PART D

9. Actions

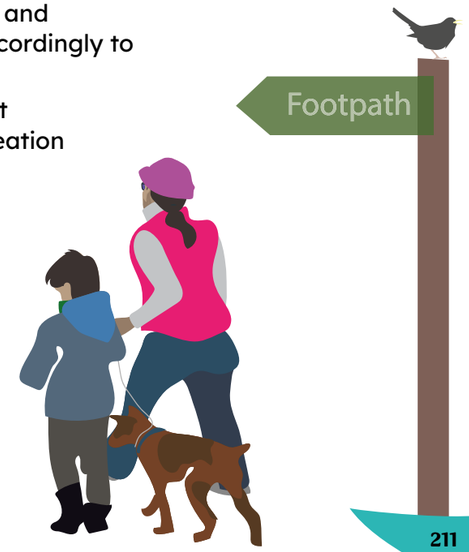
This LNRS identifies the areas in Essex where steps – both small and large – can be taken to improve habitat and therefore create better conditions for plants and wildlife. Everyone has a part to play.

We encourage you to use the maps and the tables of potential measures to consider what you can do to help reverse the loss of biodiversity that has occurred over the last 50 years.

Besides the specific actions described in Section 6, we suggest below general approaches that different parts of the community could take to help restore nature in Essex.

Landowners/farmers:

- The National Character Area and Landscape Character Assessments and AONB Management Plan applicable to your landholding will help you to identify the key characteristics of the landscape to strengthen[53].
- Consider the LNRS Priority species, and whether you can take action to support them.
- If you are in an opportunity area for a priority habitat, consider whether you can take action to support recovery in that habitat.
- Consider your connectivity to freshwater habitats and the water journey through your land and explore opportunities to reduce risks to raw water quality from surface water runoff and soil loss.
- Participate in or initiate local farm clusters to collaborate on local nature recovery and nature-friendly farm practices.
- Implement adaptive land management practices that consider local ecological conditions, **climate change impacts**[54], and biodiversity priorities, and adjust farming practices accordingly to support nature recovery.
- Participate in or investigate potential agri-environment payment schemes, that may be suitable for habitat creation or restoration on your land.
- Engage with local communities, environmental organisations, government agencies and other stakeholders to exchange knowledge, collaborate on environmental projects, and contribute to broader nature recovery initiatives in the region.



Left: Bioblitz © Essex Wildlife Trust

Local authorities:

- Prioritise sites identified in opportunity maps for green space delivery and Biodiversity Net Gain (BNG) off-site delivery.
- Embed the goals and objectives of the LNRS into planning policies and guidance documents, including local plans and action plans, to ensure that development decisions prioritise biodiversity, habitat restoration and green space provision.
- Promote the use of nature-based solutions, such as green roofs, urban greening, green corridors, and sustainable urban drainage systems in new development projects, to enhance biodiversity, mitigate climate change impacts and improve quality of life for residents.
- Collaborate with developers, landowners, community groups, environmental organisations and other stakeholders to raise awareness about the importance of biodiversity, facilitate dialogue on nature recovery priorities, and encourage participation in nature recovery initiatives.
- Identify council-owned land highlighted in the strategy for conversion into nature recovery locations/habitat creation or enhancement.
- Establish mechanisms for monitoring and reporting on the implementation and effectiveness of nature recovery actions outlined in the strategy, tracking progress towards biodiversity targets.
- Ensure large scale developments, such as NSIPS comply with LNRS guidance.

Individuals:

- Get involved in local conservation projects and initiatives identified in the nature recovery strategy, such as habitat restoration, tree planting, wildlife monitoring and invasive species control, through volunteering, citizen science programmes or community-led conservation groups.
- Research the various volunteering and community led environmental groups in your area to see what a good fit for you might be.
- Spend time outdoors, at your local nature reserve, the coastal seafront, or in your local park and reap the health benefits of engaging with and spending time in nature.
- Take small steps to benefit nature in your own space or local areas visited.
- Consider setting up your own local group to support wildlife in your local area.
- Collaborate with local planning authorities, town and parish councils, environmental organisations and other community groups to provide input on nature recovery priorities, share local knowledge and expertise, and contribute to the development and implementation of nature-based solutions within the community.
- Participate in biodiversity monitoring programmes, such as citizen science surveys or bioblitz events, to collect data on local species and habitats.

Local Communities:

- Initiate community-led projects and events focused on biodiversity and nature appreciation, such as guided nature walks, wildlife gardening workshops, habitat restoration days, and community science projects to monitor local biodiversity.
- Help set up a local community nature recovery group in your area if there is not one already.
- If a community group in your area exists, consider what can be done to support delivery of the LNRS locally.
- Add your group to the Essex Local Nature Partnership's online community map to connect and collaborate with other local community groups working to protect and restore nature.
- Assist with the formation of other local nature recovery groups in your region.
- Develop nature plans for your local parish council in line with the Climate Commission target.
- Assist in the formation of tree councils and warden networks, encouraging a community forestry approach.

Below, left to right: Bee bath © Essex Wildlife Trust; Trust Links Volunteers in Southend, Essex © Paul Starr

Developers:

- Engage with local authorities to understand how your project can contribute to broader nature recovery efforts via biodiversity net gain (BNG) agreements.
- Use environmental assessments to identify potential impacts of development projects on local biodiversity, and consider and review this LNRS to explore BNG.
- Consider the extent to which you and your project can help support delivery of nature recovery in rural and urban areas, referring to the opportunity maps and the measures linking infrastructure and development to nature recovery.
- Achieve BNG through the potential measures and priorities highlighted in this LNRS.
- Collaborate with environmental organisations and local community groups to implement nature based solutions at development sites, to align with the objectives of the LNRS, creating nature-rich, healthy environments for residents to live.
- Strive for continuous improvement in your approach to nature recovery – considering the impacts to nature of development projects.

Environmental organisations and charities:

- Raise awareness of the importance of the LNRS among local communities, policy makers, businesses, landowners and other stakeholders.
- Advocate for adoption of the LNRS.
- Engage with local communities and environmental groups to empower them to take action for nature recovery and participate in delivery projects.
- Directly participate in and organise on-the-ground projects to deliver the LNRS practically, taking forward the measures and priorities highlighted in this strategy.
- Consider potential habitat restoration and creation projects that are aligned with this LNRS and its biodiversity priorities.
- Help to facilitate partnerships between different stakeholders, including government agencies, businesses, landowners and community groups to join forces on nature recovery initiatives.

Left, clockwise from bottom left: Father and daughter © Jon Hawkins; Forest Pod, Anglia Ruskin University © Paul Starr; Nightingale ringing - Fingringhoe Wick © Emily McParland; Bug hotel, Anglia Ruskin University © Paul Starr

Ecologists, geologists and other specialists:

- Provide scientific knowledge and experience to inform the practical implementation of the LNRS.
- Consider the LNRS when working on habitat design and implementation projects, to align local objectives with the wider nature recovery network that the LNRS provides.
- Where appropriate, conduct ecological assessments to evaluate or advise on the potential impacts of development projects, land use changes, and other human activities, to minimise negative impacts of disturbance to nature.
- Raise awareness of this LNRS and the importance of the LNRS opportunity maps in implementing habitat connectivity.

Businesses:

- Align operations with nature recovery priorities where possible.
- Enhance or maintain habitats on their own land, supporting habitat restoration and enhancement projects.
- Participate and support local nature recovery efforts in the local area.
- Implement sustainable practices within business operations, to minimise impact and disturbance to local habitats and ecosystems.
- Where possible, minimise pollution in the environment, conserve water, and adopt nature-friendly packaging and production methods.
- Collaborate with local nature organisations and groups involved in the implementation of the LNRS, to provide support either financially, or by providing expertise and resources for local projects.
- Invest in green and blue infrastructure in the local area.
- Advocate for local policies that support nature recovery.

Below, left to right: Barn owl ringing - Blue House Farm © Essex Wildlife Trust; Essex Forest Initiative (EFI) Volunteers Tree Planting in Essex © Essex Forest Initiative

Our partners

The Essex Local Nature Recovery Strategy (LNRS) has been crafted through collaborative efforts and partnerships. The following partners have made significant contributions to the development of the Essex LNRS:

- Anglian Water
- Basildon Council
- Bird Aware Essex
- Blackwater Partnership
- Braintree District Council
- Braxted Park Estate
- Brentwood Borough Council
- Brightlingsea Nature Network
- Buglife
- Bumblebee Conservation Trust
- Butterfly Conservation
- Castle Point Borough Council
- Chelmsford City Council
- City of London, Epping Forest
- Colchester City Council
- Country Land and Business Association (CLA)
- Dedham Vale National Landscapes
- Environment Agency
- Epping Forest District Council
- Essex and Suffolk Rivers Trust
- Essex and Suffolk Water
- Essex Association of Local Councils
- Essex Climate Action Commission
- Essex Coastal Organisation
- Essex County Council
- Essex County Recorders
- Essex Cultural Diversity Project
- Essex Developers Group
- Essex Field Club
- Essex Forest Initiative
- Essex Highways
- Essex Local Nature Partnership
- Essex Rural Partnership
- Essex Wildlife Trust
- Forestry Commission
- Forestry England
- GeoEssex
- Ground Control
- Harlow Council
- Maldon District Council
- National Farmers Union
- National Trust
- Natural England
- North Essex Farm Cluster
- Northumbrian Water
- Place Services
- Plantlife
- Rochford District Council
- Roding Farm Cluster
- RSPB
- Rural Community Council of Essex
- Southend on Sea City Council
- Spains Hall Estate
- Suffolk and Essex Coast and Heaths National Landscape
- Tendring District Council
- Tendring Farm Cluster
- Thames Chase Community Forest
- Thurrock Council
- Trust Links
- Uttlesford District Council
- Whirledge and Nott
- Wilderness Foundation
- Wildfowl and Wetlands Trust (WWT)
- Woodland Trust
- Young Essex Assembly

Right: Little Owls © Russell Savory

Appendices

1. LNRS Policy Context

Levelling Up and Regeneration Act (LURA)

Section 245[55] (Protected Landscapes) of the Levelling Up and Regeneration Act 2023 places a duty on relevant authorities in exercising or performing any functions in relation to, or so as to affect, an Area of Outstanding Natural Beauty (AONB) in England, to seek to further the statutory purposes of the area. Within Essex LNRS projects within Dedham Vale National Landscape and Suffolk and Essex Coast and Heaths National Landscape should seek to align to statutory AONB management plan aims and objectives in their design and delivery. It will also be important within the National Landscape and its setting that the design and spatial arrangement of the LNRs is in keeping with the special qualities of the National Landscape, and opportunities to enhance special qualities plan are seized.

