CAMBRIDGESHIRE & PETERBOROUGH COMBINED AUTHORITY

Local Nature Recovery Strategy

for Cambridgeshire and Peterborough

Creating a wildlife-rich, resilient, productive and sustainable landscape, for people and nature

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Priorities and actions

We are seeking your views on this Local Nature Recovery Strategy

Part 1 of the document reminds us why nature is so important to our lives. It shows some of big challenges that our natural environment faces. It also shows the opportunities for action. Nature recovery can deliver wide benefits, such as water and air quality, or reducing flood risk.

Part 2 sets out the actions (also referred to as measures) we are suggesting for our most important habitats and species. Some actions cannot be mapped but are still important.

We suggest reading this document first. However, if you want you can go straight to what the strategy is recommending near you by looking at the Local Habitat Map. The map shows existing areas important for nature. It also takes the actions and shows where they could apply. The map has different layers that you can turn on or off – easy instructions are provided on the webpage.

We'd love to hear your comments on both this document and the map. We want to hear about whether we have got the right plants, animals and habitats. We want to hear about the actions we suggest, and if we have shown all the right areas.

You can leave your comments here

You don't have to leave a comment on every question – just skip to those that you want to. You can also leave a comment on the map pages.

Once we have all the comments we will consider what changes are needed. We will approve the final Strategy by the end of the year.

Once the Strategy is approved then Local Plans and planning permissions need to have regard to it. Government will use it in its future spending plans. If you farm or manage land then the strategy can't require you to make any changes, but it will suggest the priority areas when action could be taken. All of our natural environment is important. We encourage everyone to look after nature. However, to have the best impact we need to focus our activity. This is why we are very interested in your comments on the actions and areas the Strategy shows.

Nature recovery: let's make it happen!

For millennia we have lived alongside and amongst nature, experiencing an abundance of wildlife through the changing seasons, the dawn chorus and bluebells in spring, wildflowers and clouds of insects in summer, autumn colours, and flocks of birds or owls hooting in winter. Our own prosperity was entwined with the natural world.

Since the industrial revolution and throughout the twentieth century we have improved our quality of lives in terms of health and life expectancy, quality of housing, income and material goods. Yet in the process we lost our connection to the natural world and have collectively forgotten that our own prosperity depends upon the natural world. We drained marshes, cut down woods, ploughed up wildflower meadows and polluted rivers. Our economic and political system has under-valued the natural world until it is nearly too late.

But it isn't too late. We know and understand there is a climate and biodiversity emergency. This is the first step on our journey to re-connect with nature, to value the natural world and to take action to bring about nature's recovery.

At times the size of the task may appear too daunting. However, we can all take action to help nature recover and collectively, everyone acting, even in small ways, we will make a difference.

Carrying out at least one wildlife friendly gardening option at home, whether putting up nestboxes, creating a pond, leaving part of a lawn unmown for part of the year, or planting pollinator friendly garden or window-box plants can make a difference. If 30% of gardens were wildlife friendly, this would be equivalent in area to all our internationally important wetlands. We can all reduce our carbon footprint and the amount of water that we use. We can start or continue our nature recovery journey at home.

With the right support, nature-friendly farming can flourish . This may include cropping less land at the field edges where the land is not as productive or having grass buffers adjacent to hedgerows, ditches and rivers. It may include a variety of higher value wildlife options such as bird seed mixes or pollinator flower mixes, or creating thick, dense hedgerows. Minimising the use of pesticides and fertilisers alongside the above measures will help wild plant and insect populations to recover, which in turn feeds our birds and mammals. Some landowners will be able to create high-value habitats such as species-rich meadows, woodlands and wetlands, to buffer and extend our core nature sites.

Our parks and urban greenspaces can be managed to provide more space for wildlife, whether that is unmown or less frequently mown corners, new wildflower meadows, parkland and street trees, or hedgerows and small woodlands. Communities can work with their councils to create their own nature recovery plans for their local patch and make them happen.

Businesses can work with our Local Planning Authorities to invest in the new strategic natural places that our growing population requires. We can plan for and create the new downland, woodland, fen and parkland around and between our growing cities, towns and villages, to improve our quality of life.

Our Local Nature Recovery Strategy sets out the range of actions that will bring about nature recovery in Cambridgeshire and Peterborough. The Local Habitat Map shows where these actions will benefit our most valuable habitats. However, nature recovery is more than just one strategy. It is about us all acting for nature and in so doing, our actions no matter how small will help us reconnect with the natural world.

In reconnecting with the natural world, we will value what nature provides for us and how it is essential to our health, our food supplies, clean water and economic prosperity.

We can create an environment where we will hear a richer dawn chorus in our woods, hedgerows and parks, see clouds of butterflies and other insects in flower-rich meadows, verges and field margins, and witness large flocks of birds flying across our skies. Our rivers and chalk streams will flow with clean water and be teaming with fish, dragonflies, water voles and otters.

We have the knowledge to help nature recover. Let's make it happen!

1 Introduction

What is a local nature recovery strategy?

Local nature recovery strategies (LNRS) are a new, England-wide approach to supporting nature recovery, as mandated by the Environment Act 2021. There will be 48 LNRS together covering the whole of England, each setting out priorities and actions (referred to in the Environment Act 2021 as 'potential measures') to support nature recovery and provide wider environmental benefits in their area.

Together they will describe a Nature Recovery Network across England. They will also be crucial to achieving local and national environmental goals, helping us to adapt to climate change and promote healthier, more sustainable living.

The Environment Act state that each LNRS must include:

A statement of biodiversity priorities, including:

i. a description of the strategy area and its biodiversity.

ii. opportunities for recovering or enhancing biodiversity in the strategy area.

iii. priorities for biodiversity recovery or enhancement, considering contributions to other environmental benefits.

iv. proposals for potential measures related to those priorities.

A local habitat map that identifies:

i. national conservation sites in the strategy area.

ii. **local nature reserves** within the strategy area.

iii. other areas in the strategy area which:

   a. are, or could become, of particular importance for biodiversity, or

   b. are areas where the recovery or enhancement of biodiversity could make a particular contribution to other environmental benefits

The LNRS will help inform where public money is spent on nature recovery, inform sustainable land use planning through the planning system and shape how **nature-based solutions** are delivered and inform sustainable land use planning through the planning system for example through BNG. These solutions will achieve outcomes beneficial to society including flood management, improvements to water quality and **carbon sequestration.**

The Cambridgeshire and Peterborough LNRS has been designed to act as a guide to the most effective actions and locations for nature recovery. **An online interactive map** will help users to understand the priorities in their locality. It informs the most effective action for nature recovery across Cambridgeshire and Peterborough.

Everyone can take action for nature and play their part in local nature recovery. This strategy is for everyone, whether you are a farmer or landowner, environmental charity, business or developer, public organisation, policy maker, community group or local resident.

Area covered by the local nature recovery strategy

The LNRS covers the Cambridgeshire and Peterborough Combined Authority area as shown opposite

Purpose and structure of this document

Part 1 of the LNRS provides a description of the area covered by the strategy, its biodiversity, and the opportunities for recovering or enhancing biodiversity in the area.

It sets the scene as to why nature recovery matters and is essential. It provides an overview of the natural environment and state of nature locally including our local landscapes, key protected nature sites, habitats, and some of our most notable species. Finally, it identifies the challenges and opportunities facing nature locally.

Part 2 of the LNRS sets out the 'priorities for biodiversity recovery or enhancement' and 'proposals for potential measures', as well as how the local habitat map (showing the opportunity areas for nature recovery) was created.

It sets out the vision for the LNRS and its strategic priorities. It also identifies the **priority natural landscapes** that are best suited to achieve large-scale nature recovery across Cambridgeshire and Peterborough in the years ahead. It also describes the action for nature recovery that can be undertaken across the farmed and urban landscapes, which form the vast majority of the LNRS area.

It identifies the habitats and species that are our local priorities for nature recovery in Cambridgeshire and Peterborough, along with the actions required to support their recovery. These form the **local habitat map** and the relationship of the local habitat map to local plans and biodiversity net gain is described.

Further information on the detailed methodology used to select our local habitat and species priorities, and the chosen measures is included in our supporting documents along with a range of background information. The supporting documents are listed below:

- LNRS prioritisation and mapping methodology.
- habitat opportunity modelling methodology.
- stakeholder engagement.
- long list of priority habitats.
- priority species list without actions.
- case studies of nature recovery action.
- national and local context
- list of relevant legislation, policy and strategies.
- LNRS and the planning system

Click to view the local habitat map

Click to discover more about this process

The Lawton Principles

A key approach to the development of this LNRS is the Lawton Principles:

These emerged from a review by Sir John Lawton (2010)[1] to assess how England's nature sites and wider ecological networks could be improved to help nature thrive in the face of climate change and other pressures. The review concluded that England's nature sites did not comprise a coherent or resilient ecological network and that a step change was needed in nature conservation action.

The Lawton report described the four components of a healthy ecological network; these are described as:

BETTER

Enhance the quality of current nature sites through better habitat management.

BIGGER

Increase the size of nature sites to allow wildlife space to thrive and adapt.

MORE

Create new nature sites and more land dedicated to nature recovery.

JOINED UP

Enhance the connections between, or join up, nature sites, either through physical corridors or through habitat 'stepping stones'.

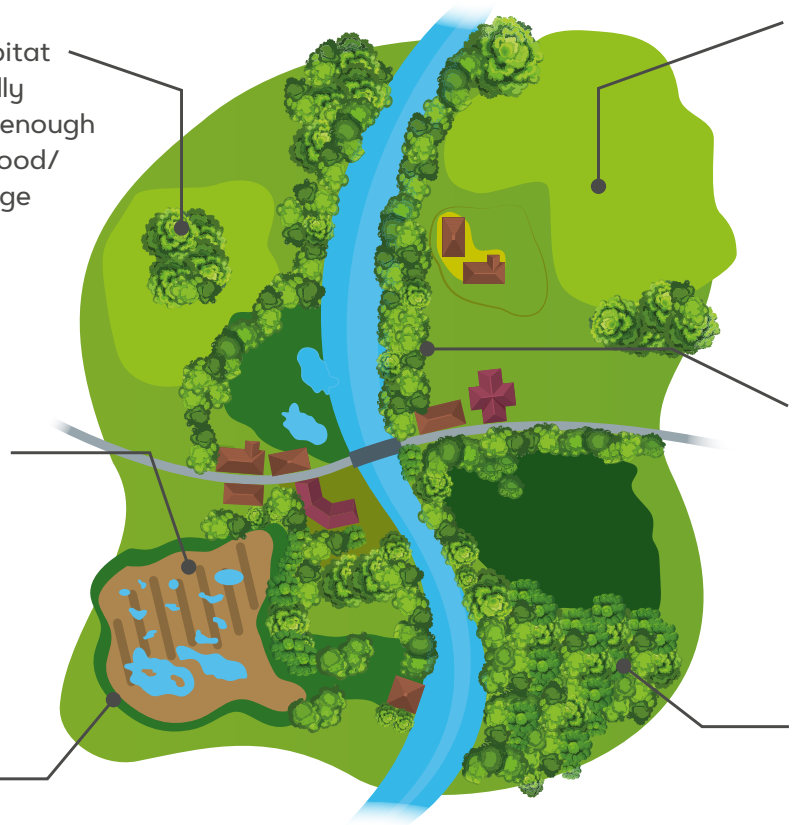
These are shown diagrammatically below:

Components of an ecological network

Stepping stones: Small patches of habitat that are not physically linked, but are close enough to provide shelter/ food/ rest to enable passage between core areas

Restoration areas: Where work is currently underway to create new high valued habitat

Buffer zones: To protect core areas



Wider landscape: Area that focus on the sustainable use of nature resources and activities that help make the wider landscape more wildlife-friendly

Corridors: Strips of habitat that can provide a safe passage between areas

Core areas: Place most important for biodiversity, including protected areas

Everyone can take action for nature and play their part in local nature recovery.
This strategy is for everyone, whether you are a farmer or landowner, environmental charity, business or developer, public organisation, policy maker, community group or local resident

1. Lawton, J. et al. (2010) Making Space for Nature: A review of England's wildlife sites and ecological networks

Statement of biodiversity priorities

Part one Area description

2

Setting the scene

Setting the scene

Why nature matters

Nature is important for its own sake, the unique product of millions of years of evolution and natural processes. For many people, connecting with nature is a source of inspiration or renewal and reminds us that we are part of something bigger, that enriches our daily lives.

Everything we do, from the water we drink, the air we breathe and the food we eat is dependent on the natural world. Three-quarters of our food crops depend on insects and pollination, yet insect numbers have crashed. Deteriorating soil health due to historic farming practices poses a major risk to farming and food security. An environment rich with plant life helps clean the air we breathe. Trees provide shade and slow the flow of flood waters. Natural spaces help make attractive places to live, work and play. They provide spaces for relaxation, leisure and tranquillity and boost our health and wellbeing. If nature is depleted through our actions, we are also harming ourselves.

Why do we need a local nature recovery strategy?

England is one of the most nature-depleted counties in the world[2], as demonstrated by the lack of nature-rich land and by historic and continued declines in species.

In terms of natural habitats, Cambridgeshire has one of the lowest proportions of land designated for nature in the UK (3.3%), the second lowest woodland cover at just 4.8%, and one of the lowest proportions of nature-rich habitats (approximately 8%) in England. The rapidly growing population of Cambridgeshire and Peterborough does not have national parks, national landscapes or large areas of open access downland, forest, moorland or coast on its doorsteps.

The national State of Nature Reports[3] tell in stark terms of the declines in species populations, and the collapse in bio-abundance, in particular invertebrate populations.

64% **decline** in abundance of UK Priority species

45% **decline** in butterfly distribution **SINCE 1976**

43% of bird species & **26%** of terrestrial mammal species ...are threatened with **extinction**

25% **DECLINE** in moth numbers **SINCE 1970**

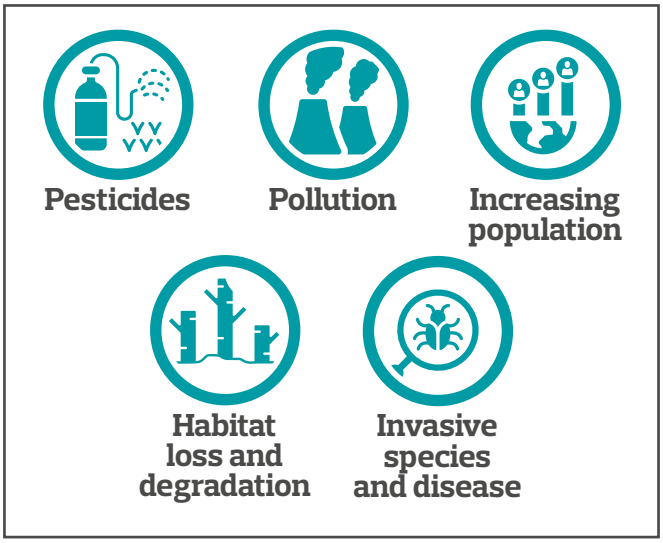
54%

25% of UK fish stocks are in a **CRITICAL** condition

Did you know?
State of nature reports uses data from biological monitoring and recording schemes to provide a benchmark for species populations throughout the UK

We are in a biodiversity crisis as well as a climate crisis. This mass depletion of biodiversity is now having harmful consequences for humans, both economic and social. Taking action to promote nature recovery has never been more important, which is why we need LNRS.

Causes of the decline in nature



Habitat loss and degradation

The primary driver of wildlife decline in the UK and locally is the loss and degradation of habitats. Since the Second World War, the intensification and expansion of farming, coupled with urban development, has resulted in a significant loss of nature-rich land.

As well as the species losses described above, the UK lost over 97% of its lowland meadows between the 1930s and 1980s[4]. Further losses since the 1980s suggest the overall losses locally are likely to be 98-99%. We have lost over 75% of our wetlands since the 1700s[5], largely through drainage for agriculture, and these losses have continued into the 20th and 21st centuries. The Fens was the largest wetland in western Europe prior to drainage from the 17th century onwards.

The removal of scrub and hedgerows and inadequate woodland management and protection (only 7% of the UKs woodland is in a good ecological condition[6]) have all contributed to nature's decline. While agricultural changes account for the majority of the habitat losses, urban expansion has also played a significant role locally, with a doubling of the urban area over the past century. This pressure is set to continue over the coming decades.

Pesticides

The use of pesticides has played a crucial role in significantly increasing farming yields and improving food security over the past 75 years. However, this has come at a substantial cost to wildlife. In the 1960s and 1970s, the widespread use of now banned **pesticides** led to alarming declines in birds of prey and songbirds.

More recent generations of **pesticides,** such as **neonicotinoids,** are highly toxic to insects and other **invertebrates** on land and in water[7].

The widespread use of broad-spectrum **herbicides** has reduced the diversity of plants across the farmed landscape and with it those insects that depend on these plants to complete their life cycles.

While the total weight of active pesticide ingredients has decreased since the 1990s, the total application area and frequency of use have both increased. The toxicity of **pesticides** has also increased, offsetting the decline in weight applied, and a greater variety of **pesticides** are now used on a single crop[8]. This is contributing to the widespread loss in abundance of many **invertebrate** and other species groups.

Pollution

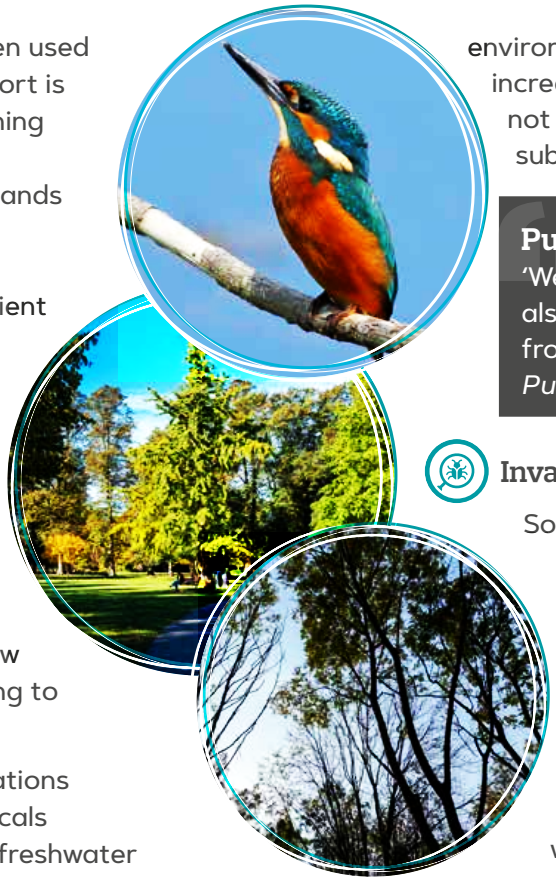
As well as **pesticides**, many of our local waterways have elevated nutrient levels, both **phosphates** and **nitrates** and as a result are not reaching their full ecological potential. **Phosphates** come from **both** human wastewater and from runoff from farmland[9]. The poor water quality affects the composition of the aquatic plants and animals, with species of low nutrient conditions in decline.

Poor quality flood waters also impact adjacent floodplain wetland and flood meadow habitats, reducing the abundance of notable species dependent on low nutrient levels.

Air pollution from nitrogen used in agriculture and transport is contributing to the declining quality of many natural habitats, including grasslands and woodlands, as many notable species of these habitats require low nutrient conditions.

With increased urbanisation, there is also more light pollution, which has been shown to affect the natural behavioural patterns of bats, birds and moths and is also now thought to be contributing to insect declines[10].

The increasing concentrations of pharmaceutical chemicals and microplastics within freshwater environments are also becoming an increasing concern. However, we do not yet understand the impacts these substances have on wildlife.



Public opinion
'I am concerned about the loss of wildlife we are accustomed to seeing in our gardens'
Cambridge City Resident

Public survey feedback
'We need public engagement, but also areas which are protected from human impact.'
Public survey respondent

Invasive species and disease

Some non-native species become **invasive** and adversely impact local ecosystems. The species with the most impacts locally are Muntjac Deer, American Mink, Signal Crayfish, Himalayan Balsam, Floating Pennywort, Azolla and increasingly a range of **invertebrates** in the Fens waterways.

Tree diseases have had significant impacts on Cambridgeshire's landscapes. The loss of Elms in the 1970s to Dutch Elm Disease altered the landscape dramatically. Ash dieback is now having a similarly large-scale impact on our local woodlands where Ash is the dominant species.

Increasing population

The human population of Cambridgeshire and Peterborough has grown by over 20% since 2000. As well as the loss of habitat to urban development, natural assets in Cambridgeshire and Peterborough are also coming under increasing pressure with conflicts and damage from recreational activity being recorded at sites including Wicken Fen and many **Sites of Special Scientific Interest (SSSIs)** and nature reserves.

Better management, restoration and creation of natural habitats will not just play a part in reversing the loss of biodiversity. It will also contribute towards achieving net zero-carbon and help provide better access to the countryside for a growing population with the health and social benefits that this brings to the local economy.

As outlined by the UK government 'sustained economic growth is the number one mission of this government, but this cannot come at the expense of our natural environment. A healthy natural environment is essential both in its own right and for sustained and resilient growth' (Nature Restoration Fund, 2025).

Nature and development can coexist through sustainable planning that integrates green spaces, protects biodiversity, and enhances ecosystems while meeting growth aspirations. An example of how nature can be integrated into development is Trumpington Meadows. Further information can be found in supporting document 6.

Cambridgeshire and Peterborough land use changes over the past century

Land use in Cambridgeshire and Peterborough has changed significantly over the last century.

Between 1930 and 2018 there has been large-scale habitat loss, with the remaining areas of habitat becoming smaller in size and more fragmented.

A summary of the key changes is as follows...[11]

Expansion of intensive land uses and / or those unfavourable to biodiversity:

- Arable land increased by 31,200ha (15% increase from 61% to 70%)
- Built-up areas and gardens increased by 16,500ha (84% increase from 6% to 11%)

Natural and semi-natural habitat LOSS

- Marsh habitat loss of 2,900ha (88% decline)
- Semi-natural grassland has declined by at least 84% (more likely to be 97-99% with a better definition of semi-natural grassland)

Natural and semi-natural habitat GAIN

- Woodland increased by 7,000ha (85% expansion from 2% to 5%)

Waterbodies increased in number and total area

- Due to the sand and gravel mineral extraction and construction of Grafham Water

Current land uses

Farmed landscape

Urban landscape

Natural landscapes

Cambridgeshire and Peterborough are dominated by arable agriculture and urban settlements. Estimates put the cover of high-value habitats for nature at around 8% of the land area.

Farmed landscape

Around 80% of Cambridgeshire and Peterborough is agricultural land. A high proportion is highly fertile **grade 1 and 2 land** which makes a significant contribution to the nation's food production (over one-third of England's fresh vegetables are produced in the Fens). Much of the highest quality agricultural land is on peat soils in the Fens. Cambridgeshire has around 27% of England's total peatland, but due to intensive use accounts for 70% of the damaged peatland in the country[12]. Beyond the Fens, arable farming remains the predominant land use across the chalk landscapes in the south of the county and the claylands in the west.

Urban landscape

Cambridgeshire and Peterborough is a largely rural area. It is formed of five districts and one unitary authority which include historic cities such as Cambridge, Peterborough and Ely, smaller market towns such as Huntingdon, March and Wisbech, and numerous villages. Over the past twenty years the area has seen one of the UK's biggest population increases. Overall, the number of people living in Cambridgeshire and Peterborough has risen by 20% since 2000 and 9.2% since 2015 which is higher than the East of England average[13].

Peterborough is one of the top ten fastest growing cities in the UK[14] and this rapid population growth has led to significant urban expansion and increased demands on resources.

Natural landscapes

Approximately 8% of Cambridgeshire and Peterborough[15] is high-value natural habitats. This is one of the lowest proportions in England. Most of these nature sites are small and fragmented.

The remaining habitats are therefore under intense pressure for the reasons set out previously. Although starting from a low base, there are significant opportunities for nature recovery.

Did you know?

Grade 1 and 2 land is an agricultural land classification that determines the quality of existing farmland or undeveloped land. Grade 1 and Grade 2 land is considered 'excellent' and 'very good' respectively.

3

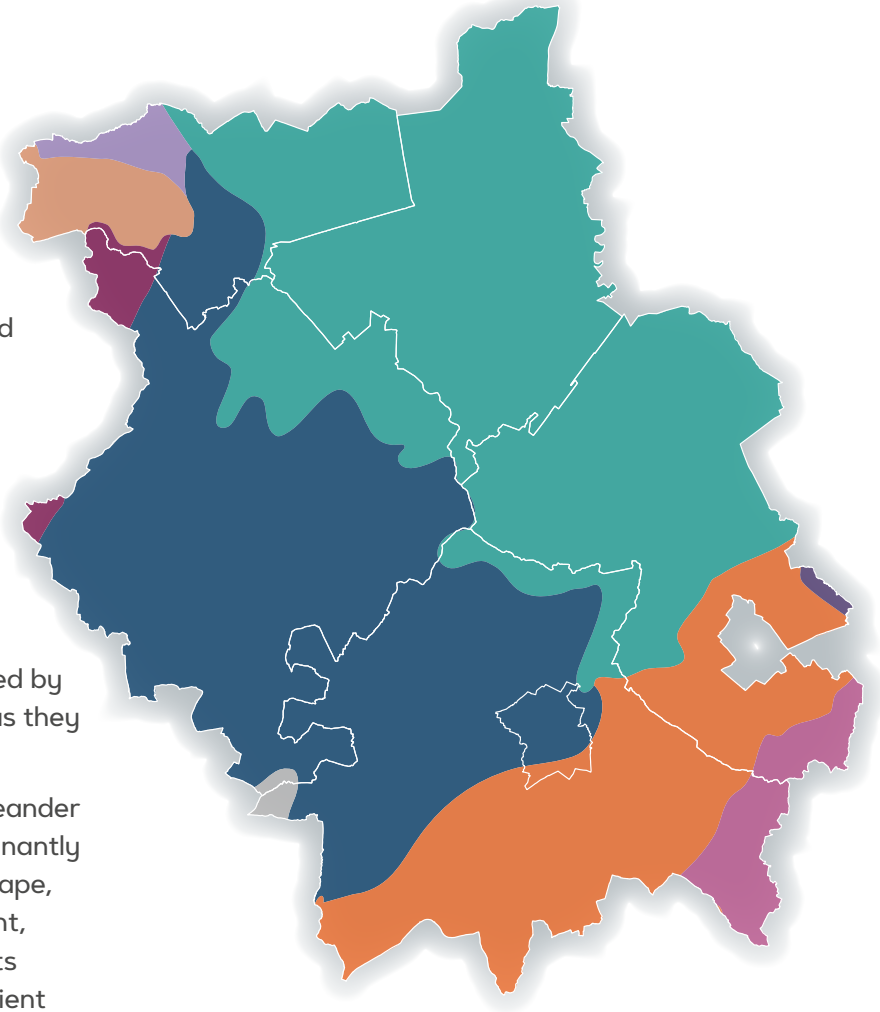
Our natural environment

Our natural environment

Landscape character

National Character Areas (NCAs) are areas that represent a distinct and recognisable landscape character across England. NCAs provide a useful starting point to describe the landscape as they influence where different habitats and land management can be supported.

There are three main NCAs that cover Cambridgeshire and Peterborough as shown here.



- *Bedfordshire and Cambridgeshire Claylands*
- *Bedfordshire Greensand Ridge*
- *East Anglian Chalk*
- *Kesteven Uplands*
- *Northamptonshire Vales*
- *Rockingham Forest*
- *South Suffolk and North Essex Clayland*
- *The Brecks*
- *The Fens*

Source: Natural Capital Solutions (2024)

In the west, the Bedfordshire and Cambridgeshire Claylands are a broad, gently undulating, lowland plateau dissected by shallow river valleys that gradually widen as they approach the Fens in the east.

The river Great Ouse and its tributaries meander across the landscape. While this is predominantly an arable and commercially farmed landscape, a wide diversity of habitats are also present, including: Grafham Water **SSSI**, noted for its wintering birds and passage migrants; ancient woodland at Monks Wood National Nature Reserve noted nationally for its rich insect fauna; and flood meadows at Portholme **SSSI** which are still traditionally managed as per the historic common 'lammas' system[16].

The East Anglian Chalk covers a large swathe of the south of the county. It is characterised by rolling chalk hills with large regular fields enclosed by low hawthorn hedges, few trees, straight roads and expansive views to the north.

The chalklands are crossed by internationally important **chalk streams** in the gentle valleys of the rivers Granta and Rhee which converge to form the Cam just south of Cambridge. Large-scale cereal production dominates, with small fragments of botanically rich grasslands such as those found at Gog Magog Golf Club **SSSI**, and Devil's Dyke **SSSI**[17].

Did you know?

National Character Areas – 159 Character Areas have been established by Natural England, covering the entirety of England.

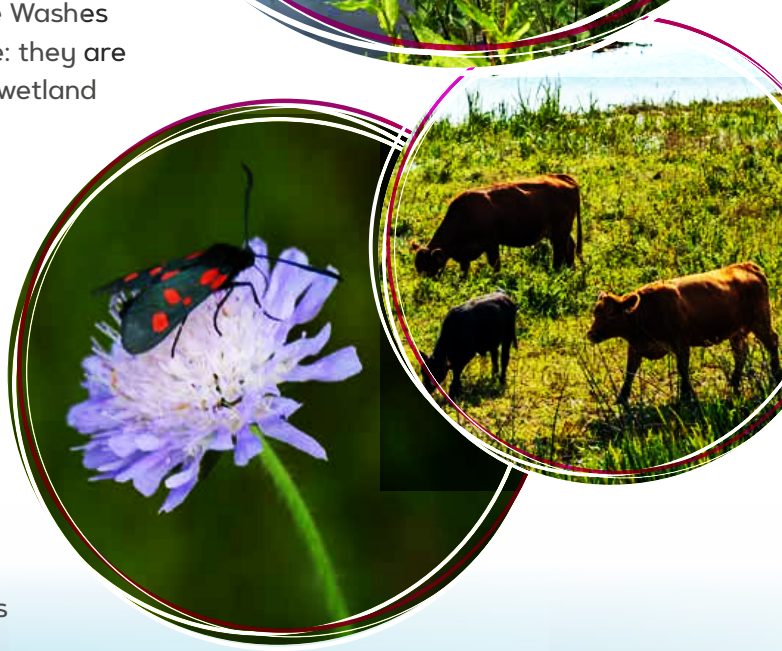
Each area represents a distinct and recognisable region based on landscape features rather than county or district boundaries.

In the north and east, the Fens form a distinctive, historic and human-influenced arable landscape. It is a large, low-lying, predominantly flat landscape with an intricate network of drainage ditches, dykes and rivers that drain towards the Wash.

Much of the land is at or below sea level, relying on pumped drainage and the control of sluices at high and low tides to maintain its use for agriculture.

Public survey feedback
'I love having green spaces on the doorstep; being able to experience nature is vital to good mental health'
East Cambridgeshire resident

Two major rivers in Cambridgeshire drain into the Wash: the Great Ouse and the Nene. Both now have artificial canalised courses that run straight for long distances and are bounded by high banks to contain the watercourse from the lower adjacent fields and settlements. The associated Ouse and Nene Washes are both highly designated reflecting their importance: they are listed as **Ramsar** sites of international importance as wetland habitats, as **Special Protection Areas (SPA), Special Areas of Conservation (SAC)** and **Sites of Special Scientific Interest (SSSI).** They are particularly noted for the large numbers of wildfowl and waders that they support[18].



Toward the borders of Cambridgeshire and Peterborough lie small parcels of neighbouring NCAs which contribute to the mosaic of habitats and to cross-boundary connectivity with the wider nature network. These include the Lincolnshire and Rutland Limestone and Rockingham Forest in the north-west, the Bedfordshire Greensand Ridge in the south-west, and the East Anglian Plain and Brecklands in the south-east.

Protected sites

Internationally important nature sites

The area has eight internationally important European designated nature sites which are either Ramsar sites, Special Area of Conservation (SAC) or Special Protection Areas (SPA).

Ouse Washes Ramsar, SAC, SPA (338 hectares, 2499 hectares)

- designated for its internationally important numbers of breeding and wintering waders and waterbirds, and in particular breeding Black-tailed Godwit, Snipe, Ruff, Shoveler, Gadwall and wintering Whooper Swan, Bewick's Swan and Wigeon.
- designated for its population of Spined Loach.

Nene Washes Ramsar SAC, SPA (88 hectares, 1520 hectares)

- designated for its internationally important numbers of breeding and wintering waders and waterbirds, in particular breeding Black-tailed Godwit, Shoveler, Garganey, Gadwall and wintering Bewick's Swan, Wigeon, Teal, Shoveler, Pintail and Gadwall.
- designated for its population of Spined Loach.

Fenland SAC (619 hectares)

- designated for calcareous and other fen types, with Spined Loach and Great Crested Newt also as qualifying features.
- includes Wicken Fen, Woodwalton Fen and Chippenham Fen national nature reserves.
- supports a wide range of nationally and locally rare species.

Orton Pits
SAC (141 hectares)

- designated for the largest known breeding population of Great Crested Newts.
- designated for its nutrient-poor water bodies supporting populations of stoneworts, including the main UK population of Bearded Stonewort.

Portholme
SAC (91 hectares)

- designated as the largest lowland hay meadow in the UK.

Devil's Dyke
SAC (8 hectares)

- designated for its orchid rich calcareous grassland.

Barnack Hills and Holes
SAC (23 hectares)

- designated for its orchid rich calcareous grassland.

Eversden and Wimpole Woods
SAC (66 hectares)

- designated for its Barbastelle bats maternity colony, feeding area and foraging flight paths.

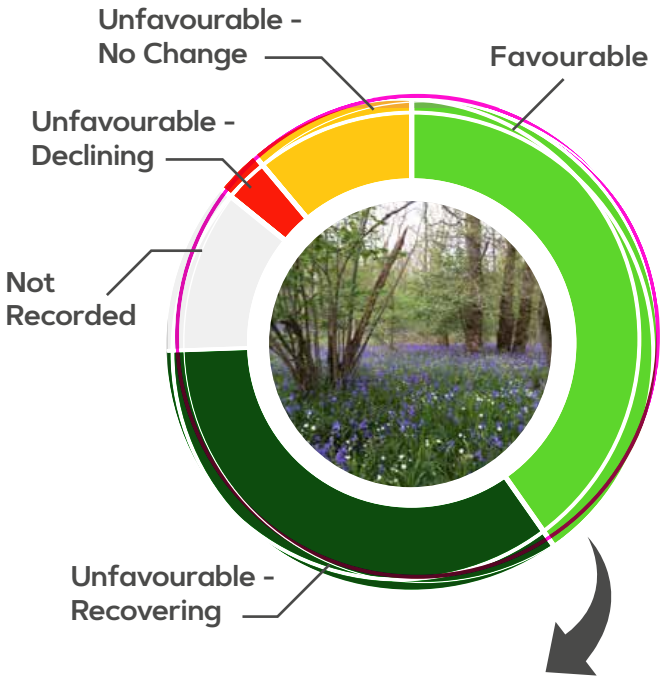
Nationally designated sites

Sites of Special Scientific Interest (SSSIs) are our most valuable sites for nature and include the international sites listed above. They cover the full range of habitats from ancient woodlands, species-rich grasslands, fens, lakes and wetlands and geological sites. They cover 8,800 Hectares, approximately 2.6% of our area.

Our largest sites outside the international sites are:

- **Bedford Purlieus** (214 hectares).
- **Brampton Wood** (132 hectares).
- **Cam Washes** (166 hectares).
- **Castor Hanglands** (89 hectares).
- **Grafham Water** (806 hectares).
- **Holme Fen** (269 hectares).
- **Little Paxton Pits** (127 hectares).
- **Monks Wood** (169 hectares).

