priority species (see Section 5), they are indicative of well managed ancient woodland and it was suggested that a single-species approach may not deliver the best outcome for biodiversity.

Development and recreational disturbance

Securing larger buffer areas between new residential development and woodlands, through the planning system, would help in reducing impacts, such as predation of wildlife by pet cats, fly tipping, and disturbance to wildlife, and would allow robust woodland edges to develop, providing additional habitat and connectivity. The creation of ‘honey-pot’ greenspaces could be provided to reduce pressures on sensitive woodland habitats.

It was suggested that the impact of dog-walkers and associated wildlife disturbance could be countered by the provision of more support for private woodland owners where public access was not an issue, and additional woodland planting in both urban greenspace and on less productive farmland to dilute the effect.

Better management and increased provision of rights of way is also seen as a way of reducing recreational pressure on sensitive areas.

Woodland management

It was stressed that woodlands are about more than simply tree planting. Improving access to traditional skills such as sensitive felling and coppicing, and increasing awareness of the need for ongoing management, is considered crucial.

Lack of appropriate active management is one of the main drivers of biodiversity decline in UK woodlands. More private landowners need to be incentivised to manage woodlands to the UK Forestry Standard and a Forestry Commission-approved woodland

management plan. Silvicultural operations and management options like thinning and selective felling, coppicing and continuous cover forestry improve the condition and resilience of woodlands. This is because they create greater structural and age diversity and are opportunities to restock (through natural regeneration and/or planting) with a greater choice of species and provenances. All this in turn benefits biodiversity, including threatened species.



Greenspace, health and access to nature

Area of NCA (within the LNRS boundary)	Whole of Hampshire.
Key priority habitats present	Varies from species poor amenity grassland to ancient woodland, species-rich grassland and heathland.
'Crown jewel' sites	The New Forest, the SANGs and open heaths of NE Hampshire, Southampton Common SSSI, Portsdown Hill SSSI, St Catherine's Hill, Itchen Valley meadows, the Hampshire coastline, all National and Local Nature Reserves and Country Parks.
Notable species	Too numerous to mention.
Potential opportunities for nature recovery	Restoration/creation of species-rich grassland from amenity grassland. New woodland and tree planting. Improved/managed access to existing woodland such as ride widening. New parkland trees and low intervention areas within parks. Community orchards. New ponds. More street trees. Reduced mowing in churchyards.

Description and current value to nature

Greenspace

Greenspace, most commonly located in urban and semi-urban areas, can range from areas of monoculture grassland to areas rich in habitats and species and is often referred to as green infrastructure⁷¹. It can be both publicly accessible and private and may include water features, also known as blue spaces. Greenspace in Hampshire includes:

- Parks and formal gardens.
- Natural and semi-natural greenspaces.
- Green and blue corridors (e.g. river and canal corridors, and railway and road embankments and verges).
- Ponds and other static water features.
- Outdoor sports grounds (e.g. playing fields and golf courses).
- Amenity greenspace (e.g. areas used for informal recreation and village greens).
- Allotments, community gardens and city farms.
- Cemeteries and churchyards.
- Residential gardens.

⁷¹ What is green infrastructure? - <https://www.tcpa.org.uk/what-is-green-infrastructure/>

Many areas of greenspace may be protected through Local Green Space designation⁷², designated as formal country parks, and/or designated for their nature conservation value as SINCs and SSSIs. Some greenspaces are also provided as Suitable Alternative Natural Green Space (SANGs), where management is not so intensive, so that a feeling of naturalness is allowed to predominate⁷³. They are used to mitigate recreational pressure on SPAs and SACs, to protect them from new development. Areas provided as Solent Wader and Brent Goose Strategy (SWBGS) mitigation areas can also be compatible as public open space, providing dog control measures are in place. Greenspaces, generally, offer significant opportunities for nature recovery, particularly those in urban areas and those without formal management in place.

Importantly, access to greenspace is known to promote improved mental health and wellbeing for people and communities. It is estimated that greenspaces in England deliver around £6.6 billion of environmental, health and climate change benefits, annually. However, one third of people in urban areas do not have good quality access to green or blue spaces within a 15 minute walk of their homes⁷⁴.

West Hill Cemetery in Winchester is an excellent example of a 're-purposed' 2.5ha accessible natural greenspace that is now being managed for its chalk downland flora with twice yearly cut and collect mowing. Church yards and cemeteries provide a valuable refuge for many species in an often urban setting, especially for slow worms and lizards.

Private residential gardens in England cover more than four and a half times the area of its National Nature Reserves. Gardens offer a substantial and widespread opportunity for biodiversity conservation

because they offer essential food, water, shelter, and breeding grounds for wildlife, especially as natural habitats decline in urban areas and the countryside. By providing these resources, gardens act as stepping stones and corridors, allowing wildlife to move and survive, helping to maintain biodiversity and providing species like hedgehogs, sparrows, and frogs with a refuge from habitat loss and fragmentation. Everyone has a part to play⁷⁵.

Built structures

Built environments, including residential and commercial development, churches, schools, bridges and culverts, quarries, sea defences, and ports and harbours, provide a range of artificial habitats, particularly for nesting and roosting birds and bats. The UK has a set of priority species partly or wholly dependent on man-made built structures and dwellings for at least some of their life cycle. These include swifts, sand martins, house martins, swallows, peregrine falcons and house sparrows, together with pipistrelle, grey long-eared and serotine bats.

All built environments provide habitat niches that are generally incidental to design and are exploited opportunistically by wildlife, but also have the ability to provide significantly greater opportunities for target species. Increasingly, there are efforts being made to integrate intentional habitat design into new buildings and structures, and to retrofit them during repairs and maintenance, supported by local planning policies and the requirements of Biodiversity Net Gain (BNG). In addition to nature recovery, the incorporation of artificial habitats into built structures increases people's access to nature and promotes mental wellbeing, particularly when incorporated into residential buildings.

72 Local Green Space designation -

<https://www.oss.org.uk/need-to-know-more/information-hub/local-green-space-designation/>

73 Nature Nearby: Accessible Natural Greenspace Guidance. Natural England (2010) -

http://www.ukmaburbanforum.co.uk/documents/other/nature_nearby.pdf

74 [https://www.gov.uk/government/news/natural-england-unveils-new-green-infrastructure-](https://www.gov.uk/government/news/natural-england-unveils-new-green-infrastructure-framework#:~:text=Parks%20and%20greenspaces%20in%20England,15%20minutes%20of%20their%20home.)

[framework#:~:text=Parks%20and%20greenspaces%20in%20England,15%20minutes%20of%20their%20home.](https://www.gov.uk/government/news/natural-england-unveils-new-green-infrastructure-framework#:~:text=Parks%20and%20greenspaces%20in%20England,15%20minutes%20of%20their%20home.)

75 [How to make your garden wilder | Rewilding Britain](#)

An example is the incorporation of swift bricks into new development or retrofitted into existing structures. Swift bricks are a universal nest brick for small bird species and can be installed in new developments, including extensions, in accordance with best practice guidance.

Progress in the field of ecological design and engineering is well advanced in the coastal and maritime sectors, where constructed habitats (artificial reefs, pools, colonisable surfaces) are now routinely required by planners and regulators.

Access

Hampshire has approximately 4,200km of public rights of way. This network includes footpaths, bridleways, restricted byways and byways open to all traffic (BOAT), and provides public access to wildlife, greenspaces and open countryside within Hampshire and beyond. Habitats along these access routes also provide ecological connectivity, improving species' ability to move through the landscape and promote genetic exchange. The New Forest National Park alone has over 325 km of rights of way for the public to explore and enjoy. Hampshire also benefits from having 25,320ha of publicly accessible open access land⁷⁶. Details of Hampshire's rights of way network and the definitive map is provided on Hampshire County Council's website⁷⁷.

National Trails are an important part of this rights of way network (see Protected Landscapes and National Trails section in 2.1, above). National Trails provide both access to nature for people, opportunities for nature recovery and landscape scale ecological connectivity, with nature conservation being an important objective in their management. In Hampshire these include:

- South Downs Way - 160 Km long National Trail, 48 Km of which is within Hampshire.
- King Charles III England Coastal Path – 4,345 km long coastal path around England, when finished, 208 Km of which is within Hampshire.

The provision and management of the England Coastal Path's 'coastal margin' further increases the ability of the network to deliver nature recovery⁷⁸.

The use of the rights of way network, including long-distance National Trails, for walking, running, cycling and horse riding, and accessing nature is one of the most effective ways to improve physical health and mental wellbeing. In 2020, the value of health benefits associated with outdoor recreation within the UK was estimated to be between **£6.2 billion and £8.4 billion**⁷⁹. An estimated annual saving of £2.1 billion would be achieved through averted health costs if everyone in England had good access to nature.

Transport routes, such as roads, railways and navigable waterways, often considered barriers to wildlife, can provide access to nature and the countryside for people, and form extensive wildlife corridors and stepping stones across the landscape. Vegetated verges, embankments and fringing habitats along transport corridors, if effectively managed, enable species migration and promote genetic diversity. These corridors often incorporate and connect areas of priority habitat.

76 Open Access Land in England - <https://www.gov.uk/right-of-way-open-access-land/use-your-right-to-roam>

77 Hampshire rights of way network - <https://www.hants.gov.uk/landplanningandenvironment/rightsofway>

78 England Coastal Path coastal margin - <https://www.nationaltrails.uk/news/coastal-margin-national-trails-in-local-nature-recovery-strategies-england>

79 **Health benefits from recreation, natural capital, UK - Office for National Statistics**

Green infrastructure standards

As important components of green infrastructure, green and blue spaces and access networks feature in Natural England's Green Infrastructure Framework⁸⁰, which supports the greening of towns and cities and connections with the surrounding landscape as part of the Nature Recovery Network. It incorporates the 2023 Accessible Natural Greenspace (AGS) standards. These standards are set out as follows:

AGS size and proximity criteria

Everyone should have access to good quality green and blue spaces close to home for the benefit of their health and wellbeing and so they can be in contact with nature. Within 15 minutes' walk from home, everyone should have:

- A doorstep greenspace of at least 0.5ha within 200m or a local natural greenspace of at least 2ha within 300m walk from home.
- A medium sized neighbourhood natural greenspace (10ha) within 1km.
- Beyond 15 minutes' walk, everyone should have:
- A medium or large wider neighbourhood natural greenspace (20ha) within 2km.
- A large natural district greenspace (100ha) within 5km.
- A very large sub-regional greenspace (500ha) within 10km.

AGS capacity criterion

Local authorities should provide at least 3ha of publicly accessible greenspace per 1,000 residents and there should be no net loss or reduction in capacity.

AGS quality criteria

It is recommended that accessible greenspace meets

the Green Flag Award Criteria⁸¹, and best practice in accessibility for all⁸² in major new developments.

It should however be noted that significant public access close to, or within, ecologically important areas can lead to a range of recreational impacts on sensitive habitats and species. For the New Forest National Park, for example, potential conflicts are identified in the National Park Management Plan. Conflicts are managed on the ground by National Park Authority staff and others. This includes off-setting recreational impacts by undertaking biodiversity enhancement away from affected areas and by creating 'honeypot' sites for visitors.

As part of the programme of LNRS engagement, an improving access to nature and our health and wellbeing workshop was held online on 6 March 2024. The workshop report is available on the LNRS webpages⁸³. The workshop brought together a wide range of key stakeholders and interested individuals interested in greenspace, access to nature and health and wellbeing.

The workshop identified a number of key issues for nature and opportunities for nature recovery, included below. It should be noted, however, that these issues and opportunities are the views of workshop attendees and may not always align with the scope and ambition of the LNRS.

Key issues for nature identified through engagement

Barriers to access

It was considered that many people do not feel able to access nature due to practical barriers. These include:

⁸⁰ Natural England's Green Infrastructure Framework -

<https://designatedsites.naturalengland.org.uk/GreenInfrastructure/GIStandards.aspx>

⁸¹ Green flag award guidance manual - <https://www.greenflagaward.org/media/1019/green-flag-award-guidelines.pdf>

⁸² <https://www.sensorytrust.org.uk/uploads/documents/ByAllReasonableMeansEnglandAug2020.pdf>

⁸³ Health and access to nature Workshop (March 2024) -

<https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/get-involved>

- Lack of provision for those with specific access needs.
- Lack of access to private transport or poor public transport.
- Unfamiliarity with how to use public rights of way.
- A lack of affordable weatherproof clothing.
- Inadequate provision of toilet facilities and benches, particularly for older people and those with additional needs.

Dogs that are insufficiently controlled can also be off-putting for many users and damaging to wildlife, particularly ground nesting birds and feeding waders. Dog walkers are often vocal in discussions around the provision and management of parks and greenspaces.

Many people feel excluded from greenspaces for cultural reasons. This may be because they lack confidence that greenspaces are for them, or do not feel safe in natural environments. There should not be an assumption that people care about green and blue spaces. Efforts must be made to include a wide range of people, including young people, in decision making relating to greenspace provision.

Lack of incentives for farmers and landowners

Agri-environment schemes do not currently incentivise access provision as they previously did, and farmers can be negatively affected by public access. The Hampshire Farmer Wellbeing Survey highlights farmers' concerns about recreational uses of their land. In addition, there is a lack of understanding of visitor safety and risk management principles that can mitigate the claims culture, encouraging more access.

Development and population pressure

Development plans could work more holistically across boundaries to deliver greater levels of access. SANG creation is driven by the need to offset development-related pressures and there is often further opportunity for biodiversity enhancement on these sites. A shortage of greenspace in urban areas can put pressure on wildlife from high visitor numbers.

Lack of resources

A shortage of funding to create and maintain accessible greenspace can prevent innovative projects taking place and result in existing spaces being in poor condition.

Opportunities for nature recovery identified through engagement

Connectivity

An increase in accessible routes between high nature value sites and across administrative boundaries would enable the movement of people and wildlife and foster a landscape-scale approach to access. The National Trails network is an excellent example of this in action. Improved signage both within and outside accessible greenspace would raise people's awareness of their ability to walk or cycle to nearby greenspaces, rather than travel by road. The provision of natural capital investment into local plans, and the planning system more widely, was cited as an opportunity. An example provided was the South Downs National Park People Nature Network. It was considered that the rights of way network needs to evolve to suit current needs. It would help to have a website showing all accessible greenspace and connecting access routes.

Community engagement

A bottom-up approach, starting with meaningful and inclusive community engagement, was considered one of the most important opportunities for this aspect of the LNRS. Education would be key to this, starting in schools - potentially with the National Curriculum, and including a wide range of parish and community groups. It is important to show people that the management of nature conservation sites can look different from management of amenity sites. The management of more natural areas may look untidy as a result of tree felling and thinning. Encouraging responsible use of greenspaces to leave space for wildlife and explaining how pet dogs and cats can detrimentally impact wildlife could also be integrated into this engagement.

Practical access provision

Improved facilities, public transport links, parking and a better rights of way network are all opportunities for the LNRS. Microgrant funding could enable small projects to green their local environment or create community gardens and orchards. This has been very successful in Southampton and Portsmouth. In addition, there could be more conversion of underused amenity greenspaces, GP surgery greenspace, and greenspace in new developments to more natural spaces to improve practical access in urban areas.

More trees

Several tree planting strategies were cited as opportunities in the LNRS. These include:

- Enacting the 3-30-300 urban treescape rule⁸⁴.
- Planting trees along transport routes.
- Joining up forest fragments with accessible wildlife corridors.
- Planting more elms in coastal areas. Elms are resistant to salt spray and are suitable for coastal planting where other species are not.
- Incorporating trees into sustainable drainage systems (SuDS).

Collaborative funding mechanisms

Public and private finance, including Environmental Land Management (ELM) schemes and BNG present an opportunity for long-term investment in accessible greenspace, including education and community engagement.

⁸⁴ The '3-30-300 rule' is an evidence-based rule that stipulates that everyone should be able to see at least three trees from their home; there should be a 30% tree canopy cover in each neighbourhood; and 300 metres should be the maximum distance to the nearest high-quality public green space.

Species recovery

Area (within the LNRS boundary)	Whole of Hampshire.
Key priority habitats present	Ancient semi-natural woodland and pasture woodland, fen, mire, heathland, species-rich grasslands, chalk streams, coastal habitats.
'Crown jewel' sites	All SSSIs and many locally designated sites.
Notable species	As listed in Part 3.
Potential opportunities for nature recovery	As listed in Part 2.

Description and current value to nature

Hampshire is very rich in a wide range of species due to a number of factors, including:

- The merging of two climatic zones.
- The county's situation on the coast.
- The broad extent of a considerable range of habitats.
- The New Forest.

Hampshire lies at the junction of two climatic zones and is fortunate to have species that are typical of both. Some western or oceanic species reach the eastern edge of their range - for instance western gorse and the marsh fritillary butterfly. Similarly, some eastern or continental species reach the western edge of their range, for example ground pine, wall bedstraw, and small cord-grass. The county is also the first landing point for some species from continental Europe.

Hampshire has a variety of coastal habitats, including extensive saltmarshes and vegetated shingle, which have their own distinctive wildlife. These habitats support a number of species absent from inland counties.

Hampshire also has a wide range of other habitats, due to the variation in its underlying geology, superficial deposits and river catchments.

The New Forest is a special case. It is the largest expanse of semi-natural habitat in the lowlands of

north-west Europe and is extremely rich in fungi, lichens, bryophytes, vascular plants, invertebrates and vertebrates, many of which are found nowhere else in Britain.

However, a great many species are undergoing decline due a range of factors such as fragmentation and pollution which can affect individual organisms or their habitat. For example, the marsh fritillary butterfly has been driven close to extinction as traditionally managed damp pastures and meadows have been reduced in extent by development, agricultural improvement and abandonment. These grasslands now occur in patches too small to support a viable population of the butterfly.

Some species are particularly sensitive to the direct effects of pollution. Lichens are well known as sensitive indicators of air pollution and are in decline across the New Forest. Some species are adversely affected by other species, through competition, disease or predation. For example, the native, white-clawed crayfish has undergone a very marked decline since the introduction of North American crayfish which carry a fungal disease lethal to the native species.

Disturbance is a particularly important factor in the reduced breeding success of several species of bird,

particularly waders nesting in open habitats such as wet grasslands in river valleys and shingle on the coast.

Species are essential because they form the building blocks of our habitats, providing crucial services like clean air and water, pollination, and climate regulation that support all life, including humans. Species-rich ecosystems are more resilient to disturbances like climate change with each species playing an important role in maintaining the balance and proper functioning of its ecosystem.

As part of the programme of LNRS engagement, a species recovery prioritisation workshop was held online on 9 March 2024. The workshop report is available on the LNRS webpages⁸⁵. The workshop brought together a wide range of key stakeholders, experts and individuals interested in species recovery, and helped to identify those species that should be targeted in this LNRS. Further detail about species recovery in Hampshire is provided in the LNRS for Hampshire Part 3: Species Recovery document.

85 Species recovery and prioritisation Workshop (March 2024) - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/get-involved>





Local Nature Recovery Strategy for Hampshire 2025

Part 2: Priorities and Measures



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1. Priorities and Potential Measures

This section sets out the priorities for nature recovery within Hampshire, and the potential measures that could help deliver those priorities. The identification of priorities and potential measures builds upon the description of the strategy area and its biodiversity and opportunities for nature recovery, set out in Part 1: Introduction and description of strategy area.

Each priority is an outcome (i.e. what is to be achieved), and the potential measures are how the outcome could be achieved. The biodiversity priorities and the related measures enable us to understand the outcomes and actions that will be most effective for nature in a given area. They are intended to inform rather than dictate actions, as the best and most realistic action will also depend on local factors and preferences.

In drafting the priorities and measures for the LNRS for Hampshire, their effectiveness in delivering a broad range of wider environmental benefits has been an important consideration (see Appendix 3). Wider environmental benefits that will be delivered by the LNRS are listed against each priority outcome in the shortlist of priority outcomes and associated potential measures, below.

Priorities

Statutory guidance¹ requires responsible authorities to gather possible priorities from existing published plans and strategies, and from engaging directly with locally active organisations and individuals. Priorities must only be habitat or species focused. The first stage of this process was the creation of a priorities long-list of suggestions from the following sources:

- A series of stakeholder workshops held between January and March 2024.
- An online public survey on priorities for nature recovery.
- A review of local plans and strategies, including local biodiversity action plans and catchment management plans.

The second stage was to select, from the long-list, a shortlist of priorities considered critical for the Strategy to address. This includes priorities for recovering or enhancing biodiversity and the contributions that these can make to wider environmental benefits. An example of wider environmental benefits is how the strategies can include nature-based solutions to address wider

¹ Local Nature Recovery Strategy: what to include - <https://www.gov.uk/government/publications/local-nature-recovery-strategy-what-to-include>

environmental issues, such as air quality, flood risk, and health and wellbeing. The shortlist was informed and agreed by the LNRS supporting authorities and steering group over a period of months, culminating in a workshop held in December 2024.

The aim of the shortlist is to have a set of priorities that:

- Contribute to the National Environmental Objectives (see Appendix 1).
- Address the opportunities and pressures identified in the description of the Strategy area.
- Sufficiently cover the variation of landscapes and ecosystems in the Strategy area.
- Balance the contributions from a range of stakeholders, from local experts through to local residents.
- Is a manageable number where delivery is possible over a reasonable number of years.

The shortlist of biodiversity priorities is presented below, subdivided by habitat and theme. The shortlist also includes relevant potential measures, the biodiversity and wider environmental benefits of delivering each priority, whether the relevant measures have been mapped, and potential funding schemes to enable delivery. Priority species that will benefit from many of these habitat-based measures are also included.

Potential Measures

The LNRS statutory guidance defines a measure as the specific practical action needed to achieve a priority for recovering or enhancing biodiversity. LNRS measures need to focus on what actions can be taken to enhance existing habitats and create new habitats, and must be relevant for the next three to ten years to aid Hampshire's nature recovery.

The mapping of potential measures in this LNRS is based on existing data, available at the time of publication. The mapping should be interpreted flexibly to achieve improvements to biodiversity that support a full range of naturally occurring habitats and species that are appropriate to the soils and landscape and do not exclude actions which subsequent data indicates are appropriate. The ideal would be to aim for a mosaic of habitats as they can support complex ecosystems and diverse wildlife by providing a variety of interconnected habitats, such as open ground, scrub, woodland, wetland and grassland, in close proximity, allowing species to meet all their life cycle needs within a localised area. Mapped measures can be viewed in the measures map (see Section 2, below).

It is important to note that some of the potential measures will not be mapped as they are too generic, apply to large areas of farmland, and apply to many of the habitats and sites mapped on the areas of particular importance for biodiversity (APIB) and areas that could become of particular importance for biodiversity (ACB) maps. As they are listed in the statement of biodiversity priorities, they can be used to inform wildlife friendly land use decisions in future agri-environmental schemes and planning.

Also important to note that whilst many SSSIs are in unfavourable condition they are not being mapped with measures given there is separate legislation and management prescriptions that cover them. Any measures which may impact on or are adjacent to an SSSI will need to be discussed and agreed with Natural England.

Shortlist of priority outcomes and associated potential measures

The following section presents the shortlist of priorities subdivided by habitat type and theme, and the potential measures needed to achieve them. Habitats and themes have not been prioritised as all priority outcomes are important to halt and reverse the decline in biodiversity, and deliver wider environmental benefits. Potential measures are not spelt out in detail as every site is different and there is abundant guidance available which is constantly being updated. Specific locations relating to priority outcomes are represented on both the Measures Map and the ACB Map, where they are mappable. Measures are not mapped within national designated sites as explained earlier. There is synergy and overlap between some priority outcomes represented under different habitat/theme headings, e.g. between 'rivers and other watercourses', and 'wetlands, ponds, and ditches'. Main Countryside Stewardship Higher Tier options are provided, which came into force September 2025. A legend for the potential funding schemes is provided at the end of the section.

Priorities marked with an asterix focus on water quality within watercourses and SPZs but do so solely through grassland management.



Chalk streams other watercourses, headwaters and groundwater source protection zones

Priority Outcome – Riparian buffer strips created and managed to protect the area’s watercourses and headwaters, along with other potential measures aimed at reducing the amount of nutrients and pollutants entering the watercourses and groundwaters, restoring river health and improving habitat connectivity between river and floodplain.

Potential Measure(s):

R1* - Creation and management of buffer strips up to 10m wide on land next to watercourses.

Measure to create buffer strips to provide new habitat, form links or corridors between other habitats, open up within woodland, and improve water quality by reducing the amount of potential pollutants, such as sediment, pesticides and nutrients entering the watercourse. Preventing livestock accessing the watercourse will help reduce bankside erosion. Planting trees and allowing scrub and woodland to develop where there is none will help shade and cool the watercourse. Where buffer strips overlap built land, they can be ignored. Where they occur on top of culverted streams there may be opportunity to revert the stream back to a natural state

R2 – Improve the conditions of in-channel physical habitat, such as gravel cleaning to optimise spawning success and the restoration or re-creation of lost or relic meander patterns. Work with the water industry to improve the treatment of water and discharge of effluent from WTWs.

Measures to restore natural watercourse morphology and processes, and minimise effluent discharge into watercourses from wastewater treatment works.

R3* - Reversion of arable land to grassland and management of intensive grassland, with low fertiliser input to reduce nutrient levels

Measure to buffer sensitive aquatic habitats by reverting arable land to a dense grass sward or by reducing stocking and fertiliser inputs on improved grassland; to reduce risk of soil erosion, compaction and surface runoff, and reduce the amount of nutrients entering the watercourse. Reducing surface runoff may also help to reduce the risk of flooding.

R4* - Flood mitigation on permanent grassland – making space for water by managing and enhancing river/floodplain habitat connectivity.

Measure to intercept and slow surface runoff from rainfall events and provide space for water from streams and rivers to be stored during a flood event to help manage flood risk and enable the re-connection of the river with the floodplain. Will improve connectivity between river and floodplain, allowing the development of a variety of naturally occurring floodplain habitats including wet woodland, grazing marsh, fen and reedbed.

R5* - Application of very low nitrogen input to slow or reverse nutrient levels in groundwaters.

Measure to reduce nutrient input to grassland in highly targeted locations to help slow or reverse nutrient levels in groundwater. Targeted at designated Groundwater Source Protection Zones SPZs (Zone 1). Measures to improve species diversity within these areas would be desirable

Biodiversity and wider environmental benefits:

- Improves water quality for people and wildlife by intercepting, filtering and absorbing sediment, pesticides, and nutrients from adjacent agricultural land use and urban drainage.
- Reduces the use of fertilisers, pesticides and other pollutants close to and entering watercourses, improving water quality and improving farm business profitability.
- Improves biodiversity value within the river habitat.
- Helps to buffer watercourses from the effects of livestock trampling of banks and headwaters, reducing habitat damage and the need for land management intervention.
- Acts as natural floodplain, absorbing and slowing floodwaters during heavy rainfall or high flow events, reducing flood risk for communities.
- Provides valuable habitat corridors through the landscape, improving species migration and promoting genetic variation.
- Improves carbon storage and sequestration through vegetation growth, contributing to climate change mitigation.
- Increases the resilience of watercourses and associated species to the effects of climate change, e.g. river cooling.



Mapped on Measures Map?

R1* - Buffers up to 10m wide from edge of bank or centre lines have been mapped along all rivers and streams except where they pass through nationally designated sites and lakes. Where rivers and streams pass through urban areas this does mean some developed land may be incorporated.

R2 – Applies to all main rivers where they occur as polygons on OSMM (so excluding river line data) and excluding stretches of river that that are nationally designated

R3* and R4* - Floodplains have been mapped where this measure might apply to areas mapped as G2 for floodplain grazing marsh.

R5* - SPZs are mapped separately.

Potential Funding Streams:

R1* - Countryside Stewardship HT options CSW25, Water Environment Improvement Fund (WEIF), Chalk Partnership Fund.

R2 – Countryside Stewardship HT option CSW25, (WEIF), Chalk Partnership Fund.

R3* - Countryside Stewardship HT options CSW7 and CSW8; Sustainable Farming Incentive (SFI) WBD8; nutrient mitigation (NM), (WEIF), Chalk Partnership Fund.

R4* - Countryside Stewardship options CSW12, CSW15, CSW16 and CSW22, Biodiversity Net Gain (BNG), (WEIF), Chalk Partnership Fund.

R5* - Countryside Stewardship option CSW13; Sustainable Farming Incentive (SFI) WBD8; nutrient mitigation (NM), (WEIF).

Priority Outcome – Road surface water runoff is intercepted by natural flood management structures, with no direct pathways to watercourses.

Potential Measure(s):

R7 - Reduce the impact of road and urban runoff into watercourses.

Reduce the impact of road and urban runoff by improving existing infrastructure or by filtering run-off with “natural barriers”, such wetlands/reedbeds or channels built alongside the busiest roads to prevent pollution flowing into rivers and canals

Biodiversity and wider environmental benefits:

- Improves water quality in watercourses for people and wildlife, by intercepting, filtering and absorbing sediment, salt and other chemicals from road surface water runoff.
- Enhances biodiversity where natural flood management drainage solutions are employed, e.g. reedbeds and attenuation ponds.
- Intercepts and slows road derived surface water runoff during heavy rainfall or high flow events, reducing flood risk for communities.

Mapped on Measures Map?

Applies to all mapped riparian buffers.

Potential Funding Streams:

Highways Authority and National Highways.

Priority Outcome – Barriers to fish movement along rivers and streams are removed or circumvented.

Potential Measure(s):

R8 – Removal of fish barriers.

Measures to remove barriers to fish passage (weirs, dams, impoundments, culverts etc) that can restrict the upstream and downstream movement of fish, preventing access to important spawning and feeding areas.

Biodiversity and wider environmental benefits:

- Allows migration of fish, including eel and salmon, along Hampshire's rivers and streams, to feed and spawn, enhancing important fish populations and improving the health of the river ecosystem.
- Makes fish populations more resilient to the effects of climate change.
- Restores natural processes by reconnecting fragmented rivers.
- Reduces flooding by restoring natural floodplain connectivity.
- Creates diverse habitats for aquatic and terrestrial wildlife.

Mapped on Measures Map?

Mapped – as small polygons on all rivers and streams.

Potential Funding Streams:

Water Restoration Fund, Water Companies (e.g. Water Industry National Environment Programme (WINEP), Water Environment Improvement Fund (WEIF).

Priority Outcome – Mink populations along the county's watercourses are controlled.

Potential Measure(s):

R6 – Mink Control.

Measure to control/eradicate mink to support the return and re-establishment of water voles. Continue to monitor for presence.

Biodiversity and wider environmental benefits:

- Supports the return and re-establishment of water vole populations and decreases the impact of mink on a range of other mammals, birds and fish, improving the health of the river ecosystem and people's enjoyment of it.
- Makes riparian animal species populations, including water voles, more resilient to the effects of climate change.

Mapped on Measures Map?

Mapped for all rivers and streams. 'Water vole alert' data exists for stretches of river where water voles have been recorded, alongside mink records. See

[The National Water Vole Database Project | The Wildlife Trusts](#)

Potential Funding Streams:

Countryside Stewardship option CSP21, Water Environment Improvement Fund (WEIF).

Priority Outcome – Bankside trees are managed.

Potential Measure(s):

R9 - Managing bankside trees.

Measures to manage bankside trees either to reduce overshading and allow for the growth of bankside and in-channel vegetation, or increase shade to provide cooling. For cooling, the Environment Agency recommends 50% of the water surface is covered with dappled shade or for chalk streams shading of about 30%, where in-channel macrophytes need to be considered

Biodiversity and wider environmental benefits:

- Helps to reduce overshading, allowing the growth of bankside flora and in-channel vegetation.
- Aids bank stabilisation, reducing the need for land management intervention.
- Provides river cooling where shade is deficient, increasing the river ecosystem's resilience to the effects of climate change.

Mapped on Measures Map?

Only mapped where the measure has been identified in a particular scheme. Otherwise, a generic measure.

Potential Funding Streams:

Countryside Stewardship option TE10; Local Planning Authority funding; water company funding, Water Environment Improvement Fund (WEIF).



Priority Outcome – Invasive non-native species (INNS) (aquatic and riparian) are controlled, and preferably eradicated.

Potential Measure(s):

NN1 - Control and, where possible, eradicate invasive non-native aquatic and riparian species.

Measures to reduce and eradicate severe infestations of invasive non-native species such as Himalayan balsam, orange balsam, Japanese knotweed, American skunk cabbage, aquatic plants such as floating pennywort and New Zealand pigmyweed, and animals such as signal crayfish, the green frog and other aquatic species, to restore wildlife value and allow native plants and animals to re-establish.

Biodiversity and wider environmental benefits:

- Improves water quality for people and wildlife.
- Improves the ability for native in-channel and riparian biodiversity to flourish, and aids bank stability, reducing the need for land management intervention.
- Reduces the long-term cost of INNS management and clearance on riparian businesses and managers.
- Improves invertebrate diversity and fish spawning habitat, improving the health of the river ecosystem.

- Reduces the risk of localised flooding on communities.

Mapped on Measures Map?

Mapped along various watercourses and wetlands where known to be an issue. For rhododendron and other invasive woodland species see measure W9.

Potential Funding Streams:

Countryside Stewardship option CSP13/14/15 , Water Environment Improvement Fund (WEIF).

Priority Species that will benefit from the creation and management of riparian buffer strips and improvements to watercourses and their headwaters:

White-clawed crayfish, southern damselfly, two-tone reed beetle, fine-lined pea mussel, Desmoulin's whorl snail, grey long-eared bat, and species listed in the following priority species assemblages (Part 3: Species recovery) 'chalk streams, other rivers including the New Forest rivers and streams', and 'birds – birds of rivers, lakes and reedbeds'.

Priority Outcome – Fens are created, restored and managed

Potential Measure(s):

FR1 - Creation, restoration and management of fen habitat, including valley mires.

Measures to create new areas of fen priority habitat on land with low wildlife value, particularly around existing wetland habitats, and to maintain and restore priority fen habitat. Any removal of scrub/woodland would be subject to the Government's Open Habitats Policy - **When to convert woods and forests to open habitat: operations note 68 - GOV.UK**. Valuable wet woodland to be retained and managed through rotational coppicing for example. Requires high water levels sustained by a natural, unpolluted water supply which will support a diverse range of target fen species.

Biodiversity and wider environmental benefits:

- Provides valuable habitat for a wide range of species, including many rare specialist species.
- Increases the abundance of breeding waders, and wintering wildfowl and wading birds, through the creation and management of wet grassland.
- Provides valuable habitat corridors and stepping stones through the landscape, improving species migration and promoting genetic variation.
- Allows for the recruitment of species from locally adapted sources, promoting genetic diversity.
- Improves water quality for people and wildlife by intercepting, filtering and absorbing sediment, pesticides and nutrients from adjacent agricultural land and urban drainage.
- Improves carbon storage and sequestration through vegetation growth and development of wetland soils, contributing to climate change mitigation.
- Enhances the resilience of wetlands and associated species to the effects of climate change.

- Reduces the risk of flooding on communities by absorbing and storing floodwaters during periods of high rainfall and storm events.

Mapped on Measures Map?

Potential areas for fen creation are mapped using the opportunity mapping as a guide, to buffer, expand or connect to existing wetland areas. Also includes areas of fen in poor condition.

Potential Funding Streams:

Countryside Stewardship options CWT13 and CWT14; biodiversity net gain (BNG); nutrient mitigation (NM).

Priority Outcome – Reedbeds are created, restored, and managed.

Potential Measure(s):

FR2 - Creation, restoration and management of reedbed.

Measures to create new areas of reedbed priority habitat on land that is currently of low wildlife value and to maintain and restore priority reedbed habitat (over 2ha for CS options) - to ensure open reed-dominated vegetation on waterlogged ground, interspersed with open water features along ditch lines and pond areas sustained all year round, and to support healthy populations of target reedbed species. Consider also commercial reedbeds for the treatment of wastewater, and for thatching reeds (may not be eligible for CS).

Biodiversity and wider environmental benefits:

- As per Potential Measure FR1, above.

Mapped on Measures Map?

Potential areas for reedbed creation are mapped using the opportunity mapping as a guide, to buffer, expand or connect to existing wetland areas.

Potential Funding Streams:

Countryside Stewardship options CWT13 and CWT14; biodiversity net gain (BNG); nutrient mitigation.

Priority Outcome – Wet grassland is created from arable or temporary grassland, and managed.

Potential Measure(s):

WB1 - Creation and management of wet grassland for breeding waders and wintering waders, and wildfowl.

Measure to increase abundance of breeding and wintering waders and wildfowl by creating and managing wet grassland from arable or temporary grassland. To increase nesting and fledgling success and ensure wading birds and wildfowl are able to feed and roost undisturbed. See also Measure F4.

Biodiversity and wider environmental benefits:

- As per Potential Measure FR1, above.

Mapped on Measures Map?

Solent wader and brent geese mitigation (SWBGM) sites are mapped alongside other potential areas for breeding waders and wintering waders and wildfowl identified from the coastal or floodplain grazing marsh opportunity mapping.

Potential Funding Streams:

Countryside Stewardship options CGS19 and CGS20; Solent wader and brent geese mitigation (SWBGM); biodiversity net gain (BNG); nutrient mitigation (NM).

Priority Outcome – Scrapes and gutters are created and managed.

Potential Measure(s):

P3 - Creation of scrapes and gutters.

Creation of scrapes and gutters to provide areas of bare ground to hold water or transport water through wet habitats, and provide feeding areas for waders.

Biodiversity and wider environmental benefits:

- As per Potential Measure FR1, above.

Mapped on Measures Map?

Mapped for specific sites but would apply generally to Solent wader and brent geese mitigation (SWBGM) sites.

Potential Funding Streams:

Countryside Stewardship option WN2.

Priority Outcome – Ditches and ponds of high environmental value are managed (profile and vegetation) and in-field ditches and ponds are buffered.

Potential Measure(s)

P1* - Buffering and managing in-field ponds and high value ditches on grassland or on arable land.

Measures to manage water levels and enhance water quality and wildlife in ponds and high-value ditches from nutrient leaching and sediment runoff, both on grassland and arable. Especially high value ditches that support target species of plants, birds, mammals and invertebrates.

Biodiversity and wider environmental benefits

- As per Potential Measure FR1, above.

Mapped on Measures Map?

Largely unmapped save for some ponds and ditches known to support notable species such as great crested newts.

Potential Funding Streams:

Countryside Stewardship options CWT1, CWT2 and CWT3.

Priority Outcome – New ponds and networks of ponds are created, and all ponds are managed.

Potential Measure(s):

P2 - Restoring, managing ponds and creating new ponds.

Measures to protect, manage and enhance ponds of high wildlife value including shallow ephemeral ponds, and to create new ponds or networks of ponds (at least three to qualify for Countryside Stewardship), Also to restore the wildlife value of ponds that have become degraded.

Biodiversity and wider environmental benefits:

- As per Potential Measure FR1, above.

Mapped on Measures Map?

P1* and P2 - Largely unmapped save for some ponds and ditches known to support notable species such great crested newts and significant toad populations.

Potential Funding Streams:

P2 - Countryside Stewardship options CWT15, WN5 and WN6; Great Crested newt (GCN) licencing.

Priority Outcome – Large water bodies are restored and managed.

Potential Measure(s):

P4 - Restoration and management of large water bodies.

Measure to restore the wildlife value of lakes that have become degraded. Includes management of water levels, scrub management, control of invasive non-native species, fish removal, bird control and de-silting.

Biodiversity and wider environmental benefits:

- As per Potential Measure FR1, above.

Mapped on Measures Map?

Several lakes including flooded gravel pits have been mapped.

Potential Funding Streams:

Countryside Stewardship option CWT16; Biodiversity net gain (BNG).

Priority Species that will benefit from expansion, enhancement and management of wetlands, ponds and ditches:

Southern damselfly, two-tone reed beetle, scarce four-dot pin-palp, Desmoulin's whorl snail, spangled diving beetle, brilliant emerald dragonfly, brown galingale, natterjack toad, and species listed in the following priority species assemblages (Part 3: Species recovery) 'birds of rivers, lakes and reedbed', 'birds - breeding waders – wet grassland and heathland', 'birds - wintering birds (shore and grassland)', 'ponds for amphibians', 'ephemeral and shallow ponds which also occur outside the New Forest SSSI', 'calcareous sedge communities', and 'wet woodland'.

Species-rich grasslands - includes lowland calcareous grassland, dry acid grassland, lowland meadows, purple moor grass and rush pasture, and floodplain grazing marsh, including mosaics of these with managed scrub and other habitats such as fen and heathland

Priority Outcome – All existing species-rich grassland in positive management.

Potential Measure(s):

G1 - Management and enhancement of species-rich grassland. These are split further into G1 - Lowland meadow (LMW), G1 – Lowland acid grassland (LAG), G1 - Purple moor grass and rush pasture (PMP), G1 - Lowland calcareous grassland (LCG), and G1 - Floodplain grazing marsh (FGM).

Measure to manage and enhance priority grasslands to maintain or increase the presence and abundance of important plant species and many other priority species, such as bees, butterflies and birds. Requires grazing, hay cutting, or a mixture of both, with preferably no application of manure, fertiliser, pesticide or supplementary feed. Maintain a range of plant heights suitable for invertebrates, birds or other priority species.

G4 – Management of scrub.

Measure to maintain and enhance scrub to restore and maintain priority grassland and other open habitat mosaics. Also, to manage scrub for those species present that depend on managed scrub, for example turtle dove and brown hairstreak. Includes removing wet scrub woodland to restore to wet fen grassland

Biodiversity and wider environmental benefits:

- Helps maintain and enhance species-rich grassland for its associated wildlife.
- Helps to manage scrub at desired levels whilst maintaining structural diversity for wildlife.
- Allows for the recruitment of species from locally adapted sources, promoting genetic diversity.
- Increases the resilience of grasslands and associated species to the effects of climate change.
- Improves grassland for a range of specialist species.
- Provides agricultural benefits through increased pollinator populations.

Mapped on Measures Map?

G1 - Such sites have been mapped where more positive management would be beneficial. They may appear on the Measures map if undesignated.
G4 - All SINC grasslands and other open habitat are mapped where known to be in poor condition due to scrub encroachment.

Potential Funding Streams:

G1 - Countryside Stewardship option CGS22.
G4 - Countryside Stewardship option CWD7 SB1 and SB2; Biodiversity net gain (BNG).

Priority Outcome – Degraded species-rich grassland restored back to species-rich grassland.

Potential Measure(s):

G2 - Restoration of grassland towards species-rich grassland. These are split further into G2 - Lowland meadow, G2 – Lowland acid grassland, G2 - Purple moor grass and rush pasture, G2 Lowland calcareous grassland, and G2 Floodplain grazing marsh.

Measures to restore grassland back to a priority species rich grassland to increase the abundance of important plant species and many other priority species, such as bees, butterflies and birds. They tend towards semi-improved or neglected grasslands that still support patches of relic species-rich grassland. Requires appropriate grazing and/or hay cutting regimes with preferably no application of manure, fertiliser, pesticide or supplementary feed. Use of green hay from local donor meadows is recommended to re-introduce species back into the sward. Maintain a range of plant heights, including small patches of scrub, suitable for invertebrates, birds or other priority species.

G4 - Management of scrub – applies across all types of grassland.

Measure to reduce or manage scrub to restore and maintain priority grassland. Also, to manage scrub for those species present that depend on managed scrub, for example turtle dove and brown hairstreak. Includes removing wet scrub and secondary woodland to restore to wet fen whilst being mindful of retaining valuable wet woodland and subject to the Governments Open Habitats policy - **When to convert woods and forests to open habitat: operations note 68 - GOV.UK**

Biodiversity and wider environmental benefits:

- Helps re-establish species-rich grassland through appropriate grazing and cutting regimes.
- Improves grassland structural diversity to create nesting, foraging and breeding opportunities for grassland species.
- Improves grassland for a range of specialist species.
- Removes encroaching scrub and maintains structural diversity for wildlife.
- Improves carbon storage and sequestration through improved vegetation growth and soil condition.
- Increases the resilience of the habitat and associated species to the effects of climate change.
- Provides agricultural benefits through increased pollinator populations.

Mapped on Measures Map?

G2 and G4 - All SINC grasslands in known poor condition are mapped, along with other areas of semi-improved or neglected grassland which may support areas of relic species-rich grassland and are covered by the opportunity mapping. G4 will apply to any of these areas that require some management of scrub.

Potential Funding Streams:

G2 - Countryside Stewardship options CGS22; biodiversity Net Gain (BNG); nutrient mitigation (NM).

G4 - Countryside Stewardship options SB1; biodiversity Net Gain (BNG).

Priority Outcomes – New areas of species-rich grassland created (including habitat expansion), linking existing areas of grasslands.

Potential Measure(s):

G3 - Creation of species-rich grassland, particularly from arable reversion. These are split further into G3 - Lowland meadow, G3 - Lowland acid grassland, G3 - Purple moor grass and rush pasture, G3 Lowland calcareous grassland, and G3 - Floodplain grazing marsh.

Measure to create grassland that has the potential to become a priority grassland and establish a wide range of important plant species, which will attract many other species such as bees, butterflies and birds. Use of local provenance seed sources or green hay from local donor meadows recommended. Will require appropriate grazing and/or hay cutting regimes with preferably no application of manure, fertiliser, pesticide or supplementary feed. Maintain a range of plant heights suitable for invertebrates, birds or other priority species.

R3* - Reversion of arable land to grassland and management of intensive grassland, both with low fertiliser input.

Measure to buffer sensitive aquatic habitats by reverting arable land to a dense grass sward or by reducing stocking and fertiliser inputs on improved grassland; to reduce risk of soil erosion, compaction and surface runoff, and reduce the amount of nutrients entering the watercourse. Reducing surface runoff may also help to reduce the risk of flooding. This measure also applies in SPZs (Zone 1).

Biodiversity and wider environmental benefits:

- Improves grassland connectivity and provides valuable habitat corridors through the landscape, improving species migration and genetic exchange.
- Increases availability of suitable habitat for specialist species.
- Allows for the recruitment of species from locally adapted sources, promoting local provenance.
- Provides a range of ecosystem services, including air purification, soil stabilisation and water filtration.
- Helps protect soil and water resources and reduces the risk of flooding and sedimentation in water bodies, reducing flood risk for communities.
- Increases carbon storage and sequestration, through improved vegetation growth and soil condition.
- Makes grasslands and associated species more resilient to the effects of climate change.

- Provides agricultural benefits through increased pollinator populations.

Mapped on Measures Map?

G3 - Potential areas are mapped using the opportunity mapping as a guide, to buffer, expand or connect to existing priority grasslands and other habitats.
R3* - Floodplains and SPZs have been mapped where this measure might apply.

Potential Funding Streams:

G3 - Countryside Stewardship option CGS22, CGS18, GR1 and GR2; biodiversity net gain (BNG); nutrient mitigation (NM).
R3* - Countryside Stewardship options CGS18; Sustainable Farming Incentive (SFI) WBD8; nutrient mitigation (NM).

Priority Species that will benefit from expansion and management of species-rich grassland:

Priority species - green-winged orchid, juniper, , field cow-wheat, marsh fritillary, Duke of Burgundy, striped lychnis, forester, smart-banded hunchback and hornet robberfly, and species listed in the following priority species assemblages (Part 3: Species recovery): 'grazed chalk grassland with structural diversity including managed scrub and bare ground', 'grazed or mown trefoil/clover communities', and 'waxcaps and other grassland fungi'.



Heathland and acid grassland mosaics

Priority Outcome – All existing heathland and acid grassland mosaic in positive management.

Potential Measure(s):

H1 - Management and enhancement of lowland heathland including scrub management.

Measure to manage heathland to maintain a diverse mosaic of vegetation (wet or dry heath, transitional heaths, acidic grassland & mires, scrub and coastal heaths) including pioneer heath and bare ground, which benefits invertebrates, birds, reptiles and plants, including nightjar, woodlark, smooth snake and sand lizard, where within their range. Manage features for wildfire management.

H4 - Bracken control preferably by mechanical means.

Measure to control bracken to restore or maintain high value heathland/acid grassland and their associated wildlife.

H5 – Managing public access and dogs.

Controlling and educating public with regard to unfettered access especially with dogs to reduce impact on ground nesting birds and reptiles on heathland.

Biodiversity and wider environmental benefits:

- Helps to maintain good condition of heathland and acid grassland mosaic for its associated wildlife.
- Helps to manage scrub and tree growth at desired levels for wildlife.
- Improves the habitat's structural diversity to create nesting, foraging, and breeding opportunities for associated species.
- Improves the habitat for a range of specialist species.
- Allows for the recruitment of species from locally adapted sources, promoting genetic diversity.
- Makes the habitat and associated species more resilient to the effects of climate change.
- Provides agricultural benefits through increased pollinator populations.

Mapped on Measures Map?

H1 - Mapped for those areas where more positive management would be beneficial.

H4 - Heathland SINC's mapped where bracken is known to be a problem.

H5 - Heathland SINC's mapped where dogs are a known issue.

Potential Funding Streams:

H1 - Countryside Stewardship option CLH1 and CUP18; Biodiversity Net Gain (BNG).

H4 - Countryside Stewardship options SB4, SB5 and SP3; Biodiversity Net Gain (BNG).

H5 – Local authorities; Ministry of Defence; Forestry England; suitable alternative natural greenspace (SANG) funding.

Priority Outcome – Restoration of degraded heathland and acid grassland mosaic.

Potential Measure(s):

H2 - Restoration of heathland from forestry and woodland, including scrub.

Measure to re-establish lowland heathland on forested land or land recently colonised by scrub/secondary woodland, to create a diverse mosaic structure, including undisturbed bare ground, varied heathland vegetation types and some wooded/scrub heath, and subject to the Governments Open Habitats policy - **When to convert woods and forests to open habitat: operations note 68 - GOV.UK**). Manage features for wildfire management. May include need for some re-wetting to restore wet heath/valley mire.

H4 - Bracken control preferably by mechanical means.

Measure to control bracken to restore or maintain high value heathland/acid grassland and their associated wildlife.

Biodiversity and wider environmental benefits:

- Helps re-establish heathland and acid grassland mosaic through appropriate grazing regimes.
- Improves habitat structural diversity to create nesting, foraging and breeding opportunities for associated and specialist species.
- Allows for the recruitment of species from locally adapted sources, promoting genetic diversity.
- Removes encroaching scrub and trees and maintains structural diversity for wildlife.
- Improves carbon storage and sequestration through improved vegetation growth and soil condition.
- Increases the resilience of the habitat and associated species to the effects of climate change.
- Provides agricultural benefits through increases in pollinator population.

Mapped on Measures Map?

H2 - All heathland SINCs are mapped where known to be in poor condition either due to lack of grazing (or mowing), scrub encroachment, low water table or covered by secondary/plantation woodland known to support relic heath/acid grassland communities.

H4 - All heathland SINCs mapped where bracken is known to be a problem.

Potential Funding Streams:

H2 - Countryside Stewardship option CLH2 and CUP18; Biodiversity Net Gain (BNG).

H4 - Countryside Stewardship options SB4 and SB5; Biodiversity Net Gain (BNG).

Priority Outcome – New areas of heathland and acid grassland mosaic created, and existing areas expanded, improving connectivity with existing areas of habitat. Includes agricultural land and restoration of mineral workings.

Potential Measure(s):

H3 - Creation of heathland from arable land, grassland and mineral workings.

Measure to create lowland heathland, to include mosaics with lowland acid grassland, on arable or improved grassland sites that have largely lost their heathland seed bank. And to restore to heathland following mineral extraction. Ideally sites should be adjacent to existing heathland to increase their extent and chances of success and decrease fragmentation.

Biodiversity and wider environmental benefits:

- Improves heathland and acid grassland mosaic connectivity.
- Provides valuable habitat corridors through the landscape, improving species migration and genetic exchange.
- Allows for the recruitment of species from locally adapted sources, promoting local provenance.
- Increases suitable habitat for specialist species.
- Provides a range of ecosystem services, including air purification, soil stabilisation and water filtration.
- Helps protect soil and water resources and reduces the risk of flooding and sedimentation in water bodies reducing flood risk for communities.
- Can increase carbon sequestration through improved vegetation growth and soil condition.
- Makes heathland and acid grassland mosaic and associated species more resilient to the effects of climate change.
- Provides agricultural benefits through increased pollinator populations.

