An Interim Nature Recovery Network for East Cambridgeshire

Final Report

Prepared by

The Wildlife Trust for Bedfordshire, Cambridgeshire & Northamptonshire

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Wildlife Trust for
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& Northants

CONTENTS

List of Tables & Maps

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1. INTRODUCTION

1.1 Background

Urgent action is required to reverse biodiversity loss and climate change, which is increasingly being reflected in national, regional and local policies.

The UK Government has set ambitious targets related to climate change and through the Defra sponsored 25 Year Environment Plan has committed to reversing the loss of biodiversity. The Environment Act introduces a requirement to prepare Local Nature Recovery Strategies and to deliver mandatory Biodiversity Net Gain (BNG) through the land-use planning system.

In terms of natural habitats, Cambridgeshire has one of the lowest proportions of priority habitats in England (less than 10%), with one of the lowest percentages of land designated for nature and the second lowest woodland cover at 4.8%. Natural assets in Cambridgeshire are coming under increasing pressure with conflicts and / or damage from recreational pressures being recorded at sites including Wicken Fen.

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, particularly in a county such as Cambridgeshire which does not benefit from large-scale open access downland, moorland or coast.

Local Authorities such as East Cambridgeshire District Council (ECDC) have recognised the climate emergency and biodiversity crisis and are looking to take greater action to address these twin challenges. ECDC has formally supported the Natural Cambridgeshire[1] vision to double nature:

> *"Our Vision is that by doubling the area of rich wildlife habitats and natural greenspace, Cambridgeshire and Peterborough will become a world-class environment where nature and people thrive, and businesses prosper."*

1.2 Strategic Land-use Planning

In 2020, East Cambridgeshire District Council published a [1]Natural Environment Supplementary Planning Document. Policy SPD.NE6 requires new developments to demonstrate significant biodiversity net gain, while Policy SPD.NE7 encourages strategic development proposals to provide a significant contribution to the doubling nature vision. Policy SPD.NE10 encourages such enhancements to be located in the most appropriate locations. However, the SPD did not specify in detail where the most appropriate locations are within East Cambridgeshire.

Where off-site biodiversity net gain and enhancement measures are required, these would have most benefit where they are targeted to strategic locations, which contribute to the creation of a functioning nature recovery network. Such locations are also rewarded in terms of biodiversity units when using the Defra Biodiversity Metric, the official measure of biodiversity net gain.

The Environment Act places a legal duty on Local Authorities to prepare Local Nature Recovery Strategies. It is expected that these will be produced through cross boundary co-operation at a County or equivalent level, however, they are not likely to be completed before 2023 or 2024 at the earliest. This document and associated mapping layers will therefore support the existing East Cambridgeshire District Council Local Plan and Supplementary Planning Document policies.

[1] Natural Cambridgeshire is the Local Nature Partnership covering Cambridgeshire and Peterborough. See https://naturalcambridgeshire.org.uk/

1.3 Study Aims & Objectives

This report has been commissioned by East Cambridgeshire District Council. The project aim is to identify a high level Interim Nature Recovery Network for East Cambridgeshire district (to act as a preliminary, but non-statutory Local Nature Recovery Strategy for the area), to inform implementation of biodiversity net gain planning policies. The work will also inform other green infrastructure and natural capital investments, as well as Parish Neighbourhood Plans and organisational nature recovery plans.

The project aims to:

1. Identify Priority Areas for landscape-scale action to support nature's recovery, from both desktop analysis and targeted fieldwork.
2. Undertake stakeholder engagement with key stakeholders and a sample of major landowners to agree the boundaries of the priority landscape areas.
3. Identify the critical components of a Nature Recovery Network in each of the Priority Areas, based on the [2]Lawton principles of More, Bigger, Better, and More Joined Up.

The final products are this report and a series of GIS mapping layers.

The outputs from this project will be available to inform, influence and be fed into the statutory county-level Local Nature Recovery Strategy (which commences preparation later in 2022), but also provide a local context for securing biodiversity net gain across East Cambridgeshire.

2. STUDY STAGES

2.1 Identification of Priority Areas

The study was undertaken between October 2021 and July 2022.

The first stage involved putting together the evidence base to identify ***Priority Areas*** for large-scale, strategic biodiversity and landscape enhancement across East Cambridgeshire. There were two separate but related strands to the initial evidence gathering.

The first strand of this stage involved collation and analysis of high-level habitat and nature conservation sites data, to identify priority landscape areas as the core components of a potential Nature Recovery Network across East Cambridgeshire. Information including data from Natural England's Open Data Portal, Natural Capital Solution's Opportunity Map of Cambridgeshire and data held by the Wildlife Trust on County Wildlife Sites and nature reserves was collated using QGIS to produce a series of mapping layers that can be interrogated and analysed. We assessed this information against maps of underlying and surface geology, soils, topography and drainage to understand the wider landscape context of the habitat information.

The second strand involved site visits to each of the Priority Areas to understand better the local landscape and land-use, and to allow us to refine the area boundaries, which were further tested through engagement with key stakeholders.

2.2 Identifying the Components of a Nature Recovery Network

The second stage involved the identification of the detailed components of a nature recovery network within each of the ***Priority Areas***.

The identification of robust ecological networks can be undertaken using a variety of methods, see [3]Natural England Research Report NERR081 *Nature Networks Evidence Handbook* (2020).

Many of these methods are modelling approaches that rely on large amounts of habitat and other spatial data and require significant inputs of time and money to produce robust outputs. For the short timescale and level of detail required for this study we therefore decided to use a simpler approach based on use of up-to-date high-quality information on habitats, soils, and discussion with landowners regarding better and poorer quality agricultural land. **This in effect is a more local and refined version of the approach Natural England have taken to their National Habitat Network Framework and Maps and their Habitat Potential data layers.**

By incorporating a component of site visits and habitat mapping within the Priority Areas, this simplified approach is likely to produce at least as good results as any ecological modelling result for a similar level of effort. That is not to say that ecological modelling methods would not be useful, but they are likely to refine the identified network, rather than completely re-invent it. They may in future, however, be useful if there are difficult choices to be made between different options for creating stepping-stone habitats. However, they will not change the locations of the core sites or the immediate priorities for creating a Nature Recovery Network for East Cambridgeshire.

During fieldwork, detailed analysis of the priority landscape areas was undertaken, including targeted site surveys to update habitat information where this was out of date (most of the phase 1 habitat data dates from the 1990s). These site visits helped us gain a better understanding of local opportunities and constraints that may not be evident from desk-based studies. Analysis of the updated habitat information was used to refine the boundaries of the Priority Areas and to identify core habitat and buffer areas, and key linkages and stepping-stones within the study area, in line with the Lawton principles. As part of the study, connections to the wider Nature Recovery Network across Cambridgeshire and beyond were also considered.

The habitat information gathered during this project, was used to produce a series of GIS mapping layers showing the local Nature Recovery Network including the detailed boundaries of the Priority Areas and the components of a nature recovery network, with core areas, stepping stones and extensions to each of these. Chapter 4 of this report describes these areas in more detail, including the opportunities within each and their potential benefits.

The overall network maps identify the best and most important opportunities for a Nature Recovery Network across East Cambridgeshire. However, they do not identify every opportunity and landowners and local communities will be able to bring forward other projects to complement and add to the core network set out in this report.

The information in this report will help inform land use planning decisions, including priority locations for delivery of biodiversity net gain, as well as other priorities for funding including agri-environment schemes.

2.3 Stakeholder Engagement

The draft Priority Areas boundaries were presented to key stakeholders, including Natural England, large conservation organisations such as the National Trust and RSPB, and a sample of landowners with significant land within one or more of the areas. The boundaries of the Priority Areas were further refined based on these discussions.

Once the boundaries of the Priority Areas were established, further discussions took place with key stakeholders to identify the critical components of a Nature Recovery Network and the best opportunities to create or enhance habitats in each Priority Area. At this stage, not all opportunities have been identified. More detailed engagement with landowners and stakeholders outside of this project will be required to identify the full range of opportunities for expanding the nature recovery network core areas and stepping stones.

Further discussions with landowners will also enable identification of the potential delivery mechanisms for each component of the nature recovery network, whether that be through agricultural policy (Environmental Land Management Schemes), Biodiversity Net Gain linked to development, provision of green infrastructure, or other policy drivers. They will also identify those opportunities deliverable in the short-term compared to those that will be longer-term ventures.

The Priority Area boundaries and the critical Nature Recovery Network components set out in this report are therefore a product of combined desktop and field assessment, coupled with testing through engagement with key stakeholders.

The outputs from the project are this report and a series of GIS mapping layers showing an interim Nature Recovery Network for East Cambridgeshire.

3. IDENTIFICATION OF PRIORITY AREAS

3.1 Sites of Highest Biodiversity Value

In order to establish areas on which to focus landscape-scale biodiversity opportunities, an evidence-based understanding of the current nature conservation sites and habitats across East Cambridgeshire is required.

The broad nature of this study could not look at the details of the individual sites and so sites of high biodiversity were defined as those with some kind of designation (e.g. SSSIs, Local Nature Reserves, County Wildlife Sites, ancient woodlands, orchards), or other protection, for instance a private nature reserve. Designated sites are already defined and well mapped and the GIS data for these was taken from the Natural England Open Data Geoportal. We supplemented this with local data available to the Wildlife Trust and through CPERC (the Local Records Centre) including County Wildlife Sites, Wildlife Trust nature reserves, and wildlife-rich countryside sites owned by other conservation stakeholders.

3.2 Identification of Priority Areas

Clusters of designated nature conservation sites were used as the initial basis for identifying potential Priority Areas. Although these designated sites cover the vast majority of priority habitats they do not represent all the wildlife habitats present in the area. We therefore supplemented this information with other data sources, to better define clusters of sites and habitats that were well connected.

[4]The Mapping Natural Capital and Opportunities for Habitat Creation in Cambridgeshire Report (Rouquette, 2019), provided a good basis for analysis of the full range of habitats, although not all of the data sets used in this were recent, for example the phase 1 habitat survey for the county dates from the 1990s. We therefore supplemented this high-level habitat opportunity mapping with local knowledge and additional field surveys to update the historical land use information where it is out-of-date.

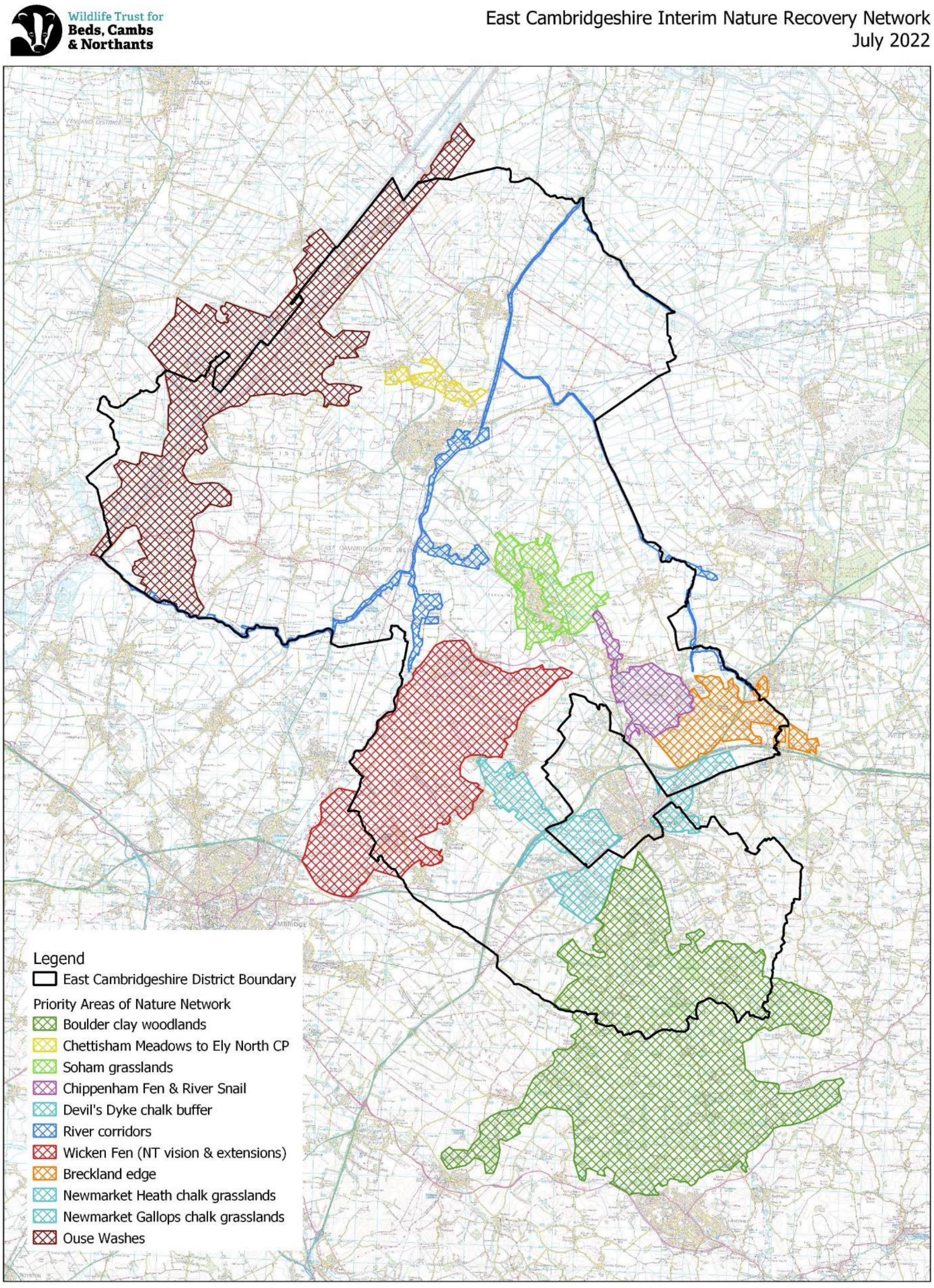
The Natural England National Habitat Network data layers available on the MAGIC website were also downloaded and interrogated. These provided a coarse layer of information based on simple buffers around different types of priority habitat, which was helpful in identifying the initial areas of focus.