25 Year Environment Plan

The 25 Year Environment Plan (25YEP) 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.

Local Nature Recovery Strategies (LNRSs) 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, LNRSs help advance the broader aims of the 25YEP, such as enhancing biodiversity, improving ecosystem resilience and promoting sustainable land management practices.

Environmental Improvement Plan 2023

The Environmental Improvement Plan 2023 (EIP) is the Government's delivery plan for the environment, building a green, more prosperous country. One of the main goals of the EIP is to "enhance beauty, heritage, and engagement with the natural environment". The 10 Goals of the EIP provide the overarching basis for LNRSs, which include:

- 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

Both the EIP and LNRSs 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, LNRSs specifically target nature recovery and biodiversity conservation.

One of the main commitments made in the EIP 2023 is that the Government has stated it 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, and therefore play a crucial role in achieving the aspirations set out by the NRN and 30% protection by 2030.

Environment Act 2021

The Environment Act (EA) 2021 is an act to make provision about targets, plans and policies for improving the natural environment in the United Kingdom. LNRSs are introduced in the Environment Act 2021. They are introduced as spatial strategies, to map out the action needed to restore, enhance, and create spaces for nature.

EA 2021 requires local authorities to prepare and implement LNRSs as part of their environmental planning responsibilities. This statutory requirement ensures that LNRSs are embedded within the planning framework and given due consideration in local decision-making processes. The EA 2021 emphasises the integration of LNRSs with existing planning systems, including local plans and spatial strategies. By mainstreaming nature recovery considerations into planning processes, the Act seeks to ensure that LNRSs are effectively implemented and integrated into broader land use planning and development decisions.

Biodiversity Duty

EA 2021 establishes mechanisms including a strengthened 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. Local Authorities are to consider how their organisation complies with LNRSs under their biodiversity duty.

LNRS guidance, released by DEFRA March 2023, states that all public authorities should have regard to relevant LNRSs under the strengthened biodiversity duty.

Local Plans

A local plan, also known as a Local Development Plan (LDP) or a Local Planning Policy Framework, is a document prepared by a local planning authority that 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.

Local plans and Local Nature Recovery Strategies (LNRS) must work together in a coordinated and complementary manner 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 Local Nature Recovery Strategies in planning matters.

Local 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 into development plans to support nature recovery.

Local 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 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, LNRS can be used to target off-site BNG, through the ‘strategic significance’ score which provides additional unit value to habitats located in preferred locations (strategic opportunity maps) for biodiversity and other environmental objectives. This encourages BNG habitat to be delivered close to the development site as possible, and within the strategic locations, likely to be within the same authority boundary or national character area.

Local plans 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 plans

A neighbourhood 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 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.

Neighbourhood plans should align their objectives with the goals and priorities outlined in the LNRS. This ensures that local planning decisions at the neighbourhood level support broader efforts to protect and restore biodiversity, enhance ecosystem services and promote nature recovery.

Neighbourhood plans should incorporate specific recommendations and actions from the LNRS into their policies and proposals. This may include identifying and protecting local wildlife habitats, green spaces and ecological corridors

identified in the LNRS, and integrating nature-based solutions into neighbourhood development projects.

LNRS, in time, will support and facilitate neighbourhood-led initiatives for nature recovery. This may involve providing technical assistance and capacity-building support to help neighbourhoods implement their proposals and projects for biodiversity conservation and green space enhancement.

Neighbourhood planning groups should collaborate with local authorities and environmental organisations responsible for implementing the LNRS. This collaboration can facilitate coordination of efforts, sharing of resources, and joint initiatives to promote nature recovery at the neighbourhood level.

Local Authority Strategies

The Essex LNRS has considered and aims to align with the goals, priorities and objectives outlined in existing local authority strategies, such as sustainable development plans, biodiversity action plans, climate action plans and green infrastructure strategies. This ensures that nature recovery considerations are integrated into broader planning and policy frameworks at the local level.

Future local authority strategies should integrate spatial planning considerations from LNRS into their land use allocations, zoning decisions and development policies. This involves identifying and protecting areas for habitat creation, restoration and enhancement identified in LNRS, and ensuring that development activities are compatible with nature recovery objectives.

National Landscape Management Plans

These plans provide the agreed policy for an individual National Landscape (previously known as AONBs) for a five year period. It describes the National Landscape, sets out the statutory purpose of the designation and meets the duty on National Landscapes' local authorities to produce and review a Management Plan every five years. The document includes objectives and policies to support the delivery of the National Landscape's vision and statutory purpose.

The creation of the Essex LNRS had regard for the Dedham Vale National Landscape and the Suffolk & Essex Coast and Heaths National Landscape's Management Plans.

Essex Climate Action Commission

The Essex Climate Action Commission (ECAC) is an independent body set up by Essex County Council to advise on how best to tackle the climate challenge and become a net zero emissions county. In its report "Net Zero: Making Essex Carbon Neutral", there are a series of recommendations under "Land Use and Green Infrastructure", which include:

- 30% of all land in Essex will enhance biodiversity and the natural environment by creating natural green infrastructure. 25% to be achieved by 2030, and 30% to be achieved by 2040.
- 50% of all farmlands in Essex will adopt sustainable land stewardship practices by 2030, 75% by 2040 and 100% by 2050.
- To increase urban greening – 30% greening of our towns, villages and new developments by 2030.

This LNRS will help to guide the delivery of green and blue infrastructure and will support the creation of new spaces for nature, to enable delivery of ECAC's recommendations.

Essex Green Infrastructure Strategy 2020

The purpose of the Essex Green Infrastructure (GI) Strategy 2020 is to take a positive approach to enhance, protect and create an inclusive and integrated network of high-quality green infrastructure in Greater Essex.

This LNRS takes the mapping element of the GI Strategy a step further by examining where there are opportunities for habitat creation, enhancement and connection amongst existing green and blue spaces.

Essex Water Strategy 2024

The Essex Water Strategy addresses the issues surrounding water shortages, quality and consumption in Essex, and examines what steps should be taken to address the issues surrounding water.

The Essex Water Strategy recognises the importance of natural ecosystems in providing essential services such as water purification, flood regulation and habitat provision. This LNRS focuses on enhancing and restoring natural habitats to improve ecosystem resilience and support biodiversity, which contributes to the sustainable provision of ecosystem services, including water quality improvement and flood mitigation.

By integrating water management considerations into nature recovery planning and vice versa, the Essex Water Strategy and the Essex LNRS can promote holistic and sustainable approaches to water and environmental management that enhance ecosystem resilience, support biodiversity, and improve overall water quality and quantity in the region.

Essex Design Guide

The Essex Design Guide, established in 1973 by Essex County Council, is used as a reference guide to help create high quality places.

The Essex Design Guide and this LNRS can work together synergistically to promote sustainable and nature-friendly development that enhances both the built environment and the natural environment.

Essex Green Infrastructure Standards Technical (and Non-technical) Guidance

The Essex Green Infrastructure (GI) standards technical guidance provides support to professionals in the built environment, highways, health and environment to deliver better GI. Essex's nine GI standards are written as a form of assessment criteria to enable policy and development management to go beyond statutory requirements, to create great places for people and wildlife to thrive.

This LNRS identifies priority areas and opportunities for GI development and nature-based solutions to enhance biodiversity, improve ecosystem resilience and provide multiple benefits for communities. GI standards guidance can then use this information to inform the selection, design and implementation of GI projects that support LNRS objectives.

Essex Joint Health and Wellbeing Strategy 2022 - 2026

The overall aim of the Joint Health and Wellbeing Strategy (JHWB) is that Essex sees an improvement in health and wellbeing outcomes for people of all ages. Access to nature and greenspace has been proven to have significant benefits for mental and physical health, and this LNRS is therefore consistent with the JHWB.

Everyone's Essex 2021 - 2025

Everyone's Essex sets out Essex County Council's 20 commitments from 2021 – 2025, outlining the county's plan for levelling up. Five of the 20 commitments focus on the environment, one of which includes "levelling up the environment", stating that Essex County Council will "help all communities to enjoy a high-quality environment, by making them more resilient against flooding, heat stress and water shortages, by enhancing our county's green infrastructure and by reducing air pollution." This LNRS helps to achieve the environment commitments made in Everyone's Essex by setting out a visual spatial strategy as to where enhancements to the environment can be made, and therefore where the greatest benefits to nature and the wider environment can be achieved.

Minerals and waste planning

When identifying sites for mineral extraction or waste management facilities, minerals and waste planning authorities can consider the potential impacts on biodiversity and ecosystems. They can consult this LNRS to identify areas of ecological importance, priority habitats and protected species, ensuring that sensitive sites are safeguarded from development.

Minerals and waste planning authorities can align with the principles of Biodiversity Net Gain (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.

Tree management plan 2023

This LNRS is consistent with the Essex Tree Management Plan, formulated to set the Vision for Essex's trees and woodlands.

Essex Coast Recreational Disturbance and Mitigation Strategy (RAMS)

This LNRS is consistent with the RAMS, which sets out a long-term strategic approach to lessen the impact of local housing development on protected birds along the Essex coast.

Local Sites Partnership

This LNRS is consistent with the Local Sites Partnership, formed under the Local Nature Partnership, which conducts the ratification of local sites reviews, including local wildlife sites and local geological sites, and seeks to ensure the continued success and maintenance of Local Wildlife Sites.

Thames Estuary 2100 Plan and Riverside Strategies

This LNRS has regard to the Thames Estuary 2100 Plan and local Riverside Strategies which outline how to manage risk from sea level rise. Developed by the Environment Agency and its partners, the Thames Estuary 2100 Plan sets out a vision for the estuary's future.

Nationally Significant Infrastructure Projects (NSIPs)

Impacts on the natural environment are to be considered through the development of Nationally Significant Infrastructure Projects (NSIPs). NSIP developers must monitor the environmental impacts 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 LNRSs, large-scale infrastructure projects can contribute to meaningful biodiversity improvements and nature recovery. This integrated approach helps balance development needs with environmental sustainability.