Mapped on Measures Map?

Potential areas are mapped using the opportunity mapping as a guide, to buffer, expand or connect to existing areas of heathland.

Potential Funding Streams:

Countryside Stewardship option CLH3; Biodiversity Net Gain (BNG).

Priority Species that will benefit from expansion and management of heathland and acid grassland mosaics:

Hornet robberfly, smart-banded hunchback, heath cudweed, heath lobelia, grass-poly, common butterwort, wood bolete, nail fungus, field cricket and other species listed in the following priority species assemblages (Part 3: Species recovery): 'birds - breeding waders – wet grassland and heathland', 'birds - heathland birds', 'dry heaths with sand and gravel exposures', and 'other heathlands occurring inside and outside the New Forest SSSI'.



Priority Outcome – Existing woodlands enhanced through suitable active management.

Potential Measure(s):

W2 - Actively managing woodland.

This measure is aimed at bringing existing woodland back into active management to improve its biodiversity value and structure through thinning, selective felling, coppicing, natural regeneration and planting, ride/glade widening/creation, scrub management etc, and make it more resilient to climate change. The re-wetting and management of water levels is important for areas of Wet Woodland Priority habitat.

W3 – Managing woodland for priority woodland species.

This measure is aimed at bringing woodland back into active management for specialist species such as barbastelle & Bechstein's bat, dormice, pearl-bordered fritillary and a suite of other species listed on the LNRS priority list. Restocking with a broader range of tree species and provenances appropriate to the site conditions and future predicted climate scenarios must also be considered to make the woodland more resilient to climate change. See also

Woodland Wildlife Toolkit (sylva.org.uk)

W4 – Soft woodland edges on adjacent farmland.

By creating new 'soft' woodland edges on farmland adjacent to woodland, this will provide additional transitional habitat for plants, birds, invertebrates, small mammals and other wildlife.

W6 - Management and control of deer and grey squirrel populations.

This measure is aimed at controlling deer and grey squirrel populations to reduce browsing and tree damage, improve woodland structure and species diversity, and increase resilience to climate change. Deer and grey squirrel control is most effective if undertaken in a coordinated manner at a landscape scale. Actions would be appropriate beyond the mapped areas and will also be beneficial to non-woodland habitats.

W8 - Improving access and educational opportunities within woodlands.

Measures to manage and improve public access (including dogs) and provide educational opportunities within woodlands which will improve physical and mental well-being and encourage engagement with nature. Impacts on woodland biodiversity will need to be carefully managed.

W9 - Control of rhododendron, laurel and other invasive non-native woodland species.

Measures to control and eradicate rhododendron and other non-native species will improve natural regeneration and overall biodiversity.

W10 – Raise awareness of and monitor tree pests and diseases. Felling of diseased trees.

Measures to increase awareness of and monitor incidence of tree pests and diseases and prevent disease spreading. Presence of tree pests and diseases to be reported to **TreeAlert**.

Biodiversity and wider environmental benefits:

- Reinvigorates natural regeneration within our native deciduous woodlands through thinning/selective felling and coppicing.
- Improves structural and age diversity in the woodland, which in turn creates nesting, foraging and breeding opportunities for woodland wildlife.
- Improves woodland for a range of specialist species.
- Allows for the recruitment of plants from locally adapted seed sources, promoting genetic diversity.
- Improves carbon storage and sequestration through improved vegetation growth.
- Makes woodlands and associated species more resilient to the effects of climate change.
- Improves the viability of woodland businesses.



Mapped on Measures Map?

- W2 - Woodland SINCs are mapped where they are known to be unmanaged and in poor condition.
- W3 - Woodland SINCs are mapped where they support a suite of LNRS priority species.
- W4 – Mapped occasionally on specific sites.
- W6 – Mapped only where it has been specified in a plan or report.
- W8 – Mapped only where it has been specified in a plan or report.
- W9 - Not mapped unless specified in SINC woodlands mapped under measure W2.
- W10 – Mapped on specific sites.

Potential Funding Streams:

- W2 - Countryside Stewardship option CWD2, CWS8 and FY6; biodiversity Net Gain (BNG).
- W3 - Countryside Stewardship options CSP9.
- W4 - Countryside Stewardship option CWD3; biodiversity Net Gain (BNG); nutrient mitigation (NM).
- W6 - Countryside Stewardship options CWS1, CWS3, FG9.
- W8 – Countryside Stewardship options CPAC1, CPAC4 and EWCO - Woodland creation with access will receive higher payments under EWCO – contributions for woods close to settlements (£600/ha) and with recreational access (£3700/ha).
- W9 - Countryside Stewardship options CSP12, SB5 and SB6.
- W10 - Countryside Stewardship option SB1; grant support is available for restocking after felling, due to a tree health issue.

Priority Outcome – Plantations on ancient woodlands (PAWs) restored.

Potential Measure(s):

W7 - Restoring plantations on Ancient Woodland Sites back to native woodland.

Converting plantations on ancient woodland sites by using a mix of at least 80% native species and encouraging natural regeneration, to improve biodiversity and resilience to climate change over time. Note – important to safeguard areas of conifer known to support breeding goshawk and other priority species. PAWs predominantly known to support beech or other native species (c55% of total number) will carry the W2 measure.

Biodiversity and wider environmental benefits:

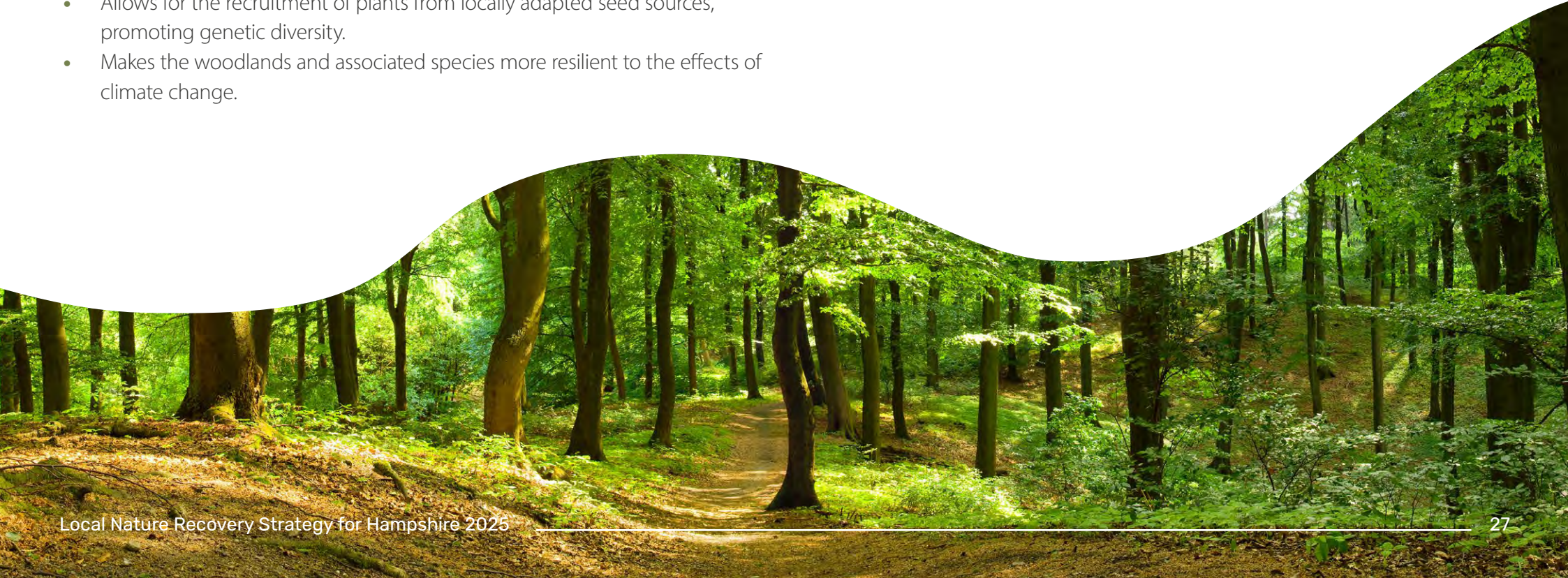
- Reinvigorates natural regeneration within PAWs particularly for ancient woodland species.
- Improves structural and age diversity in the woodland which in turn creates nesting, foraging and breeding opportunities for woodland wildlife and a range of specialist species.
- Allows for the recruitment of plants from locally adapted seed sources, promoting genetic diversity.
- Makes the woodlands and associated species more resilient to the effects of climate change.

Mapped on Measures Map?

Coniferous plantations in ancient woodland SINC which directly abut (within 10m) ancient semi-natural woodland are mapped to ensure greatest chance of recolonisation of ancient woodland flora.

Potential Funding Streams:

Countryside Stewardship option CWS2; Biodiversity Net Gain (BNG).



Priority Outcome – New woodlands created with native tree species linking existing areas of woodland.

Potential Measure(s):

W1 - Creation and management of new native woodland

This measure is to create and maintain new diverse native woodland including wet woodland in order to improve ecological connectivity between existing ancient and other native woodland and other habitats where there are priority species, to increase dispersal and provide new habitat for these species, to improve resilience to climate change, and enhance the landscape.

W1A – Creation, restoration and management of new native woodland on ‘lost’ ancient woodland sites adjacent to existing ancient woodland

This measure is to plant new native woodland on sites previously shown as ancient woodland within the last 100 years where the relic ancient woodland flora may still exist in hedge banks and where dispersal from adjacent ancient woodland is likely to be more rapid. Note, the latest Ancient Woodland Inventory Review was only recently approved and so not all ancient woodland lost in the last 20 years has been captured under W1A. Much of it has already been replanted.

W4 – Soft Woodland edges on farmland next to woodland.

By creating new ‘soft’ woodland edges on farmland adjacent to woodland, this will provide additional transitional habitat for plants, birds, invertebrates, small mammals and other wildlife and buffer ancient woodlands.

W5 - Creating and managing successional areas of scrub.

This measure is aimed at creating or extending scrub on arable or improved permanent grassland on land next to existing scrub or woodland areas to create mosaics of open grassland and scrub, particularly for nightingales. A successional scrub habitat will provide food and habitat for invertebrates, birds and mammals as well as specific target species.

W6 - Management and control of deer and grey squirrel populations.

This measure is aimed at controlling deer and grey squirrel populations to reduce browsing and tree damage and improve woodland structure and species diversity and increase resilience to climate change. Deer and grey squirrel control is most effective if undertaken in a coordinated manner at a landscape scale. Actions would be appropriate beyond the mapped areas and will also be beneficial to non-woodland habitats.

W9 - Control of rhododendron, laurel and other invasive non-native woodland species.

Measures to control and eradicate rhododendron and other non-native species will improve natural regeneration of the native flora and overall biodiversity.

W10 – Raise awareness of and monitor tree pests and diseases. Felling of diseased trees.

Measures to increase awareness of and monitor incidence of tree pests and diseases and prevent disease spreading. Presence of tree pests and diseases to be reported to **TreeAlert**.

Biodiversity and wider environmental benefits:

- Improves woodland connectivity and provides corridors for woodland species improving species migration and genetic exchange.
- Increases carbon storage and sequestration through improved vegetation growth.
- Increases availability of suitable habitat for specialist species.
- Makes woodlands and associated species more resilient to the effects of climate change.
- Enhances woodland biodiversity that is dependent on native tree species.
- Improves localised air quality for the benefit of human health.
- Helps protect soil and water resources and reduces the risk of flooding for the benefit of local communities.
- Creates additional resource for forestry and woodland products markets.

Mapped on Measures Map?

W1/W1A - Areas are mapped where they link existing woodlands known to support priority species, or occur within 1 km of key urban areas or are areas which replace ancient woodland lost within the last 100 years – shown as cleared on the 1979 Ancient Woodland Inventory.

W4 - Mapped occasionally on specific sites.

W5 - Mapped occasionally on specific sites.

W6 - Not mapped as this measure applies to all woodlands.

W9 - Not mapped unless specified in SINC woodlands mapped under measure W2.

W10 - Mapped on specific sites.

Potential Funding Streams:

W1 - Countryside Stewardship option CWD1; England Woodland Creation Offer; biodiversity net gain (BNG); nutrient mitigation (NM).

W4 - Countryside Stewardship option CWD3 and CWD8; biodiversity net gain (BNG); nutrient mitigation (NM).

W5 - Countryside Stewardship options CWD7 and CWD8; biodiversity net gain (BNG).

W6 - Countryside Stewardship options CWS1, CWS3, FG9 .

W9 - Countryside Stewardship options CSP12.

W10 - Countryside Stewardship option SB1; grant support is available for restocking after felling, due to a tree health issue.

Priority Outcome – Deer, grey squirrels, and invasive plant species, like rhododendron, controlled to enable natural woodland regeneration.

Potential Measure(s):

W6 - Management and control of deer and grey squirrel populations.

This measure is aimed at controlling deer and grey squirrel populations to reduce browsing and tree damage and improve woodland structure and species diversity, and increase resilience to climate change. Deer and grey squirrel control is most effective if undertaken in a coordinated manner at a landscape scale. Actions would be appropriate beyond the mapped areas and will also be beneficial to non-woodland habitats.

W9 - Control of rhododendron, laurel and other invasive non-native woodland species.

Measures to control and eradicate rhododendron and other non-native species will improve natural regeneration of the native flora and overall biodiversity.

W10 – Raise awareness of and monitor tree pests and diseases. Felling of diseased trees.

Measures to increase awareness of and monitor incidence of tree pests and diseases and prevent disease spreading. Presence of tree pests and diseases to be reported to **TreeAlert**.

Biodiversity and wider environmental benefits:

- Helps control deer populations, reducing browsing pressure within woodlands and the wider agricultural landscape.
- Reduces grazing/browsing pressure and reduces tree damage, resulting in a greater variety of tree species that can regenerate and establish, supporting biodiversity.
- Helps maintain a balanced and diverse shrub and herb layer for wildlife.
- Maintains the financial viability of sustainable woodland management and forestry operations.

Mapped on Measures Map?

W6 - Not mapped as this measure applies to all woodland.

W9 - Not mapped unless specified in habitat survey reports for SINC woodlands mapped under potential measure W2.

W10 - Mapped on specific sites.

Potential Funding Streams:

W6 - Countryside Stewardship options WS1 and WS3.

W9 - Countryside Stewardship options CSP12, SB5 and SB6

W10 – Countryside Stewardship option SB1; grant support is available for restocking after felling, due to a tree health issue.

Priority Species that will benefit from expansion and management of woodland and woodland edges:

Duke of Burgundy, white-letter hairstreak, brown hairstreak, red helleborine, green hound's-tongue, Devil's bolete, old man of the woods, pine martin, cheese snail, common fan foot, and species listed in the following priority species assemblages (Part 3: Species recovery): 'birds – birds of ancient coppiced woodland', 'coppice woodland', 'mature deciduous woodland', 'fungi and other species associated with deciduous woodland and wood pasture inside and outside New Forest', 'wet woodland', and 'woodland bats'.

Wood pasture, wooded commons and historic parkland

Priority Outcome – Existing lowland wood pasture, wooded common and historic parkland is restored and managed, and created. Veteran trees are safeguarded and managed. New standard parkland trees are planted in appropriate locations. Traditional orchards created and managed.

Potential Measure(s):

PP1 - Restoration and management of lowland wood pasture, wooded common and historic parkland including the planting of new trees to ensure succession.

This measure is aimed at restoring and managing lowland wood pasture, wooded common and parkland particularly on sites that support veteran trees; to provide continuity of the tree population over managed or grazed unimproved or semi-improved grassland or heathland and leaving standing or fallen deadwood habitats for invertebrates. Ensure health and lifespan of veteran trees is maximised by preventing damage (especially to roots and bark) and where appropriate by maintaining pollarding and sufficient light. Ensure newly planted trees have enough space to allow open grown crowns to develop, to provide replacement veteran trees into the future. Avoid use of fertilisers and pesticides to protect rare lichens and fungi and encourage floristic diversity. Consider reverting arable or improved grassland that lies within historic park/wood pasture boundaries back to species-rich grassland or heathland.

PP2 - Creation of wood pasture or parkland.

This measure is aimed at creating and managing new wood pasture or parkland on arable or improved/semi-improved grassland to extend, link and buffer sites with open grown trees, other areas of wood pasture or priority woodland habitats, to provide ecological connectivity and improve biodiversity.

TO1 - Traditional orchards created, restored and managed.

This measure is to create or restore a traditional orchard with healthy young fruit and nut trees, pruned to maintain their characteristic tree form, manage any existing mature and veteran trees to leave undisturbed standing, attached and fallen deadwood and retain a grass sward between the trees (once the orchard is created), with suitable sward heights and structure. The purpose being to provide a mosaic of trees and grassland which offers sources of food and shelter for wildlife, such as invertebrates and birds.

Biodiversity and wider environmental benefits:

- The planting of new standard parkland trees will ensure the succession of such trees in historic parkland, provide replacement veteran trees into the future, and provide continuity for many rare and specialist species.
- The restoration and management of existing wood pasture and the creation of new wood pasture and traditional orchards, alongside lower inputs such as fertilisers and herbicides, will provide improved habitats and enhance associated biodiversity, including many rare and specialist species.
- Provides ecological connectivity and habitat corridors with similar habitats, improving species migration and genetic exchange.
- Improves structural diversity to create nesting, foraging and breeding opportunities for associated species.
- Increases the extent of important deadwood habitats, particularly for specialist invertebrate species.
- Improves the range of ecosystem services, including air purification, soil stabilisation and water filtration benefits that these types of habitats provide.
- Increases carbon storage and sequestration through improved vegetation growth.
- Makes wood pasture and parkland, and associated species, more resilient to the effects of climate change.

- Improves landscape character and enhances cultural connection and aesthetics.
- Increases orchard fruit production and helps safeguard rare apple and other fruit varieties.

Mapped on Measures Map?

PP1 - Existing wood pasture and historic parks (outside nationally designated sites) are mapped, mostly using the Natural England Inventory of Wood Pasture and Historic Parkland.

PP2 - Areas suitable for the creation of new wood pasture or parkland are mapped.

TO1 - Not mapped.

Potential Funding Streams:

PP1 - Countryside Stewardship options CWD21, CWD22 and TE2.

PP2 - Countryside Stewardship option CWD20 and WD6; biodiversity net gain (BNG).

TO1 - Countryside Stewardship options CBE5, and CBE4; biodiversity net gain (BNG); nutrient mitigation (NM); Hampshire Forest Partnership.

Priority Species that will benefit from expansion and restoration of wood pasture and parkland.

Red-horned cardinal click beetle, zoned rosette, and species listed in the following priority species assemblages (Part 3: Species recovery): 'lichens associated with mature and veteran trees in open parkland', and 'fungi and other species associated with deciduous woodland and wood pasture inside and outside the New Forest SSSI'.

Priority Outcome – Coastal sand dunes and vegetated shingle protected and managed.

Potential Measure(s):

C1 - Creation and management of coastal sand dunes and vegetated shingle.

Ensure existing coastal sand dunes and vegetated shingle sites are well managed and look to create sand dune and coastal vegetated shingle on arable land or improved grassland in locations that were once part of, or next to active sand dune or shingle systems - to increase the area of this rare habitat. Consider use of anti-predator fencing, nest trays, education and dog control measures to protect nesting seabirds on shingle

Biodiversity and wider environmental benefits:

- Provides valuable habitat for a wide range of species, including many rare specialist species.
- Acts as natural buffers against storm surges, coastal erosion and sea-level rise.
- Enhances coastal resilience whilst providing ecological benefits.
- Provides greater protection to communities, agricultural land and valuable habitats from coastal processes.
- Reduces the risk of flooding by absorbing and storing floodwaters during high tides and storm events.
- Sequesters carbon dioxide from the atmosphere.
- Enhances the resilience of coastal ecosystems and communities to the effects of climate change.

Mapped on Measures Map?

Existing SINC sites in poor condition are mapped. No opportunity mapping to expand this habitat has been undertaken due to lack of knowledge around the parameters that would allow shingle and dune systems to migrate or rollback, into what is mainly existing SSSIs or developed land.

Potential Funding Streams:

Countryside Stewardship options CCT8, CCT9 and FG7/FG8; biodiversity net gain (BNG);

2 Maritime soft cliffs have not been included as they are largely designated in Hampshire and maintained by natural processes. Cliff-top buffer zones are needed to allow for continued erosion and to provide supplementary habitats to support foraging for cliff-dwelling species especially priority invertebrate assemblages

Priority Outcome – Coastal saltmarsh restored and managed.

Potential Measure(s):

C2 - Management and restoration of coastal saltmarsh.

Measures to maintain coastal saltmarsh in good condition and restore saltmarsh in unfavourable condition. Grazing or cutting are key factors. Can include lagoons and tidal creeks.

Biodiversity and wider environmental benefits:

- Improves the sustainability of saltmarsh habitats.
- Provides valuable habitat for associated species.
- Improves the habitat's role as a natural buffer against storm surges.
- Provides valuable ecosystem services such as water filtering and purification.
- Helps prevent further coastal erosion, benefitting communities and wildlife.
- Sequesters carbon dioxide from the atmosphere.
- Adapts coastal habitats to the impacts of climate change, making them more resilient to potential future changes to the coastal environment.

Mapped on Measures Map?

All SINCs for this habitat are mapped where known to be in poor condition.

Potential Funding Streams:

Countryside Stewardship option CCT3; Restoring Meadow, Marsh and Reef (ReMeMaRe) funding.

Priority Outcome – Inter-tidal and saline habitat, including saltmarsh/mudflat, created on coastal flood plain, intensive grassland, and arable land and/or as part of managed retreat/realignment.

Potential Measure(s):

C3 - Creation of inter-tidal and saline habitat on arable land, or on intensive grassland or by non-intervention.

Measures to create inter-tidal and saline habitats, including saltmarsh/mudflat and transitional areas (between saltmarsh and nearby habitats), on arable land or improved grassland, to create a mosaic of open habitats such as lagoons, creeks and mud flats, to provide additional feeding for birds, increase abundance of marine invertebrates and increase resilience to climate change. The beneficial use of dredged sediment to recharge eroding saltmarsh or mudflat has to be a key part of any managed realignment scheme.

C4 - Management and restoration of coastal floodplain grazing marsh for priority species and other features.

Measures to manage and restore coastal floodplain grazing marsh as a priority habitat and for use by overwintering and breeding waders/brent geese.

Biodiversity and wider environmental benefits:

- Provides a diversity of intertidal and saline habitats for wildlife including for rare, threatened and migratory species.
- Compensates for habitat losses due to coastal erosion and coastal squeeze.
- Enhances coastal resilience while providing ecological benefits.
- Reduces the risk of flooding by absorbing and storing floodwaters during high tides and storm events, for the benefit of communities and wildlife.
- Reduces erosion along shorelines and mimics tidal influences.
- Helps filter and purify water by trapping sediment, nutrients and pollutants before they enter coastal waters.
- Provides greater protection to agricultural land from coastal processes.
- Increases carbon storage and sequestration.
- Enhances the resilience of coastal ecosystems and communities to the effects of climate change.

Mapped on Measures Map?

C3 - Potential areas for saltmarsh creation are mapped using the opportunity mapping as a guide, to buffer, expand or connect to existing areas of saltmarsh and other coastal habitats. Mapping for mudflat replenishment can be essentially anywhere on the intertidal with viable vessel access and a nearby source of sediment is suitable.

C4 - Potential areas for creation of Coastal floodplain grazing marsh are mapped using the opportunity mapping as a guide, to buffer, expand or connect to existing areas of grazing marsh and other coastal habitats.

Potential Funding Streams:

C3 - Countryside Stewardship options CCT4, CCT5 and CCT7; Solent wader and brent geese mitigation (SWBGM); biodiversity net gain (BNG); nutrient mitigation (NM); Restoring Meadow, March and Reef (ReMeMaRe) funding.

C4 - Countryside Stewardship options CGS19 and CGS20; Solent wader and brent geese mitigation (SWBGM); biodiversity net gain (BNG); nutrient mitigation (NM).

Priority Outcome – Seagrass beds to be restored.

Potential Measure(s):

C5 - Restore seagrass beds.

Measures to restore seagrass beds by using established techniques with a focus on existing mapped areas and their expansion.

Biodiversity and wider environmental benefits:

- Increases habitat complexity that supports a wide range of associated species, enhancing biodiversity.
- Supports adjacent oyster reefs for the benefit of wildlife and oyster businesses.
- Acts as a buffer, helping to minimise coastal erosion processes for the benefit of communities and wildlife.
- Increases sediment stabilisation, reducing turbidity and improving water quality for the benefit of other species.
- Increases carbon storage and sequestration through vegetation growth.
- Helps increase the resilience of seagrass beds and associated species to the effects of climate change.

Mapped on Measures Map?

All known areas are mapped, although they all occur within nationally designated sites, along with 'preferred potential' areas sourced from

Seagrass Potential - data.gov.uk

Potential Funding Streams:

Restoring Meadow, March and Reef (ReMeMaRe) funding, Solent seagrass restoration project.

Priority Outcome – Native oyster reefs established.

Potential Measure(s):

C6 - Establish native oyster reefs.

Measures to establish native oyster reefs in appropriate locations.

Biodiversity and wider environmental benefits:

- Improves local water quality (a single oyster can filter up to 200 litres of water a day).
- Provides important nursery habitat for species of fish and other marine organisms.
- Acts as a natural defence against coastal erosion.
- Increases carbon storage and sequestration.

- Increases the resilience of associated species to the effects of climate change.

Mapped on Measures Map?

Not mapped – intertidal/marine.

Potential Funding Streams:

Restoring Meadow, March and Reef (ReMeMaRe) funding.

Priority Outcome – Disturbance from dogs on coastal wildfowl minimised.

Potential Measure(s):

C7 - Managing public access and dogs.

Measures to manage access by the public and control dogs to reduce impact on waders, ground nesting birds and high tide roosts on coastal habitats.

Biodiversity and wider environmental benefits:

- Reduces the detrimental impacts of disturbance on waders, ground nesting birds and high tide roosts on coastal habitats.

Mapped on Measures Map?

Measure applied to all mapped Solent wader and brent geese mitigation (SWBGM) sites (outside the nationally designated sites) and potential sites.

Potential Funding Streams:

C7 – Countryside Stewardship option AC3: Install and maintain signage; Bird Aware Solent.

Priority Species that will benefit from expansion, management and protection of coastal habitats:

Gilkicker weevil, sea heath, *Rinodina aspersa*, Wilson's pottia, and other species listed in the following priority species assemblages (Part 3: Species recovery): 'birds - shore birds – breeding, migrating and wintering', 'coastal grazing marsh and upper saltmarsh', 'saline lagoons', 'shingle and coastal grassland communities', and 'maritime soft cliffs'.



Priority Outcome – Farming is nature friendly and incorporates management/actions for farmland birds, rare arable plants and invertebrates, particularly pollinators. Arable land management incorporates buffer strips, beetle banks and headlands, minimises soil erosion and protects water quality.

Potential Measure(s):

F1 - Creation of skylark plots.

This measure will increase the abundance of skylarks by providing them with suitable access to nesting habitats in winter cereal crops throughout their breeding season.

F2 - Creation of nesting plots for lapwing and stone curlew.

This measure will provide nesting sites for lapwing and stone curlew on arable land, especially in areas where they are known to occur. The plots may also benefit other declining farmland birds, brown hare and important arable plant species.

F3 - Targeted management for specific threatened species.

This measure will increase the abundance of a target species by creating the right conditions for reintroduction, re-colonisation or range extension – aimed at turtle dove, stone-curlew, corn bunting and brown hairstreak in Hampshire.

F4 - Management of grassland for target features.

This measure is aimed at the management of grassland for target features. It can include existing grassland or grassland that's being restored or created, to support a range of habitats and features, including species such as fungi, bats, insects, birds and rare plants. This action can also be used to provide buffer areas to link up priority habitats. For feeding areas for over-wintering geese especially on coastal and floodplain grazing marsh see Measure WB1.

F5 - Provide cultivated areas and manage for rare arable plants.

This measure will increase the abundance of rare arable plant species especially in areas where they are known to occur.

F6 - Provide unharvested cereal headlands, overwinter stubble and winter bird food.

These measures will increase the abundance of declining farmland birds, small mammals, pollinator species and other insects by providing an important food source and foraging/over wintering habitat.

F7 - Protection of in-field trees on intensive grassland or arable.

This measure is aimed at protecting trees from agricultural operations and retaining as important features in the landscape, providing important habitat for invertebrates, rare mosses and lichens.

F8* - Creation and management of 4 to 6m buffer strips on intensive grassland or cultivated land.

This measure is aimed at providing new habitat which forms links or corridors between other habitats, protects existing landscape features, improves water quality if next to a watercourse (overlaps with the creation of riparian buffers), and reduces nutrient load reaching road verges of ecological importance

F9 - Establishment of an agroforestry system where suitable conditions exist.

The establishment of an agroforestry system reduces soil erosion, provides shelter and shade for livestock, mitigates the impacts of climate change, improves water and air quality, and helps to mitigate flood risk.

F10 – Provide pollinator strips.

This measure provides areas of flowering plants to boost essential food sources for beneficial pollinators such as bumble bees, solitary bees, butterflies and hoverflies.

Biodiversity and wider environmental benefits:

- Improves the ability of farmland to support a range of species primarily associated with the farmed environment.
- Increases invertebrate biomass, including pollinators, that then support a range of ecosystems.
- Provides nesting sites and foraging resources for a wide range of species.
- Creates habitat corridors and stepping stones in the landscape to improve species migration and promote genetic variation.
- Protects watercourses and groundwater supplies from sediment, nutrients and other chemicals, benefitting people and wildlife.
- Improves water retention, reducing flood risk on local communities.
- Increases the ability of farmland to capture and sequester carbon.
- Helps farmland and associated wildlife to become more resilient to the effects of climate change.
- Through a variety of funded schemes, improves farm business viability through additional income.

Mapped on Measures Map?

F1 - Mapped on proposed nutrient mitigation sites.

F2 - Not mapped.

F3 - Not mapped.

F4 - Sites that are mapped are identified in the Solent wader and brent geese strategy. Also includes suitable areas that link these sites that could be restored to coastal or floodplain grazing marsh.

F5 - SINCs supporting rare arable plants and adjacent land are mapped.

F6 - Mapped on the occasional proposed nutrient mitigation site.

F7 - Not mapped.

F8* - Not mapped.

F9 - Not mapped.

F10 - Mapped on the occasional proposed nutrient mitigation site.

Potential Funding Streams:

F1 - Countryside Stewardship option AHW4: Skylark plots.
F2 - Countryside Stewardship option CAB5.
F3 - Countryside Stewardship option CSP9.
F4 - Countryside Stewardship option CGS21; Solent wader and brent geese mitigation (SWBGM); nutrient mitigation (NM).

F5 - Countryside Stewardship option CAB11.
F6 - Countryside Stewardship options CAB10, CAB2, AB6, AB9 and CAB12.
F7 - Countryside Stewardship options BE1 and BE2, BSF5, TE7.
F8* - Countryside Stewardship options CSW21.
F9 - Countryside Stewardship options CAGF1, CAGF2, CAGF3 and CAGF4.
F10 - Countryside Stewardship options CAB19 and CAB16; Beelines Fund.

Priority Species that will benefit from enhancement of the farmed environment for nature:

Red-tipped cudweed, harvest mouse, and species listed in the following priority species assemblages (Part 3: Species recovery): 'birds - farmland birds', and 'rare arable plants and other species associated with arable farmland'.

Hedgerows

Priority Outcome – Existing hedgerows better managed through trimming, pruning, laying, coppicing and gapping up to maximise their value for biodiversity.

Potential Measure(s):

HD1 - Management of hedgerows including coppicing, laying and gapping up.

This measure aims to improve the structure, longevity and biodiversity of our hedgerows, maintaining them as distinctive and historic landscape features, and increasing the availability of blossom, fruits and berries for invertebrates, overwintering birds and small mammals such as dormice. Avoid cutting all hedgerows annually to allow them to develop.

Biodiversity and wider environmental benefits:

- Enhances the value of hedgerows for wildlife including for priority species such as dormice.
- Helps maintain the structure and density of hedgerows, preventing them from becoming overgrown or excessively woody.
- Stimulates the growth of new shoots from the base of hedgerow plants, increasing their longevity and the volume of blossoms, fruits, berries and nesting sites for a range of species, including dormice, birds and invertebrates.
- Improves their effectiveness as stockproof barriers, benefitting livestock farming.
- Helps prevent shading and competition with adjacent crops.
- Helps preserve cultural heritage, landscape character, and traditional land management techniques.

Mapped on Measures Map?

Mapped on specific sites and can be applied anywhere.

Potential Funding Streams:

Countryside Stewardship options CHRW4, BN5, BN6 and BN7 .

Priority Outcome – New species-rich hedgerows created using local native species to improve hedgerow connectivity and join up other species-rich habitats, like woodlands.

Potential Measure(s):

HD2 - Planting new hedgerows.

Planting new hedgerows with a variety of local native species will increase biodiversity, restore historic landscape features and sequester carbon.

Biodiversity and wider environmental benefits:

- Improves flight lines in the landscape for bat species.
- Reduces the loss of soil from agriculture and helps protect watercourses from nutrient enrichment and sedimentation.
- Improves hedgerow connectivity and provides valuable habitat corridors through the landscape, improving species migration and genetic exchange.
- Provides nesting sites and foraging resources for pollinators.
- Increases crop pollination and yields for farmers.
- Enhances the landscape character, providing scenic beauty and restoring historic landscape features.
- Sequesters carbon dioxide from the atmosphere through plant growth and biomass accumulation.

Mapped on Measures Map?

Mapped on specific sites and can be applied anywhere.

Potential Funding Streams:

Countryside Stewardship option BN11.



Priority Outcome – More hedgerow trees in new and existing hedgerows.

Potential Measure(s):

HD3 - Planting standard native hedgerow trees.

Planting new native hedgerow trees will provide shelter, food, nesting sites and song posts, as well as providing stepping stones between woodland habitats. They will sequester carbon and make a valuable contribution to the landscape. Avoid planting new hedgerow trees in areas where ground nesting bird species such as stone curlew and wetland waders need an open landscape to avoid predator species using the trees as perches

Biodiversity and wider environmental benefits:

- Improves the ability of hedgerows to connect areas of woodland habitat.
- Sequesters carbon dioxide from the atmosphere through tree and shrub growth.
- Enhances landscape character, providing scenic beauty and cultural significance.

Mapped on Measures Map?

Mapped on specific sites and can be applied anywhere.

Potential Funding Streams:

Countryside Stewardship option TE1.

Priority Species that will benefit from expansion and management of hedgerows:

White-letter hairstreak, brown hairstreak, sandy stiltball, dormouse, western European hedgehog, harvest mouse, and other species listed in the following assemblages for priority species (Part 3: Species recovery): 'birds - farmland birds', 'birds - urban birds', 'open deciduous woodland', 'woodland bats' and 'bats requiring landscape-scale recovery and protection of roost sites'.

Priority Outcome – The nature conservation value of public spaces is enhanced.

Potential Measure(s):

U1 - Improve nature in public spaces and create wildlife corridors.

Improve nature in public and urban spaces and create new green spaces, wildlife corridors and stepping stones, through wildflower planting/seeding, hedgerow planting, tree and shrub planting, reduced and varied mowing regimes, scrub management, removal of invasive species, pond creation/ maintenance, provision of suitable nest boxes, herbicide reduction, and improved footpaths and signage to facilitate access and manage the impact of recreation on wildlife.

Biodiversity and wider environmental benefits:

- Improves the structural diversity of habitats to create nesting, foraging, and breeding opportunities for a wide range of species, enhancing biodiversity.
- Provides valuable habitat corridors through the urban landscape, improving species migration and genetic exchange, and provides ecological connectivity with habitats and species beyond the urban area.
- Increases communities' access to nature.
- Enhances individual and community health and wellbeing.
- Enhances sense of place and community cohesion.
- Improves the appearance and character of urban and sub-urban areas.
- Increases carbon storage and sequestration through vegetation growth and soil development.
- Improves community resilience to the effects of climate change by helping to cool urban areas during periods of high temperature, and reducing flood risk by intercepting and attenuating urban run-off.
- Provides educational opportunities for local schools.
- Increases nature awareness in the local population.

Mapped on Measures Map?

A variety of sites are mapped.

Potential Funding Streams:

Local authority in-house / grants; Community Infrastructure Levy (CIL) and s106 planning agreements; SANGs funding, Biodiversity Net Gain (BNG); Local communities groups; Beelines Fund.

Priority Outcome – The nature conservation value of brownfield land is enhanced.

Potential Measure(s):

U2 - Improve biodiversity on brownfield sites.

Create and maintain open mosaic habitat on previously developed land (a priority habitat) and recognise and value the contribution of brownfield habitats to nature especially for a diverse range of invertebrate species.

Biodiversity and wider environmental benefits:

- Provides important open mosaics habitats that can support a diverse range of pioneer species, and invertebrate and reptile species.
- Helps to enhance long-standing habitats, such as acid grassland lawns.
- Provides important stepping stones in the landscape for species migration, promoting genetic variation.

Mapped on Measures Map?

Several SINC's supporting the priority habitat 'Open Mosaic Habitat on Previously Developed Land' have been mapped to improve their biodiversity.

Potential Funding Streams:

Countryside Stewardship SCR2: Manage scrub and open habitat mosaics
Community Infrastructure Levy (CIL) and s106 planning agreements;
Biodiversity Net Gain (BNG).

Priority Outcome – Increased tree canopy cover in urban areas.

Potential Measure(s):

U3 - Plant more street trees.

Measure is to plant more street trees to reduce air pollution, attenuate noise, reduce surface water flooding and keep our towns and cities shaded and cool. They capture fine particulate matter, NO₂, SO₂ and carbon dioxide, and produce oxygen. They improve our physical and mental wellbeing by improving visual attractiveness and encouraging people to walk and cycle more. It is important when planting urban trees to provide sufficient space for growth and canopy expansion, manage root expansion, maximise water interception and attenuation, avoid long-term conflicts with buildings and other street infrastructure, and provide sufficient funding for long-term care.

Biodiversity and wider environmental benefits:

- Improves community resilience to the effects of climate change by helping to cool urban areas during periods of high temperature, and reducing flood risk by helping to intercept and attenuate urban run-off.
- Increases carbon storage and sequestration through vegetation growth.
- Supports urban biodiversity by providing habitat, wildlife corridors and stepping stones.
- Increases people's access to nature, improving mental health and wellbeing.
- Creates a sense of place and improves the visual character of the streetscape.

Mapped on Measures Map?

Not mapped.

Potential Funding Streams:

Local authority in-house / grants; Community Infrastructure Levy (CIL) and s106 planning agreements; Biodiversity Net Gain (BNG).

Priority Outcome – Transport corridors, including new and existing road verges and rights of way are enhanced for biodiversity.

Potential Measure(s):

U4 - Improve biodiversity on Road verges of ecological importance (RVEIs) and other road verges.

Measures to improve biodiversity on road verges and roundabouts with reduced and planned cuts, especially for those identified as Road Verges of Ecological Importance (RVEIs), allowing a longer unmown period of at least 3 months over the summer for flowering, whilst having regard to more frequent safety cuts required for visibility reasons. Cut and collect should be the ultimate objective. See **Grass cutting and weed control | Transport and roads | Hampshire County Council**. Join the Parish Pollinator Network for advice and support on improving biodiversity within your parish road network. Consider low input buffer strips on field side of RVEIs to reduce nutrient load reaching the verges - see F8.

U5 - Improve biodiversity along new & existing travel routes.

Improve the connectivity of nature corridors by targeting new and existing travel routes (National Trails, rail, road, cycleways, green lanes and footpaths) for high quality green and blue infrastructure, including active management, and use of Sustainable Drainage Systems (SuDS). Use native seed mixes and new planting that reflects the character of the area that delivers for biodiversity and reduces run-off entering our natural watercourses.

Biodiversity and wider environmental benefits:

- Increases communities' access to nature.
- Collectively, provides significant areas of habitat for biodiversity.
- Improves habitat structural diversity to create additional nesting, foraging, and breeding opportunities for many species including small mammals, reptiles and amphibians.
- Provides linear wildlife corridors across the landscape allowing species to migrate, promoting genetic variation.
- Enhances species populations, particularly pollinator species.
- Provides ecotones along habitat corridors, where verge vegetation is influenced by varying adjacent habitat types, increasing biodiversity.
- Increases total area of species-rich habitat, particularly grassland, scrub and woodland.
- Improves carbon storage and sequestration through vegetation growth and soil development.
- Provides bank/cutting stabilisation, increasing public safety and reducing the need for land management and engineering intervention.
- Increases the resilience of a variety of habitats and associated species to the effects of climate change.
- Improves local air quality and helps to buffer adjacent sensitive sites from the air pollution, noise and visual disturbance generated by traffic.
- Provides opportunities to absorb, filter and attenuate surface water runoff, particularly in periods of storm surge.

Mapped on Measures Map?

U4 - Several hundred road verges are mapped including all road verges of ecological importance (RVEIs) and other verges in urban situations where there is planned reduced/timed mowing to improve their diversity.
U5 – Not mapped.

Potential Funding Streams:

U4 - Countryside Stewardship options CS21 (field side); Highways Authority and Highways England
U5 - Highways Authority and Highways England; Biodiversity Net Gain (BNG); Community Infrastructure Levy (CIL) and s106 planning agreements Network Rail.

Priority Outcome – Increase biodiversity within residential and community gardens.

Potential Measure(s):

U6 – Improve nature within residential and community gardens.

Measures to promote the contribution that gardens can make towards increasing biodiversity and supporting species that are becoming more dependent on urban spaces, potentially through parish councils and local 'green groups'. To encourage residents to garden in a wildlife friendly way by providing refuge habitats and feeding resources - such as creating small ponds, log piles and compost heaps, providing nest boxes, leaving longer areas of grass, planting nectar rich plants and native trees and shrubs, and by leaving gaps at the bottom of fences to create "wildlife corridors" that allow creatures to move between gardens. Avoid use of pesticides and artificial grass.

Biodiversity and wider environmental benefits:

- Provides benefits for a wide range of species, including pollinators.
- Helps local communities become more resilient to the effects of climate change, including cooling urban areas in periods of high temperatures.
- Increases access to nature, enhancing health and wellbeing.
- Improves soils and carbon storage.
- Provides linear wildlife corridors and stepping stones across the urban landscape.
- Reduces flood risk by helping to intercept and attenuate urban run-off.

Mapped on Measures Map?

Not mapped.

Potential Funding Streams

For community gardens - Local councils, Housing associations, Community Programme | Grow Wild | Kew , Community Hub | The Wildlife Trusts.

Priority Outcome – Impacts from recreational disturbance on the Thames Basin Heaths SPA, Wealden Heaths Phase II SPA, New Forest SPA and coastal SPAs are mitigated through the creation of alternative natural greenspace (SANGs) and habitats.

Potential Measure(s):

U1 - Improve nature in public spaces and create wildlife corridors.

Improve nature in public and urban spaces to create new green spaces including SANGs, wildlife corridors and stepping stones, through wildflower planting/ seeding, hedgerow planting, tree and shrub planting, reduced mowing, scrub management, removal of invasive species, pond creation/ maintenance, provision of suitable nest boxes, herbicide reduction. and improved footpaths and signage to facilitate access and manage impact of recreation on wildlife.

Biodiversity and wider environmental benefits:

- Reduces recreational disturbance on sensitive sites and species by providing alternative greenspace in the form of SANGs, country parks, etc.
- Helps protect important bird species for which the SPAs are designated.
- Creates additional habitats for protected and other species, enhancing biodiversity.
- Increases communities' access to nature, enhancing health and wellbeing.
- Improves carbon storage and sequestration through vegetation growth and soil development.

Mapped on Measures Map?

A variety of sites are mapped.

Potential Funding Streams:

Local authority in-house / grants; Community Infrastructure Levy (CIL) and s106 planning agreements; Biodiversity Net Gain (BNG); Local communities groups; Beelines Fund.

Priority species that will benefit from the enhancement of greenspace, brownfield land and transport corridors:

The biodiversity enhancement of greenspace and transport corridors will benefit a wide range of priority species depending on the habitats and/or species populations present. This includes field garlic, tower mustard, field cow wheat and striped lychnis found on RVEIs, plus western European hedgehog and species listed in the following priority species assemblages (Part3: Species recovery): 'birds - urban birds', 'birds - urban gulls', and 'ponds for amphibians'.

Sites of Importance for Nature Conservation (SINCs)

Priority Outcome – The condition of SINC habitats is improved.

Potential Measure(s):

Range of measures listed in this table depending on associated habitat types.

Biodiversity and wider environmental benefits:

- Provides benefits for all habitats and species populations covered by SINC designation.
- Provides access to nature and associated health and wellbeing benefits for those SINCs that are publicly accessible.
- Improves the range of ecosystem services that these areas provide, including air purification, soil stabilisation, water filtration, and flood attenuation benefits, that SINCs provide for communities and wildlife.

Mapped on Measures Map?

This priority outcome applies to all SINCs considered to be in poor or uncertain condition.

Potential Funding Streams:

Range of funding streams listed in this section depending on associated habitat types.

Priority Species that will benefit from the enhancement of SINCs:

The enhancement of the condition of SINCs across the LNRS area will benefit a wide range of priority species depending on the habitat types and/or species populations the SINCs were selected for.

Improving knowledge of priority species and priority habitats

Priority Outcome – Priority habitats and priority species populations are enhanced and sustained with the most up to date supporting evidence.

Potential Measure(s):

S1 - Species survey, monitoring and evaluation.

To increase knowledge and understanding of priority species in order to assess feasibility of managing or restoring the habitat or the species population.

S2 - Managing land specifically for priority species.

Bespoke targeted management aimed at any species on the LNRS priority species list to protect, manage, restore, expand, and reconnect sites to enable that species to recover and flourish.

S3 – New habitat survey required to assess condition, guide management options and monitor progress.

Ensuring that habitat management decisions and monitoring programmes are based on the most up to date habitat survey data.

Biodiversity and wider environmental benefits:

- Changes in priority species' populations are tracked.
- The effects of different forms of habitat management on priority species are better understood.
- Greater genetic exchange is enabled through improved ability for species to move through the landscape.
- The condition of priority habitats, and the efficacy of different management regimes, is better understood.

Mapped on Measures Map?

S1 – Mapped for some sites and would apply to all sites known to support priority species listed in Part 3 as 'data deficient' (class E).

S2 - Mapped on some sites known to support priority species (W3 is applied to woodlands with priority species).

S3 – Applied to all SINC's on the measures map where data is over 20 years old (pre-2005). Note, some SINC's may have only been partially surveyed within last 20 years but will still have S3 applied as will sites surveyed in 2025.

Potential Funding Streams:

S1: Built into various Countryside Stewardship options and England Woodland Creation Offer (EWCO) schemes.

S2: Species Recovery programmes (SRP); Species conservation strategies (SCS).

S3: Habitat surveys can be funded by various Stewardship/WGS/EWCO assessment grants and by the Local Planning Authorities, as part of the HBIC habitat survey programme.

* These priorities focus on water quality within watercourses and SPZs but do so solely through grassland management. If woodland were to be included as a measure to deliver improved water quality, this could be supported through EWCO, with landowners receiving the Additional Contribution for water quality (£500/ha) and riparian buffers (£2500/ha). There would also be potential for the Woodland Carbon Code to deliver funding and the future Woodland Water Code (which research for is intended to be completed by March 2025).

Beelines Fund (within SDNPA) - **South Downs Trust**

Big Chalk Nature Recovery Fund **Big Chalk | Big Chalk Nature Recovery Fund - launching late August...**

Biodiversity net gain (BNG) - **Biodiversity net gain - GOV.UK (www.gov.uk)**

Chalk Partnership Fund - **More good news from the Environment Agency – Chalk-Streams**

Community Infrastructure Levy and Section 106 Agreements (CIL / s106) - **Community Infrastructure Levy - GOV.UK (www.gov.uk). What are Section 106 (s106) agreements? - Planning Portal**

Countryside Stewardship (CS) potential options listed - **Countryside Stewardship Higher Tier actions - GOV.UK**

England Woodland Creation Offer (EWCO) - **England Woodland Creation Offer - GOV.UK (www.gov.uk)**

Great Crested Newt (GCN) District Licencing - NatureSpace and Newt Conservation Partnership - **Newt Conservation Partnership (freshwaterhabitats.org.uk)**

Hampshire Forest Partnership (HFP) - **Get involved | Hampshire County Council (hants.gov.uk)**

Nutrient Mitigation (NM) - **Nutrient Mitigation for New Housing Development - Partnership for South Hampshire (push.gov.uk)**

Sustainable Farming Incentive (SFI) - **Sustainable Farming Incentive: guidance for applicants and agreement holders - GOV.UK (www.gov.uk)**

Species Recovery programmes (SRP) - **What you need to know about the Species Recovery Programme Capital Grant scheme – Natural England**

Solent Wader and Brent Geese Mitigation (SWBGM) - **Bird Aware Solent - Partnership for South Hampshire (push.gov.uk)**

Thames Basin Heaths SANG funding available via Natural England - **Thames Basin Heaths Special Protection Area Delivery Framework**

Restoring Meadow, Marsh and Reef (ReMeMaRe) - **Restoring Meadow, Marsh and Reef (ReMeMaRe) | Estuarine & Coastal Sciences Association (ecsa.international)**

Water Environment Improvement Fund (WEIF) - **Water Environment Improvement Fund projects - GOV.UK**

Water Industry National Environment Programme (WINEP) - **Water industry national environment programme (WINEP) methodology - GOV.UK**

Water Restoration Fund - **About the Water Restoration Fund - GOV.UK**

Woodland Carbon Code - **Home | Woodland Carbon Code**

Woodland Tree Health grant (WTH) - **Applicant's guide: Woodland Tree Health grants 2024 - GOV.UK2.**

2. Maps

The Defra defined LNRS for Hampshire area covers the boundary of the county of Hampshire. This includes the cities of Southampton and Portsmouth, and incorporates those parts of the New Forest National Park and South Downs National Park within its border. As a coastal county, the LNRS boundary extends to the intertidal zone as far as the mean low water mark³. The total area that the LNRS covers is 385,239ha.



- 3 Defra statutory guidance requires that LNRS follow administrative boundaries into the inter tidal zone only to mean low water. The Marine Management Organisation (MMO) will explore how spatial planning for marine nature recovery might develop in the future.

Three principal types of maps are presented below. These are:

- Areas of particular importance for biodiversity (APIB) map.
- Measures map.
- Areas that could become important for biodiversity (ACB) map.

(LNRS maps are also available for viewing in greater detail on the LNRS for Hampshire website⁴)

4 LNRS for Hampshire Website - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/hampshire-strategy>

Areas of particular importance for biodiversity (APIB)

LNRS statutory guidance⁵ sets out specifically what should and should not be included in the APIB map. It should contain:

- All national conservation sites.
- All Local Nature Reserves.
- Other areas of particular importance for biodiversity, as defined in paragraph 22 of the guidance as:
 - All existing local wildlife sites.
 - Areas of irreplaceable habitat.
 - Other areas identified by the Secretary of State as being of particular importance.

Areas of irreplaceable habitat are defined as those included in the biodiversity net gain (BNG) irreplaceable habitats list⁶. Those on this list that are relevant to Hampshire include:

- Ancient woodland.
- Ancient and veteran trees⁷.
- Coastal sand dunes.
- Spartina saltmarsh swards.
- Lowland fens.

The Secretary of State has not identified any other areas of being of particular importance, and therefore there is no requirement for other areas to be included on the map.

The guidance is clear that responsible authorities should not map any other areas that are not mentioned in paragraph 22 of the guidance as being of particular importance for biodiversity. It notes that this is not to suggest that other areas are not of importance for biodiversity. It is to help establish a nationally consistent baseline of areas whose particular importance has already been recognised and are protected. It states that this will help LNRSs align well with local planning policy and avoid duplicating with the identification of local wildlife sites.

If a responsible authority believes that additional areas require protection due to their importance, they should discuss making them local wildlife sites with the relevant local planning authority. For example, in Hampshire it is estimated that some 20% of priority habitat has yet to be assessed for local wildlife site designation.

Areas of particular importance for biodiversity (APIB) cover a total area of 90,099ha, which is 23.4% of Hampshire's land area.