Using the above data, nine potential ***Priority Areas*** were outlined and then further defined by studying landscape features such as the topography, underlying geology (both solid and drift), current habitat and land use, and past habitat and land use. Published green infrastructure strategies and visions, such as the National Trust Wicken Fen Vision, and land owned and managed by organisations with a predominantly conservation remit was also taken into account. The boundaries of the Priority Areas were refined using the updated habitat information, gathered from site visits.

In defining the detailed boundaries of each Priority Area, the placement of the boundary has, where possible, followed land use and geographic features rather than the individual ownership of land, but inevitably these are sometimes one and the same. Where possible, Priority Areas have been connected to neighbouring areas to create a coherent network.

The above information formed the initial evidence base through which we defined areas of focus for a potential Nature Recovery Network within East Cambridgeshire. Each area is different in character and may ultimately produce very different opportunities in terms of habitats and land uses.

Map 1: East Cambridgeshire Interim Nature Recovery Network Priority Areas



The nine ***Priority Areas*** are described below, and also shown on Map 1 above:

It is important to note, when reading the Priority Area descriptions below, that the Priority Areas as identified in Map 1 are not intended to be converted in their entirety to the opportunities as described below. The Priority Areas, as mapped, also do not have any new or amended statutory planning policy status arising from this Report (though future planning policy may take into account the contents of this Report). The purpose of the maps, and the opportunities described below for each mapped area, is to indicate what opportunities there are and, if nature recovery activities are planned within one of the areas, this Report will hopefully help steer those activities to the best available nature recovery solutions.

Further details on each Priority Area, including an individual vision and objectives for each, can be found in section 4 of this Report.

3.3 Wicken Fen (NT Vision Area & Extensions)

The National Trust has a long-term vision to create a landscape for wildlife and people that extends its Wicken Fen reserve southwards towards the edge of the city of Cambridge, potentially covering an area of over 50 Km^2. The northern part of the Vision area around the historic Wicken Fen lies within East Cambridgeshire and includes areas of deep peat with potential for restoration to wet fen and other associated habitats, as suitable opportunities arise. This area of peat extends south-west from Wicken to Waterbeach, tapering to a point close to the River Cam, with some river terrace deposits. Further to the east and south within the vision area the geology and soils are instead characterised by low-lying, wet, clay on top of the underlying Cretaceous marly chalk. The whole Priority Area lies beneath the 10m contour line and is cross-cut by a series of parallel drains including Burwell Lode, Reach Lode, Swaffham Bulbeck Lode and Bottisham Lode. Quy Water flows through the south-west part of the Priority Area (within South Cambridgeshire) and the New River flows along the northern edge. Ultimately all of these water courses flow into the River Cam which lies to the west of this Priority Area. Quy Fen SSSI in the southern part of this area, and Wicken Fen in the north, demonstrate the potential habitats which could be restored across it. The River Cam marks the western boundary, while the eastern boundary is marked by the B1102 and line of villages at the fen edge. A small extension beyond the National Trust Vision area has been proposed to connect to the historic Bottisham Park.

The conservation priorities in the north of the area are the creation of lowland fen priority habitat and other wetland mosaics. In the southern portion of the Vision area the priorities are the creation of lowland meadow priority habitat, and other complementary habitats such as hedgerow networks, ponds and small-scale woodland planting.

Throughout the Wicken Fen area, it is recognised that farming will continue to be a long term and important feature of the area. However, there is growing recognition and support in the farming community to adapt farming practices so that thriving and viable farming can continue to take place, while integrating land management methods that support nature recovery. Alternative approaches to farming also have the potential to make a major contribution to reducing greenhouse gas emissions from agriculture in this area. Further details on farming related opportunities are covered in section 4 of this report.

3.4 Ouse Washes & Surrounds

The Ouse Washes Priority Area is broadly defined by the Washes themselves and a buffer either side. However, as part of this work, the distance-based buffer has been refined to take account of areas of remnant surface peat soils with potential for wet grassland creation suitable for breeding waders. The area also includes the Block Fen-Langwood Fen minerals extraction area, where restoration will be to a mixture of wet grassland and open water. Within East Cambridgeshire the most significant opportunities for the creation of complementary buffering habitats to the Ouse Washes are at Sutton, Mepal and Coveney. The conservation priorities in the area are the creation of wet grassland habitats to support breeding and wintering bird species associated with the Ouse Washes. As well as providing suitable soils for wet grassland creation, conservation of the peat soils through alternative approaches to farming also has the potential to make a major contribution to reducing greenhouse gas emissions from agriculture in this area.

Beyond this Priority Area there is also the Natural England Goose and Swan Impact Risk Zone (IRZ) which covers a wider area over to Ely and Littleport, and where farming practices can help provide an important winter food source for the internationally important wintering bird populations of the Washes.

3.5 Newmarket Chalk Grasslands

This Priority Area is defined by a combination of where the underlying chalk geology comes to the surface and where the major remnants of calcareous grassland priority habitat occur. The Priority Area comprises three sub-areas, two of which, the Devil's Dyke and Newmarket Heath sub-areas, are only separated by the A14. The third sub-area to the east of Newmarket is separated from the other two by the town.

The town of Newmarket greatly constrains this area and the flat topography means there are no obvious natural boundaries, with the chalk stretching west to Cambridge and beyond. The boundaries of each sub-area have therefore been largely defined by the remaining areas of high quality habitat. They have been drawn to include all the chalk grassland sites (SSSIs and CWSs) along with buffers of varying distance, depending on the nature of adjacent land use and the management needs of the core sites. This Priority Area includes the chalk grassland SSSIs of Devil's Dyke, Newmarket Heath, as well as other Wildlife Sites such as the Limekilns and Warren Hill racehorse training areas, the Links Golf Course and Beacon Course Green Lane.

Each sub-area directly connects with another Priority Area. The Devils Dyke sub-area connects to the Wicken Fen Vision Priority Area to its north-west, the Newmarket Heath sub-area connects to the Boulder Clay Woodlands Priority Area to its south-east and the Newmarket Gallops sub-area connects with the Breckland Edge Priority Area to its north-west.

The conservation priorities are the restoration and enhancement of species-rich calcareous grassland within all the nature conservation sites, together with the creation of new chalk grassland habitats in strategic locations where these will buffer and extend the remnant sites, or provide greater scope to achieve more sustainable management, such as adjacent to the Devil's Dyke.

3.6 Chippenham Fen & River Snail

The historic remnant fenland site of Chippenham Fen SSSI forms the main focus of this area. The Chippenham Fen sub-area comprises the historic fen, area of peat soils adjacent to it, the surrounding farmland and the River Snail chalk stream, which connects the River Snail to Snailwell Meadows SSSI and Fordham Woods (Brackland Rough SSSI). This area is relatively well defined geographically. The conservation priorities are provision of wetland mosaics, lowland fen and grassland habitats to buffer, extend and connect the core sites. Restoration of the River Snail could entail a range of in-channel habitat enhancements for this chalk stream priority habitat as well as ensuring natural flows from the chalk springs.

South of Chippenham Fen, the area includes part of Chippenham Park and the farmland which forms the catchment of Chippenham Fen. The farmland includes a mixture of free draining chalky soils and wetter soils typical of the Fen edge. Conservation priorities for the farmed areas include the provision of grassland habitats of various types and small wetland areas which could also be created around the ditch networks.

To the south and east, this area adjoins the Breckland Edge Priority Area, which has sandier soils overlying the Cretaceous Chalk; the boundary between the two areas is predominantly based on this difference in soil type.

3.7 Breckland Edge

This Priority Area forms an extension to the main area of Breckland in Suffolk and Norfolk. It comprises areas with Quaternary sand and gravel deposits overlying the Cretaceous Chalk and includes former sand pits that support a range of Breckland specialist flora and invertebrates. The Priority Area also includes the River Kennett and adjacent land within the river corridor, in places forming the border with Suffolk. River gravel terrace deposits form the main component of the surface geology, but the area also includes some

shallower soils over the chalk along the River Kennett. The main conservation sites are Red Lodge SSSI (in Suffolk) and Chippenham Gravel Pit, Halfmoon Plantation Pit and Kennett Restored Gravel Pit County Wildlife Sites.

The western part of this area is farmland adjoining the Chippenham Fen Priority Area. The area includes the sandy soils in the eastern part of the Breckland Edge area as well as the calcareous soils in the west, forming a direct connection to the Newmarket chalk grasslands Priority Area. The farmland includes a mixture of free draining sandy or chalky soils, often with damp hollows, and wetter soils typical of the Breckland Edge and contains areas known to support rare arable flora, including Chippenham Avenue Fields County Wildlife Site.

Conservation priorities in this area include the provision of habitats suitable for Breckland flora and invertebrates, whether grasslands of various types or arable areas suitable for assemblages of rare arable flora. Small wetland areas could also be restored and created around watercourses including the River Kennett along with in-channel enhancements and seasonally damp hollows. Other habitats such as tree belts and hedgerows would provide complementary habitats.

3.8 Soham Grasslands

This Priority Area comprises the patchwork of historic unenclosed commons around Soham and adjacent farmland connecting them. This area within the Fens and including the fen island of Soham, is less well defined, so has been drawn to connect the various commons and other remnant habitats together. The area excludes the main built up area of Soham, but connects all of the commons. The main conservation sites are Soham Meadows SSSI, Qua Fen Common, East Fen Common, and North Horse Fen County Wildlife Sites, as well as the other commons. The priorities in this area include the creation of lowland meadow priority habitats and networks of species-rich hedgerows and drains. Pond creation on clay soils around Soham would help support the isolated population of Great Crested Newts.

A further extension to this area across the former Soham Mere to connect to the Wicken Fen Vision could be considered in the future, but will depend on further engagement with the landowners, as there is currently little habitat of interest in this area.

3.9 Boulder Clay Woodlands

The higher ground in the south of the district comprises glacial boulder clay deposits, which overlay the Cretaceous chalk bedrock. This area extends well beyond the district boundaries into Suffolk, Essex and South Cambridgeshire forming the South Suffolk - North Essex Claylands National Character Area.

The surface and underlying geology does not form a defined boundary, except where it meets the chalk around Newmarket. There are also no particular topographical features such as contours of river valleys to further define a Priority Area. While the boundary with the chalk and underlying geology could in theory be used, past and current land use has influenced the landscape and locations of remnant habitats including ancient woodlands and ancient hedgerows.

Large areas of land around Newmarket are used as studs to house racehorses. This studland provides limited opportunities to incorporate nature-friendly land management. While many hedgerows and tree belts help define the grazing paddocks, these are generally highly manicured, and regularly managed, limiting their potential for wildlife. There could however be opportunities to enhance these tree belts and hedgerows, through changes to management to provide space for wildlife outside the grazing paddocks.

The Priority Area has therefore been defined by reference to the locations of recognised nature conservation sites and remnant ancient habitat features such as ancient woodland, ancient hedgerows, the Upper Stour river valley and the locations of other complementary woodland or grassland habitats. This more closely defined area connects across the district boundary into South Cambridgeshire and Suffolk. Key nature conservation sites include the following wooded SSSIs: Devil's Dyke (wooded section), Out and Plunder Woods, Ten Wood, Park Wood, and Carlton Wood in Cambridgeshire, and Trundley & Wagdell's Woods SSSI in Suffolk. Other ancient woodland sites include many County Wildlife Sites such as Ditton

Park Wood, Great and Little Widgham Woods, Basefield Wood, Lucy Wood, as well as some ancient parish boundary hedgerows and road verges.

In the early 2000s, the Forestry Commission commissioned the East Anglian Wildlife Trusts to identify priority areas for the management and restoration of ancient woodlands and creation of new woodlands to inform their woodland grants programme. This area was one of six in Cambridgeshire identified as a priority for woodland management, restoration and creation. The conservation priorities include restoration of planted ancient woodland sites to native broadleaved species, the buffering and connection of the ancient woodland sites through new native woodland, networks of mature hedgerows, and other complementary habitats such as species-rich grasslands and ponds. The River Stour could be enhanced through in-channel habitat restoration and restoration of mixed wetland, species-rich grassland or woodland habitats on adjacent land and within the wider catchment on land through which feeder streams and ditches flow.

Within East Cambridgeshire, the priorities are the restoration of the ancient woodlands, and their buffering and connection through new woodland creation, enhancement of hedgerow networks and creation of complementary meadow and pond habitats.

3.10 Chettisham Meadows to Ely North Country Park

To the west of Ely, on the Little Downham spur of the Isle of Ely, the underlying lithology is Kimmeridge Clay, along with areas of glacial till. Chettisham Meadows and Little Downham Local Nature Reserve both occur on areas of the clay without the covering of glacial till. Chettisham Meadows comprises one field of high quality lowland meadow priority habitat (the SSSI) along with sixteen fields of degraded neutral grassland (the County Wildlife Site). The City of Ely is growing to the north, heading towards this Priority Area, and a new country park is proposed as part of this extension, which will include new meadow habitats. This Priority Area connects the Chettisham Meadows complex to Little Downham LNR and the proposed Ely North Country Park. It is a Priority Area for restoration and creation of lowland meadows, and associated habitats such as hedgerows and ponds. It forms a stepping stone between the Great Ouse Valley and Ouse Washes, a role that could be considerably enhanced to the benefit of the natural environment and public access to the countryside.

3.11 River Corridors (Great Ouse, Cam, Lark, Little Ouse & Soham Lode)

The River Corridors of the Great Ouse, Cam, Lark and Little Ouse form a linear habitat corridor through the district. All these main rivers flow through the Fens and are enclosed between flood embankments on either side, which significantly reduce the area of floodplain. However, semi-natural grasslands occupy most of the confined floodplain area which are still quite wide in places (50-300 metres) and thus create a linear corridor of habitat. The Priority Area is therefore mostly defined by the river embankments, but in the few places where habitats have been created adjacent to the river embankments, such as at Kingfishers Bridge, the boundaries of the Priority Area extend beyond the flood embankments.