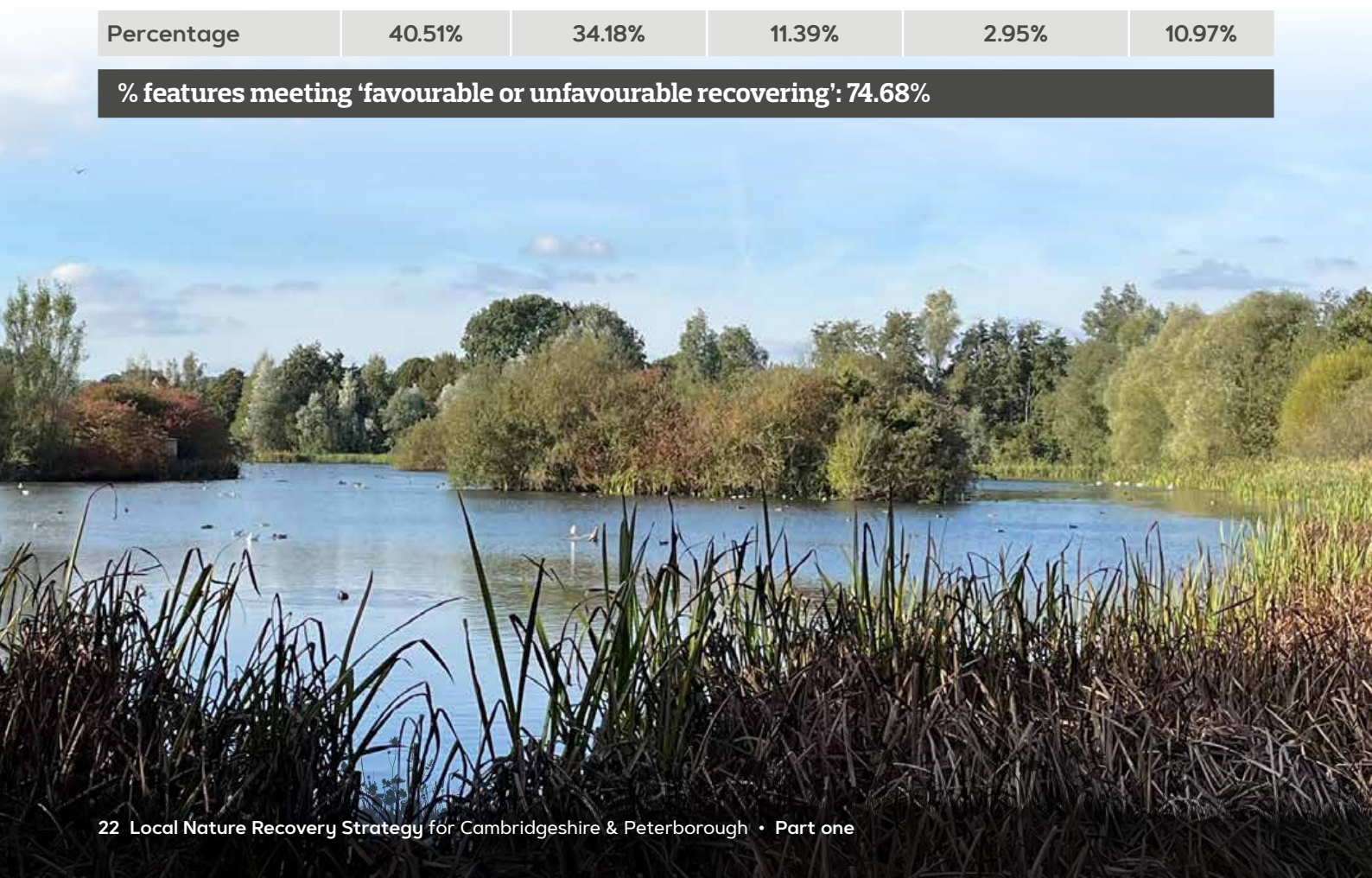
	Sites
Total Number	99
Total Area (ha)	8,808.45
Number of features	237



A summary of the condition of SSSIs across Cambridgeshire and Peterborough is shown here:

	Favourable	Unfavourable - Recovering	Unfavourable - No change	Unfavourable - Declining	Not recorded
Number of features	96	81	27	7	26
Percentage	40.51%	34.18%	11.39%	2.95%	10.97%

% features meeting 'favourable or unfavourable recovering': 74.68%



Local Nature Reserves and Local Wildlife Sites

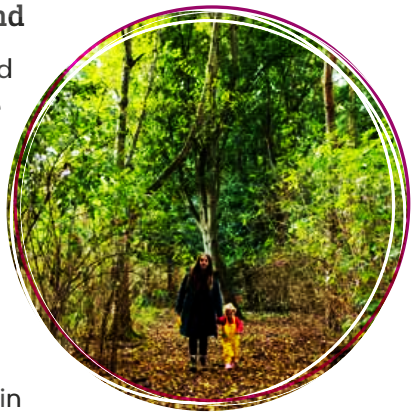
There are over 500 **local wildlife sites** and 34 **local nature reserves** in Cambridgeshire and Peterborough. These cover approximately 2.8% of the land area.

In 2024 only 41.4% of sites in Cambridgeshire were in positive management. The figures varied considerably with from Cambridge with 62.5% of sites in positive management to the rural districts of East Cambridgeshire, Fenland and Huntingdonshire with between 32-36% of sites in positive management.

Peterborough however had a much higher proportion of sites in positive management at 78.6%, reflecting the greater effort put into assessing sites and providing information and support to landowners through a partnership between Peterborough City Council and the Wildlife Trust Bedfordshire, Cambridgeshire and Northamptonshire.

Priority habitats

Trees and woodland



Cambridgeshire and Peterborough have approximately 16,300 Ha of woodland which equates to 4.8% of the land area. This is one of the lowest proportions of woodland cover in England. However, since the middle of the 20th century there has been an 85% increase in woodland cover.

The total area of ancient woodland is however only 2,886 hectares (0.8% of the area). This includes 1,876 hectares of semi-natural ancient woodland and 992 hectares of planted ancient

woodland sites (with most of the planting in the 20th century post-World War Two).

There are five main clusters of ancient woodlands:

- **west of Peterborough** including Bedford Purlieus and Castor Hanglands.
- **along the fen-edge** including Monks Wood and Aversley Wood.
- **In a ring around Grafham Water** including Brampton Wood, Perry Wood and Little Paxton Wood.
- **west of Cambridge** including Hayley Wood, Gamlingay Wood, Waresley and Gransden Woods, Eversden Wood and Kingston Wood.
- **In the south-east of Cambridgeshire** including Out and Plunder Woods, Lower Wood and Langley Wood.

Ash woodlands are the dominant type reflecting the chalky boulder clay soils on which most semi-natural woodlands are found. These include woods in the south-east and south-west of the county with Oxlip, a species restricted to parts of Cambridgeshire, Suffolk and Essex. However, with the advent of Ash dieback, the future for our ash woods is highly uncertain. While the areas will remain wooded, tree cover will reduce significantly in the short-term with significant changes to tree species composition likely in the future.

Did you know?
Cambridgeshire and Peterborough have approximately 16,300 Ha of woodland which equates to 4.8% of the land area

Huntingdonshire and Cambridgeshire were renowned for their Elm woods and large field boundary Elm trees prior to the ravages of Dutch Elm Disease from the 1970s onwards. However, there are several surviving Smooth-leaved Elm woods which are nationally significant. There are also a few historic parklands with veteran **pollarded** Elm trees. Elms also form a substantial proportion of hedgerow trees in the county, and green lanes and fenland **droves** lined by elms are a unique feature of parts of the county. Elms are host to a suite of **invertebrates** which have become restricted with the decline in elm abundance.

Veteran willow pollards alongside rivers and floodplains, particularly in the Fens and along our river valley, provide unique features vital for biodiversity.

Cambridgeshire is also known for its traditional orchards, with examples concentrated on the fen edge of South Cambridgeshire, in south Huntingdonshire, and particularly west and north-east of Wisbech.

Grasslands and other open habitats

The Great Ouse Valley is renowned for its lowland flood meadows between St Neots and Earith. Port Holme is the largest lowland flood meadow in England. Other examples include St Neots Common, the Hemingford Meadows and Houghton Meadows. These flower-rich habitats support nationally scarce and threatened species such as Narrow-leaved Water Dropwort. Species-rich examples are also known to store high levels of soil carbon.

Chalk downlands once occurred extensively across the chalk in the south of Cambridgeshire from Royston to Newmarket. They are the most flower-rich habitats in England and can support up to 40 plant species per square metre. However, the flat and rolling terrain has resulted in most of the area becoming arable farmland and chalk grasslands are now restricted to relatively small areas including ancient monuments (Devil's Dyke, Fleam Dyke, Roman Road), parish chalk pits and road verges. There are more extensive chalk grasslands around Newmarket on the gallops used for racehorse training, but their management restricts their species richness and habitat quality.

There is a suite of species-rich limestone grasslands west of Peterborough including Barnack Hills and Holes National Nature Reserve and various sites around Southorpe. These support species such as Pasqueflower and Man Orchid.

Lowland meadows are scattered throughout the claylands, but most remaining examples are small, isolated sites and they are often suffering from under management or used for pony grazing and over-grazed.

In the far east of the county, on the Breckland edge there are a few sites supporting acid, sandy grasslands, usually former sand and gravel quarries. These support a specialised suite of plant and **invertebrate** species associated with bare ground and disturbed conditions. These species also occur in some of the sand and gravel pits in the Fens.

Wetlands

With the drainage of the Fens basin and conversion of the largest wetland in England to farmland from the 17th century onwards, only four remnant fen sites survived at Wicken Fen, Woodwalton Fen, Holme Fen and Chippenham Fen. These fens, fen meadows and other wetlands are the most species-rich habitats in Cambridgeshire supporting a rich array of fen plants and wetland **invertebrates** including large numbers of threatened, rare and scarce species. More species have been recorded from Wicken Fen than any other site in Britain.

Did you know?
Although the current network and mechanism for the drainage of the Fens basin were constructed from the 17th Century onwards, many of the channels date from Roman and medieval times

In spite of the drainage of the Fens, some drainage ditches remain rich in relic fen plant and **invertebrate** species, particularly where the water quality is good. This usually arises where the water sources come from underlying peat, sand, gravel or chalk geology. These drains provide potential stepping stones and refuges for these relic fen species away from the main fen sites. However, most of the drainage ditch network suffers from poor water quality and high nutrient levels, limiting plant and invertebrate species richness.

The inter-connected network of drainage ditches, particularly the Internal Drainage Board drains support a nationally significant population of Water Voles, as water quality is less of a constraint to this species.

The large washlands through the Fens at the Ouse Washes and Nene Washes are an integral part of the drainage system and support extensive areas of wet grassland and other floodplain wetland mosaic habitats. These in turn support internationally important numbers of wetland birds and the ditch networks support a suite of fen aquatic plants and **invertebrates.**

Elsewhere in the County, other fen and fen meadow sites are associated with chalk springs and streams in the south of the county, such as Shepreth L-Moor, and limestone to the west of Peterborough, such as Sutton Heath and Bog, and Whitewater Valley.

These are generally small, with neighbouring land uses and water abstraction putting added pressure on the species for which they are noted.

Parts of the chalk landscape hold concentrations of temporary pools on bare chalk which support specialist species such as Grass-poly and Fairy Shrimp.

Chalk streams are internationally important with England supporting 85% of the world's resource of this habitat. In Cambridgeshire they mainly occur in the Upper Cam Catchment and include the tributaries of the Rhee (Mill River, Mel, Shep and Hoffer Brook), the River Granta, Hobson's Brook and Cherry Hinton Brook. The Wilbraham River flows to the lower Cam as do the lodes through the South Level, which although man-made are fed by water from the underlying chalk aquifer. In the east the River Snail is a **chalk stream** before it joins the Soham Lode.

All of our **chalk streams** have been significantly changed by past river engineering and drainage works as well as other modifications to create mill races or ornamental lakes. However, they still support populations of species including Brown Trout, Brook Lamprey, Water-Crowfoots and **chalk stream invertebrates** such as mayflies and stoneflies.

Major river restoration work is required to return our local **chalk streams** to a more natural character, but this will also depend on reduced water abstraction from the underlying aquifer to restore more natural flow levels.

Our other rivers and their tributaries have been significantly changed for navigation, drainage or both. They have often been straightened, over-deepened and widened, with a disconnect between the river and floodplain. Although the rivers are often degraded, high quality habitats survive within the backwaters and on the floodplains of the larger rivers.

Cambridgeshire and Peterborough contain several habitats with types of species that are rare or absent elsewhere in Britain (and Europe).

These are listed below:

Nationally rare habitats which are unusually well represented in the county

- fens
- fen meadows
- fen ditches
- chalk streams
- seasonally flooded chalky pools (grass-poly, fairy shrimp etc)
- flood meadows
- chalk downland
- smooth-leaved Elm woods
- oxlip woods
- parkland with veteran pollarded elms
- traditional Orchard
- fen droves with elms

Iconic, notable and important species

Mammals

Cambridgeshire contains an important population of Barbastelle Bats associated with the parkland and ancient woodlands around Wimpole, with smaller populations in nearby woodlands.

The fens support a nationally important population of Water Voles, that has the potential to spread into many of the major rivers of middle England.

Birds

The washlands of the fens are home to the only regular breeding populations of Black-tailed Godwit in Britain, the most frequent site for breeding Ruff, and internationally important numbers of wetland birds visiting in winter, including Whooper Swan, Bewick's Swan, and Wigeon.

The creation of reedbeds at Ouse Fen post sand and gravel extraction will create over 700 hectares of reedbed and the local Bittern population is likely to grow to become nationally important.

Amphibians and reptiles

The largest known population of Great Crested Newts in the world is present at Orton Pits, south of Peterborough. The species is widespread through the claylands of the west and central southern parts of the area.

Fish

The fens support important populations of European Eel and Spined Loach.

Invertebrates

Despite the very small area of surviving habitats, the **Fens** is uniquely rich in wetland invertebrates, supporting around 10,000 species, over a quarter of British fauna. These include rare and threatened species in every habitat: European threatened species such as Desmoulins's Whorl-snail and Rosser's Sac-spider in sedge-beds, the only British populations of Twin-spot Longhorn Beetle in willow woodland, Tansy Beetle in fen

meadows (otherwise known from the Ouse Valley (near York), Reed Leopard Moth (here and in the Broads), and important populations of Norfolk Hawker Dragonfly, Large-mouthed Valve Snail and several rare water-beetles in fen ditches. The Great Ouse and New Bedford River are two of only three rivers where the rare Witham Orb Mussel has been recorded.

Cambridgeshire **woodlands** support insects which are rare elsewhere. Our elms host around 90% of the British population of White-spotted Pinion moth, in addition to the more widespread White-letter Hairstreak butterfly. Ancient woodlands have a very rich insect fauna, among the best-known of which is probably Black Hairstreak butterfly - around a quarter of the British populations of which occur in the county.

Cambridgeshire's grasslands support a diverse insect fauna, though the rarest and most threatened species, such as the metallic-blue seed-eating ground-beetle Ophonus puncticollis, are mainly associated with disturbed habitats on chalk.

Plants

Cambridgeshire holds significant numbers of Elm species, five of which are confined globally to the county. It represents one of the hotspots in the UK for both diversity and abundance of elms, which support rare **invertebrates** and the elm-dependent lichen Bellicidia imcompta. Our ancient woodlands in the south-west and south-east of the county support species such as Oxlips that are otherwise found only in Suffolk, Essex and Norfolk. Woodland edge habitats in Cambridgeshire hold around half the UK Crested Cow-wheat population.

Three fen plant species - Cambridge Milk-parsley, Fen Woodrush and Fen Ragwort are confined to Cambridgeshire, as is the fen subspecies of Heath Dog-violet. Several other wetland plants are extremely rare elsewhere, such as Fen Violet and Water Germander,

The unique brackish-water habitats of the Peterborough clay-pits are of European significance for their stonewort populations, including the stronghold for Bearded Stonewort in Britain.

Our chalk grasslands support species associated with a drier, more continental climate such as Moon Carrot and Great Pignut, which are known from only two or three other counties. Orchid-rich grasslands were for decades the national stronghold of Lizard Orchid, currently expanding into new areas. Important populations of Pasque flower and Rare Spring-sedge still survive in the county, together with the only lowland population of Mountain-everlasting in England.

4

Challenges and opportunities

Challenges and opportunities

Over the last century, changes in land use across Cambridgeshire and Peterborough have led to significant habitat loss, with remaining habitats becoming smaller and more fragmented.

The area is one of the driest in the country with the lowest rainfall, whilst also being at greatest risk of flooding. Both issues are likely to worsen with the impacts of climate change.

The following are key challenges specific to Cambridgeshire and Peterborough:

- **rising sea levels due to the changing climate and how this is being managed.**
- **the importance of the remaining lowland peat soils and limiting CO2 and methane emissions from agriculture.**
- **providing space for nature within our farming and food production system.**
- **how water is managed and the current impacts of over-abstraction on wetlands and chalk streams.**
- **water quality and excess nutrients, adversely impacting aquatic ecosystems and wetland habitats.**
- **the impact of major infrastructure such as new housing, employment sites and major transport schemes.**
- **the rising population and lack of large areas of downland, forest, or commons to provide natural green space for local communities.**
- **the fragmentation and low percentage land cover of natural habitats**

There are however also new opportunities to better integrate nature into how we build settlements and infrastructure and practice farming and food production. There are also the wider benefits of nature recovery, not just for habitats and species, but for our economy and quality of life.

Did you know?
Fenland SOIL is a not-for-profit organisation that aims to develop farm policies to help achieve climate change mitigation and improved biodiversity within the Fenland region.

Each of these challenges and associated opportunities are considered by the following sectors.

Arable farming and lowland peat

The extent and condition of peat in Cambridgeshire is currently unknown, although there are projects looking to establish this being conducted by the Fens East Peat Partnership and **Fenland SOIL.** As set out in the England Peat Action Plan (2021), Natural England is working on a new peatland map. Future iterations of the LNRS should take account of this peat data once it is available.

There are growing efforts to monitor farming on peat soils to ensure soils are protected alongside healthy sustainable farm businesses. **Fenland SOIL** projects engage with farmers to encourage **regenerative** farming practices that reduce soil disturbance and carbon release, while maintaining the primary purpose of food production.

Soils on the fens are at risk of wind erosion, which can be a major problem during prolonged dry spells. Re-wetting will require large quantities of water, and major water abstraction pressures from agricultural use, public water supply demand and drought from climate change present significant challenges. Holding back water that currently flows out to the sea by encouraging farmers to provide reservoirs on their land or change their flood management strategies and seek to farm in alternative ways, could be two potential solutions. However, interventions need careful consideration on a case-by-case basis.

Projects are underway trialling wet farming techniques to test innovative new viable crops for food, healthcare and industry, and to lock in carbon whilst not increasing methane emissions. **Paludiculture** is the productive use of wet peatlands; a land management technique to cultivate commercially valuable crops on wet or re-wetted peatlands under sustainable conditions. **Paludiculture** is a developing science and trials such as Water Works project led by the Wildlife Trust are seeking to understand whether this will be a viable option for farmers[19]. The outcomes of these trials could present opportunities for nature recovery within Cambridgeshire and Peterborough.

Consultation as part of the production of the LNRS has found that Government **stewardship** incentives are often not appropriate for the type of agriculture practised in the fens. Encouraging and assisting farmers and landowners to change farming practices, where practical and viable, in areas of known peat deposits will be important for climate change mitigation and nature recovery in Cambridgeshire and Peterborough but will require more targeted environmental schemes..

Opportunities for nature recovery in arable farming on lowland peat

- encourage and assist farmers and landowners to change farming practices where practical and viable in areas of known peat deposits.
- look at opportunities to hold water back on farmland through on farm reservoirs or changes in drainage management strategies.
- keep up-to-date with the outcome of wet farming technique trials and work with farmers and landowners to understand and overcome any barriers to implementation.

Nature-friendly Farming

Farmland birds, diverse flora, pollinators and Brown Hare are species typical to Cambridgeshire and Peterborough farmland but have suffered dramatic national declines due to land use intensification. Run-off of excess agricultural chemicals and soil are polluting many watercourses. Many agricultural soils are in a poor condition from decades of ploughing and artificial chemical inputs, with reduced levels of organic matter and a poor structure due to compaction.

Across Cambridgeshire and Peterborough there are farmers demonstrating wildlife-friendly practices such as sensitive hedgerow management,

providing uncultivated margins and headlands, buffering natural habitats, and creating small-scale farm habitats. These help wildlife populations to recover and move through the landscape.

Other farmers are adopting regenerative agricultural techniques to prevent the loss of soil and improve soil quality, and integrated pest management to minimise chemical inputs, whether pesticides or herbicides.

Farm clusters (groups of farmers / land managers working together at a landscape or local scale) are providing valuable support and opportunities for knowledge-sharing and training to increase understanding of the habitats and wildlife present on farms, and how best to protect or enhance wildlife alongside productive farm businesses.

Opportunities for nature recovery in arable farming

- encourage and assist farmers and landowners to adopt nature-friendly farming practices.
- support the adoption of regenerative farming and integrated pest management approaches across the whole farming sector.
- encourage and support farmers to work with their neighbours through farmer clusters to learn together and share knowledge.

Water resource management and aquifer depletion

The drying out of our chalk streams in 2019 and 2022, following previous droughts in the 1990s, is putting significant pressure on the species reliant on these habitats. Many of the spring-fed fens are in a poor condition and several rare species dependent on high ground-water levels and clean spring water have not been recently recorded. Over-abstraction of water from the chalk aquifer for public water supply means that our rivers and wetlands are less resilient to natural drought periods and climate change is likely to exacerbate these threats, with more frequent drought periods in the future.

The current reliance on the chalk aquifer for water supplies across the southern half of Cambridgeshire is unsustainable and already damaging the natural environment. While there are plans for a new fens reservoir to supply drinking water, this will not come on-line until the late 2030s and plans to transfer water from an adjacent region with excess water will not be in place until the early 2030s. In the meantime, our chalk streams and spring-fed wetlands are in a poor condition and continue to decline.

Paradoxically, the internationally important bird populations of the fen washlands are threatened by excess flooding, particularly during their late spring and early summer breeding season. Increased intensity of rainfall events, coupled with improved drainage of agricultural land in the upstream catchment causes larger peak flood flows with increased risk of flooding to communities and habitats downstream.

The Fens' drainage system removes water in winter to protect people, property and land against flooding and maintains water levels in summer for the environment, irrigation and, in places, navigation. Much of the existing infrastructure was put in place to support agriculture but will need upgrades to handle climate change impacts like rising sea levels and heavier rainfall events. The Fens 2100+ partnership and program are developing a long-term plan for managing flood risk in the fens. A 20 – 25year flood and coastal resilience plan will identify more immediate investment needs.

For more information and latest project updates, visit the Fens 2100+ website.

The solutions to drought and over-abstraction on the one hand, and flooding on the other are inter-related. It is not necessarily that there is too little or too much water, it is how we manage the water that is important.

While Cambridgeshire is the driest part of the country, it sits at the lower end of major rivers catchments, and there could be sufficient water if it was stored, rather than the current approach of getting water to the North Sea as quickly as possible. Storing excess winter water in reservoirs or wetlands could support irrigation, public water supply, and groundwater recharge whilst providing environmental benefits. This new approach could benefit people, the economy, and the environment.

There are some short-term solutions. Collection and storage of excess water in winter, through new farm reservoirs or wetlands could provide water for irrigation and even public water supply.

For the Ouse Washes and their internationally important bird populations, there is also a need to store more water in the upper catchment for longer to reduce the volume of flood flows and their peaks particularly during the breeding season. This needs to take place on both farmland and in urban areas. This catchment wide approach could also support the restoration of wetlands on floodplains.

Finally, there is also a need for wider public recognition of the value of water and the need to reduce personal consumption.

Opportunities for nature recovery in water management and aquifer depletion

- promote catchment-scale, nature-based solutions to store more water upstream for longer, including use of farm reservoirs and wetlands.
- work with water companies to ensure new water supply infrastructure considers the impact and opportunities for nature recovery.
- work with the Fens 2100+ project to consider how nature-based solutions can be used to aid management of flood risk.
- promote water saving among the public and support retrofitting of water-saving devices in existing buildings to reduce demand on water supply.
- strongly discourage adding non-porous cover to gardens.

Water quality and excess nutrients

Pollution from agriculture and pollution from agriculture and waste water treatment works works contribute to excess nutrients within our rivers and streams. This in turn affects floodplain habitats as nutrient laden flood waters cause changes to the soil conditions and vegetation. This is contributing to a deterioration in the quality of floodplain meadows habitats such as at Portholme and the floodplain wet grasslands of the Ouse Washes.

Nutrient-rich waters also change the composition of the in-stream aquatic plants and adversely affect sensitive aquatic invertebrate species and some fish species.

Point source pollution needs to be addressed at source with upgrades to sewage treatment works. However, there is also a role for wetland treatment systems creating wetland habitats that take up nutrients, whether downstream of sewage plants or inefficient septic tanks.

Farming practices can significantly reduce diffuse pollution through a mixture of wide habitat buffers such as woodlands or grasslands along rivers and ditches, or across sloping fields. Wetland basins and other natural flood management actions such as leaky dams can also slow the flow and prevent nutrient laden silt entering watercourses.

Opportunities for nature recovery associated with water quality improvements

- upgrade sewage treatment works and install downstream wetland treatment systems at waste-water plants or in catchments with a high number of septic tanks.
- promote catchment-scale nature-based solutions including habitat buffer strips to reduce nutrient and soil run-off from fields.

Major infrastructure

Major transport infrastructure such as the A1(M), A14, A428, the national rail network and guided bus routes create barriers to the movement of wildlife across the landscape. There are however options for reducing habitat fragmentation such as the use of green bridges and tunnels for transport infrastructure.

Major energy infrastructure also takes away space for food production and nature recovery, while wind turbines sited in the wrong location can kill birds and bats. However, designed well, solar parks and other energy infrastructure can support nature recovery by using landscaping and new habitats to buffer and connect existing habitats and ensuring that these are well managed.

Proposals within the LNRS will need to consider how existing physical barriers from major infrastructure can be overcome to allow wildlife to move unimpeded across the landscape within the design, construction and operation of major infrastructure.

Opportunities for nature recovery in major infrastructure

- Consider opportunities for overcoming physical barriers of major transport infrastructure to improve landscape permeability for wildlife and people.
- Adopt best practice in the design and management of energy infrastructure such as solar parks and the siting of wind farms.

Urban expansion and population growth

The rapid and continuing increase in developed land area and associated infrastructure is taking land from food production and reducing space for nature recovery. There are however good practice standards for the provision of Green Infrastructure and the sustainable design of new communities. Well-designed new settlements can contribute to nature recovery and an enhanced sense of place and quality of life. Natural England has published the Green Infrastructure Standards[20]. These have and are being applied to many of the strategic developments taking place. However, strategic developments only account for about half of new development.

Locally, the 2011 Cambridgeshire Green Infrastructure Strategy set out a coherent set of proposals to enhance the quality and increase the provision of strategic Green Infrastructure to meet the needs of all development across the county. Unfortunately, this has not been comprehensively implemented, and the deficiencies in Green Infrastructure provision have continued to grow.

With the increasing population there has been an increase in demand for access to nature and to the countryside. This was further heightened during the Covid pandemic. Many local nature sites are small and suffering adverse impacts from human recreational pressures and declining in quality, due to the lack of large-scale open access downland, forests or commons for people to visit.

The Cambridge Nature Network identified a vision and locations for the provision of large-scale strategic natural areas of downland, forest and fen to support the future sustainable growth of Cambridge. In the John Clare Countryside, west of Peterborough, partners are exploring how best to meet the demand for increased access to the countryside in a way that respects the natural environment.

In recognition of this local councils in Greater Cambridge and Peterborough are reviewing their approach to Green Infrastructure needs and provision through their Local Plans. The more rural districts also need to review green infrastructure provision associated with the growth of their market towns.

Opportunities for nature recovery in and around urban areas

- ensure the LNRS and local Green Infrastructure strategies inform one another and Local Plans to deliver large-scale nature recovery and accessible countryside where possible around our towns and cities.
- implement best practice Green Infrastructure design and provision through all new developments.
- identify opportunities to create, expand and connect natural and other green spaces within urban areas to address the shortage of greenspaces.
- identify improvements to the Rights of Way network to encourage active travel, and enhance wildlife corridors through, between, and around urban areas.
- to encourage people to adopt nature friendly gardening and contribute towards the nature recovery.

Public survey feedback

'I am concerned that our urban gardens are not wildlife friendly' *East Cambridgeshire Resident*

Habitat fragmentation and low percentage habitat cover

Cambridgeshire and Peterborough is a rural area with around 80% of the land farmed, most of which is arable. Urban areas cover another 11% of the county. The remaining natural habitats cover less than 8% of the area and are highly fragmented.

Applying the Lawton Principles to this situation is challenging and could potentially result in a scattergun approach. To effectively deliver nature recovery these principles must be applied in a way that responds to this landscape fragmentation.

Public survey feedback
'Urban restoration is the best chance for people to see nature in their daily lives'
Public survey respondent

Ecological principles suggest that within a particular geographical area, nature recovery and the re-building of species richness and abundance has a greater chance of success where at least 30% of the land area comprises high value habitats[21].

However, it is neither possible nor desirable to achieve 30% land cover of high-value habitats over the whole of Cambridgeshire and Peterborough because of the importance of farming the continued growth in urban areas and other constraints.

However, there are parts of the LNRS area with higher concentrations of habitats.

Several studies (see list opposite) have mapped habitat networks across the LNRS area and identified those local landscape areas which provide the best opportunities for re-building a resilient nature network:

- Natural Cambridgeshire's six priority landscapes[22]
- John Clare Countryside habitat network mapping
- Great Ouse Valley habitat network mapping
- West Cambridgeshire Hundreds habitat network mapping
- Cambridge Nature Network[23]
- East Cambridgeshire Interim Nature Network[24]
- Fenland Interim Nature Network[25]
- Huntingdonshire Interim Nature Network[26]

The local landscape areas identified as priorities for nature recovery have been termed **priority natural landscapes.**

These local landscape areas provide a realistic opportunity for achieving at least 30% habitat cover and are the best areas for applying the Lawton Principles across Cambridgeshire and Peterborough and to focus nature recovery in the short and medium-term.

Opportunities for nature recovery to address habitat fragmentation

- focus nature recovery opportunities within the priority natural landscapes identified through nature network mapping to achieve approximately 30% land cover of high value habitats within these localised areas.

The impacts of climate change

Climate change is the greatest threat to terrestrial and freshwater habitats. Our warming climate is already having dramatic impacts on nature.

Species distribution patterns are being altered and food webs and life cycles disrupted. The impacts of climate change on food production and crop choices could place additional stresses on the natural environment. We are currently headed for nearer 3oC than 2oC warming by the end of the century.

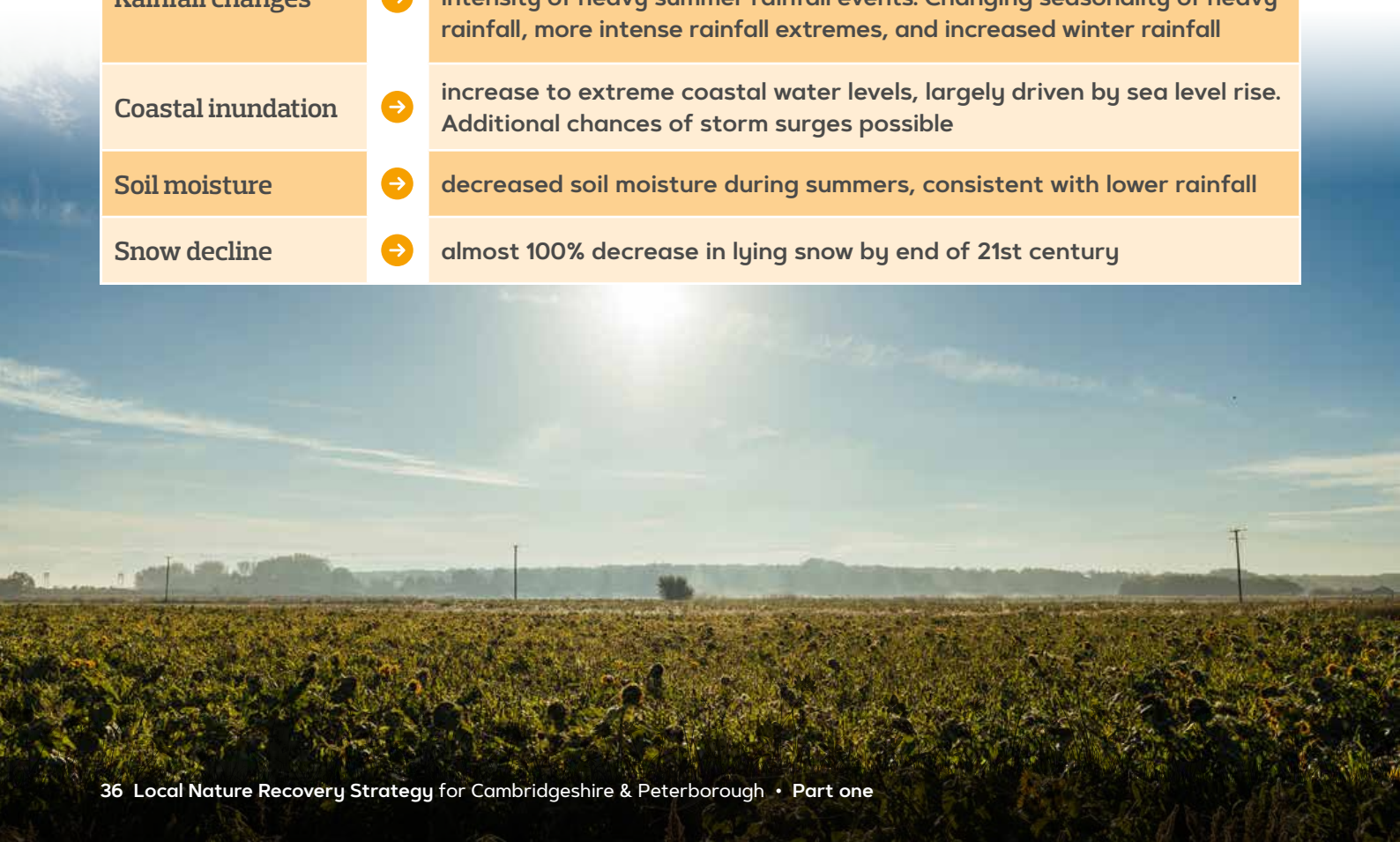
With these changes there is likely to be increased risk of prolonged droughts, increased flooding and a growing threat of wildfires. Pests, diseases and invasive non-native species might spread in unpredicted ways. The impact of sustained severe weather events, multiple extreme events, and record-breaking seasons poses significant risks to our natural environment.

The UK Climate Change Risk Assessment[28] has identified threats to terrestrial and freshwater habitats and species as one of eight priority risks facing the country. Other priority risks included soil health, natural carbon stores and sequestration, and crops, livestock and commercial trees. This means half the country's priority risks are linked in some ways to the wellbeing of our natural environment.

Species adapted to current climate conditions are likely to see their geographical range change. For some species this will increase, while for others such as bluebell,l it will decrease, but with a general northwards movement in suitable conditions for many.