⁵ Local nature recovery strategy statutory guidance What a local nature recovery strategy should contain (March 2023) -

https://assets.publishing.service.gov.uk/media/6421a4bdf97a8001379ecf1/Local_nature_recovery_strategy_statutory_guidance.pdf

⁶ BNG irreplaceable habitats list - <https://www.gov.uk/guidance/irreplaceable-habitats>

⁷ Ancient and veteran trees are not currently present on the APIB map due to uncertainties around the accuracy of the data, and licensing issues.

The APIB map is provide in Map 2.1, below. As all features on the APIB map are shown collectively as shades of green, it is supplemented by four further maps (Maps 2.2 – 2.5) that help to differentiate between the features that combine to form the APIB map, as follows:

- APIB map with main features differentiated (Map 2.2).
(Note: The nationally designated sites mask areas of irreplaceable habitat whilst Local Wildlife Sites are shown as boundaries only so as not to mask areas of irreplaceable habitat.)
- APIB map showing only internationally and nationally designated site sub-components (Map 2.3).
- APIB map showing only irreplaceable habitat sub-components (Map 2.4).
- APIB map showing local sites sub-component (Map 2.5).

The APIB map has been produced in conjunction with the Hampshire Biodiversity Information Centre (HBIC) and on behalf of the LNRS Steering Group and Supporting Authorities Working Group.

The APIB map and supplementary maps are also available for viewing on the LNRS for Hampshire website⁸.

⁸ LNRS for Hampshire Website - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/hampshire-strategy>

Map 2.1: Areas of particular importance for biodiversity (APIB) map



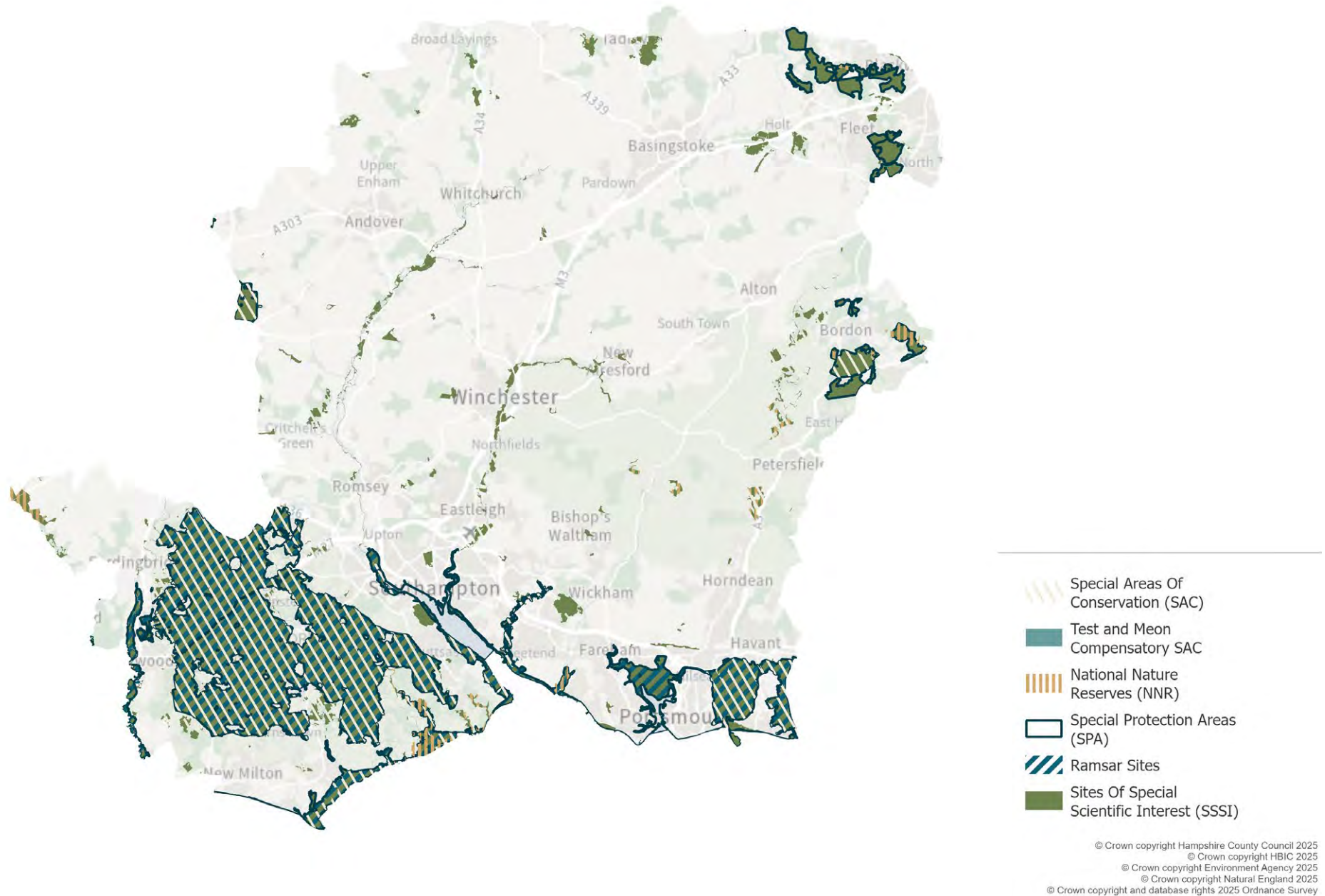
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Map 2.2: APIB map (with main features differentiated)

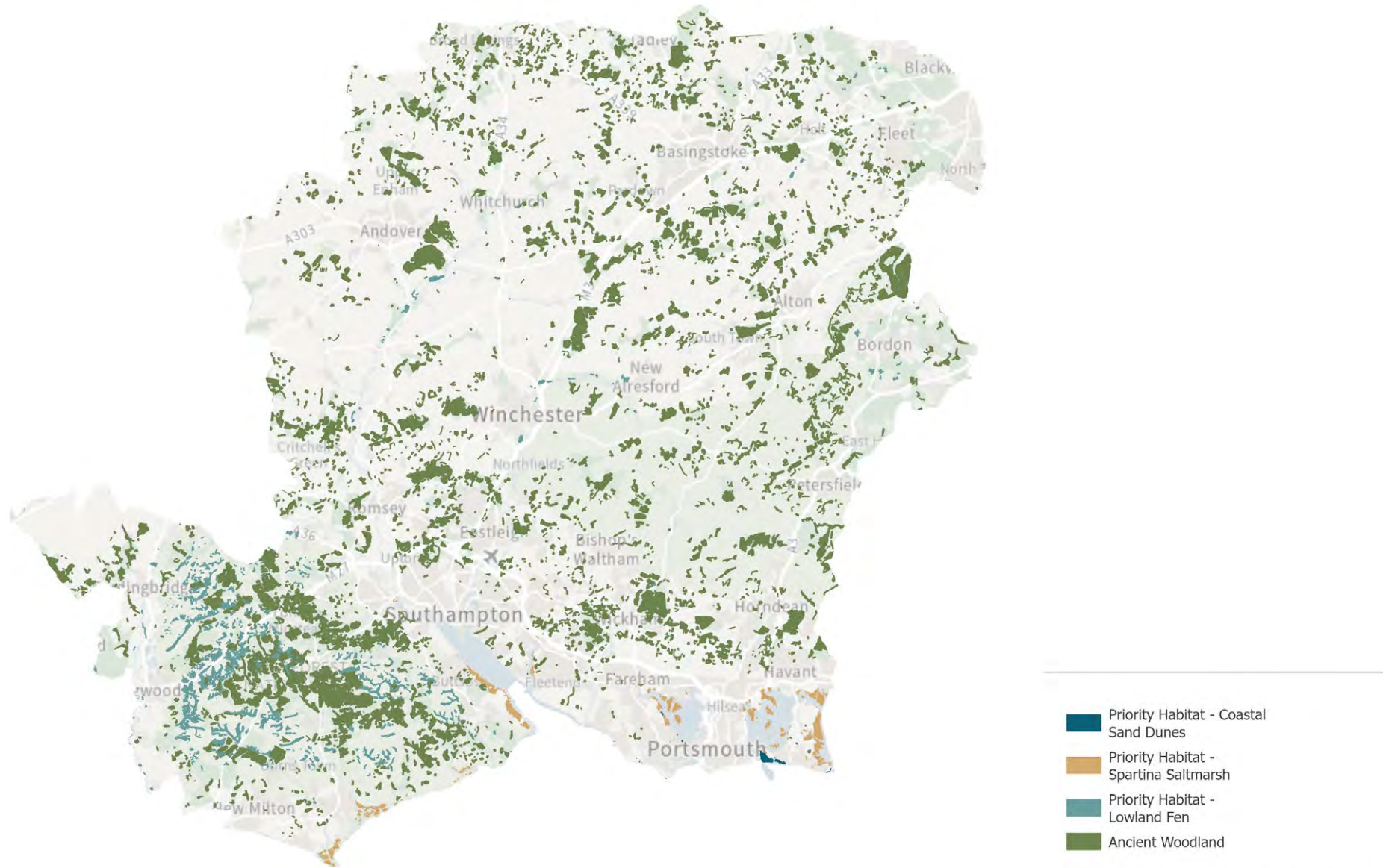


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Map 2.3: APIB map (internationally and nationally designated sites)

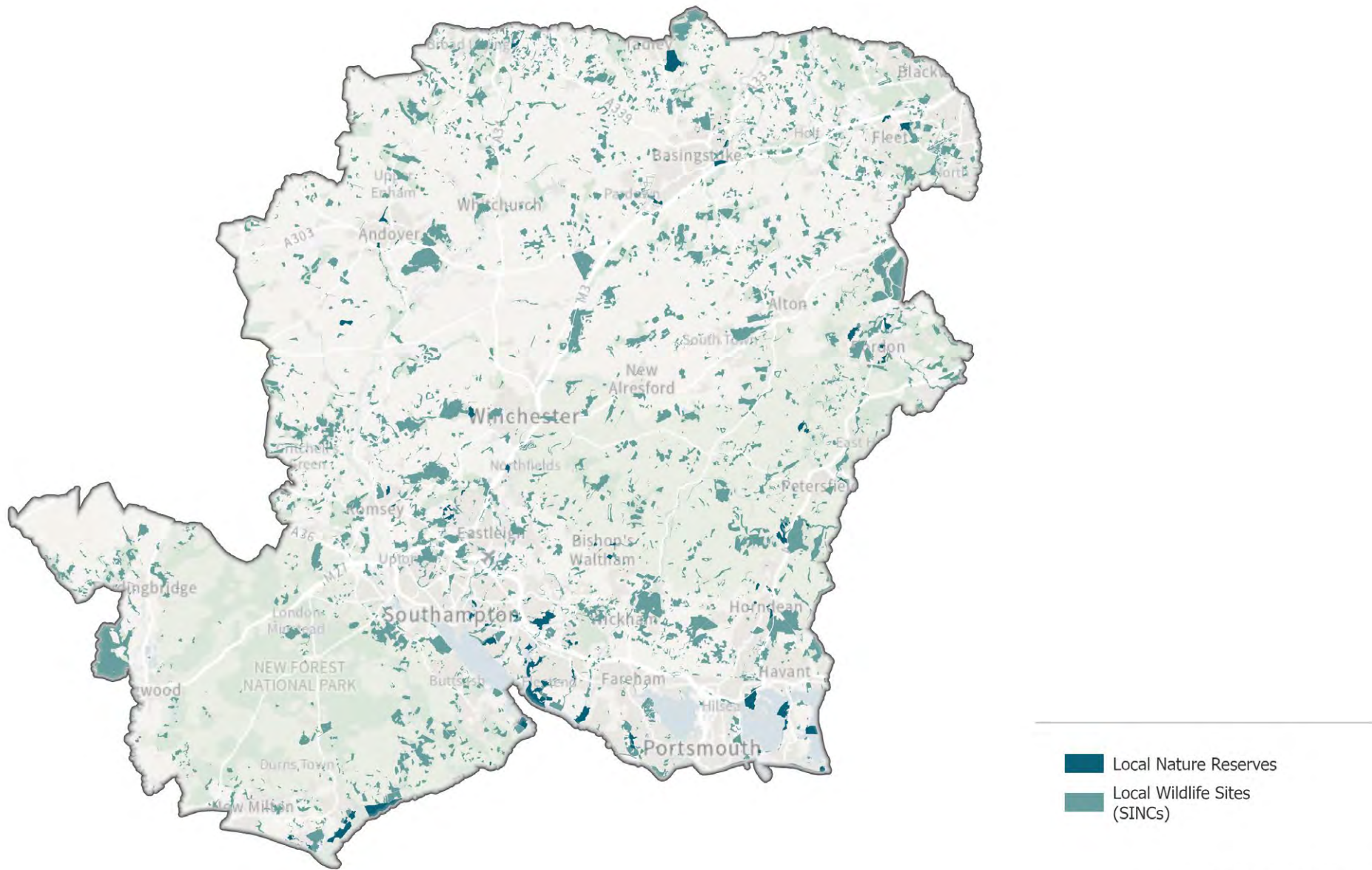


Map 2.4: APIB map (irreplaceable habitat)



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Map 2.5: APIB map (local sites)



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Measures map

The measures map (Map 2.6) plots the locations where potential measures from the statement of biodiversity priorities could be carried out in a way that contributes to the Strategy's priorities. This allows the LNRS to consider areas of potential importance for biodiversity and nature-based solutions in an integrated way. Areas included on the measures map are considered strategically significant areas and eligible for biodiversity net gain (BNG) uplift. Areas on the measures map cover 86,293ha, which is 22.4% of Hampshire's land area.

The measures map builds on the distribution of existing habitats and areas of particular importance for biodiversity. This means that areas that could become of particular importance for biodiversity (ACB) can be targeted to join up or expand and buffer those existing areas of importance or provide valuable stepping stones. This helps to establish larger, more resilient networks of high-quality habitat across the landscape. Mapped areas range in size, from individual sites to narrow linear features such as proposed riparian buffers, and to much larger landscape-scale areas informed by the priority habitat opportunity mapping.

The methodology used to construct the Priority Habitat Opportunity mapping is provided in Appendix 6. It is guided by the Natural England Habitat Network model which maps habitat creation opportunities for the following eleven priority habitats:

- Ancient woodland.
- Wood pasture and parkland.
- Lowland calcareous grassland.
- Lowland meadow.

- Lowland heath.
- Lowland acid grassland.
- Lowland fen.
- Reed-bed.
- Floodplain and coastal grazing marsh.
- Coastal saltmarsh.
- Purple moor grass and rush pasture.

These priority habitat opportunities are shown in six supplementary maps (Maps A6.1 – A6.6) in Appendix 6.

The measures map includes the following components, some of which will overlap. Each one has one or more potential measures attached to it:

- Habitat Opportunity Areas – areas buffering SSSI and SINCs and supported by the priority habitat opportunity mapping. Also includes sites proposed by the supporting authorities for (these are described in more detail in Appendix 7):
 - Biodiversity net gain.
 - Nutrient mitigation schemes.
 - Nature recovery through local plans, neighbourhood plans, and local biodiversity action plans.
 - Mineral sites where nature recovery is planned as part of restoration proposals.
 - Sustainable alternative natural greenspaces, local green spaces, and other land LPAs own or manage for nature recovery.
 - Woodlands owned by Forestry England where nature recovery is planned (SINCs and undesignated woodlands).

- Riparian buffers which cover up to 10m either side of all rivers and streams.
- All in-channel river habitat excluding stretches designated as SSSI.
- SINCs in poor condition due to negative or unknown management. These have been removed from the ACB map as they are already mapped on the APIB map.
- SINC woodlands supporting priority woodland species.
- Proposed woodland creation sites produced from a 'lost ancient woodland layer' (shown as cleared post 1920 in the original ancient woodland inventory produced in 1979) and by targeting areas of farmland that connect ancient woodlands that support LNRS priority species.
- Planted ancient woodland (PAWs) that directly abuts ancient semi-natural woodland.
- Historic Parkland and Wood Pasture sites.
- Solent wader and brent geese sites all sites.
- Seagrass beds and potential expansion zones.
- Groundwater Source Protection Zones (1) WFD.
- Road verges of ecological importance (RVEIs) and other verges undergoing measures which improve their biodiversity.

In identifying potential measures and their locations, the development of the LNRS has considered which would have the greatest impact on achieving the priorities, and which would achieve greater connectivity of similar biodiverse habitats across the landscape.

It should be noted that some measures cover a much wider area, or Hampshire as a whole, and are not included in the measures map. These include measures such as deer control and nature friendly farm management practices, and are set

out in the shortlist of priority outcomes in Section 1 of this document.

Supplementary maps that show the following sub-components of the measures map (these are also available for viewing on the LNRS for Hampshire website⁹) are set out below:

- 1.** Habitat Opportunity Areas (Map 2.7).
- 2.** Woodland creation or restoration areas (Map 2.8). This map shows:
 - Ancient woodlands targeted for priority species management.
 - PAWs woodland.
 - Woodland creation areas and replacing 'lost' ancient woodland.
 - Woodland SINCs targeted for priority species management.
 - Parkland and wood pasture sites.
- 3.** Rivers and riparian buffers, fish migration barriers and Groundwater Source Protection Zones (Map 2.9). This map shows:
 - Riparian buffers.
 - In-channel rivers and streams.
 - Barriers to fish migration.
 - Groundwater Source Protection Zones.
- 4.** SINCs and RVEIs, plus other road verges with measures (Map 2.10). This map shows:

9 LNRS for Hampshire Website - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/hampshire-strategy>

- SINCs in poor condition due to negative or nil management.
- SINC condition uncertain (not been surveyed for 20+ years).
- RVEIs and other road verges (some are also SINCs).

5. Solent wader and brent geese sites and seagrass beds and potential expansion zones (Map 2.11). This map shows:

- SWBG - all sites mapped in the SWBG Strategy.
- Seagrass beds and potential expansion zones.

Map 2.6: Measures map



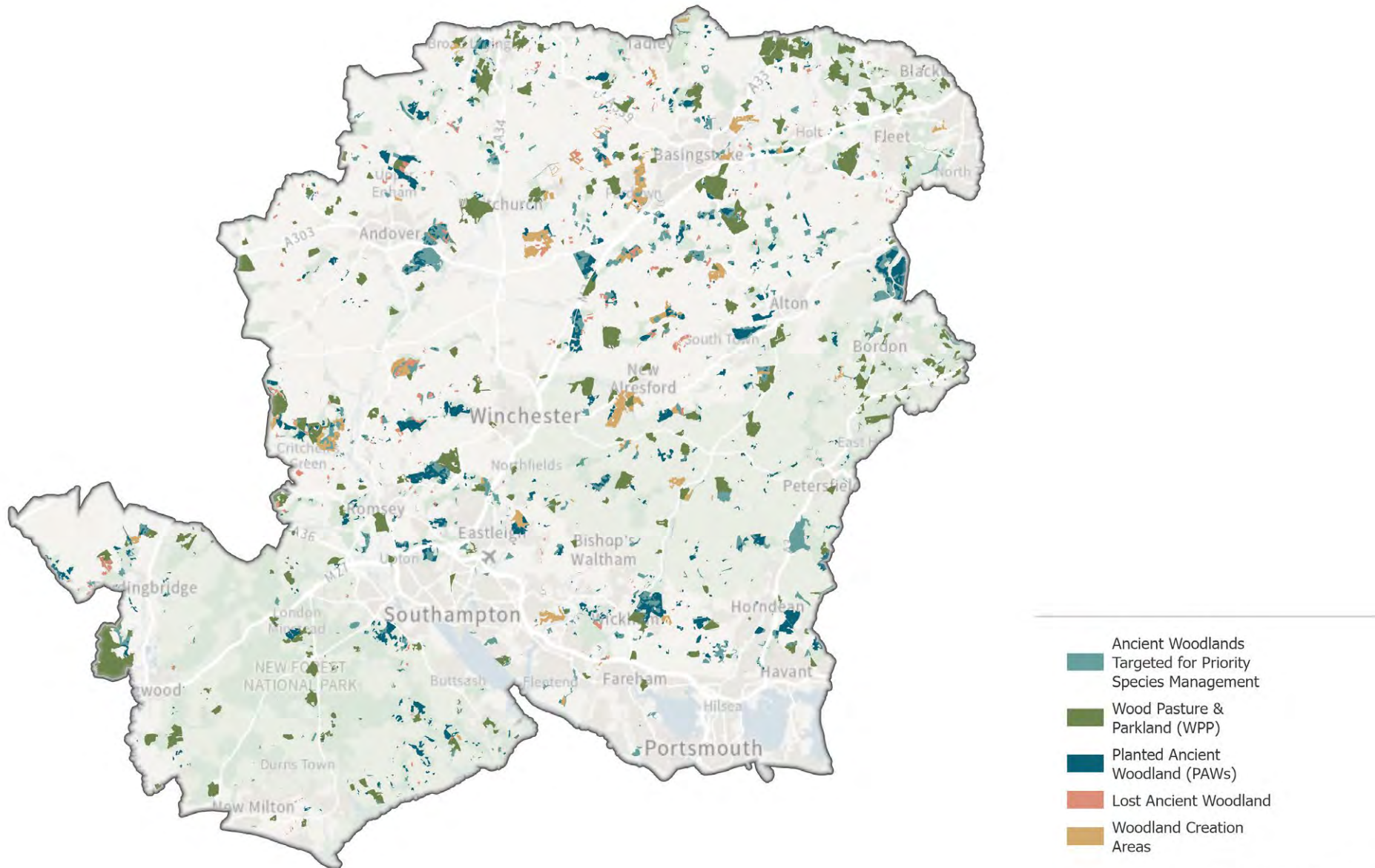
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Map 2.7: Habitat Opportunity Areas



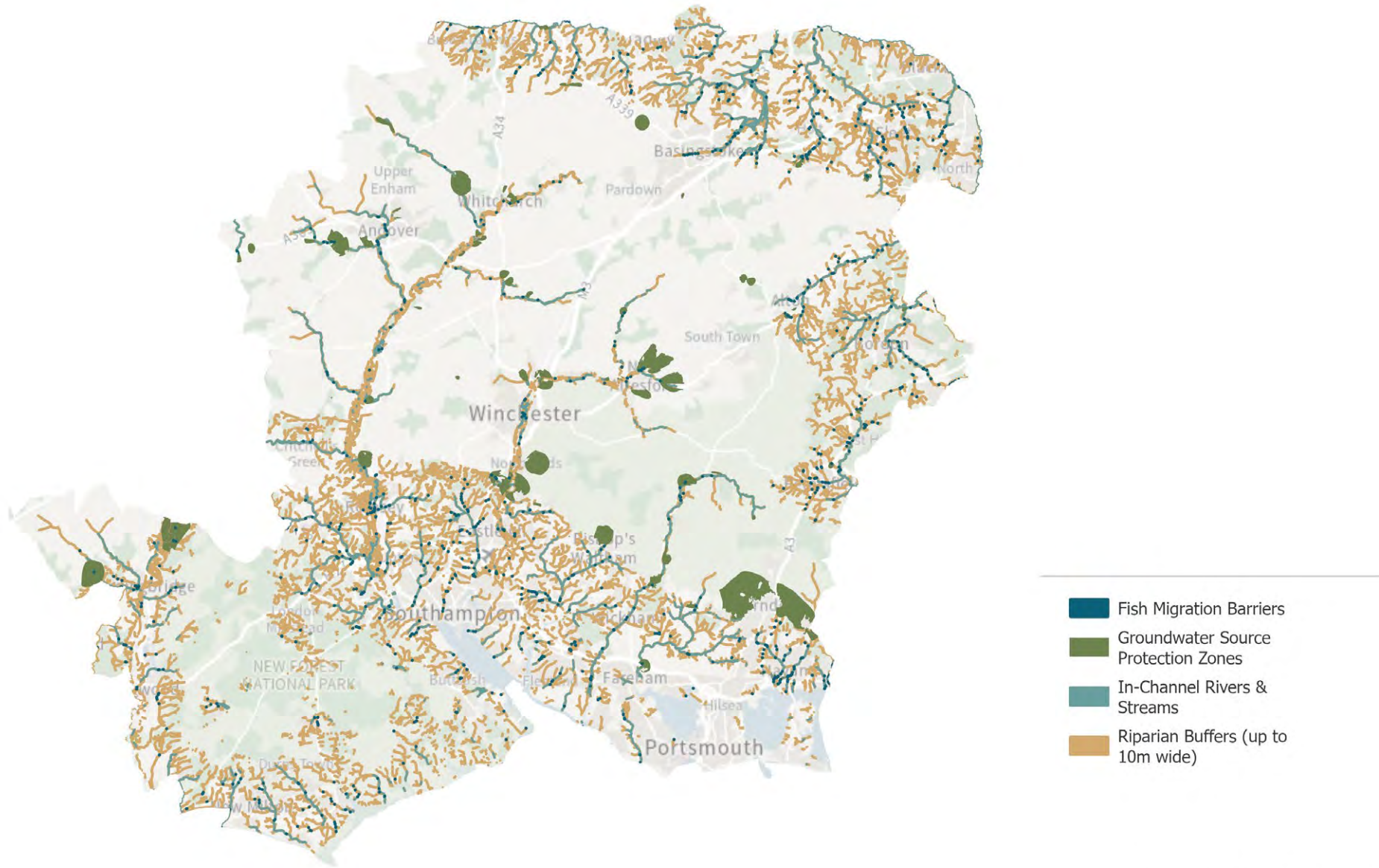
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Map 2.8: Woodland creation or restoration areas



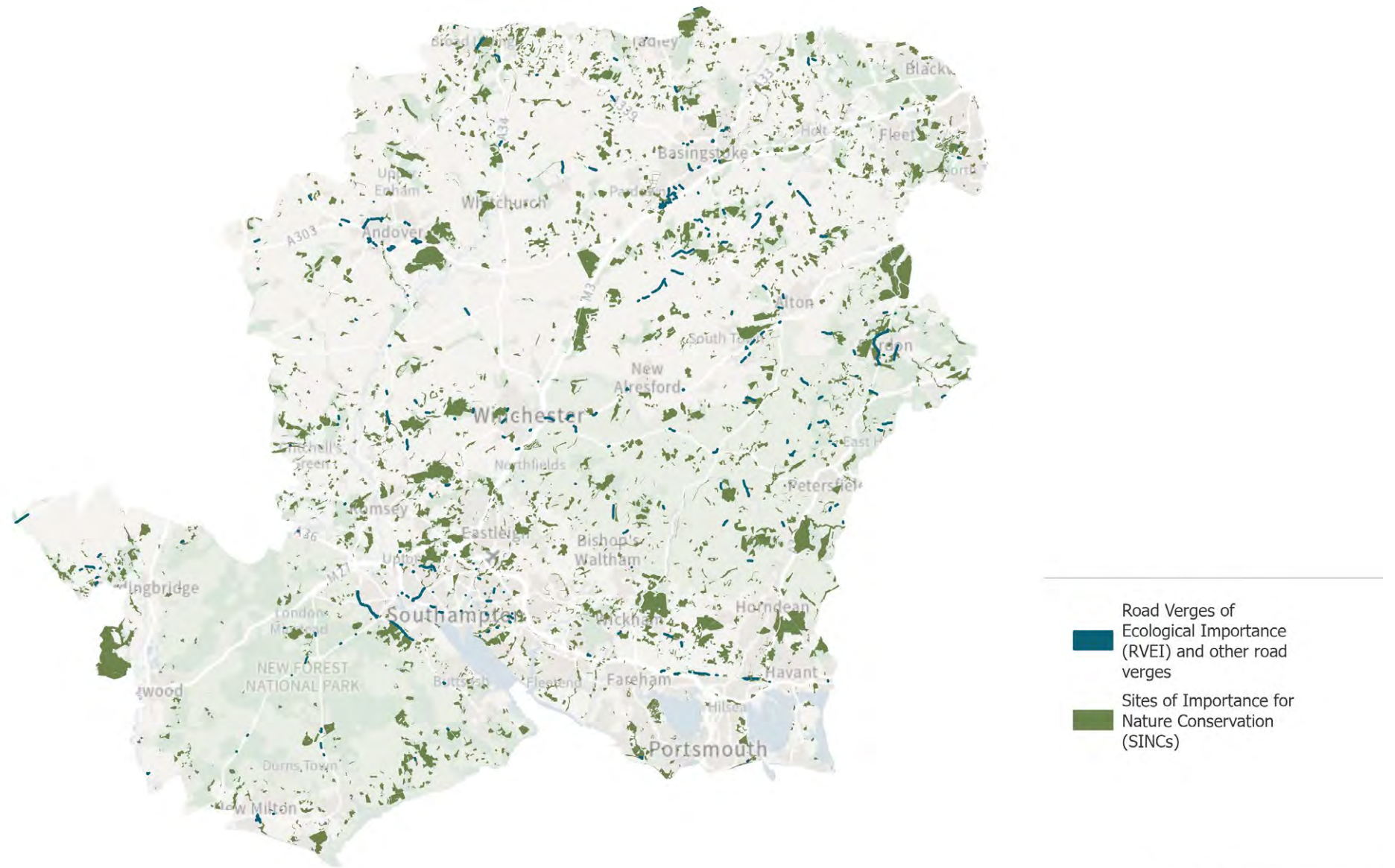
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Map 2.9: Rivers and riparian buffers, fish migration barriers and Groundwater Source Protection Zones



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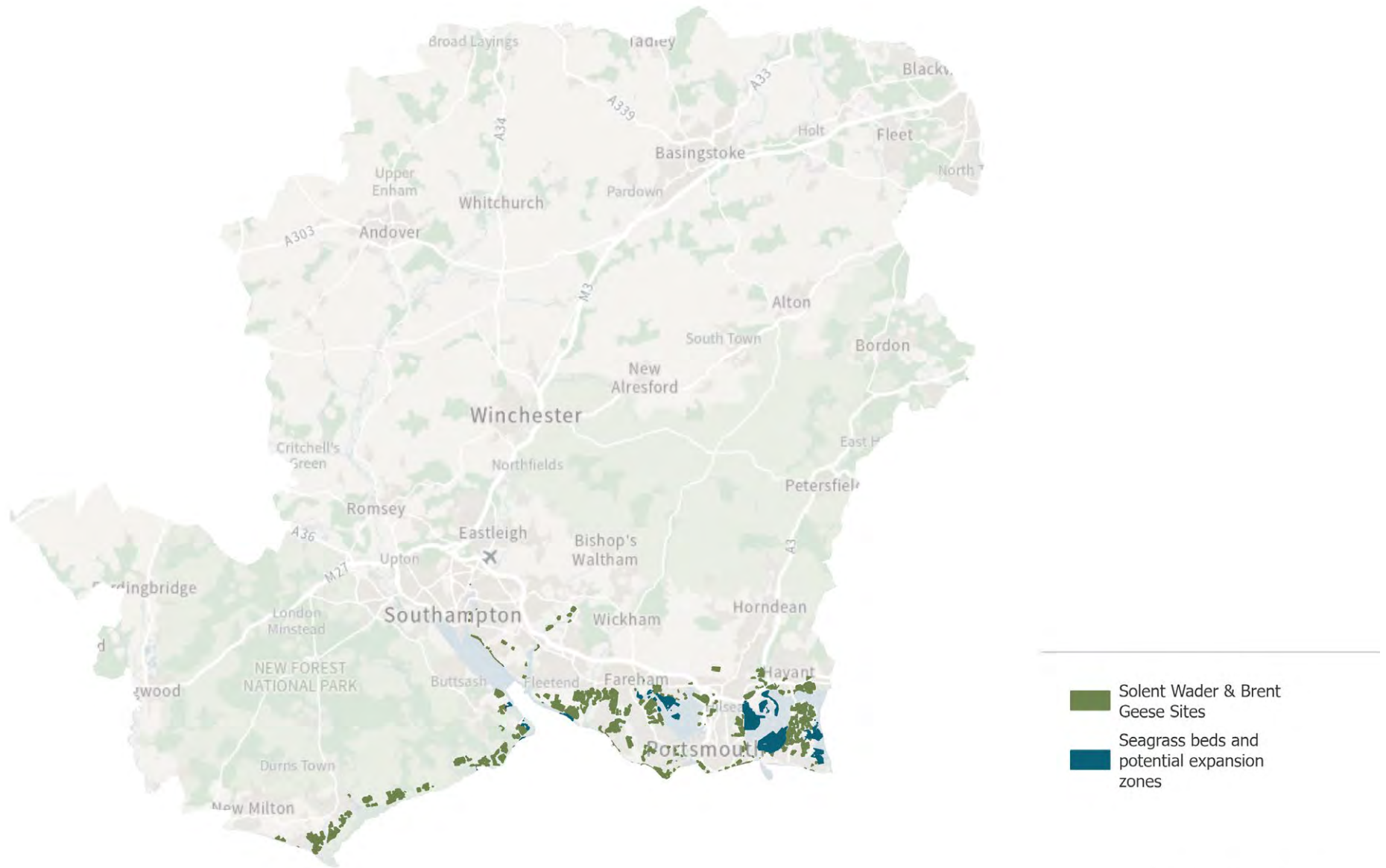
Map 2.10: SINCs and RVEIs, plus other road verges with measures



- Road Verges of Ecological Importance (RVEI) and other road verges
- Sites of Importance for Nature Conservation (SINCs)

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Map 2.11: Solent wader and brent geese sites, and seagrass beds and potential expansion zones



- Solent Wader & Brent Geese Sites
- Seagrass beds and potential expansion zones

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Areas that could become of particular importance for biodiversity (ACB) map

Defra LNRS guidance states that “areas that could become of importance [for biodiversity] must not overlap with areas that are already of particular importance for biodiversity” (APIBs). Therefore, all APIBs have been removed from the Measures Map to create the ACB map. This does not mean that APIBs do not require measures to restore or improve their condition, which is why many SINCs appear on the Measures Map.

The ACB map shows where we can connect and expand existing habitats in order to deliver the Lawton principles¹⁰ of “bigger”, “better” and “more connected” spaces for nature to create resilient and coherent ecological networks. Areas on the ACB map cover 51,477ha, which is 13.4% of Hampshire’s land area.

Sites and areas identified on either the ACB map or measures map will have a BNG ‘strategic significance multiplier’ applied to them. This will incentivise targeted habitat creation and enhancement in these areas. (see Appendix 3).

Whilst the measures and ACB maps show where action for nature recovery will have the most benefit for nature and the wider environment, any efforts to create or enhance space for nature outside of these areas should be encouraged, wherever it is.

It is recommended that advice and guidance is sought from an ecologist or land management adviser when planning to create or enhance habitat. Where schemes potentially impact a Scheduled Monument or non-designated cultural heritage feature, the advice and opinion of Historic England and the local authority historic environment officer, respectively, must be sought. Habitat features such as ancient hedgerows and boundary banks, ancient woodlands, and water meadow systems, and landscape features such as parks and gardens of historic design (including those that are Registered), and protected battlefield sites, have significant cultural and historic value. Heathlands and woodlands often contain burial features and earthworks that have not survived the arable landscape. Historic landscape character can inform woodland and hedgerow creation. Nature recovery schemes should seek to avoid ‘needless or thoughtless damage’ to the historic environment and archaeological sites.

This will determine the most appropriate and beneficial action for nature and the surrounding environment. It is also recommended to seek relevant advice where consent is required. Where there may be multiple habitat opportunities on one site, the landowner may work with an expert and/or ecologist to determine the most suitable habitat to be created in this location. The habitat to be created also depends upon availability of resources and funding to carry out works.

10 Making Space for Nature: A review of England’s Wildlife Sites and Ecological Network (2010) - https://webarchive.nationalarchives.gov.uk/ukgwa/20130402170324mp_/http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf

All sites and areas shown on the Measures and ACB maps are subject to existing land use and ownership constraints, and any prevailing constraints or conditions on site, such as presence of Scheduled Monuments and other historical feature, or being within an existing scheme. Therefore, inclusion on the ACB map does not automatically guarantee that it is possible to create that habitat in these areas. Maps can only be based on best available evidence. Any potential habitat creation schemes will need thorough investigation and appropriate consent.

The ACB map is provided in Figure 2.13, below. The map is also available for viewing in more detail on the LNRS for Hampshire website¹¹.

¹¹ LNRS for Hampshire Website - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/hampshire-strategy>

Map 2.12: Areas that could become of particular importance for biodiversity (ACB) map



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

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3. Meeting national environmental objectives

The areas and measures covered on the Measures Map, if delivered over the period of the Local Nature Recovery Strategy, could contribute to the delivery of national targets (Appendix 1: EIP targets) as follows:

National Objective	How the LNRS can contribute	Area
Biodiversity on land - Restore or create in excess of 500,000 hectares of a range of wildlife-rich habitat outside protected sites by 2042, compared to 2022 levels.	Creation of new native woodland that connects to existing ancient semi-natural woodland.	4,534 ha
	Ancient woodland SINCs managed for priority woodland species.	10,850 ha
	Restoration of planted coniferous ancient woodland (PAWs) situated adjacent or within ancient semi-natural woodland.	4,506 ha
	Lowland calcareous grassland restored or created.	8,572 ha
	Other grasslands restored or created including floodplain grazing marsh.	22,215 ha
	Restoring or creating lowland heath and lowland acid grassland.	9,495 ha
	Restoring historic parkland and wood pasture.	15,307 ha
	Saltmarsh restored/created.	916 ha
	Riparian buffers created (10m wide).	7,450 ha
	Total - a contribution of up to 17% towards the national target.	84,000 ha

<p>Protect 30% of land and of sea in the UK for nature's recovery by 2030.</p>	<p>Total area covered by ACB map and APIB map – 36.8%.</p> <p>Area of SINCs covered by measures – 88% of all SINCs which equals 8.2% of Hampshire out of total SINC coverage of 9.2%.</p> <p>SSSIs cover 13% of Hampshire.</p>	<p>141,576 ha</p> <p>31,597 ha</p> <p>50,107 ha</p>
<p>Woodland cover - Increase total tree and woodland cover from 14.5% of land area now to 16.5% by 2050.</p>	<p>Creation of new native woodland (repeated from above). Takes woodland cover in Hampshire to over 19.5%.</p>	<p>4,534 ha</p>
<p>Manage our woodlands for biodiversity, climate and sustainable forestry.</p>	<p>Ancient woodland SINCs actively managed for priority woodland species (repeated from above).</p>	<p>10,850 ha</p>
<p>Biodiversity on land – Halt the decline of species abundance by 2030. Ensure that species abundance in 2042 is greater than in 2022, and at least 10% greater than 2030.</p> <p>Reduce the risk of species' extinction by 2042, when compared to the risk of species' extinction in 2022.</p>	<p>419 species have been selected for actions proposed in the LNRS, most are rare and declining species, with some on the edge of extinction. The majority fall into habitat assemblages and will benefit from the targeted habitat restoration and creation measures listed above.</p> <p>Ancient woodland SINCs actively managed for priority woodland species (repeated from above).</p>	<p>10,850 ha</p>
<p>Improve water quality and availability –</p> <p>Reduce nitrogen (N), phosphorus (P) and sediment pollution from agriculture into the water environment by at least 40% by 2038, compared to a 2018 baseline.</p> <p>Restore 75% of our water bodies to good ecological status.</p>	<p>10m buffers mapped along all water course (excluding SSSIs) to create new habitat.</p> <p>Floodplain grazing marsh mapped for restoration with measures.</p> <p>All in-channel main rivers mapped for measures to improve physical habitat and water quality.</p>	<p>7,450 ha</p> <p>c20,000ha</p>
<p>Reducing the rates of introduction and establishment of invasive non-native species by at least 50%, by 2030.</p>	<p>Measures mapped for control and eradication of INNS along all water courses.</p> <p>Measures mapped for control and eradication of woodland INNS such as rhododendron where it is known to cause a problem in SINC woodland.</p>	





Local Nature Recovery Strategy

for Hampshire
2025

Part 3: Species Recovery



Contents

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Species priority list	6
Species tables	7

Species recovery

Species abundance and diversity serve as crucial indicators of the health of the natural environment. The government has set legally binding targets to:

- Halt the decline in species abundance by the end of 2030.
- Increase species abundance by the end of 2042 so that it is greater than in 2022 and at least 10% greater than in 2030.
- Reduce the risk of species' extinction by 2042, when compared to the risk of species' extinction in 2022.

Expanding the habitat network is critical, therefore, to increase species abundance, reduce risk of species extinctions and help deliver national targets.

Within the LNRS for Hampshire, the first step in the process of identifying those species to target for species recovery was the creation of an LNRS species longlist. This longlist includes species identified using criteria set by Natural England¹ and that meet national rarity categories, together with additional Natural Environment and Rural Communities (NERC) Act² species, and birds of conservation concern. The longlist included 1,618 species³ for Hampshire. The source of this data came from the Hampshire Biodiversity Information Centre which holds over 11 million species records covering nearly 20,000 species, much

of it collected by the Hampshire species recording groups, volunteer experts whose contributions to recording the wildlife of Hampshire are invaluable.

The second step consisted of creating a more succinct and targeted LNRS species priority list from the longlist. Selection of species for the priority list was informed by a species recovery prioritisation workshop held in March 2024. It was attended by the key species recording groups and local experts, and a number of statutory and nature conservation organisations⁴. The process included removing species:

- that are considered extinct in Hampshire with no chance of returning;
- where there were very few records and not seen for least two decades;
- where populations are thought to be stable or increasing;
- that would require action outside England; or
- where further evidence would be needed.

Some species have been retained where there is a species recovery programme and/or chance of reintroduction, or expansion of range through the effects of climate change.

¹ Species Recovery within Local Nature Recovery Strategies - Advice for Responsible Authorities (August 2023) -

<https://ericnortheast.org.uk/wp-content/uploads/2024/03/Species-Recovery-within-Local-Nature-Recovery-Strategies-v.1-August-2023.pdf>

² Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 - <https://www.legislation.gov.uk/ukpga/2006/16/section/41>

³ Species Long List - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/hampshire-strategy>

⁴ Species Recovery Prioritisation Workshop Report - <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/get-involved>

Habitat recovery classes

To support the compilation of the shortlist, each species was assigned a habitat recovery class, ranging from A – E, based on their nature recovery requirements. Some species were assigned more than one class, where appropriate. The list of habitat recovery classes was presented to the species recovery prioritisation workshop and is set out in Table 3.1, below.

Table 3.1: Habitat Recovery Classes

Category	Description	Benefit from LNRS?	Suitable LNRS species priorities?
A: Needs more/bigger/better connected habitat	<ul style="list-style-type: none"> Species likely to markedly benefit from general creation, expansion, and improved connectivity of good quality habitats in the strategy area. Species with high recovery potential that do not require specific or targeted recovery measures. 	Yes	Probably not. Species are likely to benefit from LNRS measures generally and do not need to be singled out for specific measures.
B: Needs targeted habitat management	<ul style="list-style-type: none"> Species with specific requirements for habitat quality, structure, conditions, or processes above and beyond category A. Species may require specific configurations or complexes of connected or nearby habitat(s), either at site level or across large areas/multiple sites. This may include habitat connectivity measures for species needing support to track climate change. Causes of decline can be addressed with new or improved management practices. 	Yes	Yes

C: Needs improvements in environmental quality	<ul style="list-style-type: none"> Species primarily limited by one or more pressures beyond site level that can be mitigated at LNRS scale or wider scales through collaboration with neighbouring responsible authorities. Examples include better catchment water quality, improved spatial planning of air pollution sources, or mitigation of recreational disturbance. 	Yes	Yes
D: Needs bespoke conservation action(s)	<ul style="list-style-type: none"> Species requiring additional, tailored measures which can be spatially indicated on the local habitat map. Species may need multiple coordinated actions to bring about recovery, including combinations of local actions and national actions where LNRS could address the former. Examples of bespoke, spatially targetable local actions include conservation translocations (such as assisted colonisation for climate change adaptation), control of invasive species, and localised surveys. Species requiring bespoke measures which cannot be mapped should be assigned to category E. 	Yes	Yes
E: Needs better evidence base	<ul style="list-style-type: none"> Species for which there is insufficient evidence or understanding regarding drivers of decline, recovery actions required, and range/population levels. Species for which the current priority is other than on-the-ground action, for example research or off-site conservation. 	Unknown	No. On-the-ground action is not a priority.
F: Needs action outside England	<ul style="list-style-type: none"> Species with low (or very low) recovery potential due to factors constraining recovery beyond England's borders or evidence shows that action in England is highly unlikely to improve species' prospects. This category is likely to apply only to migratory species (e.g., Afro-Palearctic migratory birds affected by hunting). 	No	No
G: Vagrants / occasional visitors	<ul style="list-style-type: none"> Species currently outside their normal breeding or wintering range or normal migration route, without an extant population in the strategy area, and which are not suitable for conservation translocation. 	No	No

Only a few of these species fell into Class A and so do not need targeted measures. They will benefit from the general creation, expansion, and improved connectivity of good quality habitats that the LNRS aims to encourage. Therefore, in identifying priority species, we have focused on those that need actions that go beyond wider habitat restoration.

Species priority list

The LNRS species priorities list contains the individual species and groups of species (assemblages) that the LNRS will focus on supporting. Species assemblages which share habitat requirements are likely to benefit from the same recovery measures. They can therefore be addressed collectively in the LNRS rather than individually. For example, the species within the assemblage ancient woodland birds are largely dependent on the active management and enhancement of ancient woodland to improve structural diversity.

419 species are included in the species priority list, of which:

- 69 are priority species, that do not fit easily into assemblages, with most requiring more targeted and bespoke action, especially those in class D. Two species are in class C where other environmental improvements are required (water quality and air quality improvements). The majority are in a mix of recovery classes where measures are proposed based on current practices and guidance.

350 species are grouped into 37 assemblages, of which five assemblages (covering 120 species) are confined to the New Forest SSSI. These 'New Forest only' species should not, therefore, require management measures in addition to those already covered in the New Forest SSSI/SAC management plans. They are present in the assemblage lists for the purposes of awareness raising. The

remaining species occur within assemblages both in and/or outside the New Forest SSSI where more generic management measures can be applied to their habitat, although for many, they still require more bespoke measures even within an assemblage, this usually applies to one aspect of their life cycle, e.g. for breeding or feeding and is covered in the tables as far as possible. Links within the tables, below, provide more detailed guidance.

Records for some of the species listed may be several decades old, simply due to lack of recorders. New surveys are always recommended to confirm presence before any targeted or bespoke measures are carried out.

The species priorities list represents those species for which species recovery could realistically be progressed within the timeframe of the LNRS period, resources allowing.

Coincidentally the final number of 419 species listed does not differ substantially from the 444 species listed in the previous Hampshire Biodiversity Action Plan (2000). Since the Biodiversity Action Plan, a number of species are either now extinct, doing well or have been added because of ongoing declines.



Species tables

The following tables (Tables 3.2, 3.3 and 3.4), below, present the LNRS for Hampshire species priorities list. Table 3.2 includes individual priority species for which specific actions are required. Table 3.3 covers species assemblages for birds. Table 3.4 covers species assemblages for all other groups. Additionally, Table 3.5 includes those species assemblages for the New Forest SSSI. These species do not form part of the species priority list as the New Forest SSSI has its own statutory measures.

Within the tables, the following groups (taxa) are represented:

- Amphibians and reptiles.
- Birds.
- Fish.
- Fungi.
- Clubmosses, conifers, flowering plants and stoneworts.
- Invertebrates
 - Annelida (leeches).
 - Araneae (spiders).
 - Cnidaria (sea anemones).
 - Coleoptera (beetles).
 - Crustacea (crayfish and shrimps).
 - Diptera (flies).
 - Ephemeroptera (mayflies).
 - Hemiptera (bugs).
 - Hymenoptera (bees, wasps and ants).

- Lepidoptera (butterflies).
- Lepidoptera (moths).
- Molluscs.
- Odonata (dragonflies and damselflies).
- Orthoptera (grasshoppers and crickets).
- Lichens and fungi-related lichens.
- Lower plants (bryophytes and liverworts).
- Mammals.

Brief information on each species is provided in the following tables including information on distribution in Hampshire and links to fact sheets on management guidance or recovery projects such as 'Back from the Brink'.

Another source of guidance for many of the species listed is the recently published (August 2025) Threatened Species Recovery Actions (TSRA) project⁵ which identifies which species are most in need of recovery in England today and the specific actions required to progress their recovery. Led by Natural England, TSRA is the result of a large and diverse partnership of governmental and non-governmental organisations, and comprises a spreadsheet containing the actions and associated data for each species listed.

5 Threatened Species Recovery Actions 2025 baseline - JP065



Table 3.2: Individual priority species requiring bespoke measures

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Amphibians

Epidalea calamita Natterjack toad **D**

Only one current site in Hampshire out of 80 UK sites. Four-year translocation programme to a former site near Woolmer from its main site. Requires open sandy heath and shallow ephemeral pools. **Returning the natterjack toad to Blackmoor | Amphibian and Reptile Conservation**

Bees, wasps and ants

Chrysis fulgida Shimmering ruby-tail **B/E**

This parasitic wasp is associated with scrubby heathland and open woodland where its host is found in the vicinity of aspen and creeping willow. Found in the New Forest and north-east Hampshire. Requires dead wood. More survey and monitoring needed. **Chrysis fulgida | BWARS**

Beetles

Bembidion

quadripustulatum Scarce four-dot pin-palp **B**

Only found at Bishops Waltham North Pond and Hockley Meadows in Winchester. Management should aim at maintaining open conditions and encouraging early successional stages in wetland margins including bare mud adjacent to standing running water.

Donacia bicolora Two-tone reed beetle **C/E**

Found within stands of *Sparganium erectum* on the edge of the River Slea at Kingsley, the River Wey at Bentley and on the Basingstoke Canal in Aldershot. High water quality essential. Water quality improvements and marginal vegetation restoration are required. These are old records, so more survey required to determine presence.

Enochrus nigritus N/A **B/E**

Recorded in New Forest, Bartley Heath and Mortimer. Loss of wet heathland habitats have contributed to its decline. Maintenance and creation of undisturbed, shallow, exposed fen pools is key. These are old records, so more survey required to determine presence.

Erotides cosnardi Cosnard's net-winged beetle **D/E**

One of our rarest and most threatened invertebrates with only one record in Hampshire - on old growth beech at Noar Hill 2006. It requires the continuous presence of sufficient old Beech trees in the landscape and importantly

decaying Beech trees, trunks and stumps to endure habitat continuity. More survey and research are needed.

Cosnard's net-winged beetle - species information guide

Graphoderus zonatus Spangled water beetle **D**

Confined to lakes and man-made pools in Woolmer Forest. Creation of shallow pools in areas of suitable heathland to expand the population out from Woolmer. Grazing needs to be at moderate stocking densities to slow down pond succession and eliminate woody scrub but at a level that allows some patches of sedges and rushes to develop.

Spangled water beetle information

Malachius aeneus Scarlet malachite beetle **D**

Confined to one site in the New Forest, this species requires thatched roofs and open meadows with tall flowering grasses to provide a continuous source of pollen from late April until mid-July. **Scarlet malachite beetle information sheet**

Pachytychius haematocephalus Gilkicker weevil **B**

Fort Gilkicker only. Needs more common bird's-foot-trefoil (host) patches linked up and fencing/signage to stop trampling by the public.

Gilkicker weevil information

Sitaris muralis Flame-shouldered blister beetle **D/E**

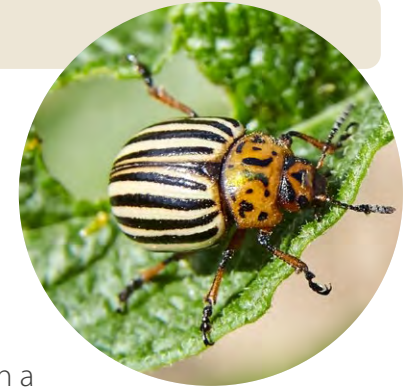
The flame-shouldered blister beetle is only known from one site in the New Forest (Brockenhurst village). These beetles are parasites in the nest of the fairly common hairy-footed flower bees which nest in old brick walls. More information required on its ecology - survey and monitor.

Flame-shouldered blister beetle - New Forest National Park Authority

Bugs

Cicadetta montana New Forest cicada

D
In England, this species has only ever been found in the New Forest and not since the early 1990s. It requires open grassy woodland rides and glades that are in plenty of sunshine, and sunny areas between open grass/heathland and woodland with a scrub edge. No grazing over spring and summer and regular clearance of bracken and scrub. A 2024 Species Recovery Project to reintroduce to the Forest using captured cicadas from Slovenia met with no success.