The conservation priorities are the enhancement of floodplain wetland mosaics within the floodplains and the creation of additional wetland stepping stones in key locations adjacent to and outside the river corridors.

These main river corridors are extended in a couple of areas to encompass smaller water courses in the upper reaches of the catchment. The Soham Lode and a corridor of land either side past Barway up to Soham town is one such corridor. Another is the River Lark tributary of the Lea Brook / River Kennet which joins with the Breckland Edge Priority Area at Chippenham and Kennett and includes Haveacre Meadows & Deal Nook County Wildlife Site. In-channel enhancements and creation of wetland mosaics along the river corridor are desirable along both the Soham Lode and Lea Brook / River Kennett.

4. PRIORITY AREA NATURE NETWORK COMPONENTS

4.1 Nature Network Rules of Thumb

There are different approaches that can be adopted to develop a nature network, based on local conditions. However, there are some broad principles that influence the design of functional and robust ecological networks ([1]Natural England Research Report NERR081). The following represents a hierarchical approach based on the [3]Lawton principles (Lawton et al, 2010), listing the most important elements in order. The key elements are then each considered in turn.

Better site quality > Bigger sites > More sites > Stepping stones & permeable matrix (nature friendly farming) > Corridors

Better site quality: Maintaining the quality of core sites within a network is the starting point, as these will represent the best quality areas of habitat supporting the largest range and number of key species. To achieve the best site quality, there needs to be sufficiently large habitat patches to allow for a complex mosaic of different habitats and micro-habitats, along with dynamic processes to allow the fullest range of species to flourish.

Core sites with long-term continuity of habitats, whether ancient woodland, or long-standing grassland and wetland habitats need to have strong protection as they will support more species and have more complete and carbon-rich soil structures than more recent examples of these habitats.

These core habitat patches should be buffered from adverse adjacent land uses by at least 50m, and ideally 100m of less intensive land uses. In some cases, e.g. where predation from urban cats would affect important species, a larger distance of up to 500m may be required.

The final critical element to achieving better quality core habitat patches is to ensure suitable management that allows key ecological processes such as grazing or natural regeneration to occur. Where this is not possible, for example on small sites, management interventions can attempt to replicate these processes, but this tends to be more costly with less natural results.

Bigger sites: Bigger sites with significant buffer zones have reduced edge effects, and provide larger core habitat patches that can support wider ranging species. They are also likely to have more habitat variation and better support those species with specialist habitat requirements. In the context of climate change, bigger sites are likely to provide more micro-climates and therefore be more resilient than smaller sites.

The aim should be to have core habitat patches of at least 100 Ha with a minimum habitat patch size of 40 Ha. If there are choices to be made, when expanding the size of sites, it will usually be better to choose the smallest core site to increase first (for example increase a site of 30 Ha to 40 Ha before increasing a site of 70 Ha to 100 Ha).

In the context of recreational pressure, bigger sites are usually able to cope with larger numbers of people because of the greater scope to provide areas with no / low disturbance to act as refuges for sensitive species.

More sites: When selecting locations for creating new sites, it will often be better to choose areas with greater variation of topography and aspect. Larger sites are better than smaller sites, but if the former is not possible, larger numbers of smaller sites can work so long as they are well connected to the core sites and each other.

Stepping stones & permeable matrix: Across a defined habitat network the aim should be for there to be at least 30% semi-natural habitat. For specialist species, habitat patches should be less than 200m apart, but for more generalist species less than 1 Km apart is acceptable.

Landscape-scale habitat mosaics help improve the stability of populations and may be important for wide-ranging species. In agricultural landscapes a more heterogeneous landscape can help counter the impacts of intensive farming practices. A landscape with a good variety of different types of habitats can often support a greater variety of species than would be predicted by just considering the number and type of habitats present (i.e. a Nature Network as a whole is potentially more valuable than each individual Priority Area).

Nature-friendly farming, with a variety of farm habitat features and some high quality habitat stepping stones will support a habitat network by providing a more permeable matrix through which some species can move. Work at RSPB Hope Farm and the work of the Nature Friendly Farming Network (Georgina Bray & Martin Lines, *pers. comm.)* has shown that giving 10% of farms over to wildlife features is the level required to allow nature to recover. This is also achievable through using the least productive / unproductive parts of fields along with retaining existing farm wildlife features. This approach increases the area of breeding, foraging or sheltering habitats for some species. It is also likely that different landowners will take different approaches based on their own interests, so will increase the variety of the landscape in between habitat patches, and support a wider diversity of species.

Habitat corridors: For most habitat specialist species, corridors are of little value unless they are a minimum 100m wide, due to edge effects reducing the habitat quality along a linear corridor. Natural corridors, such as rivers function better than man-made corridors. Most species will “see” corridors differently to humans. For example, hedgerow corridors are a landscape feature that are of little value to wildlife unless they are dense and tall (i.e. they act as good scrub edge habitat) and they form part of a permeable landscape or part of a woodland habitat network.

Extent of nature-rich habitats: As well as the individual site size, the other critical aspect for the development of a coherent and functioning ecological network is the extent of nature-rich habitats. A minimum land cover of 30% is ideally required to allow species to thrive and respond to naturally fluctuating conditions across a landscape. While in some instances a lower % cover might suffice, this will inevitably require a significantly larger proportion of wildlife-friendly farmland habitats or extensive nature-friendly farming practices.

The following sections consider each of the Priority Areas in terms of these principles and identify the components of the habitat network and opportunities for enhancing it. The opportunities identified have been discussed with key stakeholders, but detailed discussions have not taken place with most landowners. This would be a valuable subsequent task once the Interim Nature Recovery Network has been published. Land use and land management opportunities will evolve over time, so the Nature Recovery Network should be seen as identifying the best opportunities and indicative of what could be achieved.

4.2 Wicken Fen (NT Vision Area & Extensions) Priority Area

4.2.1 Key Facts

NT Vision area: 5,300 Ha
Total area: 6,030 Ha (East Cambs & South Cambs)
Area of core habitats and stepping stones: 985.03 Ha (16.34% of total area)

Core sites: Wicken Fen SSSI / SAC, Stow-cum-Quy Fen SSSI, Anglesey Abbey CWS, New River / Monk's Lode CWS, and Bottisham Park CWS.

Important habitats: Lowland fen, wet woodland, lowland meadows, floodplain grazing marsh, and ditches.

Important species:
Fauna: Fen invertebrates for example, *Lamia textor* (longhorn beetle), reed dagger moth, reed leopard moth, flame wainscot moth, and a range of flies and spiders.
Birds including common crane, marsh harrier, bittern, wintering raptors such as hen harrier & short-eared owl.
Flora: Fen flora for example, fen violet, milk parsley, saw sedge, & marsh orchids.

4.2.2 Network Approach:

Better Management
Wicken Fen and the recent extensions are actively managed by the National Trust for their range of priority wetland habitats and species. Management will continue, but in the longer-term, the priority is to further expand the area of high quality habitat managed for nature, with a view to moving towards less intensive and costly approaches to site management, that work with natural processes. This approach has already started on some of the new habitat land, as opposed to the historic fen where targeted conservation management is still required to support the critical species and habitats.

Anglesey Abbey is a 50 Ha County Wildlife Site owned and managed by the National Trust. Much of the grounds are laid out as formal gardens with a mixture of woodland and grasslands, with many specimen trees and horticultural plants. A large area forming the south-western part of the estate is managed with a wildlife focus and comprises a semi-improved calcareous grassland set within semi-natural and plantation broadleaved woodland. To the north-west of the main Anglesey Abbey site the National Trust have acquired approximately 30 Ha of land which is currently fallow or planted with various pollinator crops. Plans for this land are still in development, but a suitable aim would be to seed much of the former arable land with an appropriate grassland mixture, alongside using natural regeneration to establish a mosaic of habitats. In the longer-term the potential for diverting some water from the Quy Water to create wet grassland could also be explored.

Bottisham Park is an area of parkland with mature trees over generally poor semi-improved grassland, though there are patches of more species-rich grassland close to the hall. The area has been managed with Countryside Stewardship schemes for many years, with the aim to preserve the historic parkland. There is some potential to increase the species-richness of the underlying grassland, and then to adopt management practices similar to those used at Anglesey Abbey.

Stow-cum-Quy Fen is 30 Ha in size and managed by the Quy Fen Trust. Its history lies in common land used in the past for grazing and hay cutting, wood harvesting and fen digging and in the 19th century several pits were dug for coprolite mining. This history of diverse uses has created a mosaic of semi-natural habitat which is now well managed in order to maintain this diversity. The site is still grazed by cattle and the various ponds are kept open by grazing or occasional cutting, with some areas protected from grazing animals to maintain a variety of aquatic habitats. For its small size it hosts a wide diversity of habitats, including open water, reedbed, scrub, woodland and calcareous grassland and is important for the pools which are underlain by marly chalk and host a range of uncommon aquatic plant species. The grassland

habitats are, however, still recovering from ploughing in the Second World War and there is significant potential to restore a larger area of species-rich grassland. There is hope to attract nesting turtle doves on the reserve as the site holds all their habitat requirements and they are known from the area. The site is, however, an island in the midst of an intensive arable landscape and as such its value as a refuge for wildlife and its potential for relying on natural processes in management is limited. Expansion of the area of priority habitats would enable more flexible and extensive and potentially less costly approaches to management in the future.

Buffering & Extending Core Areas

The expansion of the Wicken Fen core area has been achieved through the purchase of land and habitat creation at Adventurer's Fen and Baker's Fen. However, in the north of the vision area there are still large areas with peat soils where further expansion of the priority lowland fen and other habitats could occur. The National Trust hopes to achieve this in stages over the coming decades, working with.local communities and farmers.

A range of opportunities to buffer, extend and connect Anglesey Abbey with Stow-cum-Quy Fen SSSI have been identified through the Cambridge Nature Network and these have also been included in this report. At 30 Ha, Stow-cum-Quy Fen SSSI is too small to host a variety of habitats or support landscape-scale natural processes. Using this site as a nucleus, the aim should be to restore high quality wetland and grassland habitats along the hydrological route of the old Quy Water to create a large core area and corridor linking the Cambridge Nature Network through Stow-cum-Quy Fen and Anglesey Abbey to an expanded Wicken Fen.

Beyond this corridor of potential and current high quality habitat, the wider area in the south of the Wicken Fen Vision area is intensive arable farmland with minimal field margins and few well-maintained hedges. Directly to the west of the land at Anglesey Abbey there are a few fields which have 4-6m margins. Otherwise the land is generally cropped to within a metre of the field boundaries and hedges are gappy or lines of trees. In the short-term introducing nature-friendly farming practices, particularly directly adjacent to the high quality habitats, would enhance their value allowing a wider variety of species to utilise the area.

Stepping Stones

White Fen (10 Ha) and Oily Hall (46 Ha), towards the middle of the Vision area, have been under National Trust management since 2008 and are becoming habitat 'stepping stones' in the wider Vision area. These areas are a developing mosaic of grassland, hedgerow and scrub which may become naturally established woodland. They also play a key role for access; White Fen forms a corridor to connect the Lodes Way cycle route between Wicken Fen and Anglesey Abbey, whilst Oily Hall is the location of a 'back to basics campsite'. Both areas have played host to community engagement projects, most recently with the planting of over 1,000 trees in winter 2021.

In the south, directly to the north and east of Stow-cum-Quy Fen lies an area of approximately 60 Ha which is currently managed predominately as amenity grassland and used to host the annual LodeStar Festival and other outdoor events. There is potential to increase the amount of high quality habitat within this area while still allowing for the provision of camping and other large-field activities. For instance, scrub and grassland could be allowed to develop around the periphery of the field units with swathes cut out for camping areas and promoted as a 'wild' camping site. This would act to buffer Stow-cum-Quy Fen and contribute to a network of stepping stones across the landscape to connect to the land at Anglesey Abbey.

Nature Friendly Farming

Across significant parts of the Vision area, particularly away from the deeper peat soils to the north of the area, farming is likely to continue. However, in these locations the adoption of regenerative and nature-friendly approaches to farming could be introduced to support the core habitat areas. The full range of measures including reduced or no tillage, use of cover crops, sowing of pollinator and wild bird seed mixes, and use of fallows or break crops would be beneficial to the creation of a more nature-rich landscape. On areas of peat soils, which continue to be farmed, alternative wet farming approaches may be adopted to protect the peat soils and reduce carbon emissions while still actively farming, subject to the results of ongoing trials.

In the arable landscape to the south of the Vision area, the farming is currently very intensive with few nature-friendly farming practices in place. Land is typically cropped to the field boundaries and hedges are in poor management with many gaps or have become lines of trees. Improved management of hedgerows, including planting of additional hedgerows, and the addition of uncropped margins would act to both buffer the core areas and stepping stones and to provide corridors through a landscape for species to disperse.

Uncropped field margins could be sown with a variety of seed mixtures to benefit different aspects of the local wildlife. Around the core areas appropriate wild seed mixtures could be sown along uncropped margins to provide food and forage for a range of farmland birds, including turtle doves and corn buntings, as well as pollinating insects. Game cover crops would benefit grey partridge while fallow areas may help lapwing. Ponds could also be created amongst new grassland habitats or within field corners.

The use of uncropped field margins and an improvement in hedgerow management could provide a valuable corridor connecting the Bottisham Park, Anglesey Abbey & Quy Fen core areas as well as to the River Cam beyond. In the short-term this should act to improve the value of the land for wildlife attracting and supporting a variety of species which could be thriving as part of the National Trust's landscape vision to connect Wicken Fen to Cambridge.