2. Mapping Methodology

Areas of Particular Importance for Biodiversity (APIBs)

Within the APIB maps, National Conservation Sites include:

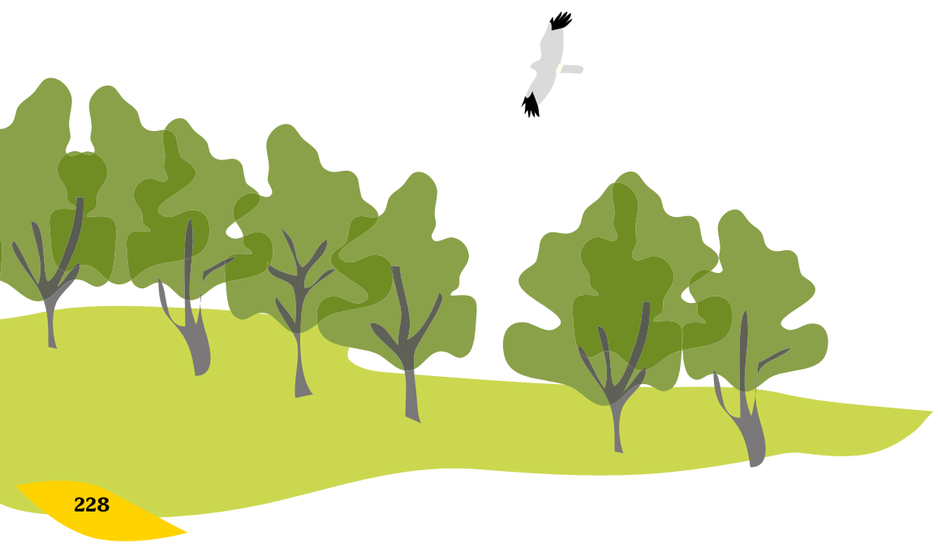
- Sites of Special Scientific Interest (SSSI)
- RAMSAR
- Marine Conservation Zone (MCZ)
- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)

Local Nature Reserves include:

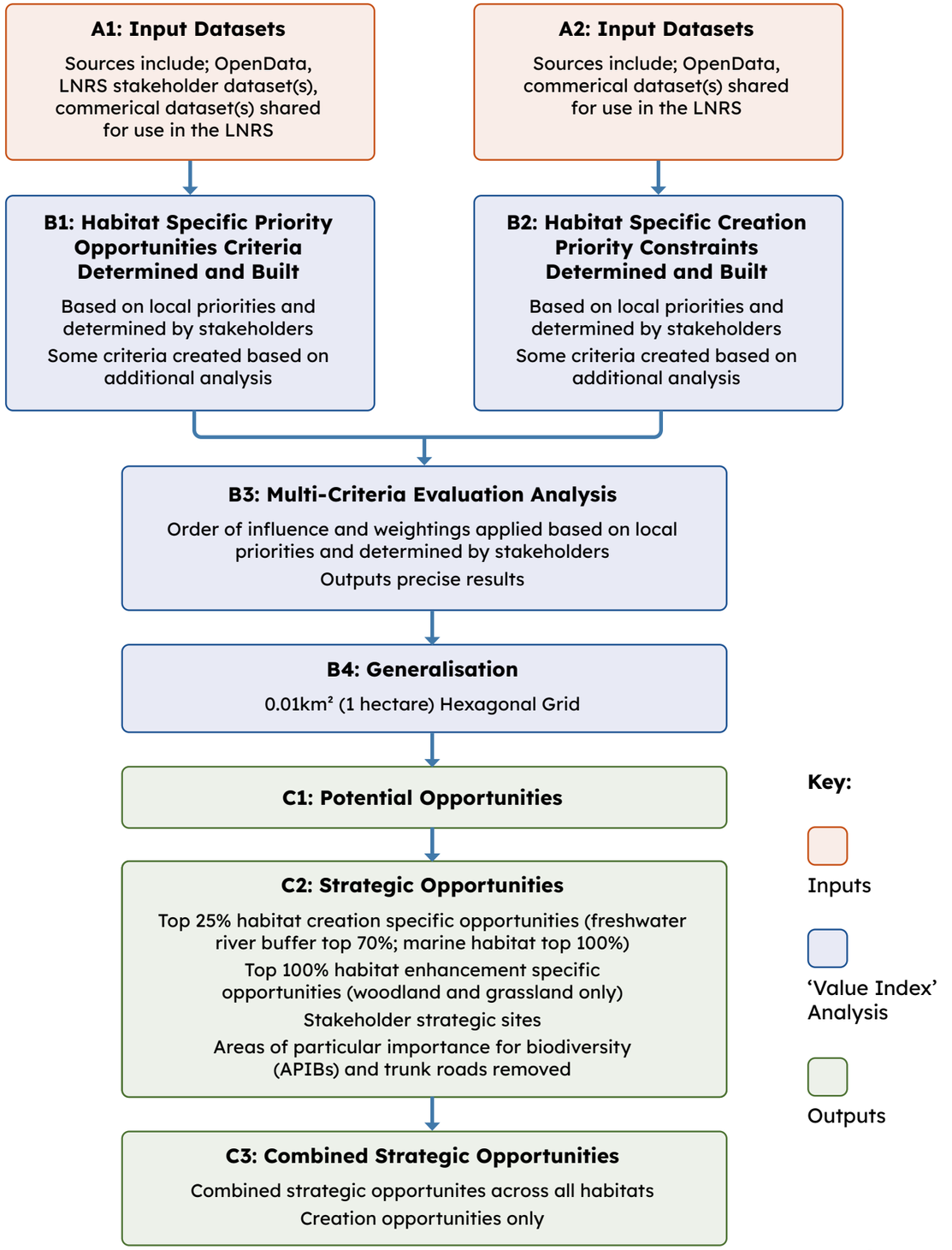
- Local Nature Reserves

Other areas of particular importance include:

- Local Wildlife Sites
- Ancient Woodland
- Ancient Trees and Veteran Trees
- Lowland Fens
- Coastal Saltmarsh



GIS Methdology: Areas that could become of particular importance - all habitats' opportunities



GIS Methodology: Areas that could become of particular importance – all habitats' creation and enhancement opportunities – flow chart accompaniment

This document is an additional information accompaniment to the **'GIS Methodology: Areas that could become of particular importance – all habitats' opportunities** flow chart.

Note each individual habitat type follows the same general approach, however each has its own specific inputs, analyses and outputs.

A: Inputs:

A1 and A2: Input datasets:

Whilst Greater Essex's local priorities were being determined, a full review of available datasets was conducted to ensure opportunities and constraints data for each local priority could be integrated into the overall analysis being designed, and the best options were used.

B: 'Value Index' Analysis:

The 'Value Index' analysis comprises a collection of analytical processes which ultimately identifies the best/priority areas across Greater Essex to be targeted for nature recovery (known as our opportunities) and consists of analyses specific to individual habitats. The final analysis took the form of a multi-criteria evaluation, where inputs and criteria were chosen, configured and weighted following both a review of available datasets and of Greater Essex' local priorities. Generalisation was then applied for ease of use and interpretation.

Final chosen individual inputs can be categorised into the following:

- **Interconnectivity:** improving overall interconnectivity across the landscape, both in terms of habitat focused connectivity as well as species focused connectivity.
- **Protecting designated sites:** by strengthening habitats directly surrounding our existing designated sites, and important and irreplaceable habitats.
- **Stakeholder engagement:** local knowledge and expertise identified areas of interest.
- **Other environmental benefits:** such as focusing on improving overall natural flood management and enhancing water quality.
- **Social:** improving people's access to nature.
- **Other:** such as ensuring the best farmland for food production was left alone.

B1: Habitat specific priority opportunities criteria determined and built:

Criteria to identify locations to create and enhance habitat was based on local priorities and determined by stakeholders, examples include:

- Enhancing interconnectivity between/with existing habitats (including existing APIBs), both at a local and regional level.
- Incorporating existing published habitat specific opportunity datasets, such as;
  - Forestry Commission's woodland sensitivity
  - Natural England's GCN Strategic Opportunity Areas
  - Environment Agency's 'Seagrass Potential'
  - WWT's Wetland Potential
- Taking into account local and expert stakeholder identified opportunity areas.
- Ensuring habitat creation and enhancements will also provide other benefits, such as wider environmental and social benefits.

B2: Habitat specific priority constraints determined and built:

Criteria to identify locations to avoid creating or enhancing habitat was based on local priorities and determined by stakeholders, examples include:

- Existing good quality habitats
- Existing APIBs (National APIBs only for enhancements)
- Land already designated as future sites for development
- Existing habitat specific constraint published datasets, such as;
  - Existing habitat
  - Forestry Commission's woodland sensitivity; 'not suitable'

B3: Multi-criteria evaluation analysis:

The main step of the analysis took the form of a multi-criteria evaluation analysis. This took in a set of criteria as its inputs (see opportunities and constraints above), adding weighting based on the importance of each criteria where desired. Each habitat type had its own unique set of specific criteria.

Example subset criteria and weightings for woodland creation habitats is shown in the table below:

Criteria	Reason / Description	Order of Importance / Influence	Weighting
Local connectivity – new connections	Ensuring new habitat is created in areas to enhance overall connectivity, particularly the creation of new connections between habitat which is currently disconnected via a targeted stepping stone approach.	1	17%
Local connectivity – strengthening	Ensuring new habitat is created in areas to enhance overall connectivity, particularly the strengthening and expansion of existing habitat.	2	15%
Biodiversity quality index bottom 30%	Ensuring new habitat is created in areas which is currently of limited biodiverse value.	=3	9%
Proximity to APIBs	Ensuring new habitat is created in areas which protect and grow our existing APIBs.	=3	9%

This analysis outputted precise results, allocating areas across Greater Essex with a unique overall score based on the input criteria – here the more opportunities criteria an area meets, the higher the score, which equate to a higher value/quality of overall opportunity.

Any area falling within any constraint criteria did not receive a score, regardless of its number of met opportunity criteria.

B4: Generalisation:

Outputs from the multi-criteria evaluation were generalised into a 0.01km² (1 hectare) hexagon grid, which:

- Blurs the lines where required:
  - Removes false precision – analyses such as those used here (analysis which involves interconnectivity) is not an exact science and as such it is not possible to 100% correctly calculate, therefore total precision should not be inferred in displaying results.
  - Followed feedback from various landowners who did not wish to have their land specifically put forward for nature recovery.
- Made the final output data easier to understand by non-technical personnel.
- Adds greater speed and efficiency and removes complexity to the process of determining final strategic opportunities.
- Allows for more manageable dataset sizes.

C: Outputs:

Final outputs/results comprise of 'potential opportunities', 'strategic opportunities' and 'combined strategic opportunities'.

C1: Potential Opportunities:

Potential opportunities include all hexagon grid areas which were not 100% covered by constraints – remaining areas were categorised based on the relative overall analysis score.