New Forest Cicada - The Species Recovery Trust

Butterflies

Euphydryas aurinia Marsh fritillary **B**

Requires an uneven patchwork of grazed short and long vegetation by the end of the grazing period, between 8-25 cm high on damp grassland and 5-15 cm on chalk grassland. Requires Devil's-bit scabious but will occasionally use field scabious and small scabious on calcareous grassland. Requires extensive habitat networks of suitable habitat.

Marsh fritillary fact sheet

Hamearis lucina Duke of Burgundy **D**

Requires mosaics of poorly grazed scrubby chalk grassland and sunny clearings in ancient woodland. Main food plants are cowslip and primrose. Scrub is required on downland for shelter and for perching. It is also essential for providing shade to enable cowslips to flourish for longer. For woodland it is important to enhance rides and cut coppice on rotation, providing linkages between glades, rides, coupes.

Duke of Burgundy

Lasiommata megera **Wall** **B/E**
Declined significantly but could be making a comeback. A species possibly affected by climate change. Further data/research needed. Requires short open grasslands, also rides and glades and small patches of bare ground.

Nymphalis polychloros **Large tortoiseshell** **B**
Extinct resident, becoming re-established. Climate changes are in its favour, and it could easily re-establish in southern counties over the next 10-20 years. Not many recent Hampshire records, but regularly turning up on the Isle of Wight. Caterpillars feed primarily on elms but can also be found on aspen, birch, poplars and willows. Willows are needed for nectaring. Planting of disease resistant elms across Hampshire is taking place. More planting is needed in the south. Maintain hedgerows and shelterbelts with Elms. Do not tidy up edges as may contain Elm suckers. **UK Butterflies - Large Tortoiseshell - Nymphalis polychloros**

Satyrion w-album **White-letter hairstreak** **B**
Elm is the sole foodplant and so this species has suffered as a result of Dutch elm disease. Favourite sites are elms on the edge of deciduous woodland, but this species can also be found in more open habitat such as roadside verges, if suitable elms are present. More planting of disease resistant elm is needed, particularly in areas with recent records of white-letter hairstreak, more so in southern Hampshire. Over 4,000 whips have been planted between 2023 and 2025 by the Hampshire Forest Partnership across Hampshire.
UK Butterflies - White-letter Hairstreak - Satyrion w-album

Thecla betulae **Brown hairstreak** **B**
Still a priority species, although it has shown a significant range expansion in Hampshire over the last decade. This species lives in hedges, scrub, and woodland edges where young blackthorn, the primary larval foodplant, is

abundant. The species has declined due to annual flailing which can destroy their eggs. Trim hedgerows once every three to five years, cut no more than a third each year and ensure that the hedges cut in any one year are in different areas. **Hedgerows for hairstreaks - Butterfly Conservation**

Caddisflies

Hagenella clathrata **Window winged sedge** **D**
Only found in four sites in UK. Not doing well except at Ancells Farm and Foxlease Meadows SSSI. Need to prevent scrub encroachment.
Window-winged sedge (caddisfly) - The Species Recovery Trust

Ironoquia dubia **Scarce brown sedge** **D**
Our rarest caddisfly. On western edge of its range, it needs dried up stream beds in summer. Only found in Pamber Forest SSSI stream. More targeted survey needed to confirm presence. **Scarce brown sedge (caddisfly) - information sheet - Buglife**

Clubmoss

Lycopodiella inundata **Marsh clubmoss** **D**
Found on wet heaths and bogs. Not uncommon in the New Forest, with scattered records in north-east Hampshire heaths, nearly all on SSSIs. Endangered and a Hampshire Responsibility species. Protect sites and maintain managed heath and hydrology. Create areas of bare exposed peat to boost regeneration. Expand habitat to improve connectivity.
Marsh clubmoss - The Species Recovery Trust

Conifers

Juniperus communis Juniper

D

Has declined on the chalk and is now very rare in the New Forest.

Early successional habitat is needed for juniper to regenerate. Scrape back to create suitable grassland habitat then seed with juniper, preferably collected from bushes locally. Trial plots taking place at Martin Down, Butser Hill, and Danebury Hill Fort.

Saving England's Lowland Juniper - Plantlife

Crustacea

Austropotamobius

pallipes

White-clawed crayfish

D

Once widely found in all Hampshire's chalk streams. Now only found in the Candover Stream, Cheriton Stream and River Arle in the upper reaches of the Itchen. Requires unpolluted shallow chalk streams and eradication of the North American signal crayfish, a carrier of the crayfish plague which has wiped out most native crayfish populations. Has been captive released back into the upper reaches of the Itchen by the Hampshire & Isle of Wight Wildlife Trust. Expand into other suitable 'Ark' sites where new populations can be established, safe from non-native crayfish and crayfish plague. Avoid removing downstream in-river structures where these are protecting white-clawed Crayfish from invasive signal crayfish and other non-native crayfish species.

White-clawed crayfish information sheet - Buglife



Dragonflies and damselflies

Somatochlora metallica

Brilliant emerald dragonfly

B

Found in north-east Hampshire around heathland pools and the Basingstoke Canal. Water quality is important for this species so maintaining water levels and quality is essential, along with sensitive cutting of emergent vegetation, dredging and pruning. Prefers shady edges with overhung trees. Target survey work to map emergence sites.

Fish

Salmo salar

Atlantic salmon

C/D

The River Test and River Itchen are two of only six chalk streams in the UK that are home to populations of Atlantic salmon. Measures include; removal or modification of water control/in-river structures that impede or delay upstream and downstream migration of adults and smolts, respectively; creation of a network of salmon sanctuary areas; targeted habitat enhancements and gravel cleaning to optimise spawning success (by keeping gravels clean) and juvenile success at key spawning locations; strategic tree planting to keep rivers cool and below salmon stress temperature thresholds; education of river users (wild swimmers and anglers) to avoid impacts and reduce disturbance of spawning adults, gravels and juvenile life stages (eggs and alevins) which live within the gravels; fisheries management measures to protect salmon populations (including fishing method restrictions and mandatory catch and release) and management for all life stages of salmon including riparian and in-river vegetation management and trout stocking.

See **Itchen Salmon Delivery Plan - Test and Itchen Association**



Flies

Asilus

crabroniformis

Hornet robberfly

B

Heaths and grassland across Hampshire. The conversion of heaths and meadows to species-poor improved grasslands or arable land, replacing cattle with sheep and even under-grazing on nature reserves have reduced the robberfly's range. The robberfly larvae prey on dung beetle larvae from cattle dung. Sites require cattle grazing on insect-rich heaths and meadows.

Hornet robberfly - species management sheet - Buglife

Flowering plants

Allium oleraceum

Field garlic

D

Very rare. Found recently on several road verges in north Hampshire (Vice County 12) with some older records elsewhere. Likes grassy arable field margins, tracksides and road verges. Ensure all sites are managed by appropriate cutting to prevent dense grassland and scrub, avoiding July and August when flowering. Look to get the recent road verge into Road Verges of Ecological Importance (RVEI) management.

Anacamptis morio

Green-winged orchid

B

Indicator of high-quality grassland and declining. Maintain low soil fertility and ensure grazing is light and paused especially during flowering and seed-setting periods.

Arabis glabra

now *Turritis glabra*

Tower mustard

D

Very rare. Main site at Kingsley on steep banked RVEI, plus another at Woolmer.

Road verge sites requires at least annual and thorough scrub clearance and disturbance to ground to maintain open conditions. The seeds seem to be long-lasting, so populations have the potential to reappear on newly opened ground.

Cephalanthera rubra

Red helleborine

D

Very rare - one of only three sites in UK. Requires the dappled shade of clearings within mature beechwoods. Its intolerance of both shade and light-assisted competition mean that its survival requires careful, well-informed management of the habitat, and fencing is needed to discourage grazing by deer and rabbits. Recent funding received from Natural England for selective tree-felling, erection of an enclosure to protect the colony from trampling and browsing, and leaf-litter removal.

Cynoglossum

germanicum

Green hound's-tongue

D

Rare and newly discovered in Hampshire in Rushmoor with significant populations. Maintain open woodland/plantation with bare ground and some disturbance. However, avoid soil compaction and waterlogging to retain important mycorrhizal fungi. There is an ongoing project under NE licence with the Species Recovery Trust to translocate individuals and try to expand the range. See - **Green hound's-tongue - The Species Recovery Trust**

Daphne mezereum

Mezereon

D

North Hampshire populations, all in (wet) woodland situations. Protect in situ with no disturbance. Maintain open conditions. Better management required at Greywell Moors SSSI.

Epipactis palustris **Marsh helleborine** **D**

Few sites in Hampshire outside of SSSIs. Found in neutral to calcareous fens, marshes, damp pastures, and meadows. Favours open unshaded flushed or seasonally inundated areas in which the intensity of competition from other vegetation is low. Important to maintain water levels.

Filago lutescens **Red-tipped cudweed** **D**

A Schedule 8 species in special management on an RVEI. Requires annual deep rotavation of the road verge over the winter, and extending further to include scrubbed up areas nearby, where it used to flourish.

Gentianella campestris **Field gentian** **D**

Rare in the New Forest and subject of a Species Recovery Trust initiative. Maintenance of habitat and appropriate grazing is essential. Extremely vulnerable to summer droughts.

Field gentian - The Species Recovery Trust

Gnaphalium sylvaticum **Heath cudweed** **D**

Rare and declining, found on the north-east Hampshire heaths in open areas. No longer present in the New Forest. Occurs on heaths, along the edges of forest rides, and tracks in areas of former heathland. Needs open conditions on infertile, damp or dry, sandy or gravelly acidic soils. Requires sporadic small-scale disturbance (e.g. forestry vehicles) to expose seedbank and create open conditions for germination. Needs research into its ecology and decline. Mostly on SSSIs.

Gymnadenia densiflora **Marsh fragrant-orchid** **D**

Habitat is rare, mostly SSSIs at Greywell Fen and Mapledurwell Fen. Found in base-rich wet meadows, fens, ditches and flushes mostly on SSSIs. Maintain hydrology and open conditions, grazing and no inputs - SSSI Site Management Plans.

Lobelia urens **Heath lobelia** **D**

Seven UK localities and only one in Hampshire, mostly within SSSI/SINC on edge of New Forest but with potential expansion. Subject of a Species Recovery Trust project. Requires scrub removal, disturbance creation for bare ground and introduction of herbivores.

Heath lobelia - The Species Recovery Trust

Lythrum hyssopifolia **Grass-poly** **D**

A Schedule 8 species, usually found in gravelly hollows, tracks, and ruts. Needs disturbance. Maintain conditions at its one site at Bourley Valley SSSI. Investigate translocations and potential habitat enhancement and expansion.

Melampyrum arvense Field cow-wheat **D**

Only four sites in UK, one in Hampshire Skew Road RVEI at Portsdown where it is expanding onto the M27 motorway verge. This is a deliberately introduced population. The species favours dry chalky soils and requires open conditions. However, its parasitic nature means that full habitat clearance cannot be carried out, and a range of suitable host plants have to be retained alongside the cow-wheat. **Field cow-wheat - The Species Recovery Trust**

Pilularia globulifera Pillwort **D**

Although still widespread in the New Forest it has declined in areas in north-east Hampshire due to habitat loss and lack of management. Found in very shallow pools and pond edges on gravel/sandy/silty acidic substrates it colonises newly exposed pond edges but then declines as other species take over. Requires active management or poaching, and seasonally fluctuating water levels

Pillwort - Freshwater Habitats Trust

Pinguicula vulgaris Common butterwort **D**

Acid bogs. Eelmoor Marsh SSSI is the only site with recent records. Important to maintain the groundwater quality and quantity and extensive light grazing.

Fungi

Battarrea phalloides Sandy stiltball **D**

Battarrea phalloides has very site-specific habitat requirements and is found growing solitary to scattered on dry, sandy hedge banks sometimes growing amongst elm suckers. Hampshire is not a stronghold, but we should preserve what we have and encourage its spread to suitable sites. One site in the Corhampton area. Raise awareness with landowner, maintain habitat, and possible translocation? Survey and monitor.

Grasshoppers and crickets

Gryllotalpa gryllotalpa Mole cricket **B**

One New Forest population verified, 2014 to 2022 at Ladycross. Occurs on damp grazed New Forest lawns with seepages. Continue to monitor and maintain habitat, potential to discover other populations in the area and outside the New Forest. **Mole Cricket in the New Forest - ResearchGate**

Gryllus campestris Field cricket **D**

Was extinct but reintroduced at Shortheath Common SSSI in 2000 and 2001. It requires well managed heath with areas of sandy bare ground. Small scrapes or turf stripping are essential for maintaining populations.

Conserving our Wild: field crickets – a nature recovery project

Lichens

Placidium pilosellum N/A **B/E**

Only one record at Micheldever Spoil Heaps SSSI. Needs survey to establish whether still present and evaluation as to habitat requirements. Raise awareness with local Natural England Team to safeguard location.

Rocella phycopsis N/A **B**

Two locations in Hampshire: Portchester Castle churchyard and Hayling Island (Gable Head) churchyard on ancient stonework. Has been seen recently but not surveyed in detail. Maintain conditions and raise awareness with church wardens to safeguard locations.

***Thalloidima sedifolium* N/A**

B

One old location at Portsdown Hill SSSI. Needs new survey to establish whether still present. More recent records found at and near Micheldever Spoil Heaps SSSI. Best populations on the fuel tank site on railway land just off the SSSI. The species will soon become Red-listed. Maintain close sward and raise awareness with land managers to safeguard locations.

Usnea florida

Witches' whiskers lichen

C

Occurs on twigs and small branches, and very rarely on trunks, of a wide range of acid barked trees and shrubs such as hawthorn, birch, oak, and larch. Very susceptible to air pollution. Occurs almost wholly within the New Forest but not on old growth. Buffer known and potential host sites from pollution, e.g. dense tree and shrub planting. May expand naturally if air pollution continues to reduce.

Liverworts and mosses

Cephaloziella

baumgartneri

Chalk threadwort

D

Nationally rare, in Hampshire only present at Netley Abbey. Protect and monitor species in situ. Has potential to be translocated to other old limestone buildings, e.g. Beaulieu Church.

Pallavicinia lyellii

Ribbonwort

B

A thallose liverwort, in Hampshire typically found at the base of Alder trees in wet woodland, or sometimes on tussocks of *Carex paniculata*. During a recent survey of the Hampshire populations by Callaghan (2019) it was confirmed from only three of about six of its former sites (all VC11), but at two of these only in very small quantity. The other more extensive population at Cadnam Common is still thriving. In September 2020 a new large population was discovered at

Withycombe Shade on the Beaulieu River, in the east of the New Forest.

Status, conservation and ecology of *Pallavicinia lyellii* (research paper)

Riccia fluitans

Floating crystalwort

C

An aquatic species, found as scattered plants or in dense masses floating on the surface of water in ponds, ditches, canals, gravel pits and marl pits. It prefers to grow in mesotrophic to eutrophic conditions. An indicator of good quality freshwater habitat, it has never been common and has declined significantly in Hampshire with the main stronghold likely to be the Basingstoke Canal. Old sites include Breamore Park, Sowley Pond and Fleet Pond. It also occurs at Swanwick Lakes nature reserve and was recently discovered at Allbrook Brickpits where habitat management might be needed. **Floating crystalwort - Atlas of British and Irish Bryophytes**

Mammals

Arvicola amphibius

European water vole

C/D

Water voles have undergone one of the most serious declines of any wild mammal in Britain during the 20th century. The intensification of agriculture in the 1940s and 1950s caused the loss and degradation of habitat, but the most rapid period of decline was during the 1980s and 1990s as American mink spread. Between 1989 and 1998, the population fell by almost 90 per cent. Water voles need dense vegetation to provide food and shelter from predators and soil that they can easily dig into to create burrows. 10m riparian buffers are recommended to prevent grazing up to the waters' edge to allow waterside vegetation to recover and prevent the banks being trampled and poached. Ensure that trees and scrub are managed so that they don't dominate the watercourse. Grassy buffer strips allow water voles to disperse, and provide links between suitable patches of habitat and other water vole populations. Only cutting one bank a year means there is always refuge for water voles to escape

to. Cutting the vegetation too short will cause slower regrowth meaning water voles lose cover for longer. Carrying out cutting late in the summer reduces the disturbance to water voles during the breeding season. Also needs bespoke management of mink population.

Helping water voles on your land - information guide

Castor fiber European beaver D/E

Whilst recognising that beaver activity can increase the complexity and diversity of a river system in terms of wetland habitat, species, and holding back the water, further research is needed. This research should establish the potential negative impacts that any reintroduction might have on local wetland communities and species of conservation concern. This is as a result of beavers' changes to hydrology, their burrowing and feeding, adverse impacts on fish migration and spawning grounds, increased sedimentation, and localised flooding. The species has been reintroduced at Ewhurst Park as part of a rewilding scheme. The New Forest Biodiversity Forum is considering all these impacts in relation to any call for re-introduction into the New Forest, although it is already believed to have established itself in the nearby Avon. Other sites are being identified for potential re-introduction.

Beaver reintroduction and its effects on freshwater biodiversity in Britain — Freshwater Biological Association

Erinaceus europaeus West European hedgehog A/B/E

Hedgehogs live in a variety of habitats including woodland edges, hedgerows, parks, and gardens. More research is needed into rural hedgehog populations. For urban populations, wildlife friendly gardens, connectivity between gardens, green corridors, plus small mammal road warning signs, are ways to maintain and increase populations. **Hedgehog (Erinaceus europaeus) - Woodland Trust**

Martes martes Pine marten B

Recently re-introduced into the New Forest, the pine marten is now well established in several areas and successfully breeding. Aim to increase their population across the county. Work with the Vincent Wildlife Trust to assess feasibility of areas and improve and connect habitats before considering any re-introduction schemes. The pine marten predominantly inhabits forested habitat and has a home range of 1-6km. They are particularly vulnerable to road traffic and predation by foxes. Consider also the potential deleterious impacts pine martens might have on other species, if re-introduced. **Pine marten – The Vincent Wildlife Trust**

Micromys minutus Harvest mouse B

Nests in tall tussock grasses, reedbeds, ditches, and brambles, along hedgerows and woodland edges. Create and maintain grassy headlands around arable fields. Cut them on a 3–5-year rotation so that there is always suitable habitat for breeding, feeding, and overwintering. Monitor populations. More intense survey may well reveal additional populations, as has happened with the Selborne Landscape Partnership. **Farmers help bring back rare harvest mice to Hampshire - Farmers Weekly**

Mustela putorius Polecat A/D

The polecat, a solitary animal, occupies a variety of habitats, from farmland to woodlands to coastal sand dunes, and it typically dens in rabbit burrows, log piles, haystacks and farm buildings. Any re-establishment of polecats may be limited by the high density of road networks and traffic volume, and it is likely they will expand their range by themselves. Landscape-scale restoration of semi-natural habitat can only aid its recovery. However, covert releases of captive-bred polecats have masked their expansion and cross breeding with ferrets means many are not pure polecat. **Polecat – The Vincent Wildlife Trust**

Molluscs

Helicodonta obvoluta Cheese snail

B/E

UK stronghold in South Downs, old beech forest (few sites), West Wood Winchester, East Hampshire Hangers, and Buriton chalk pit. Little appears to be known other than it requires old growth beech woods on the chalk, living in the leaf litter. Protect and maintain key sites, expand where possible to enable habitat continuity and ensure landowners are aware.

Cheese snails - The Living World of Molluscs

Vertigo (Vertigo)

moulinsiana

Desmoulin's whorl snail

B

Most recent records include Winnal Moors and The Moors at Bishops Waltham, possibly still present in Basing Fen and Mapledurwell Fen. Requires long-established calcareous wetlands, usually where there is a tall growth of sedges, reed-grass or reed along with a wide variety of other emergent waterside vegetation. High ground water levels throughout the year are essential. Undertake further surveys to clarify current distribution and ensure landowners are aware of the presence and importance of conserving this snail, and appropriate methods of habitat management for its conservation. Expand habitat into suitable adjacent areas, encouraging growth of tall swamp vegetation. **Desmoulin's whorl snail (*Vertigo moulinsiana*) - JNCC**



Moths

Adscita statices

Forester

B

Present in only two locations - Odiham Common SSSI and Martin Down SSSI. Management through light grazing to control scrub encroachment is recommended, but overgrazing is detrimental. Needs a medium-tall sward with abundant sorrel and nectar plants. As it has relatively poor dispersal, the focus must be on ensuring the optimum management of existing sites and the restoration and creation of semi-natural grassland in close proximity to existing colonies. **Forester moth - protecting rare pollinators - information guide**

Agonopterix atomella

Greenweed flat-body moth

B/E

This species is likely to still be present at Needs Ore, part of North Solent SSSI/ NNR, but access to survey is not permitted. Host plant is dyer's greenweed. Sites need to be actively managed to prevent coarse grasses and scrub from overgrowing and eliminating Dyer's Greenweed. This can be achieved through grazing or winter mowing. Look to SSSI management plan to evaluate population and measures required. **Agonopterix atomella - Hantsmoths**

Aleucis distinctata

Sloe carpet

B/E

Confined to the New Forest and requires additional survey. Larva feeds on Blackthorn - preference thought to be unmanaged bushes or thickets, although more research is needed on habitat requirements.

Sloe carpet - fact sheet - Butterfly Conservation



Coleophora vibicella **Large gold case-bearer** **B/E**
Found in rough pastures and woodland rides, where it feeds on the leaves and flowers of dyer's greenweed. Declining, and now very restricted - only recorded recently from Needs Ore (2015), Hayling Billy (2022), and Botley Wood (1995). These are nationally important colonies in Hampshire. Requires survey to determine current status and habitat needs, but avoid heavy summer grazing. As per Greenweed flat-body moth. **Moths on dyer's greenweed - fact sheet - Butterfly Conservation**

Cucullia lychnitis **Striped lychnis** **B/D**
Hampshire is an important national stronghold for the species, and managing road verges for dark mullein is important. Re-seed appropriate areas with dark mullein to expand populations.
Striped Lychnis | Butterfly Conservation

Cyclophora pendularia **Dingy mocha** **D/E**
Found in the New Forest and fringes of the New Forest, this species persists at very low density, amongst small bushes of willow in boggy areas. Recommendations from Butterfly Conservation for a site in Dorset include rotational cutting of the willow on a 3-year cycle so there will be a continuous supply of grey willow in the right condition to support the moth. Grazing should ideally be restricted so that it takes place between mid-September and mid-April. If required at other times, the density of stock should be low so that the new growth of grey willow, on which the larvae of dingy mocha depend, is not denuded. More surveys and landowner awareness needed. **Report on dingy mocha moth survey - Butterfly Conservation**

Noctua orbona **Lunar yellow underwing** **B**
Nationally scarce (Nb) in heaths, downland and open woodland. In Hampshire there are strong colonies in the Test Valley, at Harewood Forest, Porton Down, and Cholderton. They feed on a variety of grasses and herbaceous plants. Low intensity grazing is required, or where in woodland rides, the rides should be kept open and sunny by periodic clearance of rideside trees and scrub. Marginal strips of longer vegetation should be cut on rotation and not all cut in any one year. **Lunar yellow underwing - Butterfly Conservation**

Pechipogo strigilata **Common fan-foot** **B**
In Hampshire, its decline mirrors the national trend and until recently was only reliably found in Pamber Forest. However, in recent years, it has been found to have a relatively strong population in the Harewood Forest area. Preference for unmanaged mature oak woodland (damp). Larvae feed on pedunculate oak. Management requirements unknown, although lack of active management and/or the tidying of fallen trees and branches may have reduced potential habitat.
Common fan-foot - Woodland Wildlife Toolkit

Reptiles

Vipera berus **Adder** **B**
90% of adder populations surveyed have declined in UK. Requires undisturbed open heath/woodland mosaics with structural diversity. Habitat expansion and connectivity important.
Adder - Amphibian and Reptile Conservation Trust

Spiders

Agyneta mollis

Thin weblet

B

Local and scarce with significant decline. Only seven records post 1992. Bias towards damp grassland and wet woodland in the New Forest and southern Hampshire near Bishops Waltham SSSI, Idsworth Down, and Browndown. Also, near Noar Hill, Flagpond Copse, and Botley Wood SSSI. Target low level grazing of grasslands to maintain structural diversity on grasslands outside the New Forest.

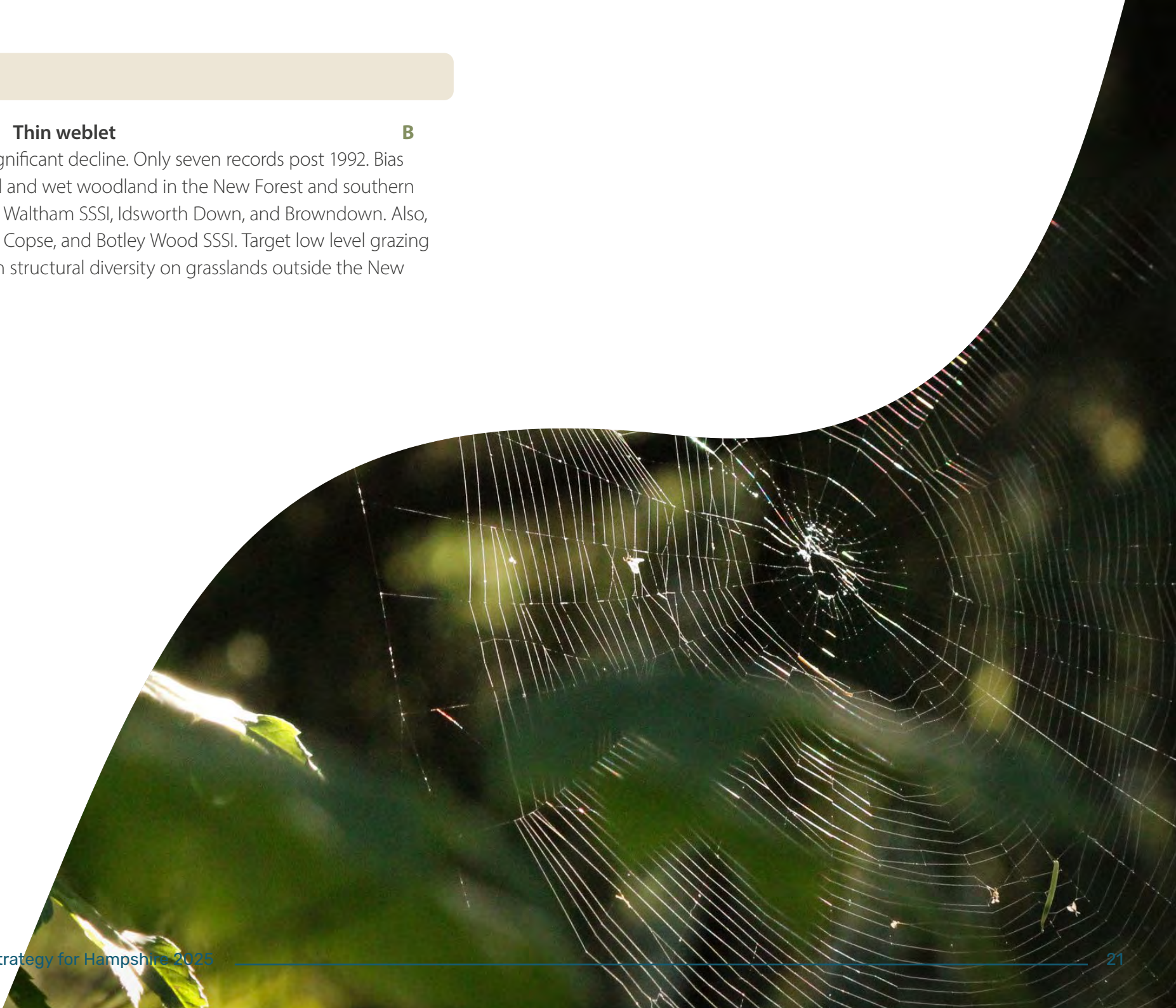


Table 3.3: Priority species assemblages for birds

Priority species assemblages for birds - breeding waders – wet grassland and heathland

Measures – Refer to habitat measures G2(PMP), G2(FGM), H2, H3, FR1, C2, C3, C4, C7

Across Hampshire, there has been a huge contraction in range for all these breeding birds as a result of drainage and other agricultural practices, predation and disturbance from human activity. Restore and expand areas of wet meadow, heathland, mire, and saltmarsh. Graze (ideally cattle) to provide a mosaic of suitable sward heights for nesting and feeding. Minimise grazing during the breeding season to reduce chance of trampling from livestock. Create small wader scrapes, hollows and pools to provide muddy areas for feeding. Consider use of predator fencing to protect nests and chicks. Minimise disturbance from human activity during breeding season.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Gallinago gallinago Snipe A/B
Snipe conservation - advice for farmers - RSPB

Numenius arquata Curlew A/B
Curlew conservation - advice for farmers - RSPB

Tringa totanus Redshank A/B/C
Redshank conservation - advice for farmers - RSPB

Vanellus vanellus Lapwing B/D
 Declining nationally. Also found on heathland and farmland.
Lapwing conservation - advice for farmers - RSPB



Priority species assemblages for birds – birds of ancient coppice woodland

Measures – Refer to habitat measures W2, W3, W4, W8

Reintroduce coppicing, varying lengths of rotation to benefit different species e.g. tree pipits like newly coppiced areas, whereas medium and long rotation benefits others. They should be reasonable sized blocks to create a coarse mosaic of larger patches of scrub and coppice for nightingale and other species. Carry out some selective thinning to allow more light to reach the understorey along with the widening of rides. Creation of glades to increase variety of structure. Remove invasive woody species. Avoid heavy disturbance or a sudden or dramatic change in woodland structure which may impact hawfinch. Improve connectivity within the wider landscape through creation of scrubby areas, hedgerows, and soft edges between woodland and open habitats. Control deer numbers. Monitor populations to get a better idea of breeding range especially for woodcock, tree pipit and honey buzzard. Retention of deadwood where possible. Tackle recreational disturbance including predation from domestic dogs and cats.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

<i>Anthus trivialis</i>	Tree pipit	A/B/E
Tree pipit also inhabits heath and farmland, so would need more specific management for heathland and general measures for farmland. For woodland, provide rides and glades, restore/maintain coppice with large coupes and/or sequential cutting of adjacent coupes (tree pipit will use early stage of coppice,		

preferably with standards) with scrubby, open mosaics at woodland edge (scattered trees in more open habitat).

Woodland Wildlife Toolkit

<i>Coccothraustes coccothraustes</i>	Hawfinch	A/B
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Thin neglected mature woodland to improve structural diversity and create new woodland ensuring opportunity for thicket stages.

Woodland Wildlife Toolkit

<i>Dryobates minor</i>	Lesser spotted woodpecker	A/B
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Thin mature woodland to encourage crown development, increase deadwood (standing and in-tree snags), retain, and replenish standards in coppice. Create new woodland to increase connectivity.

Woodland Wildlife Toolkit

<i>Pernis apivorus</i>	Honey-buzzard	A/B
Honey-buzzard BTO - British Trust for Ornithology		

<i>Pyrrhula pyrrhula</i>	Bullfinch	B
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Declining nationally. Management should include enhancing shrub and ground layer by opening up the canopy and creating rides and edges to encourage scrub edge and seeding herbaceous plants.

Bullfinch | BTO - British Trust for Ornithology

<i>Scolopax rusticola</i>	Woodcock	A/B/D
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Low breeding but high wintering numbers.

Woodland Wildlife Toolkit

Luscinia megarhynchos **Nightingale** **A/B/F**

Rapidly declining, only a few birds left in Hampshire. Scrubby habitats have become increasingly important over the last 30 years. For woodlands, ensure all stages of coppice are present at all times (sequential coppice of adjacent coupes, Nightingale favour medium growth stage (4-10yrs)). Allow dense scrub to develop along wood edge and in coppice for feeding and nesting habitat (takes ~7yrs for scrub to be sufficiently dense for breeding). Thin canopy to encourage dense shrub layer (incl. bramble) and enhance rides/glades to encourage a scrubby edge) **Woodland Wildlife Toolkit**
Managing scrub for nightingales - BTO

Muscicapa striata **Spotted flycatcher** **A/B/F**

Declining but doing okay in the New Forest. For woodlands, improve structure of woodland, enhance rides with irregular edges, retain/enhance deadwood for nesting and provide invertebrates for feeding, retain climbers such as ivy and honeysuckle, thin woodland edges to create diverse structure and provide invertebrates **Woodland Wildlife Toolkit**

Phoenicurus phoenicurus **Redstart** **A/B**

In Hampshire, only nest in the New Forest and doing well. Population has contracted elsewhere in the country. Management includes thinning to encourage crown growth (favour bigger trees) and buffer strips to woodland edge with semi-natural vegetation but open aspect. Retain deadwood (standing, fallen and in tree) **Woodland Wildlife Toolkit**

Phylloscopus sibilatrix **Wood warbler** **A/B**

Woodland bird. New Forest is a stronghold. Declining fast. Requires selective thinning to encourage crown development but retain shade and sub-canopy open structure. Restructure even-aged woods by small coupe felling or coppice (0.5-1 ha). Retain deadwood **Woodland Wildlife Toolkit**

Poecile palustris **Marsh tit** **A/B**

Requires thinning of crowded, immature woodland to encourage shrub layer regeneration, and/or restoring a percentage of neglected coppice (e.g. 15-20 yrs old) on long rotation coppice cycle with standards – young dense coppice required for foraging. Marsh tit breed low down in neglected coppice, so retention of some neglected coppice is recommended. Retain deadwood as nests in holes (including deadwood low in shrub layer) **Woodland Wildlife Toolkit**

Priority species assemblages for birds - farmland birds

Measures – Refer to habitat measures F1, F2, F3, F6, HD1

Aim for a range of different crops and habitats, including fallow areas throughout the year, and retain areas of stubble. Create and manage set aside areas that could support a mosaic of scrub, species-rich grassland, rough grassland, beetle banks, some bare ground, and ponds or small wader scrapes to provide water and muddy edges. Reduce pesticide use to increase insect and small mammal numbers, and to reduce secondary poisoning of barn owls. Manage hay meadows to produce a range of seeds for seed eating species. Create areas of scrub and avoid cutting all hedgerows annually to allow them to develop.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Burhinus oedicephalus Stone-curlew B/D

Specific measures for stone curlew and lapwing - create 1-5ha uncropped fallow plots with 30% bare ground. Retain the plot until the crop is harvested from late July for lapwing and late September for stone-curlew. Monitor breeding while protecting nests and chicks.

Create nesting plots for lapwing and stone curlew – Farming

Cuculus canorus Cuckoo A/B/F

Declining. Significant cuckoo decline in the New Forest. The principle host is dunnoek, so to improve nesting opportunities, opening up the canopy in woodland to allow the shrub layer to develop may increase nesting opportunities for dunnoeks and, therefore, cuckoos.

Cuckoo decline | BTO - British Trust for Ornithology

Emberiza calandra Corn bunting B/D

Red listed, some recovery. **Corn bunting conservation - advice for farmers - RSPB**

Emberiza citrinella Yellowhammer B

Red listed, limited numbers on heaths. **Yellowhammer conservation - advice for farmers - RSPB**

Falco tinnunculus Kestrel B

Wider farmland, declining. **Kestrel | BTO - British Trust for Ornithology**

Linaria cannabina Linnet B

Linnet conservation - advice for farmers - RSPB

Vanellus vanellus Lapwing B/D

Lapwing conservation - advice for farmers - RSPB

Perdix perdix Grey partridge B

Grey partridge conservation - advice for farmers - RSPB

Streptopelia turtur Turtle dove A/B/F

Also a heathland bird. Has declined rapidly, and now only found at 2-3 sites in Hampshire. **Conservation advice from Operation Turtle Dove**

Tyto alba Barn owl **B/D/E**
 Include erection of nest boxes in pairs (within 500m of each other) at a density of about one pair per 500m square in barns or trees.

Barn owl conservation - advice for farmers - RSPB

Alauda arvensis Skylark **B**
 Declining nationally. **Skylark conservation - advice for farmers - RSPB**

Priority species assemblages for birds – heathland birds

Measures – Refer to habitat measures H1, H2, H3, H5

Improve connectivity within the wider landscape by connecting open areas to wide rides within woodlands and scrubby edges to woodlands. Restore open habitats within woodlands, especially heathland, with scattered trees. Ideally these areas should be grazed to create structural diversity and encourage invertebrates. Create and maintain areas of bare ground and short, sparse swards with tussocky areas nearby for woodlarks. Monitor populations, especially those away from heathlands. These species breed in a range of habitats except for Dartford warbler, which is primarily gorse and heathland, although has been found along the coast. Creation of ponds and wet areas where suitable, to support dragonflies and damselflies for hobbies.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Lullula arborea Woodlark **B**
 Woodlark found increasingly off heaths. **Woodlark - Norfolk Biodiversity Action Plan**

Curruca undata Dartford warbler **B**
 Doing quite well but can be severely impacted by harsh winter weather. **Dartford Warbler | BTO - British Trust for Ornithology**

Falco subbuteo Hobby **B**
 Possible decline in woodlands due to goshawks, otherwise doing okay. **Hobby | BTO - British Trust for Ornithology**

Caprimulgus europaeus Nightjar **B**
 Also breeds in marginal habitat on farmland and more recently on the coast at Keyhaven Marshes (SSSI). **Woodland Wildlife Toolkit**



Priority species assemblages for birds - birds of rivers, lakes and reedbed

Measures – Refer to habitat measures R1, R2, R6, P4, FR2
 Require general wetland and river improvements, including better water quality. Wetland and reedbed management aimed at bitterns also benefits other species including marsh harriers, bearded tits, and a range of invertebrates, fish, and mammals. A 2024 paper in *British Birds Journal* (White et al.) identified key actions to follow for encouraging bitterns to breed. Management should be adapted to reflect this and other detailed guidance on reedbed management. Pochard decline may be due to mild winters reducing the need to migrate. Continue to monitor and, if necessary, control mink and other non-native species.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

<i>Aythya ferina</i>	Pochard	B/C
Lakes and ponds. Red listed, some breeding - priority for the small breeding population. Pochard BTO - British Trust for Ornithology		
<i>Botaurus stellaris</i>	Bittern	A/B
Slowly increasing in numbers but not bred yet. Bitterns: booming, or boom and bust? Bitterns: booming, or boom and bust? - British Birds		

<i>Circus aeruginosus</i>	Marsh harrier	A/B/C
Coastal marsh and reedbeds. Increasing the restoration and re-creation of reedbed habitats for other reedbed specialists is likely to have helped Marsh Harriers.		

<i>Panurus biarmicus</i>	Bearded tit	A/B
Nests in three locations. Bearded tits depend on Phragmites reedbeds and therefore habitat availability is likely to limit their distribution. The creation and restoration of reedbeds to help other specialist species, such as bittern, is therefore likely to have helped drive population increases.		

<i>Alcedo atthis</i>	Kingfisher	A/C
Severe winters are main driver to decline but improvements to water quality and the provision of new wetland habitats will benefit this species. Kingfisher BTO - British Trust for Ornithology		

<i>Charadrius dubiosus</i>	Little Ringed Plover	B
Breeds on flat, undisturbed gravel with scattered pools, on gravel islands in rivers and also partially flooded fields. Main threats are disturbance and predation. Mesh cages could help protect eggs and chicks from predation, especially on shingle islands. Little Ringed Plover BTO - British Trust for Ornithology		

Priority species assemblages for birds - shore birds – breeding, migrating and wintering

Measures – Refer to habitat measures C1, C2, C3, C4, C5 and C7

Protect from disturbance and predators. Wardening is key. Create new breeding areas including use of mesh-sided rafts, shingle islands, scrapes, and pools to benefit species all year. Consider use of mesh fencing and nest trays being trialled at Calshot for oystercatchers, and at Gunner Point and Hurst Spit. Potential for some managed realignment and creation of new saltmarsh and shingle. Monitor populations.

The English Seabird Conservation and Recovery Pathway ESCaRP (Natural England) has a series of recommendations to reverse seabird decline and implement actions at key breeding sites on nationally designated sites. These could be implemented elsewhere. **NERR134 English seabird conservation and recovery pathway - Technical report - NERR134**

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Charadrius hiaticula Ringed plover **B**
Ringed Plover | BTO - British Trust for Ornithology

Chroicocephalus ridibundus Black-headed gull **B**
 Declining - significant amount of UK population in Hampshire. Vulnerable to flooding and predation.

Haematopus ostralegus Oystercatcher **B/C**
 Declining in Europe, a stronghold on our coasts - **Oystercatcher - Bird Aware Solent**

Ichthyaetus melanocephalus Mediterranean gull **B**
 Big increase from low base and half UK population in Hampshire. Vulnerable to flooding and predation. Also a balancing act as they predate tern chicks.

Recurvirostra avoetia Avocet **B**
 4-5 breeding locations. **Avocet | BTO - British Trust for Ornithology**

Sterna hirundo Common tern **B/C**
 Breeding and certain parts of the Solent seem important for passage birds roosting in July-September e.g. Hill Head and Sandy Point, so tackling disturbance is an issue. Disturbance is so high at Sandy Point that there have been very few birds recently.

Sternula albifrons Little tern **B/C/D**
 Wardening of little tern breeding colonies is a key conservation tool.
Little Tern | BTO - British Trust for Ornithology

Thalasseus sandvicensis Sandwich tern **B/C**
Sandwich Tern | BTO - British Trust for Ornithology

Priority species assemblages for birds – urban birds

Measures – Refer to habitat measures U1

All species declining nationally. Create and improve management of species-rich grassland, wetland, hedgerows and pockets of scrub in urban areas and improve connectivity within the landscape. Link with sustainable drainage systems (SuDS), e.g. de-paving. Provide suitable nest boxes where there are no natural nests present and preserve existing nest sites through partnership working. Engage with businesses and the public to educate them about these species and encourage their involvement in conservation of urban birds.

[1563785657-wwt-rspb-sustainable-drainage-systems-guide.pdf](#)

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

<i>Passer domesticus</i>	House sparrow	D
House Sparrow BTO - British Trust for Ornithology		

<i>Sturnus vulgaris</i>	Starling	D
Starling BTO - British Trust for Ornithology		

<i>Delichon urbicum</i>	House martin	D
Create small scrapes in suitable areas to provide muddy material for natural nest building. House Martin BTO - British Trust for Ornithology		

<i>Apus apus</i>	Swift	D
Encourage developers to add swift bricks to all new housing stock. Hampshire Swifts Swift BTO - British Trust for Ornithology		

Priority species assemblages for birds – urban gulls

Measures

Habitat management improvements and the creation of wetlands in urban settings and in the wider countryside should benefit these species. Work with businesses and landowners to allow breeding in urban areas (mostly on roofs) and minimise conflict with people. Remove netting on buildings. Monitor populations.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

<i>Larus argentatus</i>	Herring gull	D
Herring Gull BTO - British Trust for Ornithology		

<i>Larus fuscus</i>	Lesser black-backed gull	D
Lesser black-backed gull BTO - British Trust for Ornithology		

Priority species assemblages for birds - wintering birds (shore and grassland)

Measures- Refer to habitat measures C2, C3, C4, C5, C7, WB1, P3 and F4

Work with farmers to provide suitable crop or set-aside land in the winter months for geese and waders to feed on. Create and manage diverse coastal grasslands, marshes with ditches, and wader scrapes or lagoons. This will benefit a wide range of species. These areas should ideally be grazed to provide a suitable sward height for birds during the summer but left ungrazed in the winter. Reduce grazing levels at times due to breeding waders. Reduce recreational disturbance through education.

Agricultural regime modification on two Wildfowl Trust reserves benefits wintering geese at Slimbridge (Gloucestershire), England and Caerlaverock (Dumfriesshire), Scotland - Conservation Evidence

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

<i>Branta</i>		
<i>bernica bernica</i>	Dark-bellied brent goose	B/C
Brent goose BTO - British Trust for Ornithology		
<hr/>		
<i>Limosa limosa</i>	Black-tailed godwit	B/F
Black-tailed godwit BTO - British Trust for Ornithology		



Table 3.4: Species assemblages – other species groups

Priority species assemblage - rare arable plants and other species associated with arable farmland

Measures – Refer to habitat measure F5

Requires low-input arable management, adjacent or on known sites. Cultivate margins in the spring between February and April or in the autumn between September and November. Do not apply any fertilisers, manures or pesticides except for herbicides to weed-wipe or spot-treat for the control of injurious weeds and invasive non-natives.

Managing Arable Farm Land - Plantlife Links below point to 'Back from the Brink' factsheets and management guidance, and information on distribution.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Beetles

Carabus monilis Necklace ground beetle A/B

Associated with cultivated land and arable field margins. Avoid winter tilling, pesticide use, and soil disturbance that may damage the larvae. Create and manage field margins and headlands that will provide refuges and hibernation areas for the ground beetles, and encourage populations of other invertebrates that they can prey on. A continuity of appropriately managed fields and field margins across the landscape will facilitate the spread of this species back across its former range. **Necklace ground beetle - species management - Buglife**

Flowering plants

Adonis annua Pheasant's-eye B
S41 Rare. **Adonis annua Pheasant's-eye - Game and Wildlife Conservation Trust**

Ajuga chamaepitys Ground-pine B
S41 Rare. **Ground pine - information guide - Back from the Brink**

Anthemis arvensis Corn chamomile B
Not known if it is still extant in Hampshire. Occurs in wild seed mixes. Target where native. **Anthemis cotula L. - Hampshire distribution**

Anthemis cotula Stinking chamomile B
Vulnerable. **HPRP Anth cotul.pdf**

Briza minor Lesser quaking-grass B
Rare. **Briza minor - Hampshire distribution**

Fumaria parviflora Fine-leaved fumitory B
Threatened. **Fumaria parviflora Lam. in BSBI Online Plant Atlas 2020**

Fumaria vaillantii Few-flowered fumitory B
Endangered. **Fumaria vaillantii Loisel. in BSBI Online Plant Atlas 2020**

<i>Galeopsis angustifolia</i>	Red hemp-nettle	B
S41 Rare. Red hemp-nettle - Back from the Brink		
<i>Gastridium ventricosum</i>	Nit-grass	B
Rare. Gastridium ventricosum (Gouan) Schinz & Thell. in BSBI Online Plant Atlas 2020		
<i>Buglossoides arvensis</i>	Field gromwell	B
Endangered and declining. Buglossoides arvensis (L.) I.M.Johnst. in BSBI Online Plant Atlas 2020		
<i>Misopates orontium</i>	Weasel's-snout	B
Vulnerable. Misopates orontium (L.) Raf. in BSBI Online Plant Atlas 2020		
<i>Myosurus minimus</i>	Mousetail	B
Vulnerable and much declined. Myosurus minimus L. in BSBI Online Plant Atlas 2020		
<i>Roemeria (Papaver) argemone</i>	Prickly poppy	B
Endangered. Roemeria argemone (L.) C.Morales, R.Mend. & Romero García in BSBI Online Plant Atlas 2020		
<i>Ranunculus arvensis</i>	Corn buttercup	B
S41 and Endangered. Corn buttercup - Back from the Brink		
<i>Scandix pecten-veneris</i>	Shepherd's-needle	B
S41 and Endangered. Scandix pecten-veneris L. in BSBI Online Plant Atlas 2020		

<i>Scleranthus annuus</i>	Annual knawel	B
S41 and Endangered. Declining. Annual knawel - Back from the Brink		
<i>Silene gallica</i>	Small-flowered catchfly	B
S41 and Endangered although population potentially increasing due to climate change, frequent more towards Bournemouth area. Small-flowered catchfly - Back from the Brink		
<i>Silene noctiflora</i>	Night-flowering catchfly	B
Vulnerable. Silene noctiflora L. in BSBI Online Plant Atlas 2020		
<i>Teucrium botrys</i>	Cut-leaved germander	B
Schedule 8 and Hampshire stronghold. Teucrium botrys L. in BSBI Online Plant Atlas 2020		
<i>Torilis arvensis</i>	Spreading hedge-parsley	B
S41 and Endangered. Spreading hedge-parsley - Back from the Brink		
<i>Valerianella dentata</i>	Narrow-fruited cornsalad	B
Endangered and Hampshire stronghold. Valerianella dentata (L.) Pollich in BSBI Online Plant Atlas 2020		
<i>Valerianella rimosa</i>	Broad-fruited cornsalad	B
S41, Endangered and Hampshire stronghold. Broad-fruited cornsalad - Back from the Brink		

Priority species assemblage – ponds for amphibians

Measures – Refer to habitat measures P1 and P2

Common toads have declined by 68% over the last 30 years in the UK. They prefer deeper water bodies in which to breed. Restore ponds - de-silt, deepen, whilst maintaining gentle sloping edges, maintain water levels, and improve water quality. Maintain and extend semi-natural habitat surrounding pond but manage so ponds are not over-shaded. Establish crossing signage/patrols if roads cross migration routes and consider use of Traffic Regulation Orders

Great crested newts (GCNs) have also suffered huge declines. A conservation strategy is in place through district licencing. GCNs favour medium size ponds with abundant weeds, a well-developed litter layer and no fish. Connectivity to other ponds is important as is undisturbed semi-natural vegetation adjacent to ponds with lots of deadwood, but no overshading.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Amphibians

<i>Bufo bufo</i>	Common toad	B
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Widespread in the UK but numbers declining rapidly. Threatened by a loss of breeding ponds and disruption of migration routes.

Common Toad (froglife.org)

<i>Triturus cristatus</i>	Great crested newt	B
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Populations are thought to have declined dramatically throughout the species' European range.

Great crested newt (*Triturus cristatus*) - Special Areas of Conservation (jncc.gov.uk)



Priority species assemblage - chalk streams

Measures – Refer to habitat measures R1, R2, R3, R4, R5, R6, R7, R8, R9, NN1 and P1

Many of our chalk streams suffer from over abstraction of water, pollution, and habitat loss, but there are actions that can restore good ecological health to these unique rivers, leading to improved water quality and flow, well-oxygenated water and clean gravels

Riparian and in-river restoration or enhancement should include; restoration of connectivity between floodplain and the chalk stream; use of riparian buffers to reduce nutrient and sediment load, restoration or re-creation of lost or relic meander patterns; restoration of spring-line calcareous fens and flushes; restoration of wet woodland and riparian meadows; and creating changes in flow patterns, which alters the bed morphology and moves silt and uncovers gravels. Other measures include restoring backwaters and backchannels to provide fish spawning and riparian habitats along the river including the introduction of woody material in appropriate places to restore habitat diversity, and riparian tree planting to increase shading of river channels and to counter the effects of increased temperatures, but not where it shades out aquatic macrophytes, and establishing passes to overcome or remove barriers to migration upriver.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Dragonflies and damselflies

Coenagrion

mercuriale

Southern damselfly

B

An Annex II (Habitats Regulations) species. Southern damselflies breed in slow-flowing heathland streams but away from the New Forest they can be found breeding in our chalk streams where they requires base-rich, unpolluted shallow water with a permanent slow-to-moderate flow. Habitat requirements include maintaining adjacent habitat in mid-successional conditions with appropriate livestock grazing to prevent vegetation from encroaching into the channel. Some poaching is required to maintain open conditions. Where channels have become shaded by trees or scrub, careful clearance will reduce water loss through transpiration and remove barriers to dispersal. Monitor populations.

Southern damselfly - Back from the Brink

Fish

Anguilla anguilla

European eel

C/D

Recorded in most of our rivers, most recent records in Itchen, Test, and New Forest streams. **European eel - status assessment**

Cottus gobio

Bullhead

B/C

Bullhead (*Cottus gobio*) - Special Areas of Conservation

Lampetra planeri

Brook lamprey

B/C

Ecology of the River Brook and Sea Lamprey - IN104

Petromyzon marinus Sea lamprey C/D

A rare migrants, which probably used to be present in larger numbers in the Solent and in the Lower Test and Lower Itchen.