4.2.3 Objectives:

Short-term

- Continue management and enhancement of the historic Wicken Fen area and the adjacent created wetland habitats.
- Develop further habitat stepping stones across the Vision area, following on from those at Oily Hall Farm and White Fen.
- Buffer all the core sites in the south of the Vision area with species-rich grassland headlands and field margins.
- Provision of forage and supplementary feeding for turtle dove in the south of the Vision area.
- Establish a nature-friendly farmer cluster to focus on addition of uncropped field margins and well-managed hedgerows to benefit a variety of wildlife

Long-term

- Create a mosaic of priority habitats and nature-friendly farmland across the whole 53 Km^2 of the Wicken Fen Priority Area, to achieve the Wicken Fen 100-year Vision to provide a well-managed landscape for nature from Wicken to Cambridge.
- Expand the area of priority fen and wetland habitats across all areas of remaining peat soils in the north of the Vision area.
- In the south of the Vision area (the part within the Cambridge Nature Network), Increase the % cover of semi-natural and other habitats from 13% to 30%, and the amount of priority grassland and wetland habitats from 41 Ha to 250 Ha.
- In the south of the Vision area, create one core habitat area of at least 200 Ha of high quality priority grassland / wetland and associated habitats including ponds, and create at least two stepping stones of priority grassland and associated habitats, each no more than 1 Km from the core areas or other stepping stones.
- Establish nature-friendly farming across the other 70% of land in the south of the Wicken Fen Vision area.

4.2.4 Priority Area Vision:

Launched in 1999, the National Trust has one-hundred-year plan to create a diverse landscape for wildlife and people between Wicken Fen and Cambridge; the Wicken Fen Vision. It will create more space for nature and a place for people to breathe, think and explore; restoring nature on a landscape-scale and taking action against climate change.

The Vision landscape will evolve into mosaic of species-rich habitats supporting a wide variety of abundant wildlife. Restoring natural processes, careful management of water and working with landowners will ensure future land management is sustainable.

The north of the Vision area is focussed on creation of fen habitats and protection of the peat soils, principally through re-wetting. The south of the Vision area has the potential to deliver a mosaic of woodland, grassland and scrub alongside nature-friendly farming that may include ponds, hedgerows and species-rich field margins. Access will be a higher priority in the south with the potential connections to Cambridge and other growing communities such as Waterbeach.

4.2.5 Delivery Mechanisms:

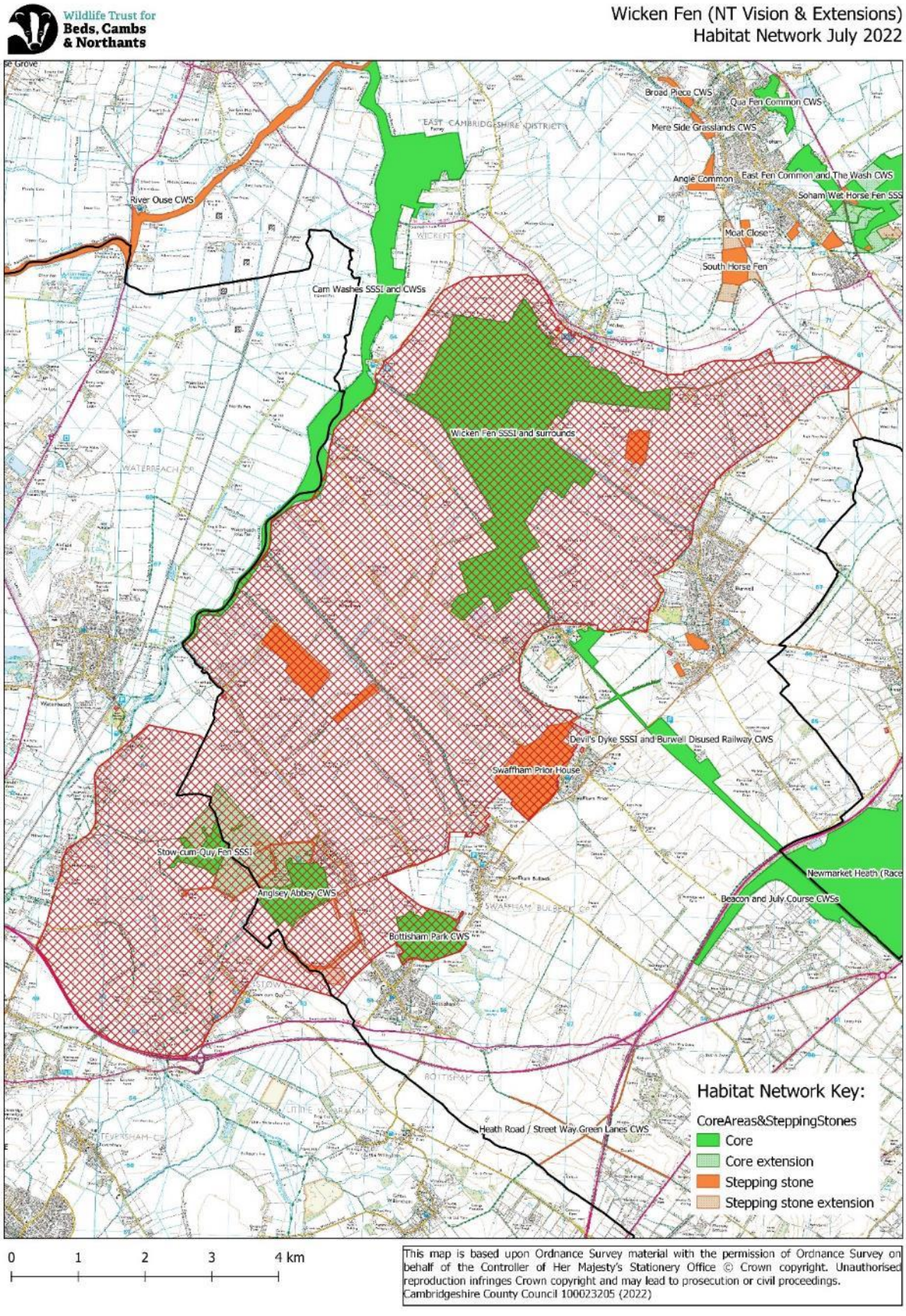
The aim of the Wicken Fen Vision is to increase the land managed for wildlife and people. This will take place through a variety of delivery mechanisms, including land acquisition using the funding sources available to charities and working with neighbouring landowners.

Regenerative and nature-friendly farming approaches will be mainly supported through Environmental Land Management Schemes.

In some cases landowners may deliver long-term habitat creation through the establishment of one or more habitats banks funded through biodiversity offsetting.

To the south of the Vision area crossing over the East Cambridgeshire / South Cambridgeshire border, some habitat creation may arise through the provision of strategic natural greenspace, linked to the eastern expansion of Cambridge.

Map 2: Wicken Fen (NT Vision & Extensions) Existing Habitat Network



4.3 Ouse Washes & Surrounds Priority Area

4.3.1 Key Facts

Total area: 5,750 Ha in East Cambs (7,730 Ha in East Cambs, Fenland & Norfolk)
Area of core habitats: 1,854 Ha (32.2% of East Cambs area)

Core sites: Ouse Washes SPA / SSSI / SAC; Old Bedford Low Bank Drains CWS, Sutton & Mepal Pumping Station Drains CWS, Mepal Gravel Pits CWS, Haddenham Engine / Adventurer's Head Drainage System CWS, Byall Fen Pumping Station Drains CWS, Block Fen CWS (Fenland DC).

Important habitats: Floodplain grazing marsh, swamp, wet woodland, open water: lakes & drainage ditches, and arable farmland (as winter feeding grounds for swans).

Important species:
Fauna: Internationally and nationally important numbers of waders & wintering water fowl. Key species include breeding black-tailed godwit, snipe, redshank & lapwing, and wintering Bewick's swan, Whooper swan, mute swan and wigeon, amongst many other wetland birds. The washes, and in particular the drainage ditch systems support a range of notable fen relic wetland invertebrate species. Drainage ditches also support healthy populations of water vole. Fish include spined loach and European eel.
Flora: The drainage ditches of the washes and beyond support a range of fen relic aquatic flora including various rare stoneworts.

4.3.2 Network Approach:

Better Management
Approximately 80% of the Ouse Washes is owned by nature conservation organisations committed to managing it primarily for nature. However, due to factors beyond the control of land managers, relating to flooding and sea level rise, the Ouse Washes supports lower numbers of breeding waders in particular and some wintering water birds than when it was first designated. Climate change may exacerbate these trends. Management of flood events and water across the wider catchment is required to help alleviate late spring floods which are detrimental to breeding waders, and excess winter flooding which is detrimental to species such as feeding wigeon. Various areas of work are underway to explore solutions, but none will be easy or quickly achieved.

The conservation NGOs working with government agencies have brought forward an alternative approach of creating suitable wet grassland habitats either side of the Washes to build up populations of breeding waders, and to provide breeding sites safe from unseasonal flooding. Approximately 150 Ha have been created at Coveney with plans for another 150-200 Ha at Sutton. However, this falls significantly short of the 1,000 Ha of habitat creation calculated as being necessary to return the breeding wader populations to their historic levels.

Buffering & Extending Core Areas
Within Cambridgeshire, three key areas have been identified for expanding wet grassland habitat for breeding waders, two in East Cambridgeshire and one mainly in Fenland. The Fenland site is centred on the Block Fen-Langwood Fen mineral masterplan, where the plan is over the next few decades to create a mosaic of wetland habitats, including significant areas of floodplain grazing marsh post sand and gravel extraction.

The two areas in East Cambridgeshire are centred on areas with deeper deposits of surface peat soils, as these provide the best conditions for creation of suitable wet grassland priority

habitat for breeding waders. These are located at Coveney and Sutton. A significant area of wet grassland has already been created at Coveney and is being managed by the RSPB. There are additional areas of peat soils in this area, which could provide further potential for increasing the area of wet grassland created and managed for breeding waders.

At Sutton, habitat creation has not commenced. The Environment Agency will be bringing forward the habitat creation scheme working with a partner such as the RSPB, but the available funding will only create wet grassland across 40-50% of the suitable area of peat soils. There is significant potential to create a larger area of wet grassland habitat in the future.

Stepping Stones

There are a range of smaller nature sites either side of the Ouse Washes that provide stepping stones for wildlife, whether former sand and gravel pits, or some of the Internal Drainage Board ditch networks selected as County Wildlife Sites. The best of these usually have clean water sources coming out of gravel seams or through peat deposits. There are also pockets of woodland and some farm reservoirs that provide habitats. There is further scope for the creation of small stepping stone habitats of various types anywhere across the Priority Area.

Nature Friendly Farming

Outside of the priority locations for the creation of wet grassland habitats, the adoption of nature-friendly farming approaches can help support many of the species that use the Washes as well as other farmland bird species, or species associated with the ditch networks. Cropping patterns and rotations influence the location of winter foraging grounds for swans. However, the use of various agri-environment options can support greater provision of nesting, sheltering and foraging opportunities for various declining farmland bird species. Buffering and sensitive management of the ditch networks can also support water vole, specialist fen relic invertebrates and aquatic flora.

The adoption of nature-friendly farming, regenerative farming techniques or innovative wet farming techniques could also make a major contribution to reducing the loss of peat soils and reducing carbon emissions from agriculture, as significant areas of peat soils or organic-rich former peat soils remain across this area.

4.3.3 Objectives:

Short-term

- To complete the current phase of wet grassland habitat creation at Coveney.
- To commence the creation of wet grassland habitats at Sutton.
- To promote nature-friendly and regenerative approaches to farming to reduce carbon emissions from peat and organic-rich soils and provide an increased area of on farm habitats for farmland birds.

Long-term

- To expand the planned habitat creation areas at Coveney and Sutton, to achieve the originally planned 1,000 Ha of wet grassland habitats.
- To create additional areas of wet grassland habitats complementary to the Ouse Washes at Pymoor and Coveney.
- To bring forward wet grassland and other wetland creation in phases through the Bock Fen-Langwood Fen minerals masterplan.
- To promote the take up of alternative and novel approaches to farming, such as wet farming, if commercially viable opportunities arise.

4.3.4 Priority Area Vision:

Three significant areas of wet grassland creation, totalling at least 1,000 Ha will be created in the Sutton, Coveney and Block Fen-Langwood Fen areas, to create an expanded core habitat area in the heart of the Cambridgeshire fens. Either side of the Washes, nature-friendly and regenerative farming practices will provide complementary habitats for wildlife, while also reducing carbon emissions from farming. IDB ditch systems will support greater abundance of relic fen species alongside providing flood management or water for irrigation.