The UK national climate projections[27] suggest the following headline figures:

Warming trend	all areas of the UK will be warmer by the end of 21st century
Seasonal change	increased chance of warmer, wetter winters and hotter, drier summer
Extreme weather	increased frequency and intensity of extreme weather events
High temperatures	hot summers become more common, with increased hot summer days and more frequent hot spells
Rainfall changes	overall trend is for drier summers, alongside future increases in the intensity of heavy summer rainfall events. Changing seasonality of heavy rainfall, more intense rainfall extremes, and increased winter rainfall
Coastal inundation	increase to extreme coastal water levels, largely driven by sea level rise. Additional chances of storm surges possible
Soil moisture	decreased soil moisture during summers, consistent with lower rainfall
Snow decline	almost 100% decrease in lying snow by end of 21st century

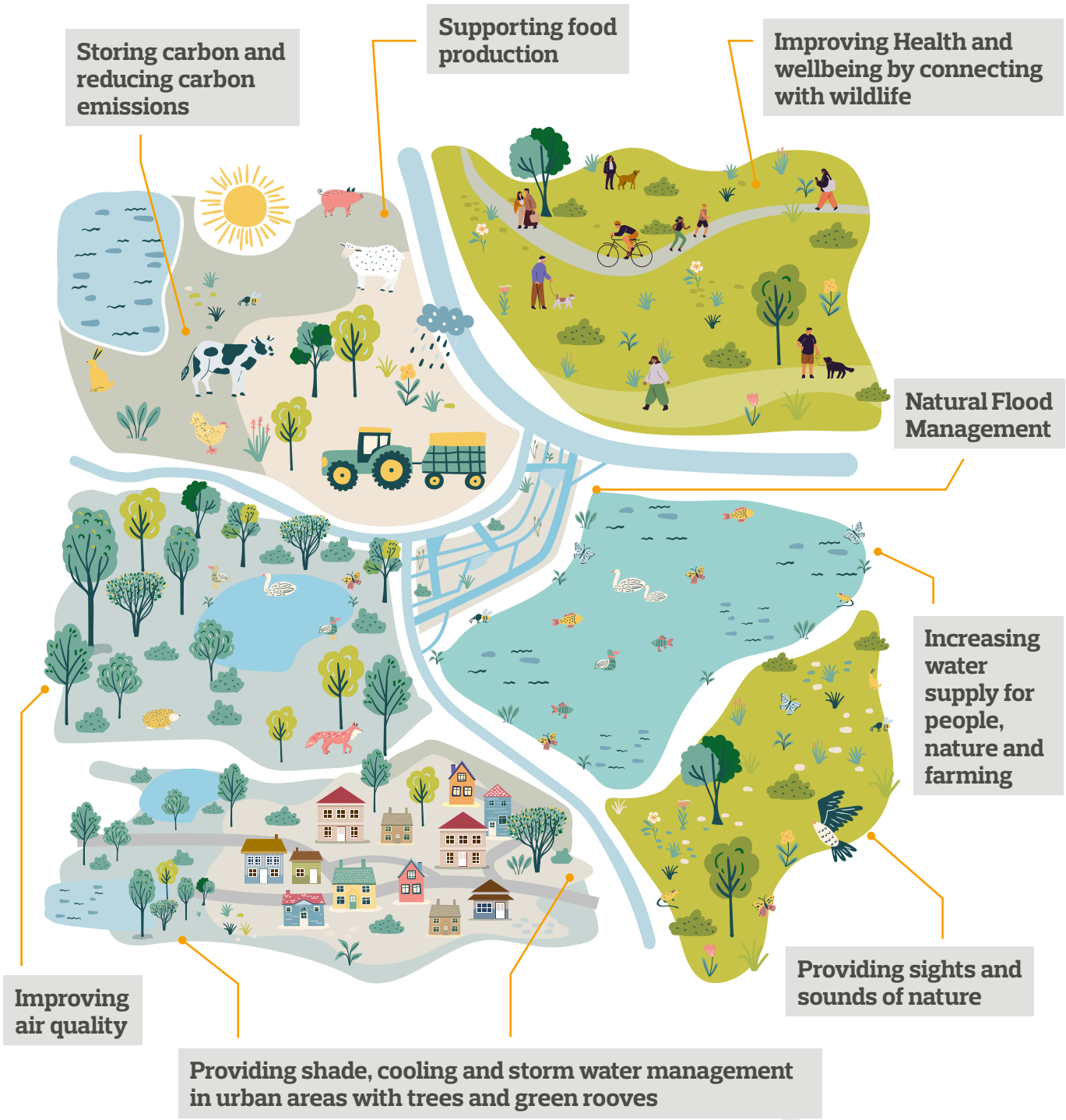


Adapting to climate change

Working with nature and supporting nature recovery is one of our best options for mitigating climate risk. **There are two ways that action for nature recovery can support mitigation and adaptation to climate change.**

1. **nature-based solutions:** to support climate and nature goals: Using ecosystem and habitat restoration to reduce impacts such as drought, flooding and extreme heat through the natural processes and ecosystem services that nature provides..
2. **support nature to adapt to climate change:** Reducing the impact of climate change on biodiversity and increasing resilience through building a resilient nature network to allow species to move in response to the changing climate.

Nature-based solutions (NbS)



Nature-based solutions are solutions to problems faced by society that are provided by the natural environment. These can range from the carbon stored in peatland, to flood management provided by wetlands, to the cooling and shading from urban trees. Critically they must provide both benefits to human well-being and biodiversity. They are a way of supporting nature's recovery in a way that creates other benefits to society and the economy.

There is an increasing demand from public and private sectors for nature-based solutions. Standards such as the woodland carbon code, peatland carbon code, and biodiversity net gain metric are delivering nature-based solutions in a verifiable and measurable way. Further market-led developments are expected to bring private finance to support nature-based solutions over the next few years.

Opportunities for nature-based solutions locally include:

- **carbon emission reductions and sequestration:** Most habitat creation will offer carbon sequestration – the absorbing and storing of carbon - whether in the vegetation or soils. Protecting the lowland peat soils in the Fens from further erosion is the biggest opportunity locally to reduce carbon emissions.
- **natural flood management:** Holding more water back in upper catchments, particularly on clay soils, through the use of new wetland areas, leaky dams and woodland planting helps to reduce flooding downstream. The naturalisation or "re-wiggling" of rivers, improving channel structure and reconnecting rivers to floodplains provides more wetland habitats as well as reducing flood risk.
- **improved water quality:** Many of our water bodies are in a poor state due to pollution. Wetlands can help clean water as can buffer strips and woodland along watercourses.
- **water supply & aquifer recharge:** Wetlands and other habitats on the chalk can help to retain rainwater and runoff from fields and allow it to percolate back into the soil to recharge the aquifer.
- **food production:** Nature can support food production by providing habitats to support larger populations of pollinators and predators of crop pests.
- **urban nature-based solutions:** These can help to improve the liveability of our towns and cities as well as improve health and wellbeing. Street trees and vegetation can improve air quality, provide shade, reduce heating, and support wildlife to bring the sights and sounds of nature closer to people. These can encourage physical exercise and improve mental health.

Restoring natural processes to our land and water management can be more cost effective by requiring less human intervention in the longer-term. The use of more extensive or natural grazing regimes, allowing natural regeneration of woodland and the re-naturalisation of rivers are all examples of working with nature. However, doing this requires more space for nature to allow species to adapt. It is also messier, creating more varied habitats and mosaics of habitats that change in space and time.

Opportunities for promoting more natural processes locally include:

- restoring lowland peatlands so they are better able to absorb carbon.
- using a mix of free-roaming grazing animals at a low density to create dynamic mosaics of flower-rich grassland and scrub or wood pasture and provide high quality meat and lower emissions from the animals..

Continued from previous page

- managing woodlands so they have a greater diversity of habitats including open spaces, a dense shrub layer and lots of deadwood. Introducing grazing animals into larger woods and keeping deer populations at levels where they do not prevent regeneration of trees.
- creating new woodlands and areas of scrub through natural regeneration and promoting natural regeneration in existing woodlands.
- restore rivers to a more natural state by 're-wiggling', reconnecting rivers to floodplains, creating more varied river channels and restoring floodplain and river edge habitats..

In many areas the existing farming or other land uses will restrict what can be achieved in terms of re-instating natural processes. However, there are still opportunities to undertake more traditional small-scale conservation on all productive farmland and within our urban areas.

Supporting nature to adapt to climate change: the most important response to climate change for mobile species, such as birds and mammals, is to ensure an ecologically connected landscape, that enables them to move in response to a changing climate.

However, for less mobile species, particularly some invertebrates and plants, specific habitat management actions and larger sites with more varied habitats may be needed to increase their chances for survival.

The application of the Lawton Principles is critical to providing space for nature to adapt to climate change.

Restoring nature: a way forward

There are multiple competing demands for how we use land, especially here in Cambridgeshire and Peterborough. This LNRS has been written so that other competing demands can be accommodated alongside gains for nature, including:

- maintaining our status as the 'breadbasket' of England.
- enabling much needed new homes, businesses and infrastructure to be provided where they are needed most.
- reducing our carbon emissions, as we contribute to minimising global climate change.
- preserving and enhancing clean and adequate flows in our water courses.

There are two key approaches underpinning nature recovery:

1. the Lawton Principles: Better, bigger, more, and joined
2. natural capital and ecosystem services

Source: Lawton (2010) Making Space for Nature

The Lawton Principles highlight the need for a more coherent and resilient ecological network by improving habitat quality, expanding nature sites, increasing connectivity, and promoting nature-friendly land use.

These principles have formed the basis for identifying the opportunities for nature recovery in this LNRS.

Natural capital and ecosystem services

Ecosystem services are the services that nature provides when it is functioning as it should. Damage to nature means our natural environment is less able to provide the many services upon which we depend.

Natural capital is the 'stock' of natural resources (for example, plants, animals, air, water, soils, minerals). From this stock, we receive ecosystem services such as healthy soils, crops, pollination, timber, clean air, clean water, and so on. **Ecosystem services is shown diagrammatically below.**

Source: https://www.southdowns.gov.uk/wp-content/uploads/2018/04/Core-05-Ecosystem-Services-Background-Paper-April-2018.pdf

A Natural capital assessment was undertaken for Cambridgeshire and Peterborough in 2022. This study found:

- woodlands and some of the fenland nature reserves had the highest capacity to provide ecosystem services.
- river corridors were highlighted as particularly effective at bringing habitats delivering high levels of ecosystem services right into the heart of urban areas, especially in Peterborough, Huntingdon and St Ives.
- most land (81.7%) in Cambridgeshire is in poor condition, primarily due to the predominance of arable and improved grassland habitat, and the extent of domestic gardens and amenity grassland.
- most of the Ouse Washes is also considered to be in poor condition.
- the total monetary value of public benefits provided by greenspaces each year was estimated to be a minimum of £377 million.
- the vast majority of opportunities to improve water quality by reducing soil erosion are located adjacent to watercourses and are found predominantly in the fens and claylands.

Understanding the ecosystem services provided by habitats in Cambridgeshire and Peterborough has helped in the prioritisation of nature recovery opportunities.

Did you know?
Natural Capital Assessment – a method for quantifying the total value of natural capital (resources such as water, air and soil quality) within a region.

The information provided in Part 1 of the Local Nature Recovery Strategy provides the context and background to the priorities and actions set out in the following Part 2.

Nature Recovery in Action

Working together we can bring about Nature's Recovery, in spite of the challenges we face. In Cambridgeshire and Peterborough, it is thought that we started to turn the tide in habitat loss about 2000.

Since this time more habitats have been created than lost, whether new woodlands, natural greenspaces in new developments or large-scale wetland restoration schemes in the Fens and through restoration of mineral sites.

Great Fen

Location: Between Huntingdon and Peterborough, centred around Woodwalton Fen and Holme Fen

The aim is to restore nature at scale to increase biodiversity, access to nature and reduce carbon emissions.

The Great Fen is a partnership between the Wildlife Trust BCN, Natural England, Middle Level Commissioners, Huntingdonshire District Council and Environment Agency. The Wildlife Trust and Natural England now own over 60% of the land. Over the first 20 years, relatively small-scale wetland creation has taken place, limited by the need to protect neighbouring farmland from flooding. However, over the next five years, two farms adjacent to Woodwalton Fen will be completely re-wetted. In future, further areas will be re-wetted as farm tenancies come to an end.

The Great Fen has also been involved in several major research projects looking at lowland peat and the potential to reduce carbon emissions in the Fens. The Great Fen initiated a trial paludiculture (wet farming) project and this has been the catalyst for the farming sector to explore the potential for wet farming in the Fens and alternative farming systems that will significantly reduce carbon emissions.

Community engagement has been at the heart of the project from the outset, introducing new audiences to nature, as well as connecting with the local population to explore the benefits of nature recovery at the Great Fen to them.

Find out more at www.greatfen.org.uk

Did you know?
The Great Fen is a long-term initiative to create 37 square kilometres of new wetlands, meadows and woodlands, connecting, buffering and expanding the nationally important wetlands of Woodwalton Fen and Holme Fen.

Wicken Fen

Location: Between Cambridge and Wicken, based roughly on the Swaffham Internal Drainage Board district but not limited to it.

Our vision is an expanded area of fenland that contains a network of wildlife-rich habitats.

Did you know?
The Wider Wicken Vision is an ambitious 100-year plan covering 5,300ha between Wicken Fen and the edge of Cambridge. Our aim is to increase biodiversity, reduce carbon emissions, and increase access to nature.

Working in partnership with stakeholders and landowners this landscape will buffer and protect Wicken Fen, one of the UK's most biodiverse sites and one of the last remaining fragments of undrained fen in East Anglia. It will provide better access to nature in an area with limited greenspace and significant growth, benefitting local people's health and wellbeing.

We are responding to the decline in nature and unequal access for people to nature – and are aiming to do more, now, within the context of a productive agricultural landscape and area of significant development.

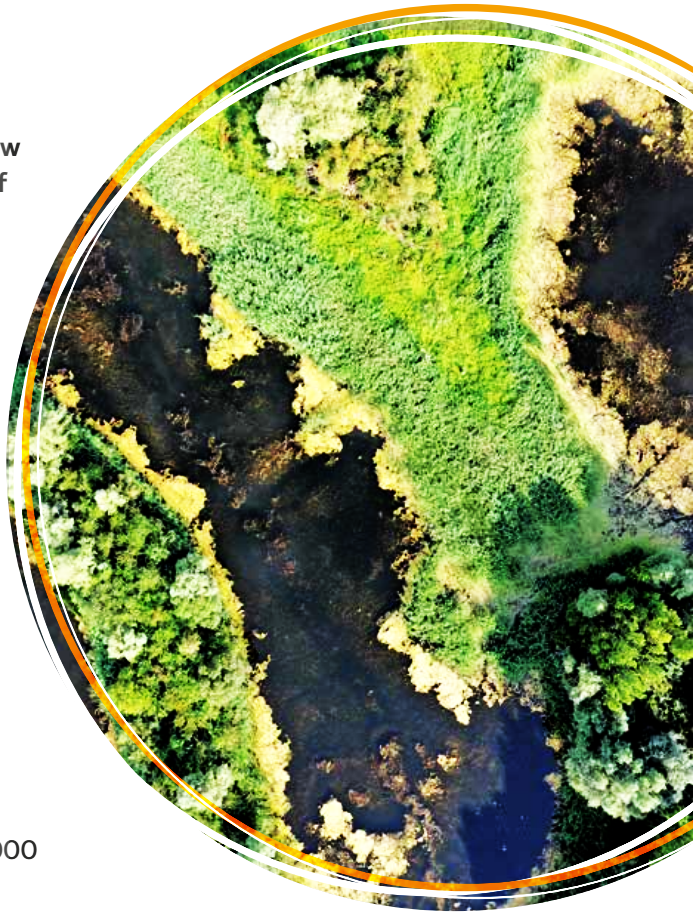
The Wider Wicken Fen Vison celebrated its 25th anniversary this year. The Vision was conceived in 1999 on the 100th anniversary of the National Trust's first acquisition at Wicken Fen. Its aim was to expand the nature reserve to the edge of Cambridge, restoring fen and wetland habitats, and to provide a landscape-scale space for wildlife and people. Selected as one hydrological unit, the Vision was one of the first re-wilding projects in the UK, restoring natural processes through careful water management and extensive grazing by Konik ponies and highland cattle on newly acquired land. The Vision epitomises and influenced the development of the Lawson principles: bigger, better and more joined up.

Find out more at www.nationaltrust.org.uk/visit/cambridgeshire/wicken-fen-national-nature-reserve/wicken-fen-vision

Ouse Fen

Location: Needingworth, Cambridgeshire

With a 30-year lifespan, this carefully planned project is now more than half complete with more than 16 million tonnes of aggregates quarried from the site so far.



The project has been designed to create high value habitats for target species and incorporate significant public access. In the last 20 years the site has become important for rare species such as the secretive Bittern, known for its loud booming calls in Spring, Marsh Harrier and Bearded Tit.

- 3 square km has been restored to wildlife-rich wetland so far.
- The site already holds up to 12 booming male Bitterns, 8 nesting Marsh Harriers and a pair of European Cranes annually.
- Water Voles and Otters have established themselves across the reserve alongside 22 different species of dragonfly.
- Around 19km of trails have been opened to date with 15,000 visitors a year.

Did you know?
Since 1999 the RSPB has been working in a wetland creation project partnership with the minerals sector at Needingworth Quarry, one of the largest sand and gravel extraction sites in the UK, to create Ouse Fen nature reserve.

Trumpington Meadows and Cambourne

Location: Trumpington, Cambridge, and Cambourne, South Cambridgeshire

Trumpington Meadows was conceived as part of a planned southern extension to Cambridge in the noughties.

The development of the former Plant Breeding Institute research site by Grosvenor includes 1200 new homes and an extension of the strategic green corridor along the River Cam into Cambridge city centre. The Wildlife Trust BCN were chosen as the organisation to manage the new greenspace and now own the nature reserve. Trumpington Meadows nature reserve is 58 hectares in size and stretches for 1 Km along the River Cam. It includes 50 Ha of new flower-rich meadows, as well as ponds, hedges, new woods and an extensive network of surfaced and grass paths. It is well used and popular with new and existing residents alike.

Did you know?
Cambourne has recorded most productive skylarks in Britain (more young per nest per year recorded than anywhere else in Britain)

An independent, retrospective Biodiversity Net Gain analysis showed that the development delivered a 43% net gain in biodiversity using the Defra Metric.

Cambourne was conceived in the 1990s as three linked villages surrounded by a network of natural greenspaces. Cambourne was developed on intensive arable farmland, with few natural features. However, those natural features present including four small woodlands, a historic hedgerow and several ponds were retained and formed the framework for the network of green infrastructure.

This network surrounds and passes through Cambourne. In total, over 60% of the development site is allocated to green infrastructure with over 15 Km of new paths. It is managed by Cambourne Town Council and the Wildlife Trust BCN. Cambourne has become a popular destination for families to live, not least because of the green spaces.

Did you know?
The small blue butterfly which was at risk of extinction in the area (county/C&P) is now thriving at **Trumpington Meadows.**

Further Case Studies of nature recovery in action are included in Supporting Document 6.

The information provided in Part 1 of the LNRS provides the context and background to the priorities and actions set out in the following Part 2.

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Photo competition winner, Ely sunrise © Chris Barton

Glossary

Abstraction
The removal of water from its natural source for human use.

Agri-environment schemes
Set up by the Department for Environment, Food and Rural Affairs (Defra), these schemes provide funding for farmers and landowners to manage their land in a way that aids biodiversity and the air, water and soil quality of the land.

Biodiversity
The variety of species to be found within a particular area. A wide variety of species is an excellent indicator of ecosystem health.

Calcareous grassland
Grassland situated on a chalk or limestone soil, relatively rare in the UK and an important habitat for those plant species adapted to this soil type.

Carbon sequestration
Any process that converts carbon dioxide in the atmosphere into stored carbon, preventing it from acting as a greenhouse gas.

Catchment-scale
The entire geographical area that drains water into a river or other water body, also known as the 'catchment area'.

Chalk streams
Streams that come from springs in chalk bedrock. They are characterised by clear water and a diverse number of plant species.

Colonisation
The movement of a species into a new area.

County Wildlife Sites (CWS)
See Local Wildlife Sites.

Droves
Roads within the Cambridgeshire Fens that were originally used to move livestock.

Ecosystem
The species and physical environment existing within a particular area. It is referred to as a system due to the back-and-forth interactions between both species and their environment.

Ecosystem Services
Benefits that humans derive from a thriving ecosystem, such as improved water and air quality, climate regulation, provision of resources, and improved health and wellbeing.

Eutrophication
An increase in nutrients within a body of water, often caused by fertiliser run-off, that can cause algal blooms that deprive the water of oxygen and harm or kill animals living within the water.

Fenland SOIL
A not-for-profit organisation that aims to develop farm policies to help achieve climate change mitigation and improved biodiversity within the Fenland region.

Fragmentation
The breaking up and separation of similar habitats into smaller parts. This can have a negative effect on the movement and reproduction opportunities for a species.

Germination
The process by which a plant develops from its seed.

Grade 1 and 2 land
An agricultural land classification that determines the quality of existing farmland or undeveloped land. Grade 1 and Grade 2 land is considered 'excellent' and 'very good' respectively.

Green infrastructure
Building projects with ecosystem services at the forefront of its development.

Groundwater recharge
The movement of water downwards from surface water to groundwater.

Habitat network mapping
Mapping undertaken to identify areas that provide the best opportunities for re-building a resilient nature network. The areas identified comprise the six priority natural landscapes within the region.

Herbicides
A type of pesticide targeted at plants.

Insecticide
A type of pesticide targeted at insects.

Invasive species
Any non-native species that has been introduced and is harmful to its new environment.

Invertebrate
Any animal without a backbone, such as insects, spiders, and crayfish.

Landscape Character Areas
Landscape Character Areas are regions that share distinct and recognisable landscape characteristics such as geology, vegetation and land use.

Landscape Character Assessment (LCA)
Landscape Character Assessment is the process of identifying and describing variation in character of the landscape.

Landscape-scale approach
A nature conservation approach working with farmers and landowners across entire landscapes rather than individual sites.

Lawton Principles
Principles from the 'Lawton Review' paper, set out in 2010 and commissioned by the Environment Secretary. The key principles are that nature sites should be more, bigger, better, and joined up.

Local Nature Reserves (LNR)
Nature reserves established by local authorities they are places with wildlife or geological features that are of special local interest.

Local Wildlife Sites (LWS)
Areas of land that are especially important for wildlife. They are identified and selected locally using scientifically-determined criteria and surveys.

Mapped actions
These are actions for the priority habitats that have been mapped onto the local habitat map. Mapped actions are eligible for Biodiversity Net Gain (BNG) uplift.

National Character Areas
159 Character Areas have been established by Natural England, covering the entirety of England. Each area represents a distinct and recognisable region based on landscape features rather than county or district boundaries.

Natural capital
The value of resources naturally available, such as water, air, and soil.

Natural Capital Assessment
A method for quantifying the total value of natural capital (resources such as water, air and soil quality) within a region.

Nature Recovery Network
See Priority Natural Landscapes.

Nature-based solutions
Actions taken that are designed to protect and restore existing ecosystems to benefit both people and nature.

Neonicitinoids
A specific class of insecticide. Its name comes from the fact they are chemically similar to nicotine. They are banned from general use in the UK.

Nitrates
Chemicals that are a common component of fertilisers. Along with phosphates, their existence in water bodies are responsible for the process known as eutrophication.

Nutrient enrichment
See Eutrophication.

Paludiculture
Farming on rewetted peat, for the production of wetland crops.

Pesticides
Any chemical substance used to control species considered pests. They can be damaging to the wider environment by entering water through agricultural run-off.

Phosphates
Chemicals that are a common component of fertilisers. Along with nitrates, their existence in water bodies are responsible for the process known as eutrophication.

Point source pollution
The point at which pollution is discharged, such as a sewage pipe or ditch.

Pollarding
A technique for regularly cutting back trees to their trunk. It encourages a denser and stronger tree canopy.

Priority natural landscapes
These are six priority areas set out by Natural Cambridgeshire for nature recovery. The areas include the Connected Fens, John Clare Countryside, Nene Valley, Great Ouse Valley, West Cambridgeshire Hundreds, Cambridge Nature Network.

Ramsar sites
these are wetland sites designated as being of international importance, as defined by the Ramsar Convention on Wetlands.

Regenerative agricultural techniques
techniques used for farming that emphases methods such as minimal soil disturbance and composting, to ensure a healthy, regenerating layer of topsoil.

Semi-natural grassland
grassland that is naturally occurring, without fertiliser or herbicide applied to it, but is managed through mowing or livestock grazing.

Sites of Special Scientific Interest (SSSI)
a government designation applied to those sites that support characteristic, rare or endangered species.

Special Areas of Conservation (SAC)
areas designed to protect species outlined within the European Union's Habitats Directive. Together with Special Protection Areas, they form part of the UK's national site network.

Special Protection Areas (SPA)
protected areas for birds in the UK, designated under the European Union's Bird Directive. Together with Special Areas of Conservation they form part of the UK's national site network.

Species assemblages
the full list of species that live within a particular habitat.

State of nature reports
reports on species from the State of Nature Partnership. They use data from biological monitoring and recording schemes to provide a benchmark for species populations throughout the UK.

Stewardship
management that involves the responsible use of natural resources.

Supporting actions
these are actions for the priority habitats that are not stand-alone, but help carry out the mapped and unmapped actions more effectively.

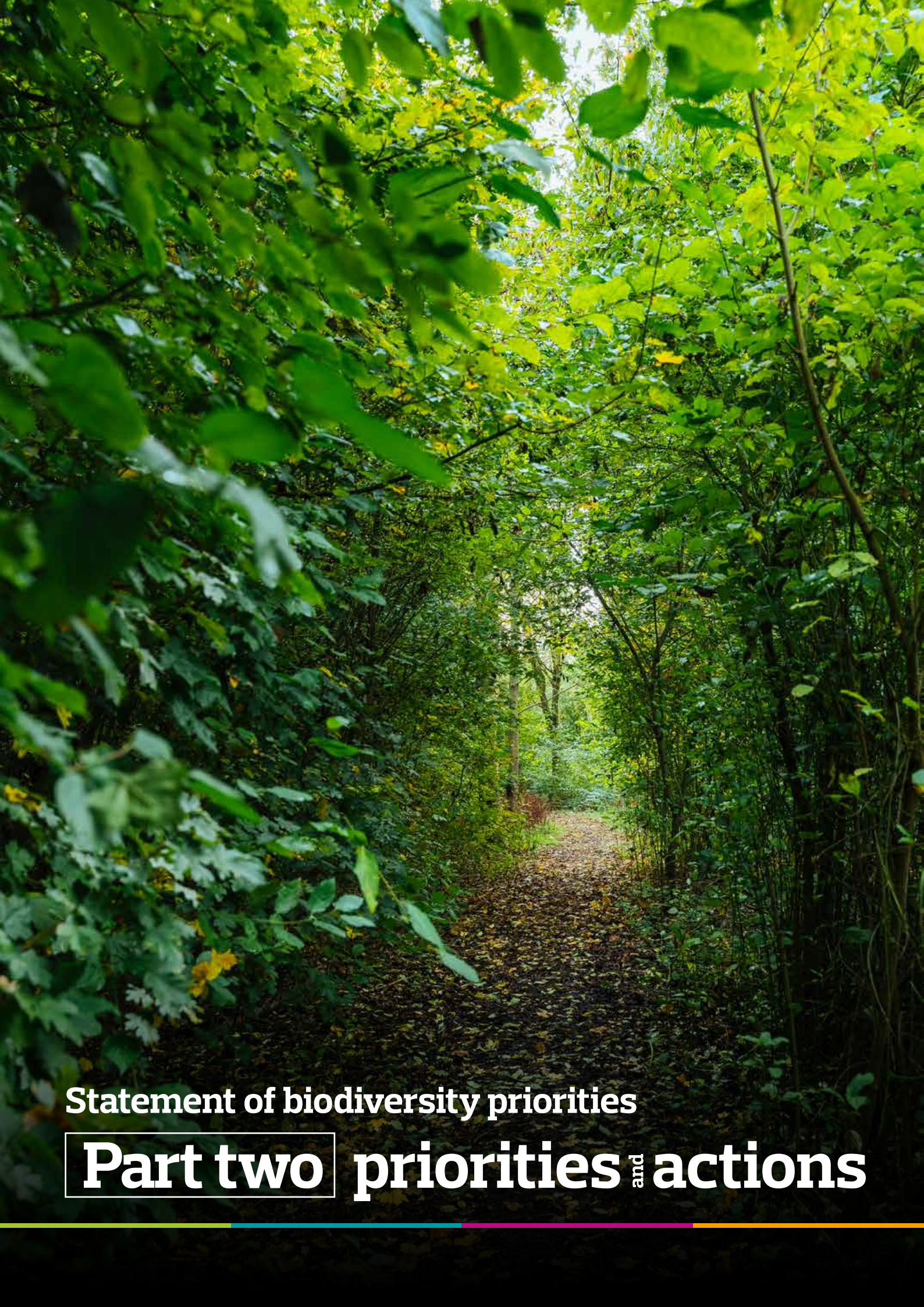
Terrestrial
species that are based on land, as opposed to water.

Unmapped actions
these are actions for the priority habitats that are too broad to be mapped to a specific location, so do not appear on the local habitat map. Unmapped actions are not eligible for Biodiversity Net Gain (BNG) uplift.

UK priority species
those species that were identified by the Joint Nature Conservation Committee as the most threatened within the UK.

Unimproved grassland
areas of grassland that have never been used for agriculture.

Wider environmental benefits
benefits that include both improving the natural environment and improving human health and wellbeing, such as improved air quality and closer access to nature.



Statement of biodiversity priorities

Part two priorities and actions

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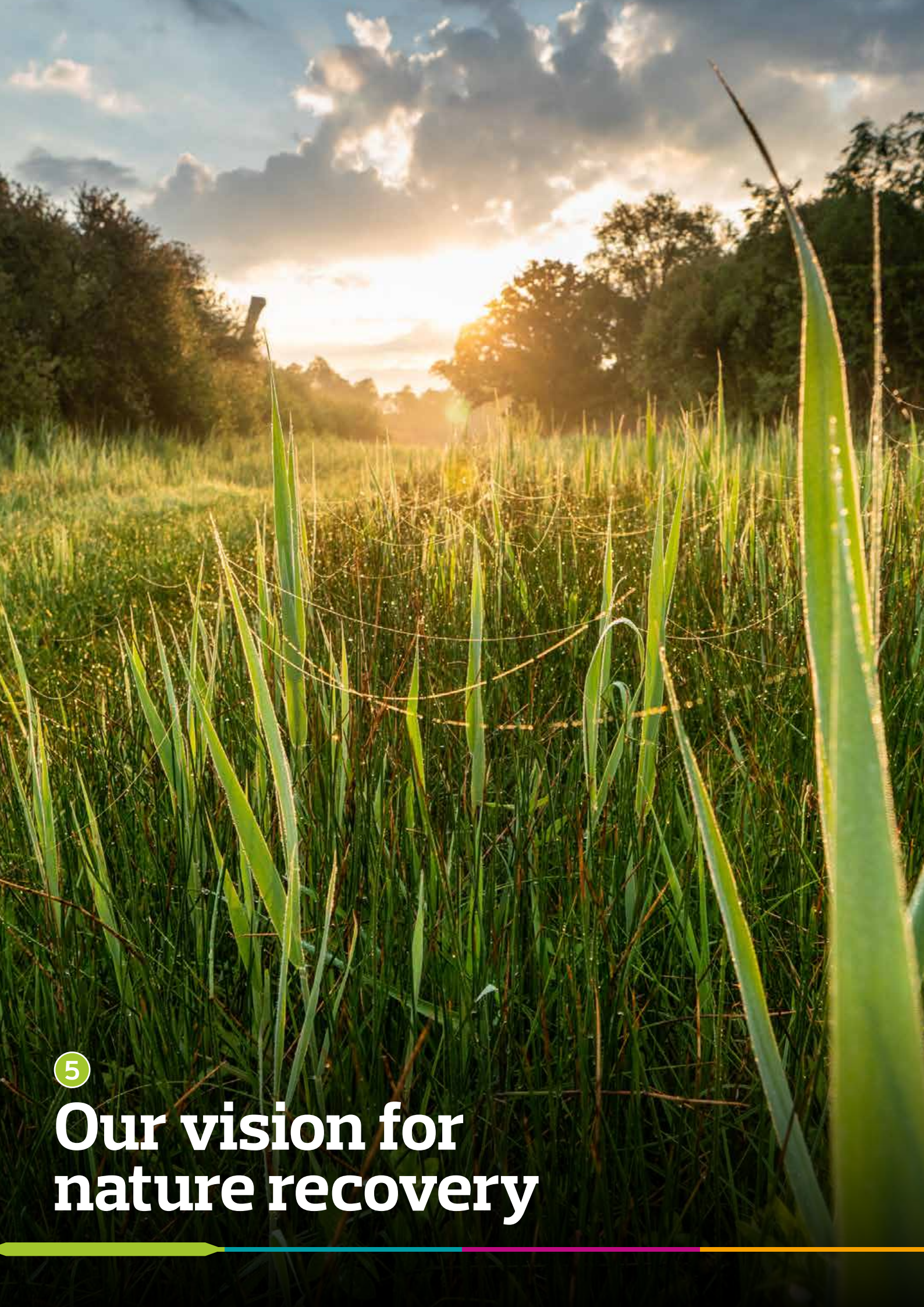

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Our vision for nature recovery

Our vision for nature recovery

Creating a wildlife-rich, resilient, productive and sustainable landscape, for people and nature.

At the heart of Cambridgeshire and Peterborough's vision for nature recovery is taking action to create, restore, connect and ultimately double the amount of nature. This will enhance our rich natural and agricultural heritage.

Doubling nature will see internationally significant wildlife sites extended, buffered, enriched and connected through nature-filled corridors and stepping stones across our landscape. This means that land managed for nature will increase from around 8% today to more than 16% by 2040.

The ambition to at least double nature in the area is viewed as an achievable target. This strategy goes further, identifying just under 30% of land as providing the best opportunities for nature restoration activity. This provides scope to exceed our doubling nature target.

The vision sees the creation of corridors of abundant biodiversity threading between and through our villages, settlements and cities. It envisages vibrant communities taking actions for nature in gardens, parks and local wild spaces.

As an area with a strong growth agenda, the vision is for new high quality wildlife areas to be integrated with housing and commercial developments. Newly created natural green spaces within easy reach of communities will help attract businesses and retain staff to benefit our local economy.

In the fens and river valleys, functioning wetlands will connect across the area through wildlife-rich rivers, ditches, drains and floodplains. Improved water management will support our internationally important habitats and our productive agricultural land. Nature recovery will take place alongside securing water supplies for our existing and new towns, while also providing flood relief in affected areas. Identifying and effectively managing restorable peat habitats will also increase the longevity and resilience of productive land and reduce carbon emissions.

Our vision for nature recovery (continued)

Our chalk streams will be restored to provide diverse habitats for some of our most precious species as well as creating tranquil places for people to connect with nature. Our historic orchards will be valued, and new community orchards established to provide fruit for local communities. This will strengthen the connection with the area's fruit growing and horticultural heritage.

The farmed landscape of Cambridgeshire and Peterborough supports nationally important populations of farmland birds, insects and rare plants. Maintaining flower-rich field margins and increasing habitat connections through the sensitive management of ditches and hedgerows, will create a diversity of wildlife-rich areas within a productive arable system.

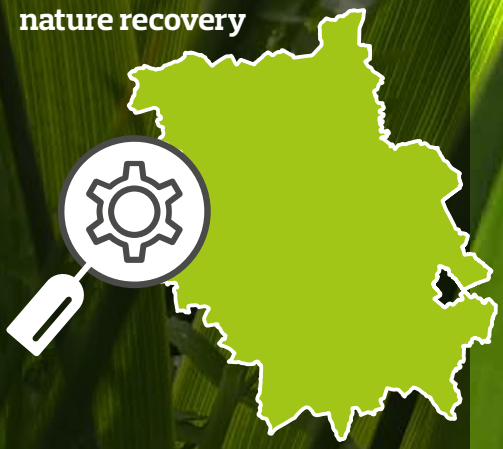
In one of the driest areas of the country, our distinctive grasslands, woodlands, and wetland habitats will be cherished and managed to support the area's resilience to future changes in climate. Declines in species will be halted, and thriving, reconnected populations of plants and animals will be established.

