



How to Design your LNRS to Deliver for Plants and Fungi

Guidance for local action

October 2023

Introduction to LNRs

Local Nature Recovery Strategies (LNRs) present a unique opportunity for communities across England to work together to protect our natural environment and turn the tide on species loss. If we get them right, these strategies will put us on the path to creating a society that functions in harmony with nature.

From the tiniest mosses to the tallest trees, wild plants and fungi are the foundation of our planet's ecosystems. They sustain all life. They clean our water and air, provide food, prevent flooding and soil erosion, and capture and store massive amounts of carbon.

Efforts to recover nature need to start by protecting and supporting these incredibly important groups. Plantlife is publishing this guidance to help Responsible Authorities design LNRs which help create a world rich in plants and fungi, for the benefit of all. At this crucial time for our wildlife and our future, now is the time to step up.



Knowledge is power: Habitat mapping and species data

Before any planning for nature's recovery can start, a good understanding of existing habitats and species is essential. The data packages provided by Natural England will be a useful starting point to sourcing habitat data. However, enriching these datasets with **local data on habitats and species** will provide a higher resolution understanding of the biodiversity in your LNRS area. A well-informed knowledge base of local biodiversity will produce the most reliable map of opportunities and ultimately, the most effective LNRS.

To take account of wild plants and fungi in your LNRS mapping:

Obtain species data from all possible sources – in particular, your local environmental/biological records centre (LERCs), specialist societies for vascular plants, lichens and bryophytes (e.g. BSBI, BLS, and BBS) and national monitoring schemes and databases (e.g. National Biodiversity Network (NBN)). Speak to the appointed Natural England advisor for your region for information on how to contact these organisations.

Ask Plantlife for **spatial data** for Important Plant Areas (IPAs) and Important Fungus Areas (IFAs). These represent hotspots for plant and fungal diversity and populations of internationally threatened species.

Compile **priority species lists** in accordance with the 'Species Recovery within LNRSs: Advice for Responsible Authorities' guidance provided by Natural England. This will help you to identify which species are of interest at a local level before mapping areas of importance for these.

Cross-check your LNRS species records against these additional resources to comprehensively establish priority species of plants and fungi:

- Government information on [Protected plants, fungi and lichens](#) – these are species of principal importance in England
- [The Vascular Plant Red List for Great Britain](#) and the [Vascular Plant Red List for England](#)
- 'Threatened Plants in Britain and Ireland' published by the BSBI
- Local biological records centres e.g. Vice County Records and Rare Plants Registers
- Your Local Environmental Record Centre (LERC) will hold additional information collated by local recording groups; they can also signpost you to relevant experts who may hold additional data of interest for the area.

Species: Bending the curve on declines

To date, LNRS planning has largely been focused on habitats. However, many species have very specific management requirements, which means general habitat work alone is not enough to support them. With **1 in 5 UK vascular plant species at risk of extinction**, we cannot afford for any to slip through the net. Actively incorporating species – and the actions required to allow them to thrive – will be central to LNRS success.

In order to maximise the species potential of your local habitats:

Always consider the management needs of priority species within the broader management requirements of the habitat.

Where species-specific recovery plans are already in place, identify the priorities and measures from these which can be integrated into the LNRS plans.

Include opportunities for improving habitat heterogeneity – increasing the structural complexity of a habitat will create microhabitats which can support a diversity of species at all scales.

Where keystone species are present, identify priorities and targeted measures required to benefit these species.

Include measures to control invasive species that are detrimental to keystone species.



Grasslands: The unsung heroes of carbon storage and biodiversity

Our grasslands are vital nature-based solutions to climate change. Not only can they be economically-productive lands for farming, they also store more than 30% of UK terrestrial carbon and can support more species per square metre than any other habitat.

Yet grasslands are often seen as empty spaces, making them vulnerable to development, tree planting and other land use changes. This is why around **97% of our species rich grasslands have been lost in less than a century.**

In order to put wildlife-rich grasslands back at the heart of your LNRS:

Identify existing species-rich grasslands (>15 species per square metre) and include priorities to both improve their condition and protect them from land use changes and other threats.



Identify opportunities to create and restore species-rich grasslands. See Plantlife's [good meadow guide](#) for how to establish meadows in the most ecologically stable way.