C2: Strategic Opportunities:

Strategic opportunities include only the top scoring potential opportunity areas, individually for each habitat. The following percentiles were utilised:

Creation:

- Top 25% scoring areas:
  - Woodland
  - Grassland
  - Scrub
  - Freshwater Standing Water
  - Coast
- Top 70% scoring areas:
  - Freshwater River Buffers
- Top 100% scoring areas:
  - Marine*
  - Stakeholder strategic sites**

Enhancements:

- Top 100% scoring areas:
  - Woodland (unmanaged woodland only)
  - Grassland

The strategic opportunities were chosen at these percentage levels in order to meet a total strategic opportunities' target Greater Essex coverage of >30% – our final strategic opportunities have an overall Essex coverage of 33.47%. Here, all overlapping APIBs, as well as trunk roads and selected other elements were clipped from the output.

Our final strategic enhancement opportunities have an overall Essex coverage of 3.71%. Here, National overlapping APIBs, as well as trunk roads and selected other elements were clipped from the output.

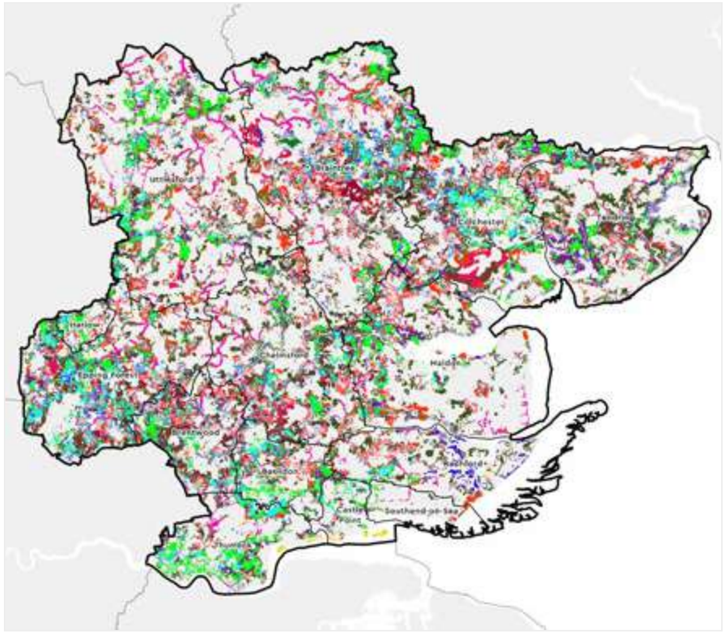
C3: Combined Strategic Opportunities:

Our final, combined strategic opportunities, is a merged version of each individual habitats' strategic creation opportunities.

* Due to a lack of opportunities for our marine habitat, all potential opportunities were included within our strategic opportunities.

** 'Stakeholder strategic sites' are areas which selected stakeholders consider as key opportunities, as such these identified opportunities were automatically upgraded to strategic.

3. Combined Strategic Creation Opportunities Map



Areas that could become of particular importance – 'strategic' combined habitat creation opportunities.

Analysis results presented as a generalised 0.01km² hexagonal grid and categorised by habitat type. All combined 'strategic' habitat creation opportunities cover 33.39% of the Greater Essex LNRS region. APIBs removed. APIBs and trunk roads removed from all categories, coastline at mean high water mark removed from marine only.

Key

- Woodland Only (1)
- Grassland Only (1)
- Scrub Only (1)
- Freshwater Standing Water Only (1)
- Freshwater River Buffer Only (1)
- Coast Only (1)
- Marine Only (1)
- Woodland and Grassland (2)
- Woodland and Scrub (2)
- Woodland and Freshwater Standing Water (2)
- Woodland and Freshwater River Buffer (2)
- Grassland and Scrub (2)
- Grassland and Freshwater Standing Water (2)
- Grassland and Freshwater River Buffer (2)
- Grassland and Coast (2)
- Grassland and Marine (2)
- Scrub and Freshwater Standing Water (2)
- Scrub and Freshwater River Buffer (2)
- Scrub and Coast (2)
- Scrub and Marine (2)
- Freshwater Standing Water and Freshwater River Buffer (2)
- Freshwater Standing Water and Coast (2)
- Freshwater River Buffer and Coast (2)
- Woodland, Grassland and Scrub (3)
- Woodland, Grassland and Freshwater Standing Water (3)
- Woodland, Grassland and Freshwater River Buffer (3)
- Woodland, Grassland and Coast (3)
- Woodland, Grassland and Marine (3)
- Woodland, Scrub and Freshwater Standing Water (3)
- Woodland, Scrub and Freshwater River Buffer (3)
- Woodland, Scrub and Coast (3)
- Woodland, Freshwater Standing Water and Freshwater River Buffer (3)
- Woodland, Freshwater Standing Water and Coast (3)
- Grassland, Scrub and Freshwater Standing Water (3)
- Grassland, Scrub, and Freshwater River Buffer (3)
- Grassland, Scrub and Coast (3)
- Grassland, Freshwater Standing Water and Freshwater River Buffer (3)
- Grassland, Freshwater Standing Water and Coast (3)
- Grassland, Freshwater River Buffer and Coast (3)
- Grassland, Coast and Marine (3)
- Scrub, Freshwater Standing Water and Freshwater River Buffer (3)
- Scrub, Freshwater Standing Water and Coast (3)
- Scrub, Freshwater River Buffer and Coast (3)
- Freshwater Standing Water, Freshwater River Buffer and Coast (3)
- Woodland, Grassland, Scrub and Freshwater Standing Water (4)
- Woodland, Grassland, Scrub and Freshwater River Buffer (4)
- Woodland, Grassland, Scrub and Coast (4)
- Woodland, Grassland, Freshwater Standing Water and Freshwater River Buffer (4)
- Woodland, Grassland, Freshwater Standing Water and Coast (4)
- Woodland, Grassland, Freshwater River Buffer and Coast (4)
- Woodland, Grassland, Freshwater River Buffer and Marine (4)
- Woodland, Scrub, Freshwater Standing Water and Coast (4)
- Woodland, Scrub, Freshwater Standing Water and Freshwater River Buffer (4)
- Woodland, Scrub, Freshwater River Buffer and Coast (4)
- Grassland, Scrub, Freshwater Standing Water and Freshwater River Buffer (4)
- Grassland, Scrub, Freshwater Standing Water and Coast (4)
- Grassland, Scrub, Freshwater River Buffer and Coast (4)
- Grassland, Freshwater Standing Water, Freshwater River Buffer and Coast (4)
- Scrub, Freshwater Standing Water, Freshwater River Buffer and Coast (4)
- Woodland, Grassland, Scrub, Freshwater Standing Water and Freshwater River Buffer (5)
- Woodland, Grassland, Scrub, Freshwater Standing Water and Coast (5)
- Woodland, Grassland, Scrub, Freshwater River Buffer and Coast (5)
- Woodland, Grassland, Freshwater Standing Water, Freshwater River Buffer and Coast (5)
- Woodland, Scrub, Freshwater Standing Water, Freshwater River Buffer and Coast (5)
- Grassland, Scrub, Freshwater Standing Water, Freshwater River Buffer and Coast (5)
- Woodland, Grassland, Scrub, Freshwater Standing Water, Freshwater River Buffer and Coast (6)

4. LNRS Delivery: Key Partners

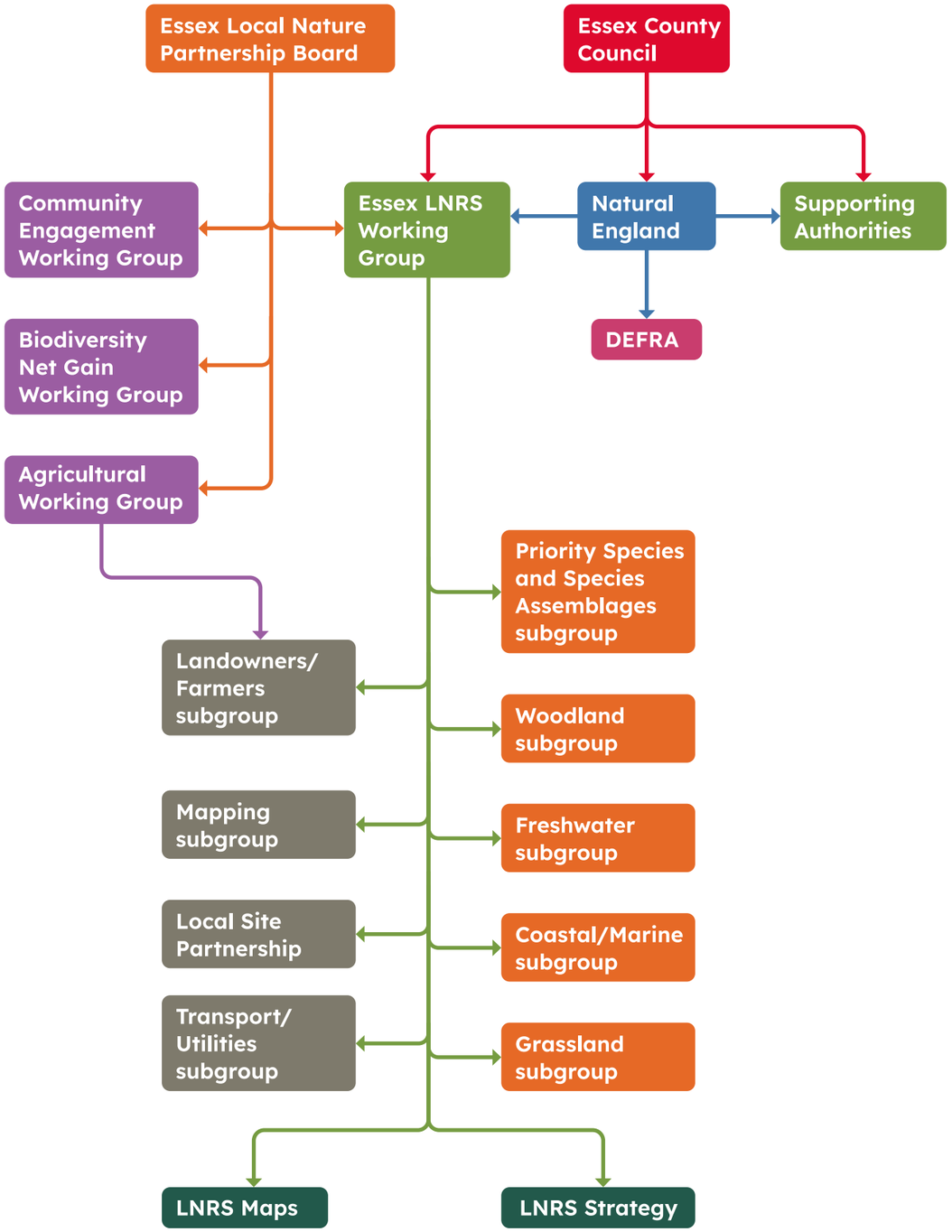


Figure 1: Diagram of Essex LNRS Delivery Structure

This LNRS was meticulously developed through a collaborative effort with the people of Essex, benefiting from the support, advice and guidance of a diverse array of experts and stakeholders throughout Essex from August 2022 to March 2024.