Working alongside new approaches in sustainable development and farming, there will be more spaces for nature which will be made, better, bigger and joined up, to ensure Cambridgeshire and Peterborough becomes an exemplar of nature recovery.

What can you do to help achieve the vision?

1 **Read our strategy and supporting documents to find out what you can do for nature**

2 **Explore our interactive maps to see where you can take the most effective action for nature recovery**



3 **Let us know what you have been doing for nature recovery**

Click here to discover more

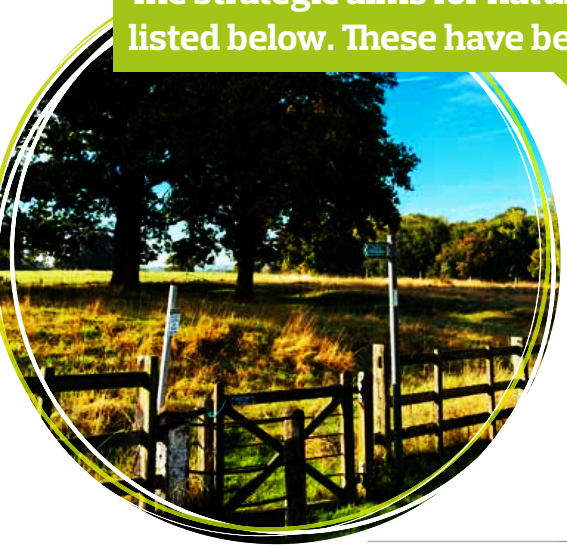
Did you know?

Researchers at University College London found that people who spend just two hours a week in nature report significantly better health and wellbeing than those who don't

(White et al., Scientific Reports, 2019).

Strategic aims for nature recovery

The strategic aims for nature recovery in Cambridgeshire and Peterborough are listed below. These have been identified through:



- Workshops with farmers, landowners, technical specialists, local authorities, government agencies and environmental organisations
- Engagement sessions with communities, interest groups and local people
- public surveys
- desk based research
- Existing strategic environmental reports produced for Cambridgeshire and Peterborough

Air quality

Strategic aim:

Improve the air quality of Cambridgeshire and Peterborough and reduce impacts on habitat and species.

Climate change

Strategic aim:

Strengthen the resilience of Cambridgeshire and Peterborough's environment against the effects of extreme weather and climate change impacts..

Communities

Strategic aim:

Enhance a sense of place where both people and nature can benefit by:

- empowering organisations, communities and interest groups (e.g. faith groups) to manage priority habitats, local freshwater habitats and community greenspaces.
- promoting and educating people's connections to nature and improving health and wellbeing.
- supporting local organisations and interest groups to help recover nature on their doorstep.
- working with residents to identify and improve or provide areas of natural green space close to existing settlements.

Doubling nature

Strategic aim:

Support Natural Cambridgeshire's doubling nature ambition to at least double the area of rich wildlife habitats from approximately 8% to more than 16% by 2040 and increasing beyond that.

Development

Strategic aim:

Encourage existing, new and large developments to incorporate wildlife friendly features in gardens, buildings and land by:

- maximising opportunities for wildlife through the planning system.
- enhancing and expanding existing greenspaces for wildlife, and providing new strategic green space connected to the wider green infrastructure network by green corridors, to address the lack of accessible green infrastructure, reduce recreational pressure on existing nature sites, provide multifunctional benefits and provide an important asset to meet growing demand from proposed development.
- introducing urban greening interventions such as green roofs, sustainable drainage systems (SuDS), street trees, wildflower verges, allotments and pocket parks within existing and newly proposed urban areas to deliver multiple benefits for people, wildlife and the environment.
- supporting biodiversity net gain (BNG) policy, encouraging 20% as a minimum, where possible.

Environmentally friendly farming

Strategic aim:

That farming and food production across Cambridgeshire and Peterborough is conducted using environmentally sustainable practices, recognising the importance of food production and the potential of farming to support nature recovery

Historic environment

Strategic aim:

Celebrate Cambridgeshire and Peterborough's rich culture, built / natural heritage, and its geology and surrounding environment by:

- Protecting the character and integrity of the rural landscape, whilst maximising the environmental benefits including the historic environment.
- Understanding and promoting protection of the historic environment alongside nature recovery

Did you know?
In parts of the Cambridgeshire Fens, peat has started forming at least 6 times (with marine flooding in between) since the last Ice Age - it really does want to grow peat!

Internationally rare chalk streams

Strategic aim:

Recognise the importance of the internationally rare chalk streams within Cambridgeshire and Peterborough and collaborate with cross-boundary partners to conserve and restore them

Lawton Principles

Strategic aim:

Respond to the existing deficit of rich wildlife areas across Cambridgeshire and Peterborough by using the Lawton Principles of 'better, bigger, more and joined up'

Peatland

Strategic aim:

Promote healthy functioning peatlands to store and capture carbon whilst not increasing methane emissions.

Water quality and resources

Strategic aim:

Promote integrated water management techniques considering water resources, quality, and resilience to flooding to support:

- improvement of water quality by better management of pollutants from farmland, transport networks, wastewater works and other rural and urban sources.
- improvement of water efficiency for domestic and commercial use
- exploring options for addressing water scarcity.
- using nature recovery as part of a natural flood management programme to help mitigate against flood risk.

6

Priority natural landscapes

Priority natural landscapes

Landscape–scale nature recovery

A focus on nature recovery across large, connected areas, rather than isolated sites, has been long recognised in Cambridgeshire and Peterborough. This is particularly the case for an area where around 80% of the land is farmed, most of which is arable crop land, and where high value nature sites are small, fragmented and only cover about 8% of the area. The case for landscape-scale restoration of nature becomes even more important when you consider that Cambridgeshire and Peterborough is one of the fastest growing areas in the country in terms of population growth and new development, and that there aren't large areas of accessible downland, forest, moorland or coast. The impacts from climate change and the urgent need to provide space and connectivity for species to adapt and move further supports this landscape-scale approach.

However, a landscape-scale approach to nature restoration must also align with our continuing need to grow food and provide the homes, employment sites and other infrastructure we need.

In an intensive agricultural landscape with rapidly growing towns and cities and where high value nature sites are highly fragmented, a landscape-scale approach to nature restoration must be highly focused to be effective in the short-term and to target scarce resources to those areas where the greatest biodiversity benefits can be achieved.

Application of the Lawton principles in Cambridgeshire and Peterborough will look very different to other parts of the country with greater land cover or concentrations of nature sites. Here, the first step is to rebuild our core biodiversity hotspots. We don't have areas with extensive and well-connected habitats such as the Brecks, the Chilterns, or Broads. Most of our best nature sites are either small and / or isolated. Our priorities for nature recovery will therefore look very different to many other parts of the country.

Nature recovery requires us to move beyond a single habitat or species focus. Even within Cambridgeshire and Peterborough there are areas where a greater concentration of nature sites has survived. In many of these there are combinations of remnant habitats whether woodlands, meadows and ponds; or chalk grasslands and scrub; or fens, wet grasslands and wet woodland. These combinations of habitats all in proximity to each other have the potential to support higher levels of biodiversity than blocks of single habitats.

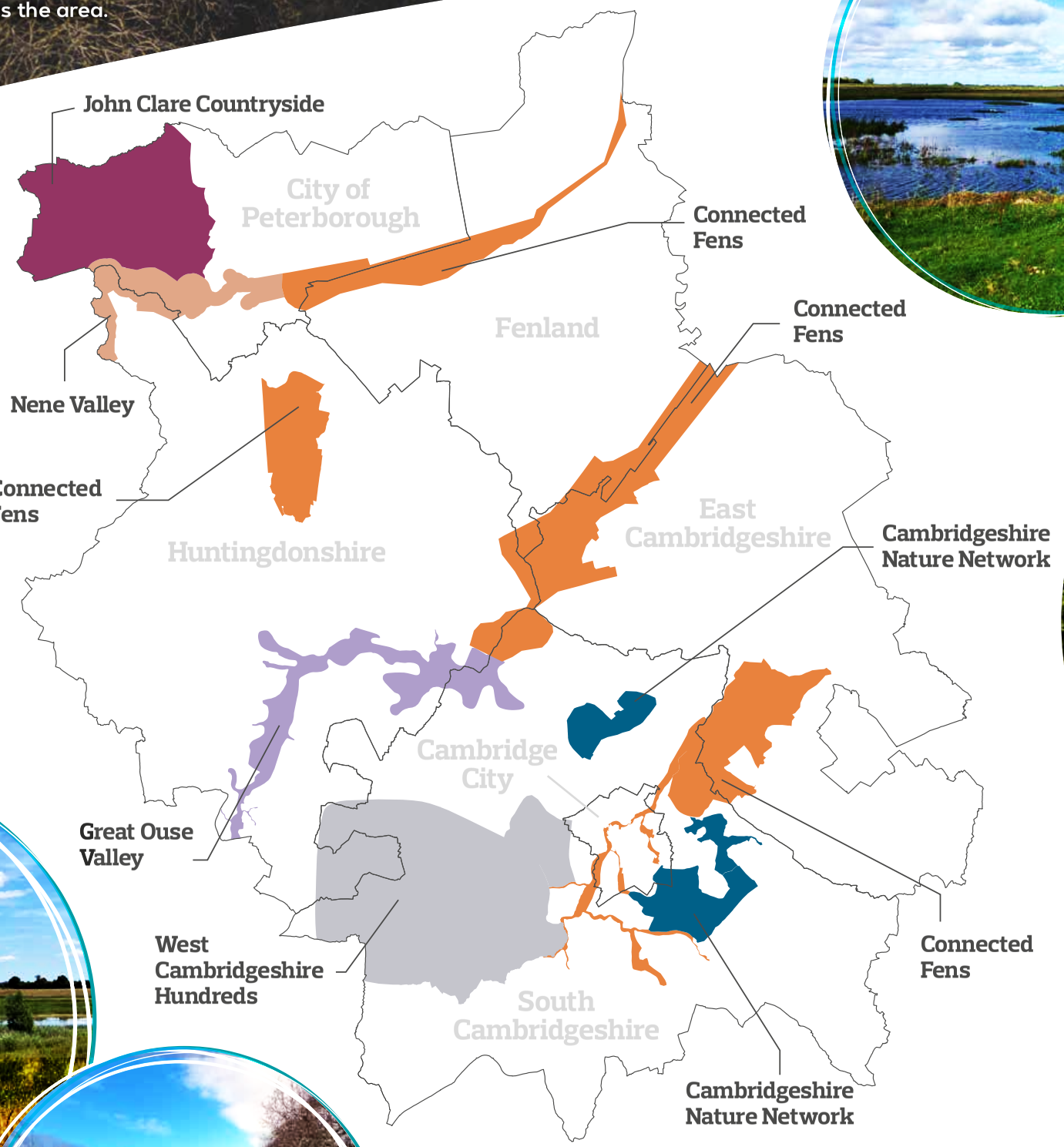
Did you know?
The Ouse washlands were created 360 years' ago to retain winter flood water from the Ouse.

Identification of priority natural landscapes

In 2000, the Cambridgeshire and Peterborough Biodiversity Partnership identified those areas of Cambridgeshire and Peterborough where the highest concentrations of habitats survived, and which represented the variety of landscapes and habitats across the area.

These were refined by Natural Cambridgeshire into six priority landscapes[1] for landscape-scale nature recovery to deliver the Cambridgeshire and Peterborough doubling nature vision:

Natural Cambridgeshire Priority Landscapes



Each of these areas is briefly described below

Connected fens

The area of internationally important remnants of ancient fen and washland habitats that now cover less than 1% of the Fens. They include the richest areas of habitat locally, supporting many rare and iconic species. Major restoration is planned and taking place in the Great Fen, Wicken Fen and Ouse Washes areas.

John Clare Countryside:

An area of ancient woodland, species-rich limestone grasslands and wetlands, supporting the richest array of species beyond the fen sites and connecting to the large Rockingham Forest area in Northamptonshire to the west.

Nene Valley

An area of remnant flood meadows and other wetland habitats from the city of Peterborough upstream to the large wetlands along the Northamptonshire Nene.

Great Ouse Valley

An extensive area of floodplain meadows, former sand and gravel pits and other wetlands supporting a rich array of plants and nationally important numbers of waterbirds. It connects the Ouse Washes to the Great Ouse in Bedfordshire.

West Cambridgeshire Hundreds

The ancient woodlands and parklands west of Cambridge to the Bedfordshire border with populations of iconic plants and invertebrates with restricted distributions in England.

Cambridge Nature Network

The area of downland, fen and wooded farmland around Cambridge and the river Cam and its chalk stream tributaries extending into Essex.

While these six landscapes form the top priorities for nature recovery when viewed at the county or regional scale, they are still relatively isolated from each other and similar areas within neighbouring counties. To help create a national nature recovery network these will need to connect with other biodiversity hotspots. Nationally, nature recovery will connect from the English Channel to the north of Scotland and from the Wash to West Wales.

Therefore, landscape-scale nature recovery in Cambridgeshire and Peterborough will also need to take place within other areas between the six priority landscapes. The Wildlife Trust has worked with district councils and other partners to identify additional priority landscapes to focus nature recovery at the district-scale and as a result, further refined the boundaries of the Natural Cambridgeshire Priority Landscapes.

The detail is set out in reports for the Cambridge Nature Network[2], East Cambridgeshire Interim Nature Network[3], Fenland Interim Nature Network[4] and Huntingdonshire Interim Nature Network[5]. Separate unpublished mapping studies have been undertaken for the Great Ouse Valley and John Clare Countryside following the same principles.

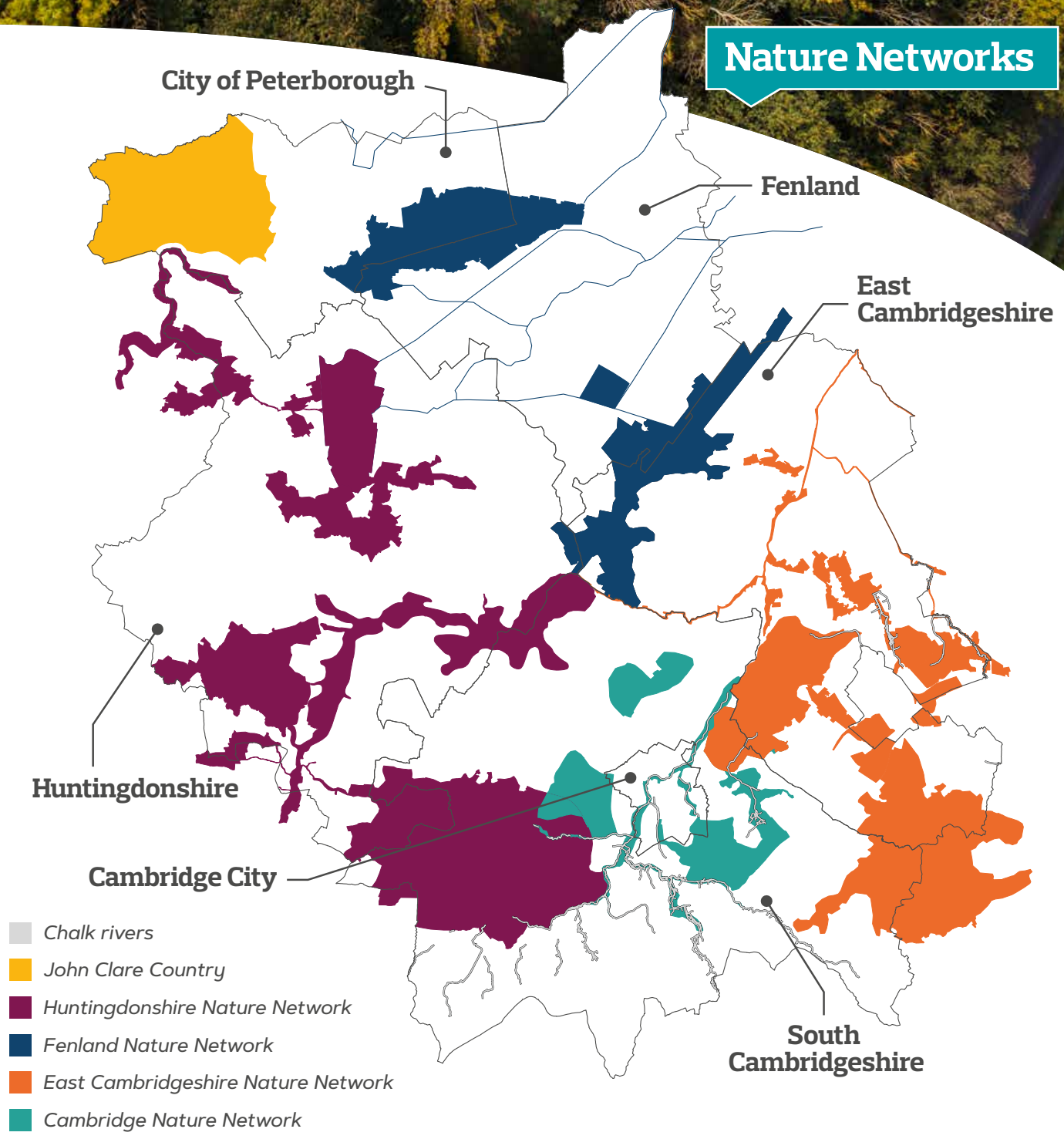
The aim of these nature network studies was to:

1. **Identify priority areas** for landscape-scale action to support nature's recovery, from both desktop analysis and targeted fieldwork
2. **Agree the boundaries** of the priority landscape areas though stakeholder engagement with key stakeholders and a sample of major landowners
3. **Identify the critical components** of a nature recovery network in each of the priority areas, based on the Lawton Principles

These nature network reports include a detailed analysis of the nature recovery opportunities in each of the priority natural landscapes. The aim within each area is to create or restore at least 30% of the landscape to high value nature sites, with these set within a wider landscape of nature friendly farming. In all but one or two of the priority natural landscapes, farming would continue to be the dominant land use. Creating or restoring land to achieve 30-40% high value nature sites in each of these priority natural landscape areas would achieve the Cambridgeshire and Peterborough doubling nature vision target for 16% of the Cambridgeshire and Peterborough land area to be high value nature-rich habitats.

Combining the Natural Cambridgeshire six priority landscapes with the district priority natural landscapes produces a coherent, long-term nature network map for Cambridgeshire and Peterborough to support nature recovery at scale.

A long-term nature recovery network for Cambridgeshire and Peterborough



These priority natural landscape areas provide a focus for delivery of long-term nature recovery in Cambridgeshire and Peterborough and for targeting investment in the natural environment, whether agri-environment schemes, private natural capital finance or other public funds. They also highlight those areas where BNG and offsetting would be best focused.

Within these priority natural landscape areas, partners are undertaking more detailed nature recovery opportunity mapping to identify the best areas for habitat creation and restoration. In some locations, specific areas and sites have been identified and agreed in dialogue with landowners. These have been integrated into the LNRS local habitat map.

Beyond the priority natural landscapes

Although creation of high-value habitats might be focused within priority natural landscapes, there are opportunities for nature recovery across our farmed and urban landscapes. Action to support nature recovery can occur anywhere and be undertaken by anyone.

Creating more nature friendly farmed landscapes and urban areas is an essential part of nature recovery, as it provides space for many species to move between high-value habitats and in response to climate change. As most of our area will remain farmed or be part of the growing urban areas, it is important that these areas are as hospitable to wildlife as possible.

Nature recovery on our farmland

Nature recovery on our farmland

80% of Cambridgeshire and Peterborough is farmed and over 70% of the land is arable. Agriculture will remain the dominant land use across our area. Even in our priority natural landscapes, where increased cover of high value habitats is essential for nature recovery, farming will remain the dominant land use. However, all farms, can play an active role in nature recovery. Many farmers are already doing this, though much more could be done, with the right incentives, encouragement and information.

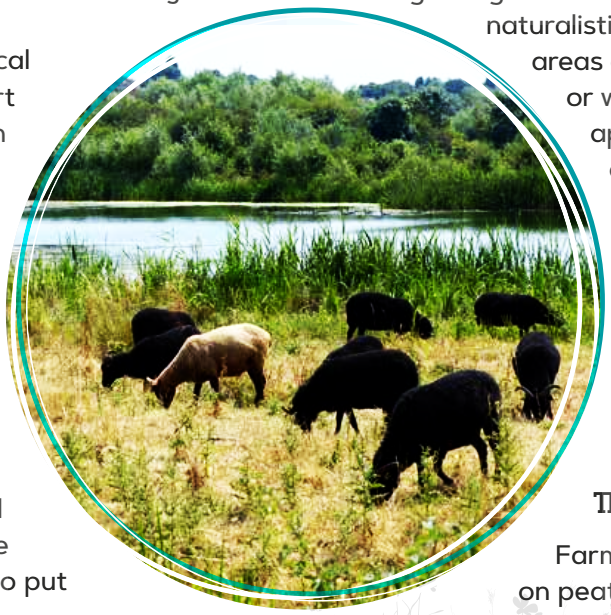
Did you know?
80% of Cambridgeshire and Peterborough is farmed and over 70% of the land is arable.

A more nature-friendly farmed landscape is essential to support more, bigger and better high-value natural habitats. Nature friendly farming would help provide connectivity between core local nature sites as well as support those species that depend on the farmed environment.

In Cambridgeshire and Peterborough, the widespread adoption of nature friendly farming practices, for example putting unproductive or less productive parts of fields down to field margin habitat options, is an integral part of nature recovery. If the majority of farms were able to put 7-10% of their farm into wildlife friendly options, the decline in many species whether invertebrates, plants or birds could be reversed. While this will not be possible on all farms, even 3-5% cover of field margin options will start to make a difference.

Regenerative forms of agricultural aimed at improving soil health complements nature-friendly farming and will often be undertaken on the same farm. Some farmers will choose an organic approach or adopt agro-forestry principles.

Nature recovery across the farmed landscape will involve a variety of approaches. Most farmers will continue with intensive production but help nature recovery with on-farm actions such as nature-rich field margins, headlands, hedgerows or ditches. Other farmers may transition towards agro-ecological production that prioritises nature recovery and soil health. Some may integrate wildlife-rich grassland habitats with conservation grazing. In a few areas, land may transition to naturalistic grazing or more extensive areas of new grassland, wetland or woodland habitats. All these approaches complement each other at the landscape scale to ensure continued farming and food production plays its part in nature recovery.



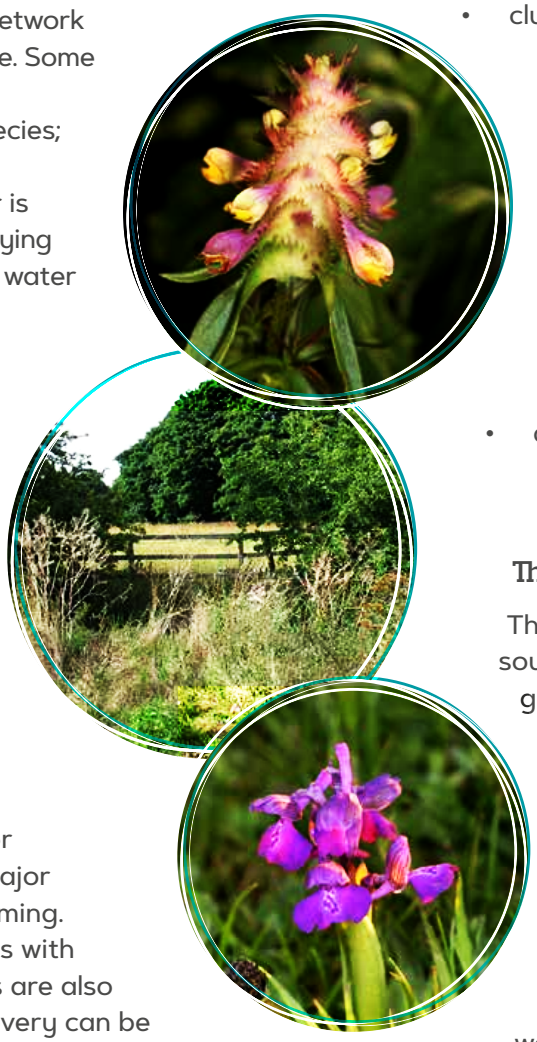
Nature friendly farming will take different forms in the different landscapes that make up our area.

The Fens

Farms in The Fens are generally on peat or organic-rich soils with

networks of drainage ditches to manage water. The ditch systems and pumping are used to lower water levels in the fields to allow arable crops to be grown, and at other times to provide water for irrigation during the crop growing season. Much of the land is at or below sea level requiring the water to be pumped into the main drains that take the water to the Wash.

The landscape has few other nature rich habitats beyond the internationally important wetlands, though there are small woods, pockets of grassland, and networks of fen droves. The ditch system provides a connected habitat network across the whole fens landscape. Some parts of this network are rich in aquatic wildlife and relic fen species; however, this is limited to those ditch networks where the water is clean, often arising from underlying gravels, chalk or peat soils. The water quality in much of the ditch network is poor and supports a low diversity of aquatic species; however, Water Voles are present in nationally important numbers across the internal drainage board (IDB) ditch network, irrespective of water quality.



Climate change and sea level rise with flooding risks from rivers and the sea, combined with the potential for increasing droughts present major challenges to the future of farming. The continued loss of peat soils with the resultant carbon emissions are also a major challenge. Nature recovery can be part of the response to these challenges.

Drains are conduits and channels providing stepping stones to nature sites between larger nature areas such as the Ouse and Nene Washes, as highlighted in the Great Fen Project. The provision of buffer areas around nature adjacent to the main drains and ditches will assist with the following nature friendly farming options:

- provision of grass or wildflower field margins along ditch networks to reduce agricultural run-off in the ditches and improve water quality. All ditches should have at least a 2-metre margin from the top of the bank.
- management of the ditch network, to create areas that hold water all year round and have a mixture of shallow margins to support wetland plants and steeper sides for Water Vole to burrow into.
- creation of small areas of wet grassland or willows in unproductive field corners.
- creation of small wetlands in strategic locations close to pumping sites or farm reservoirs to filter and clean water and provide small habitat stepping stones across the landscape.
- clusters of farms working together to build farm reservoirs to provide water for farming operations and reduce impacts on water supply elsewhere. These can be designed to include at least one shallow margin suitable for wetland plants and provide habitat for wetland birds and invertebrates.
- adoption of alternative forms of cropping such as wet farming (paludiculture).

The Claylands

The Claylands in the west and south of the area were largely grassland or mixed farming until the 1930s. However, today arable farming is dominant with small areas of pasture still present. Areas of species-rich grassland are limited to isolated fields and road verges.

These areas are the most wooded parts of our area and in some parts, there are networks of hedgerows, though many are often thin, gappy and with sparse cover at their base, reducing their value to breeding birds.

Most ponds in the area are within the Claylands and support species such as Great Crested Newt.

The installation of under-soil drainage networks in the twentieth century helped the transition from pasture to arable farming.

However, this, together with straightening and deepening of rivers and streams has contributed to flooding downstream.

Nature friendly farming options for the Claylands include:

- better management of hedgerows to create tall, thick hedgerows, with dense cover at the base and buffers of wide grass or wildflower field margins. Some hedgerows may contain trees.
- restoration and creation of networks of hedgerows to connect clusters of woodland.
- creation of networks of wildflower rich grassy field margins and headlands on less productive or unproductive parts of fields. Incorporation of areas of wild bird seed mixes, pollinator mixes and legume-rich crops.
- creation of wide habitat buffers to watercourses and where possible reconnecting rivers to their floodplains and creating more natural river profiles.
- restoration or creation of ponds, ideally as clusters of two or three ponds.
- natural flood management to slow the flow and improve water quality before it reaches the main rivers. Actions include leaky dams across ditches, creation of small wetlands and water retention basins, planting of hedgerows or grassland buffer strips across slopes, sowing winter cover crops and reducing soil compaction.
- creation of small copses as stepping stone habitats, including tree and woodland planting along ditches and streams as part of natural flood management.
- buffering ancient woodlands with wide flower rich field margins or headlands and allowing some of these to become a mix of flower rich grassland and scrub.

The Chalklands

There is a long history of arable farming across the Chalklands in the south of the area, though mixed farming was the norm before World War Two. Today arable farming is predominant, with only a few mixed arable and livestock farms.

Species-rich grasslands are now restricted to non-farmed land such as ancient monuments, former chalk quarries and road verges.

Rare arable plants occur across the landscape but often associated with farms that include some less intensively cropped areas. Farmland birds associated with open landscapes occur in good numbers where farms include all year-round feeding opportunities.

Fields are generally large and where hedgerows are present, they are usually relatively recent, low growing, and thin with sparse cover at the base.

Small planted farm woodlands occur across parts of the landscape but are rarely more than 100-150 years old. Most are unmanaged and do not support the areas of open space, dense shrubby growth or deadwood that most specialist woodland species depend on.

Nature friendly farming options for the Chalklands include:

- management and creation of varied wildflower rich and grassy field margins across the farmed landscape and adjacent to remnant chalk grassland sites such as road verges or chalk pits.
- creation of cropped but unsprayed headlands and wide field margins for rare arable plants.
- planting of areas with wild bird seed mixes, pollinator mixes and legume-rich crops.
- creation of areas of dense scrub on less productive land across the landscape. Pockets of scrub are likely to better support species such as Turtle Dove than hedgerows in this landscape.
- creation of wide habitat buffers along chalk streams and around spring sources and where possible reconnecting chalk streams to their floodplains.
- creation of more permanent ponds where pockets of clay are present. Water sources are important for wildlife including priority species such as Turtle Dove.
- creation of temporary ponds for specialist species of this rare habitat.
- management of farm woodlands to create more varied woodland habitats including open space, dense shrubby growth and increases in deadwood.

Nature recovery in our cities, towns and villages

Within our cities, towns and villages are networks of public open spaces. Some of these may lie within a priority natural landscape, while others lie outside, but all provide space for people to interact with nature. In some towns and villages, they provide the only access to nature within walking distance for those who live there.

Local councils recognise the environmental importance of their open spaces. Some may be natural greenspaces while others are primarily used for recreation but may have wilder corners. Urban natural greenspaces are often managed with community groups. Parish councils also manage small open spaces under their control. There are significant opportunities to work with local people and community groups to achieve more for nature across our public parks and open spaces.

Did you know?
You don't have to do everything at once – even small changes can bring big benefits.

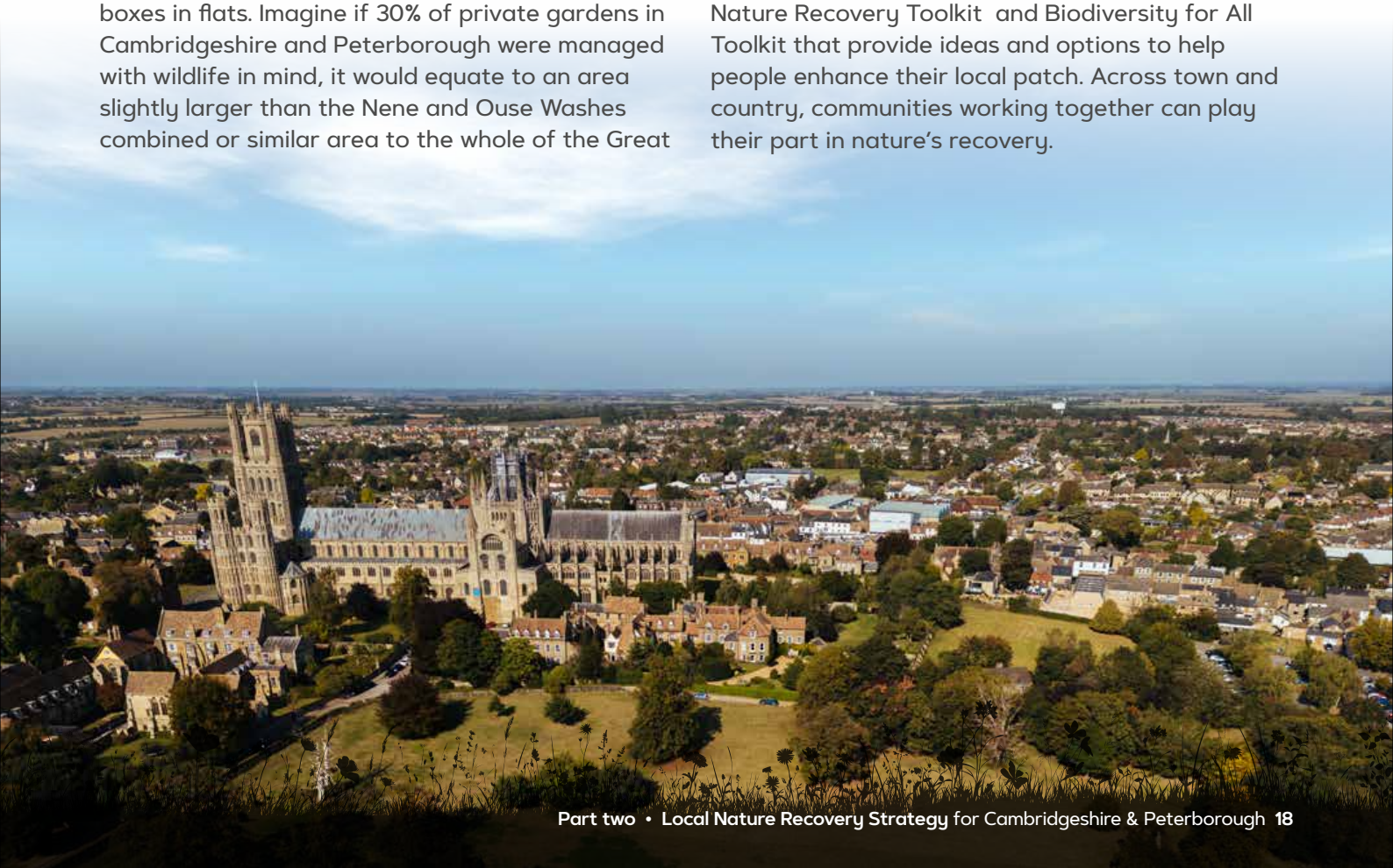
There are many private gardens across our towns and villages which potentially provide a haven for urban wildlife from foxes and hedgehogs to garden birds, frogs and insect pollinators such as bees. Everyone can garden for wildlife, whether it is in a detached house with large garden, in a typical modern housing estate small garden or in window boxes in flats. Imagine if 30% of private gardens in Cambridgeshire and Peterborough were managed with wildlife in mind, it would equate to an area slightly larger than the Nene and Ouse Washes combined or similar area to the whole of the Great Fen. The Climate Change Gardening Group has a range of informative tips to help local residents mitigate against climate change and decline in biodiversity. You don't have to do everything at once – even small changes can bring big benefits.

The public open spaces and gardens provide the basis for the "urban forest" and are supplemented by street trees and road verges. As temperatures continue to rise there is a need for much greater "urban greening" with increased tree and vegetation cover to help provide urban cooling in towns, as well as the other benefits of cleaner air and improved mental health.

Buildings can also be made greener through green roofs and green walls. The incorporation of bat and bird bricks or boxes can provide breeding spaces that otherwise wouldn't exist. The use of SuDS is increasing, and these can provide space for wetland wildlife in our towns.

Actions to support wildlife include the introduction of wildflowers, pond restoration and creation, tree and hedge planting, or more wildlife-friendly mowing and hedge cutting regimes. Every parish or community can prepare their own local nature recovery plan, to guide actions in their area, within gardens, the public realm or by the farming and landowning community of their area.

There are a variety of resources such as Local Nature Recovery Toolkit and Biodiversity for All Toolkit that provide ideas and options to help people enhance their local patch. Across town and country, communities working together can play their part in nature's recovery.



7

Priorities for nature recovery

Priorities for nature recovery

Our priority natural landscapes provide a focus for nature recovery action. This is complemented by action to support nature recovery across our farmland and within our cities, towns and villages. However, a LNRS also needs to identify specific habitats and species as local priorities for nature recovery action.