Identify opportunities to restore wildflower habitat on road verges and other green spaces. Consult our [road verge management guide](#) to create verges which contribute to a national network of wildlife-friendly habitat corridors.



Ensure the LNRS advises the use of [local provenance seed sources](#) when creating new meadows and other species-rich grasslands. Other than natural regeneration, green haylage from local donor meadows is one of the cheapest and most ecologically resilient ways of doing this.



Through engagement with farmers and landowners, identify opportunities and measures to support nature-friendly farming practices such as expanding hedgerows, introducing mob grazing or rotational grazing, reducing soil disturbance, and reducing chemical input. Using language in LNRS plans similar to that used in the Government's Environmental Land Management (ELM) scheme will help align the strategy with future ELM applications.



Trees and Woodlands: Bringing back species diversity

Our trees, woods and forests are iconic features of our landscape and our natural heritage. However, despite their immense ecological, environmental and cultural value, **only 7% of our native woodlands are in good ecological condition**. Each tree is an ecosystem in and of itself, so whether they occur in woodlands or urban environments, their protection and positive management will support life.

In order to design your LNRS for trees and woodland:

Identify the specific measures needed for positive woodland management, restoration and creation in your area, bespoke to the woodland types present.

If your LNRS falls in the southwest or northwest of England, use Plantlife's [Rapid Rainforest Assessment \(RRA\) toolkit](#) to help you reach decisions on what management style to take. Elsewhere, key stakeholders such as the Forestry Commission, Woodland Trust and local Wildlife Trusts will be able to advise on the characteristics and priorities for the woodland types in your area.

Consult the Woodland Trust's report [Trees and Woods at the Heart of Nature Recovery in England](#) for recommendations on how to recover nature at the landscape, wood and tree scale.

Identify opportunities to diversify woodlands both in terms of native tree species and tree age in order to facilitate natural succession, opening up optimal niches for species to occupy and thrive in.

Woodland creation schemes and woodland management plans should incorporate areas of open space and transitional habitats such as scrub and grassland to maximise species diversity. Woodlands require active management such as the use of grazing where appropriate.

Prioritise restoration opportunities for Plantations on Ancient Woodland Sites (PAWS woodlands). Ancient woodlands support unique plant communities that have difficulty colonising secondary woodlands

Include measures to preserve and enhance mature trees in line the Ancient Tree Forum's [practical guidance](#). This will help to support maximum lichen and bryophyte diversity.

When identifying opportunities for new woodland creation, work to the principle of: **'Right Tree, Right Place, Right Management'**. While increased tree cover is central to our efforts to reach net zero, it must not come at the cost of our existing wildlife, carbon stores and other ecosystem functions.

In order to keep wildlife at the forefront of land use decisions:

Any tree planting should be guided by data. Ensure that comprehensive ecological surveys are always carried out before any afforestation takes place to reveal and protect existing species; the best time to do these are spring/summer for plants and autumn for fungi.

Priority open habitats must be protected from afforestation. Intensive tree planting and disruption of organic soils in irreplaceable open habitats such as species-rich grasslands and peatlands leads to loss of biodiversity and soil carbon that cannot be recreated or compensated for within any meaningful timescale.

Woodlands should be designed and created following the principles of the Woodland Trust's [Woodland Creation Guide](#) and Kew's [10 Golden Rules for Restoring Forests](#).

High priority botanical sites identified with the [BSBI Heatmap of Botanical Interest](#) should be protected from land use change. However, this map is not comprehensive and should not be used as a tool for guiding opportunities for afforestation, only for excluding sites from consideration.



Clean air for nature's recovery: An integrated solution

Action for nature, the climate and people's health are joined by an invisible thread: tackling air pollution. Air pollution is a serious issue in urban and rural areas, and for wildlife as well as human health. In particular, ammonia emissions from farming and anaerobic digestion are often overlooked in plans to improve air quality.



In order to reduce the impacts of air pollution on nature in your LNRS:

Incorporate data on air pollutant emissions and nitrogen deposition into LNRS mapping to identify the main sources of emissions, as well as the habitats and species that may be most at risk. For data and other information see naei.beis.gov.uk/emissionsapp and the Air Pollution Information System (apis.ac.uk).