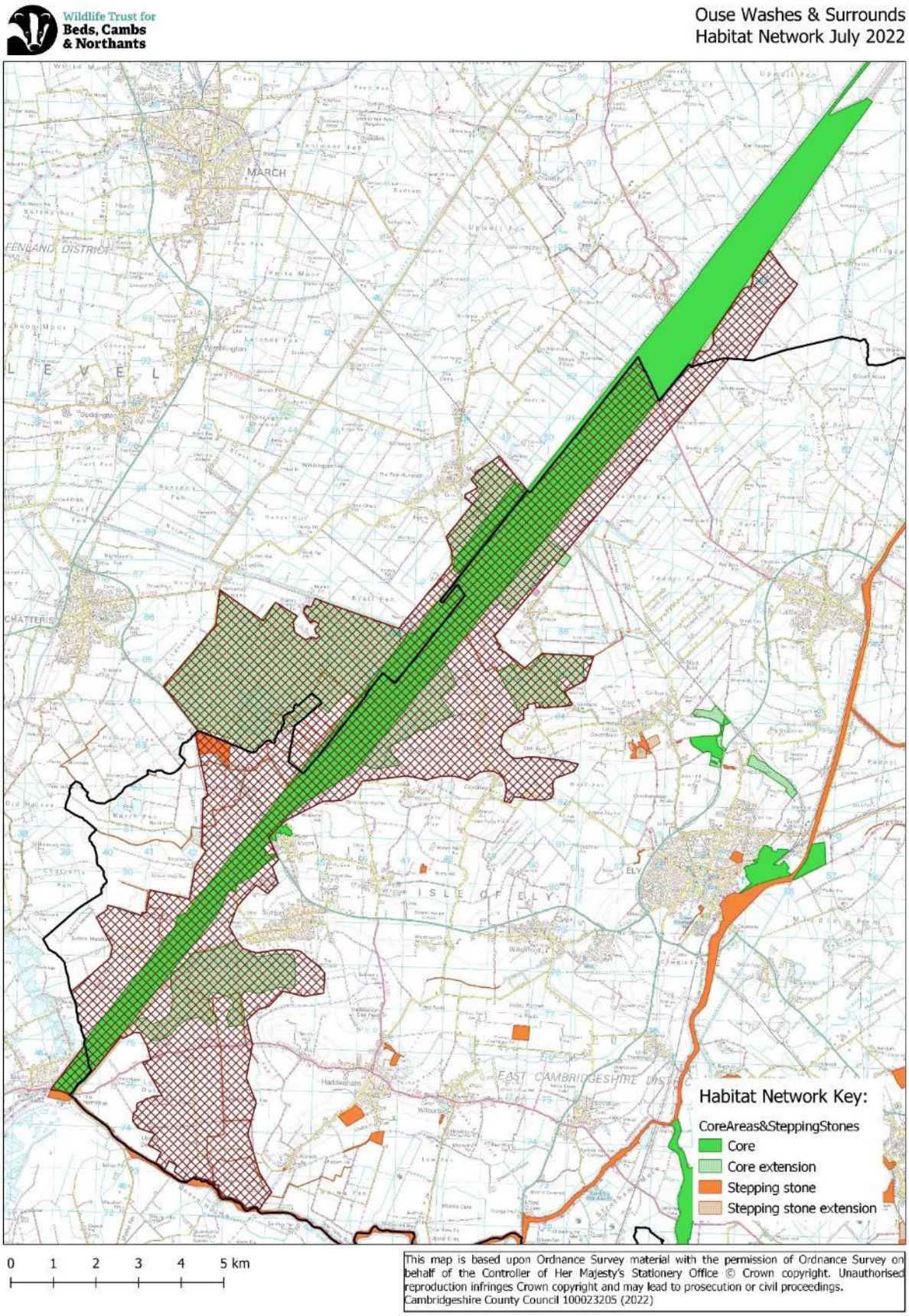
4.3.5 Delivery Mechanisms:

The current phase of the Ouse Washes habitat creation project at Coveney and Sutton is being taken forward by the Environment Agency. It is unknown whether future additional phases may be taken forward by government agencies as part of meeting international conservation treaty obligations, or whether they will need to be taken forward by local partners. If central government funding is not forthcoming, then one alternative option may be the use of biodiversity offsetting and the creation of a habitat bank in one or more locations.

The habitat creation from restoration of minerals sites in the Block Fen-Langwood Fen area will be delivered through the minerals planning process.

Across the majority of the area, the creation of smaller stepping stone habitats or adoption of nature-friendly farming approaches will be mainly delivered through commercial farming and / or the use of agri-environment schemes.

Map 3: Ouse Washes & Surrounds Habitat Network



4.4 Newmarket Chalk Grasslands Priority Area

4.4.1 Key Facts

Total area: 2,150 Ha
Area of core lowland calcareous grassland habitats: 1,149.55 Ha (53.48% of total area)

Core sites: Devil's Dyke SSSI / SAC, Newmarket Heath (Racecourse) SSSI, Newmarket Heath (Warren Hill) SSSI,, Warren Hill CWS, The Limekilns and Water Hall CWS, July Course Grasslands CWS, Beacon Course Green Lane CWS, Links Golf Course CWS, Burwell Disused Railway CWS.

Important habitats: Lowland calcareous grasslands, chalk heath.

Important species:
Fauna: Stone-curlew; a range of chalk grassland invertebrates including notable butterflies, beetles, bees, flies and molluscs.
Butterflies: chalk-hill blue, small blue, brown argus, dingy skipper and green hairstreak.
Beetles: Hawthorn jewel beetle, downy back beetle and green tiger beetle.
Bees: Large garden bumblebee, two-coloured mason bee, lobe-spurred furrow bee, and grey-gastered mining bee.
Molluscs: Heath snail.
Flora: A range of scarce calcareous grassland and chalk heathy species.
Chalk Grassland: Spotted cat's-ear, lizard orchid, spring sedge, pasque flower, purple milk-vetch, bloody crane's-bill, field fleawort, bastard toadflax, spring cinquefoil, eyebright (*Euphrasia pseudokerneri*) and Spanish catchfly.
Chalk Heath: Heather, heath grass, heath dog-violet, saw-wort and spiked speedwell.

4.4.2 Network Approach:

The Newmarket chalk grasslands Priority Area comprises three linked but distinct areas. The first is the Devil's Dyke and adjacent farmland north of the A14; the second is Newmarket Heath racecourse, Devil's Dyke and other associated wildlife sites between the A14 and Cambridge-Newmarket railway line; and the third is the Newmarket training areas and gallops, east of the town.

Better Management
This Priority Area already comprises over 50% lowland calcareous grassland habitats of various quality and the priority is to maintain and where necessary restore these habitats.

Devil's Dyke & farmland buffer: The Devil's Dyke is a long narrow linear earthwork, which supports chalk grasslands, particularly on the slopes of the ancient monument. However, after the 1950s it became progressively covered in scrub, except in a few discrete areas where one landowner kept it clear and on the section through the racecourse which was periodically subject to a controlled burn. By the late 1990s the scrub had become dominant over large sections and was threatening the integrity of both the ancient monument and the chalk grassland habitats.

Through lottery funding, a restoration project took place between 2002 and 2007, removing a majority of the scrub, but maintaining these improvements has been challenging over the next 15 years and the scrub is returning. Keeping the Devil's Dyke sufficiently scrub-free requires both the mechanical removal of the scrub and sufficient grazing pressure to keep it in check. It is this latter element that has been missing, hindered by the lack of grazing animals and grasslands adjacent to the Dyke.

Newmarket Heath: In recent years, a more nature sympathetic mowing regime has been introduced across larger areas of the Newmarket Heath SSSI providing more opportunities for the chalk grassland plants to flower and set seed, and for invertebrates to complete their life cycles. Continuation and further refinements of this management will help conserve the chalk grassland habitats. There are also three

County Wildlife Sites adjoining the SSSI, two in Cambridgeshire (July Course Grasslands and Beacon Course Green Lane) and one in Suffolk (Newmarket Heath CWS which lies immediately north of the SSSI). These sites would also benefit from a more sympathetic mowing regime, as adopted on the main Heath. The Beacon Course Green Lane would also benefit from a programme of scrub management and regular cutting back of scrub.

A section of the Devil's Dyke runs through the Newmarket racecourse directly adjoining the Heath. Management on this section involves occasional cutting and some volunteer management. Scrub is starting to increase in places, though not as much as in the section of the Dyke north of the A14. This section of the Dyke would benefit from more frequent cutting of the slopes and regular removal of young birch and Scot's pine trees.

South of the main road into Newmarket is the Links Golf Course. This County Wildlife Site is adjacent to a section of the Devil's Dyke and surrounded by a horse training area. The chalk grassland interest of the golf course is in the out of play areas, and the golf club have been managing these areas sympathetically. The surrounding gallops used to be part of the CWS, but were degraded through the use of fertilisers to improve the gallops and no longer hold significant interest, though could potentially be enhanced. More recently, parts of these gallops have been subject to a more nature-friendly mowing regime comprising an annual hay cut, which will allow the chalk grassland plants to flower and set seed and help to restore the grassland.

The section of the Devil's Dyke running along the golf course has arable farmland on the other side. Grazing of the Dyke has been taking place since the removal of scrub, but as for the area of the Dyke north of the A14, the scrub is starting to return. Better management involving regular scrub clearance, coupled with increased grazing intensity, is required to maintain the Dyke in good condition.

Newmarket training areas & gallops: East of the town are two large, extensive areas of grassland used for racehorse training at Warren Hill and the Limekilns and Water Hall. While significant areas are regularly mown and fertilised to provide optimum conditions for racehorse training, there are still large areas beyond this, where chalk grasslands survive intact to a greater or lesser extent. The areas of higher quality chalk grassland are patchy, but much of the intervening grasslands still supports typical chalk grassland species, though in lower numbers. At a broad scale the quality of the grassland reflects previous management practices and land use and going forward would benefit from measures to encourage an increase in the abundance of key chalk plant species and their spread to other parts of each site. A conservation mowing regime has more recently been embarked upon in areas of both sites, though there is much potential to further refine this and to review where and how it is applied to benefit the chalk flora and invertebrates.

<u>Buffering & Extending Core Areas</u>

The Devil's Dyke north of the A14 is set within a landscape of largely arable farming which abuts most of the Dyke. The exceptions are adjacent to Ditch Farm and a small section in Reach. At Ditch Farm, the Dyke forms part of the County Farms Estate and is managed as part of the farm. The adjacent land has been reverted from arable to grassland over the past 30 years, and there is evidence of chalk grassland species beginning to colonise the new grasslands. However, it is difficult to achieve the intensity of grazing required to prevent scrub from growing and spreading. There is a need for both more animals and for more grassland on one or both sides of the Dyke. The creation of additional areas of chalk grassland either side of the Dyke would not only increase the area of chalk grassland, it would also buffer it from the adjacent arable farming, help support larger flocks of sheep which in turn could graze the Dyke, and would restore the landscape setting of the ancient monument.

The Newmarket Heath area comprises extensive tracts of connected chalk grassland habitats which do not need to be buffered or extended. The one area where this approach would however be beneficial is along the section of Devil's Dyke adjacent to the golf course. A grassland buffer on the farmland along the Stetchworth side of the Dyke could help facilitate the better grazing management of the Dyke as well as provide for an increase in area of chalk grassland habitats. However, the farmland and Dyke are in separate ownerships, so this may be challenging to achieve.

The Newmarket training area almost exclusively comprises the two chalk grassland sites. The surrounding land is made up of various studs or the urban edge of Newmarket, so there is little scope to extend them.

Stepping Stones
The Newmarket chalk grasslands priority area already comprises extensive tracts of linked grassland habitats, so there is no need for the identification of stepping stone habitats within this area.

Nature Friendly Farming
The farmland adjacent to the Stetchworth section of the Devil's Dyke includes a significant area of non-cropped farmland habitats at around 10-12% of the farmland. With this there are good populations of farmland birds and depending on crop rotations a few pairs of breeding stone curlew.

The adoption of nature-friendly farming in the landscape around the Devil's Dyke north of A14 would complement any increase in chalk grassland habitats immediately adjacent to the Dyke, and help to support larger populations of farmland birds and invertebrates.

4.4.3 Objectives:

Short-term

- Implement a programme of scrub removal and management on the Devil's Dyke.
- Identify opportunities for the creation of additional chalk grassland to buffer, extend, and support the ongoing effective grazing management of the Devil's Dyke, particularly north of the A14.
- Promote the adoption of nature-friendly approaches to farming on farmland either side of the Devil's Dyke.
- Work with the Jockey Club to review and refine the management of the chalk grassland areas of their Estate around Newmarket Heath and the training areas.

Long-term

- To create an area of at least 250 Ha of chalk grassland around the Devil's Dyke, north of the A14, to enable the Dyke to be managed as part of a wider grassland landscape.
- To restore a network of high quality species-rich chalk grassland areas, sympathetically managed for chalk grassland flora and invertebrates, across Newmarket racecourse and training areas (alongside the areas maintained exclusively for racehorses).

4.4.4 Priority Area Vision:

A chalk grassland landscape setting will be created in the immediate environs of the Devil's Dyke, through the creation of new chalk grasslands on one or both sides of the Dyke. This will facilitate the improved grazing management of the Dyke and back up scrub removal and management operations. Across the Newmarket racecourse and training area estate, a network of high quality chalk grassland habitat patches, that support the locally important chalk flora and invertebrates, will be restored amongst the areas used exclusively for racehorses. Areas of retained arable land adjacent to the Dyke will be managed through nature-friendly farming approaches to support farmland birds, priority bird species such as stone curlew, as well as support the chalk flora and invertebrates.