This section identifies the habitats and species we have chosen as our priorities. The method used to identify these local habitat and species priorities is set out in the Prioritisation and Mapping Methodology document.

Or visit the online interactive summary of the methodology - Methodology Summary Flowchart v2.

Habitats identified as local priorities

Broad habitat	Local habitat priority
Woodland	✓ lowland mixed deciduous woodland ✓ wet woodland ✓ wood pasture and parkland ✓ traditional orchards
Grassland	✓ lowland calcareous grassland ✓ lowland meadow
Wetland	✓ lowland fen, floodplain wet grassland and associated habitats ✓ reedbed ✓ gravel pits, lakes and reservoirs
Habitat mosaics	✓ mosaic of woodland, grassland and wetland
Rivers, chalk streams and drainage ditches	✓ rivers ✓ chalk streams ✓ fen main river and drains ✓ fen drainage ditches
Urban landscape	✓ urban parks and natural greenspaces
Farmland landscape	✓ arable field margins ✓ ponds ✓ temporary pools ✓ hedgerows

Habitat actions

We have developed actions for the priority habitats to support nature recovery.

The method we used to identify these actions can be viewed in our supporting documents (Prioritisation and Mapping Methodology and Habitat Opportunity Modelling Methodology).

Not every action listed below can be pinned to a specific spot on the Local Habitat Map. While many actions can and should be mapped at the right scale, some are too broad or general to link to one place. These are called unmapped actions.

Just because an action isn't mapped doesn't mean it's any less important—it's simply not tied to a specific location. However, please note that unmapped actions aren't eligible for Biodiversity Net Gain (BNG) uplift.

There are also supporting actions—these aren't standalone actions, but they help make the mapped and unmapped measures happen more effectively, for example by carrying out further mapping work or supporting local communities to develop their own local nature recovery plans.

Did you know?
The Cambridgeshire Fens are one of the most species rich areas for Stoneworts in the country

For all our priority habitats you can explore our interactive map of opportunity

Woodland priorities, actions and supporting actions

Although less than 5% of Cambridgeshire and Peterborough is wooded, our remaining ancient woodlands support species that are scarce elsewhere in the country.

Our ancient woodlands are mainly found in areas with heavy clay soils. These support species such as Oxlip that is only found in Cambridgeshire, Suffolk and Essex and the more widespread iconic and enchanting Bluebell. We also have woods with significant populations of Smooth-leaved Elm, including some Elm species which that are either unique to this area or where the majority of their known population exists. Other iconic species include Hazel Dormouse, Nightingale and Barbastelle bat. Our woodlands therefore form a priority for local nature recovery action.

Our wood pasture and parklands support collections of veteran and ancient trees. Pollarded Elm form a component of the veteran and ancient trees present in some of our historic parks and those with populations of these trees are a local priority.

Although we have very little wet woodland, ancient willows form a significant component of the landscape. Given this, and because of the potential for large-scale restoration of wetlands in parts of the Fens and through restoration of mineral sites, wet woodlands have also been chosen as a local priority. They will support a wide range of invertebrates but could also help to recover iconic species such as Black Poplar.

The final type of wooded habitat that has been chosen as a local priority is traditional orchards. Parts of Cambridgeshire and Peterborough still have concentrations of old orchards with veteran fruit trees, including around Wisbech and between Cambridge, St Ives and Ely. These include many local varieties of apple, pear or plum not found elsewhere.

Did you know?
Cambridgeshire is one of only a few places where Grass-poly, an arable plant which needs disturbed ground that's flooded in winter, is found

Theme 1 Woodlands (Wo)

Lowland mixed deciduous woodland

Wo 1 ▶ better manage woodlands to improve resilience and structural diversity.

▶▶ ENHANCE Actions

Wo1A – enhance the management of unmanaged woodlands with a minimum size of 1 hectare to UK Forestry Standards to achieve a varied structure and greater diversity.

Wo1B - enhance all woodlands of at least 1 hectare and within 200 metres of existing ancient woodlands by managing to UK Forestry Standards to achieve a varied structure and greater diversity and act as corridors, stepping stones or buffers.

▶▶ SUPPORTING Actions

Wo1B - deliver productive forestry and agroforestry, utilising funding opportunities when available, to support the economic and environmental benefits of woodland creation and management, including supporting local timber markets.

Wo1C - monitor and manage the impacts of pests and diseases, by promoting the reporting on outbreaks such as via Tree Alert and following the relevant guidance.

Wo 2 ▶ restore planted ancient woodland sites to locally appropriate trees, shrub and ground layer species

▶▶ ENHANCE Actions

Wo2A – restore designated plantations on ancient woodland sites back to appropriate native species.

Wo 3 ▶ expand and connect existing areas of woodland to increase woodland biodiversity and help combat climate change

▶▶ CREATE Actions

Wo3A - improve biodiversity by creating mixed deciduous woodland consisting of appropriate native or climate change tolerant (European only) species to increase resilience and diversity. Such newly created woodlands are to be within 2.5 kilometres of existing woodland, though in practice to be much closer (ideally within 500 metres).

Newly created woods would ideally form a woodland block (or group of woodlands within 200 metres of each other) which are ideally at least 40 hectares in size. Woodland creation would be expected over approximately 80% of the site area mapped under this measure, with the remaining 20% a mosaic of other complementary habitats such as species-rich grassland, scrub, ponds, and individual trees.

Wo3B – deliver wider environmental benefits such as improving water quality, air quality and reduce flood risk through tree and woodland creation in appropriate locations such as upper catchment locations, adjacent to rivers and close to centres of population. Such sites should be a minimum of 0.5 hectares.

▶▶ UNMAPPED Actions

Wo3C - create woodland, scrub and other complementary habitat buffers such as species-rich grassland adjacent to appropriate priority woodland sites.

Wo 4 ▶ reduce the impacts of deer and squirrel within existing woodland to allow for natural regeneration and to improve the woodland biodiversity and economic value of timber

▶▶ SUPPORTING Actions

Wo4A - manage the impacts of deer to allow natural regeneration and structural diversity within existing woodland, reducing the impact on biodiversity and economy. Support the establishment of deer management groups.

Wet woodland

Wo 5 ▶ better manage woodlands to improve resilience and structural diversity.

▶▶ ENHANCE Actions

Wo5A– enhance the management of existing wet woodlands to create varied woodland structure at the site and landscape scale, in line with the UK Forestry Standard.

Wo 6 ▶ create areas of wet woodland in suitable locations.

▶▶ CREATE Actions

Wo6A - create wet woodland within appropriate hydrological areas, consisting of native or climate change resilient (European only) species. Newly created wet woodland should not be created in areas that buffer internationally designated areas such as the Ouse and Nene Washes, archaeological sites, or where wet grassland, fen and floodplain meadow habitats have been identified as priorities for habitat creation without further consultation.

▶▶ SUPPORTING Actions

Wo6A - create wet woodland within appropriate hydrological areas, consisting of native or climate change resilient (European only) species. Newly created wet woodland should not be created in areas that buffer internationally designated areas such as the Ouse and Nene Washes, archaeological sites, or where wet grassland, fen and floodplain meadow habitats have been identified as priorities for habitat creation without further consultation.

Wood pasture and parkland

Wo 7 ▶ improve the management of ancient and veteran trees within wood pasture and parklands.

▶▶ ENHANCE Actions

Wo7A– enhance the biodiversity value of designated or other mapped parkland and wood pasture sites, ensuring protection of and continuity of veteran and ancient trees in accordance with best practice, and the provision of complementary habitats such as species-rich grasslands, ponds and wetlands.

▶▶ UNMAPPED Actions

Wo7B - improve management of all ancient and veteran trees, including urban / street trees, including planning for replacement with locally sourced 'plant healthy' stock that is resilient to climate change.

Traditional orchards

Wo 8 ▶ improve the management of traditional orchards and seek to expand them where possible.

▶▶ ENHANCE Actions

Wo8A– restore and enhance the biodiversity value of traditional orchards. Where possible ensure such enhancements deliver gains for cultural and landscape continuity and for the genetic diversity of fruit trees. Enhance grasslands under the fruit trees to create complementary species-rich habitats.

▶▶ CREATE Actions

Wo8B– create traditional orchards close to existing traditional orchards. These should deliver enhanced biodiversity and heritage value through the planting of heritage variety fruit trees and the creation of species-rich grassland.

Woodland (all Types)

▶▶ SUPPORTING Actions

Wo9A – identify and map ancient and veteran trees within the landscape.

Wo9B - conserve and enhance ancient, heritage trees and veteran trees in landscape, including pollard willows in river valleys and hedgerows, for their biodiversity and heritage value, planning for the provision of replacement stock and future veteran trees. Put in place measures to protect them and ensure succession such as establishment of root protection, pruning practice, protection from livestock and nursing of seedlings.

Wo9C - improve management of all trees in and out of woodland, including urban / street trees, planning for replacement with locally sourced 'plant healthy' stock that is resilient to climate change.

Wo9D - ensure integration with Forestry England, local community and local planning authorities' tree and woodland strategies, as well as funding, to support the creation of new areas of trees and woodlands for public access and enjoyment.

Example of species supported by these habitats

Oxlip

Bluebell

Purple Emperor Butterfly

Hazel Dormouse

Wider environmental benefits

- Water supply
- Timber
- Energy
- Genetic diversity
- Inspiration and spiritual values
- Tranquillity
- Cultural heritage values
- Recreation and tourism services
- Pollination
- Disease and pest control
- Water quality
- Soil quality
- Erosion
- Water flow and flood
- Climate and carbon storage
- Air quality
- Soil formation
- Primary production
- Nutrient cycling
- Water cycling
- Biodiversity

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Grassland priorities, actions and supporting actions

Species-rich grasslands are rare in Cambridgeshire and Peterborough, though some of our remaining grassland sites are spectacular. The two main types of grassland present in our area have both been selected as local priorities due to their scarcity.

Lowland calcareous grassland occurs either in the south of Cambridgeshire on chalk soils or west of Peterborough on limestone soils. The chalk grassland in the south is often associated with ancient monuments, though a significant area has survived on the Gallops around Newmarket. These grasslands support a rich array of wildflowers including orchid and insect species. Although subtly different in character, the limestone grasslands are also valuable for a similar suite of flora and insects. Iconic species include Pasqueflower, Lizard Orchid, and a vast array of insects including Chalk-hill Blue Butterfly, Glow-worm and Bees, Common Lizard and some bird species such as Turtle Dove or Stone Curlew, though these also rely on arable land.

The other major type of grassland is lowland meadow. The most extensive examples occur in the Great Ouse Valley, where distinctive floodplain meadows are present between St Neots and Needingworth. Beyond the river valley, the remaining flower-rich lowland meadows are small and infrequently scattered across the Claylands, but support wildflowers such as Knapweed, Trefoil and Cowslip.

Theme 2 Grasslands (G)

Chalk and limestone grassland

G1 ▶ enhance calcareous grassland sites, buffer and enlarge them and create habitat stepping stones and corridors to connect habitats for important flora and invertebrate grassland species.

▶▶ ENHANCE Actions

G1A - enhance existing chalk and limestone grassland sites to create a diverse set of micro-habitats to support the diversity of scarce and common species associated with this habitat.

▶▶ CREATE Actions

G1B – improve biodiversity by creating species-rich calcareous grassland adjoining to, and up to 500 metres from, existing designated and other chalk and limestone grasslands. There is no minimum site size, but larger sites are preferable (in combination with other complementary habitats), and there should be a realistic ambition for sites to become priority habitat in the future.

G1C – deliver wider environmental benefits such as runoff reduction, water quality enhancement and potential access to nature, by creating species-rich calcareous grassland in appropriate locations.

Lowland meadows

G2 ▶ enhance existing meadow sites and create buffers and new sites to provide a refuge for species and improve their resilience to climate change.

▶▶ ENHANCE Actions

G2A - enhance existing species-rich neutral grassland sites to support the diversity of scarce and common species associated with this habitat.

▶▶ CREATE Actions

G2B – improve biodiversity by creating species-rich neutral grassland adjoining to, and up to 500 metres from, existing designated and other neutral grassland sites. There is no minimum size threshold, but larger sites are preferable (in combination with other complementary habitats) and therefore should be a realistic ambition for site to become priority habitat in the future.

G2C – deliver wider environmental benefits such as runoff reduction, water quality enhancement and potential access to nature, by creating species-rich neutral grassland in appropriate locations.

Dry grasslands (all Types)

SUPPORTING Actions

G3A - encourage the creation of complementary habitats (e.g. scrub, ponds), so long as the grassland remains the majority habitat created.

G3B - work with ecologists and local experts to introduce a LNRS area wide management approach to grassland restoration to deliver bespoke management for priority grassland species.

G3C - establish local seedbank to be accessible across the area, supplying locally sourced seed mixes seed for different soil types and uses.

G3D - manage recreational pressures on existing grassland conservation sites through appropriate zoning and protecting the most sensitive areas.

Example of species supported by these habitats

Knapweed Broomrape

Waxcap

Glow-worm

Wider environmental benefits

- Water supply
- Timber
- Energy
- Genetic diversity
- Inspiration and spiritual values
- Tranquillity
- Cultural heritage values
- Recreation and tourism services
- Pollination
- Disease and pest control
- Water quality
- Soil quality
- Erosion
- Water flow and flood
- Climate and carbon storage
- Air quality
- Soil formation
- Primary production
- Nutrient cycling
- Water cycling
- Biodiversity

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Wetlands priorities, actions and supporting actions

The Fens basin was once the largest wetland in Western Europe, but today less than 0.5% of the area supports wetland habitats. What remains includes the internationally important lowland fen sites of Wicken Fen, Woodwalton Fen, Chippenham Fen and Holme Fen. These are our most species-rich habitats, supporting many rare and scarce plants, invertebrates and other species. These include Crane, Hen Harrier, Spined Loach, Tansy Beetle, Marsh Carpet Moth, Fen Violet, Fen Wood-rush and Greater Water-parsnip.

Our other type of internationally important wetland is the Ouse and Nene Washes. These were created as part of the water management and drainage system that turned The Fens from wetland to farmland. The extensive area of floodplain wet grassland supports internationally important numbers of waterbirds including Bewick's and Whooper Swan, geese, ducks, wading birds and Egret.

The Fen wetlands are therefore the top priority for nature recovery locally. They could in future provide space for species currently missing from the landscape to be returned such as Spotted Crake, Pool Frog or Swallowtail Butterfly.

Other types of wetland habitat selected as a local priority for recovery include reedbeds and gravel pits, lakes and reservoirs. Reedbeds are scarce across the area, but because of mineral restoration plans, significant new reedbeds will be created including one of the largest in England at Ouse Fen. These support Bittern and Reed Leopard Moth. Former gravel pits and existing reservoirs such as Grafham Water have been chosen as a local priority because they support nationally important numbers of wetland birds.

Theme 3 Wetlands (We)

Lowland fens and floodplain wet grasslands and associated habitats

We 1 ▶ create wetlands on peat soils around remnant fen sites to buffer and protect the peatland fen habitats for their special biodiversity and improve their hydrological function

▶▶ CREATE Actions

We1A – in the following large-scale Fenland wetland vision areas: Wicken Fen; Great Fen; Ouse Washes Landscape Area; and Nene Washes, together with surrounding areas associated with such Vision Areas, create mosaics of wetland habitats such as fens, reedbeds, wet grasslands for breeding and wintering waterbirds, ponds, wet woodlands and other complementary habitats.

We 2 ▶ identify and prioritise areas for the protection of peat soils to restore fen habitats and reduce carbon losses from the soil

▶▶ ENHANCE Actions

We2A– manage floodplain wetland mosaics through sustainable grazing to create habitats that are wetter for longer and support a greater diversity and abundance of wetland flora and fauna, including breeding and wintering wetland birds.

We 3 ▶ enhance and create floodplain wet grassland sites to better support breeding and wintering wetland birds

▶▶ CREATE Actions

We3A - create areas of floodplain wetland mosaics within the embanked floodplain land of the major rivers to enhance connectivity between wetland sites and reverse habitat fragmentation to support diverse species assemblages

Reedbeds

We 4 ▶ sustainably manage established reedbeds to preserve their important role as a carbon sink and valuable habitat.

▶▶ ENHANCE Actions

We4A – enhance existing reedbeds to benefit the bird and invertebrate species associated with this habitat. This can include managing reeds to a variety of heights at different stages of growth, areas of wet reedbed with varying water depths, dry reedbed and a network of open water pools and channels.

▶▶ CREATE Actions

We4B - create reedbed habitats that are resilient to climate change in suitable locations beyond the landscape-scale wetland vision areas. Large examples are likely to be associated with the restoration of mineral sites.

Gravel pits, lakes and reservoirs

We 5 ▶ better manage gravel pits to support wetland wildlife

▶▶ ENHANCE Actions

We5A – enhance existing former sand and gravel pits sites through best practice management to maintain areas of open water, fringing reedbeds and other wetland habitats such as pollard willows and wet woodland for wetland birds, invertebrates and flora. Reduce nutrient enrichment and pollution and where necessary reprofile edges to create shallow sloping margins and bare areas for natural regeneration.

We 6 ▶ design new mineral sites and reservoirs to include features suitable for wetland wildlife and as stepping stone habitats for wetland species.

▶▶ CREATE Actions

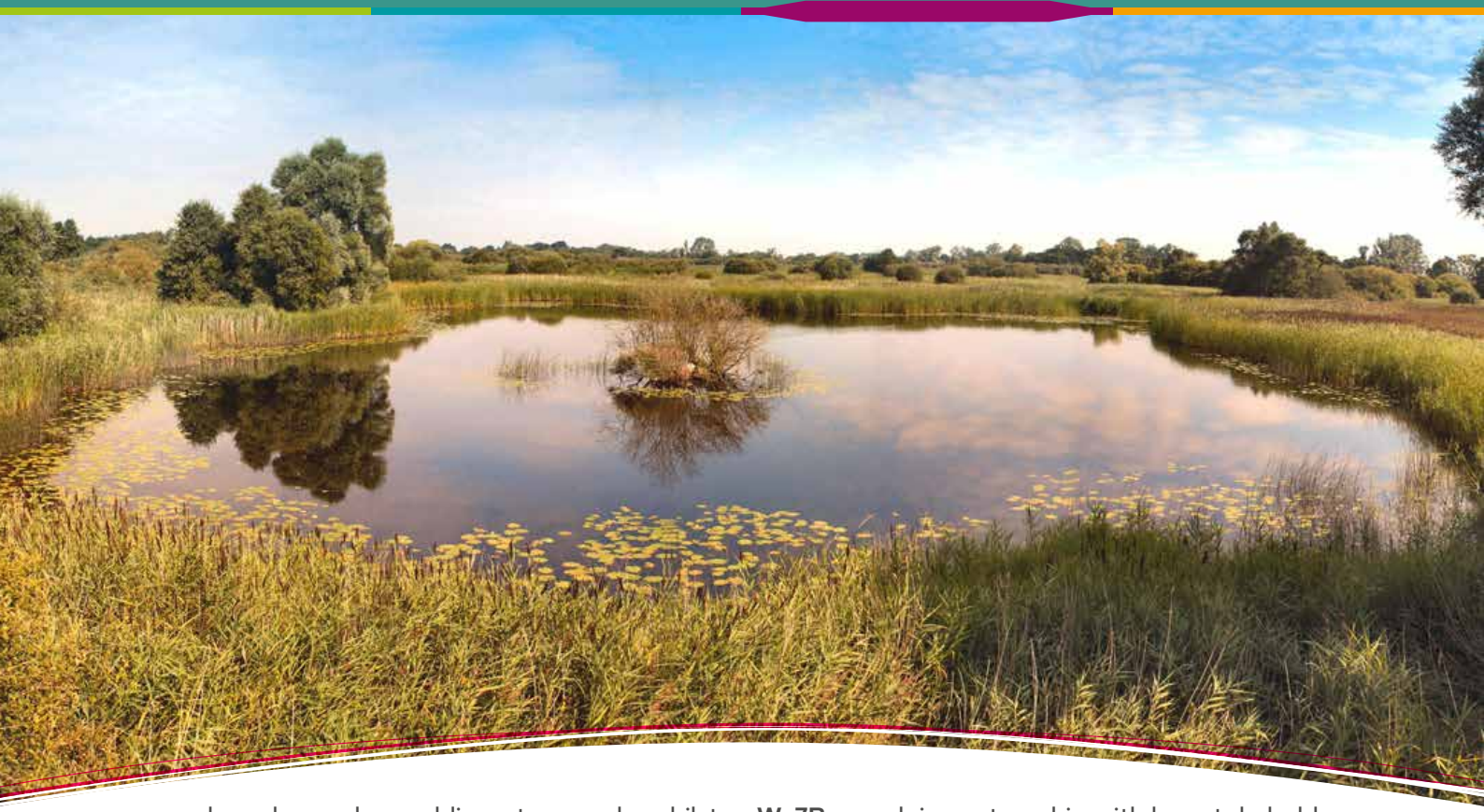
We6A - around the Fens reservoir create a range of wetland habitats including reedbeds and wet grassland. This measure does not apply to the reservoir itself.

▶▶ UNMAPPED Actions

We6B – create new bodies of open water after mineral extraction has taken place. Ensure they are designed to promote nature in accordance with best practice, and include shallow margins, islands, areas of bare ground, fringing reedbeds and areas of wet woodland and pollard willows.

▶▶ SUPPORTING ACTIONS

We6C– promote the creation of nature-friendly farm reservoirs to capture water for irrigation



uses, reduce demand on public water supply, whilst providing wetland stepping stones across the landscape.

Wetlands (all types)

We 7 ▶ work with farmers, landowners and internal drainage boards to deliver nature-rich habitat restoration and more sustainable land use practices to protect peat soils, through the adoption of new agri-environment schemes and minimising the presence of bare peat.

▶▶ SUPPORTING Actions

We7A – enhance water management systems and manage land connected to peatland habitats to protect their hydrological and nutrient status, for example reducing nutrient rich run off, modifying drainage next to lowland fens to reduce or prevent water losses from the site.

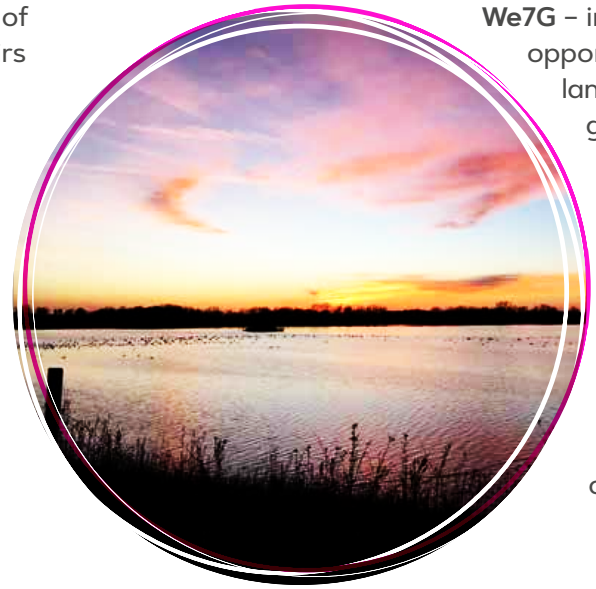
We7B – work in partnership with key stakeholders to pursue sustainable long-term water management solutions, ensuring water is captured, stored and conveyed to the correct places as the correct time, through an Integrated Water Management approach that looks at site, farm and landscape scale to support creation and enhance of wetland mosaics.

We7C– farm businesses should help reduce the effects of agricultural run-off on water quality including implementation of integrated pest management and reduction of pesticide use, and best practice nutrient management to reduce nutrients entering watercourses.

We7D – support paludiculture and explore opportunities for complementary cropping that reduces pollution and improves water quality, reduces peat soil losses and carbon emissions.

We7E– promote the creation of nature-friendly farm reservoirs within the Fens to capture water for irrigation uses, reduce demand on public water supply, whilst providing wetland stepping stones across the landscape.

We7F – continue to map areas of surface and buried peat to better inform peat conservation and restoration and support the use of peatland maps by partners and stakeholders.



We7G – increase educational opportunities across the Fens landscape to access its geodiversity, archaeology and cultural heritage to enhance enjoyment and understanding for those who live and work in and visit the Fens and supporting the development of tourism opportunities to benefit the area's economy and communities.

Example of species supported by these habitats

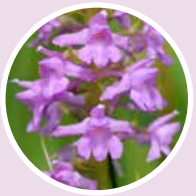
Ground Beetle

Fen Violet

Yellow Iris

Drinker moth caterpillar

Marsh Fragrant Orchid



Wider environmental benefits

- Water supply
- Timber
- Energy
- Genetic diversity
- Inspiration and spiritual values
- Tranquillity
- Cultural heritage values
- Recreation and tourism services
- Pollination
- Disease and pest control
- Water quality
- Soil quality
- Erosion
- Water flow and flood
- Climate and carbon storage
- Air quality
- Soil formation
- Primary production
- Nutrient cycling
- Water cycling
- Biodiversity

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Rivers, streams and drains priorities, actions and supporting actions

All rivers and their floodplains have been selected as local priorities for nature recovery as they provide landscape-scale corridors and can deliver a wide range of other natural benefits. The upper Cam catchment supports around a dozen chalk streams, although many have been significantly modified by river engineering, drainage and excessive water abstraction for human use. Iconic species include Brown Trout and Water Vole. England has most of the world's chalk streams so even damaged examples are a priority for nature recovery.

Our other rivers support species such as Otter, Kingfisher and populations of fish and aquatic insects such as dragonflies. Some species such as Brook Lamprey are only associated with unpolluted water. In the medium to long term there may be opportunities to re-introduce beavers to some tributaries and upper catchments of the Cam, Great Ouse and Nene, to help deliver nature-based solutions to reduce flood risk and improve water quality. However, throughout most of our area this could not be considered before significant riverside habitat, and woodland creation has been undertaken to create a suitable environment.

The network of fen rivers, main drains and drainage ditches is essential to continued farming of the Fens, particularly with much of the land at or below sea level. Although man-made, the drainage network supports relic fen plant and invertebrate species, particularly where the water quality is good. Even where the water quality is poorer, the network supports a nationally significant population of Water Vole and are also home to the rapidly declining European Eel. They therefore provide an interconnected wetland network across the landscape, that can support the movement of species between the major wetland restoration sites.

Theme 4 Rivers, streams and drains (RD)

Rivers

RD1 ▶ create and increase buffers alongside rivers and streams to enhance the water quality and biodiversity of our rivers.

▶▶ ENHANCE Actions

RD1A– establish natural or semi-natural buffer zones 50 metres wide adjacent to all rivers to improve river water quality, and consequently their biodiversity value and ecological functionality. Within such buffer zones, appropriate measures should be introduced which both enhance biodiversity and reduce sediment or pollutant run off into the water. Restore natural function of the river channel through restoration of natural processes, reconnecting rivers with floodplains and creating backwaters and backchannels to provide fish spawning and riparian habitats along the river.

▶▶ UNMAPPED Actions

RD2A– reduce sedimentation of rivers by better land management of the river catchment to create habitats that help prevent soil erosion and stop sediments entering watercourses.

Chalk streams

RD3 ▶ Conserve and restore chalk streams and associated habitats to preserve and improve their high ecological value to both nature and people.

▶▶ ENHANCE Actions

RD3A– establish natural or semi-natural buffer zones 50 metres wide adjacent to all chalk rivers and their headwaters, winterbourne sections and springs to improve river water quality, and consequently their biodiversity value and ecological

functionality. This will help reduce sedimentation of rivers by better land management of the chalk river catchment to create habitats that help prevent soil erosion and stop sediments entering watercourses. It will also help prevent spray drift from agricultural activities into the chalk rivers.

Rivers and streams (All Types)

RD1 ▶ create and increase buffers alongside rivers and streams to enhance the water quality and biodiversity of our rivers.

▶▶ SUPPORTING Actions

RD6A - reconnect rivers to floodplains wherever feasible to hold more water for longer on floodplains to provide more space for wetland biodiversity, and to contribute to nature based solutions such as improved water quality and reduced flood risk.

RD6B – identify and remove redundant artificial structures within rivers and streams to create more natural flows and remove barriers to fish migration. Where barriers cannot be removed (e.g. navigation locks), seek to maximise the habitat variety within backwaters and bypass channels.

RD6C – continue to advocate for early reductions in abstraction from the chalk aquifer to restore natural flows to chalk streams.

RD6D – undertake definitive mapping of chalk streams and their headwaters and springs to inform water resource planning and future chalk stream restoration efforts, working with partner organisations (e.g. Natural England, Catchment Based Approach (CaBA) Chalk Stream Working Group and Greater Cambridge Chalk Stream Project).

RD6E - continue to support existing farm clusters, working with catchment partnerships and local facilitators to deliver high quality chalk streams, support farmland species and address issues around water quality and water scarcity by supporting alternative water storage solutions and aquifer recharge.

RD6F– work in partnership with water companies, catchment partnerships and landowners, and supporting citizen science projects to deliver comprehensive monitoring of the chalk streams, including headwaters.

RD6G - work in conjunction with organisations already undertaking invasive species control to eradicate mink and other invasive species. This should be carried out with careful consideration of ecological impacts and in compliance with relevant regulations and guidelines.

RD6H– enhance sections of watercourses identified as bathing spots for the benefit of both biodiversity and health and wellbeing.

Fen main drains

RD4 ▶ Enhance the fen main rivers and drains adjacent land to create wetland stepping stones along these landscape corridors.

▶▶ ENHANCE Actions

RD4A– maximise opportunities for nature in fen main drains by choosing nature-supporting and enhancing maintenance and management approaches such as enhancing in channel habitats to provide more habitat for wetland wildlife alongside managing flood risk and water levels.

▶▶ CREATE Actions

RD4B - within corridors 50 metres either side of the fen rivers and main (excluding the 20 metre internal drainage board bylaw maintenance corridors) drains, create wetland stepping-stone habitats including, reedbeds, fens, wet grassland, ponds and open water features.

▶▶ UNMAPPED Actions

RD4C – support aquatic nature in fen main drains by reducing or intercepting direct discharges of nutrient-rich water into fen internal drainage board ditches.

Fen drainage ditches

RD5 ▶ enhance the network of fenland farm drainage ditches by providing habitat buffers and improving water quality.

▶▶ ENHANCE Actions

RD4A– maximise opportunities for nature in fen

drainage ditches by choosing nature-supporting and enhancing maintenance and management approaches such as enhancing in channel habitats to provide more habitat for wetland wildlife alongside managing flood risk and water levels.

CREATE Actions

RD5B– establish uncultivated riparian buffer zones at least 15 metres wide from the top of the bank (including the 9 metre internal drainage board bylaw maintenance corridor). Plant or promote low growing, non-woody vegetation such as diverse grasses or wet grassland mixes that are compatible with regular ditch maintenance operations, to provide habitats for nature

UNMAPPED Actions

RD5C– improve water quality monitoring across internal drainage board ditches to identify those that have poor water quality and develop natural in-channel or off-line filtration areas such as reedbeds, to intercept and remove excess nutrients from water.

RD5D– enhance the network of fen ditches and farm drainage ditches through the provision of buffer zones (a minimum of two metres in width, from the top of the bank). Within such buffer zones, appropriate measures should be introduced which both enhance biodiversity and reduce sediment or pollutant run-off into the ditch.

RD5E–maximise the opportunities for aquatic biodiversity by improving water level management across smaller areas, enabling some seasonally dry ditches to retain water all year round.

Example of species supported by these habitats

Spined Loach

Opposite-leaved Pondweed

River snail

Wider environmental benefits

- Water supply
- Timber
- Energy
- Genetic diversity
- Inspiration and spiritual values
- Tranquillity
- Cultural heritage values
- Recreation and tourism services
- Pollination
- Disease and pest control
- Water quality
- Soil quality
- Erosion
- Water flow and flood
- Climate and carbon storage
- Air quality
- Soil formation
- Primary production
- Nutrient cycling
- Water cycling
- Biodiversity

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Habitat mosaics priorities, actions and supporting actions

Many species depend on more than one habitat type to complete their life cycle. Our lowland landscapes also comprise a mixture of wooded, grassy or wet habitats and a combination of these will often result in "the whole being more than the sum of the parts".

Nature recovery across Cambridgeshire and Peterborough will require the rebuilding of nature networks comprising mixtures and mosaics of different habitat types to support the widest range of biodiversity. In recognition of our local circumstances, habitat mosaics have been chosen as an additional local priority.

Theme 5 Habitat mosaics (M)

Habitat mosaic

M1 ▶ improve the diversity of habitats at a landscape and site-scale to increase the diversity and abundance of species and make them more resilient to climate change.

▶▶ CREATE Actions

M1A - where two or more mapped actions arise on the same land parcel, the preference is to create mosaics of the identified habitats, with at least one of the habitats of a sufficient quality to meet the minimum standards for that habitat.

▶▶ UNMAPPED Actions

M1B – within the following priority natural landscape areas, create the habitat as described in the applicable brackets for each area:

John Clare Countryside (woodland, scrub, wood pasture, limestone grassland, lowland meadows, ponds and networks of hedgerows).

West Cambridgeshire Hundreds (woodland, scrub, wood pasture, lowland meadows, ponds and networks of hedgerows).

Cambridge Nature Network – Boulder Clay and Woodlands (woodland, scrub, lowland meadows, ponds and networks of hedgerows).

East Cambridgeshire Nature Network – Boulder Clay Woodlands (woodland, scrub, wood pasture, lowland meadows, ponds and networks of hedgerows).

East Cambridgeshire Nature Network – Soham Grasslands (lowland meadows, scrub, ponds and networks of hedgerows).

East Cambridgeshire Nature Network – Chettisham to Ely North (lowland meadows, scrub, ponds and networks of hedgerows).

East Cambridgeshire Nature Network – Breckland Edge (woodland, scrub, wood pasture, lowland meadows, ponds and acid grasslands).

Huntingdonshire Nature Network – Grafham-Brampton-River Kym (woodland, scrub, wood pasture, lowland meadows, ponds and networks of hedgerows).

Huntingdonshire Nature Network – Holme-Conington (woodland, scrub, wood pasture, lowland meadows, ponds and networks of hedgerows).

Huntingdonshire Nature Network – Folksworth-Etton-Ashton Wold (woodland, scrub, wood pasture, lowland meadows, ponds and networks of hedgerows).

Huntingdonshire Nature Network – Hail Weston to Bushmead (woodland, scrub, lowland meadows, ponds and networks of hedgerows).

M1C - restore and enhance habitats within and around County Wildlife Sites, in coordination with landowners, to increase the ecological value of the site.

▶▶ SUPPORTING Actions

M1D – work with landowners to identify and map the locations within each priority natural landscape area that can be taken forward to deliver the desired landscape-scale mosaic of habitats.

Example of species supported by these habitats

Skylark

Common Lizard

Gatekeeper Butterfly

Wider environmental benefits

- Water supply
- Timber
- Energy
- Genetic diversity
- Inspiration and spiritual values
- Tranquillity
- Cultural heritage values
- Recreation and tourism services
- Pollination
- Disease and pest control
- Water quality
- Soil quality
- Erosion
- Water flow and flood
- Climate and carbon storage
- Air quality
- Soil formation
- Primary production
- Nutrient cycling
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- Biodiversity

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Urban landscape priorities, actions and supporting actions

Most people in Cambridgeshire and Peterborough live in urban areas whether towns, cities or villages.

Contact with nature improves quality of life and provides many health benefits whether it is the sounds of bird song, the colour of flowers and butterflies, or an urban landscape with good tree cover. Although not one habitat type, we recognise the value of urban parks and greenspaces and private gardens to human endeavours and quality of life and have therefore included them as a local priority, to bring nature recovery close to people.

Our urban areas support several iconic species including Swift, Swallow, House Martin, Song Thrush, Hedgehog and Bumblebee.