LNRS Working Group and specialist subgroups

The LNRS Working Group – part of the Essex LNP – worked collaboratively across multiple sectors to deliver a LNRS that reflects local priorities for nature recovery. The group's objective was to oversee the development of the LNRS document, including the biodiversity priorities, potential measures and opportunity maps. Since the group formed in mid-2022, a series of subgroups were formed later in 2023, to support the development of specific sections of the strategy including habitat and landscape types. These subgroups include: woodland; grassland; freshwater; coastal and marine; data and mapping; farmers and landowners; priority species; and the re-establishment of the local wildlife sites partnership.

Supporting Authorities

Supporting Authorities in Essex, which have been working with ECC, the Responsible Authority, since the LNRS regulations and guidance were released by DEFRA in March 2023, have contributed local data and expertise, including local wildlife site data and species records.

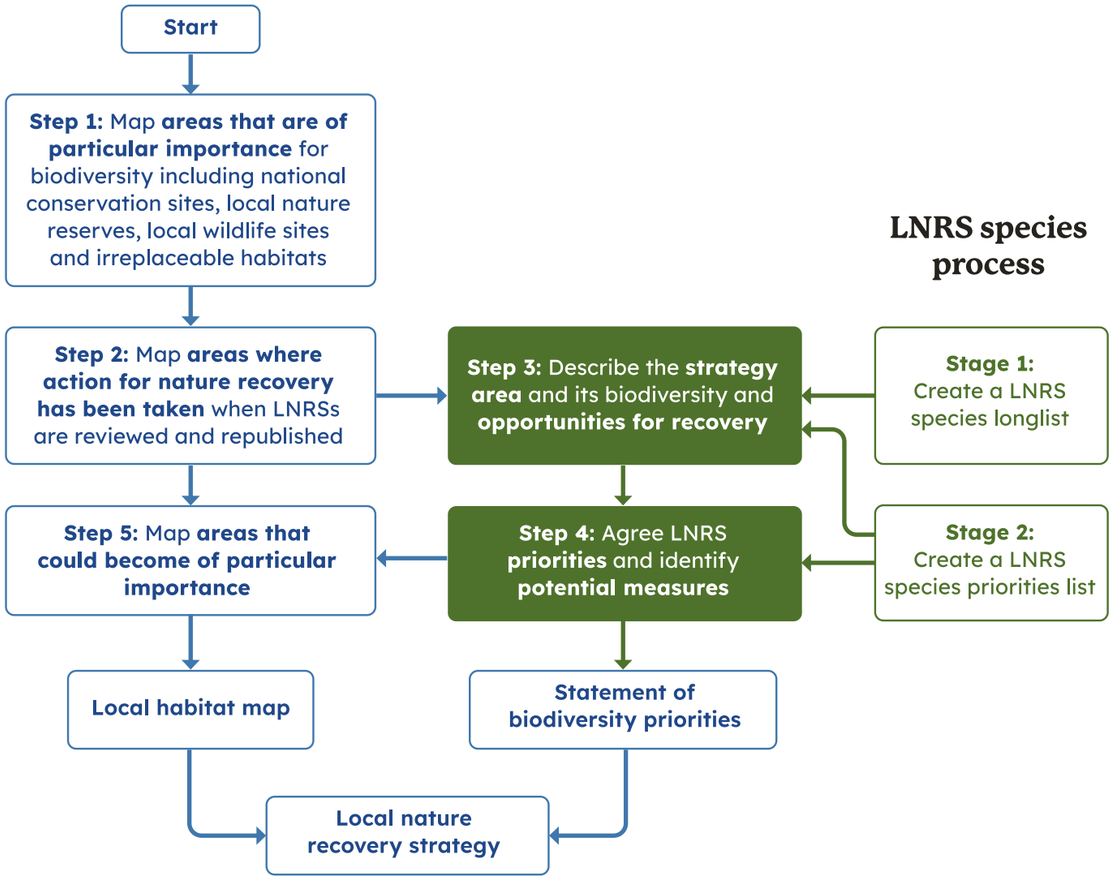
They are:

1. Basildon Borough Council
2. Braintree District Council
3. Brentwood Borough Council
4. Castle Point Borough Council
5. Chelmsford City Council
6. Colchester City Council
7. Epping Forest District Council
8. Harlow District Council
9. Maldon District Council
10. Rochford District Council
11. Southend-on-Sea City Council
12. Tendring District Council
13. Thurrock Council
14. Uttlesford District Council
15. Natural England

5. Species Recovery

A LNRS priority species and species assemblage's subgroup was formed mid-2023, to support the creation of the LNRS species longlist and LNRS priority species shortlist. Membership of the priority species subgroup included representatives from National Landscapes, RSPB, Place Services, Essex Wildlife Trust, Essex Field Club, Natural England, Uttlesford District Council, City of London, Ground Control, County recorders, the Environment Agency and Forestry Commission.

Order of steps to be followed in preparing contents of a LNRS



LNRS species process

Natural England released "species guidance" for Responsible Authorities to follow when creating LNRS species long list and shortlist. This flow diagram highlights how Responsible Authorities were to create their species lists in the process of the creating the overall LNRS.

Species Long list Methodology

- Stakeholders were firstly asked to identify species of local significance for the species long list.
- Local data sets, knowledge and expertise were used to identify species for the long list, including any native species which have been assessed as Red List **Threatened** against IUCN criteria, any native species which have not been formally assessed against IUCN Red List criteria but where strong evidence is provided to show that they would meet the criteria for **Threatened** status and any native species considered to be nationally extinct that re-establish themselves or are rediscovered.
- Natural England provided species which they suggested as suitable candidates for the long list. Place Services, The Essex Field Club and Essex Wildlife Trust greatly supported the long list formation too.
- The species long list is formed of 436 species.

Species Short list methodology

- Once a draft long list was formed, processes begun to create the LNRS priority species shortlist. Following the LNRS species guidance, this was formed by grouping species on the long list into habitat-based assemblages, alongside using the categories in the species guidance to identify which species the LNRS can best support.
- Other aspects considered when shortlisting included urgency for the species, national species recovery and climate change impacts.
- The species on the LNRS priority species shortlist were those that had very specific actions for recovery and habitat requirements, which would not be addressed elsewhere in the strategy, and bespoke actions for those species are listed in this LNRS.
- There are 28 individual species on the LNRS priority species shortlist, which have been selected from the long list.

The species guidance outlined a series of categories on how to group species, to help with the shortlisting process. Categories B, C and D related to those species which would benefit from the LNRS, as outlined below.

B: Needs targeted habitat management

- Species with specific requirements for habitat quality, structure, conditions, or processes above and beyond Category A species are those likely to markedly benefit from general creation, expansion, and improved connectivity of good quality habitats in the strategy area
- 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.

C: Needs improvements in environmental quality

- 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 RAs.
- For example, better catchment water quality, improved spatial planning of air pollution sources, mitigation of recreational disturbance.

D: Needs bespoke conservation action/s

- 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.

In January 2024, the Essex LNRS team hosted a LNRS priority species workshop, where the county recorders and key species experts, including those in the priority species subgroup, came together to work through the shortlisting method. Following the efforts of the workshop, a smaller group of stakeholders met to work through the results of the workshop to finalise the shortlist. The smaller group included Place Services, Essex Field Club, Essex County Council and Essex Wildlife Trust. The LNRS priority species shortlist was then shared with stakeholders and partners for further consideration, before agreeing and finalising the shortlist.

6. Species long list

Species	Common name	Taxonomic name
1.	N/A	Acephalus brunnipes
2.	N/A	Agyneta mollis
3.	N/A	Amara strenua
4.	N/A	Aphaniosoma propinquans
5.	N/A	Aphaniosoma socium
6.	N/A	Arctosa fulvolineata
7.	N/A	Astiosoma rufifrons
8.	N/A	Aulacochthebius exaratus
9.	N/A	Axinotarsus pulicarius
10.	N/A	Bagous argillaceus
11.	N/A	Bagous tubulus
12.	N/A	Caenocara bovistae
13.	N/A	Campiglossa malaris
14.	N/A	Centromerus capucinus
15.	N/A	Centromerus serratus
16.	N/A	Cercagnota collini
17.	N/A	Chamaepsila luteola
18.	N/A	Chrysopilus laetus
19.	N/A	Cistogaster globosa
20.	N/A	Clanoptilus marginellus
21.	N/A	Clubiona juvenis
22.	N/A	Clusia tigrina
23.	N/A	Cozyptila blackwalli
24.	N/A	Crossocerus palmipes
25.	N/A	Crossocerus walkeri
26.	N/A	Cryptocephalus frontalis
27.	N/A	Curimopsis setigera
28.	N/A	Doros profuges
29.	N/A	Dorycera graminum
30.	N/A	Dyschirius angustatus

Species	Common name	Taxonomic name
31.	N/A	Elampus foveatus
32.	N/A	Erioptera bivittata
33.	N/A	Eurina lurida
34.	N/A	Eutheia formicetorum
35.	N/A	Euthyneura albipennis
36.	N/A	Evagetes pectinipes
37.	N/A	Geranomyia bezzii
38.	N/A	Glocianus pilosellus
39.	N/A	Gongylidiellum murcidum
40.	N/A	Graphoderus cinereus
41.	N/A	Gymnosoma nitens
42.	N/A	Haplodrassus umbratilis
43.	N/A	Harpactea rubicunda
44.	N/A	Harpalus dimidiatus
45.	N/A	Harpalus servus
46.	N/A	Helina intermedia
47.	N/A	Lejops vittatus
48.	N/A	Leopoldius brevirostris
49.	N/A	Leptometopa latipes
50.	N/A	Leptophloeus clematidis
51.	N/A	Limnebius papposus
52.	N/A	Limnophila pictipennis
53.	N/A	Lionychus quadrillum
54.	N/A	Lipsothrix nervosa
55.	N/A	Litophasia hyalipennis
56.	N/A	Lycoperdina succincta
57.	N/A	Macrorrhyncha flava
58.	N/A	Malthodes crassicornis
59.	N/A	Manota unifurcata
60.	N/A	Melanapion minimum
61.	N/A	Melitta haemorrhoidalis
62.	N/A	Metalimnobia quadrimaculata
63.	N/A	Mordellistena nanuloides
64.	N/A	Myrmica lobicornis