Salmo salar Atlantic salmon C/D
Itchen Salmon Delivery Plan - Test and Itchen Association

Salmo trutta subsp. fario Brown trout C/D
South Coast Sea Trout Project | Wild Trout Trust

Salmo trutta subsp. trutta Sea trout C/D
Four principal sea trout rivers in Hampshire are the Test and Itchen, Beaulieu, and Lymington. **South Coast Sea Trout Project | Wild Trout Trust**

Thymallus thymallus Grayling C/D
Scarce. **European Grayling Conservation, Ecology and Management**

Mayflies

Baetis niger Southern iron blue A
An indicator of the health of rivers and widespread in the Test and Itchen, this species requires good water quality to survive and is thought to be particularly affected by low flows. Any operations that affect the bed such as dredging, channel modifications or gravel removal should be avoided. Weed cutting and removal of bankside trees may also be detrimental to this species.

Baetis niger - species dossier - Buglife

Mammals

Lutra lutra Otter B
Historically, otters occurred over most of the UK. However, persecution, habitat loss and, more recently, the impact of toxic organochlorine insecticides caused a marked reduction in the range of the species. The otter is still scarce over much of England, where the highest concentrations are in the south-west. However, recent surveys suggest that the otter population is recovering well and recolonising parts of its former range. They require an abundant supply of food (normally associated with high water quality), together with suitable habitat, such as vegetated river banks, islands, reedbeds and woodland, which are used for foraging, breeding and resting.

Neomys fodiens Eurasian water shrew B/C
Water shrews are semi-aquatic and are found in habitats close to water, including on the banks of streams and rivers, and near ponds, drainage ditches, reedbeds and fens. They can be numerous at water-cress beds. Likely reasons for the decline in their numbers are habitat loss and water pollution. Requires good water quality and low disturbance to bankside vegetation. Riparian buffers to connect bankside habitat required to enhance population. Measures similar to water vole. More data on populations within the county is needed to assess species requirements. **Water shrew — Mammal Society**

Molluscs

Odhneripisidium tenuilineatum Fine-lined pea mussel C/E
Scattered records from the northern chalk streams, Itchen and Test. Very little is known about them. Pollution, sedimentation and habitat degradation are thought to be major factors in its decline. Would benefit from general protection and restoration of wetland habitats, and implementing pollution control measures.

Priority species assemblage - other rivers including the New Forest rivers and streams

Measures – Refer to habitat measures R1, R2, R3, R4, R5, R6, R7, R8, R9, NN1 and P1

Similar to chalk streams, many of our other rivers suffer from over abstraction of water, pollution, and habitat loss. The New Forest’s rivers and streams are internationally important and support a variety of species, including fish, insects, amphibians, and mammals. Measures to improve water quality and riparian habitat should include; restoration of connectivity between floodplain and river; use of riparian buffers to reduce nutrient and sediment load, restoration or re-creation of lost or relic meander patterns; restoration of wet woodland and riparian meadows; creating changes in flow patterns, which alters the bed morphology and moves silt and uncovers gravels, restoring backwaters and backchannels to provide fish spawning and riparian habitats along the river including the introduction of woody material in appropriate places to restore habitat diversity, and riparian tree planting to increase shading of river channels to counter the effects of increased temperatures; and establishing passes to overcome or remove barriers to migration upriver.

The following table lists the species’s *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Dragonflies and damselflies

Coenagrion mercuriale Southern damselfly **B**

An Annex II (Habitats Regulations) species, Southern damselflies breed in slow-flowing heathland streams and runnels with plenty of plant-life, but not shaded by trees and scrub. Away from the New Forest they are found breeding in chalk streams in Hampshire. Habitat requirements include maintaining adjacent habitat in mid-successional conditions with appropriate livestock grazing to prevent vegetation from encroaching into the channel. Some poaching is required to maintain open conditions. Where channels have become shaded by trees or scrub, careful clearance will reduce water loss through transpiration and remove barriers to dispersal. Monitor populations. **Southern damselfly - Back from the Brink**

Fish

Anguilla anguilla European eel **C/D**

Recorded in most of our rivers including the New Forest streams.

European eel - status assessment

Cottus gobio Bullhead **B/C**

Bullhead (*Cottus gobio*) - Special Areas of Conservation

Lampetra planeri Brook lamprey **B/C**

Ecology of the River Brook and Sea Lamprey - IN104

Salmo salar Atlantic salmon C/D
Itchen Salmon Delivery Plan - Test and Itchen Association

Salmo trutta subsp. fario Brown trout C/D
South Coast Sea Trout Project | Wild Trout Trust

Salmo trutta subsp. trutta Sea trout C/D
Four principal sea trout rivers in Hampshire are the Test and Itchen, Beaulieu, and Lymington. **South Coast Sea Trout Project | Wild Trout Trust**

Thymallus thymallus Grayling C/D
Scarce. **European Grayling Conservation, Ecology and Management**

Mammals

Lutra lutra Otter B
Historically, otters occurred over most of the UK. However, persecution, habitat loss and, more recently, the impact of toxic organochlorine insecticides caused a marked reduction in the range of the species. The otter is still scarce over much of England, where the highest concentrations are in the south-west. However, recent surveys suggest that the otter population is recovering well and recolonising parts of its former range. They require an abundant supply of food (normally associated with high water quality), together with suitable habitat, such as vegetated river banks, islands, reedbeds and woodland, which are used for foraging, breeding and resting.

Neomys fodiens Eurasian water shrew B/C

Water shrews are semi-aquatic and are found in habitats close to water, including on the banks of streams and rivers, and near ponds, drainage ditches, reedbeds and fens. They can be numerous at water-cress beds. Likely reasons for the decline in their numbers are habitat loss and water pollution. Requires good water quality and low disturbance to bankside vegetation. Riparian buffers to connect bankside habitat required to enhance population. Measures similar to water vole. More data on populations within the county is needed to assess species requirements. **Water shrew — Mammal Society**

Priority species assemblage – calcareous sedge communities

Measures – Refer to habitat measure FR1

Appropriate grazing and other vegetation management essential. Maintain/restore hydrology. Restore and create wetland habitat especially adjacent to the sites.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Flowering plants

<i>Carex diandra</i>	Lesser tussock-sedge	D
Rare - now very scarce, restricted to a few fen habitats in north Hampshire (Vice County 12) at Greywell Fen, Stockbridge North Fen and Bransbury Common – all are SSSIs.		
<i>Carex dioica</i>	Dioecious sedge	D
Requires very short vegetation in calcareous fen. Very few sites: Bransbury Common and Mapledurwell Fen – both SSSIs.		



Priority species assemblage - Coastal grazing marsh and upper saltmarsh

Measures – Refer to measures C2 and C3

Maintenance of existing habitat inside and peripheral to protected sites. Requires light grazing, aiming for low levels of disturbance, such as trampling, which could damage the flora and fauna, and contribute to erosion. Expand the area of grazing marsh by reintroducing appropriate water level management on improved grassland and arable land. This should be targeted to ensure the expansion and linkage of existing sites and to promote functioning coastal floodplains.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Flowering plants

Bupleurum

tenuissimum Slender hare's-ear **B**

S41. Important Hampshire populations.

Carex divisa Divided sedge **B**

Scarce S41 species, Hampshire stronghold.

Carex punctata Dotted sedge **B**

Scarce and infrequent, Hampshire stronghold.

Hordeum marinum Sea barley **B**

S41. Might be vulnerable to coastal erosion.

Oenanthe lachenalii Parsley water-dropwort **B**

Listed as Near Threatened in England, it is still widespread and locally frequent on the Hampshire coast.

Polypogon monspeliensis Annual beard-grass **B**

Nationally scarce although native distribution obscured by alien introductions around waste ground, railway lines, quarries, newly constructed habitats along the coast from bird and grass seed.

Puccinellia fasciculata Borrer's saltmarsh-grass **B**

S41. Declining as a result of the infilling of pools and ditches, the upgrading of sea-walls and the conversion of coastal grazing marshes to arable

Puccinellia rupestris Stiff saltmarsh-grass **B**

Nationally scarce. Found on bare mud and damp brackish hollows around sea walls. A Hampshire stronghold.

Trifolium fragiferum Strawberry clover **B**

Locally common in Hampshire.

Trifolium scabrum Rough clover **B**

Scattered along the coast, more on sand and gravel.

Trifolium squamosum Sea clover **B**

Scarce and declining on the Hampshire coast and elsewhere.

Bees, wasps and ants

Colletes halophilus Sea aster bee

B/D

A ground nesting bee associated with sea aster. Creating habitat near large strands of sea aster could offer new opportunities for this species. For example, creating an undulating surface with pits and mounds could provide a range of microhabitats and microclimates that mimic their natural habitat. They would also benefit from the maintenance of bare ground by scraping back to bare earth.

Sea aster mining bee - management guidance sheet - Buglife



Priority species assemblage - saline lagoons

Measures – Refer to measures C2 and C3

Protect and manage the habitat. Manage water quality, water levels and salinity levels at as stable a level as possible. Manage the margins - they are also important to many invertebrates. Prevent emergent plants from encroaching on the habitat and protect landward habitat for the lagoon to retreat to as sea level rises. **Saline Lagoons - Buglife**

The following table lists the species's *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Sea anemones

Nematostella

vectensis Starlet sea anemone **B**

Only 2 records; Mengham Salterns, East Haying and at Lymington and Keyhaven Marshes. Re-survey.

Molluscs

Semisalsa stagnorum Lagoon spire snail **B**

Only 3 records, from 1988. Farlington Marshes. Possibly died out due to rise in salinity. **Lagoon spire snail (Willing M. & Rowson B. (2020))**

Stoneworts

Lamprothamnium

papulosum Foxtail stonewort **B**

Recorded in three saline lagoon locations, all SSSIs: Keyhaven, Gilkicker and Haslar Lake. Protect and manage the habitat. Manage water quality, water levels, and keep salinity levels at as stable a level as possible. Manage the margins, they are also important to many invertebrates. Prevent emergent plants from encroaching on the habitat and protect landward habitat for the lagoon to retreat to as sea level rises.

Foxtail stonewort (*Lamprothamnium papulosum*) - MarLIN - The Marine Life Information Network

Priority species assemblage – shingle and coastal grassland communities

Measures – Refer to measure C1

Maintain existing habitat inside and peripheral to protected sites and have regard to this species in the consideration of any coastal defence works. Expand where possible and educate to minimise disturbance including from trampling. **Coastal vegetated shingle - Buglife**

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Flowering plants

Atriplex laciniata **Frosted orache** **B**

Rare.

Crambe maritima **Sea-kale** **B**

Hampshire stronghold.

Eryngium maritimum **Sea-holly** **B**

Uncommon and vulnerable to coastal erosion.

Frankenia laevis **Sea-heath** **B**

Vulnerable to coastal erosion with only two main locations, near Fawley Power Station and east Hayling Island on SSSIs. A mat-forming perennial herb of shingle-saltmarsh transitions.

Geranium purpureum **Little-robin** **B**

Rare shingle plant, possibly threatened by coastal erosion.

Polygonum maritimum **Sea knotgrass** **B**

Schedule 8 species. Rare, vulnerable to coastal erosion.

Salsola kali **Saltwort** **B**

Vulnerable to coastal erosion and quite rare in Hampshire.

Salsola kali subsp. kali **Prickly saltwort** **B**

S41 species. Vulnerable to coastal erosion and quite rare in Hampshire.

Silene nutans **Nottingham catchfly** **B**

Rare and possibly vulnerable to coastal erosion. Hampshire stronghold.

Trifolium suffocatum **Suffocated clover** **B**

Hampshire stronghold.

Lichens

Rinodina aspersa **N/A** **B/E**

A species of coastal shingle, only one site at Browndown SSSI. Has been re-found recently but needs more detailed survey and evaluation as to habitat requirements. Raise awareness with local Natural England team to safeguard location.

Moths

Hadena albimacula White spot **B**

Only found at Browdown SSSI. The larval foodplant is Nottingham catchfly, which is doing OK, but holm oaks need removing as per Condition Assessment. Nottingham catchfly also found in similar habitat at Eastney Beach and Sinah Common. Survey for White Spot?

White spot moth - Hantsmoths

Setina irrorella Dew Moth **B**

A mainly coastal species, occurring along the south coast, and only at Hurst Spit (SSSI) in Hampshire, feeding on lichens on shingle. Presence of lichens on stable rocks and shingle is therefore important for their survival. Populations also occur on cliff tops on the Isle of Wight



Priority species assemblage - maritime soft cliffs

Measures

Protect habitat from sea defences and allow natural erosion processes to continue, creating space for cliff retreat and providing foraging habitat.

Bare ground is a vital habitat for many species, including burrowing bees and wasps, ground beetles, and wildflowers. Coastal defences or cliff protection schemes can alter or destroy the habitat.

https://cdn.buglife.org.uk/2019/07/Managing-Soft-Cliffs-for-Invertebrates_Summary.pdf

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Beetles

Cathormiocerus

myrmecophilus

Lizard weevil

B

Cliff top maritime grassland - likes buck's-horn plantain. Recorded at Brownwich, Milford on Sea, and Gilkicker Point.

Bees, wasps and ants

Eucera longicornis

Long-horned bee

B

Requires legume-rich wildflower areas. Female long-horned bees dig burrows in bare or sparsely-vegetated ground, typically on south-facing slopes found on eroding soft cliffs.

Long-horned bee - species management sheet - Buglife

Butterflies

Melitaea cinxia

Glanville fritillary

B

Found mainly on the south coast of the Isle of Wight, with the occasional colony, typically short-lived, appearing on the South Hampshire coast at Hurst Spit and Hordle Cliffs. Requires grasslands on sheltered south facing eroding cliffs and nearby open habitat - thrift and trefoils for nectar and ribwort plantain being the larval foodplant. Could increase in range naturally as a result of climate change, so not something that can necessarily be influenced by management.

Glanville fritillary - Butterfly Conservation

Liverworts and mosses

Tortula wilsonii

Wilson's pottia

B/D

A rare, declining species listed as Endangered. It is a species of bare, neutral or acidic soil in coastal areas, occurring in habitats such as soft cliffs. One record 1974 on the coast at Pylewell, the other at Gosport (2020) - which requires targeted management of regular cutting back of scrub and management to create bare ground. Raise awareness with the landowner.

Tortula wilsonii - British Bryological Society

Priority species assemblage - dry heaths with sand and gravel exposures

Measures – Refer to measures H1, H2 and H3

Manage grazed heath (or where grazing is not practical, other forms of structural management) allowing for bare sandy areas, areas of sparse, short vegetation and structural diversity. Consider restoring felled woodland to heathland. Monitor populations.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Bees, wasps and ants

Diodontus insidiosus N/A B

New Forest and east/north-east Hampshire.

Diodontus insidiosus | BWARS

Halictus confusus Southern bronze furrow Bee B

New Forest and east/north-east Hampshire - not seen for some time.

Halictus confusus | BWARS

Temnothorax interruptus Long-spined ant B

Temnothorax interruptus | BWARS

Beetles

Cicindela sylvatica Wood (heath) tiger beetle B

Wood (heath) tiger beetle - species management sheet - Buglife

Butterflies

Hipparchia semele Grayling B

Grayling - Butterfly Conservation

Flies

Thyridanthrax fenestratus Mottled bee-fly B

New Forest and east/north-east Hampshire. **Mottled bee-fly - NBN Atlas**

Ferns

Botrychium lunaria Moonwort B

Rare/near extinct in Hampshire. Found in low grass-heath associated with roadsides, disused runways and spoil heaps. Maintain known sites, grazing to maintain open habitat, low soil fertility. Expand habitat.

Reptiles

Lacerta agilis Sand lizard B

Mainly confined to the New Forest and Ringwood Forest, and Woolmer Forest and Broxhead Common in the north east. **Sand lizard - Amphibian and Reptile Conservation Trust**

Priority species assemblage – other heathlands occurring inside and outside the New Forest SSSI

Measures – Refer to measures H1, H2 and H3

Requires grazing on wet and dry heath whilst maintaining structural diversity (or where grazing is not practical, other forms of structural management). Grazing levels should be appropriate to the site's hydrological conditions. Restore management to sites, especially small sites and seek to expand habitat to improve connectivity.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Reptiles

Coronella austriaca Smooth snake **B**

Mainly confined to the New Forest and Ringwood Forest, and Woolmer Forest. Dependent on managed heathland, where it is mainly found in mature vegetation that provides good cover. **Smooth snake | Amphibian and Reptile Conservation Trust**

Butterflies

Plebejus argus Silver-studded blue **B**

Although common on New Forest heaths and parts of east/north-east Hampshire, lots of small sites have been lost. Hampshire has nationally important populations. Better management of heathland needed. This species is a warmth-

loving butterfly and, as such, is often found in sheltered areas, or those that are south-facing. **UK Butterflies - Silver-studded Blue - Plebejus argus**

Fungi

Poronia punctata Nail fungus **B**

Although common in the New Forest, it also occurs at Eelmoor Marsh SSSI and Castle Bottom NNR in north-east Hampshire. It is a Hampshire Responsibility species with 39 Hampshire records out of 103 UK records, and is a very specialized species, only being found on the dung of horses and ponies that have been feeding on unimproved acidic grassland and heath vegetation. Important no fertiliser or pesticides are applied. Survey and monitor.

Lichens

Cladonia phyllophora N/A **B**

New Forest, but also Woolmer Forest SSSI and Broxhead and Kingsley Commons SSSI.

Cladonia rei N/A **A/B**

Recently found outside of the New Forest on high quality acid heaths, where it can occasionally be abundant. Expand heathland nr populations

Priority species assemblage – ephemeral and shallow ponds which also occur outside the New Forest SSSI

Measures – refer to measure P2

For these species it is important to maintain small, shallow ponds, and temporary pools, and avoid drainage, unnecessary clearance, infilling, and deepening. Prevent pollution and eutrophication by avoiding fertiliser use near ponds, or in areas that might drain into a pond. Management should be on a rotational basis, with any essential dredging limited to less than 50% of the pond in any two-year period. Cattle stocking densities need to be carefully balanced to prevent water bodies becoming overgrown or excessively poached and eutrophic from overstocking. Seek to establish more temporary ponds in the immediate vicinity in order to disperse and expand population.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Beetles

Berosus luridus N/A **B/E**

Inhabits lowland ponds and slow drains on heathland like New Forest and Woolmer, both SSSIs. Maintain open nature of the ponds and discourage dogs and livestock from entering ponds as flea and tick treatment plus turbidity will kill them. These are old records, so more survey required to determine presence.

Pelenomus olssoni N/A **B/E**

Mainly found in ephemeral ponds in north-east Hampshire with some old records from the New Forest. Very little known about them. Maintain and expand habitat and more survey needed.

Crustacea

Chirocephalus diaphanus **Fairy shrimp** **B**

More recent records in Long Valley in north-east Hampshire and currently thought to be present in around 28 ponds in the New Forest. Important that the pond dries out each year as drying out and re-wetting triggers the hatching of eggs on the pond substrate, and that there is sufficient food supply when the pond fills - such as algae. Grazing livestock poaching the pond margins is also essential, especially as dung provides nutrients. **Fairy shrimp - species profile - Freshwater Habitats Trust**

Flowering plants

Cyperus fuscus **Brown galingale** **D**

A Schedule 8 species mostly within two SSSIs. Requires open, shallow margins of seasonal pools and areas of winter wet poached ground maintained by grazing animals. Cessation of grazing, encroachment by scrub and lowering of the water-table have led to its decline. Requires heavy grazing to reduce the cover of other plants. A Freshwater Habitats Trust project is creating new ponds nearby to encourage expansion.

Brown galingale - species dossier - Freshwater Habitats Trust

Priority species assemblage - grazed chalk grassland with structural diversity including managed scrub and bare ground

Measures – refer to measures G2(LCG) and G3(LCG)

Requires lightly grazed chalk grassland to maintain structural diversity with areas of short and long grass, patches of scrub, anthills, and some bare ground. Maintain and restore existing sites and expand habitat to improve connectivity. Survey and monitor.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Flowering plants

Arabis hirsuta Hairy rock-cress **B**

Threatened but not uncommon on the chalk in Hampshire.

Clinopodium acinos Basil thyme **B**

S41. Indicator of NVC CG7. A pioneer species

Coeloglossum viride Frog orchid **B**

S41. Declining due to habitat loss and drought, thought to be retreating northwards **Dactylorhiza viridis (L.) R.M.Bateman, Pridgeon & M.W.Chase in BSBI Online Plant Atlas 2020**

Gentianella anglica Early gentian **B**

Schedule 8 and S41.

Herminium monorchis Musk orchid **B**

S41 and endangered. Hampshire has important populations but not many sites.

Lathyrus aphaca Yellow vetchling **B**

Vulnerable and declining.

Neotinea ustulata Burnt orchid **B**

S41. Rare and vulnerable.

Platanthera bifolia Lesser butterfly-orchid **B**

S41 and endangered.

Tephrosieris integrifolia Field fleawort **B**

Vulnerable. Rare on the chalk. Might be one for bespoke action. Possibly on its way out in Hampshire

Flies

Ogcodes gibbosus Smart-banded hunchback **B/E**

Recorded on St Catherine's Hill, Old Winchester Hill, Beacon Hill, and Oxenbourne Down - all SSSIs. Requires a mosaic of downland with scattered scrub, would benefit from general expansion in habitat and connectivity. More survey required. Also found on heath within the New Forest SSSI

Bees, wasps and ants

<i>Andrena hattorfiana</i>	Large scabious mining bee	B
Nationally rare. More frequent Salisbury Plain. Will benefit from expansion chalk grassland, requires field scabious.		
<i>Andrena simillima</i>	Buff-banded mining bee	B
Vulnerable.		
<i>Bombus humilis</i>	Brown-banded carder bee	B
S41		
<i>Bombus muscorum</i>	Moss carder bee	B
S41		
<i>Bombus ruderarius</i>	Red-shanked carder bee	B
S41		
<i>Bombus ruderatus</i>	Large garden bumblebee	B
S41		
<i>Nomada argentata</i>	Silver-sided nomad bee	D
Nationally rare. Requires <i>Andrena marginata</i> (small scabious mining bee) as it's a cleptoparasite. Only found at Bokerley Ditch, Martin Down.		
<i>Nomada armata</i>	Armed nomad bee	B
S41		

Beetles

<i>Cryptocephalus sexpunctatus</i>	Six-spotted pot beetle	B
Only known site is at Stockbridge Down SSSI. Adults feed on leaves of trees. Maintain grassland management with structural diversity including scrub hawthorn and hazel. Raise awareness with landowner. Spotting Pot Beetles - Buglife projects		

Butterflies

<i>Cupido minimus</i>	Small blue	B
S41		
<i>Erynnis tages</i>	Dingy skipper	B
S41		
<i>Hesperia comma</i>	Silver-spotted skipper	B
Threatened.		
<i>Polyommatus bellargus</i>	Adonis blue	B
Threatened. Although some Hampshire sites have recently re-colonised, its future is far from secure as most sites are isolated. Needs improved connectivity.		
<i>Polyommatus coridon</i>	Chalk hill blue	B
Threatened. Has declined massively in southern England (including Hampshire) over the last 20 years. Sites in conservation management still have reasonable populations, but many small sites lost.		

Pyrgus malvae **Grizzled skipper** **B**
 S41. Managing for pearl-bordered fritillary will also improve habitat for grizzled skipper. Has declined massively in southern England (including Hampshire) over the last 20 years. Sites in conservation management still have reasonable populations, but many small sites lost.

Moths

Hemaris tityus **Narrow-bordered bee hawk-moth** **B**
 S41. Scattered downland at Martin Down and Bentley. On the increase, a beneficiary of well managed calcareous grassland and climate warming.

Scotopteryx bipunctaria
and

S.bipunctaria creta **Chalk carpet** **B**
 S41. Declining and important. It survives only in one location on Broughton Down, with occasional wanderers elsewhere. Larva feeds on Comon bird's-foot-trefoil, hare's-foot clover, white clover, red clover, and vetch. Requires very chalky turf and some bare ground.

Chalk carpet - Butterfly Conservation

Trichopteryx polycommata **Barred tooth-striped** **B**
 S41. Barred tooth-striped moth requires wild privet bushes of a range of age groups, so grazing levels should be light enough to allow some regeneration of wild privet especially in sunny locations where it is also a valuable nectar source for many insects. Population centred around western chalk; recorded at Broughton Down, Martin Down, Harewood Forest, and Leckford. **Barred tooth-striped - fact sheet - Butterfly Conservation**

Liverworts and mosses

Abietinella abietina
var. *abietina* & *hystricosa* **Fir tamarisk-moss** **B**
 Good indicator of CG7 chalk grassland. Scattered across central chalk SSSIs and SINC.s.

Entodon concinnus **Montagne's cylinder-moss** **B**
 Good indicator of CG7 chalk grassland.

Rhodobryum roseum **Rose-moss** **B**
 Good habitat indicator. Fairly local in Great Britain as a whole and has especially declined in central and eastern England.

Weissia condensa **Curly beardless-moss** **B**
 S41. Nationally rare and Hampshire possibly has best populations.

Weissia condensa - Atlas of British and Irish Bryophytes

Weissia sterilis **Sterile beardless-moss** **B**
 S41 Nationally rare. **Weissia-sterilis.pdf**

Priority species assemblage – grazed or mown trefoil/clover communities

Measures – refer to measures G1(LMW/LAG), G2(LMW/LAG) and G4
Maintain short grazed or mown turf with some disturbance to maintain open areas. Remove scrub.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Flowering plants

<i>Filago vulgaris</i>	Common cudweed	B
Threatened.		
<i>Lotus angustissimus</i>	Slender bird's-foot-trefoil	B
Threatened and Hampshire stronghold.		
<i>Lotus subbiflorus</i>	Hairy bird's-foot-trefoil	B
Hampshire stronghold.		
<i>Moenchia erecta</i>	Upright chickweed	B
Hampshire stronghold.		
<i>Trifolium glomeratum</i>	Clustered clover	B
Hampshire stronghold.		



Priority species assemblage - waxcaps and other grassland fungi

Measures – refer to measures G1 and G2 for a variety of grassland types

Maintenance of existing habitat inside and peripheral to protected sites. Traditional land management that created the necessary habitat for this species should be maintained and taken up at adjacent and nearby sites to expand habitat. This includes short-sward grazing or cutting and removing cut material, and no fertilisation, herbicides or ploughing. Raise awareness with landowner/manager. Such sites often occur in old cemeteries. Survey and monitor. https://www.plantlife.org.uk/wp-content/uploads/2023/03/Waxcaps_GrasslandFungiGuideManagement.pdf

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Fungi

Entoloma bloxamii s. lat. **Big blue pinkgill** **B**
Recent records New Forest and Eelmoor Marsh.

Geoglossum atropurpureum **Dark-purple earthtongue** **B**
Three Hampshire records and 108 UK records - New Forest and Highclere Park.

Hygrocybe calyptriformis **Pink waxcap** **B**
Indicator of high-quality grassland. Widespread in UK. Seven Hampshire records and 1292 UK records. New Forest and grasslands in the Romsey and Eastleigh area – cemeteries.

Microglossum olivaceum **Olive earthtongue** **B**
Indicative of high-quality grassland. Six Hampshire records and 296 UK records. Linwood New Forest, Highclere, Exbury and Noar Hill.



Priority species assemblage - coppice woodland

Measures – refer to measure W2, W3, W7, HD1 and HD2

Specific management is required to create structural diversity and increase light levels in woodland, such as active coppicing, creating glades, and opening up rides. This will create more food sources for the species listed below. New woodland and hedgerow planting, and well managed hedgerows would improve connectivity and encourage expansion of their range. Any coppicing or other such work should be carried out between November and March to avoid disturbing species such as nesting dormice and birds.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Butterflies

Boloria euphrosyne **Pearl-bordered fritillary** **B**
Requires deciduous woodland containing open areas, such as woodland clearings, rides and coppice cut on rotation that provide the right conditions, foodplants (violets) and nectar sources for this species to thrive. Connect open areas within and between woodlands. **Pearl-bordered Fritillary | Butterfly Conservation**

Moths

Minoa murinata **Drab looper** **B**
In Hampshire this species is extremely local in mature deciduous woods, flying by day in open, sunlit glades where the foodplant wood spurge flourishes. Remaining strongholds are now Pamber Forest and Harewood Forest in the north of the county, and Bentley Woods and Crab Wood/West Wood in the south. Widening rides and implementing coppicing will improve conditions for wood spurge. Felling/extraction of conifers in PAWs ideal for foodplant, providing sunny, sheltered areas with disturbed ground.

Woodland Wildlife Toolkit

Mammals

Muscardinus avellanarius **Hazel dormouse** **B**
Specific management is required to create structural diversity and increase light levels in woodland, such as active coppicing, creating glades and opening up rides. This will create more food sources for dormice. Dormice also inhabit well managed hedgerows which should be cut on a three-year cycle, alternating sides. **Managing small woodlands for dormice**

Beetles

Trachys minutus **N/A** **B/E**
Known from a few sites scattered across Hampshire. Last record in 2005 at Stockbridge Down, although thought to prefer old deciduous woodlands especially where coppicing has been practiced. Needs survey and better evidence of requirements.

Priority species assemblage - mature deciduous woodland

Measures – refer to measures W2 and W3

Requires light shade in coppiced woodland, open glades and rides, woodland edges and hedges, or more shaded conditions under beech with no competing vegetation. These species are intolerant of grazing.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Flowering plants

Cephalanthera

damasonium **White helleborine** **B**

S41 species, becoming more common on the chalk in Hampshire. Requires shady bare ground, commonly under beech but can now be found in quite open conditions. Colonises new beech plantations so plant young beech trees near existing populations. **Woodland Wildlife Toolkit**

Cephalanthera

longifolia **Narrow-leaved helleborine** **B**

S41. Hampshire has significant proportion of UK population. Requires permanent patches of light in woodland (i.e. glades rather than coppice). On calcareous soils. **Woodland Wildlife Toolkit**

Epipactis phyllanthes **Green-flowered helleborine** **B**

Has a broad ecological tolerance, from deep shade to full sun in soils that range from mildly acidic to strongly alkaline and from exceptionally dry

and humus-poor to ever-wet and humic. Arguably most typical of sparsely vegetated, shaded woodland. Its habitats include **Fagus sylvatica** woods among ivy on chalk, flinty clays or sandstones, Pinus and Betula scrub, **Corylus avellana** coppice, shaded roadside verges, riverside and lakeside willow-carr. However, the wet woodland populations (Itchen Valley from Alresford to Eastleigh) seem in freefall, possibly due to habitat loss. An RVEI in East Hampshire is being managed for this species.

Epipactis purpurata **Violet helleborine** **B**

Hampshire has major UK populations. Some RVEIs are being managed for it. It is most characteristic of densely shaded fagus sylvatica woods, particularly those on 'clay-with-flints' deposits, but is also frequent in neutral to mildly acidic, usually clay-rich soils that support mixed woodland and coppices of corylus avellana and carpinus betulus. Deep shade is typical but not essential, hence appearing on shady road verges

Melittis

melissophyllum **Bastard balm** **B**

S41 species. Not common and vulnerable - (Sherfield English site now restricted to road verge but formerly in adjacent woodland). In woodland it requires thinning, rides and glades to let in light, coppicing to retain humidity, and protection from disturbance. Connectivity with hedges and other woodland is important. **Woodland Wildlife Toolkit**

Neottia nidus-avis **Bird's-nest orchid** **B**

Vulnerable. Prefers deep humus of densely shaded beech woods on chalky soils. Avoid soil compaction and waterlogging to retain important mycorrhizal fungi. **Woodland Wildlife Toolkit**

Priority species assemblage – lichens and fungi associated with mature and veteran trees in open Parkland

Measures – refer to measures PP2, G2, G3, and W9

Need to maintain open well-lit conditions around mature and veteran native trees in locations that support these species by thinning regeneration (whilst being mindful of the need to retain some younger trees) and controlling invasive species such as ivy, holly and rhododendron. Remove or reduce sources of locally generated atmospheric pollutants e.g. by specifying livestock stocking levels and by limiting fertilising of grasslands. If possible, convert arable land adjacent to veteran trees to pasture. Create new pollards out of younger trees and maintain them by periodic recutting. Necessary tree surgery of veteran trees may be needed to improve the stability of the tree and prolong its life without damaging the lichen. Monitor the habitat and species to ensure that the landowner is aware of the presence of these species. **Woodland Wildlife Toolkit (sylva.org.uk)**

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Fungi

Boletus rhodopurpureus **Oldrose bolete** **B**

The oldrose bolete is very rare in the UK (Endangered), typically favouring old open woodland or parkland with plenty of sunlight on neutral soils, reported mainly from the south of England such as parts of the New Forest and Windsor

Great Park. More recently found in the Hampshire part of Porton Down. 33 Hampshire/57 UK records.

Podoscypha multizonata **Zoned rosette** **B**

Uncommon. 27 Hampshire records out of 128 UK records. Mainly in the New Forest but recent records from IBM Hursley Park and older records at Bramshill Police College. Expansion and connection of habitat at known population sites. New oakwoods need to be grown in areas with long-term protection so that they may eventually reach veteran or ancient growth stages. Survey and monitor.

Lichens

Anaptychia ciliaris **Eagle's claws** **B**

Seriously declining lichen found on veteran trees in parkland and old pasture across central Hampshire, not seen since 2005. Declined due to Dutch elm disease, SO₂ pollution and the use of inorganic fertilisers. Now found on ash and maples, and so threatened by ash dieback. Measures include planting of host trees in open-grown situations. Supporting of potential host trees to achieve veteran status. Re-establishment of elm populations. Buffering suitable sites from SO₂ pollution sources, such as through dense tree and shrub planting. Reduction of inorganic fertiliser use in vicinity of known and potential sites.

Eagle's claw - Back from the Brink

Bellicidia incompta **Sap-groove lichen** **B**
Seriously declining field tree lichen but also with strong New Forest population. Same reasons for decline as for eagle's claws. Found on the bark or lignum of mainly veteran trees, but also sometimes slow growing suppressed younger trees. Old Elm trees were its primary recorded habitat previously. Now mainly found on the bark or lignum of wounded Beech, Horse Chestnut, Ash, Holly, Sycamore, Maple and Hornbeam. Found in both old growth pasture woodlands, parkland and on field and wayside trees. Actions include supporting host trees to achieve veteran status. Re-establishment of elm populations. Planting of new host trees in open-grown situations. Buffering suitable sites from ammonia pollution sources, such as through dense tree and shrub planting. Maintaining/creating open conditions in suitable woodlands. Retaining damaged trees where safe to do so. **Oak rim lichen - Back from the Brink**

Caloplaca lucifuga **N/A** **B**
Occurs only at Hurstbourne Park in Hampshire. Support open-grown oaks to achieve veteran status. Maintain open conditions. Reduction of fertiliser use in vicinity of known and potential sites.

Caloplaca virescens **N/A** **B**
Elm specialist of field trees, now very rare and on ash. Only four locations in Hampshire, two within registered parks at Hackwood and Armsworth. Very old records. Support open-grown trees to achieve veteran status. Survey to see if still present.

Lecanora quercicola **Oak rim lichen** **B/E**
Veteran tree species of woodland edges, rare in New Forest. Records from outside the New Forest SSSI not seen recently but parkland habitats not recently surveyed. Requires old oak trees with base-rich bark and well-lit trunks that are slightly damp - sheltered ancient parkland and wood pasture in southern Britain. Three locations: Hurstbourne Park, Cranbury Park, and New Forest. Support open-grown oak trees to reach veteran status and maintain open conditions. No recent records, requires survey. **Oak rim lichen - Back from the Brink**

Lecanora sublivescens **Lemon tart lichen** **B/E**
Veteran tree species of woodland edges, rare in New Forest, occurs outside of the New Forest. Support open-grown oak trees to reach veteran status and maintain open conditions. Four locations: Hurstbourne Park, Bramshill Park, Hackwood Park and New Forest. No recent records, requires survey. **Lemon tart lichen - Back from the Brink**

Zwackhia prosodea **N/A** **B/E**
Veteran oak species, rare in the New Forest, a few old records scattered across Hampshire including Hurstbourne Park and Brockenhurst Park. Old woodland and parkland species found on dry, shaded bark of mature and old yew and oak. Management to maintain light levels and open conditions. Supporting potential host trees to reach veteran status. Expanding suitable habitat. Needs new surveys to establish whether still present.

Chaenotheca chlorella **N/A** **B/E**

Very rare in UK, veteran oak species (FC suggests lime?). Only one site Hampshire - Waggoners Wells, part of Bramshott and Ludshott Commons SSSI. Optimum conditions on old oaks inside forests. Survey to re-establish presence and safeguard. Maintain oak succession and closed conditions.

Chaenotheca chlorella | The British Lichen Society

Lecania chlorotiza **N/A** **B/E**

Rare woodland species found on very shaded, base-rich bark and inside old hollow trees, especially elm, ash, and willow. Only one site in Hampshire: Waggoners Wells. Survey to re-establish presence and safeguard. Support host trees to reach veteran status and maintain oak succession and closed conditions

Lecania chlorotiza | The British Lichen Society

Priority species assemblage – fungi and other species associated with deciduous woodland and wood pasture in and outside the New Forest SSSI

Measures – Refer to measures W2, W3 and W9

Maintain woodland cover, reverse habitat fragmentation, and expand existing habitat. Prioritise expansion and connection at known sites. Wood-banks and other earthworks should be retained and protected from damage. Large woody debris from fallen or damaged trees should not be removed. Retain a conifer element in areas of restored Planted Ancient Woodland (PAWs). Sweet chestnut coppice with known toothed fungi communities should be retained and if possible managed along with traditional methods of cutting on a 10–12-year rotation. Invasive rhododendron can damage toothed fungi habitat and should be controlled or eliminated. Reduce levels of atmospheric nitrogen deposition. Raise awareness with landowners and land managers, and avoid tree felling at known locations. Survey and monitor. **Woodland Wildlife Toolkit (sylva.org.uk)**

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Beetles

Ampedus rufipennis **Red-horned cardinal click beetle** **B**
New Forest and Harewood Forest, but not seen since 2005. The larvae develop in relatively soft white-rotten heartwood of beech, ash, elm, birch, apple, and

plum. Maintain old-growth trees in open conditions with sensitive grazing to moderate shrub encroachment. Create new pollards out of younger trees to encourage successive generations of suitable trees to age naturally. Avoid tidying away pieces of fallen decaying wood or removing old standing dead trees. Search for new sites and continue to monitor existing sites.

Red-horned cardinal click beetle - Back from the Brink

Fungi

Craterellus melanoxeros **Blackening chanterelle** **B**
6 Hampshire/22 UK records. Thought to be New Forest only but recently found in Spearywell Woods 2023.

Hydnellum s cabrosum **Bitter tooth** **B**
Three Hampshire records and 26 UK records. Associated with oak and chestnut, mostly found on well-drained banks. All old records from New Forest and northeast Hampshire (Hawley Lake).

Hydnellum spongiosipes **Velvet tooth** **B**
27 Hampshire/92 UK records. Thought to a mainly New Forest species but recently found in Newtown Common, North Hampshire.

Porphyrellus

porphyrosporus **Dusky bolete** **B**
Two Hampshire records and 72 UK records. Ashford Hill and Preston Oak Hills.

Aureoboletus

gentilis **Gilded bolete** **B**
32 Hampshire records and 84 UK records. Most are found in the New Forest and Bentley Wood but there are records from the rest of the county.

Boletus fechtneri **Pale bolete** **B**
Six Hampshire records and 20 UK records. New Forest and near Winchester.

Boletus legaliae **Bilious bolete** **B**
10 Hampshire records and 61 UK records. Specialist habitats in New Forest plus Hursley Park.

Boletus moravicus **Tawny bolete** **B**
Eight Hampshire records and 40 UK records. Mainly New Forest, and also near Winchester.

Boletus satanas **Devil's bolete** **B**
Uncommon and mainly found in chalky woodland in central Hampshire. Hampshire has 15 out of 95 UK records. Reversing habitat fragmentation and expansion of existing habitat is key. Raising awareness with landowners. Survey and monitor.

Buchwaldoboletus

lignicola **Wood bolete** **B**
Four Hampshire records out of 72 UK records - mainly New Forest and north-east Hampshire. Requires old growth pine forest and retention of old stumps. Protection of known localities. **[Buchwaldoboletus lignicola \(redlist.info\)](#)**

Buglossoporus

(Piptoporus) quercinus **Oak polypore** **D**
19 Hampshire records out of 146 UK records, in the New Forest and Andover areas. Has very specific habitat requirements. Advice should be given to not harvest or otherwise remove large woody debris from fallen or damaged oaks at sites where this species is present (or at any nearby sites). Survey and monitor.

Hericium coralloides **Coral tooth** **B**
Saprophytic fungi on beech. Retain living or dead trunks of standing or fallen beech. 28 Hampshire records and 70 UK records, mainly New Forest and near Selborne. **[Coral tooth fungus - Back from the Brink](#)**

Hericium erinaceus **Bearded tooth** **B**
Saprophytic fungi on beech. Retain living or dead trunks of standing or fallen beech. 53 Hampshire records and 125 UK records. New Forest stronghold and scattered records across central Hampshire. **[Bearded tooth fungus - Back from the Brink](#)**

Mycena renati **Beautiful bonnet** **B**
Saprophytic fungi on beech. Retain decaying wood of deciduous trees. One record Noar Hill 2021. **[Mycena renati - My Specie Info](#)**

Sarcosphaera coronaria **Violet crowncup** **B**
Seven Hampshire records out of 31 UK records. Seen at Leckford Golf Course in 2022. Prefers calcareous soils under coniferous or broadleaf woodland so look to expand woodland habitat near existing populations. Raise awareness with landowner/manager. Survey and monitor.

***Strobilomyces
strobilaceus***

Old man of the woods

B

Four records between Alton and Petersfield. A rare species found in chalky beechwoods. Reversing habitat fragmentation and expansion of existing habitat would support this species. Raise awareness with landowner/manager. Survey and monitor.



Priority species assemblage - wet woodland

Measures – Refers to measure W2

Maintain habitat and hydrology, and expand/reconnect where possible.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources

Flies

Lipsothrix nervosa **Southern yellow splinter** **B**

Very few records scattered across Hampshire. Requires shady, wet woodland adjacent to streams. Associated with damp, decaying wood. Retain dying, mature trees and all deadwood in wet woodlands to ensure continuity of deadwood supply. Where woodlands recently dried out or in process of drying out, block ditches/culverts to raise water tables. Allow woody debris to accumulate in springs, streams, ditches and other watercourses

More survey required. **Southern yellow splinter - London Biodiversity**

Action Plan

Tabanus miki **Plain-eyed brown horsefly** **B**

Can be found in boggy clearings in woodland. Not seen in the New Forest since 1988. More recent records in Botley Wood, Wickam Common, and West Walk.

More survey required. Maintain open areas.



Credit: Steven Falk.

Priority species assemblage - woodland bats

Measures - Refer to measures W1, W2, R1, G2, G3, P1, P2, P4, FR1, HD1, and HD2

Protect all existing confirmed roost sites and retain as many potential roost sites as practicably possible. Ensure a succession or continuity of potential roost sites for the future and create a good network of habitats used for roosting, feeding and commuting. Avoid isolating any areas currently used for feeding. Ensure good connectivity between sites. Reduced pesticide use within foraging areas will improve insect diversity.

Woodland specialists - Bats and woodland - Bat Conservation Trust

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources

Mammals

Barbastella *barbastellus*

Western barbastelle

A/B

A flagship Hampshire species, barbastelles are crevice-dwelling bats. They predominantly roost in trees associated with woodland that has a high proportion of standing dead or dying trees, as these provide the cracks and crevices they prefer to use as roosts. Also, trees with ivy. Barbastelles require moth-rich foraging habitats over a 7km range, so an increase in the quality and

availability of wetland and riparian habitat, species-rich meadow, and hedgerows is important. The Mottisfont Bats Special Area of Conservation Foraging Zone is covered by planning policies to avoid direct or indirect impacts on suitable roosting, foraging and commuting habitats. Other important populations occur at Havant Thicket and across the New Forest and Forest fringes. They require mixed woodland structure and access to habitat-rich countryside and rivers.

[Barbastelle-bat-species-account.pdf \(bats.org.uk\)](#)

Myotis bechsteinii

Bechstein's bat

A/B

Flagship Hampshire woodland species, which favours mature dense woodland. Major hotspot at Havant Thicket. Scattered records elsewhere. Bechstein's bat is a woodland species similar to barbastelle, favouring holes and crevices in trees in deciduous woodland to roost in. However, foraging range is less at 2km and is mainly confined to woodland habitat. Surrounding landscape restoration is important for boosting insect numbers.

[Bechstein's bat - UK Bats - Bat Conservation Trust.](#)

Priority species assemblage – Bats requiring landscape-scale recovery and protection of roost sites

Measures – Refer to measures R1, G2, G3, P1, P2, P4, FR1, HD1, and HD2

Require landscape scale habitat restoration, a reduction in pesticide use to boost insect numbers, and protection of roost sites

Bats and agriculture - Landscapes for Bats - Bat Conservation Trust

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources

Mammals

Eptesicus serotinus **Serotine** **A/D**

Mainly roosts in older buildings. Declining due to loss of large insects and impacts to buildings. As the serotine roosts almost entirely in buildings, householders need to be aware and avoid building work and use of toxic chemicals in remedial timber treatment that may impact on them.

Serotine - UK Bats - Bat Conservation Trust

Pipistrellus nathusii **Nathusius' pipistrelle** **A/B/C**

The majority of roosts are located close to large freshwater lakes, and this species also forages near rivers, canals, lakes and waterlogged areas, as well as in woodland rides and edges. Requires improvements in water quality and retention of old trees with hollows.

Nathusius' pipistrelle - UK Bats - Bat Conservation Trust

Plecotus austriacus **Grey long-eared bat** **A/D**

Decline is related to the loss of suitable maternity roosts (large, open roof spaces) and a loss of their foraging habitat and connectivity (lowland unimproved grassland, marsh and riparian habitats, and hedgerows). Requires landscape scale habitat restoration particularly in the areas around the few records that exist, predominantly on the southern fringes of the New Forest.

Grey long-eared bats - Back from the Brink

Rhinolophus ferrumequinum **Greater horseshoe bat** **A/D**

Scattered records across Hampshire. Recent radio-tracking work from one of the two previously known key roost sites just north of Ringwood in the Avon Valley, has identified numerous new day and night roosts. These are predominantly in the Avon Valley north of Ringwood which appears to be an important area for this species (Peak count in known roost in April 2025 was 38). A key finding of the study was the linking of the population using the Avon Valley hibernation roosts to maternity/hibernation roost sites in Dorset, notably Bryanston Grange, an SSSI designated for its greater horseshoe maternity roost (~30km west). Measures should include robust survey effort (including April surveys for transitional roosts in Avon Valley) seeking to safeguard known roost sites, including minor roosts, and ensuring robust and comprehensive mitigation and monitoring where development impacts are unavoidable. Further measures include the proactive provision of suitable roosting structures where this is permissible, and further targeted survey work building upon the work undertaken to date, identifying key routes through the landscape, better defining the core sustenance zone and maintaining and creating ecologically functioning dark corridors. Working with landowners in core sustenance zone (3km and beyond where evidence supports this) to reduce the use of parasitic wormers in livestock and restoration and replanting of hedgerows, particularly those lining blocks of broadleaved

woodland should be prioritised. Additionally, riparian management should aim to maintain or reinstate riparian vegetation, including trees and shrubs, which will provide connectivity and foraging resources. **Greater horseshoe bat - Bat Conservation Trust**

Bat Conservation Trust

Rhinolophus

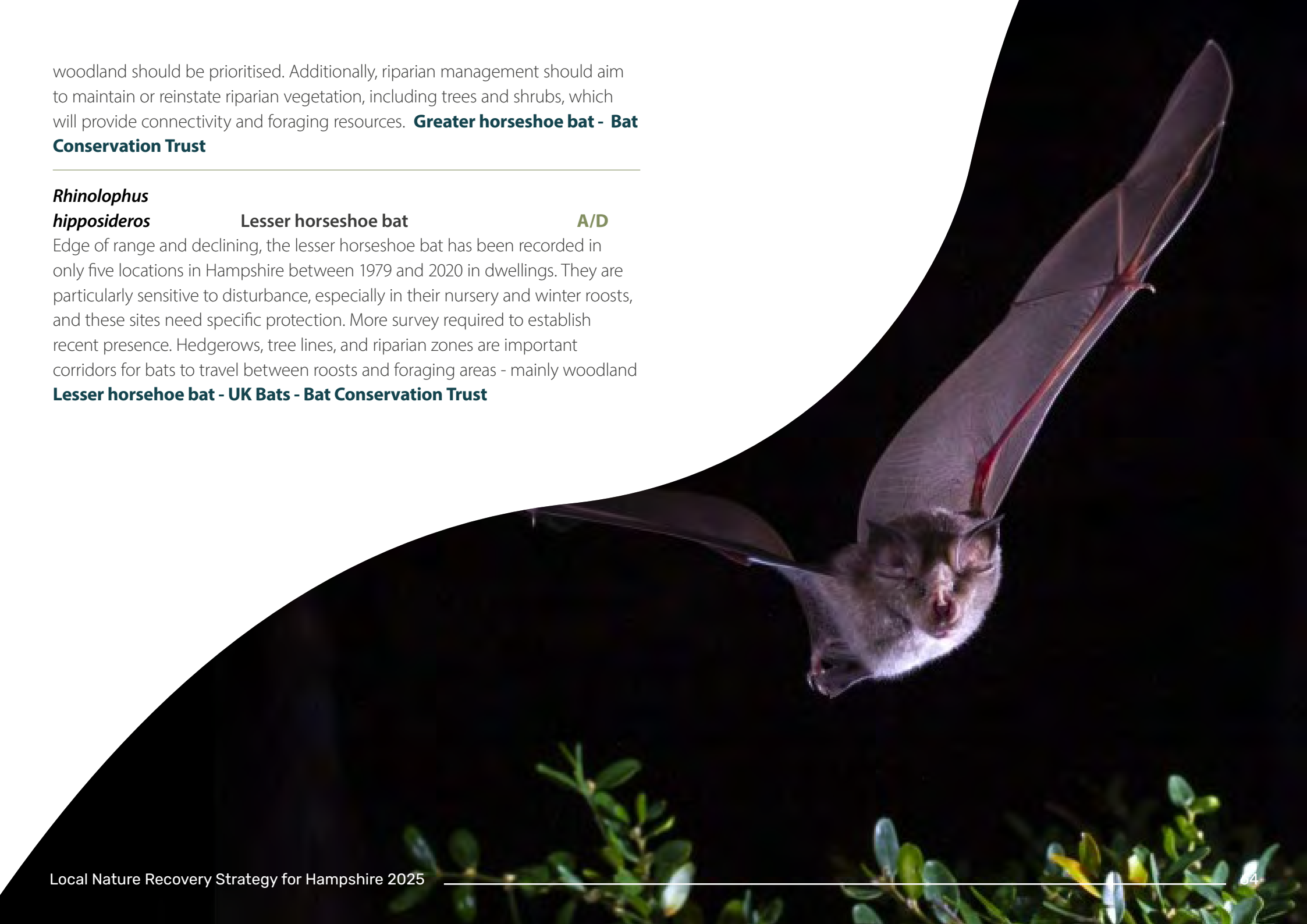
hipposideros

Lesser horseshoe bat

A/D

Edge of range and declining, the lesser horseshoe bat has been recorded in only five locations in Hampshire between 1979 and 2020 in dwellings. They are particularly sensitive to disturbance, especially in their nursery and winter roosts, and these sites need specific protection. More survey required to establish recent presence. Hedgerows, tree lines, and riparian zones are important corridors for bats to travel between roosts and foraging areas - mainly woodland

Lesser horseshoe bat - UK Bats - Bat Conservation Trust



Priority species assemblage - aspen

Measures – Refer to measures W2 and R1

The adult species seem to prefer damp woodlands and riverside margins. Larvae feed on species that feed on aspen. Needs aspen cut on rotation

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources

Bees, wasps and ants

Symmorphus connexus N/A **B**

Nationally rare. Nests are stocked with the larvae of the leaf beetle *Zeugophora subspinosa* which mainly feeds on aspen.

Symmorphus crassicornis N/A **B**

Nationally rare. Nests are stocked with the larvae of the poplar leaf beetle *Chrysomela populi* which mainly feeds on aspen.

Table 3.5: Species assemblages – New Forest SSSI only

The following species are located solely within the New Forest SSSI. It is, therefore, the statutory responsibility of landowner(s) to manage the habitats that provide the conditions for these species. However, this table has been included in the LNRS for awareness, as these are priority species and are threatened.