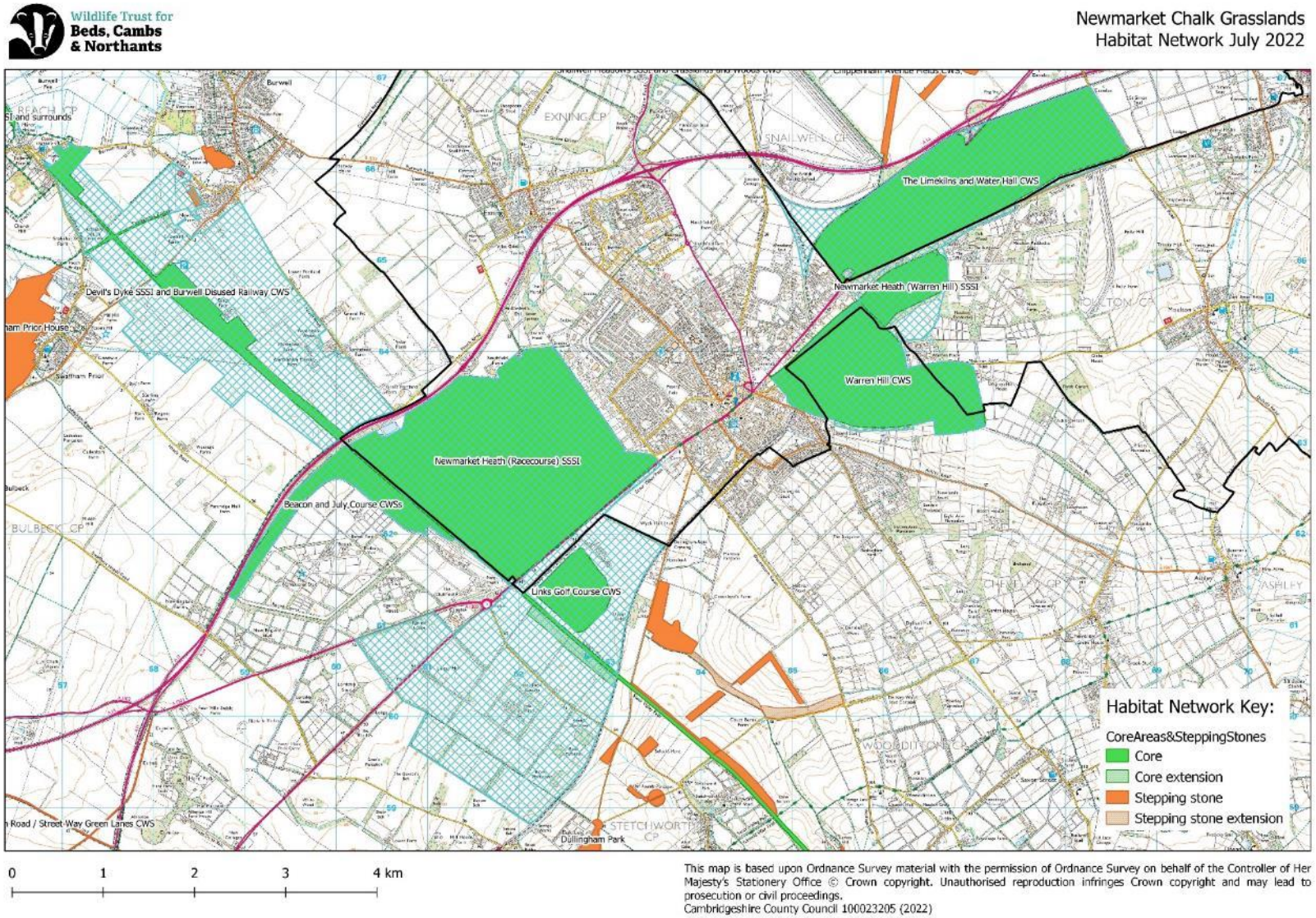
4.4.5 Delivery Mechanisms:

The main delivery mechanism for the creation of grassland or adoption of nature-friendly farming within the farmed areas adjacent to the Dyke is likely to be through the ELMS agri-environment scheme.

However, it may also be possible to create a chalk grassland habitat bank in one or more locations.

Enhanced management of the Jockey Club Estate around Newmarket will require an evolution of approaches to management and must consider the needs of the horse racing and training business.

Map 4: Newmarket Chalk Grasslands Habitat Network



4.5 Chippenham Fen & River Snail Priority Area

4.5.1 Key Facts

Total area: 949 Ha
Area of core habitats: 294.71 Ha (31.05% of total area)

Core sites: Chippenham Fen SSSI / SAC, Brackland Rough (Fordham Woods) SSSI, Snailwell Meadows SSSI, Snailwell Grasslands & Woods CWS, Chippenham Park CWS, and Old Rectory Meadows CWS.

Important habitats: Lowland fen, wet woodland, lowland meadow, chalk stream.

Important species:
Fauna: Fen invertebrates, including many nationally scarce and rare species, particularly flies, but also moth and spider species. Breeding woodcock & snipe and a range of scrub nesting birds such as warblers (Chippenham Fen).
Flora: Cambridge milk-parsley, black bog rush, bogbean, bog pimpernel, saw-wort, and marsh helleborine, southern marsh and fragrant orchids.

4.5.2 Network Approach:

Better Management
Chippenham Fen has formed within a topographical depression on the Cretaceous West Melbury Marly Chalk which is fed from a series of chalk spring arising from the base of the overlying Totternhoe Stone and Zig Zag Chalk. This allows calcareous fen conditions to be created with frequent ditches, pools and wet depressions making this a highly diverse wetland. The lack of drainage has allowed peat soils to develop on the site which vary from centimetres to 2m thick.

The top priority in this area is maintaining the quality of Chippenham Fen, which is nationally and internationally important. This relies of management to maintain open fen areas and prevent succession to woodland, and maintenance of sufficient quantities of clear calcareous water.

Similarly, Snailwell Meadows SSSI are spring-fed from the underlying Cretaceous chalk though the soils comprise patchy sand and gravel deposits from the former river bed, creating a variety of soil conditions. Some areas are dry calcareous pasture, and others are wet neutral and marshy acidic grassland. Like Chippenham Fen they rely on management to maintain open grassland and fen areas and sufficient supplies of clean water. The adjacent Snailwell Grasslands & Woodlands CWS forms an extension and complementary habitats to Snailwell Meadows.

Brackland Rough SSSI known locally as Fordham Woods is a wet woodland with alder and willows lying adjacent to the River Snail. The River Snail is a chalk stream emanating from the springs at Chippenham Park and Snailwell Meadows. However, for much of its length it flows within a modified (over-deepened and straightened) channel created to drain the adjacent farmland. It eventually joins the Soham Lode.

Maintaining sufficient water requires action to limit water abstraction and ensure the natural spring flows. Ensuring the sites are fed by clean water is best achieved by moving to more extensive farming methods within the catchment, or through the creation of buffering habitats. This has been partially done to the south of Chippenham Fen, where former arable land has been reverted to grassland and is currently grazed extensively by cattle.

The fen and grassland areas of Chippenham Fen and Snailwell Meadows are kept open through grazing, with a mixture of cattle, sheep and at Chippenham Fen, water buffalo. Chippenham Park also supports cattle grazing, with some former arable areas also reverted back to grassland within the Park. Continuation of grazing is critical for achieving favourable ecological condition at these sites.

Buffering & Extending Core Areas

The nature network priorities in this area are the buffering and extending of the four core nature sites to create a larger contiguous area of high quality habitats. The current core areas cover approximately 365 Ha and there is potential to create a single, large, connected core habitat area of over 550 Ha.

This has already been done to the south of Chippenham Fen, where a 38 Ha grassland buffer / extension to the SSSI has been created and added to the original SSSI.

Many of the new habitats would be grasslands, though in wetter areas or where there are remnant peat soils, there may be potential to create wetland mosaics. Areas of scrub and woodland would complement the open habitats. The larger area of extensive grazing could help support more sustainable grazing regimes, to bring about better ecological condition of the core sites. It could also support the creation of high quality open grassland and fen habitats in the extensions to the core areas.

Stepping Stones

The creation of a single large core area by buffering and extending Chippenham Fen, Brackland Rough and Snailwell Meadows SSSIs means there is no need to create stepping stone habitats within the Priority Area.

Nature Friendly Farming

Beyond an expanded core area, nature-friendly farming would provide complementary habitats for farmland birds, as well as help support improved water quality in the catchment. Nature-friendly farming will also play a role on land within the proposed extensions to the core areas, in the intervening period ahead of habitat creation. Measures to buffer water courses and drains, as well as provision of field edge habitats such as hedgerows and a variety of field margins for pollinators and farmland birds would be the priorities.

4.5.3 Objectives:

Short-term

- To enhance the buffer habitats around Chippenham Fen to create a mosaic of species-rich grassland and other habitats complementary to the historic fen.
- To restore species-rich grasslands to parts of Chippenham Park and Snailwell Grasslands & Woodlands CWS.
- To create a wider buffer of non-cropped land along the full length of the River Snail.

Long-term

- To create a single, large (over 500 Ha) core habitat area, connecting Chippenham Fen, Snailwell Meadows and Brackland Rough SSSIs. The area will comprise a mosaic of species-rich habitats including wildflower meadows, wetland mosaics, scrub and woodland.
- To restore a more natural channel and flow to the River Snail, particularly between Snailwell and Fordham, but also potentially downstream of Fordham.
- To adopt nature-friendly farming across the majority of the area.

4.5.4 Priority Area Vision:

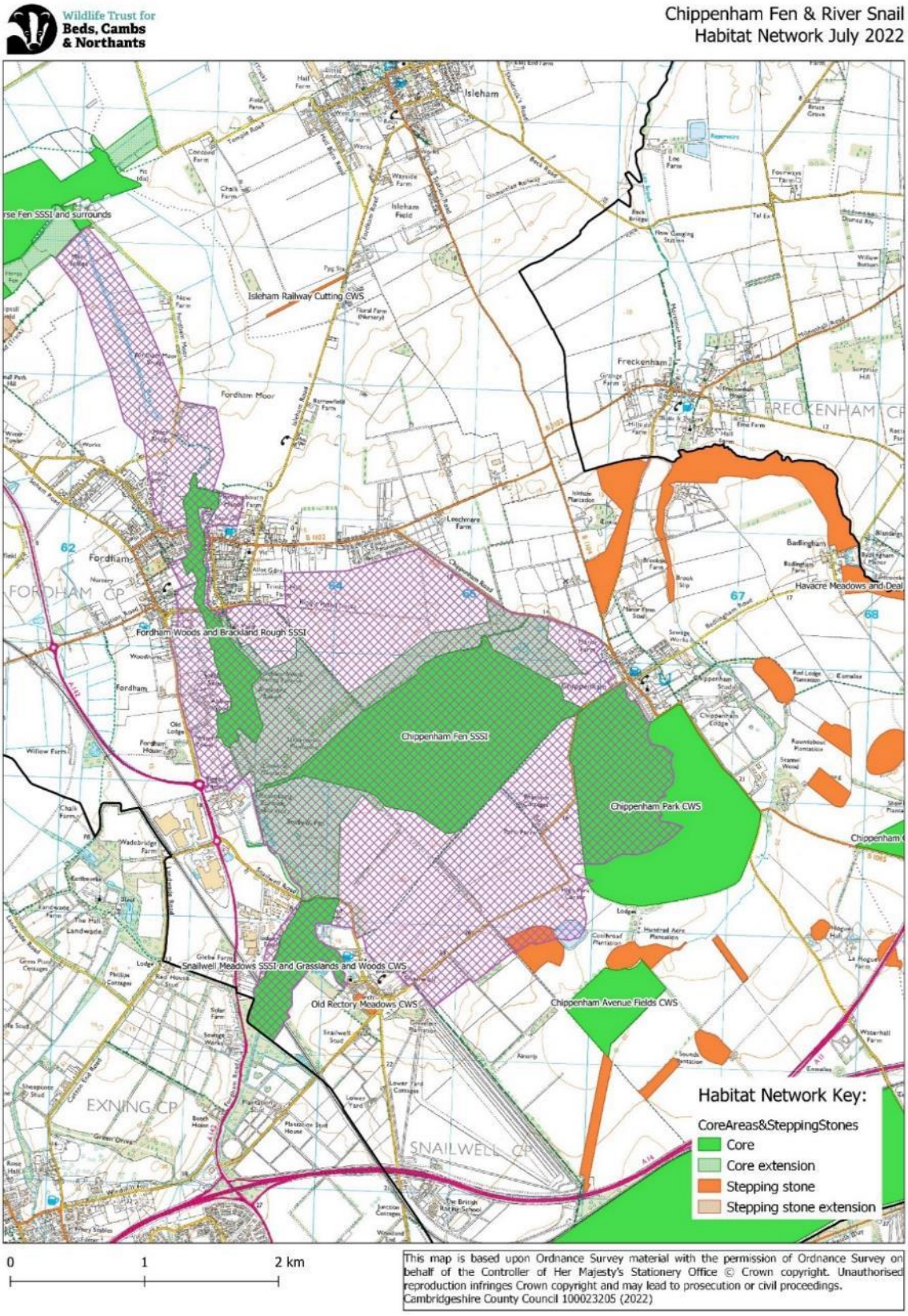
A single, large, core habitat area incorporating Chippenham Fen, Snailwell Meadows and Brackland Rough SSSIs, and other adjacent sites will be created with a mosaic of species-rich habitats including priority lowland fen and grassland habitats, wetland mosaics, scrub and woodland. The chalk springs will flow naturally feeding the Chippenham Fen and Snailwell Meadows with clean water. Likewise, the River Snail will support natural flows and will be restored along at least part of its length. The whole catchment of Chippenham Fen will be farmed in a nature-friendly way further increasing the extent of breeding, foraging and sheltering habitats and supporting increased populations for invertebrates and farmland birds.

4.5.5 Delivery Mechanisms:

The significant habitat creation proposed around Chippenham Fen could be funded in a number of ways. While the use of agri-environment schemes is one, there is potential to fund habitat creation through the

establishment of a habitat bank to provide biodiversity credits for development. Elsewhere in the Priority Area the main delivery mechanism particularly for nature-friendly farming will be the use of agri-environment schemes. Restoration of the River Snail may be funded through Environment Agency or water Company grants whether related to biodiversity, flood risk management or water supply.

Map 5: Chippenham Fen & River Snail Habitat Network



4.6 Breckland Edge Priority Area

4.6.1 Key Facts

Total area: 1,325 Ha
Area of core habitats: 247.69 Ha (18.7% of total area)
Area of core & stepping stone habitats: 368.26 Ha (27.8% of total area)

Core sites: Red Lodge SSSI, Halfmoon Plantation Pit CWS, Chippenham Gravel Pit CWS, Chippenham Park CWS (part), Chippenham Avenue Fields CWS.

Important habitats: Acid grassland and heath, arable margins and other disturbed ground, woodland and scrub.

Important species:
Fauna: Breck invertebrates, particularly bees, wasps, ants and beetles, stone curlew.
Flora: Breck acid grassland flora (e.g. smooth rupturewort, dense silky-bent, bearded fescue, Spanish catch-fly, smooth cat's-ear, long-stalked crane's-bill, sickle medick, bur medick).
Rare arable plants (e.g. corn chamomile, corn marigold, fine-leaved fumitory, wild pansy, common cudweed, sharp-leaved fluellen, round-leaved fluellen, grass-poly).