Species	Common name	Taxonomic name
65.	N/A	Neoempheria bimaculata
66.	N/A	Neoleria propinqua
67.	N/A	Neolimnophora maritima
68.	N/A	Nephrocerus scutellatus
69.	N/A	Nicrophorus vestigator
70.	N/A	Nomada subcornuta
71.	N/A	Ophonus puncticollis
72.	N/A	Orchestina sp.
73.	N/A	Orthopodomyia pulcripalpis
74.	N/A	Paragus albifrons
75.	N/A	Parochthiphila coronata
76.	N/A	Parochthiphila spectabilis
77.	N/A	Parydroptera discomyzina
78.	N/A	Pediasia fascelinella
79.	N/A	Phaeocedus braccatus
80.	N/A	Phalacrotophora harveyi
81.	N/A	Phlegra fasciata
82.	N/A	Phortica variegata
83.	N/A	Phyllocnistis xenia
84.	N/A	Platypalpus ingenuus
85.	N/A	Podalonia affinis
86.	N/A	Poecilobothrus ducalis
87.	N/A	Polistichus connexus
88.	N/A	Praestigia duffeyi
89.	N/A	Psacadina zernyi
90.	N/A	Rachispoda duplex
91.	N/A	Saaristoa firma
92.	N/A	Saprinus virescens
93.	N/A	Scopaeus sulcicollis
94.	N/A	Scybalicus oblongiusculus
95.	N/A	Scydmaenus rufus
96.	N/A	Solva marginata
97.	N/A	Spilogona scutulata
98.	N/A	Systenus tener

Species	Common name	Taxonomic name
99.	N/A	Tenellia adspersa
100.	N/A	Tomosvaryella minima
101.	N/A	Trachys minutus
102.	N/A	Trichoncus hackmani
103.	N/A	Trichonyx sulcicollis
104.	N/A	Trichopterna cito
105.	N/A	Trochosa robusta
106.	N/A	Trypeta zoe
107.	N/A	Wiehlea calcarifera
108.	N/A	Zelotes longipes
109.	N/A	Zeugophora flavicollis
110.	N/A	Henestaris halophilus
111.	N/A	Chlorita viridula
112.	N/A	Eremocoris fenestratus
113.	N/A	Ribautodelphax imitans
114.	N/A	Stenophiloscia glarearum
115.	5-banded Tailed Digger Wasp	Cerceris quinquefasciata
116.	Adder	Vipera berus
117.	Allseed	Radiola linoides
118.	Annual Knawel	Scleranthus annuus
119.	Atlantic Salmon	Salmo salar
120.	Autumn Gentian	Gentianella amarella
121.	Autumn Lady's-tresses	Spiranthes spiralis
122.	Barbastelle Bat	Barbastella barbastellus
123.	Bar-tailed godwit	Limosa lapponica
124.	Basil Thyme	Clinopodium acinos
125.	Beautiful Pearl	Agrotera nemoralis
126.	Bee Wolf	Philanthus triangulum
127.	Bell Heather	Erica cinerea
128.	Bembridge Beetle	Paracymus aeneus
129.	Bird's Nest Orchid	Neottia nidus-avis
130.	Bithynian Vetch	Vicia bithynica
131.	Bittern	Botaurus stellaris
132.	Bitter-vetch	Lathyrus linifolius

Species	Common name	Taxonomic name
133.	Black Headed Mason Wasp	Odynerus melanocephalus
134.	Black Oil Beetle	Meloe proscarabaeus
135.	Black Water Beetle	Limnoxenus niger
136.	Black-necked grebe	Podiceps nigricollis
137.	Black-tailed Godwit	Limosa limosa
138.	Blair's Wainscot	Sedina buettneri
139.	Blue Mint Beetle	Chrysolina marginata
140.	Bordered Gothic	Sideridis reticulata
141.	Borrer`s Saltmarsh-grass	Puccinellia fasciculata
142.	Brandts bat	Myotis brandtii
143.	Broad-leaved Cudweed	Filago pyramidata
144.	Bronze Bolete	Boletus aereus
145.	Brown hairstreak	Thecla betulae
146.	Brown Hare	Lepus europaeus
147.	Brown Trout	Salmo trutta
148.	Brown-banded Carder Bee	Bombus humilis
149.	Buffish Mining Bee	Andrena nigricornis
150.	Bugloss Ermine	Ethmia bipunctella
151.	Bullhead	Cottus gobio
152.	Bur Medick	Medicago minima
153.	Cardinal Click Beetle	Ampedus cardinalis
154.	Carline Thistle	Carlina vulgaris
155.	Cat-mint	Nepeta cataria
156.	Cattle Egret	Bubulcus ibis
157.	Chaffweed	Lysimachia minimus
158.	Chalk Screw-moss	Tortula vahliana
159.	Chamomile	Chamaemelum nobile
160.	Changeable Dor Beetle	Geotrupes mutator
161.	Chicory	Cichorium intybus
162.	Common Cottongrass	Eriophorum angustifolium
163.	Common Cow-wheat	Melampyrum pratense
164.	Common Cuckoo	Cuculus canorus
165.	Common Cudweed	Filago vulgaris
166.	Common Eyebright	Euphrasia nemorosa

Species	Common name	Taxonomic name
167.	Common Gromwell	Lithospermum officinale
168.	Common Rock-rose	Helianthemum nummularium
169.	Common Sea-lavendar	Limonium vulgare
170.	Common sturgeon	Acipenser sturio
171.	Common tern	Sterna hirundo
172.	Common Toad	Bufo bufo
173.	Common Valerian	Valeriana officinalis
174.	Coral Tooth Fungus	Hericium coralloides
175.	Corn Bunting	Emberiza calandra
176.	Corn Buttercup	Ranunculus arvensis
177.	Corn Chamomile	Anthemis cotula
178.	Corn Mint	Mentha arvensis
179.	Corn Spurrey	Spergula arvensis
180.	Creeping Marshwort	Apium repens
181.	Creeping Willow	Salix repens
182.	Crested Cow Wheat	Melampyrum cristatum
183.	Cross-leaved Heath	Erica tetralix
184.	Crosswort	Cruciata laevipes
185.	Dark Crimson Underwing	Catocala sponsa
186.	Dark Green Fritillary	Speyeria aglaja
187.	Depressed River Mussel	Pseudanodonta complanata
188.	Deptford Pink	Dianthus armeria
189.	Desmoulin's Whorl Snail	Vertigo moulinsiana
190.	Devil's-bit Scabious	Succisa pratensis
191.	Distinct Ground Beetle	Bradycellus distinctus
192.	Distinguished Jumping Spider	Attulus distinguendus
193.	Dunlin	Calidris alpina
194.	Dwarf Eelgrass	Zostera noltei
195.	Dyer's Greenweed	Genista tinctoria
196.	Early Tephritis Fly	Tephritis praecox
197.	Eelgrass	Zostera marina
198.	Eight-spotted Tree Fruit Fly	Myennis octopunctata
199.	English Eyebright	Euphrasia officinalis subsp. anglica
200.	Eurasian Curlew	Numenius arquata

Species	Common name	Taxonomic name
201.	European Eel	Anguilla anguilla
202.	European White-fronted Goose	Anser albifrons albifrons
203.	Fancy-legged Fly	Campsicnemus magius
204.	Fen Mason-wasp	Odynerus simillimus
205.	Few-flowered Fumitory	Fumaria vaillantii
206.	Field Garlic	Allium oleraceum
207.	Field Mouse-ear	Cerastium arvense
208.	Field Scabious	Knautia arvensis
209.	Field Woundwort	Stachys arvensis
210.	Fine-leaved Fumitory	Fumaria parviflora
211.	Fisher's Estuarine Moth	Gortyna borelii lunata
212.	Flat-sedge	Blysmus compressus
213.	Flat-stalked Pondweed	Potamogeton friesii
214.	Forest Windowfly	Scenopinus niger
215.	Four-banded Digger Wasp	Cerceris quadricincta
216.	Four-spotted	Tyta luctuosa
217.	Four-spotted Ground Beetle	Bembidion quadripustulatum
218.	Four-spotted Ladybird	Nephus quadrimaculatus
219.	Frog-bit	Hydrocharis morsus-ranae
220.	Gall wasp	Aulacidea follioti
221.	Garganey	Spatula querquedula
222.	Glow Worm	
223.	Golden Hoverfly	Callicera spinolae
224.	Golden Jumping Spider	Heliophanus auratus
225.	Golden Leaf-roller Weevil	Rhynchites auratus
226.	Goldenrod	Solidago virgaurea
227.	Good-King-Henry	Blitum bonus-henricus
228.	Gray Tooth Fungus	Phellodon melaleucus
229.	Grayling	Hipparchia semele
230.	Great Cormorant	Phalacrocorax carbo
231.	Great Silver Water Beetle	Hydrophilus piceus
232.	Green Dasytes Beetle	Dasytes virens
233.	Greenfinch	Chloris chloris
234.	Green-winged Orchid	Anacamptis morio

Species	Common name	Taxonomic name
235.	Grey Partridge	Perdix perdix
236.	Grey Plover	Pluvialis squatarola
237.	Grey-backed Mining Bee	Andrena vaga
238.	Grizzled Skipper	Pyrgus malvae
239.	Gypsy Moth	Lymantria dispar
240.	Hairy Fungus Beetle	Trinodes hirtus
241.	Harbour Porpoise	Phocoena phocoena
242.	Harbour Seal	Phoca vitulina
243.	Harebell	Campanula rotundifolia
244.	Harvest Mouse	Micromys minutus
245.	Hawfinch	Coccothraustes coccothraustes
246.	Hazel Dormouse	Muscardinus avellanarius
247.	Heath Bumblebee	Bombus jonellus
248.	Heath Dog-violet	Viola canina
249.	Heath Fritillary	Melitaea athalia
250.	Heath Milkwort	Polygala serpyllifolia
251.	Heather	Calluna vulgaris
252.	Heather Mining Bee	Andrena fuscipes
253.	Hedgehog	Erinaceus europaeus
254.	Hen Harrier	Circus cyaneus
255.	Henbane	Hyoscyamus niger
256.	Hoary Cinquefoil	Potentilla argentea
257.	Hornet Robberfly	Asilus crabroniformis
258.	Hound's-tongue	Cynoglossum officinale
259.	House martin	Delichon urbicum
260.	Kestrel	Falco tinnunculus
261.	Kingfisher	Alcedo atthis
262.	Knothole Yoke Moss	Codonoblepharon forsteri
263.	Lagoon Sand Shrimp	Gammarus insensibilis
264.	Lapwing	Vanellus vanellus
265.	Large Dune Leafhopper	Doratura impudica
266.	Large Garden Bumblebee	Bombus ruderatus
267.	Large Scabious Bee	Andrena hattorfiana
268.	Large Tortoiseshell	Nymphalis polychloros