Priority species assemblage: New Forest bogs, mires, wet heath, lawns, and ponds

Measures: New Forest SSSI Site Management Plan - Views About Management (naturalengland.org.uk)

For these species, management should aim to maintain the groundwater quality and quantity, though the quantity is not likely to be naturally constant throughout the seasons or between wet and dry years.

Grazing is important in the management of the valley mire. Animals help to break up the tussocks of rank grasses such as purple moor grass, opening the sward up to a greater variety of plants. Some (but not excessive) trampling is necessary to create open soil for invertebrates, mosses and seedling establishment. Grazing also limits the spread of willow, alder and birch carr, which naturally tends to develop around the central watercourse, and should be restricted to this area, other than for a few isolated clumps elsewhere for the benefit of birds and invertebrates. Swamps are also important for invertebrates and birds, and the inclusion of some swamp vegetation, such as reedbed, within the mosaic of habitats present will add to the conservation value of the site. Prescribed burning is also vital in wet heaths.

Lawns and other areas of marshy grassland require grazing to retain their conservation interest, the aim being to keep a relatively open sward without causing excessive poaching. Light trampling can be

beneficial in providing areas for seed germination. Regular and careful maintenance of surface drainage, including ditches and drains, can be essential to prevent adverse changes in the plant species composition of the sward.

Ponds may require periodic management to prevent a build-up of plants and silt, which will reduce water depth and cause a build-up of nutrients. It may also be desirable to maintain a range of ponds in various stages of succession whilst maintaining the overall value of the pond habitat. Silt and plant material should only be removed from a portion of the pond at any one time, allowing sufficient time for recovery before other areas are dredged. A range of water depths should be retained, and the importance of exposed muddy margins should not be overlooked.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Flowering plants

<i>Baldellia ranunculoides</i>	Lesser water-plantain	B
<i>Carex lasiocarpa</i>	Slender sedge	B
<i>Carex limosa</i>	Bog-sedge	B
<i>Cicendia filiformis</i>	Yellow centaury	B
Yellow centaury - species dossier - Freshwater Habitats Trust		
<i>Eriophorum gracile</i>	Slender cottongrass	B
<i>Galium constrictum</i>	Slender marsh-bedstraw	B
<i>Gentiana pneumonanthe</i>	Marsh gentian	B
<i>Illecebrum verticillatum</i>	Coral-necklace	B
Coral-necklace - Freshwater Habitats Trust		
<i>Ludwigia palustris</i>	Hampshire-purslane	B
<i>Lysimachia minima</i>	Chaffweed	B
<i>Mentha pulegium</i>	Pennyroyal	B
<i>Pulicaria vulgaris</i>	Small fleabane	B

<i>Radiola linoides</i>	Allseed	B
<i>Utricularia bremii</i>	New Forest bladderwort	B
<i>Utricularia intermedia</i>	Intermediate bladderwort	B
<i>Utricularia minor</i>	Lesser bladderwort	B
<i>Viola lactea</i>	Pale dog-violet	B
<i>Wahlenbergia hederacea</i>	Ivy-leaved bellflower	B

Beetles

<i>Agabus brunneus</i>	Brown diving beetle	B
Brown diving beetle - New Forest National Park Authority		
<i>Tachys obtusiusculus</i>	Edmond's ground beetle	B
Edmond's ground beetle - Natural England		

Bees, wasps and ants

<i>Formica picea</i>	Bog ant	B/E
Need for more research on its requirements.		

Moths

Heliothis maritima

and *H. maritima*

ssp warneckei **Shoulder-striped clover** **B/E**

Occurs on damp heathland, recently near Denny Lodge. Feeds on flowers of cross-leaved heath. Plenty of habitat so no reason for decline? More survey.

Shoulder-striped clover moth - Hantsmoths

Grasshoppers and crickets

Stethophyma

grossum **Large marsh grasshopper** **B**

Large marsh grasshopper - species profile - Freshwater Habitats Trust

Liverworts and mosses

Dicranum bonjeanii **Crisped fork-moss** **B**

Dicranum spurium **Rusty fork-moss** **B**

Fossombronina foveolata **Pitted frillwort** **B**

Hypnum imponens **Pellucid plait-moss** **B**

Sphagnum angustifolium **Fine bog-moss** **B**

Sphagnum rubellum

(*S. capillifolium*

subsp. Rubellum **N/A** **B**

Can be confused with *Sphagnum capillifolium* s.str. which is more likely to be found in damp areas in the pasture woodlands.

[Sphagnum-capillifolium-subsp.-capillifolium-rubellum.pdf](#)

Sphagnum contortum **Twisted bog-moss** **B**

Sphagnum molle **Blushing bog-moss** **B**

Sphagnum subsecundum **Slender cow-horn bog-moss** **B**

Sphagnum teres **Rigid bog-moss** **B**

Beetles

Bagous brevis **N/A** **B/E**

Found on *Ranunculus flammula* in ponds. Records are old, so more survey is required to determine presence and potential for searching new sites. Maintain/expand habitat.

Bagous collignensis **N/A** **B/E**

Found on *Myriophyllum* in ponds. Records are old, so more survey is required to determine presence and potential for searching new sites. Maintain/expand habitat.

Bagous frit **Bagous frit** **B/E**

Found in *Sphagnum* bogs with Bogbean. Records are old, so more survey is required to determine presence and potential for searching new sites. Maintain/expand habitat.

Priority species assemblage: New Forest ephemeral and shallow ponds

Measures: New Forest SSSI Site Management Plan - Views About Management (naturalengland.org.uk)

For these species, it is important to maintain small, shallow ponds and temporary pools, and avoid drainage, unnecessary clearance, infilling, and deepening. Prevent pollution and eutrophication by avoiding fertiliser use near ponds, or in areas that might drain into a pond. Management should be on a rotational basis, with any essential dredging limited to less than 50% of the pond in any two-year period. Stocking densities need to be carefully balanced to prevent water bodies becoming overgrown or excessively poached and eutrophic from overstocking.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Beetles

Dieckmanniellus gracilis N/A **B**

Associated with water purslane (*Lythrum portula*) in damp areas.

Nanophyidae | UK Beetle Recording

Graptodytes flavipes N/A **B**

Occurs in both temporary and permanent heathland pools, although most frequent in the former. Also recorded from slow running water on heathland.

Main populations now confined to heathland areas in west Cornwall, Dorset and the New Forest

Helophorus laticollis **New Forest mud beetle** **B**

A very rare and restricted beetle found in shallow grassy wet pools in which they place their cocoons among vegetation in the shallow water. Drought and overshadowing believed to be the cause of its decline.

Crustacea

Triops cancriformis **Tadpole shrimp** **B**

It is important that the pond dries out each year, as drying out and re-wetting triggers the hatching of eggs on the pond substrate. There should also be sufficient food supply when the pond fills, such as algae and small aquatic invertebrates. Grazing livestock poaching the pond margins is also essential especially as dung provides nutrients. Seek to establish more temporary ponds in the immediate vicinity in order to disperse and expand population.

Tadpole shrimp - Bug Directory - Buglife

Molluscs

Omphiscola glabra Pond mud snail **B**
Pond mud snail - species management sheet - Buglife

Annelids

Hirudo medicinalis Medicinal leech **B**
Medicinal Leech - Species Directory - Freshwater Habitats Trust



Priority species assemblage: New Forest dry and wet heath

Measures: New Forest SSSI Site Management Plan - Views About Management (naturalengland.org.uk)

These species require grazing and prescribed burning to maintain a varied structure of uneven-aged stands of native heathers and other characteristic plants. It is beneficial if all stages of the heather life cycle are present. Areas of wet heath require more limited management, but light grazing is needed to maintain the variation in vegetation composition and structure, and for controlling invasive grasses such as purple-moor grass. Retaining scattered individual trees and patches of scrub is important for many species, for example, the maintenance of scattered mature Scots pine in undisturbed locations will provide suitable nest sites for hobbies. Similarly, gorse scrub for Dartford warblers and mature heather for breeding.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Beetles

Bembidion nigricorne N/A **B**

A New Forest species found in open habitats, litter and on bare ground. Maintain the New Forest pastoral grazing system as per the New Forest SSSI and SAC Management Plans. Raise awareness of the importance and locations of this threatened beetle. Re-survey extant sites

Bees, wasps and Ants

Nomada roberjeotiana Tormentil nomad bee **B**

A parasite of ground nesting *Andrena tarsata* which forages on Tormentil on acid grass/heath. Avoid heavy grazing from March to September to maximise the abundance of flowering Tormentil areas in areas where it occurs. Very old records, need a new survey. **Tormentil nomad bee - species management sheet - Buglife**

Flies

Ogcodes gibbosus Smart-banded hunchback **B/E**

Requires a mosaic of heathland with scattered scrub. More survey required. Also found on several downland SSSIs.

Moths

Coscinia cribraria Speckled footman **B/E**

Recently recorded in the New Forest after a four-decade absence at Hasley Hill and Ogden's Purlieu. Larvae feed on bristle bent, heather, bell heather, cross-leaved heath and bilberry. Research into its decline, and raise awareness with landowners. **Speckled footman moth - Hantsmoths**

Pachythelia villosella **Black sweep**

B

Most recent records are from around Beaulieu Road Station, declining and previously known from a number of heathland areas in the New Forest. Larvae feed on heather, bell heather, various grasses, birch and willow. Moderate or heavy grazing pressure seems more likely to threaten the species, since larva cases appear absent from even moderately short, grazed heather.

Black sweep moth - Hantsmoths

Lichens

Cladonia mediterranea **Reindeer lichen**

B

Raise awareness of the importance and locations of these rare lichens with site managers **Cladonia mediterranea | The British Lichen Society**



Priority species assemblage: New Forest dry heaths with sandy exposures

Measures: New Forest SSSI Site Management Plan - Views About Management (naturalengland.org.uk)

These species require sufficient grazing to provide some light poaching to create small pockets of bare peat and sandy ground with areas of sparse, short vegetation that are important to a variety of specialised invertebrates. Monitor populations.

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Beetles

Anisodactylus nemorivagus Heath short-spur **B**

Scarce in southern England, found on dry sandy heath.

Poecilus kugelanni Kugelann's green clock **B**
Hugelann's green clock beetle - Back from the Brink

Bees, wasps and ants

Andrena tarsata Tormentil mining bee **B**
The Species | The Species Recovery Trust | tormentil mining bee

Ceropales variegata N/A

Western New Forest and Dorset Heaths. One record in 2005 near Brown Loaf Cutting. **Ceropales variegata | BWARS**

Cryptocheilus notatus N/A **B**
Cryptocheilus notatus | BWARS

Homonotus sanguinolentus Bloody spider-hunting wasp **B**
Homonotus sanguinolentus | BWARS

Tapinoma erraticum Erratic ant **B**
Tapinoma erraticum | BWARS

Grasshoppers and crickets

Chorthippus vagans Heath grasshopper **B**
Chorthippus vagans (Eversmann, 1848) Heath Grasshopper | Orthoptera & Allied Insects

Priority species assemblage: New Forest Wood pasture and parkland

Measures: New Forest SSSI Site Management Plan - Views About Management (naturalengland.org.uk)

The New Forest ancient wood pasture supports the richest moss and lichen flora in lowland Europe, and an exceptional diversity of fungi and invertebrate species. Wood pasture requires extensive grazing that promotes an open woodland with some scrub and young trees in between the main woodland trees. Grazing is usually carried out by deer, pigs, ponies, and cattle. Old pollards may need special attention in terms of reducing competition from younger growth or lightening the crown, for example, by re-pollarding, although this is currently only being carried out on holly. Large cut branches, fallen dead wood or the remains of old trees should be left on site as they may contain populations of important fungi or invertebrates. Grazing or cutting helps to maintain old trees in relatively open conditions, which is desirable where these are important for lichens on the lower trunks. Identify younger suitable replacement host trees and support them towards veteran status with sensitive management around them to create the right conditions. Atmospheric nitrogen deposition needs to be reduced. Site managers should be aware of the locations of these priority species. Survey and monitor. [Woodland management](#) | [The British Lichen Society Woodland Wildlife Toolkit](#)

The following table lists the species' *Taxon* name followed by the *Common* name and its *Habitat recovery class*. Beneath each entry are additional comments, measures, and links to fact sheets and web resources.

Fungi

Rubinoboletus rubinus **Crimson bolete** **B**

3 Hampshire/38 UK records. New Forest only.

Hydnellum conrescens **Zoned tooth** **B**

57 Hampshire/200 UK records. A New Forest species.

Hydnellum scrobiculatum **Ridged tooth** **B**

One old record New Forest/12 UK records.

Phellodon confluens **Fused tooth** **B**

16 Hampshire/77 UK records. A New Forest species.

Phellodon melaleucus **Grey tooth** **B**

31 Hampshire/142 UK records. A New Forest species.

Phellodon niger **Black tooth** **B**

9 Hampshire/70 UK records. A New Forest species.

Sarcodon squamosus **Scaly tooth** **B**

Rare. One record in VC11 but not in Hampshire (near Christchurch). 5 unconfirmed records in the New Forest on the NBN Atlas 1904 to 2015.

Boletus fragrans **Fragrant bolete** **B**

One old record New Forest/3 UK records.

Boletus pseudoregius **The pretender** **B**
Specialist habitats in New Forest.

Boletus pseudosulphureus **N/A** **B**
Specialist habitats in New Forest. One old record New Forest/4 UK records.

Fungi - lichen related

Arthonia invadens **N/A** **B**
New Forest Woodland. Included in Threatened Species Recovery Action (TSRA) project summer 2025. Parasitic of *Schizotrema quercicola* in ancient woodland, typically in sheltered humid woods with large populations of the host. Normally confined to larger woodland meta-sites with extensive stands of humid but well-lit old woodland. Maintain open conditions at extant sites and replicate these conditions in suitable nearby woodlands (ancient, humid).

Melaspilea amota **N/A** **B**
New Forest Woodland. Included in Threatened Species Recovery Action (TSRA) project summer 2025. Requires acid bark on veteran trees in old growth woodland, mainly found on oak. Inclusion of oak in species mix for woodland creation/woodland enhancement within close vicinity of existing populations.

Stictographa lentiginosa **N/A** **B**
New Forest Woodland. Included in Threatened Species Recovery Action (TSRA) project summer 2025.

Xerotrema quercicola **N/A** **B**
New Forest Woodland. Included in Threatened Species Recovery Action (TSRA) project summer 2025. Retain abundant standing oak deadwood at known and adjacent suitable sites and build connectivity between metapopulations.

Lichens

Agonimia octospora **N/A** **B**
New Forest Woodland. Included in Threatened Species Recovery Action (TSRA) project summer 2025. Found on base-rich bark of trunks of aged *Quercus* and *Fagus*, often amongst mosses, in somewhat sheltered situations in old woodlands. Support host trees to achieve veteran status. Replicating habitat in the timeframe of LNRS will be a challenge. Will require setting up young habitat that will reach suitable status in the very long term. Promote use of oaks in these habitats as beech will likely be inappropriate due to climate change.

Arthonia anglica **N/A** **B**
New Forest Woodland. Included in Threatened Species Recovery Action (TSRA) project summer 2025.

Bacidia subturgidula **N/A** **B**
New Forest Woodland. Included in Threatened Species Recovery Action (TSRA) project summer 2025. Found on standing deadwood of Holly and Oak. Generally in sheltered, reasonably well-lit locations such as on the edges of glades in pasture woodlands. It is both old growth dependant and intolerant of deep shade. Measures include retaining standing deadwood of host species, supporting host trees to achieve veteran status/and maintaining open conditions and creation of rides and glades.

Buellia hyperbolica N/A B/C
 Found on acid bark and lignum, mainly on old oak but also sweet chestnut, Birch, Yew and ornamental conifers, in parks and pasture woodlands. Has only been found in sites with frequent veteran trees and typically frequent large diameter dead, both standing dead and fallen, trees. It is quite light demanding and is absent from the more shaded parts of woodlands. Vulnerable to ammonia based air pollution. Retain standing and fallen large-diameter deadwood and declining trees where safe to do so. Support potential host trees to achieve veteran status and create open woodland, wood pasture and parkland with host species. Buffer suitable sites from ammonia pollution sources, such as through dense tree and shrub planting.

Byssoloma Imaderence N/A B

Calicium diploellum N/A B
 Confined to old holly trees in old growth pasture woodlands in oceanic areas. Likely to be highly dependent on historic continuity of old Holly. Ensure continuity of Holly achieving veteran status.. Creation of wood pasture with Holly. Maintain open conditions.

Calicium hyperelloides N/A B
 On well-lit to partly shaded, easily wetted Quercus bark and lignum in old growth pasture woodlands and in parklands. Support open-grown oaks to achieve veteran status. Maintain open conditions.

Calicium parvum N/A B
 Found on well-lit veteran or slow growing Pinus sylvestris in humid glade in pasture woodlands in the New Forest and in Scottish native pinewoods. The presence on a non-native tree in the New Forest pasture woodlands is a bit of a dilemma, but it has survived through the retention of aesthetically pleasing old pine trees during pine removal programmes.

Chaenothecopsis savonica N/A B
 Requires retention of deadwood.

Cryptolechia carneolutea N/A B
 Shaded basic bark of often ancient ash, elm and ivy. Support open-grown host tree species to achieve veteran status. Maintenance of light shading.

Enterographa brezhonega N/A B
 New Forest Woodland. Included in Threatened Species Recovery Action (TSRA) project summer 2025. Found in sheltered and humid old growth woodland. Most sites are pasture woodland or relics of this habitat. Usually found in woods with large populations of *Coenogonium confusum*. Maintenance of conditions at existing sites. May be difficult to replicate conditions in new sites. Introducing similar management to existing nearby ancient humid woodland with low importance for other species.

Enterographa elaborata N/A B
 A woodland species that requires good indirect light and is absent from deeply shaded stands but conspicuously avoids southern aspects on trees, even in dense woodland. It requires veteran trees with complex trunk architectures that allow rain tracks to form. In the New Forest it is mainly dependent of naturally damaged, leaning or twisted veteran beeches. Support trees to reach veteran status.

<i>Enterographa soreciata</i>	N/A	B	<i>Parmelinopsis minarum</i>	New Forest parmelia	B
New Forest Woodland. Included in Threatened Species Recovery Action (TSRA) project summer 2025.			A southern oceanic acid bark species of humid old woodlands but strongly light demanding.		
<i>Lobaria pulmonaria</i>	Lungwort lichen	B	<i>Pertusaria pustulata</i>	N/A	B
Very sensitive to atmospheric pollution and slow to recolonise. Lobaria pulmonaria The British Lichen Society			A specialist of veteran Beech and the bulk of its British population in the New Forest. Requires a continuity of well-lit but sheltered and humid veteran Beech.		
<i>Megalaria laureri</i>	Laurer's catillaria	B A	<i>Phaeographis lyellii</i>	N/A	B
Fagus specialist that is rare in Europe and confined to the New Forest in Britain. Requires a continuity of well-lit but sheltered and humid veteran Beech.			A moderately mobile species of slow growing often younger trees, such as suppressed young Beech, some evidence it is now spreading. Included in Threatened Species Recovery Action (TSRA) project summer 2025.		
<i>Megalospora tuberculosa</i>	N/A	B	<i>Phlyctis agelaea</i>	N/A	B/E
On base rich bark on veteran trees in pasture woodlands. Requires a continuity of well-lit but sheltered and humid veteran trees.			Research needed better understand habitat requirements and impacts of air pollution.		
<i>Micarea hedlundii</i>	N/A	B	<i>Porina hibernica</i>	N/A	B
A specialist of large hulks of dead wood in humid situations, but not too shaded, internationally rare. Research needed to better inform ecology and cause of rarity/pressures.			A southern oceanic species of base rich bark on veteran trees in pasture woodlands, with most of its British population in the New Forest. Requires a continuity of well-lit but sheltered and humid veteran trees		
<i>Parmelinopsis horrescens</i>	N/A	B	<i>Porina rosei</i>	N/A	B
A southern oceanic acid bark species of humid old woodlands but light demanding.			A much confused taxa, due to the more frequent occurrence of a remarkably similar, at least when sterile, but unrelated lichen, Coenogonium nimisii , the existence of which was not suspected until revealed by sequencing. Both occur in the New Forest, on base-rich bark of Fagus, Quercus and Taxus, in old growth woodland, and both rare and threatened species.		

Pyrenula nitida N/A B
A *Fagus* specialist that is confined to the New Forest and Burnham Beeches in Britain. Requires a continuity of well-lit but sheltered and humid veteran Beech. Healthy local populations within the New Forest.

Ramonia chrysophaea N/A B
An ephemeral of bared patches on base rich bark on veteran trees in pasture woodlands. Requires a continuity of well-lit but sheltered and humid veteran trees.

Ramonia dictyospora N/A B
An ephemeral of bared patches on base rich bark on and on lignum inside veteran trees in pasture woodlands. Requires a continuity of well-lit but sheltered and humid veteran trees.

Ramonia nigra N/A B
An ephemeral of bared patches on base rich bark on and on lignum inside veteran trees in pasture woodlands. Requires a continuity of well-lit but sheltered and humid veteran trees. On Holly and Oak in the New Forest, mainly on Ash beyond.

Reichlingia zwackhii N/A B
Initially parasitic on *Phlyctis argena* but confined to veteran trees in pasture woodland.

Rinodina isidioides N/A B
A southern oceanic species of base rich bark on veteran trees in pasture woodlands. Requires a continuity of well-lit but sheltered and humid veteran trees.

Schismatomma ricasolii Speckled script-lichen B
New Forest Woodland. Included in Threatened Species Recovery Action (TSRA) project summer 2025.

Scutula circumspecta N/A B
In small wound track in base rich bark on veteran tree in pasture woodland, all on Beech in the New Forest, which supports the largest British population. Requires a continuity of well-lit but sheltered and humid veteran Beech.

Scytinium fragrans N/A B
New Forest Woodland. Included in Threatened Species Recovery Action (TSRA) project summer 2025.

Scytinium palmatum N/A E
Site assessments to identify possible threats in order to design species specific management interventions accordingly.

Synarthonia astroidestera N/A B
New Forest Woodland. Included in Threatened Species Recovery Action (TSRA) project summer 2025.

Tylophoron hibernicum N/A B/E
Research into cause and effect between climate change and species distribution changes.

Varicellaria velata N/A B
An internationally rare species of mesic bark on veteran trees, Beech and Oak in the New Forest, which supports over 90% of the British population. Requires a continuity of well-lit but sheltered and humid veteran trees.

Wadeana dendrographa N/A **B**

An Ash specialist, found on veteran Ash, so very threatened by Ash Dieback. The New Forest includes some records from Oak as well as many from Ash.

Wadeana minuta N/A **B**

On base rich bark on veteran trees in pasture woodlands. Requires a continuity of well-lit but sheltered and humid veteran trees. Very rare south of the Scottish Highlands.

Liverworts and mosses

Codonoblepharon forsteri **Knothole yoke-moss** **B**

A specialist moss of rain tracks and wet pockets on roots and knotholes of mature Beech trees. The New Forest is the UK stronghold with the only other populations at Burnham Beeches (Buckinghamshire) and Epping Forest (South Essex).

Beetles

Anoplodera sexguttata **6-spotted longhorn** **B**

Epierus comptus **Epierus comptus** **B**

Gnorimus nobilis **Noble chafer** **B**

Found only in the New Forest in Hampshire and in old orchards elsewhere. It is dependent on old, decaying wood within live trees especially cherry, plum and apple, and oak and beech in the New Forest. Maintain old growth trees, encourage succession. Plant more orchards. **Noble chafer beetle facts - People's Trust for Endangered Species**

Megapenthes lugens **The Queen's executioner** **B**
Woodland Wildlife Toolkit

Melandrya barbata **Bearded false darkling beetle** **B**
Bearded false darkling beetle - Back from the Brink

Flies

Caliprobola speciosa N/A **B**
Caliprobola speciosa - NBN Atlas

Scenopinus niger **Forest windowfly** **B**
One record 2010 Denny Wood.

Bees, wasps and ants

Andrena ferox **Oak mining bee** **E**
Not associated with deadwood. Ground nesting and feeding on oak. Only known in the UK within the New Forest. **Adrena ferox - BARS**







Local Nature Recovery Strategy for Hampshire 2025

Part 4: Technical Appendices

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Introduction

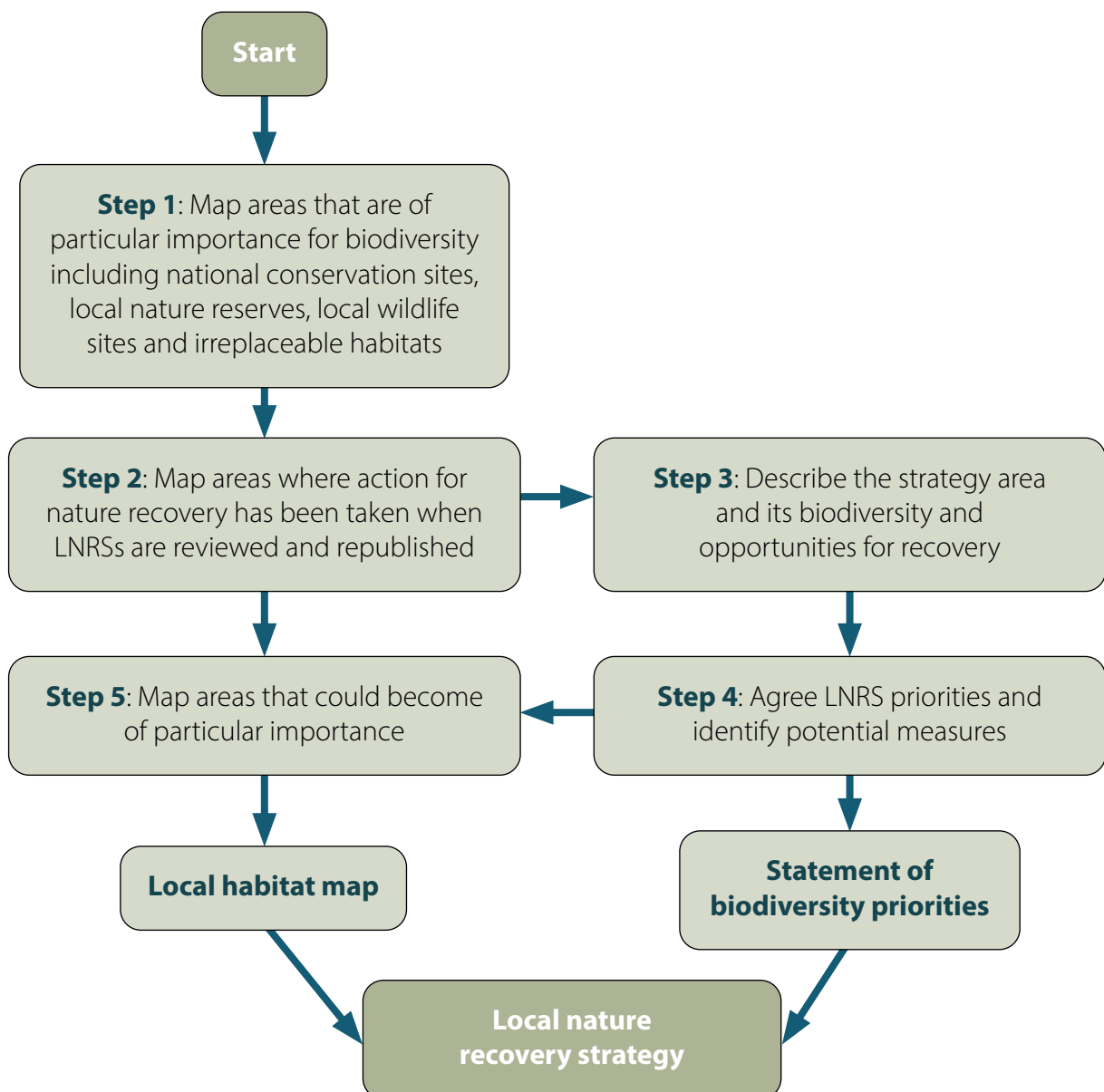
This document outlines the legislation, regulation, policy, information sources and technical methodologies that were followed and applied throughout the preparation of the Local Nature Recovery Strategy for Hampshire 2025.

Local Nature Recovery Strategy Process

The preparation of the LNRS has followed a systematic and rigorous approach. Figure 1, below, is an outline of the process undertaken to create and shape the LNRS

for Hampshire's Priorities, Measures and Mapping, and follows the five step process proposed by Defra within LNRS regulations and statutory guidance.

Figure 1: LNRS Regulations and Guidance process diagram



Appendix 1: Policy context and national objectives

Local Nature Recovery Strategies (LNRs) operate within a national and local policy framework, and should contribute to national environmental objectives, commitments and targets for nature recovery and other environmental goals.

25 Year Environment Plan

The 25 Year Environment Plan (25YEP)¹, published in 2018, provides a national framework and vision for improving the environment over a 25-year period. It sets out long-term goals and targets for various aspects of environmental conservation, including biodiversity, air and water quality, and climate change mitigation. LNRs are aligned with and support the objectives of the 25YEP at a local level. They translate the overarching goals and principles of the 25YEP into actionable plans and initiatives tailored to specific regions or localities. By addressing local environmental challenges and opportunities, LNRs help advance the broader aims of the 25YEP, such as enhancing biodiversity, improving ecosystem resilience and promoting sustainable land management practices.

Environment Act 2021

The Environment Act 2021² makes provision for targets, plans and policies for improving the natural environment. LNRs are introduced as spatial strategies in the Act to map out the action needed to restore, enhance, and create spaces for nature in England. The Act requires local authorities to prepare and implement LNRs as part of their environmental planning responsibilities. This statutory requirement ensures that LNRs are embedded within the planning framework and given due consideration in

local decision-making processes. The Act emphasises the integration of LNRs with existing planning systems, including local plans and spatial strategies. By mainstreaming nature recovery considerations into planning processes, the Act seeks to ensure that LNRs are effectively implemented and integrated into broader land use planning and development decisions.

The Environment Act is supported by the Environment (Local Nature Recovery Strategies) (Procedure) Regulations 2023³, which provides additional details and requirements in the preparation of LNRs.

Environmental Improvement Plan 2023

The Environmental Improvement Plan (EIP) 2023⁴ is the government's delivery plan for the environment, and building a green, more prosperous country. It is the first revision of the 25YEP. The EIP reinforces the intent of the 25YEP. Where the 25YEP sets out the framework and vision, the EIP sets out the plan to deliver these organised around the ten goals in the 25YEP. The 10 goals of the EIP provide the overarching basis for LNRs, which include:

-
- 1 25 Year Environment Plan - <https://www.gov.uk/government/publications/25-year-environment-plan>
 - 2 Environment Act 2021 - <https://www.legislation.gov.uk/ukpga/2021/30/contents>
 - 3 The Environment (Local Nature Recovery Strategies) (Procedure) Regulations 2023 - <https://www.legislation.gov.uk/uksi/2023/341/made>
 - 4 Environment Improvement Plan 2023 - <https://www.gov.uk/government/publications/environmental-improvement-plan>

- Goal 1: Thriving plants and wildlife.
- Goal 2: Clean air.
- Goal 3: Clean and plentiful water.
- Goal 4: Managing exposure to chemicals and pesticides.
- Goal 5: Maximise our resources, minimise our waste.
- Goal 6: Using resources from nature sustainably.
- Goal 7: Mitigating and adapting to climate change.
- Goal 8: Reduced risk of harm from environmental hazards.
- Goal 9: Enhancing biosecurity.
- Goal 10: Enhanced beauty, heritage, and engagement with the natural environment.

Goal 1, the ‘apex goal’, towards which all other goals will contribute, is to “halt the decline in our biodiversity so we can achieve thriving plants and wildlife”. The eight points of focus for this goal over the coming decade are:

- 1. Creating more joined up space for nature on land:** protecting land and increasing interconnections to boost natural resilience.
- 2. Restoring our protected sites on land:** tackling increasing pressures on our most valuable sites and building their long-term resilience.
- 3. Managing our woodlands for biodiversity, climate and sustainable forestry:** delivering co-benefits for nature and climate.
- 4. Enhancing nature in our marine and coastal environments:** taking a holistic approach to coastal and marine protection [please note that LNRS boundaries only extend to the intertidal mean low water mark].

- 5. Taking targeted actions to restore and manage species:** such as tailored conservation strategies and habitat creation.
- 6. Mobilising green finance and the private sector:** drawing on the increasing interest in investing in nature.
- 7. Taking action to restore our global environment:** supporting other countries to take the action we role-model domestically.
- 8. Unlocking private and public finance:** ensuring that we grow new sources of finance for nature.

Both the EIP and LNRS share the overarching goal of improving the environment, albeit with different scopes. While the EIP may encompass a broader range of environmental issues, such as air quality, waste management and sustainable development, the LNRS specifically targets nature recovery and biodiversity conservation.

In 2022, the UK government signed up to the Convention on Biological Diversity in Montreal (Target 3 of the Kunming-Montreal Global Biodiversity Framework)⁵:

“Ensure and enable that by 2030 at least 30 per cent of terrestrial, inland water, and of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes,

⁵ Convention on Biological Diversity – COP15: Final Text on Kunming-Montreal Global Biodiversity Framework - <https://www.cbd.int/article/cop15-final-text-kunming-montreal-gbf-221222>

recognizing and respecting the rights of indigenous peoples and local communities including over their traditional territories.

One of the main commitments made in the EIP, therefore, is that the government⁶ will “protect 30% of our land and sea for nature through the Nature Recovery Network (NRN)”. The LNRSs underpin the foundation of the nationwide nature recovery network. They play a crucial role in achieving the aspirations set out by the NRN and 30% protection by 2030 (referred to as 30by30 or 30x30).

EIP targets and commitments

The following national targets and commitments set out in the EIP, relevant to the LNRS, deliver requirements in the Environment Act 2021:

- Halt the decline in species abundance by 2030, and then by the end of 2042 increase abundance so that it is greater than in 2022 and at least 10% greater than in 2030.
- Restore or create more than 500,000ha of a range of wildlife-rich habitats outside protected sites, compared to 2022 levels, by the end of 2042.
- New interim target to restore or create 140,000ha of wildlife-rich habitats outside protected sites by 2028, compared to 2022 levels.
- Improve the GB Red List Index for species extinction by 2042 compared to 2022 levels.
- 50% of SSSIs on track to achieve favourable condition by 31 January 2028.
- Increase tree canopy or woodland cover from 14.5% to 16.5% of total land in England by 2050 (interim target is 0.26% = 34,000ha by 31 January 2028).
- Ensure that 70% of designated features in Marine Protected Areas (MPAs) are in favourable condition by 2042, with the remainder in recovering condition (interim target of 48% of designated features to be in favourable condition,

with the remainder in recovering condition, by 31 January 2028).

- Reduce nitrogen, phosphorus, and sediment pollution from agriculture into the water environment by at least 40% by 2038 (against a 2018 baseline). Interim Target 1: reduce by 10% by 31 January 2028. Interim Target 2: reduce by 15% in catchments containing protected sites in unfavourable condition due to nutrient pollution by 31 January 2028.
- Reduce phosphorous loadings from treated wastewater by 80% by 31 December 2038, against a 2020 baseline (interim target - reduce by 50% by 31 January 2028, against a 2020 baseline).
- 65% to 80% of landowners and farmers will adopt nature friendly farming on at least 10-15% of their land by 2030.



6 <https://www.gov.uk/government/publications/delivering-30by30-on-land-in-england/delivering-30by30-on-land-in-england#annex-1---30by30-criteria-explanation-of-terms>

Biodiversity duty

The Environment Act 2021 establishes mechanisms including a strengthening of the NERC Act⁷ biodiversity duty on public authorities. The strengthened biodiversity duty states that public authorities who operate in England must consider what they can do to conserve and enhance biodiversity in England. This means that public authorities must consider what they can do to conserve and enhance biodiversity, agree policies and specific objectives based on their considerations, and act to deliver policies and achieve objectives. In complying with the biodiversity duty, public authorities must “have regard to any relevant LNRS”. Local planning authority biodiversity strategies, outlined in Appendix 5, have some weight in this regard.

Duty to take account of LNRS

The Levelling Up and Regeneration Act (LURA) 2023⁸ requires that minerals and waste plans, local plans and neighbourhood development plans, “must take account of LNRS that relates to all or part of the local planning authority’s area, including in particular –

- (a) the areas identified in the strategy as areas which -
 - I. are, or could become, of particular importance for biodiversity, or
 - II. are areas where the recovery or enhancement of biodiversity could make a particular contribution to other environmental benefits,
- (b) the priorities set out in the strategy for recovering or enhancing biodiversity, and
- (c) the proposals set out in the strategy as to potential measures relating to those priorities.”

National Planning Policy Framework (NPPF)

Paragraph 192(a) of the NPPF states that plans should identify, map and safeguard areas identified by national and local partnerships for habitat management, enhancement, restoration or creation. Local Nature Recovery Strategies are prepared through local partnerships (involving all local planning authorities) established under a national legislative framework and will identify and map proposed areas for habitat management, enhancement, restoration and creation for biodiversity and the wider natural environment.

Planning Practice Guidance (PPG) adds further context to the NPPF. PPG states that “Local planning authorities should be aware of those areas mapped and identified in the relevant Local Nature Recovery Strategy and the measures proposed in them and consider how these should be reflected in their local plan. In doing so, they should consider what safeguarding would be appropriate to enable the proposed actions to be delivered, noting the potential to target stronger safeguarding in areas the local planning authority considers to be of greater importance. This will enable local planning authorities to support the best opportunities to create or improve habitat to conserve and enhance biodiversity, including where this may enable development in other location.”

Furthermore, PPG states that “The Local Nature Recovery Strategy is an evidence base which contains information that may be a ‘material consideration’ in the planning system, especially where development plan documents for an area pre-date Local Nature Recovery Strategy publication. It is for the decision-maker to determine what is a relevant material consideration based on the individual circumstances of the case.”

7 Natural Environment and Rural Communities (NERC) Act 2006 - <https://www.legislation.gov.uk/ukpga/2006/16/contents>
8 Levelling Up and Regeneration Act 2023 - <https://www.legislation.gov.uk/ukpga/2023/55/enacted>

Local plans, minerals and waste plans, and neighbourhood development plans

A local plan, also known as a local development plan (LDP) or a local planning policy framework, is a statutory document prepared by a local planning authority. It sets out land use policies and proposals for guiding development and managing growth within a specific area or local authority jurisdiction. Local plans are statutory documents that provide a framework for making planning decisions and determining planning applications and in view of the LURA 2023 requirement, must take account of relevant LNRSs.

A minerals and waste plan is a statutory document prepared by a minerals and waste planning authority that identifies sites for mineral extraction and waste management facilities and an appropriate policy framework. Minerals and waste planning authorities must consider the potential impacts of the plan on biodiversity and ecosystems, identify areas of ecological importance, priority habitats, and protected species, and ensure that sensitive sites are safeguarded from development. In doing so, and in view of the LURA 2023 requirement, minerals and waste plan preparation must take account of relevant LNRSs.

A neighbourhood development plan is a community-led initiative that sets out policies and proposals for guiding development and shaping the future of a specific neighbourhood or area within a local authority's jurisdiction. Neighbourhood development plans are prepared by local communities, often with the support of local councils and planning authorities. They provide a framework for managing land use, development and environmental conservation at the local level. In view of the LURA 2023, neighbourhood development plan preparation must take account of relevant LNRSs.

Local plans, minerals and waste plans, and neighbourhood development plans must work together with an LNRS to achieve shared objectives for biodiversity enhancement, habitat creation, and

sustainable development. Local planning authorities, as per the LNRS regulations, must take account of their LNRSs in planning matters.

Local plans, minerals and waste plans, and neighbourhood development plans should align their objectives and policies with the goals and priorities outlined in the LNRS. This ensures that nature recovery considerations are integrated into land use planning decisions and that development activities support them. Local plans should incorporate specific actions and recommendations from the LNRS into their policies and proposals. This may include designating areas for habitat creation, restoration, and enhancement, as identified in the LNRS, and integrating green infrastructure to support nature recovery.

Local plans and minerals and waste plans should integrate spatial planning considerations from the LNRS into their land use allocations and zoning decisions. This involves identifying and protecting key wildlife habitats, ecological corridors, and biodiversity hotspots identified in the LNRS.

Local plans and minerals and waste plans should have regard to the strategic opportunity sites identified in the LNRS as potential biodiversity net gain (BNG) off-site delivery locations. Where onsite delivery of BNG is not possible, the LNRS can be used to target off-site BNG. This will be determined by a strategic significance score, which provides additional unit value to habitats located in preferred locations (ACB and measures maps) for biodiversity and other environmental objectives. This encourages BNG habitats to be delivered as close to the development site as possible, and within the strategic locations. This is likely to be within the same authority boundary or National Character Area.

Minerals and waste planning authorities can align with the principles of BNG to ensure that development projects deliver a measurable increase in biodiversity value. By incorporating BNG requirements into planning policies and development proposals,

they can contribute to the objectives of this LNRS by enhancing biodiversity, restoring habitats, and creating new wildlife corridors as part of development schemes.

Local plans and minerals and waste should involve stakeholders, including local communities, environmental groups and landowners, in the development and review process. This includes consulting with stakeholders on the content and implementation of the LNRS, ensuring that local plans reflect the priorities and aspirations of the community for nature recovery.

Neighbourhood development plans should incorporate specific recommendations and actions from the LNRS into their policies and proposals. This may include identifying and protecting local wildlife habitats, greenspaces and ecological corridors identified in the LNRS, and integrating nature-based solutions into neighbourhood development projects.

Hampshire 2050

Hampshire 2050⁹ is a vision for the whole of Hampshire, prepared by expert commissioners and endorsed by a range of partners. The 2050 Commission identified climate change as the most significant factor that will have an impact on Hampshire's future. On 23 November 2023, the Hampshire 2050 Partnership was relaunched at the 2050 Summit.

The Hampshire 2050 Vision under changing environment states:

“Recognise Hampshire's natural and historic environment and the services it provides as its most valued asset and an essential component of Hampshire's attractiveness and prosperity”.

The policy associated with this statement is:

“Develop and promote a focus on sustaining and enhancing Hampshire's environment to strengthen Hampshire's economy and society”.

The Hampshire 2050 Vision under changing climate states:

“Recognising the changing climate as the biggest threat, a well-adapted and resilient Hampshire will be essential to ensure that Hampshire's economy, environment and society continues to thrive and prosper”.

The policy associated with this statement is:

“Develop and promote a focus on embedding climate resilience and mitigation across key policies and sectors, working with communities across Hampshire”.

In enabling nature recovery, the LNRS is consistent with the Hampshire 2050 Vision and policies in terms of the changing environment and changing climate.

A Strategy for the Health and Wellbeing of Hampshire 2019–2024

One of the aims of this strategy is to have healthier communities. The strategy highlights that one of the ways to achieve this is through “improving access to green spaces (such as parks and other open spaces), blue spaces (such as canals, ponds, rivers and beaches) and other leisure facilities”. Access to nature and greenspace has been proven to have significant benefits for mental and physical health and wellbeing. This LNRS is therefore consistent with the Hampshire Health and Wellbeing Board's strategy.

Nationally Significant Infrastructure Projects (NSIP)

Impacts on the natural environment are to be considered through the development of NSIPs. NSIP developers must monitor the environmental impacts

9 <https://www.hants.gov.uk/aboutthecouncil/haveyoursay/visionforhampshire2050>

of their projects and report on their compliance with biodiversity commitments. This monitoring is often coordinated with local authorities, where alignment with the LNRS should be considered. By aligning NSIPs with the LNRS, large-scale infrastructure projects can contribute to meaningful biodiversity improvements and nature recovery. This integrated approach helps balance development needs with environmental sustainability.

Net zero

The UK is legally committed to delivering net zero emissions of greenhouse gases (GHGs) by 2050, which means that the UK will not be adding to GHGs in the atmosphere. Any residual GHG emissions will, therefore, need to be offset by an equivalent amount being removed from the atmosphere.

The UK government recognises the valuable role that nature can play in sequestering carbon. A £640 million Nature for Climate Fund has been made available for the creation and restoration of habitats that will help the country reach net zero.

So far, the main focus nationally has been on tree planting and woodland creation, and the restoration of peatlands. There is also an increasing recognition of the role that other habitats, such as saltmarsh and intertidal habitat, can play in sequestering carbon.

In developing this LNRS, we have considered the best opportunities for sequestering carbon afforded by habitat creation and restoration across the area. The most significant of these in their ability to sequester carbon are:

- Woodland creation.
- Lowland peatland restoration.
- Creation of wetland and saltmarsh habitat.
- Restoration and management of unimproved meadows.

Nevertheless, restoration of a range of other habitats can also sequester carbon, though at a lower rate. In addition, nature-friendly farming practices, especially those that restore soils, can also be effective in sequestering carbon.



Appendix 2: Engagement and key partners

Stakeholder engagement is crucial in ensuring that the LNRS for Hampshire reflects the priorities of people across the area and is realistic and achievable. This has taken the form of surveys, workshops, one-to-one meetings, and attendance at regional events. This section provides a brief overview of engagement undertaken in the development of the Strategy.

Key partners

Hampshire County Council has worked collaboratively with a range of key partners in preparing the LNRS for Hampshire. The following partners have made a significant contribution to the development of the LNRS:

Organisation	Supporting authorities	Steering group	Local Planning Authority working Group	Stakeholder engagement task and finish group	Farmer and landowner task and finish group
Hampshire County Council (Responsible Authority)		X	X	X	X
Natural England (also representing the Environment Agency and the Forestry Commission)	X	X	X		X
Environment Agency		X			X
Basingstoke and Deane Borough Council	X	X*	X	X	
East Hampshire District Council	X	X*	X		
Eastleigh Borough Council	X		X		
Fareham Borough Council	X		X		
Gosport Borough Council	X		X		
Hart District Council	X		X		
Havant Borough Council	X		X		
New Forest District Council	X	X*	X		
New Forest National Park Authority	X	X	X	X	X
Portsmouth City Council	X	X	X	X	
Rushmoor Borough Council	X		X		

South Downs National Park Authority	X	X	X	X	
Southampton City Council	X	X	X	X	
Test Valley Borough Council	X		X		
Winchester City Council	X		X		
Hampshire & Isle of Wight Wildlife Trust		X		X	X
National Farmers Union		X			X
Country Land and Business Association		X			X
Hampshire and Isle of Wight Local Nature Partnership		X			
Environmental Farmers Group					X
Cluster Farm Facilitators					X

*Representing the Local Planning Authority Working Group

In developing the priorities and mapping for the LNRS, we have worked closely with organisations that have expertise and/or a particular stake in the Strategy. This has helped map areas that are impactful and realistic.

The Hampshire and Isle of Wight Local Nature Partnership (LNP) Board brings together organisations working to deliver more for nature’s recovery locally. They have provided an important steer on the content of the LNRS for Hampshire.

The Hampshire & Isle of Wight Wildlife Trust (HIWWT) has significant nature conservation experience and has provided access to its extensive network of supporters.

Organisations such as the National Farmers Union (NFU) and the Country Land and Business Association (CLA) have acted as a conduit and provided useful guidance in our engagement with the farming and landowner sector.

We have worked closely with Hampshire’s protected landscapes (New Forest and South Downs National Parks, and North Wessex Downs, Cranborne Chase,

and Chichester Harbour National Landscapes) in relation to their work on nature recovery, and through Natural England with the Forestry Commission and the Environment Agency.

Representatives of Hampshire’s catchment partnerships and other freshwater-related organisations, such as the Wessex Rivers Trust, have also been helpful in understanding the priorities relating to the freshwater environment, and how to integrate these into the LNRS.

We have held numerous one-to-one conversations with other key stakeholders to understand their priorities for nature recovery. This has included national conservation organisations, other local non-governmental organisations (NGOs), charitable bodies, and many others.

Wider engagement

Over a nine-week period, starting at the beginning of January 2024, a series of 20 workshops were held. Ten community workshops were hosted by the HIWWT on behalf of Hampshire County Council. These workshops were aimed at interested individuals and community organisations. Ten thematic workshops were hosted by Hampshire County Council. These workshops were aimed at landowners, organisations and specialist groups. Over 450 attendees representing more than 100 organisations attended this mix of online and in-person workshop sessions, resulting in 2,064 responses, generating 257 potentially mappable priority outcomes. Outputs from the workshops are available on the LNRS webpages¹⁰.

The format of the workshops was informed through the work of a number of specialist task and finish groups, as well as the LNRS Steering Group, which includes representatives from the CLA, NFU and the Hampshire & Isle of Wight Wildlife Trust.

In preparing the ACB map, an additional prioritisation workshop was held. This was attended by all Hampshire local planning authorities, together with Natural England, Environment Agency, Forestry Commission, HIWWT, CLA and NFU. The purpose of the workshop was to further refine draft opportunity areas in order to better target the delivery of biodiversity enhancement and wider environmental benefits.

Farmer and landholder engagement

Farmers and landowners are critical to the delivery of nature recovery. They have unique knowledge and experience of what would be deliverable and most impactful for nature on their land and the surrounding area. Therefore, we have worked closely with farmer and landowner representatives and advisors, including the NFU, CLA, Cluster Farm Facilitators and the

Farming and Wildlife Advisory Group (FWAG) South East throughout the development of the LNRS.

Engagement with this sector included:

- A Farmers and Landowners Task and Finish Group - meetings with organisations representing farmers and landowners, including cluster farm facilitators, NFU and CLA to advise on workshop content and wider engagement.
- Farmers and landowners were invited to attend all workshops in the engagement programme. This included invites through CLA and NFU local newsletters, cluster farm facilitators, and Natural England land management advisers, etc.
- LNRS project team attendance at the New Forest and Hampshire Show (30 July – 1 August).
- Dissemination of LNRS for Hampshire publicity leaflets to the farming/landowning sector at the Alresford Agricultural Show (7 September); the Romsey Show (14 September); and the Newbury Show (21 and 22 September).

Community engagement

It is crucial that the LNRS is informed by communities' priorities and perspectives on nature recovery. This ensures that the LNRS reflects local opportunities and priorities, and is useful for people across the area covered by the Strategy.

An analysis of previous and concurrent work in understanding local priorities for nature recovery was undertaken to ensure the best use of existing information.

Additionally, community engagement workshops were held across Hampshire in the following areas:

¹⁰ <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/get-involved>

- Basingstoke (25 January 2024).
- Brockenhurst (29 January).
- Winchester (31 January).
- Test Valley (8 February).
- Meon (19 February).
- Southampton (20 February).
- Portsmouth (28 February).

These were supplemented by county-wide online workshops held on 26 and 27 February and 5 March 2024.

In conjunction with the workshops, a public survey ran for three months. This gathered the views of Hampshire’s communities regarding their priorities for nature recovery. The public survey was advertised through the LNRS for Hampshire Newsletter, social media and press releases. Over 1,500 responses were received, highlighting those areas across Hampshire, including Southampton and Portsmouth, that would benefit from nature recovery. A summary of the results of the public survey is set out in Appendix 2.1.

Community engagement specific to the LNRS was also achieved at the following events through:

- LNRS team attendance at the New Forest Show (30 July - 1 August 2024).
- Dissemination of LNRS for Hampshire publicity leaflets at the Alresford Agricultural Show (7 September), the Romsey Show (14 September), and the Newbury Show (21 and 22 September).

The public consultation on the draft LNRS for Hampshire (12 May – 23 June 2025) was also an important part of our community engagement. In particular, we wanted to use the consultation to understand:

- if there are any other areas that could be mapped as a focus for nature recovery; and
- if the priorities and measures proposed reflect the aspirations of communities and community groups.