4.6.2 Network Approach:

Better Management
The extent of Breckland acid grassland and heath type vegetation is limited to Red Lodge SSSI and to a number of former minerals sites dug for sand and gravel. The conservation of the typical Breckland flora and invertebrates present at these sites depends on continued management and disturbance, sometimes by rabbits, but at present often through anthropogenic activities such as arable farming, mining and even off-road driving and motocross (Chippenham Gravel Pit CWS is currently an outdoor activity centre). In the future, if the amount of disturbance decreases due to changing management, alternative, mechanical forms of disturbance may be required to maintain the open, sandy conditions on which many of the scarce species depend. Managing the core sites well is critical to maintaining the presence of many of the scarce species in Cambridgeshire at this western edge of the Brecks as there is limited scope in the wider landscape to re-create such habitats and future minerals working to create suitable conditions is also unlikely to occur.

Buffering & Extending Core Areas
There are limited opportunities for buffering and extending the core areas, but some creation of additional areas of grassland, ideally managed by grazing, on suitable sandy soils would be beneficial if it could support better management of the core sites. Alternatively, agri-environment schemes may provide funding for areas of uncropped, cultivated (disturbed) soil along arable field margins which encourage the scarce flora which depends on more transient conditions. Specifically, buffers of habitat around Chippenham Gravel Pit and Halfmoon Plantation Pit CWSs would help to preserve the core habitat, and the latter site will need a sustainable long-term management approach on completion of the current minerals and restoration scheme. It is critical that these habitats are not threatened by the nearby development of Kennet Garden Village.

Stepping Stones
Many of the stepping stone habitats are broadleaved or mixed broadleaved and conifer plantations, with few areas of acid grassland or wetlands. Other habitats in the landscape include various arable field margins, and the priorities for these must be to provide suitable conditions for the rare arable flora and associated invertebrates, which will act as stepping stones for the more permanent areas of sandy grassland and heath.

Nature Friendly Farming

Current cropping patterns have maintained suitable conditions for the rare arable flora over a long period, but there has been a reduction in the distribution and abundance of species, and some are likely to have been lost locally. There is therefore scope to provide more by way of suitable conditions through a range of nature-friendly arable field margins and headlands, and several areas of cultivated but uncropped soils have already been created within the Chippenham Park Estate. This will be critical to the conservation and recovery of the special flora and fauna of this Priority Area going forward. The wide-scale adoption of suitable arable cropping patterns and arable field margin / headland / fallow options through agri-environment schemes should be promoted.

4.6.3 Objectives:

Short and long-term

- Implement suitable management regimes at the core Breck acid grassland sites to support the distinctive flora and fauna.
- Adopt nature-friendly farming practices, based on suitable cropping patterns and provision of cultivated, unsprayed areas to support the rare arable flora and invertebrates.
- Increase the extent of high quality (non-arable) habitats to over 30% of the Priority Area through limited buffering of the core sites and enhancement and restoration of stepping stone sites.

4.6.4 Priority Area Vision:

The vision for this Priority Area is to restore and maintain the range and abundance of key Breckland species, at the western edge of the Brecks. This will involve the adoption of suitable management regimes at the core Breck acid grassland sites, with sufficient grazing and disturbance to maintain open, sandy conditions. Much of the area will remain arable, but with cropping patterns and arable margin and headland options selected to favour the rare arable flora and invertebrates.

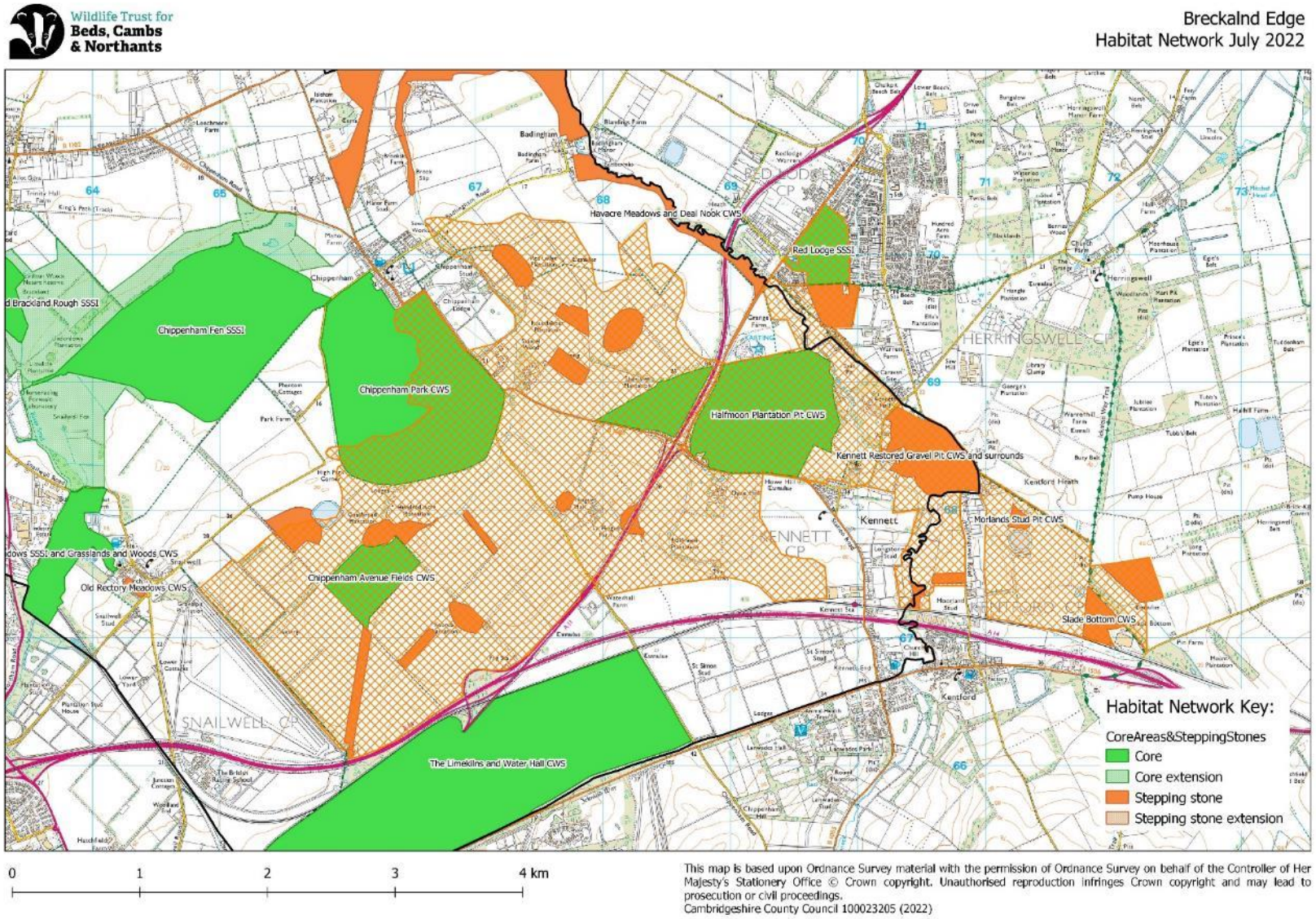
4.6.5 Delivery Mechanisms:

The predominant delivery mechanism will be the use of agri-environment schemes whether to promote arable options favourable to the rare flora and invertebrates or to support management of acid grassland sites.

Development S106 contributions may play a role in supporting the management of some of the core sites, whether that be through mitigation measures that might be required to protect Red Lodge SSSI, associated with the motor sports business operating within Chippenham Gravel Pit CWS, or the minerals restoration scheme at Halfmoon Plantation Pit. The development of Kennett Garden Village is close to this latter site, and there may be opportunities to support its conservation.

Elsewhere, there is currently an application for a major solar park across much of this Priority Area. This may bring opportunities to create a range of Breck type grasslands associated with the solar panels, however, there is also a severe risk that the loss of arable farming and regular disturbance will result in further declines in the distribution and abundance of the specialist arable flora and invertebrates.

Map 6: Breckland Edge Habitat Network



4.7 Soham Grasslands Priority Area

4.7.1 Key Facts

Total area: 1,124 Ha
Area of core habitats: 125.64 Ha (11.18% of total area)
Area of core and stepping stone habitats: 195.55 Ha (17.4% of total area)

Core sites: Soham Wet Horse Fen SSSI, East Fen Common and the Wash CWS, Qua Fen Common CWS, North Horse Fen CWS, Mereside Grasslands CWS, Broad Piece CWS, and Soham Cemetery CWS.

Important habitats: Lowland meadows, ancient hedgerows, ponds, river / drains (Soham Lode).

Important species:
Fauna: Great crested newts, farmland birds.
Flora: Green-winged orchid, early marsh-orchid, frog orchid, greater water-parsnip, common meadow-rue, meadow saxifrage, adder's-tongue, tubular water-dropwort, heath grass, marsh dandelion. There are a large number of grassland and marsh species recorded since the 1960s that have not been recently seen but may still be present.

4.7.2 Network Approach:

Better Management
The immediate priority conservation action for this area is to secure the better management of all the Soham Commons core sites and stepping stones.

At Wet Horse Fen SSSI, continuation and refinement of the hay cutting and grazing management is required, even on those fields that are considered well managed such as the Wildlife Trust nature reserve. Many plant species have been lost from the area over the past 50 years, so it would be beneficial to trial some restorative management approaches, or to even consider re-introducing some of the critical lost species.

Of the non-SSSI commons, North Horse Fen is the one that is best managed by mixed cattle and pony grazing. It receives fewer visitors than many of the others, which has also helped. However, even here there is potential for some grassland restoration as well as restoration and creation of ponds.

The other commons would generally benefit from a more active approach to restoration management. The main commons within the town (Qua Fen and East Fen Commons) would benefit from a more conservation-focussed grazing regime involving a mixture of cattle and pony grazing along with some hay cutting. In addition, active measures to try to recover lost species and to enhance the species-richness of the grasslands through use of wildflower-rich green hay or seed could be explored. There are also opportunities to better manage and restore ponds across both sites.

Buffering & Extending Core Areas
Soham Wet Horse Fen is the priority location for this approach. There are opportunities to increase the area of lowland meadow and supporting habitats such as hedgerows and ponds, on all sides of the SSSI. A larger area of meadows would provide greater scope for more flexible and refined grazing management, to deliver better overall management.

Elsewhere there are opportunities south of East Fen Common & the Wash to connect with Wet Horse Fen and north to Qua Fen Common via the strategic natural greenspace proposed through the Soham Eastern Gateway development.

Stepping Stones

New stepping stone habitats could be created across this Priority Area. At both South Horse Fen and Angle Common a mixture of species-rich grassland creation and restoration is required on, around and between these two sites and there is potential to create and restore ponds to support great crested newts and other priority pond species.

There is also the potential to create one or more wildflower meadow, hedgerow and pond stepping stones East of the A142, between Wet Horse Fen and Qua Fen Common, and between Qua Fen Common and North Horse Fen, possibly closely aligned with the public rights of way network. Finally, habitat creation in the vicinity of Shade Common, would provide a stepping stone between North Horse Fen and Broad Piece County Wildlife Site and the Soham Lode corridor.

Nature Friendly Farming

Across the remainder of this Priority Area, arable farming would be expected to continue. Adoption of nature-friendly farming approaches, together with regenerative farming could support the various species-rich meadows, helping to buffer them from adjacent land uses. It would also provide a range of feeding and breeding opportunities for farmland birds and invertebrates, and allow species to build up stronger populations as well as help more mobile species to move between the groups of meadows. Such approaches would include provision of field margins and headlands of various types including pollinator and bird mixes. Restoration and creation of hedgerows and lines of trees would also be beneficial along the many public rights of way that cross the area or around some of the pony paddocks.

4.7.3 Objectives:

Short-term

- To create a species-rich meadow buffer on all sides of Soham Wet Horse Fen SSSI.
- To maintain suitable cutting and grazing regimes on Soham Wet Horse Fen and North Horse Fen.
- To restore species-rich lowland meadow across the Soham Commons including East Fen Common, Qua Fen Common, South Horse Fen and Angle Common and the other grassland CWS.

Long-term

- To create a mosaic of habitats including wildflower meadows in the Soham Eastern Gateway green corridor, connecting East Fen and Qua Fen Commons.
- To create one or more species-rich meadow stepping stones between Soham Wet Horse Fen and North Horse Fen.
- To create a series of other stepping stone habitats around South Horse Fen and linking towards Angle Common.
- To increase the area of high quality habitats from 17% to 25-30% land cover within the Priority Area.
- To adopt nature-friendly farming across the vast majority of the area.

4.7.4 Priority Area Vision:

To create an expanded network of wildflower-rich meadows supporting orchids and cowslips, thick hedgerows supporting populations of breeding song birds, and ponds supporting a thriving population of great crested newts, associated with the Soham Commons and the surrounding farmland. Nature-friendly farming will provide the backdrop to the expanded area of priority habitats, providing greater breeding, sheltering and foraging opportunities for larger populations of birds, amphibians, reptiles and invertebrates. The Soham Eastern Gateway development will include a wildlife-rich strategic natural greenspace linking Qua Fen and East Fen Common, while other developments will contribute financially towards the restoration of all the Soham Commons.