Theme 6 Urban landscapes (U)

Urban parks and natural greenspaces

U1 ▶ enhance greenspaces in urban and rural areas to increase access to nature, foster improved health and wellbeing, and improve the resilience of people and nature to climate change.

▶▶ ENHANCE Actions

U1A - enhance the biodiversity value of parks and green spaces within our cities, towns and villages including allotments, churchyards, country parks, public parks and gardens, community gardens and river corridors.

▶▶ SUPPORTING Actions

U1B - increase the urban tree canopy by planting native and climate resilient tree species in streets, parks, and other public spaces to provide habitat, reduce urban heat island effects, and improve air quality.

U2 ▶ create new natural greenspaces in urban areas to provide environmental benefits such as improved air quality, climate change resilience, and greater health and wellbeing for residents.

U2A - create new natural greenspaces prioritising areas at most risk of health impacts (as identified by the Environmental Justice Index). New natural greenspaces would be of a minimum 0.5 hectares in size, with larger sites preferable, to contribute to natural greenspace accessibility standards.

U2B - deliver nature-based solutions through tree planting and woodland creation in beneficial locations within urban areas and close to centres of population to provide benefits such as air quality improvement, urban cooling, noise pollution, climate change resilience, and health and wellbeing.

U2C - deliver new strategic natural greenspaces at the proposed Whittlesey Country Park and as an extension to West End Park, March.

▶▶ UNMAPPED Actions

U2D– identify and bring forward through local plans, locations for provision of new strategic natural greenspaces for the market towns in the Fens, including Ely, Littleport, Chatteris, March, Whittlesey and Wisbech.

U2E - identify and bring forward through local plans, locations for provision of new strategic natural greenspaces for the market

towns in the Fens, including Ely and Littleport in East Cambridgeshire and in Fenland, the locations identified at Chatteris, March, Whittlesey and Wisbech through the Interim Fenland Nature Recovery Network.

Transport corridors

U3 - increase wildlife connectivity across transport corridors.

▶▶ UNMAPPED Actions

U3A– support high quality wildlife corridors and pollinator routes along road and rail network, public rights of way, and ancient routeways such as fen droves.

U3B– map the locations of fen droves and identify remaining biodiversity hotspots, including for locally significant species such as elms and scarce invertebrate species.

U4 - increase wildlife habitats along infrastructure routes to improve people's access to nature, foster their health and wellbeing.

▶▶ CREATE Actions

U4A– connect fragmented habitats through the delivery of strategic wildlife crossings of major road and rail infrastructure (e.g. identify locations where green bridges would support landscape connectivity and nature recovery).

Urban parks and greenspaces (all types)

▶▶ SUPPORTING Actions

U5A – use Natural England Green Infrastructure Standards to identify natural greenspace deficits in all communities across Cambridgeshire and Peterborough. Through local plans, put in place policies and site allocations to address identified deficiencies.

U5B– enable increased access for people of all abilities to appreciate, engage, enjoy and be involved with nature close to where they live and work (e.g. greenspaces, allotments, churchyards, gardens).

U5C - support local communities to develop their own local nature recovery plans that identify, protect and restore sites / habitats / species found in their local area.

U5D – encourage the adoption of nature friendly gardening in private gardens through campaigns to signpost people to toolkits and other online guides.

U5E – identify nature sites adversely impacted by recreational pressures and where necessary increase suitable alternative natural green space provision, based on district nature recovery networks, local plans and other strategies.

U5F - implement best practice in green infrastructure design and provision in new developments and through local plans. Retrofit urban greening and SuDS measures in line with urban greening and infrastructure measures.

U5G– work in partnership to create SuDS opportunity maps with associated case studies setting out areas that could be used for reducing flood risk and enhancing biodiversity.

U5H – work in partnership to manage recreational pressure on existing conservation sites through appropriate zoning and alternative greenspace

provision, including through a visitor management/ recreational pressure strategy. Identify and promote alternative greenspaces and public rights of way to reduce visitor pressure, seeking input from residents, landowners and community groups to ensure local needs are reflected.

U5I – encourage people to adopt nature friendly gardening and contribute toward the nature recovery.

U5J - enhance the skills base for nature recovery by addressing the shortage of professionals in habitat restoration, conservation contracting, and species management. By increasing training opportunities for botanists, ecologists, and specialists in species identification, translocation, and reintroductions to ensure effective conservation efforts.

Example of species supported by these habitats

Hedgehog

Brimstone butterfly

Swallow

Bee Orchid

Wider environmental benefits

- Water supply
- Timber
- Energy
- Genetic diversity
- Inspiration and spiritual values
- Tranquillity
- Cultural heritage values
- Recreation and tourism services
- Pollination
- Disease and pest control
- Water quality
- Soil quality
- Erosion
- Water flow and flood
- Climate and carbon storage
- Air quality
- Soil formation
- Primary production
- Nutrient cycling
- Water cycling
- Biodiversity

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Farmed landscape priorities, actions and supporting actions

All farms can support nature recovery with the provision of a variety of field edge habitats on less productive parts of the farm. Nature friendly farming is essential to support the habitat creation required to drive nature recovery.

However, there are some species which depend on farming and in-field or boundary habitats. Across our area there are populations of rare and scarce plant species associated with arable crops. There is also a group of birds associated with farmland where we can contribute towards their national recovery, including Turtle Dove, Grey Partridge, Yellow Wagtail, Corn Bunting, Skylark, Yellowhammer and Stone Curlew. East Anglia is also a national stronghold for Brown Hare. These rare arable plant and farmland bird assemblages are a local priority.

Although not renowned for our wooded and hedgerow landscapes there are areas, including on the clay soils and the fen-edge droves, that support our rare and scarce Elm species and the insect species that are dependent on them. These have therefore also been chosen as a local priority.

While the number of ponds has been much reduced over the past century, they support species such as Great Crested Newt. The UK is the world stronghold for this species, giving us added responsibility for its future. Ponds are essential to support a wide range of wildlife and complement other habitat creation, providing habitats for aquatic plants, insects and amphibians and drinking water for other fauna. Pond restoration and creation can occur across farmland and within our urban areas wherever there are suitable soils, so have been chosen as a local priority.

Temporary pools within chalk farmland support a highly specialised set of plants and invertebrates and some notable examples are known from Cambridgeshire. These have therefore been selected as a local priority.

Theme 7 Farmed landscapes (F)

Arable field margins

F1 ▶ increase the presence and quality of biodiversity rich arable field margins around farmland to improve the diversity of farmland species and provide habitat that is connected and more resilient to climate change.

▶▶ UNMAPPED Actions

F1 A– identify hotspots of rare arable plant species and promote suitable stewardship in field and margin measures in the areas around these hotspots.

▶▶ UNMAPPED Actions

F1B – identify hotspots for declining farmland bird assemblages and promote a suite of suitable Stewardship measures in the areas around these hotspots.

▶▶ SUPPORTING Actions

F1C – aim for at least 7-10% of every farm to be high value habitats, boundary habitats and / or uncropped and unsprayed land including field margins and headlands, pollen and nectar mixes and wild bird mixes, as part of the adoption of nature-friendly farming.

F1D – farmers to follow best practice to reduce the effects of agricultural runoff including pesticides and excess nutrients on water quality. Measures include implementation of integrated pest management and use of suitable Environmental Land Management options to buffer high-value habitats and watercourses.

F1E – develop a toolkit to promote appropriate Environmental Land Management options for the three main landscape areas of the area – the Fens, the Chalklands and the Clayland.

Farm ponds

F2 ▶ increase the number of farm ponds, including the restoration of historic pools, to provide important stepping-stone habitats and water supply for wildlife.

▶▶ UNMAPPED Actions

F2A – manage networks of farm ponds to support aquatic biodiversity as well as provide a valuable water source for terrestrial wildlife.

F2B - restore historic ponds that have been previously infilled (ghost ponds). Ponds should be surrounded by uncropped and unsprayed buffers to prevent pollution.

F2C - create networks of new farm ponds across the farmed landscape, particularly on clay soils. Prioritise locations that provide connection / stepping stones to existing areas of priority habitat and wildlife sites. Creation of clusters of two or three ponds is better than single ponds. Ponds should be surrounded by suitable uncropped and unsprayed buffer zones or other habitat types to prevent pollution. Ponds should be created following best practice design.

Farm ponds

F2 ▶ increase the number of farm ponds, including the restoration of historic pools, to provide important stepping-stone habitats and water supply for wildlife.

▶▶ UNMAPPED Actions

F2A – manage networks of farm ponds to support aquatic biodiversity as well as provide a valuable water source for terrestrial wildlife.

Temporary ponds / pools

F3 ▶ increase the presence of shallow pools on chalk soils

▶▶ UNMAPPED Actions

F3A– identify the best locations to create temporary water bodies and pools in chalk landscape locations known to support species associated with this scarce habitat type. Avoiding ploughing and spraying of seasonally wet areas, and do not create permanent ponds.

Hedgerows

F4 ▶ increase the presence of hedgerows around farmland to control run-off, improve the abundance and diversity of farmland species and provide habitat that is connected and more resilient to climate change.

▶▶ UNMAPPED Actions

F4A– enhance the biodiversity value of existing hedgerows to maximise their wildlife benefits through the implementation of best practice hedgerow management.

F4B identify all fen droves with important populations of elms or assemblages of invertebrate species and prioritise the protection and enhancement of the hedgerows and associated grasslands.

F4C - plant new native hedgerows to create ecological links between two existing features such as woodlands, priority hedgerows and historical hedgerows. Where such new hedgerows are created, they should be buffered by strips of uncultivated land at least six

metres wide adjacent to at least one side of the hedge created.

F4D– create networks of hedgerows between core local nature sites within the priority natural landscape areas on clay soils, as listed below:

- **West Cambridgeshire Hundreds**
- **Cambridge Nature Network:** Boulder Clay and Woodlands
- **East Cambridgeshire Nature Network:** Boulder Clay Woodlands; Soham Grasslands; Chettisham to Ely North
- **Huntingdonshire Nature Network:** Grafham-Brampton-River Kym; fen edge Woodlands; Folksworth-Etton-Ashton Wold; and Hail Weston to Bushmead

SUPPORTING Actions

F4E– encourage the planting of species appropriate to the local area, selected for the soil types, resilient to climate change and supporting local invertebrate species. Specifically for Cambridgeshire, include local varieties of elm to increase disease resilience maintain local genetic variety and provide food source for invertebrates. Avoid the use of non-native species or invasive species.

Example of species supported by these habitats

Harvest Mouse

Poppies

Corn marigold

Broad-leaved spurge

Wider environmental benefits

- Water supply
- Timber
- Energy
- Genetic diversity
- Inspiration and spiritual values
- Tranquillity
- Cultural heritage values
- Recreation and tourism services
- Pollination
- Disease and pest control
- Water quality
- Soil quality
- Erosion
- Water flow and flood
- Climate and carbon storage
- Air quality
- Soil formation
- Primary production
- Nutrient cycling
- Water cycling
- Biodiversity

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Site-specific actions

Priority natural landscape ▸ John Clare Countryside

Actions

- Around Castor Hanglands NNR, create a landscape mosaic of habitats with approximately 40% woodland, 20% scrub and 40% lowland meadow.
- Around Barnack Hills and Holes NNR and connecting to Walcot Park, the Southorpe SSSIs / CWS and Burghley Park, seek to create 80% limestone grassland with 20% scrub and networks of hedgerows.
- Along the Whitewater Brook create a mosaic of fens, wet and dry species-rich grassland types, scrub, woodland and wet woodland in roughly equal proportions, and restore a more natural channel.
- Along the Maxey Cut habitat corridor create a mixture of 50% grassland, 20% wetland and 30% woodland associated with gravel extraction sites.

Priority natural landscape ▸ West Cambridgeshire Hundreds

Actions

- Create new woodland (60%) and associated habitats (lowland meadow 20%, scrub 20%, ponds and wood pasture) adjacent to selected SSSI woodland and at a small number of stepping stone habitat locations identified by landowners.

Priority natural landscape ▸ Great Ouse Valley

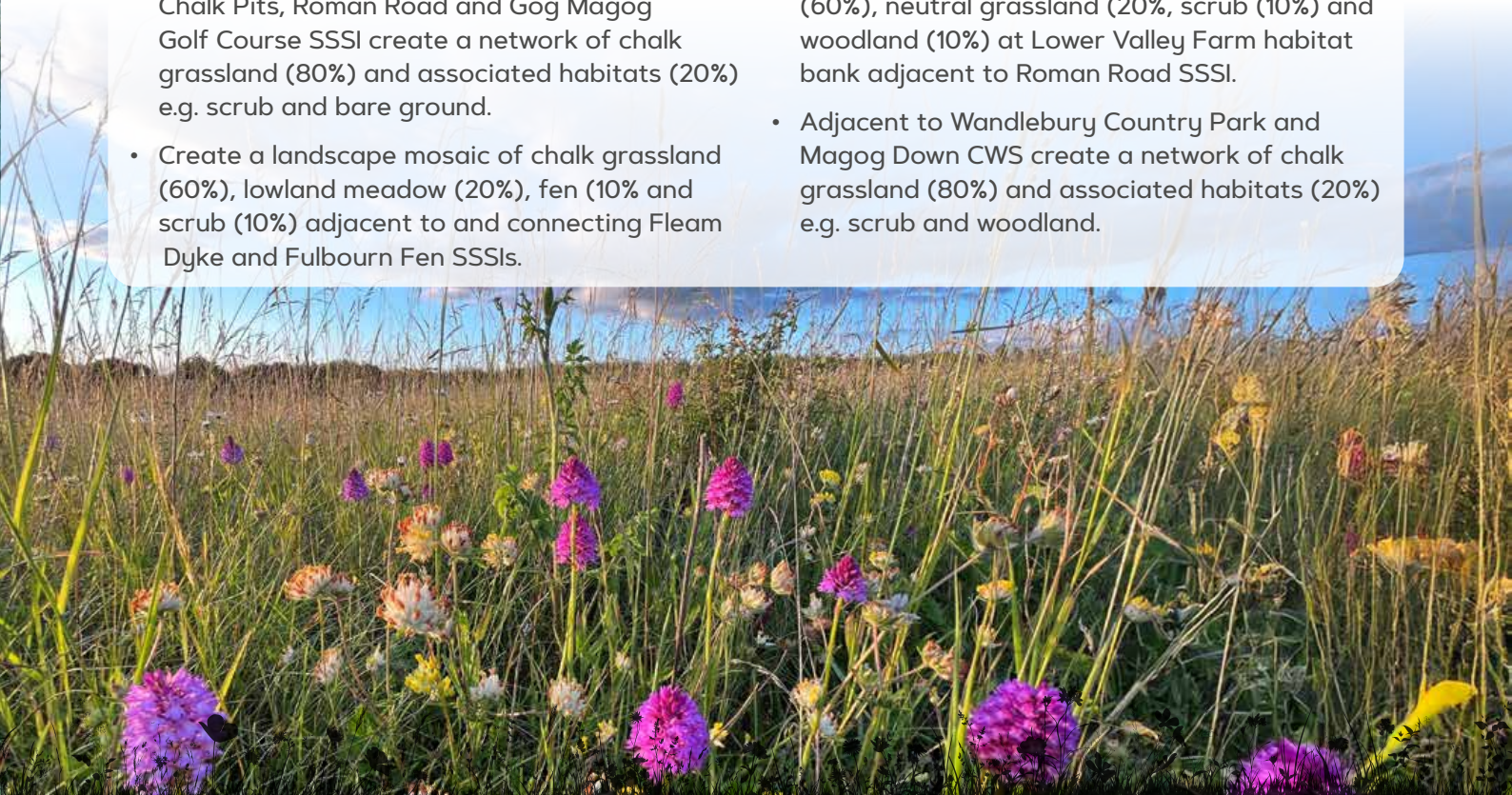
Actions

- Wildlife Trust detailed field scale mapping to supersede habitat modelling outputs.

Cambridge Nature Network ▸ Gog Magog Hills

Actions

- Adjacent to and connecting Cherry Hinton Chalk Pits, Roman Road and Gog Magog Golf Course SSSI create a network of chalk grassland (80%) and associated habitats (20%) e.g. scrub and bare ground.
- Create a landscape mosaic of chalk grassland (60%), lowland meadow (20%), fen (10% and scrub (10%) adjacent to and connecting Fleam Dyke and Fulbourn Fen SSSIs.
- Create a landscape mosaic of chalk grassland (60%), neutral grassland (20%, scrub (10%) and woodland (10%) at Lower Valley Farm habitat bank adjacent to Roman Road SSSI.
- Adjacent to Wandlebury Country Park and Magog Down CWS create a network of chalk grassland (80%) and associated habitats (20%) e.g. scrub and woodland.



Cambridge Nature Network ▸ Cambridge Fens

Actions

- Adjacent to and connecting Wilbraham Fen, Great Wilbraham Common and Fulbourn Fen SSSIs, create a landscape mosaic of fen (20%), reedbed (10%), wet grassland (40%), lowland meadow (20%), and scrub (10%) habitats.
- Restoration and buffering of Little Wilbraham River and headwaters with a mosaic of species-rich grassland (60%), scrub (20%) and woodland (20%).

Cambridge Nature Network ▸ Boulder Clay and Woodlands

Actions

- Create new woodland (60%) and associated habitats (lowland meadow 20%, scrub 20%, ponds and wood pasture) adjacent to selected SSSI woodland and at a small number of stepping stone habitat locations identified by landowners.

East Cambridgeshire Nature Network ▸ Chippenham Fen

Actions

- Adjacent to and connecting Chippenham Fen, Snailwell Meadows and Fordham Woods SSSIs create a mosaic of fen (20%), lowland meadow (50%), scrub (10%) and woodland (20%) habitats.

East Cambridgeshire Nature Network ▸ Newmarket Chalk Grasslands

Actions

- Create an extended buffer of chalk grassland adjacent to Devil's Dyke SSSI with up to 20% scrub and bare ground habitats.

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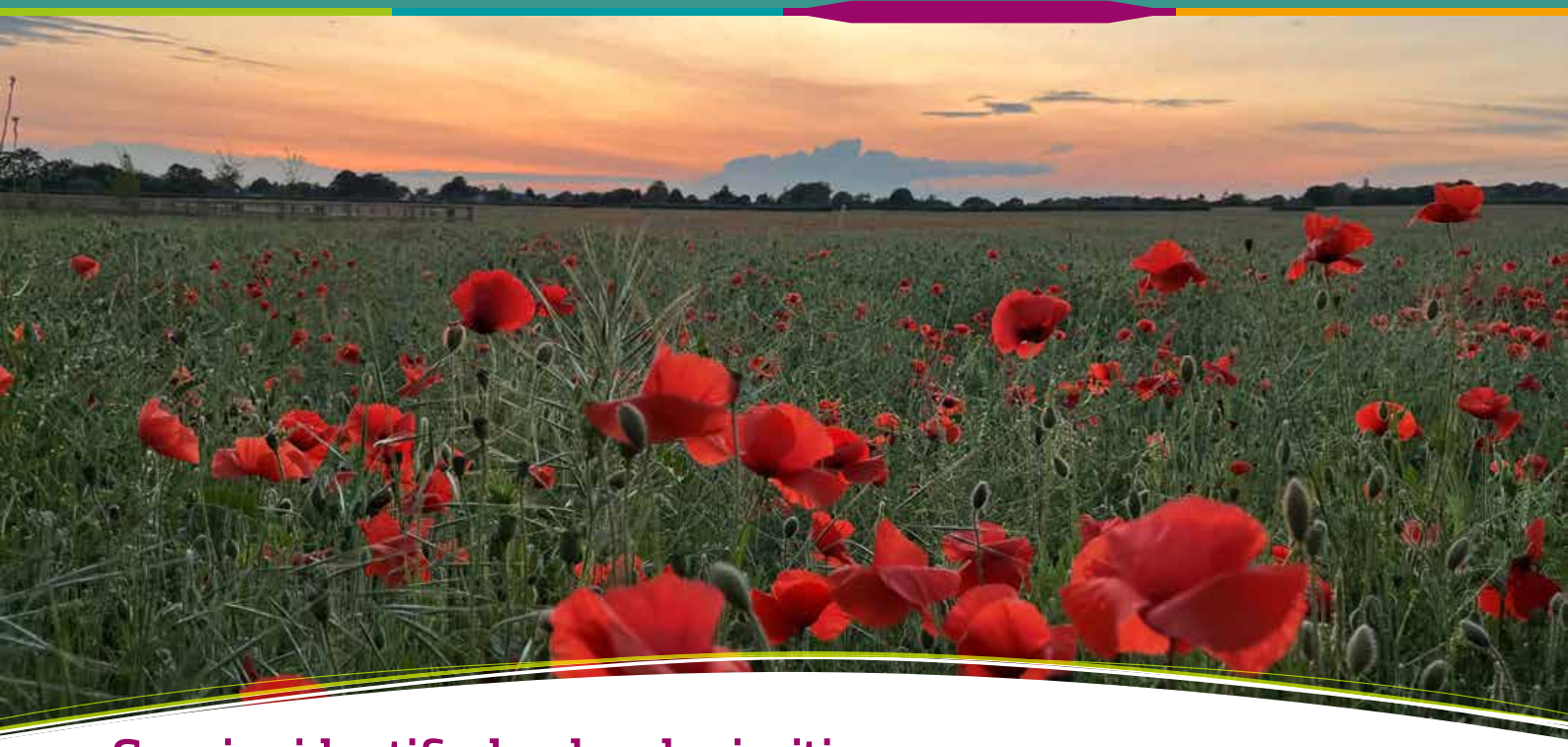


Species identified as local priorities

In addition to habitat priorities, this strategy had identified species priorities. We have a list of 144 species identified as locally and nationally important (see Priority Species list without actions) by both expert stakeholders and the wider public, as those that are most valued in our area. The methodology for selecting these species can be read in the Prioritisation and Mapping Methodology.

Cambridgeshire and Peterborough hold a large proportion of the British population for some plant species and select animal groups, which therefore hold special importance. Most 'special species' are reliant on habitats which are themselves of special value in the area. About half the species are associated with fenland, either ancient fens or species-rich fen ditches. Ancient woodland and chalk grasslands are also of particular importance. Conservation action for the habitats should meet the needs of most of these species - they can be seen as among the better indicators of the success of habitat conservation.

However, for some local priority species, general habitat actions may not be sufficient and therefore specific actions to support their recovery have been identified.

For historical reasons, due to researchers based in Cambridgeshire, some species such as elms and Goldilocks Buttercups species, are better recorded in Cambridgeshire than elsewhere in Britain. However, for different reasons, there is good evidence that the two groups merit conservation action, and that their Cambridgeshire bias in distribution is real, not an artefact of recording. None of the species of Goldilocks Buttercups, and few of the elms, have so far been recorded in mainland Europe, so they represent small range endemics in a global context.

Elm woods, elms lining fen droves, and roadside and hedgerow elms, remain a more significant features of Cambridgeshire (and parts of Essex, Suffolk and Norfolk) than elsewhere in Britain. The diversity of smooth leaved elms is far greater here than elsewhere (despite some detailed surveys elsewhere). Many smooth-leaved elm microspecies have very restricted geographic distributions, and some of these (as listed) are confined to Cambridgeshire, or better represented here than anywhere else. The area also has some of the very few surviving veteran elms and elm pollards in Britain. Their conservation can be achieved through the recognition of elm woods as a special habitat, and through sensitive management of hedgerows and fen droves.

Species actions

The following section outlines the actions required to help our priority species recover, where this will not be delivered through the habitat actions alone.

Black-Tailed Godwit *Limosa limosa*

Actions

ACTION 1 ▶ maintain optimal water levels of wetland habitats (less than 10cm deep) during breeding season.

ACTION 2 ▶ install predator fencing.

ACTION 3 ▶ create new wetland habitat (that is not subject to seasonal spring - summer flooding)

ACTION 4 ▶ support and help deliver the 2023-2033 National Action Plan by working with the existing Project Godwit partnership (https://projectgodwit.org.uk/wp-content/uploads/2023/09/National-Action-Plan-for-BTG-2023-2033.pdf)


Black-Tailed Godwit

Justification for inclusion

The UK breeding population is largely concentrated (90%) at the Ouse and Nene Washes. The overall population suffered declines between 2006 and 2017 (from 48 pairs to 35) but increased to 49 pairs in 2020. The population at the Purls Bridge Pilot Project, Ouse Washes, continue to increase, with seven breeding pairs in 2020 (up from four in 2019 and two in 2018). But there is still no breeding on the Ouse Washes themselves and, at both reserves, the populations are cushioned by captive reared head-started birds and predator exclusion fencing. Their poor wild productivity is due to high nest predation and spring flood events, which together with their small population size and range remains a cause for concern.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats

Stone-curlew *Burhinus oedicnemus*

Actions

ACTION 1 ▶ expand breeding population of Stone-Curlew within East Cambridgeshire through:

- creating grasslands similar to the Breckland area, with grass kept no taller than 2 cm from March to July, so the birds can easily nest and spot predators.
- encouraging more rabbits, as their burrows help create a good nesting area for the birds.
- protecting the birds from predators by setting up fences to keep them away.

ACTION 2 ▶ create two-hectare nesting areas within 5 km of breeding sites, kept mostly bare/sparsely vegetated ground by disturbing the ground every spring.

SUPPORTING ACTION 1 ▶ collaborate with stakeholders (e.g. RSPB) to investigate how Stone Curlews use the East Cambridgeshire landscape, to better understand it's importance to Stone-curlew population of Breckland Special Area of Conservation.

SUPPORTING ACTION 2 – work with landowners to encourage effective usage of agri-environment schemes to encourage update of options that promote stone curlew recovery.


Stone-curlew

Justification for inclusion

A rare bird nationally. East Cambridgeshire is on the edge of its stronghold in The Brecks, so rare in Cambridgeshire and Peterborough. Still under threat despite conservation efforts as vulnerable to disturbance and predation.

Habitat grouping from LNRS priority list

Farmland mosaic (all)

Swift *Apus apus*

▶▶ Actions

ACTION 1 ▶ provide nesting spaces that are suitable for Common Swifts and House Martins and do not disturb, remove nests, or try to limit these birds from nesting.

ACTION 2 ▶ install integrated bird boxes onto all new commercial and community buildings and 25% of new dwellings (where appropriate), secures as part of planning applications. This should include swift boxes positioned under the eaves of a building at least 5 metre above the ground with easy access.

ACTION 3 ▶ create insect-rich habitats near nesting sites, as well as at a larger landscape-scale.

Swift

SUPPORTING ACTION ▶ work with partners to raise awareness about the plight of swifts and importance of creating new nesting sites with members of the public and local communities.

Justification for inclusion

Significant population declines have occurred. A lack of nest sites is thought to be the key driver of decline. Decline in their insect food has also thought to have contributed.

Habitat grouping from LNRS priority list

Urban landscape mosaic

Turtle Dove *Streptopelia turtur*

▶▶ Actions

ACTION 1 ▶ create and maintain tall scrubby hedgerows and/or dense scrub thickets for nesting, provide freshwater sources (e.g. ponds, streams), and in proximity to the newly created habitat

ACTION 2 ▶ create suitable habitat in farmland landscape by providing areas of uncropped field edges or setting aside plots of farmland.

ACTION 3 ▶ plant buffer strips around farm fields with wild bird seed mix or scatter seeds for birds.

ACTION 4 ▶ restore or create semi-natural grassland.

SUPPORTING ACTION 1 ▶ manage hedges to provide nesting opportunities and allow suitable areas of scrub to grow.

SUPPORTING ACTION 2 ▶ work with landowners to encourage effective usage of agri-environment schemes to encourage update of options that promote turtle dove recovery.

Turtle Dove

Justification for inclusion

One of the UK's fastest declining birds. East of England is still a stronghold. Scrub is required for breeding success. Decline caused by habitat loss and a reduction in food availability from changes in agriculture and increases in herbicide use. This has resulted in a shorter breeding season ultimately causing fewer nesting attempts. Turtle doves are also vulnerable to hunting pressures on migration and in African wintering grounds, where they may be affected by land use change.

Habitat grouping from LNRS priority list

Farmland (all)

Fairy Shrimp *Chirocephalus diaphanus*

Actions

ACTION 1 ▶ allow for disturbance and maintain winter water levels (although eggs can remain viable in the soil for many years without water).

ACTION 2 ▶ creation of scrapes (shallow depressions or disturbed areas in the ground) close to recorded sites and in places where temporary ponds may form.

SUPPORTING ACTION 1 ▶ work with local partners and recorders to undertake surveys to confirm their presence.

Fairy Shrimp

Justification for inclusion

Few recent records nationally and only one site known in Cambridgeshire. Most recent record for this site is one from an individual reared from a soil sample in 2008. So continued presence needs confirming but included on the understanding it may not yet be extinct at the site.

Habitat grouping from LNRS priority list

Ponds

White-clawed Crayfish *Austropotamobius pallipes*

Actions

ACTION 1 ▶ prioritise their habitat needs by achieving consistent, steady flows of good or very good quality water.

ACTION 2 ▶ manage riverbanks to offer numerous natural or artificial 'refuges' which offer opportunities to hide from predators.

ACTION 3 ▶ establish ark sites (protected areas) to maintain the number of populations, in accordance guidance (e.g. Crayfish Conservation Manual)

SUPPORTING ACTION 1 ▶ survey watercourses to confirm distribution and introduction of White Clawed Crayfish and inform landowners, developers and other stakeholder of their presence.

SUPPORTING ACTION 2 ▶ coordinate with Neighbouring Authorities that have identified this species as part of their LNRS and work on including support development and research into a vaccine.

SUPPORTING ACTION 3 ▶ promote biosecurity (e.g. for fishing gear) to reduce the risk of spreading diseases such as crayfish plague.


White-clawed Crayfish

Justification for inclusion

Globally endangered species and severely threatened in the UK. In Cambridgeshire and Peterborough small populations may still be present in a few isolated locations.

Habitat grouping from LNRS priority list

Chalk streams

Autumn Lady's Tresses *Spiranthes spiralis*

Priority flowering plant species with actions

Actions

ACTION 1 ▶ manage sites through management practices such as grazing and cutting to maintain a short grassland towards the end of the growing season, allowing plants to flower and set seed.

SUPPORTING ACTION 1 ▶ reduce the usage of herbicide and fertiliser where possible by working with local landowners.


Autumn Lady's Tresses

Justification for inclusion

Only present at 1-2 sites in Cambridgeshire and Peterborough. Good indicator of unimproved grassland. Significant national decline.

Habitat grouping from LNRS priority list

Lowland calcareous grassland

Bastard-toadflax *Thesium humifusum*


Bastard-toadflax

Actions

ACTION 1 ▶ manage chalk and limestone grassland through management practices such grazing and cutting to create a short grassland sward.

SUPPORTING ACTION 1 ▶ reduce the usage of herbicide and fertiliser where possible, working with local landowners.

Justification for inclusion

Strong calcareous grassland indicator. Restricted distribution nationally. Present at 2-3 sites in Cambridgeshire and Peterborough. Requires short open grassland so always under threat from a lack of management and lower levels of grazing.

Habitat grouping from LNRS priority list

Lowland calcareous grassland

Broad-leaved Cudweed *Filago pyramidata*

Actions

ACTION 1 ▶ create regular disturbance to expose soil for seedlings to grow.

SUPPORTING ACTION 1 ▶ protect known sites against changes of nutrients in the soil (nutrient enrichment) by working with local landowners to reduce the usage of herbicide and fertiliser where possible.


Broad-leaved Cudweed

Justification for inclusion

GB and England Red List Endangered. Only two post 2000 sites in Cambridgeshire and Peterborough (last records 2012). Included on the understanding that it is still present.

Habitat grouping from LNRS priority list

Arable field margins

Cambridge Milk-parsley *Selinum carvifolia*

▶▶ Actions

ACTION 1 ▶ work with local partners to monitor existing known locations of this species.

ACTION 2 ▶ ensure that scrub is managed well, and the water table is kept at optimum levels (close to the surface, but not so high that it submerges the plant completely).

SUPPORTING ACTION 1 ▶ undertake a feasibility assessment regarding whether there are suitable sites for the reintroduction of this species.

Cambridge Milk-parsley

Justification for inclusion

GB and England Red List Endangered. Cambridgeshire holds the only populations nationally. May now only be present at 1-2 native sites.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

Chalk Fragrant orchid *Gymnadenia conopsea*

▶▶ Actions

ACTION 1 ▶ ensure appropriate levels of cutting and/or grazing.

ACTION 2 ▶ promote the removal of scrub

Justification for inclusion

Strong chalk grassland indicator.

May only be present at two sites in Cambridgeshire and Peterborough now.

Habitat grouping from LNRS priority list

Lowland calcareous grassland.

Chalk Fragrant orchid

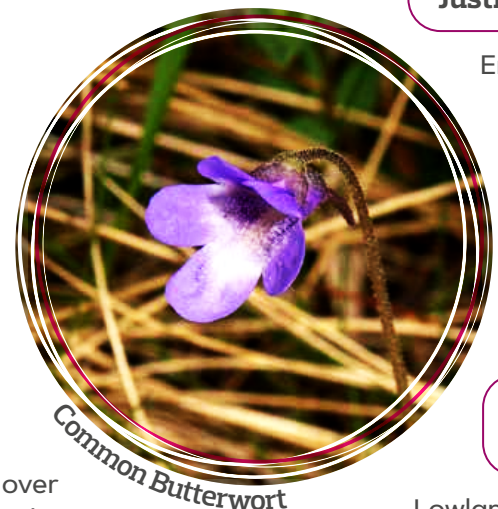
Common Butterwort *Pinguicula vulgaris*

▶▶ Actions

ACTION 1 ▶ restore and / or maintain optimum water levels (just above the surface or level with the surface of the soil) to keep it moist without submerging the plant across the site.

ACTION 2 ▶ reduce and manage water pollution by partnering with landowners to improve practices on their land.

ACTION 3 ▶ control scrub taking over through management practices such cutting and/or grazing.



Common Butterwort

Justification for inclusion

England Red List Vulnerable. At severe risk of extinction from Cambridgeshire and Peterborough at its last remaining native site if still present.

Part of a very rare habitat in our area at this site.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.


Dodder

Dodder *Cuscuta epithymum*

▶▶ Actions

ACTION 1 ▶ maintain chalk and limestone grassland by working with partners to ensure regular scrub management is achieved through mowing, cutting or grazing.

ACTION 2 ▶ prevent overgrazing by working with local landowners

SUPPORTING ACTION 1 ▶ reduce the usage of herbicide and fertiliser where possible by working with local landowners.

SUPPORTING ACTION 2 ▶ promote complementary management practices by working with Rail and Highways Authorities.

Justification for inclusion

GB and England Red List Vulnerable. May now only be present at 1-2 sites in Cambridgeshire and Peterborough. An annual that is parasitic on the stems of a wide variety of small shrubs and herbs.

Habitat grouping from LNRS priority list

Grassland (All)


Common Cottongrass

Common Cottongrass *Eriophorum angustifolium*

▶▶ Actions

ACTION 1 ▶ restore and / or maintain optimum water levels (typically 5cm – 10cm deep) across the site by working with stakeholders (e.g. Natural England).

ACTION 2 ▶ reduce and manage water pollution by partnering with landowners to improve practices on their land.

ACTION 3 ▶ control scrub taking over through appropriate levels of cutting and/or conservation grazing in spring and summer (taking care to prevent poaching during wet periods)

ACTION 4 ▶ consider the extension of existing sites for recolonisation and the creation of new sites for translocation.

Justification for inclusion

England Red List Vulnerable. Only present at one remaining native site in Cambridgeshire and Peterborough as part of a very rare habitat in our area.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.


Crested Cow-wheat

Crested Cow-wheat *Melampyrum cristatum*

▶▶ Actions

ACTION 1 ▶ implement positive management and monitoring of sites where it is known to occur. Management includes cutting and removing the arisings at appropriate times of the year and buffer areas to prevent spray drift from adjacent farmland.

ACTION 2 ▶ protect road verges from damage / disturbance and work with Cambridgeshire Highways for implementation of better management.