Theme, habitat, and species engagement

It was important to engage with a wide range of stakeholders and key organisations interested in particular habitats, species and natural areas across Hampshire. Engagement with these key stakeholders included through the following workshops:

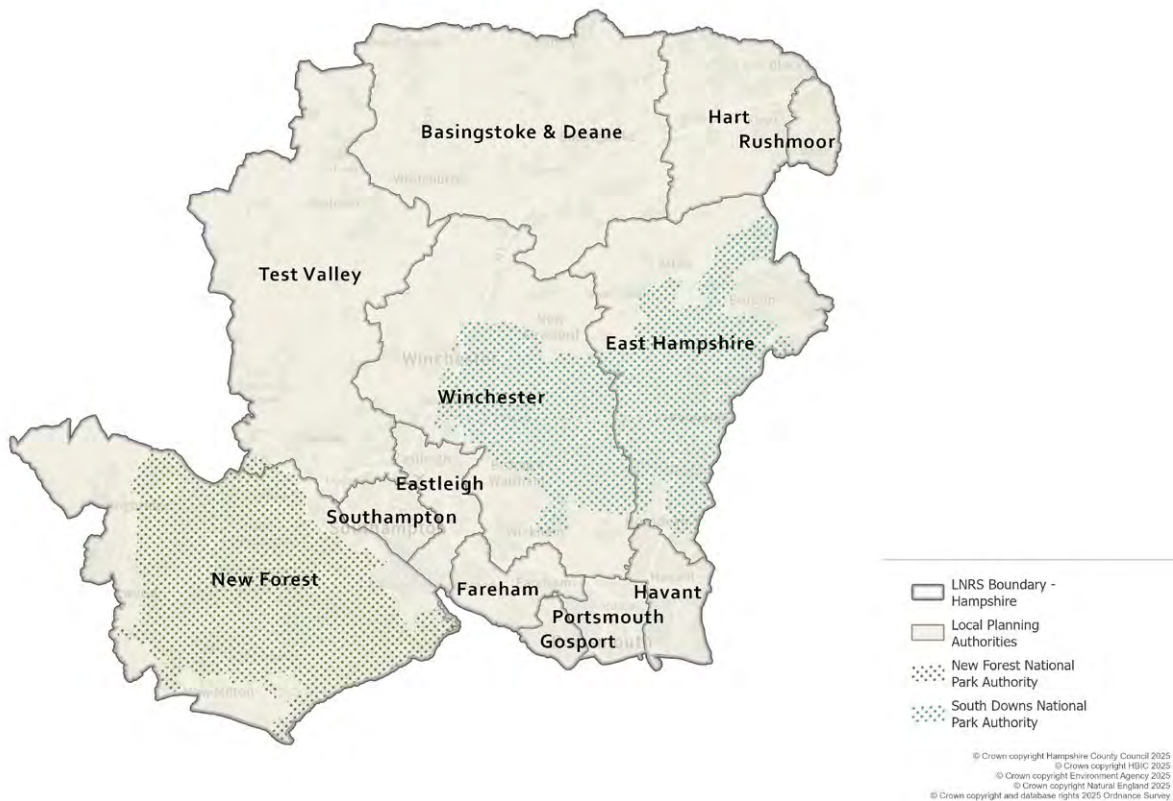
- Woodlands and forestry (10 January 2024).
- Coast and marine (16 January).
- North Hampshire farming and conservation (17 January).
- Rivers and wetlands (24 January).
- New Forest and forest fringes (1 February).
- South Hampshire farming and conservation (14 February).
- Central chalk belt farming and conservation (21 February).
- Thames and Wealden Heaths (28 February).
- Health and access to nature (6 March).
- Species recovery and prioritisation (9 March).
- Opportunity mapping prioritisation (4 December).

Local Planning Authority engagement

The local planning authorities, including the national park authorities, in the LNRS area hold significant ecological and land management data and have relevant nature conservation strategies and plans. They may also be involved in practical nature recovery projects of relevance to the LNRS. An early workshop was held with local planning authorities in October 2022. These authorities attended the programme of workshops and engaged in additional one-to-one conversations and meetings. They also attended the

opportunity mapping prioritisation workshop along with statutory agencies and other key stakeholders in December 2024. The local planning authorities, as supporting authorities for the strategy area were also represented on a working group that met monthly and helped to guide the preparation of the LNRS. The LNRS area's local planning authorities are shown in Figure A2.1.

Figure A2.1: LNRS area's local planning authorities



Business engagement

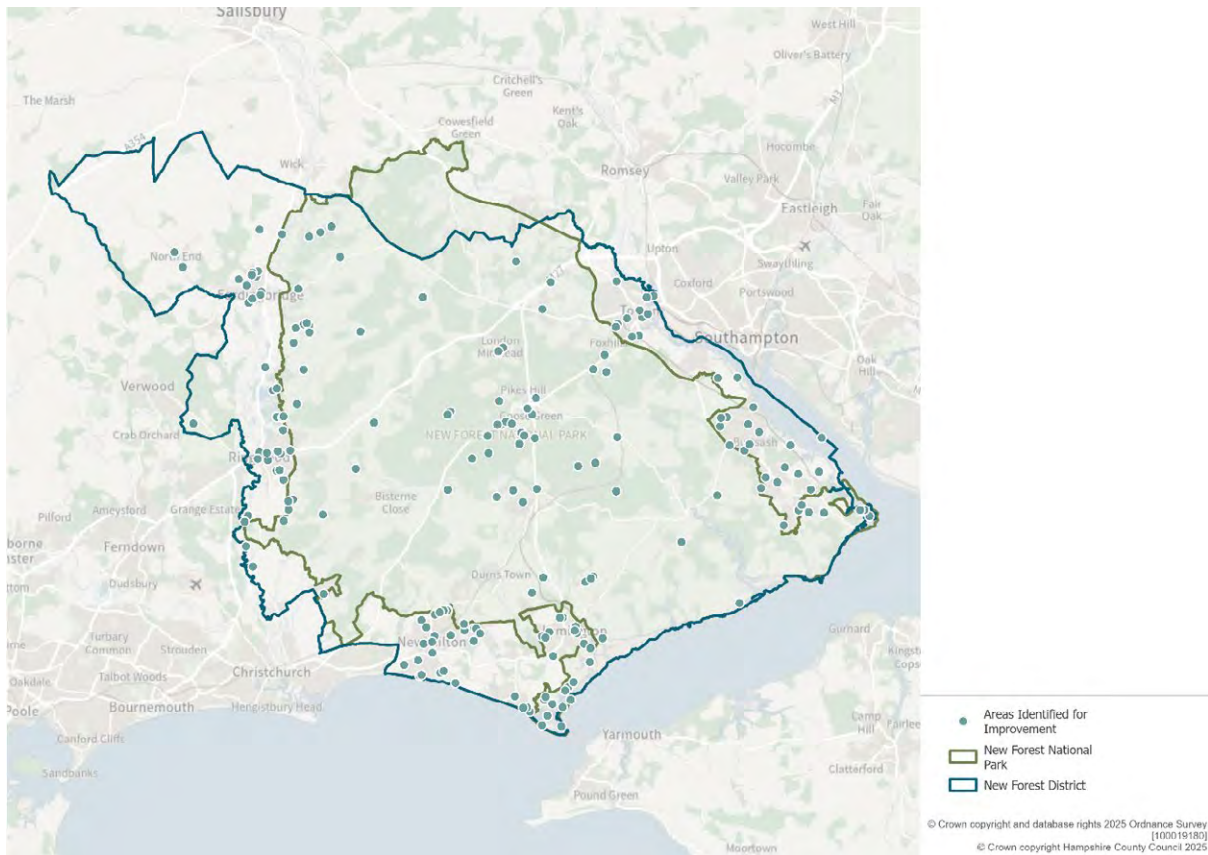
Businesses have an important role in nature recovery through investment in the natural environment and supporting nature around the workplace and in local communities. The LNRS programme of workshops benefitted from the presence of a number of Hampshire businesses.

Appendix 2.1: LNRS for Hampshire - public survey

The public survey ran for three months from 14 December 2023 to 17 March 2024. The aim was to explore the views of Hampshire’s communities about their priorities for nature recovery and where they would like to see improvements.

There were 1,234 individual responses to the survey identifying 1,574 specific geographical locations for nature improvement. Each location is plotted on an interactive map provided on the LNRS for Hampshire webpages¹¹. Figure A2.1 below provides an example of the map for the New Forest area.

Figure A3.1: New Forest example of public survey response locations



In identifying these locations for improvement, respondents told us that they want to see:

- A balance between conservation and access.
- Wildlife protection.
- Habitat restoration and management.
- Community engagement.
- The provision of alternative recreational space and increased waterside access.

Common themes that emerged from respondents’ comments centre around habitat restoration, biodiversity conservation, sustainable land management, community engagement, and infrastructure improvement, as follows:

11 <https://lnrs-hampshireonline.hub.arcgis.com/pages/Survey%20results%20map>

Habitat restoration

- Participants emphasised the importance of restoring natural habitats like wetlands and woodlands by reducing mowing, planting wildflowers, and reintroducing native species to create thriving ecosystems.

Biodiversity conservation

- There is a strong desire to protect and enhance biodiversity through creating wildlife corridors, connecting habitats, and conserving endangered species like the Duke of Burgundy butterfly.

Sustainable land use

- Calls for nature-friendly management practices, reduced pesticide use, and the preservation of greenspaces to minimise pollution and support wildlife to thrive.

Community engagement

- Suggestions include involving local communities in conservation efforts, establishing nature reserves, and providing educational opportunities to raise awareness about local wildlife.

Infrastructure improvement

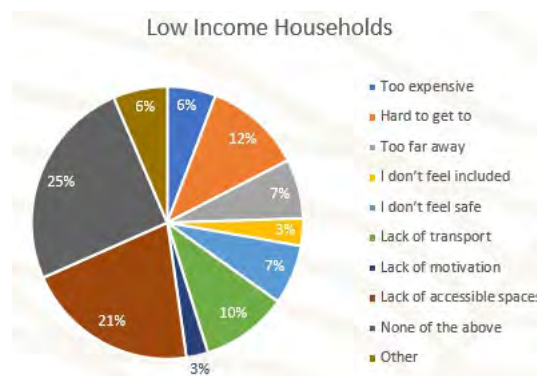
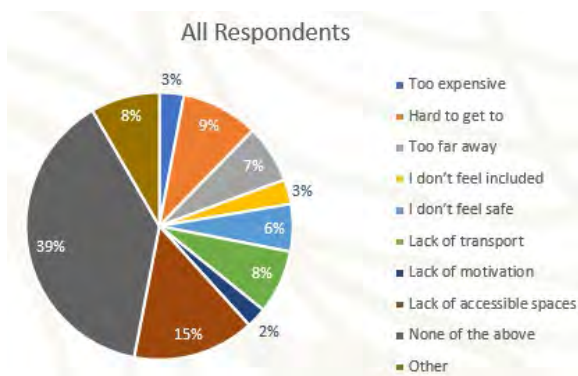
- Recommendations focus on enhancing access to greenspaces, improving pathways, and installing wildlife-friendly features like bird and bat boxes.

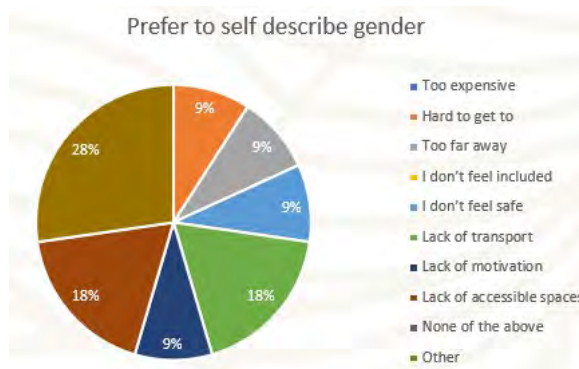
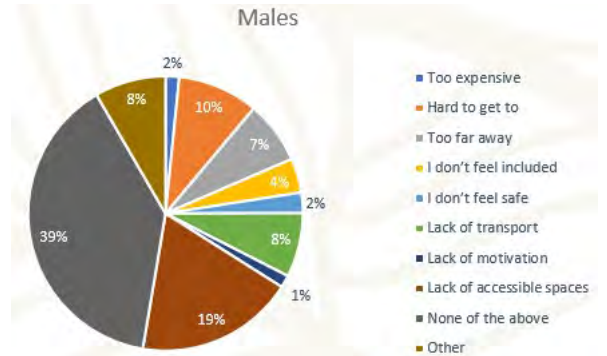
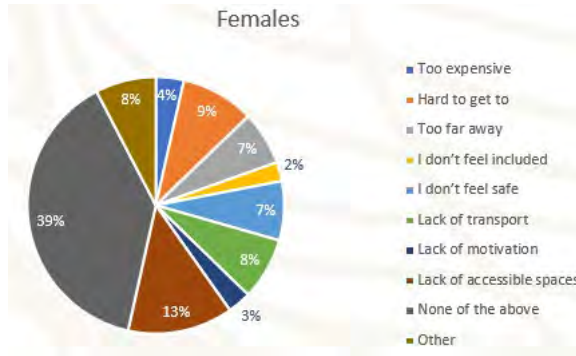
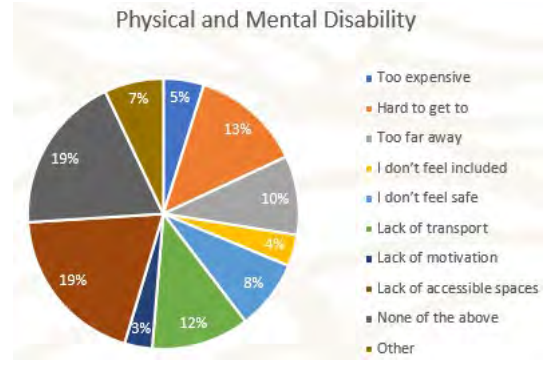
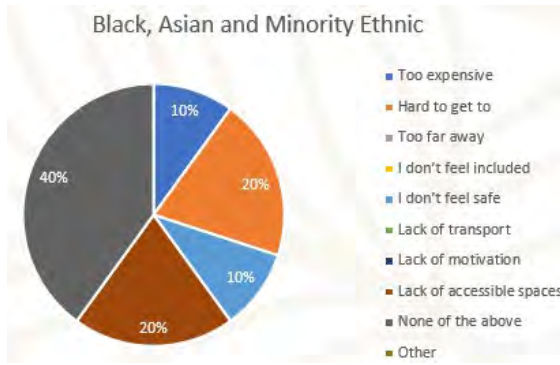
Overall, these themes underscore a collective commitment to prioritise nature conservation, protect wildlife habitats, and promote sustainable practices to ensure the well-being of ecosystems and biodiversity in Hampshire.

Responses to the statement: 'Helping nature recover is important because...', were grouped around the following beliefs:

- We are part of nature and should undo the damage we have done.
- The natural environment is essential for tackling climate change.
- Nature is good for our health and wellbeing.
- Nature protects us from flooding and pollution.
- The natural environment provides us with food and raw materials.
- Nature is good for our jobs and businesses.

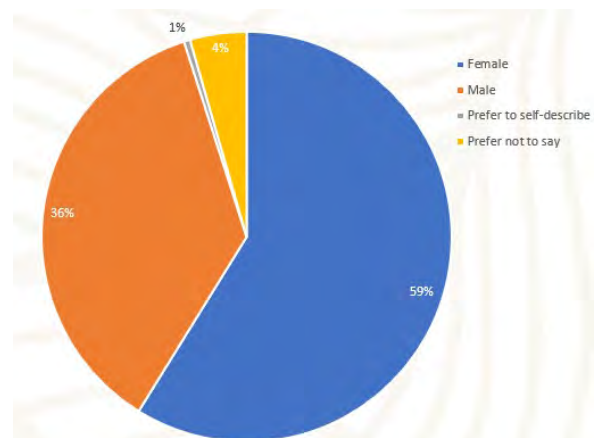
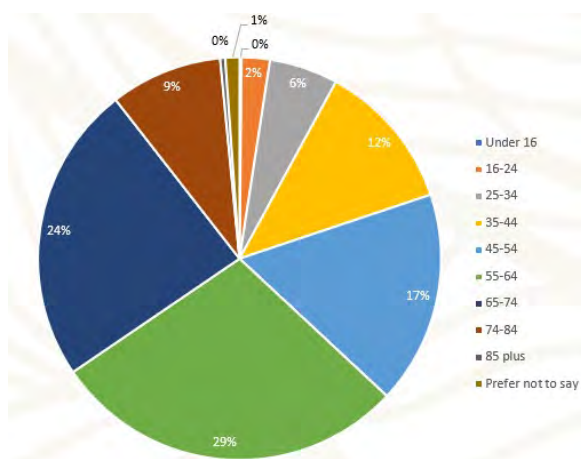
When asked what they thought were the most significant barriers to accessing nature, respondents provided the following information:





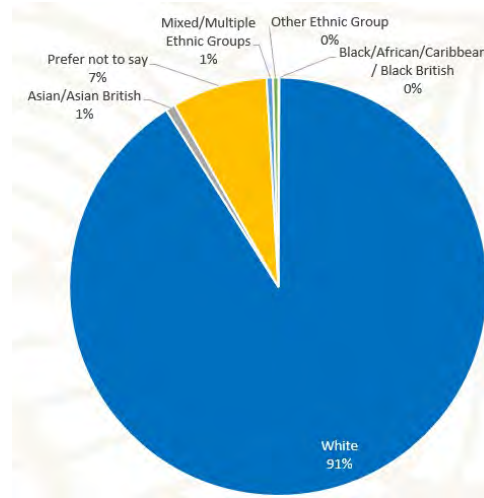
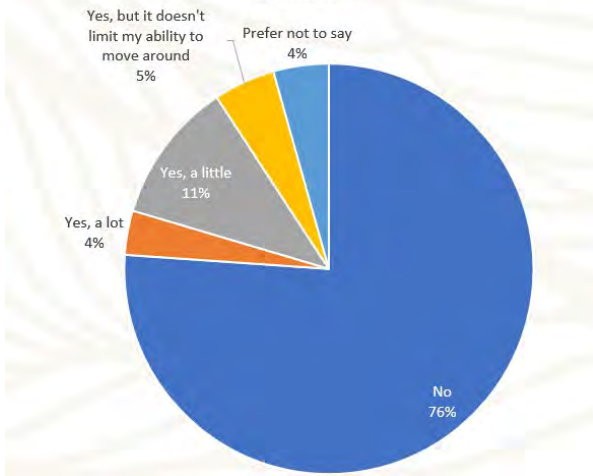
The demographic composition of respondents is as follows:

Age and gender

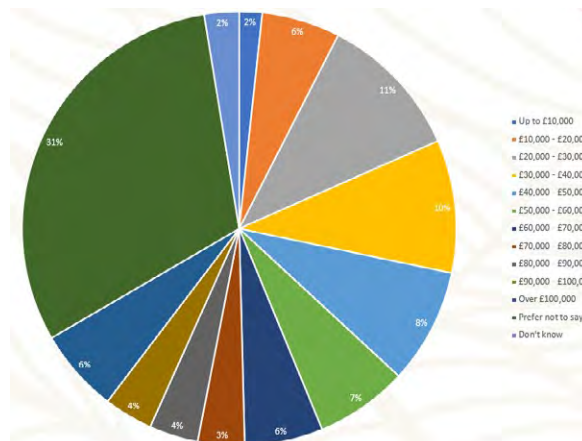


Disability and ethnicity

Do you have any physical or mental health conditions or illnesses lasting or expected to last 12 months or more which limit your ability to move around Hampshire?



Household income of respondents



Appendix 3: Support mechanisms

Environmental Land Management (ELM) schemes

ELM schemes represent an important mechanism to help farmers and landowners contribute to the delivery of the LNRS. The schemes provide financial incentives, grants, subsidies or payments to landowners and managers who implement nature-friendly practices on their land. There are three schemes currently available to pay for environmental and climate goods and services.

Sustainable Farming Incentive (SFI)

SFI rewards farmers for farming practices that help produce food sustainably and protect the environment. Many of the actions under SFI help farmers reduce their costs and improve their efficiency, as well as help make improvements to the natural environment and reduce carbon. The LNRS will help to identify suitable areas to enter SFI agreements.

Countryside Stewardship (CS)

CS rewards farmers for looking after and improving the natural environment, which includes increasing biodiversity, enhancing habitat, expanding woodland areas, improving water and air quality and utilising natural flood management. 'Countryside Stewardship Plus' aims to build on the success of its predecessor by rewarding farmers for coordinated actions that support climate and nature aims,

including collaboration with neighbouring farms and landowners. Funding is targeted towards actions in places where they can have the biggest impacts, in ways that are joined up across larger areas. The LNRS will help to identify suitable areas to enter CS agreements.

Landscape Recovery Scheme

Landscape Recovery Schemes will pay for a smaller number of longer term, larger scale, bespoke projects to enhance the natural environment. The identification of multiple projects to enter a Landscape Recovery Scheme may be aided by the LNRS, which identifies larger scale opportunities for habitat connectivity.

England Woodland Creation Offer (EWCO)

Landowners, land managers and public bodies can apply to the England Woodland Creation Offer (EWCO) for support to create new woodland, including through natural colonisation, on areas as small as one hectare. The LNRS will help to identify

suitable areas for woodland creation to expand and enhance woodland habitat and increase ecological connectivity.

Biodiversity net gain (BNG)

Biodiversity net gain (BNG) is an approach to development and land management, that aims to leave the natural environment in a measurably better state than it was beforehand. It aims to create new habitats as well as enhance existing habitats, ensuring the ecological connectivity they provide for wildlife is retained and improved.

Most developments are required to deliver BNG of at least 10% net gain for biodiversity as measured by the statutory biodiversity metric. This is achieved by delivering habitat onsite or, if that is not possible, through the purchase of off-site biodiversity units¹². A habitat will contain a number of biodiversity units, depending on factors such as its size, quality, location, and type.

The LNRS supports a strategic approach to off-site BNG delivery, agreeing evidence-based locations to expand and connect existing habitat and provide wider environmental benefits. This will support BNG in creating locally driven, joined-up outcomes for nature.

LNRS play a key role in BNG by providing a county-wide strategic approach to off-site BNG delivery. BNG provides developers and landowners the opportunity to contribute positively to the delivery on the ground of the LNRS for Hampshire, by generating measurable biodiversity enhancement and creation as part of development projects, whilst meeting the housing and business needs of residents.

There are three ways a developer can achieve BNG¹³.

1. They can create biodiversity on-site within the red line boundary of a development site.
2. If developers cannot achieve all their BNG on-site, they can either deliver through a mixture of on-site and off-site, or just off-site. Developers can

buy off-site biodiversity units on the market.

3. If developers cannot achieve on-site or off-site BNG, they must buy statutory biodiversity credits from the government. This should be a last resort. The government will use the revenue to invest in habitat creation in England.

On-site BNG delivery enhances any lost or damaged biodiversity and habitats directly impacted within a development area, promoting greater climate resilience and connecting urban and natural environments. The LNRS for Hampshire identifies and prioritises areas for BNG delivery through on-site and off-site biodiversity creation and enhancement. When off-site compensation is required, it should be located as close to the development site as possible.

The LNRS includes nature recovery opportunity areas, which show the locations identified as having strategic significance due to their high potential to deliver benefits for nature and the wider environment. These locations have been mapped on the ACB (Areas that Could become of importance for Biodiversity) Map and Measures Map. All sites mapped on the Measures Map offer up to a 15% uplift in biodiversity units compared with other sites. Therefore, developers and land managers can produce or sell more biodiversity units on sites within these opportunity areas. In order to qualify for BNG uplift, a landowner or developer must carry out the appropriate actions and follow correct procedures related to BNG policy.

BNG ensures that nature recovery efforts are sustainable and long-term, as agreements to deliver new or improved habitat through BNG are in place for 30 years. This enables the priorities of the LNRS to be delivered over a long period of time, achieving lasting gains for nature, beyond the lifetime of individual development projects.

¹² <https://www.gov.uk/guidance/understanding-biodiversity-net-gain>

¹³ <https://www.gov.uk/guidance/understanding-biodiversity-net-gain>

Woodland Carbon Code

The Woodland Carbon Code, developed by the UK government, provides a framework for certifying woodland creation projects that absorb or sequester carbon dioxide from the atmosphere. Farmers and landowners can participate in this scheme by establishing new woodlands or managing existing

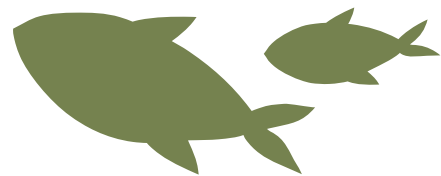
woodlands in a way that increases carbon storage. They can generate carbon credits by demonstrating the amount of carbon sequestered and then sell these credits to companies or organisations seeking to offset their carbon emissions.

Other funding schemes

There are a range of other funding schemes available to farmers and land managers to deliver improvements to the environment, including the Water Restoration Fund which provides funding for projects that are used to restore and enhance the water environment and the Farming in Protected Landscapes programme, which awards grants to farmers and landowners for a variety of projects including nature recovery. Details of existing and new funding schemes are available at: www.gov.uk/guidance/funding-for-farmers.

There are also a range of funding streams for local community groups and projects within the LNRS area including:

- Beelines Fund (within SDNPA) - **South Downs Trust**.
- **Bird Aware Solent**.
- **Community Infrastructure Levy (CIL)**.
- **Hampshire Forest Partnership (HFP)**.
- Local Authority conservation project funding.
- **Nutrient mitigation funding**.
- **ReNature Fund (within SDNP)**.
- **ReNature Credits for BNG (within SDNP)**.
- **Solent waders and brent geese mitigation funding**.
- **Urban Tree Challenge Fund**.
- Woodland Trust **MOREwoods** and **MOREhedges** funding.
- **Big Chalk Nature Recovery Fund**



Appendix 4, below, sets out the wide range of projects that are ongoing or planned within Hampshire. Collectively, they utilise a wide range of funding sources, including those listed above.

Appendix 4: Current projects and schemes

There are many projects and schemes across Hampshire delivering biodiversity, wider environmental, and health and wellbeing benefits. These are listed below and categorised as Hampshire-wide, area specific or habitat or species specific. The list informed the preparation of the ACB map and measures map. The compilation of the list was informed by the:

- Programme of LNRS workshops.
- LNRS for Hampshire public survey.
- Contributions from supporting authorities and other stakeholders.
- Review of relevant plans and strategies.

Hampshire benefits from the hard work and dedication of numerous local groups and thousands of volunteers delivering nature recovery across the area. Without these groups and volunteers, the delivery of the LNRS would not be possible.

The list of projects below is also included in a 'live' table of projects, a link for which is available on the LNRS webpage¹⁴

Hampshire-wide projects and schemes

- **Environment Land Management (ELM) schemes:**
 - Sustainable Farming Incentive (SFI).
 - Countryside Stewardship (CS).
 - Landscape Recovery Scheme (LRS).
- **Hampshire Forest Partnership projects** including:
 - **Million Trees Challenge.**
 - **Shoots Along the Roots project.**
 - **Mini Forest project.**
 - **Community Orchards project.**
 - **Linking Leaves project.**
- **Biodiversity net gain (BNG).**
- **Farmer Clusters.**
- **Road Verges of Ecological Importance project.**
- **Parish Pollinators Pledge.**

A description of ELM schemes is provided in Appendix 3: Support Mechanisms.

Area specific projects and schemes

Thames Basin and Wealden Heaths

- Western Thames Basin Landscape Partnership

(Hampshire County Council, RSPB, Forestry England, Hampshire & Isle of Wight Wildlife Trust and others).

¹⁴ <https://www.hants.gov.uk/landplanningandenvironment/nature-recovery-hampshire/hampshire-strategy>

- **Blackbush Airfield Environmental Enhancement project (RSPB).**
- **Wealden Heaths strategic access management and monitoring (SAMM) project.** Bird monitoring data.
- **Mink eradication project on the River Wey.**
- **Loddon Catchment Partnership projects.**
- Loddon Farmers Group.
- **Selborne Landscape Partnership.**
- Deer survey work in the South Downs.
- **South Downs Farmers Group.**
- **Farming in Protected Landscapes (South Downs National Park Authority).**
- **Pylon mitigation project in the South Downs National Park.**
- **Heathlands Re-united: Wealden Heaths SAMM project.**
- **Heathland Connections Nature Recovery Project. (Surrey, cross border)**

Central chalk belt

- **Newton Valence/ Colemore/ East Tisted House Sparrow recovery project.**
- **Newton Valence toad patrol project.**
- **Kestrel Conservation Monitoring project** - Hawk Conservancy Trust.
- **Rotherfield Game Restoration project** - Game and Wildlife Conservation Trust.
- **Hampshire Hedge project.**
- **Watercress and Winterbournes project** - Hampshire & Isle of Wight Wildlife Trust.
- Farm clusters:
 - Southern Streams Farmer Group.
 - Wessex Farm Conservation.
 - Candover Valley Farmers Group.
 - Martin Down Farmer Cluster.
 - Allenford Farmer Cluster.

- Avon Valley Farmer Cluster.
- New cluster on North Hampshire/ Berkshire border.

- **Farmer Clusters – South East.**
- **Parish Pollinators Pledge projects.**
- **South Downs Farmland Birds Initiative.**
- **Lapwing project** across North Wessex Downs and Cranbourne Chase National Landscapes.
- **Hawk Conservancy** raptor/owl monitoring.
- **Hampshire Forest Partnership.**
- **Welcome To Meon Valley Partnership:** Meon Valley Partnership - Work to improve the River Meon - Himalayan Balsam control, River bank restoration, Review of in-stream structures and water vole reintroduction.
- British Trust for Ornithology (BTO) bird transects.
- Water company schemes.
- **Farming in Protected Landscapes (South Downs National Park Authority).**
- **Farming in Protected Landscapes (Cranborne Chase National Landscape)**
- **Farming in Protected Landscapes (North Wessex Downs National Landscape).**
- **Catchment Sensitive Farming Advice and Schemes.**
- **Test and Itchen Catchment Partnership projects.**
- **Itchen Catchment Conservation Group projects.**
- **Environmental Farmers Group.**
- **Big Chalk project.**
- **Test Valley Dormouse project.**
- **Project work on the western portion of the River Rother in Hampshire.**

North Hampshire

- Species projects investigating causes of additional mortality to birds of prey: rodenticides, microplastics, and lead.
- Captive release of beavers for rewilding wetland. Recently reintroduced at Ewhurst Park as part

of a rewilding scheme - **Beavers are back in Hampshire after 400 years! - Beaver Trust.**

- Multiple Farmer Clusters.
- Arable environmental schemes.
- Chalk stream restoration projects.
- Woodland / tree planting schemes and focus by Hampshire County Council Tree Strategy (**tree-strategy.pdf (hants.gov.uk)**).
- **River Loddon Catchment Partnership projects.**
- **Wey Catchment Partnership projects.**
- Supporting existing river catchment groups and partnerships, e.g. River Kennet Action Group, to help support delivery of river catchment action plans.
- Chalk habitat restoration/creation via **Big Chalk initiative.**
- Projects investigating species abundance for a range of avian species and relating these to landscape-scale data.
- **Farming in Protected Landscapes - North Wessex Downs National Landscape.**

New Forest and Eastern Dorset Heaths

- **Linking Environment and Farming (LEAF)** demonstration farms on the forest fringes.
- Farm Clusters projects.
- **The Environmental Farmers Group.**
- Work with the Beaulieu Estate on habitat for red-listed birds.
- Freshwater Habitats Trust promoting and delivering **Blue Horizons Project** - wetland/standing water restorations on private land in collaboration with range of landowners - these complement larger SSSI FE work.
- **National Peat mapping across the New Forest.**
- Higher Level Stewardship wetland restoration work being undertaken by Forestry England (FE) across New Forest Sites of Special Scientific Interest (SSSI) (**New study reveals success of New Forest wetland restoration - HLS New Forest**).

- **The Hampshire Hedge** project.
- **Youth for Climate and Nature scheme** - New Forest National Park Authority.
- **New Forest National Park Recreation management strategy projects.**
- **Green Halo Partnership** - New Forest National Park Authority.
- **Greenprint Initiative** - New Forest National Park Authority, University of Southampton, University of Portsmouth, and Southern Policy Centre, working with Partnership for South Hampshire).

South Coast Plain and South Hampshire Lowlands

- **Habitat Compensation and Restoration Programme (HCRP) – Solent and South Downs** - Environment Agency.
- **ReMEDIES Project** (Solent seagrass) - Natural England.
- **Coastal resilience and saltmarsh restoration project** - Chichester Harbour Conservancy.
- **Life on the Edge project** - RSPB.
- **Return of the Tern project** (Langstone to Medmerry) – RSPB.
- **Beneficial use of dredgings in the Solent project** - ABPmer.
- **Chichester Harbour Protection and Recovery of Nature Initiative (CHaPRoN)** -partnership led by Chichester Harbour Conservancy, working collaboratively with specialist organisations including the Environment Agency, Natural England, Sussex IFCA, Coastal Partners, RSPB, Chichester District Council, and Southern Water.
- Concurrent **Defra Hampshire Convenor Test and Trials** is looking at a way to deliver ELMS (and LNRS) aims alongside continuation of productive agriculture in a simplified way for farmers with local governance.
- HIWWT's **Nature Based Solutions Programme** has been developed to provide nitrate mitigation for developments that we accept into the scheme. Acquiring former farmland (that has been releasing nutrients into the Solent) and rewilding it to remove nitrate pollution, create

space for nature and support nature's recovery.
Funded through the sale of nitrate credits.

- **Hampshire Hedge** project covers area around Romsey, CPRE Hampshire.
- Hampshire Flora Group's ongoing **Threatened Plant Project**: detailed recording of rare/scarce plant species. Can inform distribution maps (and LNRS) and help target action to protect and enhance habitat for key plant groups e.g. arable flora.
- **NatureSpace District Licencing** for great crested newts creating and restoring wetland and terrestrial habitats.
- The **East Hampshire Catchment Partnership** are currently developing a project covering headwaters/reaches in East Hampshire catchments that link land use and nature with the upstream thinking of source to sea approaches in waterways (targeting multiple benefits, awareness/training/skills/trialling techniques etc).
- **East Hampshire Catchment Partnership** project with local groups monitors riverfly, water quality, and outfall using volunteers. Predominantly lower sections of the rivers (from West Brook, Emsworth, across to River Wallington and its Potwell tributary). The project will extend to upper catchment communities too in time.
- **Hampshire Dormouse Group** continuing to run county footprint tunnel surveys to gain a better idea of distribution across the county. Working with landowners to survey hedgerows across the county.
- **Havant Thicket Reservoir** scheme.
- **Three Harbours Project.**
- **Test and Itchen river restoration projects** in conjunction with Wessex Rivers Trust and angling organisations.
- **River Itchen Flood Alleviation Scheme** looking at habitat enhancements via BNG.
- Campaign for the Protection of Rural England (CPRE) has produced a **solar farm map of Hampshire** - working with the University of Southampton to map potential of rooftops for renewable energy.

Habitat specific projects and schemes

Woodlands and forestry

- Woodland Trust: **MOREwoods, MOREhedges**, Trees For Your Farm (all with flexibility in planting design) and free advice and support (funding where available/guidance to grants) for landowners on AW/PAWS restoration, AVTs and creation.
- **Hampshire Forest Partnership funding for Community Orchards.**
- **Agroforestry** options in Defra's funding schemes.
- **Shoots along the Routes scheme** currently focusing on several B Roads, including hedgerow trees and woodland corridors. It is looking to considering strategic transport routes.
- Juniper restoration projects with **Plantlife** across the North Wessex Downs and other protected landscapes.
- **RSPB Priority Landscape Programme** looking at landscape-scale approach, collaborative restoration. In Hampshire, this includes the Thames Basin and Wealden Heaths, and the New Forest.
- **Green Infrastructure Strategy project** to development strategic tree planting strategy in Rushmoor Borough Council facilitated by the Urban Tree Challenge Fund.
- The Woodland Trust **Tree Equity Score** designed to assess urban areas most in need of greenspaces.
- **Woodland Wildlife Toolkit.**
- The **3-30-300 Rule**. A recommendation for urban forestry and greener cities - 3 trees visible from every home, 30 percent tree canopy cover in every neighbourhood, 300 metres from the nearest park or greenspace.
- **Farming in Protected Landscapes:** source of funding in National Parks and National Landscapes to March 2025.
- **Ancient Woodland Inventory** update: Ancient

woodlands under 2ha have been mapped by HBIC, funded by Natural England, the Woodland Trust and local planning authorities. New layers will be added to **MAGIC**.

- Local Planning Authority tree planting targets, e.g. **Eastleigh Borough Council: 160,000 trees.**
- The **Hampshire Hedge** project.
- **Andover Trees United projects.**
- Venison charcuterie initiatives in North Wessex Downs National Landscape.



Improving access to nature and our health and wellbeing

- **National Trails UK projects in Hampshire**, including:
 - South Downs Way.
 - King Charles III England Coastal Path.
The establishment of the remaining sections of the England Coastal Path and the maintenance and management of both National Trails.
- **Team Wilder** is a supportive network of people, organisations and groups, taking action for nature, sharing knowledge, resources and help. Within Hampshire, the initiative is hosted by the Hampshire & Isle of Wight Wildlife Trust.
- **The Greening Campaign** lottery project, supporting communities to map and identify potential greenspaces that could be created or improved within their community.
- The **Incredible Edible Willow Community Garden** at Froton Medical Centre Gosport.
- Test Valley Borough Council led initiative to find a more strategic approach to development mitigation for the New Forest Special Area of Conservation (SAC).
- **Improvements at the Alver Valley Country Park SANG**, including new land, improved paths and signage.
- Alternative SANG opportunities outside of the New Forest and South Downs National Parks, working with property developers to improve awareness and engagement around responsible behaviours.
- **Local Cycling and Walking Infrastructure Plans** being developed for New Forest National Park and New Forest District areas.
- **Hampshire Public Health** are working with partners to develop sensory walking routes in accessible greenspaces for people with sensory impairments, long term conditions, and neurodiversity to engage with nature.
- **New Forest Recreation Management Strategy** work has many actions to improve connection to greenspace and to reduce impacts on SAC.
- **NHS Forest** planting trees on NHS land.
- **Strategic Access Management and**

Monitoring project near Bordon.

- Public rights of way (PRoW) improvements outside SAC in New Forest funded through development contributions.
- South Downs National Park Authority operates an outdoor learning grant to help schools access sites in the National Park. They are also about to launch a community travel grant scheme to support groups with transport costs
- Work of **Hampshire County Council Sites (Countryside Service)** on improving facilities on sites and creating nature trails, sensory walks, events, school visits.
- New off-road Trampers at Queen Elizabeth Country Park - a Hampshire County Council and South Downs National Park Authority partnership.
- Coast and Country Canines are promoting responsible dog walking and providing funding via developer contributions for provision of dog walking facilities – part of **Bird Aware Solent**.
- Youth for Climate and Nature Scheme (YouCAN) is a partnership project aimed at 11- to 25-year-olds to encourage more community-led action to tackle the nature and climate emergencies.
- Southampton National Park City is a group working to enrich spaces and opportunities throughout Southampton with the purpose of strengthening relationships across the city. The initiative focuses on bringing people closer to the urban nature on their doorsteps to support a sense of belonging, while igniting a collective reimagining of what steps can be taken to steward communities.

Rivers and wetlands

- Farmer Clusters projects.
- Catchment Partnership Projects.
- **The Environmental Farmers Group**
- **Higher Level Stewardship wetland restoration work** being undertaken by Forestry England (FE) across New Forest Sites of Special Scientific Interest (SSSI).

- **Shawford Lake Stream river improvement project.**
- **Hampshire Forest Partnership** is the strategic delivery mechanism for Hampshire County Council's goal to plant one million trees by 2050.
- **Beaver reintroductions in Ewhurst Park** and in **adjacent areas of Dorset.**
- **The Freshwater Habitats Trust** are promoting and delivering wetland and standing water restoration on private land in collaboration with a range of landowners - these complement larger SSSI Forestry England work
- **Great crested newt (GCN) district licencing** now live across many districts in Hampshire, which should help create and restore high quality habitat across the county for GCNs.
- **Water Vole Reintroduction** in the Lower Avon Valley.
- **Waders in the Avon Valley.**
- **The River Meon and South Downs National Park see water vole number success.**
- **Environment Agency** working with businesses along the River Itchen to address plastic pollution.
- **For Love of Water (FLOW) CIC** running a citizen science project aiming to improve the River Avon.
- **Wilder for Water** – Freshwater Habitats Trust.
- **Blue Horizons Project** – Freshwater Habitats Trust.
- **Watercress and Winterbournes** Landscape Partnership Scheme.
- East Hampshire District Council **Councillor community grant** funding pot that can be spent on environmental' projects in the District. Also, a **community climate action fund** and bids to use **£106 developer contributions** could be used to fund projects to improve rivers/ water courses could be used to fund projects to improve rivers/water courses.
- **Western Sussex Rivers Trust** is working with partners to improve the habitats within two local nature reserves owned by East Hampshire District Council, through which the western stretch of the River Rother flows.



Coastal and marine

- Solent Forum - **Greater Solent Project Tracker**.
 - **Chichester Harbour Protection and Recovery of Nature Initiative (CHaPRoN)** - partnership led by Chichester Harbour Conservancy, working collaboratively with specialist organisations including the Environment Agency, Natural England, Sussex IFCA, Coastal Partners, RSPB, Chichester District Council, and Southern Water.
 - **Solent Seascapes Project** – Blue Marine Foundation. This includes:
 - Saltmarsh restoration - Beneficial Use of Dredged Sediments (BUDS) trial. Following the 2023 trial in Chichester Harbour led by the Chichester Harbour Protection and Recovery of Nature Initiative (CHaPRoN), CHaPRoN, the Isle of Wight Estuaries Project and Coastal Partners will be delivering further saltmarsh restoration activity throughout the Solent .
 - Project Seagrass - CHaPRoN and the Hampshire & Isle of Wight Wildlife Trust are conducting extensive habitat surveys across the Solent to map and monitor current distributions. Both the Trust and Project Seagrass are preparing for active restoration efforts by trialling innovative seagrass restoration techniques, with the support of local volunteers. .
 - Oyster reef project - Blue Marine Foundation's team is creating new oyster reefs in suitable areas across the Solent by placing mature "brood stock" oysters at high densities in cages hung in the water beneath pontoons, facilitating the release of millions of larvae into the Solent. The cages have been shown to provide a refuge for other marine life, including critically endangered European eels, juvenile spiny seahorse and sea bass.
 - Seabird habitat restoration project – the active restoration, enhancement and creation at least ten nesting sites for seabirds within the project area. The aim is to reverse
- the decline in seabirds, stabilise populations of ducks, geese and wading birds and then support the growth of breeding pairs in the Solent
- **Bird Aware Solent** - raises awareness of the **ducks, geese and other migratory birds** that travel to the Solent coastline to feed and rest in the winter, and to breed in the summer. Bird Aware Solent rangers engage with visitors and communities along the coast around the New Forest, Southampton Water, Portsmouth, Chichester and Langstone Harbours, and northern Isle of Wight.
 - **ReMEDIES Project** (Solent seagrass) - Natural England.
 - **Coastal resilience and saltmarsh restoration project** - Chichester Harbour Conservancy.
 - **Return of the Tern project** (Langstone to Medmerry) – RSPB.
 - **Beneficial use of dredgings in the Solent project** - ABPmer.
 - **Hurst Spit to Lymington** Coastal Flood Defence Strategy. This is being developed by the Environment Agency, in partnership with New Forest District Council, Hampshire County Council, and Natural England. The Strategy covers the coastline from Hurst Spit to Lymington, 15km of coastal frontage encompassing Keyhaven and Pennington Marshes, extending up the Lymington River to the east. The aim of the Strategy is to recommend options to manage flood and erosion risk that are sustainable and adaptive in the long term. It will focus on the next 100 years, with the aim of having a completed and approved Strategy by summer 2026.

Appendix 5: Evidence used in the development of the LNRS for Hampshire

In identifying and agreeing priorities and potential measures within Local Nature Recovery Strategies, Defra guidance states that:

“RAs [*responsible authorities*] should look to a variety of existing local plans and strategies when identifying possible priorities and potential measures. This can provide stakeholders with assurance that any previous work on identifying opportunities for nature recovery and wider environmental benefits are being considered in the LNRS. However, in doing this RAs should engage stakeholders on these additions to build consensus and ensure they are in the right format for LNRS.

RAs can draw on other plans and strategies, such as marine management plans or river basin management plans, when identifying possible priorities or potential measures addressing cross boundary issues. For example, planting trees in upper catchments that slow the flow of water to communities at flood risk”.

Plans, strategies, data and mapping considered in the identification of priorities and potential measures for the LNRS for Hampshire are set out below.

Plans, strategies, programmes, and projects

Principles of Nature Recovery Networks across the South East of England (October 2020)

This document was prepared by the South East Nature Partnerships, including Hampshire, Isle of Wight, Kent, Sussex, and Surrey, in response to the launch of the government’s ambition to create a Nature Recovery Network (NRN), set out within its 25 Year Environment Plan (25YEP). It provides a set of principles to guide the preparation of LNRSs and the delivery of a NRN across the South East.

Hampshire and Isle of Wight’s Natural Wealth (April 2022)

This report was developed as the beginning of an important initiative to plan and coordinate collective investment in the natural capital of Hampshire and the Isle of Wight. This document provides an evidence base to define the direction of travel, the vision, and wider programme of work, to restore nature and bring it back into recovery.

State of Hampshire’s natural environment (September 2020)

To inform our understanding of Hampshire’s natural environment, Hampshire County Council prepared a report providing a high-level snapshot of many key elements of Hampshire’s natural environment. The report was prepared with input from a wide range of partners and stakeholders. It identifies key trends and emerging issues under the following headings:

- Air quality.
- Noise.
- Water.
- Soil.
- Coastal.
- Landscape.
- Biodiversity (woodland, farmland birds, notable species and habitats, designated sites, insects and pollinators).
- Recreational use of the natural environment.

Designated landscape management plans

Required by the Countryside and Rights of Way Act 2000, designated landscape management plans set out the vision and policies of the respective partner organisations for the county's designated landscapes. The plans set out the special qualities and features of the protected landscapes, and determine what actions are required to ensure their conservation and enhancement, and people's enjoyment of them.

- **Partnership Plan for the New Forest National Park 2022-2027.**
- **South Downs National Park Partnership Management Plan 2020-2025.**
- **North Wessex Downs National Landscape Management Plan 2019-2024.**
- **Cranborne Chase National Landscape Management Plan 2019-2024.**
- **Chichester Harbour National Landscape Management Plan 2019-2024.**

Designated landscape nature recovery plans

Each of Hampshire's designated landscapes have prepared nature recovery strategies or have nature recovery Initiatives to help deliver the recovery of nature within their respective protected landscapes. These have helped inform the preparation of this LNRS.

- **North Wessex Downs National Landscape Recovery Plan.**
- **Chichester Harbour Protection and Recovery of Nature (CHaPRoN).**
- **ReNature: Nature Recovery in the South Downs National Park.**
- **Cranborne Chase National Landscape - Nature Recovery Plan**

Green infrastructure plans and strategies

Many local planning authorities within Hampshire have prepared green infrastructure (GI) plans or strategies for their areas. These assess the extent, quality and accessibility of local GI networks (which include blue infrastructure, the water environment). They set the policy context and provide action plans to deliver GI network enhancement.

- A Green Infrastructure Strategy for Rushmoor (July 2022).
- South Downs People and Nature Network (PANN): Green Infrastructure in the South Downs National Park and the Wider South East March 2020.
- Portsmouth Green Infrastructure Delivery Plan 2018-19.
- A Green Infrastructure Plan for Test Valley (2014-2019).
- Green Infrastructure Strategy for Basingstoke and Deane (2018-2029).
- South Hampshire Green Infrastructure Strategy 2017-2034 (updated 2018).
- South Hampshire Green Infrastructure Implementation Plan (June 2019).
- Green Infrastructure Strategy for Fareham Borough (September 2014).
- East Hampshire Green Infrastructure Strategy May 2019.
- Hart Green Infrastructure Strategy 2017.
- Winchester District Green and Blue Infrastructure Strategy Scoping Study 2021.
- Southampton City Council Green Infrastructure Strategy 2024.

Hampshire Countryside Action Plan (CAP) 2015-2025

The plan describes how rights of way and access to Hampshire's countryside will be managed over the coming years. There are three themes:

- Focusing resources on those paths which provide the most benefit to the most people.
- Working with other organisations, including volunteers.
- Listening, informing and education.

The CAP should be read in conjunction with the seven area plans, which are rich in detail and provide the background on which this plan is based. These are retained, unchanged, for reference and to provide information about how the strategic policies may be implemented at a more local level: **Forest of Bere; Forest of Eversley; Hampshire Downs; New Forest & South-West Hampshire; Solent; South Downs; Test & Itchen.**

Local Biodiversity Action Plans

Local Biodiversity Action Plans (LBAPs) set the strategic direction for how we:

- Respond to the need to protect, enhance and restore key biodiversity across the LBAP areas.
- Translate national and regional biodiversity targets into local action.
- Identify habitats and species of local importance.
- Enhance biodiversity through the implementation of objectives and actions.

Most local planning authorities have prepared LBAPs. Some LBAPs are also published at a community or development scale.

- Eastleigh Biodiversity Strategy 2024-34.
- Test Valley Biodiversity Action Plan 2008.
- The Biodiversity Strategy for Basingstoke and Deane 2023 to 2029.
- Nature in the New Forest: Action for Biodiversity 2013.
- Winchester City Council Biodiversity Action Plan Updated 2023.
- Southampton City Council Biodiversity Action Plan 2005.
- Biodiversity Action Plan for Eastleigh Borough 2012-2022.
- Fareham Local Biodiversity Action Plan Review 2008.
- Biodiversity and Portsmouth Background Paper 2019.
- Havant Borough Biodiversity Strategy 2019.
- Biodiversity Action Plan for Hart 2018-2023.
- Biodiversity Action plan for Rushmoor 2016-2021.
- Wessex Water Biodiversity Action Plan Updated

Spring 2023.

- Growing Nature to 2035 Our strategy for nature recovery (South West Water and Bournemouth Water).
- Biodiversity Action Plan for East Hampshire 2009.
- Southampton City Council Biodiversity Strategy 2024.

Greenspace assessments, plans, and strategies

Local planning authorities determine community requirements for greenspace within their areas, together with current and future provision, through the preparation of greenspace assessments, plans and strategies.

Forestry England Forest Plans

Forest plans for each local forest area set out how Forestry England aim to manage the woodlands in its care over the next 30 years or more. This includes providing a description of the woodlands as they are now, outlining the main points considered when deciding what is best for the woodlands, describing how the woodlands will develop over time, and providing specific information about approved tree felling, replanting and regeneration over the next ten years. The following plans are particularly relevant to the LNRS for Hampshire:

- Alice Holt Forest Plan.
- Basing Wood Forest Plan.
- East Dorset Forest Plan.
- Forest of Bere Forest Plan.
- Hampshire Downs Forest Plan.
- New Forest Inclosures Forest Plan 2019-2029.
- South Downs Phase 1 Forest Plans.
- South Hampshire Forest Plan.
- Thames Basin Heaths Forest Plan.

Catchment management plans

The purpose of these plans is to set out the actions that will deliver environmental improvements to achieve the vision of a healthy water environment that is valued and nurtured by residents, businesses, and the wider community. Recognition of the role

of ecosystems services is highlighted, with actions covering the themes of water quality and quantity, channel and habitat, as well as recreation and community engagement. Action at the catchment level is seen by the UK Government as the principle delivery mechanism for River Basin Management Plans.

- Hampshire Avon Catchment.
- Stour Catchment.
- New Forest Catchment.
- Test and Itchen Catchment.
- Kennet Catchment.
- Loddon Catchment.
- Wey Catchment.
- East Hampshire Catchment.
- Arun and Western Streams Catchment.

Bird Aware Solent Revised Strategy, Solent Recreation Mitigation Partnership, 2024

The strategy provides background information on the rationale for the mitigation package linked to recreational pressures on three Special Protection Area (SPA) designations within the Solent. It includes details of a mitigation package to address the identified issues and the need for this to be monitored and reviewed. Sites inland from the SPAs can be important breeding, feeding, and roosting areas for important SPA bird populations.

Solent Waders and Brent Goose Strategy, 2024 (and associated mitigation guidance) **[solent-waders-brent-goose-strategy-2024.pdf](#)**

The strategy considers areas of land that are ecologically linked to the Solent SPAs that are important to the designated bird species, so they can be properly considered when at risk. A series of policies is provided to help ensure such areas are appropriately considered, with additional advice available in relation to providing mitigation.



Coastal flood and erosion strategies

These strategies set the strategic policy approach for the management of the coastline and adjacent areas at risk of tidal flooding and coastal erosion. They are developed by coastal groups, including the Environment Agency, local authorities and others with an interest in coastal management.