Identify priorities and measures to reduce emissions at source including recommendations to strengthen local planning policies and decisions on rural and urban development; these can then be aligned with local [Air Quality Strategies](#).

Identify priorities and measures to tackle the impacts of nitrogen deposition via habitat restoration and other nature-based solutions.

Identify any sites covered by Site Nitrogen Action Plans (Natural England) that lie within your LNRS region and integrate any relevant priorities/measures these contain within your LNRS strategy.

Identify measures that will reduce air pollution alongside tackling water pollution or greenhouse gas emissions where possible, for example by extending nutrient neutrality schemes to include air pollution.

Green infrastructure: Threading colour across the built environment

We need to act now to ensure that our towns and cities are bursting with thriving, wildlife-rich green and blue space for future generations. Creating networks of wildlife sites and corridors across the urban landscape, with linkages to surrounding rural areas, will begin to reverse habitat fragmentation and allow species to move and adapt to climate change. Utilising nature-based solutions in towns and cities can be a cost-effective means of locking away carbon, supporting biodiversity, tackling pollution and urban heat extremes, minimising flood risk, and improving access to greenspaces for health and wellbeing.

To create towns and cities filled with thriving wildlife-rich space:

Convene the stakeholders concerned with amenity grasslands and road verges in your area (e.g. Highways Authorities, parish and town councils and other community groups) to identify where a change in management will deliver for nature, people, and climate following [Plantlife's road verge management guide](#).

Gather spatial data on existing high-value wildlife sites in urban areas and identify opportunities to connect urban green and blue infrastructure with wider [nature networks](#). Include priorities and measures in your LNRS to protect and enhance these spaces.

Engage with planning officers to support them in understanding and respecting the priorities established within the LNRS process. Uphold nature recovery priorities identified through rigorous application of planning policy protections.

Emphasize the need for preliminary site surveys to always be completed before development to safeguard any existing sites with priority habitats or species; the best time to do these are spring/summer for plants and autumn for fungi.



Alleviating pressures: Steps to create healthier ecosystems across England and beyond

This guidance highlights just a few of the ways that LNRSs can help to build a world rich in wild plants and fungi. Yet pressures on species and habitats created by human-induced threats are expected to worsen with rising global temperatures. Beginning to address these threats can feel like an insurmountable task, but there are steps we can implement locally to improve our ecological resilience at a national level.



To improve the environmental resilience of your LNRS:

Embed your LNRSs in Local Plans such as climate change strategies, green infrastructure strategies, neighbourhood plans, wellbeing strategies, clean air strategies and tree strategies.

Actively and inclusively involve communities in LNRS plans to cultivate a wide understanding of, and responsibility for, nature recovery.

Encourage local people to get involved with the [National Plant Monitoring Scheme](#) to help us better understand the status of wild plant species and their habitats.

Become a peat-free local authority - [ending the use of peat](#) in public green spaces and horticulture (such as tubs & baskets) will help protect peatlands in the UK and overseas.

Reduce pesticide use to minimal levels, eliminating any non-targeted use of broad-spectrum herbicides and fungicides, and phase out hazardous pesticides in your LNRS area.

Review the local authority's procurement policies to minimise its wider environmental footprint.

Identify steps that can be taken to move towards a bio-based circular economy which minimises green waste such as using grass cuttings from road verge and green space management to create renewable resources through biotechnologies such as anaerobic digestion.

Conclusion

Embedding the principles outlined in this document into your LNRS will drive tangible, positive change for your local wildlife and local communities. By targeting conservation efforts towards wild plants and fungi, you can deliver the greatest knock-on benefits for all species and habitats. A system cannot be stable when its foundations are degraded. LNRSs present an opportunity to stabilise these foundations and create a thriving natural environment for future generations of all species. Let's make the most of it.

With thanks to everyone who has contributed to this report.

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Plantlife is the global charity working to enhance, protect, restore and celebrate the wild plants and fungi that are essential to all life on earth. With two in five plant species at risk of extinction, biodiversity loss is now the fastest it's ever been – which means our work has never been more vital. We champion and accelerate conservation action, working at the heart of a global network of individuals and organisations, to influence and inspire landowners and land managers, public and private bodies, governments and local communities. As time begins to run out, we are using our position as the global voice for wild plants and fungi to bring lasting and positive change to our natural world – for everyone's sake.

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