ACTION 3 ▶ consider the extension of well-managed road verges and new grassland areas to allow for recolonisation and the potential for translocation.

Justification for inclusion

GB and England Red List Endangered. Ancient woodland edge species, remaining on some verges. Southern Cambridgeshire and north-west Essex is the centre of its national distribution. At severe risk of extinction at most remaining sites.

Habitat grouping from LNRS priority list

Woodland (All)

Dandelion assemblage

English Dandelion *Taraxacum anglicum*
Hampshire Dandelion *Taraxacum akteum*
Marsh Dandelion *Taraxacum palustre*


Dandelion assemblage

▶▶ Actions

ACTION 1 – work with local partners to monitor existing known sites.

ACTION 2 ▶ ensure positive management through suitable grazing and mowing.

ACTION 3 ▶ permitting winter flooding and monitoring water quality (or change to vegetation) to ensure eutrophication is countered by management.

Justification for inclusion

Taraxacum anglicum: confined to a small number of calcareous fens and water-meadows in central and southern England, with a high-water table and winter flooding, but probably intolerant of eutrophication

Taraxacum akteum: Confined to species-rich undisturbed meadows with a high-water table in c. 10 sites in central England

Taraxacum palustre: confined to a small number of calcareous fens and water-meadows in central and southern England, with a high-water table and seasonally inundated hay meadows, but probably intolerant of eutrophication. Also found in a few coastal grasslands and peaty grasslands. Main concentration of sites are Cambridgeshire and the New Forest.

Habitat grouping from LNRS priority list

Grassland and urban landscape (all)

Fen Wood-rush *Luzula pallescens*


Fen Wood-rush

▶▶ Actions

ACTION 1 ▶ monitoring of sites where it is known to occur and positive management which includes disturbance of peaty areas at appropriate times.

ACTION 2 ▶ create suitable, additional areas of disturbance to allow for the recovery of the species.

Justification for inclusion

GB and England Red List Critically Endangered. Cambridgeshire holds the only populations nationally at Holme Fen and Woodwalton Fen. It is a short-lived species that requires disturbance so under threat from a lack of management, but has a persistent seed bank.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

Fibrous Tussock-sedge *Carex appropinquata*

Actions

ACTION 1 ▶ positive management of site where it is known to occur, especially the specific areas where it is found, including sufficient levels of grazing and/or cutting and maintaining appropriate water levels.

ACTION 2 ▶ consider where the extension of cutting and grazing regimes could allow for the expansion of this species.

Fibrous Tussock-sedge

Justification for inclusion

Restricted in distribution nationally and only found at one site in Cambridgeshire and Peterborough (Wicken Fen). Evidence of a decline there in recent decades.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

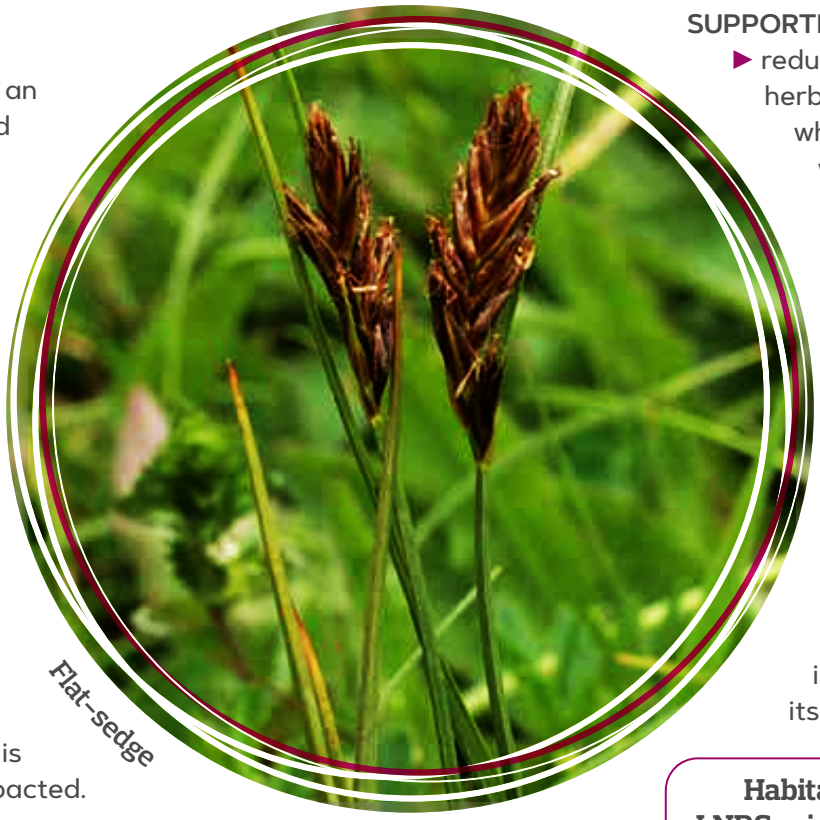
Flat-sedge *Blysmus compressus*

Actions

ACTION 1 ▶ maintain an open, short grassland through either an extensive grazing regime or by annual mowing and the removal of arisings. Periodic removal of scrub taking over may be necessary.

SUPPORTING ACTION 1 ▶ allow for the trampling of informal footpaths, as has a competitive advantage when soil is waterlogged or compacted.

SUPPORTING ACTION 2 ▶ efforts should be made to ensure a dynamic hydrological regime and the restoration of natural function where possible.



Flat-sedge

SUPPORTING ACTION 3 ▶ reduce the usage of herbicide and fertiliser where possible by working with local landowners.

Justification for inclusion

GB and England Red List Vulnerable. At severe risk of extinction from Cambridgeshire and Peterborough as only now present in small numbers at its last remaining site.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

Fly Orchid *Ophrys insectifera*

Actions

ACTION 1 ▶ where fly orchid is known / likely to be present, manage scrub along the edges, rides, and glades of woodland to create dappled light conditions and thin grassland conditions under a canopy of open scrub or grassland canopy.

Justification for inclusion

GB and England Red List Vulnerable. Only one remaining extant site in Cambridgeshire and Peterborough so under threat. Can be found in a range of habitats but our population is within a woodland in the NW of the area. Formerly found in southern Cambridgeshire but now lost from all its former sites there.

Habitat grouping from LNRS priority list

Woodland (all)


Fly Orchid

Frog Orchid *Coeloglossum viride*

Actions

ACTION 1 ▶ maintain meadows and pasture by working with partnership (e.g. Natural England, Wildlife Trust) achieved through management practices such as mowing, cutting and conservation grazing.

ACTION 2 ▶ restore and create suitable historic and new habitat sites.


Frog Orchid

Justification for inclusion

GB and England Red List Vulnerable. Only present at two sites so at risk of extinction in Cambridgeshire and Peterborough.

Habitat grouping from LNRS priority list

Lowland calcareous grassland

Great Pignut *Bunium bulbocastanum*

Actions

ACTION 1 ▶ maintain calcareous grassland by working with partners (e.g. Wildlife Trust) to ensure regular scrub management is achieved through mowing, cutting and grazing.

ACTION 2 ▶ restore and create suitable historic and new habitat sites

SUPPORTING ACTION 1 ▶ create some disturbance to expose soil for seedlings to grow but allow mature plants to thrive in areas with more cover.


Great Pignut

Justification for inclusion

Nationally restricted to a few sites in Hertfordshire, Buckinghamshire, Bedfordshire and Cambridgeshire.

Now may only be present at the Cherry Hinton Chalk Pits in Cambridgeshire and Peterborough.

Habitat grouping from LNRS priority list

Lowland calcareous grassland

Goldilocks Buttercup assemblage

Goldilocks Buttercup assemblage *Ranunculus auricomus group*

Bourn Goldilocks Buttercup *Ranunculus aequilaterus*
Angular Goldilocks Buttercup *Ranunculus angularis*
Boulder Clay Goldilocks Buttercup *Ranunculus argillicola*
Buff Goldilocks Buttercup *Ranunculus armingfordensis*
Backs Goldilocks Buttercup *Ranunculus cantabrigiensis*
Comberton Goldilocks Buttercup *Ranunculus combertonensis*

▶▶ Actions

ACTION 1 ▶ cut and collect cuttings in late summer / autumn after the buttercups have flowered and formed seeds.

ACTION 2 ▶ promote management practices for the buttercups (where they are found) over amenity value or gardening for other species, such as avoid mowing or strimming before buttercups have finished flowering and forming seeds.

Justification for inclusion

For historical reasons, due to researchers based in Cambridgeshire, the microspecies goldilocks-buttercups, Ranunculus auricomus species, are better known in Cambridgeshire than elsewhere in Britain. However, for different reasons, there is good evidence that they merit conservation action, and that their Cambridgeshire bias in distribution is real, and not an artefact of recording.

None of the British species of goldilocks-buttercups have so far been recorded in mainland Europe, where many more small-range endemic species are described; so, they represent small-range endemics in a global context.

Of the 15 microspecies recorded from Cambridgeshire, 13 are known only from county, and one from Cambridgeshire and Hertfordshire. The 14 species show here appear to be rare, and to have very restricted distributions. Surveys in neighbouring counties have failed to find the Cambridgeshire endemic species.

Habitat grouping from LNRS priority list

Woodland (all), Grassland (all)

Heath Dog-violet

Heath Dog-violet *Viola canina subsp. ruppii*

▶▶ Actions

ACTION 1 ▶ positive management and monitoring of the sites where it is known to occur, along with the restoration and creation of historical and new sites, which includes the appropriate levels of cutting and/or grazing and monitoring of water levels.

ACTION 2 ▶ create disturbance to encourage germination.

Justification for inclusion

GB and England Red List

Endangered. This sub-species of heath dog-violet grows in wetter habitats than sub-species canina and is found in only two sites nationally, both in Huntingdonshire (Holme Fen and Woodwalton Fen). It is therefore under threat.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

Maiden Pink *Dianthus deltoides*


Maiden Pink

▶▶ Actions

ACTION 1 ▶ restore and create suitable historic and new habitat sites, gravel-topped chalk hills or gravel extracted pits are preferred.

ACTION 2 ▶ ensure appropriate management practices at sites, with light grazing and occasional disturbance to promote the growth of new plants from seeds.

SUPPORTING ACTION 1 ▶ work with local partners to monitor known and new sites where it is known to occur.

Justification for inclusion

England Red List Vulnerable. Still present but under threat at only remaining native site at Hildersham in Cambridgeshire and Peterborough.

Habitat grouping from LNRS priority list

Lowland calcareous grassland.

Marsh Fragrant-Orchid *Gymnadenia densiflora*


Marsh Fragrant-Orchid

▶▶ Actions

ACTION 1 ▶ implement positive management of wet grassland, fen, marsh and swamp sites where it is known to occur, along with the restoration and creation of historical and new sites, to encourage the right conditions, including appropriate levels of cutting and/ or grazing.

- monitoring and maintaining appropriate water levels
- control invasive plants that might outcompete marsh orchid for light, space and nutrients.
- preserve soil conditions

Justification for inclusion

Strong indicator of high-quality wet fen meadow habitats. At severe risk of extinction from Cambridgeshire and Peterborough as only present now at one or two sites.

Habitat grouping from LNRS priority list

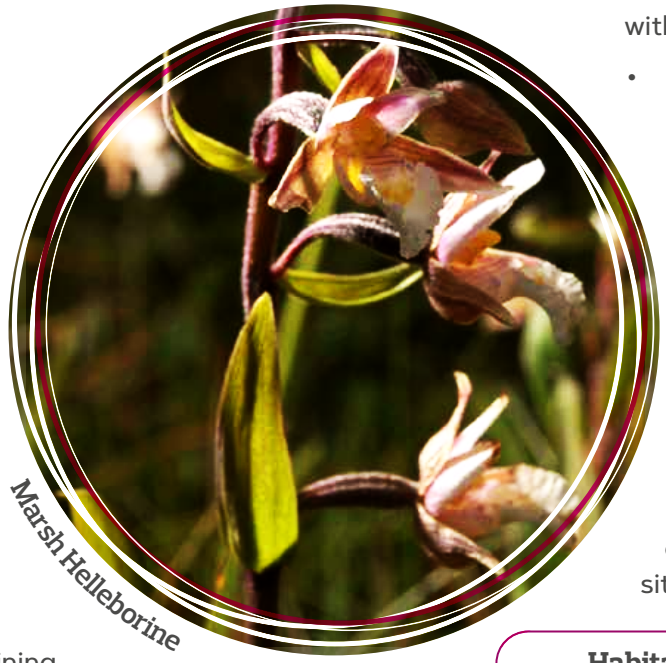
Lowland fens, floodplain wet grasslands and associated habitats.

Marsh Helleborine *Epipactis palustris*

▶▶ Actions

ACTION 1 ▶ implement positive management of site where it is known to occur, along with the restoration and creation of historical and new sites, which includes the appropriate levels of and monitoring of water levels to create flushed or seasonally inundated areas.

- appropriate levels of cutting and/or grazing
- monitoring and maintaining water levels to create flush or seasonally inundated areas.
- preserve soil conditions to be damp and nutrient poor (preferably peaty soils flushed with calcareous groundwater)
- create and maintain open space with sparse vegetation.



Marsh Helleborine

Justification for inclusion

Strong indicator of high-quality wet fen meadow habitats. At severe risk of extinction from Cambridgeshire and Peterborough as only present now at one site.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

Marsh Lousewort *Pedicularis palustris*

▶▶ Actions

ACTION 1 ▶ create and enhance suitable areas to increase populations of Marsh Lousewort by

- maintain moist, waterlogged conditions where soil remains consistently wet, during growing season (early spring and extends through summer)
- create shallow, boggy areas with nutrient poor acidic peaty soils to promote plants growth.
- control invasive vegetation that might outcompete marsh Lousewort for light, space and nutrients. By appropriate levels of cutting/ or grazing.
- encourage natural water flow, with seasonal fluctuations.

Marsh Lousewort

SUPPORTING ACTION 1 ▶ Manage water quality by working with landowners to reduce the usage of herbicide and fertiliser where possible.

Justification for inclusion

England Red List Vulnerable. Only now present at likely two sites in Cambridgeshire and Peterborough. Would have once been relatively common in fens and bogs in Cambridgeshire and Peterborough. It has been lost from both Wicken and Chippenham Fens for example.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

Milk-parsley *Thysselinum palustre*

▶▶ Actions

ACTION 1 ▶ implement positive management and monitoring of the wet grassland, fen, marsh, swamp site where it is known to occur, along with the restoration and creation of historical and new sites by

- maintain appropriate levels of cutting (four-year sedge-cutting cycle) and/or grazing and monitoring of water levels.
- monitor habitat disturbances, by minimizing human activity.

Justification for inclusion

GB and England Red List Vulnerable. Fenland species, now only present in Cambridgeshire and Peterborough as a native at Wicken Fen but is not abundant there. Foodplant of swallowtail butterfly which requires substantial populations and large individual plants for its survival.

Milk-parsley

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

Moon Carrot *Seseli libanotis*

▶▶ Actions

ACTION 1 ▶ ensure appropriate levels of cutting and/or grazing.

ACTION 2 ▶ promote the removal scrub.

ACTION 3 – promote practices to control rabbits.

SUPPORTING ACTION 1 ▶ work local partners to monitor calcareous grassland sites where it is known to occur.

Justification for inclusion

Very rare nationally, this species is only present in Cambridgeshire, Bedfordshire and Sussex. The Cambridgeshire populations are relatively small and are all centred in an area on the SE side of Cambridge. Some of these populations have declined in recent years.

Habitat grouping from LNRS priority list

Lowland calcareous grassland

Moon Carrot

Mountain Everlasting *Antennaria dioica*

▶▶ Actions

ACTION 1 ▶ maintain a short, open sward, best achieved by sheep grazing in later summer and early autumn, allowing it and other associate species to flower and set seed in the spring and summer months.

SUPPORTING ACTION 1 ▶ protect against damage from visitors and dog walkers using the nature reserve where it is known to occur.

SUPPORTING ACTION 2 ▶ look for opportunities to extend the species range.

SUPPORTING ACTION 3 ▶ seek out opportunities for creating calcareous grassland in John Clare Countryside and particularly as chalk quarries are restored.

SUPPORTING ACTION 4 ▶ include Mountain Everlasting in the restoration and management of the species assemblage.

Mountain Everlasting

Justification for inclusion

England Red List Vulnerable. Only found at one site in Cambridgeshire and Peterborough and rare in lowland England so level of threat high.

Habitat grouping from LNRS priority list

Lowland calcareous grassland

Pasqueflower *Pulsatilla vulgaris*

▶▶ Actions

ACTION 1 ▶ maintain chalk and limestone grassland to an approximate = height of 5cm and ensure a clear surrounding of vegetation.

ACTION 2 ▶ sites managed through conservation grazing (sheep or mixed livestock) by working with landowners and partners (e.g. Natural England). However, mixed livestock should be present during flowering period to prevent overgrazing.

SUPPORTING ACTION 1 ▶ undertake further research on the colonisation of new sites and their dispersal mechanism.

Pasqueflower

Justification for inclusion

GB and England Red List Vulnerable. Strong calcareous grassland indicator. Only present now in Cambridgeshire and Peterborough at 2-3 native sites.

Habitat grouping from LNRS priority list

Lowland calcareous grassland.

Rare Spring-sedge *Carex ericetorum*

▶▶ Actions

ACTION 1 ▶ maintain chalk and limestone grassland sites, where Rare Spring-sedge has been recently and historically known to occur, with appropriate levels of grazing to create open conditions and prevent scrub taking over.

ACTION 2 ▶ encourage grazing during the late summer, autumn and winter months, with the aim of producing short grassland for the spring and summer months, allowing flowering and seed formation for a wide range of species throughout the growing season.

Rare Spring-sedge

SUPPORTING ACTION 1 ▶ avoid using fertilisers, manures, or spot treatments for weeds

Justification for inclusion

GB and England Red List Vulnerable. Only recent records from two sites in Cambridgeshire and Peterborough. Under threat from reductions in grazing levels.

Habitat grouping from LNRS priority list

Lowland calcareous grassland

Red-tipped Cudweed *Filago lutescens*

▶▶ Actions

ACTION 1 ▶ create some disturbance in early autumn to expose soil for seedlings to grow.

ACTION 2 ▶ reduce the fragmentation of suitable habitats and extend range of pre-existing farmed landscape habitats managed for arable plants.

SUPPORTING ACTION 1 ▶ continue to work with local partners to monitor and understand the Red-Tipped Cudweed status at the last known site in Cambridgeshire and Peterborough.

Red-tipped Cudweed

Justification for inclusion

GB and England Red List Endangered. Only one post 2000 site for this species (last record 2004) so may now be extinct in Cambridgeshire and Peterborough. Included on the understanding that it still may be present.

Habitat grouping from LNRS priority list

Arable field margins

Slender Hare's-ear

Slender Hare's-ear *Bupleurum tenuissimum*

▶▶ Actions

ACTION 1 ▶ positive management of saltmarsh habitat along the River Nene north of Wisbech, including appropriate management practices such as cutting and/or grazing to reduce the dominance of couch grass species.

Justification for inclusion

GB and England Red List Vulnerable. May now only be present in Cambridgeshire and Peterborough in the restricted habitat of saltmarsh/coastal grassland north of Wisbech by the River Nene and under threat there from being swamped out by coarse grasses due to a lack of grazing.

Habitat grouping from LNRS priority list

Lowland calcareous grassland.

Smooth Rupturewort *Herniaria glabra*

▶▶ Actions

ACTION 1 ▶ positive management of native site where it has been recently known to occur, which includes disturbance and creation of open ground.

Justification for inclusion

Native national distribution is restricted mostly to the Breckland area. Thought to likely still be present at one remaining native location in Cambridgeshire (gravel pits near Kennett). Can be found elsewhere as a garden escape or accidental introduction. Management for this species may help other Breckland/sandy ground rarities.

Smooth Rupturewort

Habitat grouping from LNRS priority list

Grassland (all).

Spanish Catchfly

Spanish Catchfly *Silene otites*

▶▶ Actions

ACTION 1 ▶ ensure appropriate management practices on sites where it's known to occur, with appropriate levels of cutting and/or conservation grazing and occasional disturbance to promote the growth of new plants from seeds.

ACTION 2 ▶ work with partners (e.g. Wildlife Trust) to monitor site and identify optimal management for this species.

ACTION 3 ▶ create any new sites within close proximity to existing populations.

Justification for inclusion

GB and England Red List Endangered. National distribution is restricted to the Breckland area. Now thought to be lost from its native locations at the eastern edge of Cambridgeshire but still present in a small area on an old railway line near Burwell.

Here it is thought to be an accidental introduction with ballast imported from the Freckenham area where it occurred naturally. This small, isolated population is under threat.

Habitat grouping from LNRS priority list

Lowland calcareous grassland.

Spotted Cat's-ear *Hypochaeris maculata*

Actions

ACTION 1 ▶ ensure appropriate management of calcareous grassland, with conservation grazing and scrub management, to create an open area. Work with partners (e.g. Natural England) to monitor site and identify optimal management for this species.

ACTION 2 ▶ restore and create additional grassland habitat.

ACTION 3 ▶ protect from over grazing at certain times of the year and control scrub.

Justification for inclusion

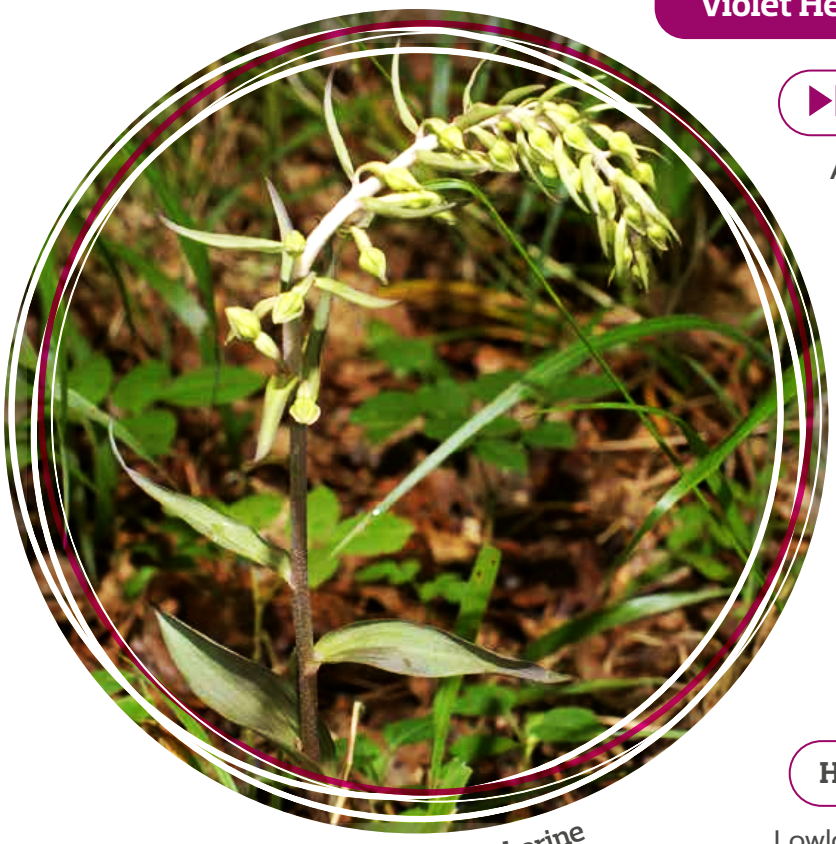
GB and England Red List Vulnerable. Strong chalk grassland indicator. May only be present at one site in Cambridgeshire and Peterborough with a small population.

Habitat grouping from LNRS priority list

Lowland calcareous grassland.

Spotted Cat's-ear

Violet Helleborine *Epipactis purpurata*



Violet Helleborine

Actions

ACTION 1 ▶ provide dense shade and, when felling, areas adjacent to populations are left in dense shade also. Refrain from creating any new areas of glade in areas where populations of violet helleborine are known to occur.

ACTION 2 ▶ protection of flowering spikes from grazing by rabbits and deer.

Justification for inclusion

Only present at 2-3 sites in Cambridgeshire and Peterborough, in relatively small numbers so under severe threat.

Habitat grouping from LNRS priority list

Lowland mixed deciduous woodland.

Black Hairstreak Butterfly *Satyrium pruni*

Priority invertebrate species with actions

Actions

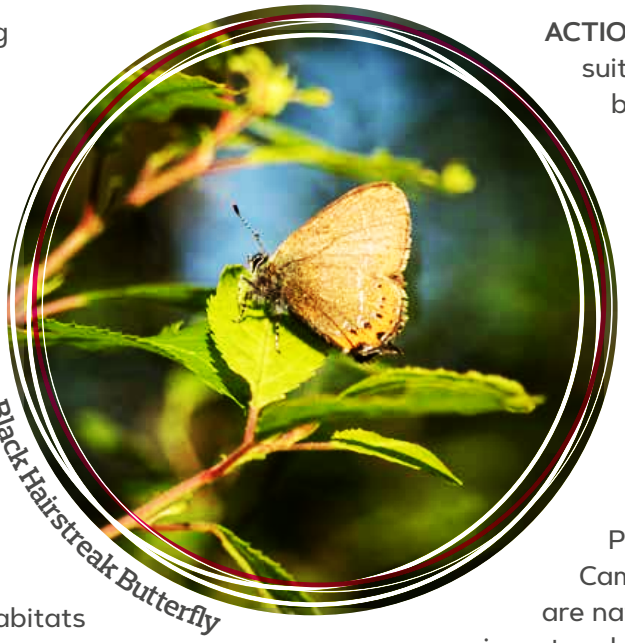
ACTION 1 ▶ retain existing thickets of blackthorn and mature hedges with blackthorn.

ACTION 2 ▶ plant new thickets and hedgerows containing blackthorn.

ACTION 3 ▶ carry out management and coppicing routines for hedges, trees, and thickets which are suitable to the species.

ACTION 4 ▶ increase the connectivity of suitable habitats by creating and extending stands, trees, and hedgerows containing blackthorn which connect existing areas.

ACTION 5 ▶ create wide rides, glades, and scrub edges in and around woodlands.



Black Hairstreak Butterfly

ACTION 6 ▶ ensure maintenance of suitable nectar sources, especially bramble microspecies which flower during the flight period.

Justification for inclusion

GB Red List Endangered. Significant decline and national distribution is restricted to a small belt of central England running approximately from Oxford to Peterborough, so populations in Cambridgeshire and Peterborough are nationally significant. Habitat is mature blackthorn scrub growing in sunny, sheltered areas.

Habitat grouping from LNRS priority list

Woodland (all).

Caddis fly *Erotesis baltica*

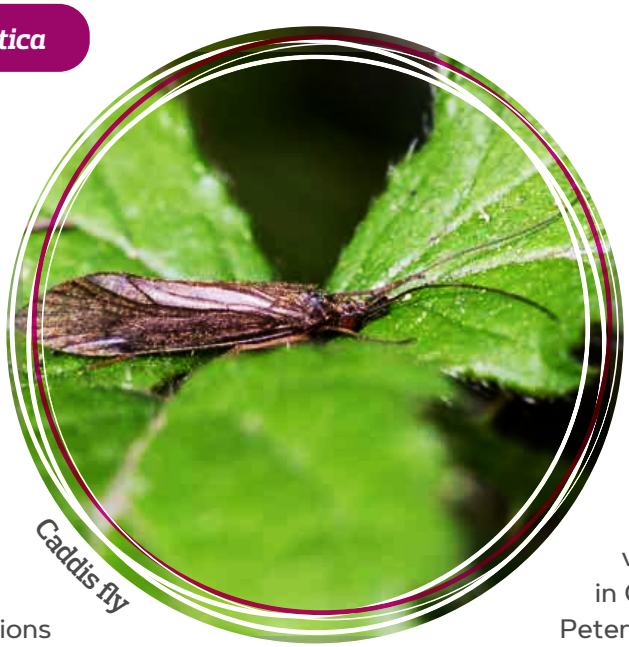
Actions

ACTION 1 ▶ maintain constant water levels at sites where this caddisfly is known to occur ensuring there is sufficient aquatic vegetation and roots of marginal trees.

ACTION 2 ▶ dig small pools in dry summers to provide temporary refuges.

ACTION 3 ▶ expand populations through further habitat creation.

SUPPORTING ACTION 1 ▶ See King's Dyke Nature Reserve for best practice examples of where they are creating clean water ponds at a restored mineral extraction site for freshwater wildlife.



Caddis fly

Justification for inclusion

GB Red List Vulnerable. Caddisfly whose larvae need permanently flooded fen and similar habitats. They are found amongst the submerged parts of dense emergent vegetation. Recorded in Cambridgeshire and Peterborough from two sites, although has not been recorded at one (Wicken Fen) for several decades.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats

Eyed Longhorn Beetle *Oberea oculata*

▶▶ Actions

ACTION 1 ▶ create, restore and enhance wet woodland with a particular focus on maintenance of suitable willow habitat.

ACTION 2 ▶ ensure a variety of habitats, including dead wood, healthy trees, young saplings, scrub, and open spaces. Keep all dead wood (standing and fallen) where it is and preserve trees with decay features without damaging them.


Eyed Longhorn Beetle

ACTION 3 ▶ buffer and connect fragmented woodland using suitable tree species.

ACTION 4 ▶ remove invasive and competitive plant species known to negatively impact wet woodland habitat such as giant hogweed and Japanese knotweed.

SUPPORTING ACTION 1 ▶ support actions to locate, develop and implement a species recovery plan to build a resilient population, working with partners such as Buglife.

Justification for inclusion

GB Red List Critically Endangered. Cambridgeshire previously thought to hold the only site nationally for this species (there also appears to be some recent confirmed iRecord records for a site in London). Its requirements are young/regenerating Salix so possible sites can be found and/or created in gravel pits and other new wetlands. A possible flagship species for the fauna of invasive willows/osier beds, with implications for gravel pit restoration and habitat creation.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

Forester Moth *Adscita statices*

▶▶ Actions

ACTION 1 ▶ expand and connect existing habitat (unimproved wet or damp grassland) to increase species resilience to climate change.

ACTION 2 ▶ control scrub taking over suitable habitats using light grazing techniques.


Forester Moth

SUPPORTING ACTION 1 ▶ ensure that the right conditions (shaded areas, moist, well-drained soil, cool temperatures and soil is rich organic matter) are met for the moth larval plant food (e.g. sorrel) to thrive.

Justification for inclusion

Local and declining nationally. Last records in Cambridgeshire and Peterborough from 2017 at one site (except for one possible record in 2021 in grid square TL66). May now be extinct in Cambridgeshire and Peterborough but included in the event that it is found to still be present.

Habitat grouping from LNRS priority list

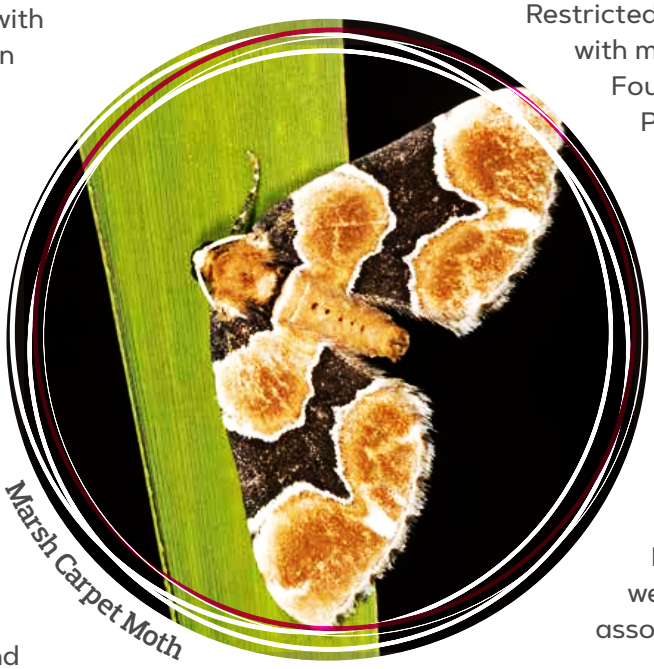
Grassland (all).

Marsh Carpet Moth *Gagitodes sagittata*

▶▶ Actions

ACTION 1 ▶ implement the following positive management of the wetland sites where it is known to occur, along with the restoration and creation of historical and new sites to encourage the right conditions for common meadow-rue.

- maintain wet, undisturbed conditions.
- control water levels, avoiding excessive flooding.
- control invasive plants that might outcompete the meadow-rue.
- avoid nutrient runoff and pollution.



Marsh Carpet Moth

Justification for inclusion

Restricted distribution nationally with most records in East Anglia. Found in Cambridgeshire and Peterborough at Wicken Fen and some other wetland localities. Larval food plant meadow-rue is relatively rare so it is restricted because of this.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

Mud Beetle *Sphaerius acaroides*

Mud Beetle

▶▶ Actions

ACTION 1 ▶ implement positive management of the site where it is known to occur. The species needs fluctuating water levels on mid-successional stages with bare/alga coated mud, so rotational management is needed.

Justification for inclusion

GB Red List Endangered. A small beetle found around the margins of waterbodies. Very rare nationally but may be overlooked. Only one site in Cambridgeshire and Peterborough, Orton Pits. This site is threatened by successional change. The old Peterborough brick pits are nationally important for a range of taxonomic groups and this could be a flagship species as management for this beetle would also benefit other species.

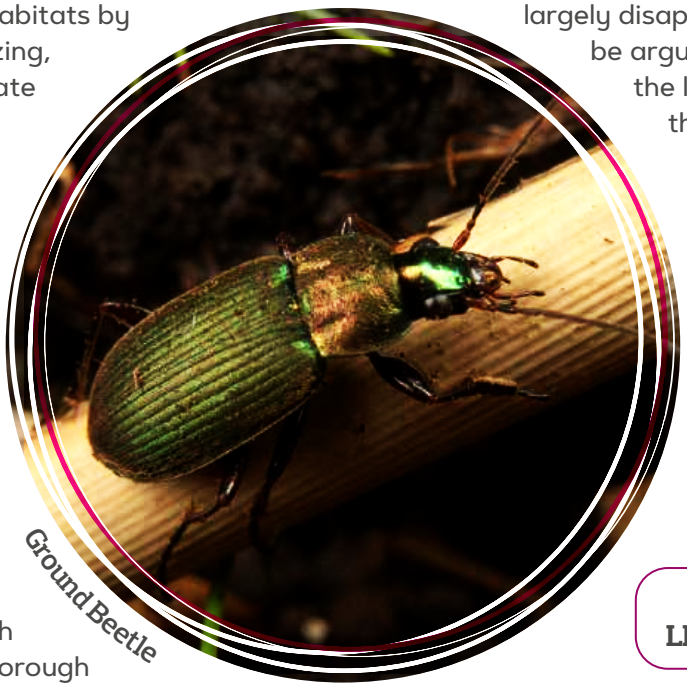
Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

Ground Beetle *Ophonus puncticollis*

Actions

ACTION 1 ▶ support moss habitats by managing with cutting, grazing, and scrub control. Also, create some disturbance to keep areas with mostly annual and biennial plants.



Ground Beetle

Justification for inclusion

GB Red List Endangered. Very rare nationally. The last Cambridgeshire record was in 1989 from Devil's Dyke and it may still occur there. The other rare chalk grassland Ophonus, of which Cambridgeshire and Peterborough used to have several, have already largely disappeared and it could be argued that this is one of the last representatives of that fauna. This reflects the decline in extent and quality of chalk grassland habitat in Cambridgeshire and Peterborough. Succession is a threat and management for this species would benefit other species even if not still present.

Habitat grouping from LNRS priority list

Lowland calcareous grassland.