Species	Common name	Taxonomic name
269.	Least Lettuce	Lactuca saligna
270.	Leisler's bat	Nyctalus leisleri
271.	Lesser Calamint	Clinopodium calamintha
272.	Lesser Spearwort	Ranunculus flammula
273.	Lesser Spotted Woodpecker	Dryobates minor
274.	Little tern	Sternula albifrons
275.	Lizard Orchid	Himantoglossum hircinum
276.	Long-fringed Mini-miner	Andrena niveata
277.	Long-horned Bee	Eucera longicornis
278.	Looping Snail	Truncatella subcylindrica
279.	Lousewort	Pedicularis sylvatica
280.	Maiden Pink	Dianthus deltoides
281.	Man Orchid	Orchis anthropophora
282.	Maritime Shore Beetle	Augyles maritimus
283.	Marsh Helleborine	Epipactis palustris
284.	Marsh Pennywort	Hydrocotyle vulgaris
285.	Marsh Speedwell	Veronica scutellata
286.	Marsh St John's-wort	Hypericum elodes
287.	Marsh Tit	Poecile palustris
288.	Marsh Valerian	Valeriana dioica
289.	Meadow Crane's-bill	Geranium pratense
290.	Mellet's Downy-back	Ophonus melletii
291.	Midas Tree-weaver	Midia midas
292.	Moss Carder Bee	Bombus muscorum
293.	Mountain Bulin	Ena montana
294.	Mousetail	Myosurus minimus
295.	Mugwort Pearl	Loxostege sticticalis
296.	Narrow Anthicid Beetle	Anthicus angustatus
297.	Narrow-fruited Cornsalad	Valerianella dentata
298.	Nathusius' pipistrelle	Pipistrellus nathusii
299.	Native Oyster	Ostrea edulis
300.	Necklace Ground Beetle	Carabus monilis
301.	Night-flowering Catchfly	Silene noctiflora
302.	Nightingale	Luscinia megarhynchos

Species	Common name	Taxonomic name
303.	Norfolk Hawker dragonfly	Aeshna isosceles
304.	Oblong-leaved Sundew	Drosera intermedia
305.	Orache Moth	Trachea atriplicis
306.	Ornate Cranefly	Ctenophora ornata
307.	Ornate Cuckoo Bee	Stelis ornatula
308.	Oystercatcher	Haematopus ostralegus
309.	Parsley Water-dropwort	Oenanthe lachenalii
310.	Pedunculate Sea-purslane	Atriplex pedunculata
311.	Pennyroyal	Mentha pulegium
312.	Petty Whin	Genista anglica
313.	Pintail	Anas acuta
314.	Plain Dark Bee	Stelis phaeoptera
315.	Pochard	Aythya ferina
316.	Prickly Poppy	Papaver argemone
317.	Prickly Saltwort	Kali turgida
318.	Quaking grass	Briza media
319.	Queens Executioner	Megapenthes lugens
320.	Ragged Robin	Silene flos-cuculi
321.	Red Hemp-nettle	Galeopsis angustifolia
322.	Redshank	Tringa totanus
323.	Red-shanked Carder Bee	Bombus ruderarius
324.	Red-throated diver	Gavia stellata
325.	Red-tipped Cudweed	Filago lutescens
326.	Rest Harrow	Aplasta ononaria
327.	Ringed plover	Charadrius hiaticula
328.	Rosser's Sac-spider	Clubiona rosserae
329.	Round-fruited Rush	Juncus compressus
330.	Round-leaved Sundew	Drosera rotundifolia
331.	Round-leaved Wintergreen	Pyrola rotundifolia
332.	Ruby-tailed Wasp	Hedychrum rutilans
333.	Rusty Click Beetle	Elater ferrugineus
334.	Rusty Flea Beetle	Longitarsus ferrugineus
335.	Rye-brome	Bromus secalinus
336.	Saltmarsh Short spur	Anisodactylus poeciloides

Species	Common name	Taxonomic name
337.	Sand Cat's-tail	Phleum arenarium
338.	Sandwich Click Beetle	Melanotus punctolineatus
339.	Sanicle	Sanicula europaea
340.	Satan's Bolete	Boletus satanas
341.	Scaly stalked puffball	Battarrea phalloides
342.	Scarce Black Arches	Nola aerugula
343.	Scarce Bugloss Ermine	Ethmia terminella
344.	Scarce Chaser	Libellula fulva
345.	Scarce Chocolate-tip	Clostera anachoreta
346.	Scarce emerald Damselfly	Lestes dryas
347.	Scarce Knapweed Fly	Acinia corniculata
348.	Scarlet Malachite Beetle	Malachius aeneus
349.	Sea aster mining bee	Colletes halophilus
350.	Sea Barley	Hordeum marinum
351.	Sea Bindweed	Calystegia soldanella
352.	Sea Heath	Frankenia laevis
353.	Sea Wormwood	Artemisia maritima
354.	Sea-holly	Eryngium maritimum
355.	Serotine	Eptesicus serotinus
356.	Set-aside Downy-back Beetle	Ophonus laticollis
357.	Sheep's-bit	Jasione montana
358.	Shelduck	Tadorna tadorna
359.	Shepherd's-needle	Scandix pecten-veneris
360.	Shining Guest Ant	Formicoxenus nitidulus
361.	Shiny Seed Beetle	Amara nitida
362.	Short Snouted Seahorse	Hippocampus hippocampus
363.	Short-spined Nomad Bee	Nomada guttulata
364.	Shrill Carder Bee	Bombus sylvarum
365.	Silver Barred	Deltote bankiana
366.	Six spotted Orbweaver	Araniella displicata
367.	Six-spotted Leaf Beetle	Cryptocephalus sexpunctatus
368.	Slate Bolete	Leccinum duriusculum
369.	Slender Bird's-foot-trefoil	Lotus angustissimus
370.	Slender Cuckoo Wasp	Chrysis gracillima

Species	Common name	Taxonomic name
371.	Slender Hare`s-ear	Bupleurum tenuissimum
372.	Slender Tare	Vicia parviflora
373.	Small Blue	Cupido minimus
374.	Small Cord-grass	Spartina maritima
375.	Small Cudweed	Filago minima
376.	Small Eggar	Eriogaster lanestris
377.	Small Heath	Coenonympha pamphilus
378.	Small Plain Stiletto	Thereva fulva
379.	Small Ranunculus	Hecatera dysodea
380.	Small-flowered Catchfly	Silene gallica
381.	Smooth Cat's-ear	Hypochaeris glabra
382.	Speckled Footman	Coscinia cribraria
383.	Spined Blood Bee	Sphecodes spinulosus
384.	Spiny Restharrow	Ononis spinosa
385.	Spiral Tasselweed	Ruppia cirrhosa
386.	Spotted Flycatcher	Muscicapa striata
387.	Spotted Ground Beetle	Acupalpus maculatus
388.	Spotted Sulphur	Acontia trabealis
389.	Spreading Hedge-parsley	Torilis arvensis
390.	Stag Beetle	Lucanus cervus
391.	Stag's-horn Clubmoss	Lycopodium clavatum
392.	Star Sedge	Carex echinata
393.	Starling	Sturnus vulgaris
394.	Stinking Goosefoot	Chenopodium vulvaria
395.	Strawberry Clover	Trifolium fragiferum
396.	Streaked Bombardier Beetle	Brachinus sclopeta
397.	Striped Horsefly	Hybomitra expollicata
398.	Sulphur Clover	Trifolium ochroleucon
399.	Swift	Apus apus
400.	Swollen Spire Snail	Mercuria cf. similis
401.	Tawny Owl	Strix aluco
402.	Tawny Water Beetle	Berosus fulvus
403.	Thatch Moss	Leptodontium gemmascens
404.	Tormentil	Potentilla erecta
405.	Tower Mustard	Turritis glabra
406.	Trembling sea mat	Victorella pavida
407.	Tubular Water-dropwort	Oenanthe fistulosa
408.	Turtle Dove	Streptopelia turtur
409.	Umbrella Fly	Platycephala umbraculata
410.	Upright Chickweed	Moenchia erecta
411.	Upright Goosefoot	Oxybasis urbica
412.	Veilwort	Pallavicinia lyelli
413.	Viper's Bugloss	Hadena irregularis
414.	Wall Bedstraw	Galium parisiense
415.	Wall Brown	Lasiommata megera
416.	Wasp Wood-soldierfly	Xylomya maculata
417.	Water Vole	
418.	Water-violet	Hottonia palustris
419.	Western European Herring Gull	Larus argentatus argenteus
420.	White Admiral	Limenitis camilla
421.	White-letter hairstreak	Satyrium w-album
422.	Whorled Water-milfoil	Myriophyllum verticillatum
423.	Wigeon	Mareca penelope
424.	Wild Clary	Salvia verbenaca
425.	Wild Pansy	Viola tricolor
426.	Wild Strawberry	Fragaria vesca
427.	Wood Sorrel	Oxalis acetosella
428.	Wormwood Flea Beetle	Longitarsus absynthii
429.	Yellow Bird's-nest	Hypopitys monotropa
430.	Yellow Horned-poppy	Glaucium flavum
431.	Yellow Loosestrife Bee	Macropis europaea
432.	Yellow Vetchling	Lathyrus aphaca
433.	Yellow Wagtail	Motacilla flava flavissima
434.	Yellow-horned Cranefly	Ctenophora flaveolata
435.	Yellow-shouldered Nomad Bee	Nomada ferruginata
436.	Yellow-vetch	Vicia lutea

7. Glossary of terms

Action

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

Agroforestry

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

All Opportunities Maps

These present all locations that could become of particular importance for biodiversity.

Base Maps

These show areas of particular importance for biodiversity. They identify national conservation sites, local nature reserves, local wildlife sites and areas of irreplaceable habitat in Essex.

Biodiversity

The total variety of all living things. This includes all plants and animals, as well as the places and spaces in which they live.

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 and land management that aims to leave biodiversity in a better state than before.

Biosecurity

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

Blue Habitats/Spaces

Aquatic environments such as rivers, lakes, ponds, wetlands and coastal areas, which support aquatic biodiversity and provide services like water filtration, flood regulation and recreational opportunities.

Blue Infrastructure

Water-related natural and semi-natural features, including rivers, lakes, wetlands and coastal waters, which deliver environmental, social and economic benefits, particularly through water management, biodiversity support and recreation.