- North Solent Shoreline Management Plan, New Forest District Council, 2010.
- River Itchen to Hamble Coastal Study, 2011.
- Southampton Coastal Flood and Erosion Risk Management Strategy, 2012.
- River Hamble to Portchester Coastal Flood and Erosion Risk Management Strategy, 2016.
- Draft Hurst Spit to Lymington Strategy (publication expected summer 2026).

Strategic flood risk assessments

Local planning authorities are required to prepare a strategic flood risk assessment (SFRA) for their areas. SFRAs help various parties consider flood risk when making planning decisions about the design and location of any development, flood risk management features and structures. In the SFRA, the following are assessed: risk from all sources of flooding; cumulative impact that development or changing land use would have on the risk of flooding; and effect of climate change on risk. SFRAs also identify opportunities to reduce the causes and impacts of flooding, and any land likely to be needed for flood risk management features and structures.

- New Forest District Council Level 1 Strategic Flood Risk Assessment (2018).
- Partnership for South Hampshire Level 1 Strategic Flood Risk Assessment (2024).
- South Downs National Park Water Cycle Study and SFRA Level 1.
- East Hampshire Level 1 SFRA, East Hampshire District Council (2022).
- Hart District Council Strategic Flood Risk Assessment December 2016.

Water utilities plans and strategies

In planning the delivery of water resources and services, water utility companies also identify where biodiversity improvements will be undertaken by them through the management of infrastructure and nature conservation/recovery projects.

- Southern Water - Natural Capital in our Catchments - Developing natural capital accounts for all 11 catchments in our area March 2024.
- Thames Water – “From 2020 to 2025 we’ve committed, with our regulator Ofwat, to enhance biodiversity by 5% at 253 of our most important sites for nature. The area of land to be improved by this five-year biodiversity programme is c.4,000 ha. This area is about two and a half times the size of Heathrow Airport. We’ll achieve this by improving the condition of existing habitats through changes in management regimes

of grassland. We'll also create new habitats with improved connectivity, such as wetlands, woodlands and hedgerows."

Landscape Character Assessments

Landscape Character Assessments (LCA) systematically and rigorously assess and characterise the landscape using standard methodology and national typology. Most local planning authorities within Hampshire have undertaken LCA and this provides essential evidence base for land use planning. The LCAs also provide guidance on the vulnerability and sensitivity of landscape types within Hampshire to development and land use change.

- Hampshire Integrated Character Assessment 2010.
- New Forest National Park Landscape Character Assessment 2015.
- New Forest District Landscape Character Assessment 2000.
- Test Valley Landscape Character Assessment 2018.
- Landscape Character Assessment for Eastleigh Borough 2011.
- Winchester District Landscape Character Assessment 2004.
- Fareham Landscape Assessment 2017.
- Havant Borough Townscape, Landscape and Seascape Character Assessment 2007
- Landscape Character Assessment - Portsea Island Coastal Defence Flood Risk Areas 2012.
- East Hampshire Landscape Character Assessment 2024.
- Basingstoke and Deane Landscape Assessment 2001.
- Hart District Landscape Assessment 1997.
- Landscape Assessment of Rushmoor 2009 Update.
- South Downs Landscape Character Assessment 2020.

Local plans

Local Planning Authorities in the area covered by the LNRS are at various stages in the preparation or implementation of their respective local plans. These local plans set out planning policies for their respective areas and include proposed or allocated sites for development, including residential sites, employment sites, and sites for renewable energy. We have used the proposed sites in each local authority's local plan to inform where new developments are likely to be located and, therefore, where land is less likely to be available for nature recovery. We have also worked with the planning services of each local authority to determine how other aspects of the local plans, such as policies related to the natural environment, may influence the LNRS.

Hampshire Minerals and Waste Plan 2013

The Hampshire Minerals and Waste Plan (HMWP) seeks to promote sustainable development within the Plan area with a focus on minerals and waste development. This includes making provision for a reliable supply of minerals and appropriate waste infrastructure, whilst protecting the environment and local communities and supporting the local economy. The 2013 Plan is currently subject to a partial update.

In addition to the inclusion of environmental policies, the HMWP Partial Update contains four mineral extraction allocations. The restoration of these and other sites provides opportunities for nature recovery both locally and as part of wider ecological networks.

Neighbourhood Development Plans

A Neighbourhood Development Plan is a community-led initiative that sets out policies and proposals for guiding development and shaping the future of a specific neighbourhood or area within a local authority's jurisdiction. Neighbourhood Development Plans are prepared by local communities, often with the support of local councils and planning authorities, and provide a framework for managing land use, development and environmental conservation at the local level.

National Character Areas (NCA)

England is subdivided into 159 Character Areas, broad divisions of landscape that form the basic units of cohesive countryside character, on which ecological strategies can be based. NCAs are areas that share similar landscape characteristics, which follow natural lines in the landscape, making them an effective decision-making framework for the natural environment. The Character Area framework is used to describe and shape objectives for the countryside, its planning and management and is maintained by Natural England.

Within Hampshire, eleven areas have been defined by Natural England as National Character Areas (NCAs):

- Dorset Heaths and Cranborne Chase.
- Dorset Heaths
- Hampshire Downs.
- New Forest.
- Salisbury Plain and West Wiltshire Downs.
- South Coast Plain.
- South Downs.
- South Hampshire Lowlands.
- Thames Basin Heaths.
- Thames Basin Lowlands.
- Wealden Greensand.

NCAs are utilised in Part 1 of this Strategy to provide a detailed area-based description of the biodiversity of the strategy area.



Mapping and data

A wide range of local, regional, and national evidence has been used in preparing this Local Nature Recovery Strategy. A summary of how key datasets have been used is provided below and set out in the following tables:

- Data on designated sites (both nationally and locally designated for their value to nature) and priority habitats, has been used to identify where there are habitats that are already of value to nature. Hampshire Biodiversity Information Centre (HBIC) has provided all locally designated sites and priority habitat data.
- Mapping of land that is in Countryside Stewardship schemes has been used as part of the opportunity modelling to help us understand where there is additional land that may already be becoming of value to nature.
- Species records held by the HBIC have been used to identify where priority species have been recorded recently or in the past, to identify sites for recovery and to draw up the species priority shortlist.
- The Natural England Habitat Network mapping model, using HBIC's priority habitat data, has been used by HBIC to identify the best opportunities to inform the Habitat Opportunity Areas to expand and connect these habitats.
- Soil types and flood zones data has been used in the model to inform where potential habitats could be created.
- The mapping of riparian buffers using the Detailed River Network centre lines has been used to identify priorities for improving the ecological status of rivers and provide more wetland vegetation.
- The location of parks and greenspaces have been used to help identify areas where nature recovery could provide the most benefit to people's health and wellbeing.



Ecology – existing biodiversity dataset

Data	Description	How it was used	Source(s)	Last updated
Sites of Special Scientific Interest (SSSI)	Mapping of sites designated nationally for their importance to biology and/or geology.	Mapped as areas that are of particular importance for biodiversity.	Natural England	2025
Special Areas of Conservation (SAC)	Mapping of sites designated as SACs for their European interest for fauna and flora. Note that all SACs are designated as SSSIs.	Mapped as areas that are of particular importance for biodiversity.	Natural England	2025
Special Protection Areas (SPA)	Mapping of sites designated as SPAs for their European interest for birds. Note that all SPAs are designated as SSSIs.	Mapped as areas that are of particular importance for biodiversity.	Natural England	2025
National Nature Reserves (NNR)	Locations of National Nature Reserves.	Mapped as areas that are of particular importance for biodiversity.	Natural England	2025
Sites of Importance for Nature Conservation (SINC) (Local Wildlife Sites)	Location and description of locally designated sites of value to nature at a regional/local level.	Mapped as areas that are of particular importance for biodiversity.	HBIC	2025
Ancient woodland Inventory	Location of ancient woodland (defined as woodland that has existed since at least 1600).	Defined as irreplaceable habitat and mapped as areas that are of particular importance for biodiversity.	Natural England and HBIC	2025
Local Nature Reserves (LNR)	Location of Local Nature Reserves (which differ from SINC).	Mapped as areas that are of particular importance for biodiversity.	Natural England	2025
Priority habitat mapping	Mapping of priority habitats as defined by Natural England and HBIC.	Re-verified and used to identify important priority habitats to inform the Habitat Network Model and habitat opportunity areas.	HBIC and Natural England	2025
Status of protected and designated sites (SSSI)	The status of each SSSI (unfavourable, favourable etc.) and an explanation of why this status has been assigned.	Provided additional information on presence of priority habitat to be used above.	Natural England	Varies

Data	Description	How it was used	Source(s)	Last updated
Detailed river network	The detailed river network including those designated as main rivers, which is managed by the Environment Agency.	Used to identify all rivers and streams, and map buffers alongside them that 'could become of importance' to biodiversity.	Environment Agency	2025
Traditional orchards	Mapping of traditional orchards.	Used to verify important habitat that was not already mapped through the Hampshire SINCs. None were found	Natural England	2024
Wood pasture and parkland	Mapping of open wooded habitats (wood pasture and parkland).	Used to identify additional important habitat within the Habitat Network model.	Natural England and HBIC	2025
Local records of species	All records of species held by HBIC, including the location in which the species was recorded and the date. HBIC hold c11 million records.	Used to draw up the shortlist of priority species and identify woodlands supporting priority species for targeting.	HBIC	2024
Countryside Stewardship schemes	Countryside Stewardship schemes active over past five years.	Used to inform the Habitat Network model where action is being taken to enhance the natural environment.	Natural England	2024
Tree Planting Schemes	Woodland and other wooded habitats (e.g. orchards) that have recently been planted or proposed for planting through the Hampshire Forest Partnership and other schemes.	Used to identify newly created woodland and other wooded habitats that are likely to be of importance to biodiversity in the future and may not be otherwise mapped.	Hampshire County Council	2024
Solent Wader and Brent Geese Strategy areas	Sites of importance to populations of birds found on the Solent SPA, which have been identified as core, primary or secondary supporting areas to the SPA.	Used to map land that is deemed to be of functional importance to bird populations using the Solent and that has not been mapped under any other designation.	Hampshire & Isle of Wight Wildlife Trust	2024

Ecology – opportunity mapping models

Data	Description	How it was used	Source(s)	Last updated/ extracted
National Habitat Network model	A spatial model that maps the geographic extent and location of Habitat Networks for 10 priority habitats in Hampshire. This is based on HBIC's priority habitat data and identifies habitat restoration-creation areas, restorable habitat areas, plus fragmentation action and network enhancement zones.	Used to identify potential areas for expanding and connecting existing habitats, as well as helping to inform opportunities for cross-boundary connectivity.	Natural England / HBIC	2024
Saltmarsh potential	Currently defended floodplain areas in England which could be suitable for managed realignment and / or Regulated Tidal Exchange (RTE) to create mudflats and saltmarshes.	Used to identify areas that are potential priorities for restoration of saltmarsh or mudflat habitat.	MMO/CABA	2024
Seagrass potential	The majority of the seagrass potential areas are derived from wave and current energy, elevation and salinity criteria. The data contains a subset of 'preferred' sites' which include areas with minimal overlap with pressures and existing activities that may hinder restoration.	The 'preferred sites have been used to identify areas that have potential for seagrass recovery – they also include areas known to support or have supported seagrass in the past	Environment Agency Seagrass Potential - data.gov.uk , and Hampshire & Isle of Wight Wildlife Trust	2025
Working with Natural Processes (WWNP) floodplain reconnection potential	The Environment Agency's best estimate of locations where it may be possible to establish reconnection between a watercourse and its natural floodplain, especially during high flows.	To help prioritise opportunities for reconnecting rivers to the floodplain.	Environment Agency	2024

Land use

Data	Description	How it was used	Source(s)	Last updated/ extracted
Soil type	Map of 27 soil types across the UK.	Used to inform potential habitat types in different areas and, alongside ALC data, areas would be most suitable as priorities for nature recovery with the least impact on food production.	LandIS Soilscapes	2024
Planned developments, including for renewable energy	Location of currently planned developments (residential, employment, infrastructure, renewables etc).	Used to ascertain where future development would mean land would not be available for prioritisation for nature recovery.	Hampshire Local Planning Authorities	2024
Scheduled Monuments and battlefields	Locations of Scheduled Monuments (e.g. stone circles), which are given protection against unauthorised change, and registered battlefields, which are given weight in the planning system.	Used to inform where certain actions may not be appropriate due to potential impacts on heritage, and where mapping areas as potentially being of importance to biodiversity would not be appropriate.	Historic England	2023
Land ownership mapping	Mapping of known land ownership, including for environmental NGOs, Forestry England, National Trust, and Water Utilities.	Used to identify sites that are or could be managed for nature due to known interests of the landowners.	Various	Various
Built up areas	Mapping of areas defined as 'built up' by the ONS by 25m grid squares.	Used to identify areas that are built up, and where opportunities for nature recovery may be limited.	ONS	2022
Local plan proposed development locations	Sites where new development is proposed in forthcoming local plans.	Used to identify areas that are likely to be built on in the future, and where opportunities for nature recovery may be limited or would inform BNG.	Hampshire Local Planning Authorities	2024

Water

Data	Description	How it was used	Source(s)	Last updated/ extracted
Water body classifications and RNAGs	Classification of water bodies (ecological status) under the Water Framework Directive and 'reasons for not achieving good' (RNAGs).	Used to identify priority interventions for improving the quality of waterbodies.	Environment Agency/ Rivers Trust	2021
River barriers	Mapping of barriers to fish passage (weirs, dams, impoundments, culverts etc) that can restrict the upstream and downstream movement of fish, preventing access to important spawning and feeding areas.	Used to help identify priorities for opening up rivers and streams to fish passage and potential barriers to river restoration.	Environment Agency and Partners - River Obstacles	2025
Flood zones	Mapping of flood zone 3 (more than 1% chance of flooding in a given year).	Used to help identify areas that could be suitable for creation of wetland habitats.	Environment Agency	2024
Risk of flooding from rivers and sea	Mapping of the chance of flooding from rivers and/or the sea for England, using local expertise and taking into account flood defences and their condition.	Used to help identify areas that could be especially suitable for creation of coastal floodplain grazing marsh.	Environment Agency	2024
Groundwater Source Protection Zones (SPZs)	Identify areas of land through which water infiltrates into a groundwater borehole, well or spring that is used for public drinking water supply. These zones show the risk of contamination from potential pollution.	Used to help identify areas where there may be opportunities for nature recovery based on the protection of groundwater sources through lowering inputs and moving to less intensive farming .	Gov.uk	2024

Appendix 6:

Habitat opportunity mapping methodology

The habitat opportunity layers used to inform the identification of Habitat Opportunity Areas in the ACB map in Part 2, have been constructed using Natural England's habitat network model¹⁵. This model uses a data integration software tool called Feature Manipulation Engine (FME). The Hampshire Biodiversity Information Centre (HBIC) adapted the model as follows:

- By exchanging Natural England's England-wide habitat layers for its own local habitat layers.
- Adding additional priority habitats to the list of associated habitats.
- Developing a model for coastal and floodplain grazing marsh.

The habitat network model produces the following zones:

- **The layer's existing primary habitat.**
- **Nearby associated habitat (see Table A6.1).** This includes other priority habitat types that form a mosaic or an ecologically coherent group within the landscape, and may be essential for some species associated with the primary habitat.
- **Habitat creation/restoration areas.** This is where work is underway to either create or restore the primary habitat, and uses Countryside Stewardship data from the past five years.
- **Restorable habitat.** Areas of land, predominantly composed of existing semi-natural habitat, where the primary habitat is present in a degraded or fragmented form, and which are likely to be suitable for restoration.
- **Network enhancement zone 1.** Land connecting existing patches of primary and associated habitats, which is likely to be suitable for creation of the primary habitat. Factors affecting suitability include proximity to primary habitat and associated habitats, current land

use, soil type, slope, and proximity to coast. The action within this zone is expanding and joining up existing habitat patches and improving the connections between them.

- **Fragmentation action zone.** Land within enhancement zone 1 that connects existing patches of primary and associated habitats, which are currently highly fragmented, and where fragmentation could be reduced by habitat creation.
- **Network enhancement zone 2.** Land connecting existing patches of primary and associated habitats, which is less likely to be suitable for creation of the primary habitat. Action in this zone, which improves biodiversity value through land management changes and/or green infrastructure provision, can be targeted here. Please note that this zone was only used for the woodland creation layer.

¹⁵ Natural England habitat network model - https://magic.defra.gov.uk/Metadata_for_magic/Habitat%20Network%20Mapping%20Guidance.pdf

- **Network expansion zone.** Land beyond the network enhancement zones with potential for expanding, linking, and joining networks across the landscape. For example, areas that are potentially suitable for habitat creation for the specific habitat in addition to enhancement zone

1. Please note that this zone was not used in the HBIC modelling. It would have covered the whole of Hampshire and the premise of the opportunity layers is to inform areas that would be of strategic significance to achieve the best impact and outcome for nature recovery.

Table A6.1: Associated habitats

Primary habitat network*	Wood pasture and parkland	Lowland beech and yew woodland	Lowland mixed deciduous woodland	Wet woodland	Coastal saltmarsh	Lakes and ponds	Lowland meadow	Purple moor grass and rush pasture	Reedbed	River	Coastal sand dune	Lowland calcareous grassland	Lowland fen	Lowland heath	Hedgerow	Coastal vegetated shingle	Saline lagoon	Lowland acid grassland	Coastal and floodplain grazing marsh
ASNW	x	x	x	x															
CFGM				x	x	x	x	x	x	x									
CSM									x		x					x	x		
LAG		x	x				x				x	x	x	x	x				
LCG		x	x								x		x			x		x	
LFN							x	x	x			x		x				x	x
LHL							x	x					x					x	
LMW	x		x					x				x	x		x			x	x
PMG							x	x	x				x	x				x	x
RBD					x	x	x	x		x	x		x				x		

* See below for expansion of initialisations in the first column

Data layers used in the Hampshire model:

- **Urban areas.** HBIC used a combination of a layer with urban areas defined by Office for National Statistics (ONS), and the built-up areas from HBIC's own broad habitat layer. The ONS layer was, in

parts, too generalised and included some parks and open greenspaces as urban areas. These areas can be important elements of a habitat network and were therefore, as far as possible, manually cut out of the urban layer.

- **Flood zone 3.** This covers those areas with at least 1% chance (rivers) or at least 0.5% (sea) of

annual flooding. The data was provided by the Environment Agency¹⁶.

- **Soils.** NatMap Soilscales layer from Cranfield University¹⁷.
- **Countryside Stewardship schemes from the Rural Payments Agency.** These show all options that have been active over the past 5 years, based on the reporting period 1 April 2019 – 31 March 2024¹⁸.
- **Ancient woodland inventory layer.** This is based on the published layer by Natural England¹⁹, and includes updates from the 2024 HBIC review, which added ancient woodlands smaller than 2ha in Hampshire.
- **Broad habitat layer.** HBIC's broad habitat layer was used to inform land use type in the model to avoid habitats where it would not be sensible to create a priority habitat, particularly overlaying an existing priority habitat.
- **Priority habitat layer.** HBIC's layer of priority habitats was used. For the areas in the

neighbouring counties of Dorset and Sussex (up to 2km from the border), their own priority habitats were used. For the other neighbouring counties, the Natural England priority habitat inventory was used.

- In all cases, the layer was then cut down to the area of the statutory LNRS boundary (LNRS45)²⁰.

Habitat networks constructed using the model were:

- Lowland calcareous grassland (LCG).
- Lowland acid grassland (LAG).
- Lowland heathland (LHL).
- Lowland meadow (LMW).
- Purple moor grass and rush pasture (PMG).
- Lowland fen (LFN).
- Reedbed (RDB).
- Coastal and floodplain grazing marsh (CFGM).
- Coastal saltmarsh (CSM).
- Ancient woodland (ASNW).
- Wood pasture and parkland (WPP).

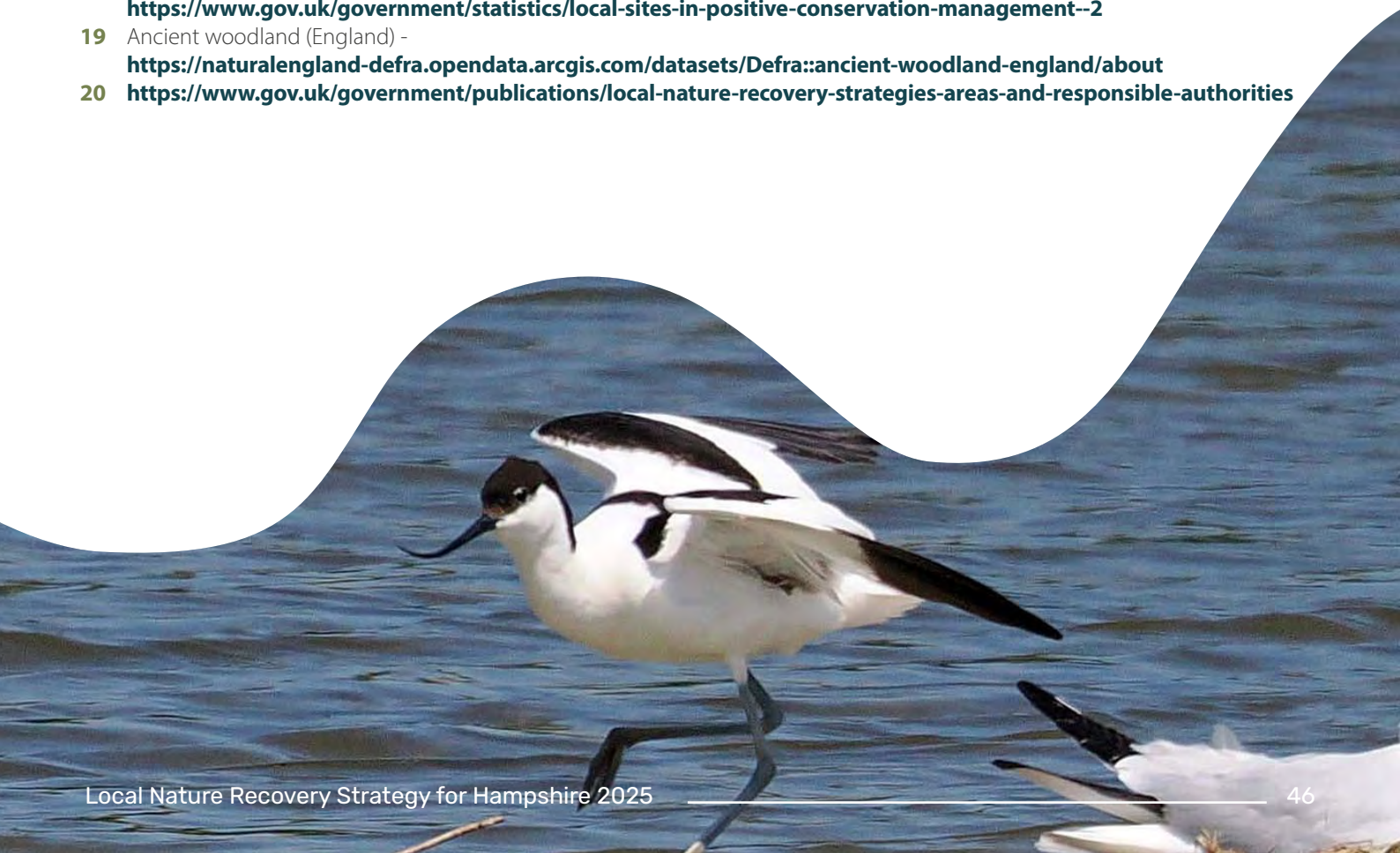
16 Flood Zone 3 - <https://www.data.gov.uk/dataset/bed63fc1-dd26-4685-b143-2941088923b3/flood-map-for-planning-rivers-and-sea-flood-zone-3>

17 National soil map of England and Wales (NATMAP) - <https://www.landis.org.uk/data/nmsoilscales.cfm>

18 Local sites in positive conservation management - <https://www.gov.uk/government/statistics/local-sites-in-positive-conservation-management--2>

19 Ancient woodland (England) - <https://naturalengland-defra.opendata.arcgis.com/datasets/Defra::ancient-woodland-england/about>

20 <https://www.gov.uk/government/publications/local-nature-recovery-strategies-areas-and-responsible-authorities>



No opportunity mapping was carried out for coastal vegetated shingle and sand dunes as those habitat types are already designated in Hampshire with little scope for expansion without major engineering works and impact on other priority habitat. Very little mapping was undertaken for restoring or creating lakes and ponds, except for known sites, due to insufficient data available.

For each habitat network:

- The model ran with a 1ha minimum area for priority habitat and associated habitats.
- Results up to and including network enhancement zone 1 were used apart from ASNW, which also incorporated network enhancement zone 2.
- The model produces rasterised outputs. To create smoother shapes, the function 'smooth polygon' with the parameters smoothing algorithm '= PAEK' and the smoothing tolerance of 75 metres in ArcMap, were used.
- Urban areas and larger rural settlements were then removed, due to lack of opportunity for habitat creation. Some greenspaces, however, were re-added.
- The layers were then cut to high mean high water mark, apart from saltmarsh and reedbed, which were cut to low mean high water mark.
- To achieve a coherent layer, holes in the layer up to a certain size (mainly covered by small rural settlements and other hard land use types) were removed.
- At each stage the layer was checked and then manually corrected for the following:
 - Tiny fragments were either removed or merged with neighbouring polygons.
 - Implausible areas were removed where it was obvious from aerial photographs or local knowledge that they could not be part of the network, such as runways, sports pitches, campus style sites etc
 - Removal of overlaps with urban areas or larger settlements.
 - For coastal saltmarsh, the layer titled saltmarsh potential from the Catchment



Based Approach (CABA) Data Hub²¹ was merged into the result. This layer extends some of the HBIC mapping and creates several new areas.

- For coastal and floodplain grazing marsh, the resulting layer was merged with the flood zone 3 layer for better connectivity.
- The model was not run for wood pasture and parkland. It instead uses the habitat layer from Natural England²², re-digitised to reflect more accurate boundaries, along with updates from the 2024 HBIC Ancient Woodland Review, which also mapped ancient wood pasture. The Natural England layer maps all Registered Historic Parks, and the measures will refer to these parks and areas of wood pasture.

Supplementary opportunity maps

The Opportunity mapping can be shown in the form of six supplementary maps, which show habitat creation opportunities for the following twelve priority habitats:

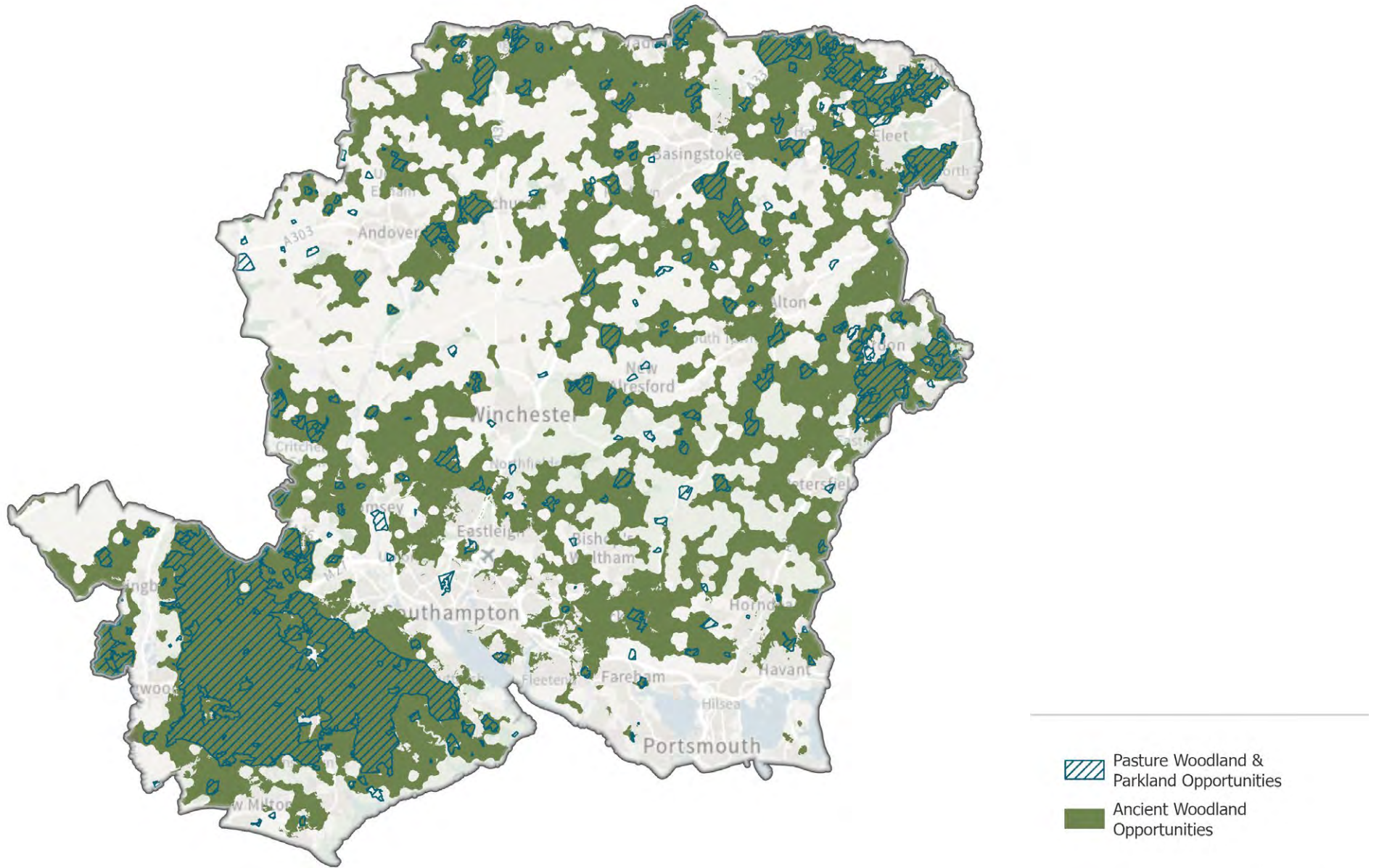
- Map A6.1
 - Ancient woodland
 - Wood pasture and parkland
- Map A6.2
 - Lowland calcareous grassland
- Map A6.3
 - Lowland meadow
 - Purple moor grass and rush pasture
- Map A6.4
 - Lowland heath
 - Lowland acid grassland
- Map A6.5
 - Floodplain and coastal grazing marsh
 - Coastal saltmarsh
 - Reedbed
 - Lowland fen

These maps are provided below.

21 <https://data.catchmentbasedapproach.org/datasets/theriverstrust::saltmarsh-potential-mmo-potential-habitat-creation-sites-within-floodplain/explore?location=52.682253%2C-1.880650%2C6.72>

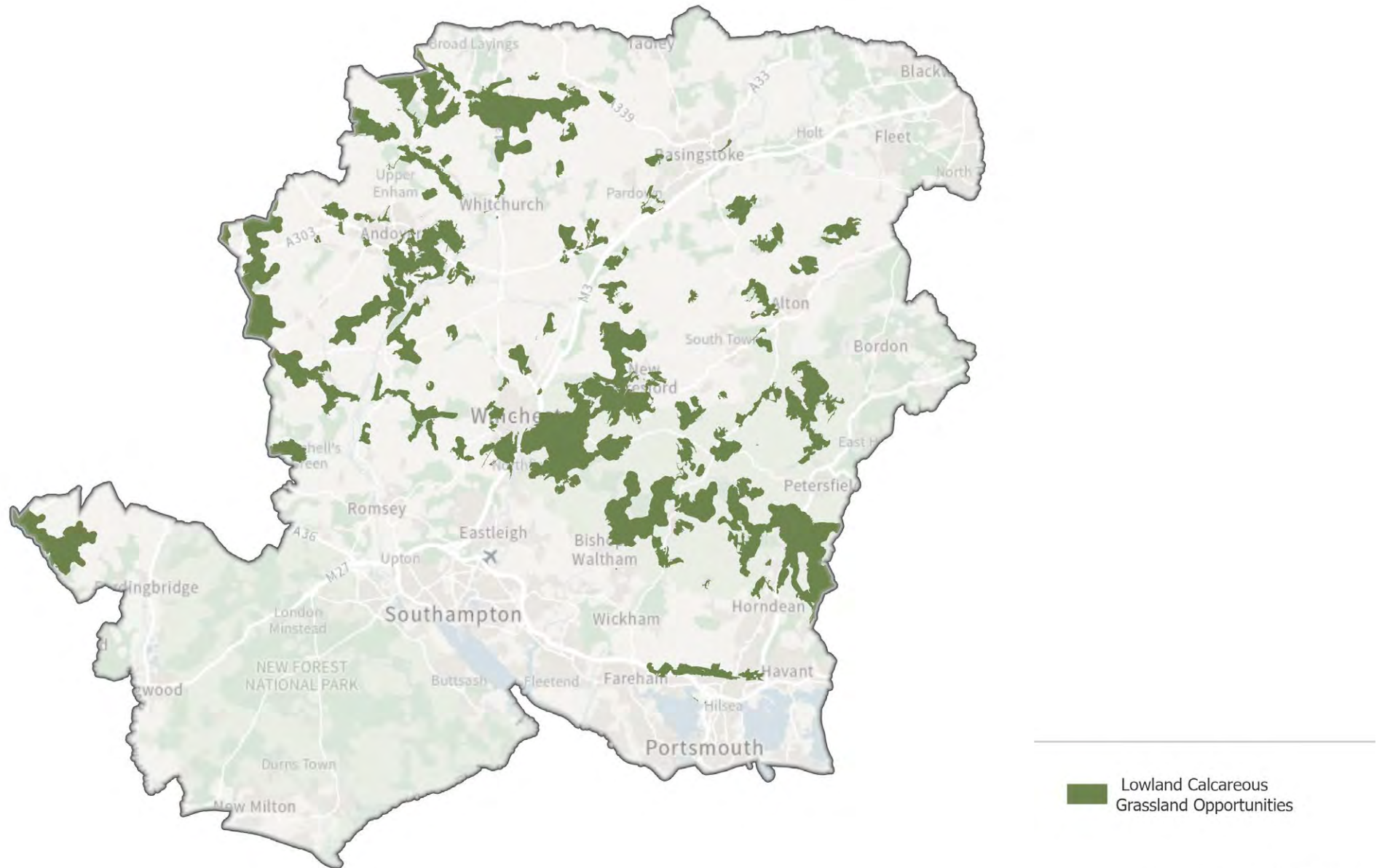
22 Wood pasture and parkland (England) - <https://www.data.gov.uk/dataset/bac6feb6-8222-4665-8abe-8774829ea623/wood-pasture-and-parkland-england>

Map A6.1: Ancient woodland, and wood pasture and parkland opportunities map



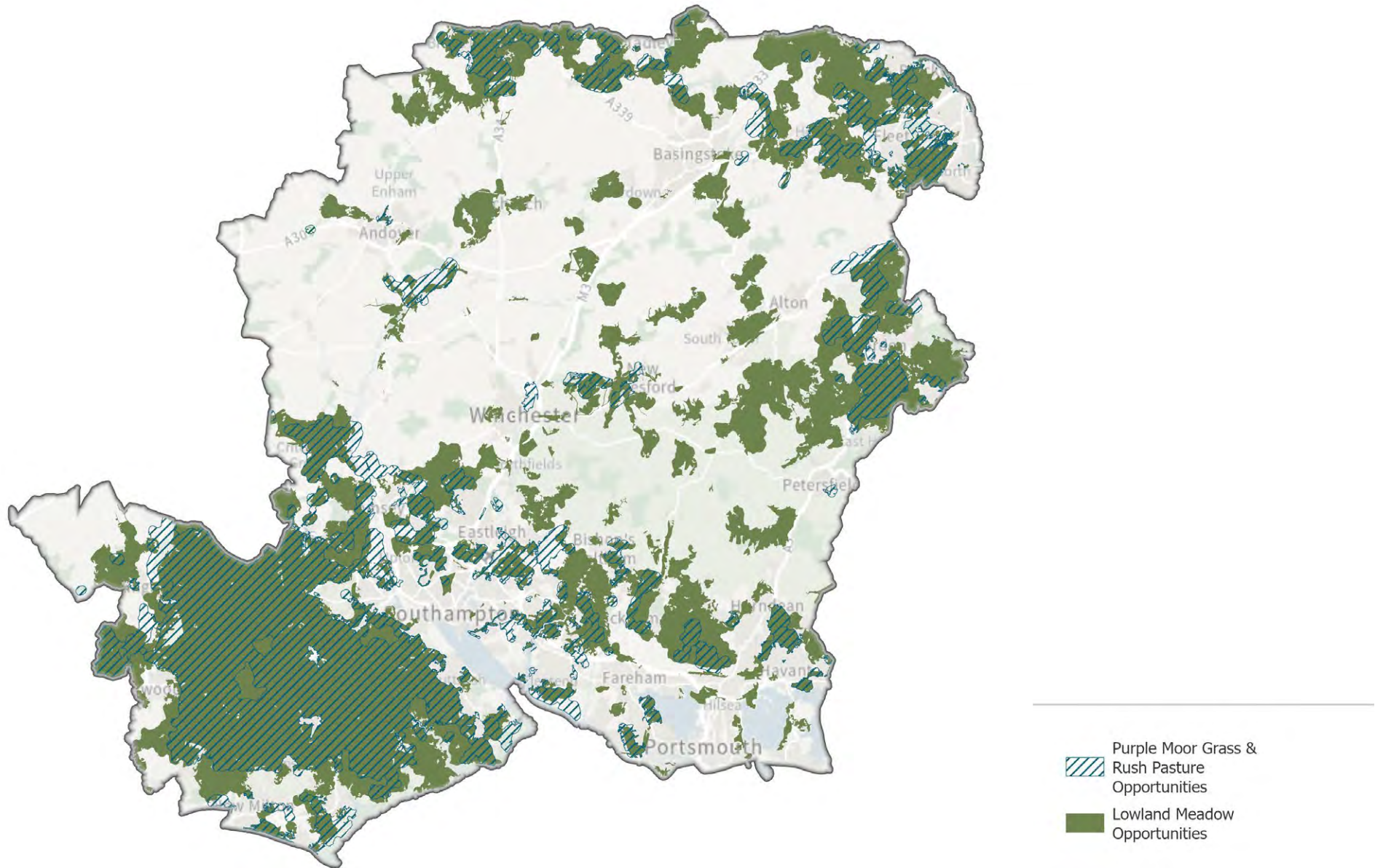
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Map A6.2: Lowland calcareous grasslands opportunities map



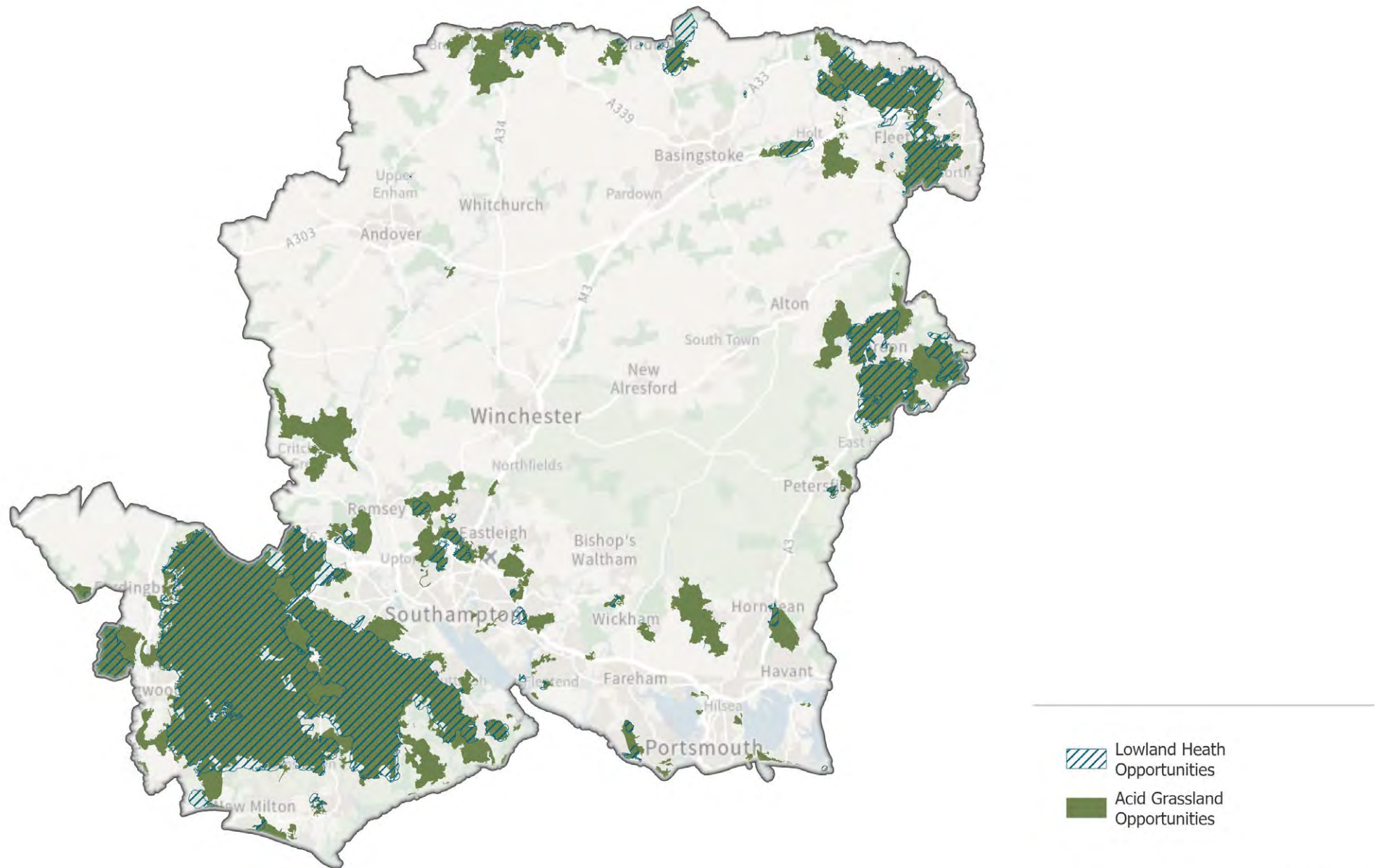
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Map A6.3: Lowland meadow, and purple moor grass and rush pasture opportunities map



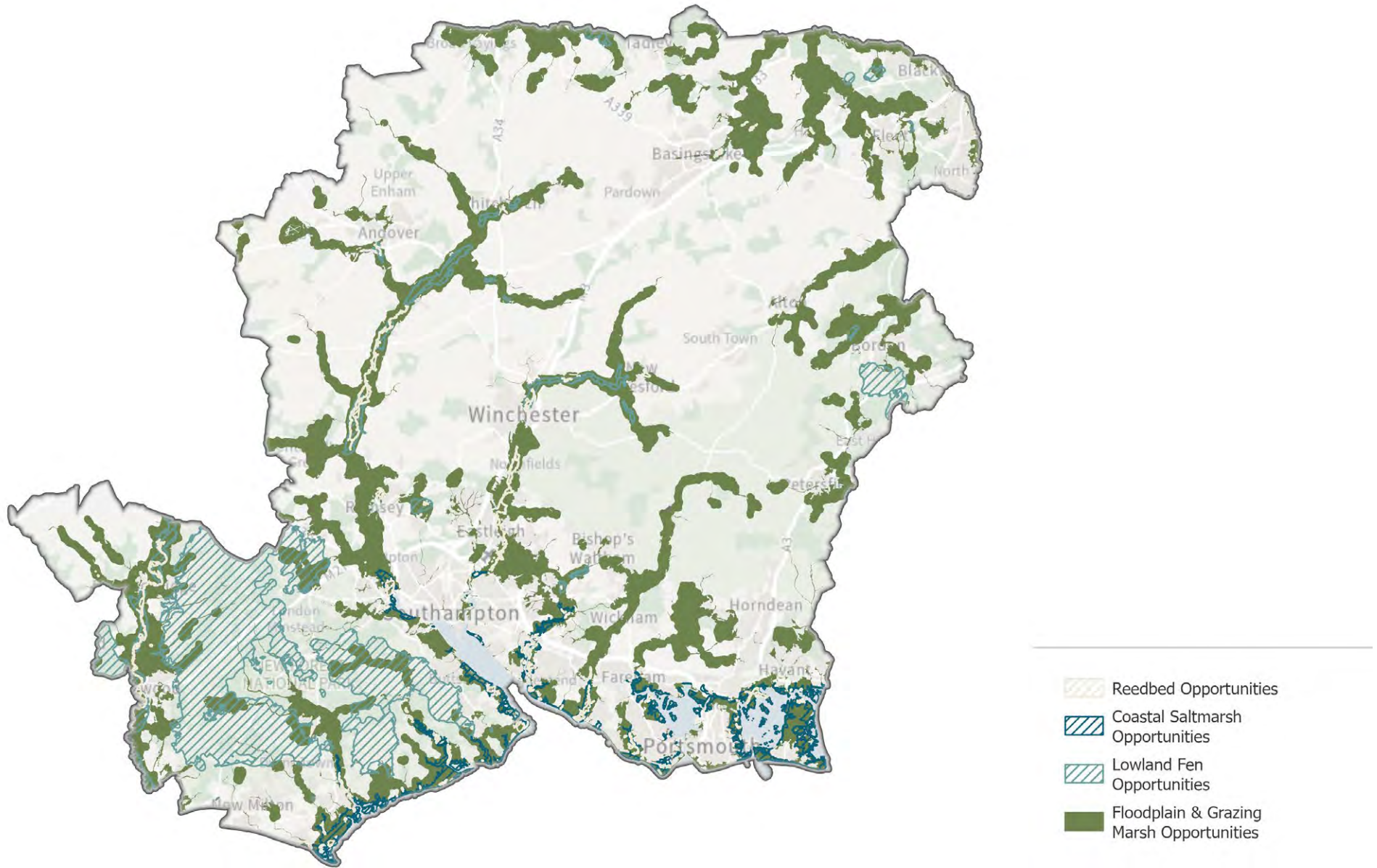
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Map A6.4: Lowland heath and acid grassland opportunities map



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Map A6.5: Floodplain and coastal grazing marsh, saltmarsh, reedbed, and lowland fen opportunities map



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Appendix 7: Method for mapping Habitat Opportunity Areas and other components of the Potential Measures Map

Habitat Opportunity Areas (HOAs) – areas where multiple habitats can be restored or created

GIS data sources used:

- Existing priority habitat data (HBIC).
- Priority habitat opportunity mapping for 11 priority habitats (HBIC) using the NE Habitat Network Model and removing enhancement zones – see Appendix 6.
- Detailed survey reports (HBIC).
- SSSIs (Natural England) and SINC (HBIC).
- The updated Ancient Woodland Inventory (NE/ HBIC).
- The Natural England Parkland and Wood Pasture Inventory.
- ‘Lost Ancient Woodlands’ – ancient woodland shown as ‘cleared’ in the original Ancient Woodland Inventory (between 1920 and 1979) and which has been digitised by HBIC.
- Ancient Woodland SINC supporting one or more LNRS priority woodland species²³.
- Aerial photographs.
- Historic mapping.

The key objective has been to map areas of land that buffer, connect and expand existing designated sites (SSSIs and SINC) and their constituent habitat(s), along with other areas of undesignated priority habitat, using the appropriate habitat opportunity mapping as a guide, and extending out by, on average, one parcel or field or slightly further if it links existing sites. This follows the Lawton principles of ‘bigger, better, more and joined-up’²⁴

Most of the HOAs have several habitat restoration measures listed due to the nature of the changing soils and hydrology across an area, such as restore to lowland heathland, lowland acid grassland, and/ or purple-moor grass/rush pasture. This will depend upon the underlying opportunity mapping and prevailing conditions or constraints on site. Creating a mosaic of such habitats with structural diversity would be a potential and desirable outcome.

Parcels within the boundaries of the HOAs must overlie the opportunity mapping, which in some cases has included areas of the ‘enhancement zone’ for completeness.

Boundaries of the HOAs align closely with Ordnance Survey Master Map (OSMM) boundaries, and SSSI/SINC boundaries. Any designated sites that lie within HOAs will be removed from the ACB layer, but SINC will remain on the measures map if they themselves have measures attached.

Developed land and roads have been removed from the HOAs, where possible, but areas can cross over rivers and streams and cover some dwellings. Existing areas of non-designated woodland have not been removed, the intention being to retain semi-natural woodland, where possible, whilst allowing surrounding areas to be restored back to heathland or floodplain grazing marsh, for example. Some HOAs may also overlap with each other (floodplain

²³ Hazel Dormice, barbastelle & Bechstein’s bats, Duke of Burgundy, pearl bordered fritillary, white-letter hairstreak, brown hairstreak, drab looper, Devil’s bolete, cheese snail, hawfinch, lesser spotted woodpecker, tree pipit, woodcock, nightingale, wood warbler, marsh tit, spotted flycatcher, narrow-leaved helleborine, green-flowered helleborine, violet helleborine, bastard balm, bird’s-nest orchid.

²⁴ <https://webarchive.nationalarchives.gov.uk/ukgwa/20130402151656/http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>

HOA across a larger HOA) although this has been minimised as far as possible for clarity.

Other sites and areas that have been mapped on the measures map, which reflect priorities in the strategy include:

Native Woodland Creation and restoration of ancient woodland

Existing ancient woodland has not been buffered with new woodland. Instead the priority has been to focus on:

- Existing ancient semi-natural woodlands which support priority species.
- New woodland areas where they establish connections between ancient woodlands, which support priority species.
- The 'lost woodland' polygons that lie adjacent to extant ancient woodland. These have been added for woodland re-creation on the basis they re-connect with many ancient woodlands and may still support relic hedge banks that support an ancient woodland flora. They also fit well back into the landscape. Any that have been built upon since clearance, have been removed.
- Coniferous PAWs woodland that directly abuts ancient semi-natural woodland which has been mapped for restoration back to (>80%) native woodland.

Wood Pasture and Historic Parkland

- All sites mapped on the Natural England Wood Pasture and Parkland BAP Priority Habitat layer on MAGIC have been mapped on the Measures map except where they fall within SSSIs – such as the New Forest. Additional areas have been added from the recent ancient woodland review.

River corridors

- Riparian buffers cover up to 10m either side of all rivers and streams. All culverted stretches have been retained where they lie beneath development, roads and, in some cases, farmland on the basis that some may be recoverable back to a more natural state. The buffers are also shown where they route through SINCs on the measures map (but not SSSIs).
- Barriers to fish migration using data supplied by the Environment Agency (EA) and **River Obstacles** website as point data and mapped as small polygons on all rivers and streams.

Groundwater Source Protection Zones (SPZs)

- All SPZs have been mapped on the Measures Map to indicate where lowering inputs and moving to less intensive farming would protect groundwater quality and ultimately river water quality. Main urban areas have been removed.

'Additional' sites – these have now been amalgamated with the HOA layer

- They include sites supplied by local planning authorities and proposed for
 - Biodiversity net gain.
 - Nutrient mitigation.
 - Nature recovery in general through local plans, neighbourhood plans, and local biodiversity action plans.
 - Sustainable alternative natural greenspaces, local green spaces, and other land they own/manage.
 - Minerals sites with planned restoration to priority habitat.
 - Sites supporting open mosaic habitat on previously developed land (where already not designated).
- Woodlands owned by Forest England (not within SINCs) where nature recovery is planned.

SINCs in poor or uncertain condition requiring active management. These include:

- SINCs where their condition has been assessed from habitat survey reports and found to be in negative or nil management.
- Woodland SINCs supporting declining priority species requiring targeted management.
- SINCs where the last habitat survey report pre-dates 2005 so condition is uncertain.
- Woodland SINCs owned by Forest England where nature recovery is planned.

Solent wader and brent geese sites

- All class types have been mapped on the basis a fully functional network is required to support the coastal SPAs.
- Seagrass Beds although they mostly occur within SSSIs they can occur within the inter-tidal areas within the LNRS boundary and are an important priority for recovery and expansion

Road Verges of Ecological Importance (RVEI) and other road verges receiving planned reduced cuts – those which are also SINCs have been mapped within the SINCs measures layer.