Tansy Beetle *Chrysolina graminis*

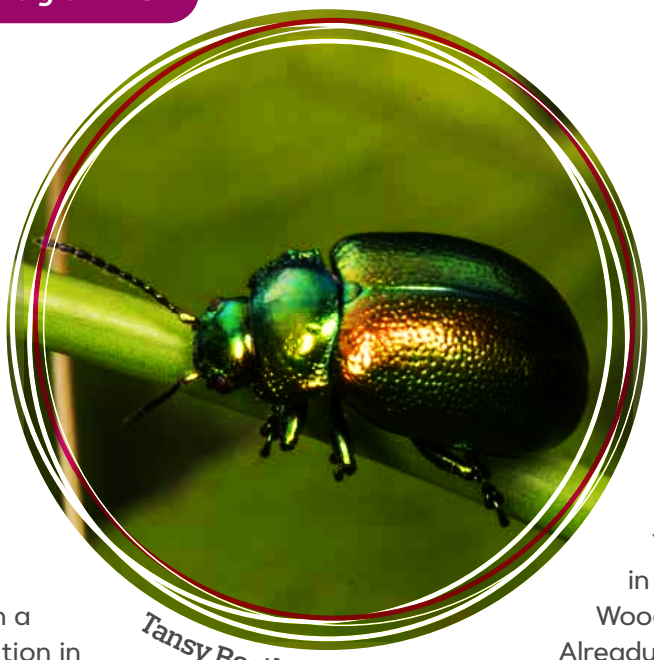
Actions

ACTION 1 ▶ manage mosaic habitat favourable to the Tansy plant through grazing (being careful to avoid overgrazing).

ACTION 2 ▶ tackle invasive non-native species, such as Himalayan balsam, by working with Natural England, Buglife and other partners.

ACTION 3 ▶ seek to establish a population in suitable vegetation in the Great Fen on land which is not subject to flooding.

SUPPORTING ACTION 1 – summer flooding should be managed as a threat to populations and working with catchment land managers is encouraged.



Tansy Beetle

Justification for inclusion

GB Red List Endangered. Very few native sites known nationally with the largest population along a 45km stretch of the River Ouse in central Yorkshire. Rediscovered in Cambridgeshire at Woodwalton Fen in 2014. Already subject to a species recovery and introduction programme coordinated by the Species Recovery Trust.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

Lichen *Bellicidia incompta*

Actions

ACTION 1 ▶ implement good woodland management practices creating well-lit areas and protect from felling.

ACTION 2 ▶ look for opportunities to reconnect existing populations through tree planting and hedgerow creation.

SUPPORTING ACTION 1 ▶ conserve and maintain the Elm trees and suckers on which this lichen depends.

Justification for inclusion

GB Red List Vulnerable. Lichen which occurs on wound tracks (sap runs) of trees, and was most often found on elm trees prior to the arrival of Dutch Elm Disease. It has declined significantly since this time with the loss of most of these trees.

Now rare nationally and only a few known sites for this species in Cambridgeshire and Peterborough. The strongest known colony is in Savages Spinney, where it grows on pole-size elm stems (sucker regrowth which has reached at least several inches in diameter).

Some microspecies of elm appear to be particularly prone to producing exudate from slight wounds and this is the case at Savages Spinney.

Lichens are an excellent indicator of good quality; clean air so measures taken to support this species are also measures which can improve air quality for people and the wider environment (e.g. reducing local air pollution levels).

Lichen

Habitat grouping from LNRS priority list

Woodland (all)

Elm *Ulmus spp*

Cambridgeshire only:

Hayley Elm ***Ulmus crenata***

Madingley Elm ***Ulmus madingleyensis***

Bassingbourn Elm ***Ulmus platyphylla***

Leathery-leaved Elm ***Ulmus coriaceifolia***

Long-toothed Elm ***Ulmus longidentata***
(found in Cambridgeshire and global population fewer than 100 trees)

Long-toothed Elm ***Ulmus longidens***

Fat-toothed Elm ***Ulmus obesidens***

Hatley Elm ***Ulmus sylvatica***

Bonhunt Elm ***Ulmus acutissima***

Prominent-toothed Elm
Ulmus prominentidens

Dark-leaved Elm ***Ulmus atrovirens***

Large-toothed Elm ***Ulmus prionopylla***

▶▶ Actions

ACTION 1 ▶ conserve and manage hedgerows and fen droves

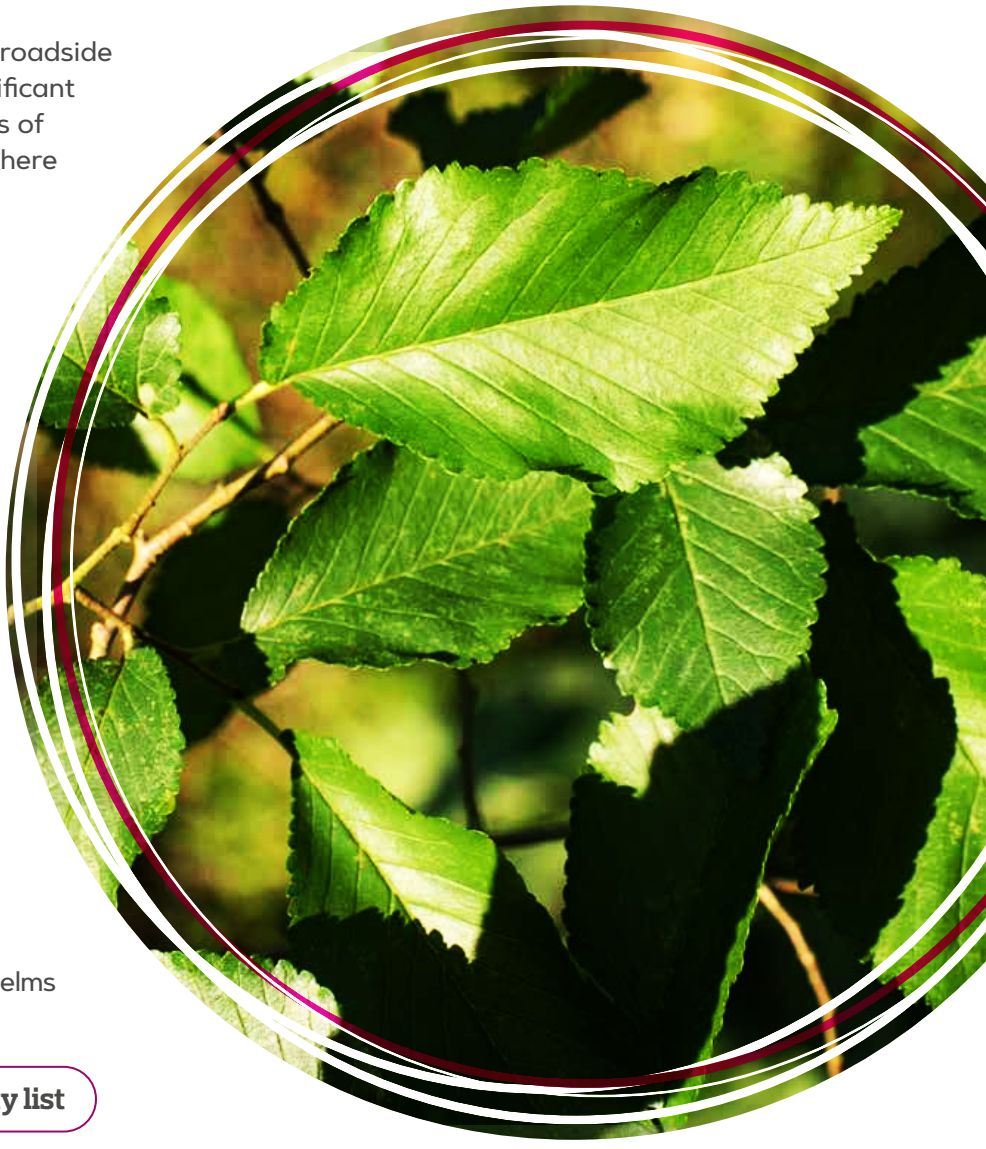
ACTION 2 ▶ establish elm nurseries for the most restricted and vulnerable Cambridgeshire microspecies.

Justification for inclusion

Elmwoods, elms lining fen droves, and roadside and hedgerow elms, remain more significant features of Cambridgeshire (and parts of Essex, Suffolk and Norfolk) than elsewhere in Britain. The diversity of smooth-leaved elms is far greater here than elsewhere (despite some detailed surveys elsewhere).

Many smooth-leaved elm microspecies have very restricted geographic distributions, and some of these, as listed, are confined to Cambridgeshire, or better represented here than anywhere else.

Currently 40 elm microspecies are considered native to Cambridgeshire, 5 of which are currently known only from the county, and 10 of which have a known population of fewer than 100 trees: all of these appear to be British endemics, with no records from mainland Europe. The county also has some of the very few surviving veteran elms and elm pollards in Britain.



Hayley Elm

Habitat grouping from LNRS priority list

Lowland mixed deciduous woodland.

Hazel Dormouse *Muscardinus avellanarius*

Priority mammal species with actions

Hazel Dormouse

Actions

ACTION 1 ▶ connect suitable habitat within 2 km of these sites by creating suitable connecting habitats e.g. coppice, woodland, or thick hedgerows.

ACTION 2 ▶ ensure arboreal connections across woodland rides every 50-100m and erect dormouse boxes and/or tubes.

SUPPORTING ACTION 1 ▶ retain trees which have cracks, crevices, and deadwood and create sunny areas in woodlands and retain woody species like blackthorn and hazel.

SUPPORTING ACTION 2 ▶ do not clear understory in winter and do not clear fell in dormouse locations.

Justification for inclusion

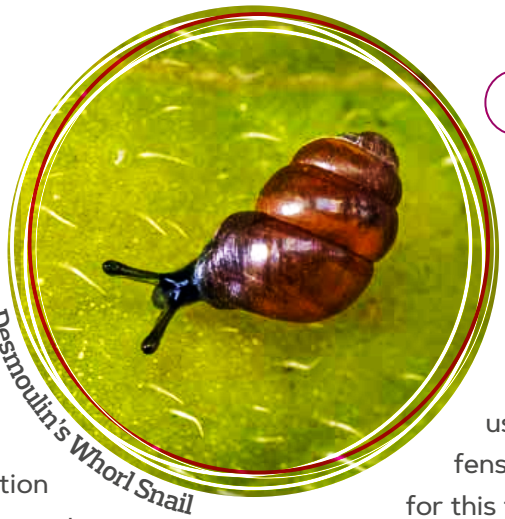
GB Red List Vulnerable. Historic populations of this species in Cambridgeshire and Peterborough uncertain. Now only exists as an introduced species at a few sites. Included at the suggestion that more can be done to improve the size and sustainability of these population

Habitat grouping from LNRS priority list

Lowland mixed deciduous woodland and Hedgerows.

Priority snail species with actions

Desmoulin's Whorl Snail *Vertigo (Vertigo) moulinsiana*



Desmoulin's Whorl Snail

Actions

ACTION 1 ▶ maintain water levels on wetland sites at water-table or slightly above ground surface for much of the year.

ACTION 2 ▶ ensure the wetted zone does not become over-shaded or scrubbed up.

ACTION 3 ▶ manage vegetation through appropriate management practices of cutting and/or grazing.

SUPPORTING ACTION 1 ▶ in river systems, focus on protecting and supporting populations upstream first.

Justification for inclusion

GB Red List Vulnerable. National decline and recent records only in 1-2 locations in Cambridgeshire and Peterborough but has been found to be under recorded nationally. It is restricted to calcareous wetlands, usually bordering lakes or rivers, or in fens and so is a positive indicator species for this type of habitat.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

Large-mouthed Valve Snail *Valvata macrostoma*

▶▶ Actions

ACTION 1 ▶ positive management of drains and waterways where it is known to exist, which includes avoiding eutrophication (particularly nitrate / nitrite) and drain management at appropriate times and intervals.

SUPPORTING ACTION 1 ▶ undertake surveys to look for other potential existing populations, establishing its status in the county, along with suitable sites to establish new populations.

Large-mouthed Valve Snail

Justification for inclusion

GB Red List Vulnerable. National distribution is scattered and local, and it is thought there has been a significant decline. In Cambridgeshire and Peterborough recent records for the Ouse and Nene Washes and 1990s Wicken Fen records. Found in vegetated drains with relatively good water quality so under threat from eutrophication.

Habitat grouping from LNRS priority list

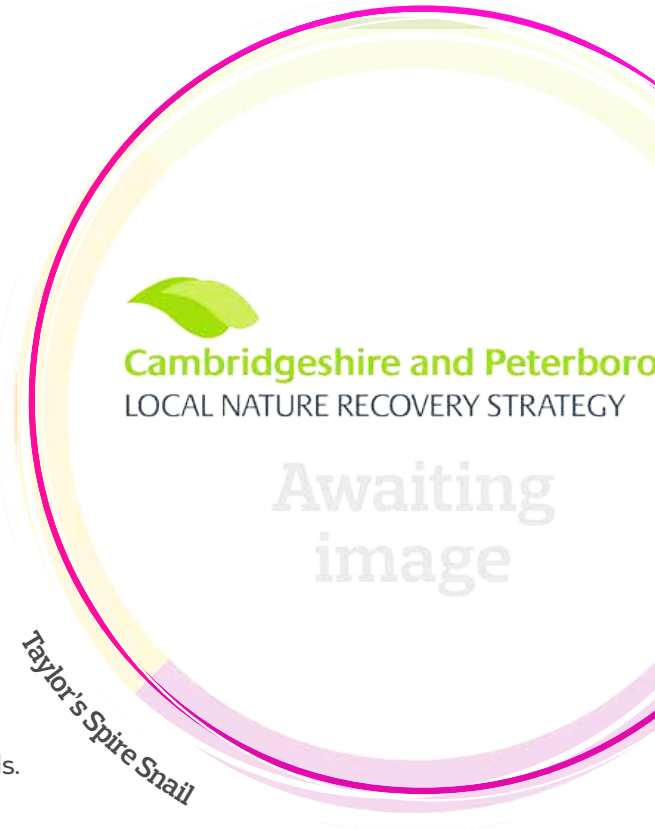
Fen drainage drains

Taylor's Spire Snail *Marstoniopsis insubrica*

▶▶ Actions

ACTION 1 ▶ positive management of drains and waterways where it has been previously recorded, which includes avoiding eutrophication and drain management at appropriate levels, times and intervals.

SUPPORTING ACTION 1 ▶ undertake new surveys to establish status.



Taylor's Spire Snail

Justification for inclusion

GB Red List Endangered. Nationally only recorded recently from a small number of locations. In Cambridgeshire and Peterborough last recorded in the Little Ouse river, but has been also recorded in the Great Ouse.

Found in slow moving water in rivers and canals in aquatic weeds. Under threat from habitat degradation.

Habitat grouping from LNRS priority list

Rivers; Fen main rivers and drains.

Witham Orb Mussel *Sphaerium solidum*

Witham Orb Mussel

▶▶ Actions

ACTION 1 ▶ implement positive management of drains and waterways where it has been previously recorded, which includes avoiding eutrophication and drain management at appropriate levels, times and intervals.

SUPPORTING ACTION 1 ▶ undertake new surveys to establish status.

SUPPORTING ACTION 2 ▶ control the spread of the invasive species Asian Clam (Corbicula fluminea).

Justification for inclusion

GB Red List Critically Endangered. Nationally post-2000 records only in the fenland area. Recorded at several sites in the New Bedford River and River Great Ouse in the early 2000s and last record in 2010. Surveys in 2015 at the same sites failed to find any live specimens so possibly now extinct. Further work, including eDNA surveys could help confirm status. Threats are from eutrophication, saline intrusion, inappropriate drain and river management and the invasive mollusc Corbicula fluminea.

Habitat grouping from LNRS priority list

Rivers; Fen main rivers and drains

Adder *Vipera berus*

Priority Reptile Species with Actions

▶▶ Actions

ACTION 1 ▶ create new areas that include scrub, rough grassland and deciduous woodland habitat or manage and improve existing mosaic habitats to allow the natural movement of adders.

ACTION 2 ▶ manage these areas to create different shapes and features, like paths and clearings. Vary the ground to provide sunny spots for basking and places for hibernation.


Adder

ACTION 3 ▶ improve habitat connectivity and encourage the creation of additional populations in the vicinity of existing, isolated populations and link with neighbouring nature reserves.

SUPPORTING ACTION 1 ▶ limit the presence of game birds, house cats and human disturbance (e.g. from dog walkers) within the critical parts of these mosaic habitats (i.e. near the known hibernation sites, scrub or bracken management can redirect footpaths to avoid sensitive areas). By use signage to inform the public of adder presence and reminding them to keep to existing paths to increase public awareness and appreciation and reduce disturbance

Justification for inclusion

Only one recent confirmed site for adder in Cambridgeshire and Peterborough so under threat.

Habitat grouping from LNRS priority list

Lowland calcareous grassland.

Pardosa Paludicola Spider *Pardosa paludicola*

Actions

ACTION 1 ▶ implement positive management of the fen habitat where it is known to occur and surrounding sites, which includes the appropriate levels of cutting and/or grazing, and monitoring and maintaining a high-water table.

ACTION 2 ▶ reduce the fragmentation and extend the range of suitable habitats.

Pardosa Paludicola Spider

Justification for inclusion

GB Red List Endangered. Very rare nationally and only found at Woodwalton Fen in Cambridgeshire and Peterborough. A wolf spider that is found in damp habitats.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

Zora Armillata Spider *Zora armillata*

Actions

ACTION 1 ▶ manage fen habitat through the appropriate levels of cutting and/or grazing. Work with partners (e.g. National Trust) to monitor site and identify optimal management for this species.

ACTION 2 ▶ monitor and maintain water levels

Justification for inclusion

GB Red List Critically Endangered. Very rare nationally - has previously been found in wet heath and bog in Dorset and in fen habitat in East Anglia.

Only found at Wicken Fen in Cambridgeshire and Peterborough.

Habitat grouping from LNRS priority list

Lowland fens, floodplain wet grasslands and associated habitats.

Zora Armillata Spider

Bearded Stonewort *Chara canescens*

Bearded Stonewort

Actions

ACTION 1 ▶ working with multiple different partners (e.g. water companies, farmers/ landowners) to reduce water pollution caused by sewage or fertiliser.

ACTION 2 ▶ control change in habitat by removing competing vegetation or return parts of ponds to suitable habitats for Bearded Stonewort by clearance or by temporarily lowering water table temporarily.

ACTION 3 ▶ creation of new ponds close to existing habitats to encourage early colonisers and movement of Bearded Stonewort

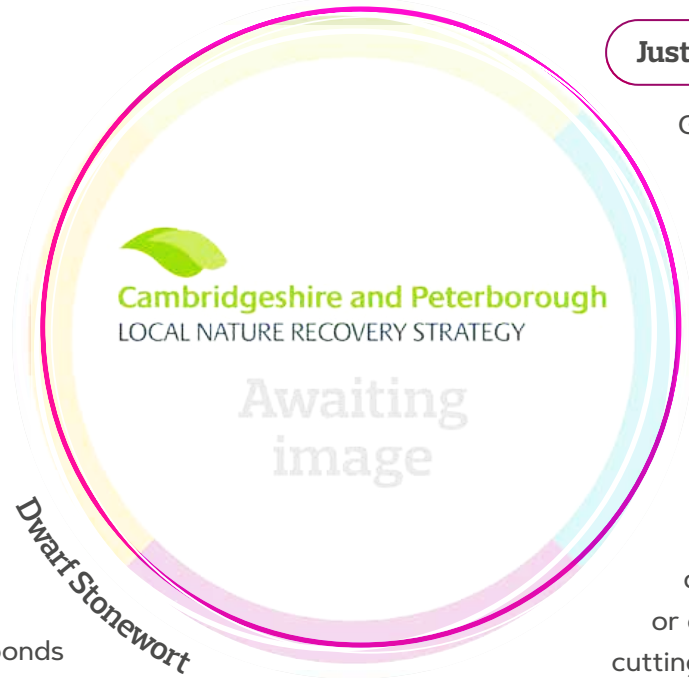
Justification for inclusion

GB Red List Endangered. Nationally found in some locations near the coast and its only inland sites are some of the old Peterborough brick pits. It is usually found in clear brackish water, but it is tolerant of a range of salinities.

Habitat grouping from LNRS priority list

Ponds.

Dwarf Stonewort *Nitella tenuissima*



Dwarf Stonewort

Actions

ACTION 1 ▶ manage open water habitats by working with partners to improve water quality by reducing water pollution caused by the addition of sewage or fertiliser.

ACTION 2 ▶ control competing vegetation with grazing or periodic vegetation clearance.

ACTION 3 ▶ create new ponds close by to provide new habitat for early colonisers.

ACTION 4 ▶ management should also be undertaken at suitable historic sites with the aim of regenerating this species from the spore-bank.

Justification for inclusion

GB Red List Endangered. Only recorded at Wicken Fen in Cambridgeshire and Peterborough. A plant of calcareous fenland where it occurs in shallow peaty pools and ditches. It requires bare peat surfaces and at Wicken Fen it has only appeared in the summer or autumn following peat cutting activities.

Habitat grouping from LNRS priority list

Ponds.

Tassel Stonewort *Tolypella intricata*

▶▶ Actions

ACTION 1 ▶ reinstate management at existent sites.

ACTION 2 ▶ creation and maintenance of new sites through periodic clearance of ditches, scrub control and grazing.

ACTION 3 ▶ monitor and maintain water levels (few centimetres to about 1 metre from the surface)

SUPPORTING ACTION 1 ▶ work with local partners to complete pond survey in Cambridgeshire.

Justification for inclusion

GB Red List Endangered. Recent records at only one site in Cambridgeshire and Peterborough. A species ephemeral pools and other waterbodies with alkaline water that dry out in summer. A winter annual which usually germinates in the autumn.

Habitat grouping from LNRS priority list

Ponds.

Tassel Stonewort

Did you know?
Peterborough brick pits hold the main population in Britain of Bearded Stonewort *(Chara canescens)*

Corncrake *Crex crex*

Priority species with actions for translocation

Actions

ACTION 1 ▶ creation of grassland habitat managed with tall vegetation during summer and autumn and delaying mid-summer mowing of fields to allow Corncrakes to successfully nest and rear their chicks.

SUPPORTING ACTION 1 ▶ expand Corncrake populations at Nene Washes and Ouse Washes through continued support of the existing national captive breeding release programme.

Corncrake

Justification for inclusion

The massive decline of the UK population, and extinction in England, justified the introduction attempts at the Nene and Ouse Washes.

The fate of these should be assessed before more widespread reintroductions are attempted.

Habitat grouping

Farmland (all)

Fen Ragwort *Jacobaea paludosa*

Actions

ACTION 1 ▶ adopt nature-based solutions which allow for periodic flooding and return natural function to rivers and floodplains to assist efforts to expand current populations.

ACTION 2 ▶ preserve existing habitat and identify new sites with optimal habitat requirements (wet, waterlogged conditions, seasonally wet areas around waterbodies, open unshaded areas and nutrient rich soil)

ACTION 3 ▶ protect from deer and slugs to ensure it is not outcompeted by surrounding vegetation.

SUPPORTING ACTION 1 ▶ partner with Cambridgeshire County Council, Natural England and other landowners to look for opportunities to work together to ensure species expansion.

Fen Ragwort

Justification for inclusion

GB and England Red List Critically Endangered. Only one native extant population nationally and this is in Cambridgeshire (a roadside ditch SSSI near Ely). Has been introduced to many sites but most introductions have failed.

Recent studies have shown greater seed viability and more opportunity for captive rearing and release.

Habitat grouping

Lowland fens, floodplain wet grasslands and associated habitats

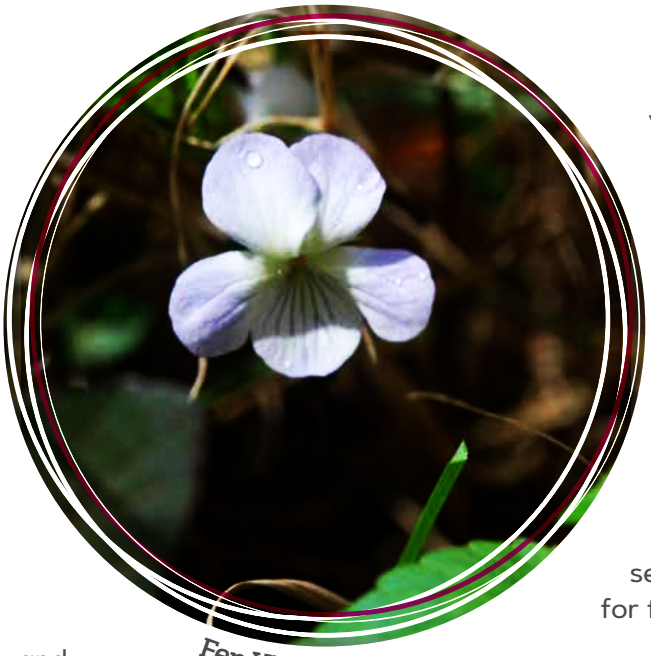
Fen Violet *Viola stagnina*

Actions

ACTION 1 ▶ ensure limited competition from other plants.

ACTION 2 ▶ periodically disturb the soil to stimulate germination e.g. from livestock and wet soil is needed in winter but waterlogging in spring and summer is detrimental.

ACTION 3 ▶ establish functioning populations at different locations within existing fen nature reserves, and potentially in restored fen habitats.



Fen Violet

Very rare nationally. Found at only two native sites in Cambridgeshire and Peterborough and introduced to another. It has a sporadic occurrence and can reappear from the seed bank after many years dormant.

Raising in cultivation is very successful, so native seed sources are available for future reintroduction.

Justification for inclusion

GB and England Red List Critically Endangered.

Habitat grouping

Lowland fens, floodplain wet grasslands and associated habitats

Large Marsh Grasshopper *Stethophyma grossum*

Actions

ACTION 1 ▶ re-introduce Large Marsh Grasshopper to historic range across Cambridgeshire fens (Great Fen, after which former sites at Wicken and Chippenham Fens).

Large Marsh Grasshopper

Justification for inclusion

Currently classed as 'near threatened' following an 85% reduction in its British range. The species currently survives in bogs and wet heaths in Dorset, Hampshire and Somerset. All these populations are vulnerable to climate change. Unless it is re-established in its former native range in East Anglia it is likely to become extinct in Britain.

Captive breeding has been successful, and self-sustaining reintroduced populations have been re-established at sites in Norfolk

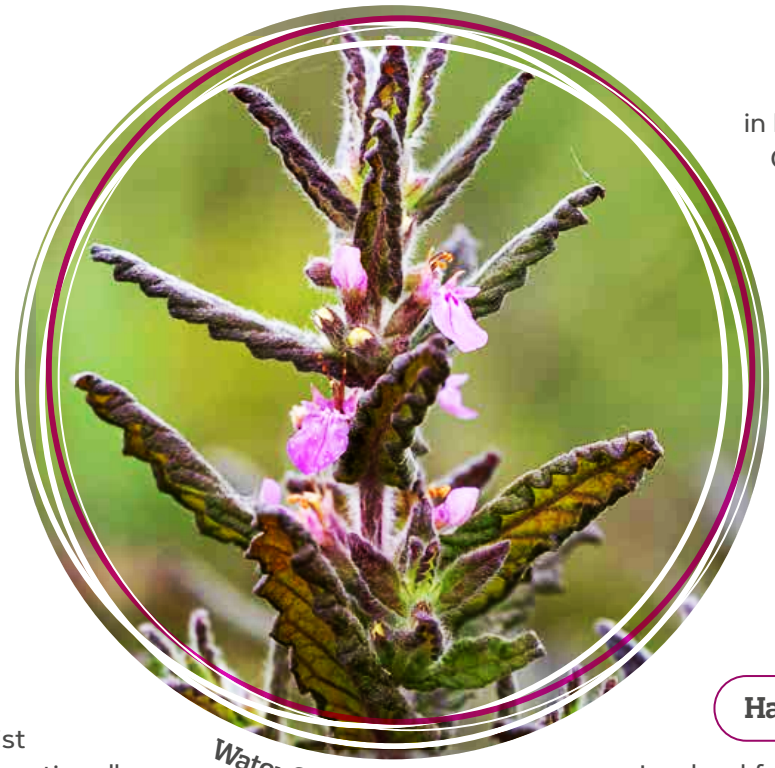
Habitat grouping

Wetland (all)

Water Germander *Teucrium scordium*

Actions

ACTION 1 ▶ implement positive management and monitoring of the sites where it is known to occur, which includes appropriate levels of grazing and/or cutting and scrub control. Also monitoring of water levels and some disturbance.



Water Germander

Justification for inclusion

GB and England Red List Endangered. Very rare nationally, by the 1990s it was confined to three sites in England - two in Cambridgeshire and one in Devon. Cambridgeshire sites under threat from a lack of management, scrub encroachment and shading. Introduced to Kingfisher's Bridge (next to one of the native sites) and this has been successful.

Habitat grouping

Lowland fens, floodplain wet grasslands and associated habitats

Pool Frog *Pelophylax lessonae*

Priority species with actions (wild ambitions)

Pool Frog

Actions

ACTION 1 ▶ re-introduce Pool Frog population into its historic range in Cambridgeshire fens through identification and management of suitable sites, working with the Natural England and Amphibian and Reptile Conservation Trust national reintroduction project currently operating in Norfolk.

Justification for inclusion

The last native population, in Norfolk, became extinct in 1880s. It has since been re-established at its last Norfolk site. Cambridgeshire is considered to have been a significant part of its former native range, and suitable habitats are present.

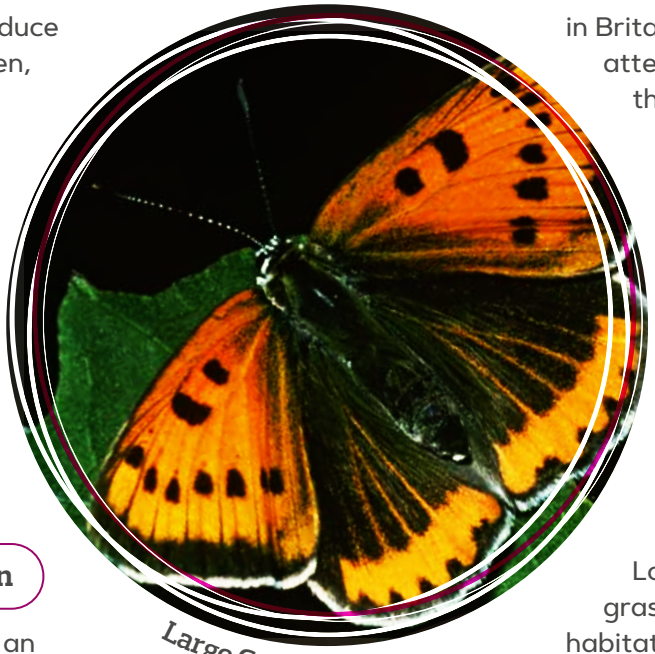
Habitat grouping

Lowland fens, floodplain wet grasslands and associated habitats

Large Copper *Lycaena dispar*

▶▶ Actions

ACTION 1 ▶ aim to re-introduce Large Copper into Great Fen, working with the existing Natural England-led reintroduction project, through creation of open fen habitat that supports Great Water Dock (larval foodplant) in areas that are not prone to prolonged periods of high-water tables during autumn/winter.



Large Copper

Justification for inclusion

The species, in the form of an endemic subspecies, became extinct in Britain in the 1860s. Repeated attempts to re-establish it in the Cambridgeshire Fens have so far failed. But a better understanding of its ecology may make a future attempt feasible if suitable habitat, extensive foodplant populations, and water level management is in place.

Habitat grouping

Lowland fens, floodplain wet grasslands and associated habitats

Swallowtail Butterfly *Papilio machaon*

▶▶ Actions

ACTION 1 ▶ expand Swallowtail butterfly distribution into Cambridgeshire through creation of large-scale fen restoration at Great Fen, introduction of Milk-parsley into tall herb fen (to be managed for this species).

ACTION 2 ▶ set up captive breeding release programme for Swallowtail by working with Natural England and partners.

Justification for inclusion

The British Swallowtail is regarded as an endemic subspecies, confined to fenland habitats and Milk-parsley is the larval food plant. It is current confined to the Norfolk Broads but occurred in Cambridgeshire until the 1950s. Previous reintroductions to Cambridgeshire have failed through being unable to sustain sufficiently large populations of the larval food plant.

Habitat grouping

Lowland fens, floodplain wet grasslands and associated habitats

Swallowtail Butterfly

Fen Orchid *Liparis loeselii*

Actions

ACTION 1 ▶ re-introduce Fen Orchid population through restoration of fen and marsh habitats on sites where Fen Orchid was previously known.Provide wet areas with bare sand, short grasses and calcium-rich habitat upon which the Fen Orchid depend, working with partners such as Plantlife who have conducted previous reintroduction attempts.

Fen Orchid

Justification for inclusion

The Fen Orchid Liparis loeselii, is one of the most endangered wildflowers in Europe. Formerly known from at least 30 fenland sites in eastern England in the 1890s, only three native populations of L. loeselii are known to survive in the Norfolk Broads.

After a decade of research and partnership work, the orchid has been re-discovered at former sites in the Broads, and the total population has estimated to have risen to over 15,000 plants through proper management.

The orchid has also been reintroduced to its former sites in Suffolk, and the signs are encouraging that it will become established in some of its old homes.

Habitat grouping

Lowland fens, floodplain wet grasslands and associated habitats.

Did you know?
The first ever local flora (a book about local plants) was about Cambridge and appeared in 1660.

8

Local habitat map

Local habitat map

The local habitat map is available online in the form of a set of interactive maps. These maps allow users to understand the priorities in their locality and inform the most effective action for nature recovery across Cambridgeshire and Peterborough.

https://cambridgeshire.maps.arcgis.com/apps/instant/basic/index.html?appid=ec08bc6160bc41969c924daf66bd0589

Static maps will be added to the document upon completion.

Next steps

Content to be added subsequently.

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Cam and Ely Ouse Catchment Partnership

Cambridge City Council

Cambridge Past, Present and Future

Cambridge Water

Cambridgeshire and Peterborough Environmental Records Centre

Cambridgeshire County Council

Cambridgeshire Geological Society

Centre for Landscape Regeneration, Cambridge University

Country Land and Business Association

Diocese of Ely

East Cambridge Farmers

East Cambridgeshire District Council

Eco Church

Ely Nature-Friendly Farming Zone

Environment Agency

Farming and Wildlife Advisory Group (FWAG)

Fenland District Council

Fenland SOIL

Forestry Commission

Great Ouse Rivers Trust

Greater Cambridge Planning

Huntingdonshire District Council

John Clare Countryside

Keystone Marketing

Land Use Consultants

Middle Level Commissioners, Internal Drainage Board

National Farmers Union

National Trust

Natural Cambridgeshire

Natural Capital Solutions

Natural England

Nene Park Trust

Ouse Valley Farm Cluster

Peterborough City Council

Royal Society for the Protection of Birds (RSPB)

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Urban and Civic

Water Resources East

West Camb 100s

Wildfowl & Wetlands Trust

Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire

Woodland Trust

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Section five

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Worts Meadow Local Nature Reserve
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Water buffalo at Chippenham Fen
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River Granta drone shot

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Play area, Alconbury green corridor, Alconbury Weald © Urban&Civic

Pond dipping with Mike Dilger © Urban&Civic

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Urban landscape, Alconbury Weald © Urban&Civic

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Section seven

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Maiden Pink (with Hoverfly, Sphaerophoria scripta) © Rob Dyke

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Mud Beetle - image to follow

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Ground Beetle © Brian Eversham

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Witham Orb Mussel - image to follow

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Pardosa Paludicola Spider - image to follow

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Bearded Stonewort, Orton Pit © Sarah Lambert

Dwarf Stonewort – image to follow

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Tassel Stonewort - image to follow

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Section eight

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COMBINED AUTHORITY

Cambridgeshire and Peterborough
LOCAL NATURE RECOVERY STRATEGY

Enquiries email localnaturerecoverystrategy@cambridgeshire.gov.uk
or visit NaturalCambridgeshire.org.uk/lnrs