Carbon emitter

Sources, such as fossil fuel combustion or deforestation, that release carbon dioxide and other greenhouse gases into the atmosphere, contributing to climate change.

Carbon sink

Natural or artificial systems that absorb more carbon dioxide from the atmosphere than they release, helping to mitigate climate change.

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 Squeeze

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

Countryside Stewardship (CS)

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

Ecosystem services

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

- Cultural services - the non-material benefits such as recreation, 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 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.

Environmental Land Management Schemes (ELMS)

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

Farm Clusters

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

Freshwater standing water habitats

Bodies of non-flowing water such as lakes, ponds and reservoirs, which provide habitat for a diverse range of aquatic species and offer important ecosystem services.

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.

Lost ponds

Former ponds that have been filled in or lost but still retain potential to be restored to functional wetland habitats.

Greater Essex

The 12 Districts, Boroughs and Cities and the two unitary authorities in Essex.

Green Habitats/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. May also include biodiverse features within the farmed landscape such as field margins managed for wildlife or agroforestry.

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.

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 creation

The process of developing new natural habitats to replace lost ones or to enhance biodiversity.

Habitat priorities

For each habitat type in the Local Nature Recovery Strategy, there are three habitat priorities. The habitat priorities fall under three headings: "bigger habitat", "better habitat" and "more connected habitat", to align with the Lawton Principles of nature recovery.

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.

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.

Landscape Character Assessment

Landscape character assessment (LCA) is the process of identifying and describing variation in character of the landscape. LCA documents identify and explain the unique combination of elements and features that make landscapes distinctive by mapping and describing character types and areas. They also show how the landscape is perceived, experienced and valued by people.

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 Sir John Lawton, emphasising the need for more, bigger, better and connected habitats to create resilient and coherent ecological networks.

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)

Essex body which, through partnership working and collaboration, aims to drive positive change in the local natural environment. The LNP's collective goal is to raise awareness of the nature crisis in Essex, and to support a variety of sectors in working towards nature recovery.

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 geological sites

Sites of geological importance at the local level, often designated for their educational, scientific or aesthetic value, and protected to conserve geological features and heritage.

Local Wildlife Sites (LoWS)

Non-statutory sites of local importance for biodiversity, identified and managed for their value to local wildlife and habitats.

National Character Area

NCAs represent areas of distinct and recognisable character at the national scale. Their boundaries follow natural lines in the landscape, not county or district boundaries. This makes them a good framework for decision-making and planning for future change.

National Landscape

A designated area of land in the UK, previously known as an Area of Outstanding Natural Beauty (AONB), that is of national importance for its natural beauty and is protected in the national interest.

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)

A connected network of habitats designed to support biodiversity and ecosystem resilience, facilitating species movement and adaptation to environmental changes.

Potential measures

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

Regenerative farming

Agricultural practices focused on restoring soil health, enhancing biodiversity, and improving ecosystem services, often through techniques like no-till farming, cover cropping and holistic grazing.

River buffers

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

Sites of Special Scientific Interest (SSSIs)

Protected areas designated for their exceptional biodiversity, geology or natural features, often subject to specific conservation and management practices to preserve their value.

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.

Soil permeability

The capacity of soil to transmit water, influenced by factors such as soil texture, structure and organic matter content, affecting drainage, irrigation and plant growth.

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 Essex LNRS, the species priorities section highlights priority measures to support species on the LNRS priorities species shortlist.

Strategic Opportunities Maps

These show the top 15% of locations within all opportunities, i.e. those identified as having the most potential to deliver benefits for nature and the wider environment.

Supporting Action

In the context of nature recovery, a “supporting action” is a secondary task which aids the completion of the primary activity and wider goal of habitat creation and nature recovery.

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; and

(b) Natural England.

Top 10 Priorities

The overarching priorities for nature recovery in Essex, whose purpose is to set out the overall vision for nature, which have been determined and agreed upon by a wide range of stakeholders and partners.

Urban areas

Regions characterised by high population density and infrastructure development.

Urban greening

The incorporation of vegetation and natural elements into urban environments, including parks, green roofs, street trees and community gardens, to enhance urban biodiversity and improve quality of life.

Wetlands

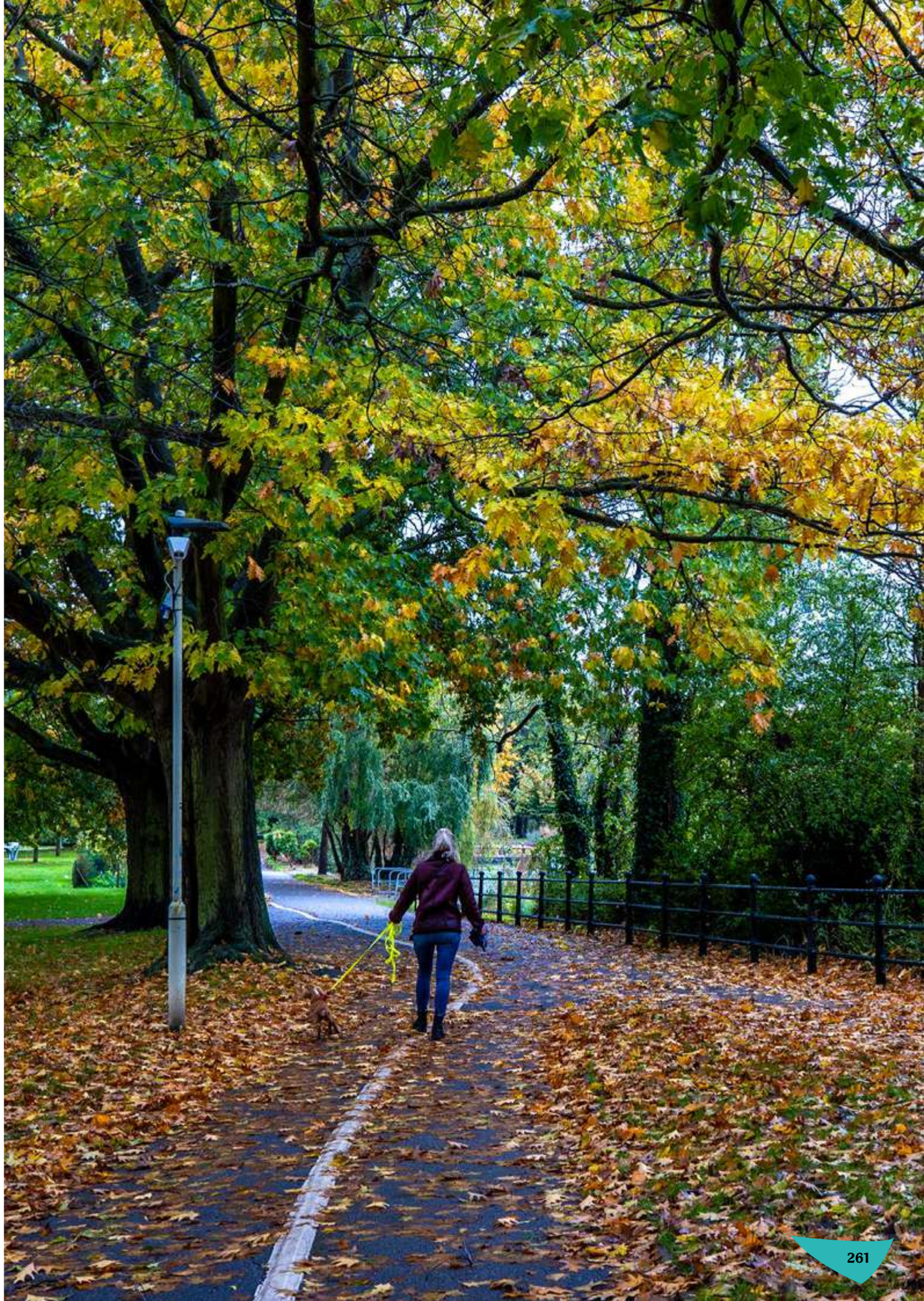
Ecosystems where water saturates the soil, either permanently or seasonally, supporting distinctive plants and wildlife adapted to wet conditions.

Wildlife buffers

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.

Woodland Carbon Code

This Code, developed by the UK government, provides a framework for certifying woodland creation projects that absorb or ‘sequester’ carbon dioxide from the atmosphere.



Right: Chelmsford © Paul Starr

8. Endnotes

1 “England is the only country in the world with mandatory Biodiversity Net Gain, further cementing our position as world leader on the environment. The UK was also the first country in the world to have legally binding targets to halt the decline of nature.” - New housing developments to deliver nature boost in landmark move - GOV.UK (**www.gov.uk**)

2 Lawton Report 2010: **www.gov.uk/government/news/making-space-for-nature-a-review-of-englands-wildlife-sites-published-today**

3 The base maps of the LNRS (areas of particular importance for biodiversity), cover 14.22% of the county currently. In addition, 14% represents natural Green Infrastructure, as defined by the Essex Climate Action Commission. This is limited to green infrastructure only within ancient woodland; coastal features; natural and semi-natural open spaces; and reservoirs, lakes and ponds.

4 Technically, this is the LNRS for Greater Essex, which includes the 12 Districts, Boroughs and Cities and the two unitary authorities in Essex. The Secretary of State for DEFRA defined the boundaries of the area and appointed Essex County Council (ECC) as Responsible Authority to lead preparation of the LNRS.

5 Lawton Report 2010: **www.gov.uk/government/news/making-space-for-nature-a-review-of-englands-wildlife-sites-published-today**

6 The base maps of the LNRS (areas of particular importance for biodiversity), cover 14.22% of the county currently. In addition, 14% represents natural Green Infrastructure, as defined by the Essex Climate Action Commission. This is limited to green infrastructure only within ancient woodland; coastal features; natural and semi-natural open spaces; and reservoirs, lakes and ponds.

7 **www.gov.uk/guidance/natural-environment#full-publication-update-history**

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10 30% of land and sea in Essex connected and protected for wildlife by 2030 and 1 in 4 people in Essex taking action for wildlife by 2030.

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42 Essex Green Infrastructure Strategy, 2020

43 Essex GI Strategy, 2020

44 Hwang, 2021

45 Office for National Statistics Census 2021 **www.ons.gov.uk/visualisations/areas**

46 Essex Gi Strategy, 2020

47 Essex Water Strategy, 2024

48 State of Nature Report. 2023

49 Wetlands are areas of marsh, fen, peatland, or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres - Ramsar Convention on Wetlands (2018). Global Wetland Outlook: State of the World's Wetlands and their Services to People. Gland, Switzerland: Ramsar Convention Secretariat

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ESSEX LNRS | LOCAL NATURE RECOVERY STRATEGY

This information is issued by:
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