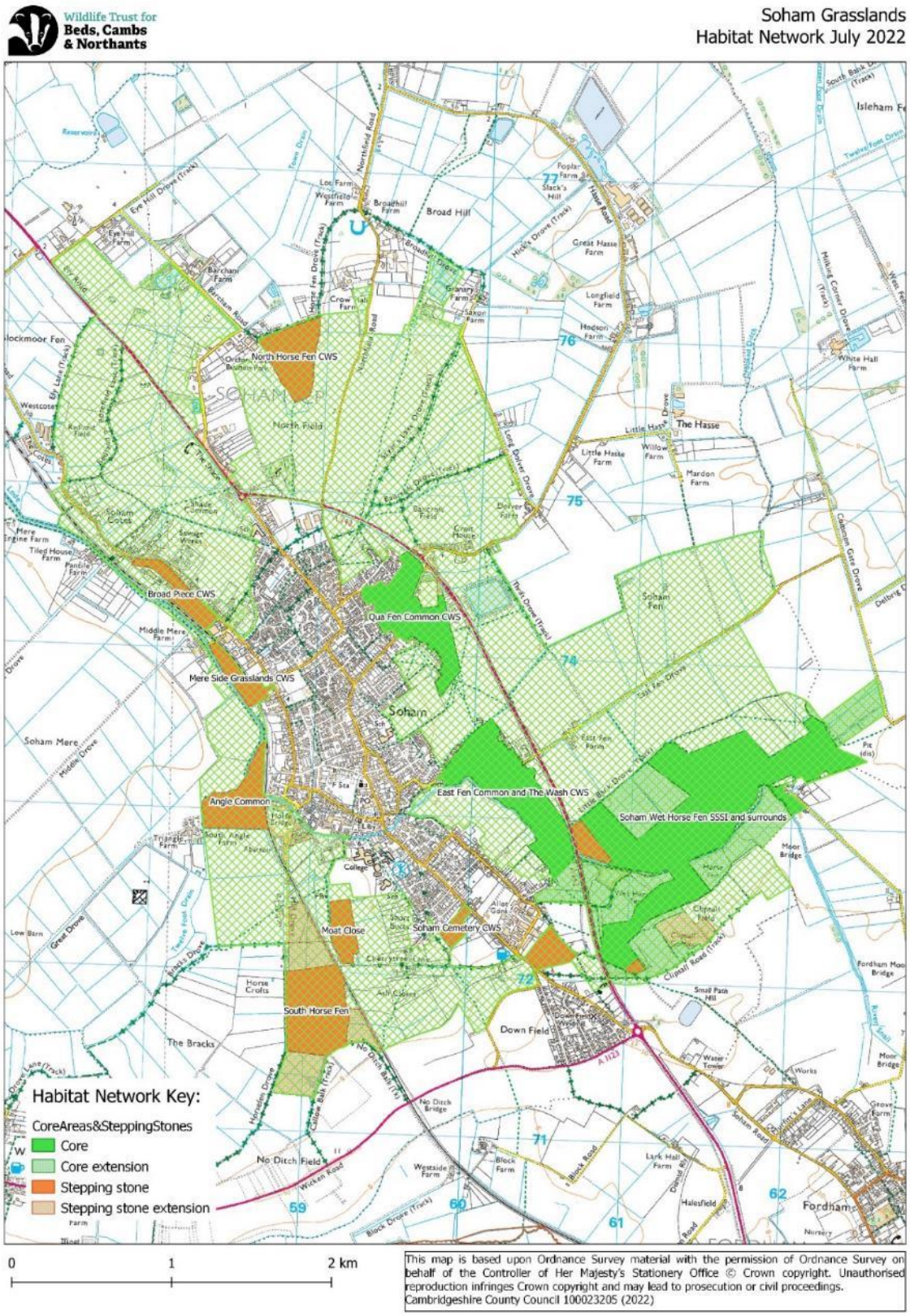
4.7.5 Delivery Mechanisms:

The main delivery mechanism across much of this Priority Area will be the use of agri-environment schemes, whether to create and restore species-rich grasslands, or to support nature-friendly farming.

Some new areas of lowland meadow creation in key locations could be delivered through biodiversity offsetting and the creation of a habitat bank by one or more landowners working together.

The commons at Qua Fen, East Fen and to a lesser extent Broad Piece have the potential to be enhanced through funding provided by the significant number of new housing developments planned across Soham.

Map 7: Soham Grasslands Habitat Network



4.8 Boulder Clay Woodlands Priority Area

4.8.1 Key Facts

Total area: 4,086 Ha in East Cambs (12,141 Ha East Cambs, South Cambs & Suffolk)
Area of core and stepping stone habitats: ***635.07 Ha (15.54% of East Cambs area)***

Core sites: Ten Wood SSSI, Out and Plunder Woods SSSI, Park Wood SSSI, and Devil's Dyke SSSI. Great Widgham Wood, Little Widgham Wood, Ditton Park Wood, Basefield Wood, Marmer's Wood, Pickmore Wood, Charcoals Wood, Combers Wood, Great Chitings Wood, Little Chitings Wood, Lucy Wood, and Parish Boundary Hedgerow (all County Wildlife Sites).

Important habitats: Ancient woodland, parkland, hedgerow networks and ponds.

Important species:
Fauna: Woodland and hedgerow bird assemblage, farmland bird assemblage, stone curlew, great crested newts.
Flora: Crested cow-wheat, ancient woodland flora.

4.8.2 Network Approach:

Better Management
This Priority Area has a high concentration of ancient woodlands, in some locations supported by extensive networks of hedgerows. Many of the woodlands lack structural variety, as woodland management has become uneconomic and ceased and many are too small by themselves to support the full range of woodland habitat structure from open space to thicket stage to over-mature and veteran woodland features. However, across the landscape it would be possible to achieve a network of woodlands supporting the full range of woodland habitat structure. This could be achieved through planned management of the larger Estates with multiple woodlands, or through different land owners adopting different approaches to woodland management.

Some landowners, particularly the larger Estates with extensive areas of woodland, do still undertake an active programme of woodland management whether to support timber production, shooting or for aesthetic or conservation objectives. Active woodland management programmes offer the opportunity to provide for woodland structural variety across the landscape, including areas of high forest, thicket stage growth, open space and the retention of over-mature and veteran trees and deadwood. This in turn has the potential to support a more complete range of typical woodland species.

One of the key conservation priorities is therefore to ensure that woodland management provides for a full range of structural variety across the landscape, while being viable for landowners. The expectation is not that every wood would be managed, but that across the landscape a variety of high forest, coppice or thicket stage, woodland open space and veteran trees / deadwood would always be present and ideally in relatively close proximity (within 1 Km of each other).

Buffering & Extending Core Areas
Many of the ancient woodlands in this area are relatively small, though with some notable exceptions such as Ditton Park Wood or Out and Plunder Woods SSSI. Buffering and extension of woodlands to create larger habitat blocks would be beneficial, helping to support larger populations of woodland species. The aim should be to create one or more habitat blocks of at least 40 Ha and ideally 100 Ha in size.

The habitat extensions could take a variety of forms. Some could involve woodland creation, while others could involve the creation of shrub dominated buffers or mixed wildflower grassland and scrub buffers to create a "softer" more graded and ecologically diverse edge to the woods. A more graded woodland edge will support larger numbers of woodland bird species, including many warblers. These type of buffers also have the advantage of increasing shelter within the main ancient woodland for specialist woodland species,

whether flora or invertebrates. In other areas, arable farm habitats such as fallows or bird seed or pollinator mixes might be used, such as has already been done around Ten Wood and south of Basefield Wood.

Not all ancient woodlands will need to be buffered in these ways. Some might already be well connected to other woodlands through mature hedgerow networks, or are already in close proximity (less than 200 metres) to another ancient woodland. However, there will be a number of locations where the buffering approach would be highly beneficial, such as where one or more of the following situations might apply:

- Where woodland edges are highly exposed to prevailing winds or cool easterly / northerly winds;
- Where the gaps between woodlands are over 1 Km; or
- Where one or more smaller woods can be connected to create a larger woodland block of at least 40 Ha, and ideally 100 Ha.

The collection of woods south of the Devil's Dyke illustrate the approach. Ten Wood SSSI, Out and Plunder Woods SSSI, Great and Little Widgham Woods and Bushy Grove are all within 200 metres of each other and form a woodland habitat complex of over 100 Ha. Ten Wood is buffered on two sides through use of agri-environment scheme options, but in future would benefit from the creation of a more mixed wildflower grassland and scrub edge.

Ten Wood SSSI is 500 metres from Ditton Park Wood. A wider 24m grass buffer is proposed for Ditton Park Wood, but the woods will still be a significant distance from each other. Enhancement of the hedgerows and use of wide flower-rich grass margins would help to create a more wildlife friendly corridor to link the two woods.

Ten Wood SSSI is over 1 Km from Basefield Wood, which is a further 350 metres from Marmers Wood. Broad uncultivated field headlands are being used to buffer both Basefield and Marmers Wood, reducing the gaps in the woodland habitat network. In addition, all three woods are connected by the Parish Boundary Hedgerow CWS, which comprises a double hedge and belt of scrub woodland either side of the footpath along the Stetchworth-Dullingham parish boundary. A headland over 20 metres wide is proposed along the whole Parish Boundary Hedgerow increasing the width and quality of the habitat corridor connecting the three ancient woods.

The gaps from Basefield Wood to Great Chitings Wood, Charcoals Wood, Little Chitings Wood, Combers Wood and Pickmore Wood are all less than 200 metres. Although each wood is relatively small, ranging from 2 to 21 Ha, together they form a woodland habitat complex of 48 Ha. There are five agricultural fields linking these woods. The creation of habitats in all or parts of these fields, whether new woodland, scrub margins or wildflower grasslands would enable the creation of a core habitat block of over 100 Ha.

Charcoals Wood is only 400 metres from Ditton Park Wood. While they are connected by hedgerows and field margins, which should be enhanced to form a more mature and broader habitat corridor, there is also potential to create a higher value woodland or wildflower grassland habitat connection.

There is therefore the potential to create two core woodland habitat blocks (with complementary habitats such as flower-rich grasslands or ponds) from Stetchworth to Widgham Green.

Stepping Stones

Across some parts of the landscape, particularly on the larger Estates, there are numerous stepping stone habitats such as shelterbelts or small farm copses. These help to improve the permeability of the landscape for some woodland species.

However, away from the two main ancient woodland habitat blocks described above, most of the remaining ancient woodland and parkland sites are relatively isolated.

There are also some habitats that are lacking or absent across the landscape, notably ponds, small wetlands and flower-rich native grasslands. These habitats provide essential complementary habitats for

woodland species, providing water and feeding opportunities for birds, or pollen and nectar sources for ancient woodland insects.

While the provision of bird seed and pollinator or legume mixes as farm or nature-friendly farming options does make up this deficit to some extent, there is still a need for more farm copses, ponds and flower-rich habitats at the landscape-scale to provide habitat stepping stones to connect the core ancient woodland habitats. The lack of livestock and mixed farming is currently a constraint to the creation of flower-rich grasslands, but there may be opportunities closer to the villages, where there is a demand for paddocks for pony grazing.

Nature Friendly Farming

The larger Estate landowners have adopted a range of more nature-friendly farming options whether through agri-environment schemes or as part of their wider crop rotations. The retention of hedgerows, and the use of fallows, bird seed mixes, pollinator seed mixes and various types of uncropped field margins help enhance the permeability of the landscape for species, as well as provide direct habitats for birds and insects associated with farming. Where these non-cropped habitats approach or exceed 10% of the farmed area, they have been shown to support increased populations of farmland birds.

The network of hedgerows are the main farm habitat features connecting the ancient woodlands and shelterbelts. The hedgerow network is a vital part of this landscape and a long-term goal would be to increase its density to approach the 8 Km / Km^2 needed for maximum bird species richness ([5]Fuller *et al.*, 2001). This, however, may not be easily achievable without decreasing field sizes in the area, a practice that can be at odds with modern farming techniques and equipment. A first step would be to enhance / reinstate degraded hedges along current field boundaries and increase their diversity by planting a mixture of native species. The value of a hedgerow as a nesting, feeding or sheltering habitat for birds, mammals and invertebrates is greatly enhanced by being tall, wide and having buffers of wide, grassy field margins, which also allow space for the hedges to become bushy and reach their full fruiting potential. Targeted use of agri-environment schemes to enhance the network of hedgerows and adjacent wide field margins through the landscape, would further increase the diversity and number of animal and plant species.

4.8.3 Objectives:

Short-term

- Improve the diversity of hedgerow types and field margins to encourage a wider range of birds, mammals and invertebrates. Seek to increase hedgerow density in parts of the area to close to the ideal of 8 Km / Km^2 for maximum bird species-richness.
- Develop a nature-friendly farmer cluster to work together to improve habitat extent and connectivity on a landscape scale.
- Promote action for an agreed set of the key species, through the farmer cluster.
- Create a network of ponds across the landscape to support a stable or growing population of great crested newts.

Long-term

- Increase the % cover of semi-natural habitat, including woodland, flower-rich grasslands and wide, grassy field margins to achieve a habitat land cover of 25%.
- Create two core habitat blocks of over 100 Ha each, one centred on Ten Wood SSSI & Out and Plunder Woods SSSI, and the other on Ditton Park Wood and the woodlands south of Stetchworth.
- Increase the area of woodland cover in the East Cambridgeshire part of this Priority Area from approximately 600 Ha to 750 Ha, and improve woodland connectivity, through buffering and enlarging the core sites and existing stepping stones.

4.8.4 Priority Area Vision:

The Vision for this Priority Area is a network of nature-friendly arable farms, incorporating additional areas of native woodland, wildflower meadows, ponds, and field edge and in-field habitats including hedgerows, pollen and nectar-rich and wild bird seed mixes, and fallows.

The focus within East Cambridgeshire is the area between Stetchworth and Kirtling, Burrough Green and Brinkley, and Great Bradley over the border in Suffolk. Conservation action here would ideally be co-ordinated with action in Suffolk, and the Stetchworth and Thurlow Estates might form a focus for co-ordinated action across multiple land ownerships, perhaps through a farmer cluster and / or deer management group.

The core ancient woodland areas together with the farm woodland stepping stones in the form of copses and shelterbelts will provide a range of woodland habitats, including dense shrubby areas for woodland birds and flower-rich glades or margins for insects and deadwood for fungi and invertebrates.

Some of the woodlands such as Ten Wood SSSI will be buffered by woodland or other complementary habitats, while groups of smaller woods will be better connected to each other or to nearby larger woods, through habitat creation, or enhanced hedgerow networks and farm habitats such as margins of bird seed / pollen and nectar mixes. There will be two core woodland habitat areas, each of at least 100 Ha.

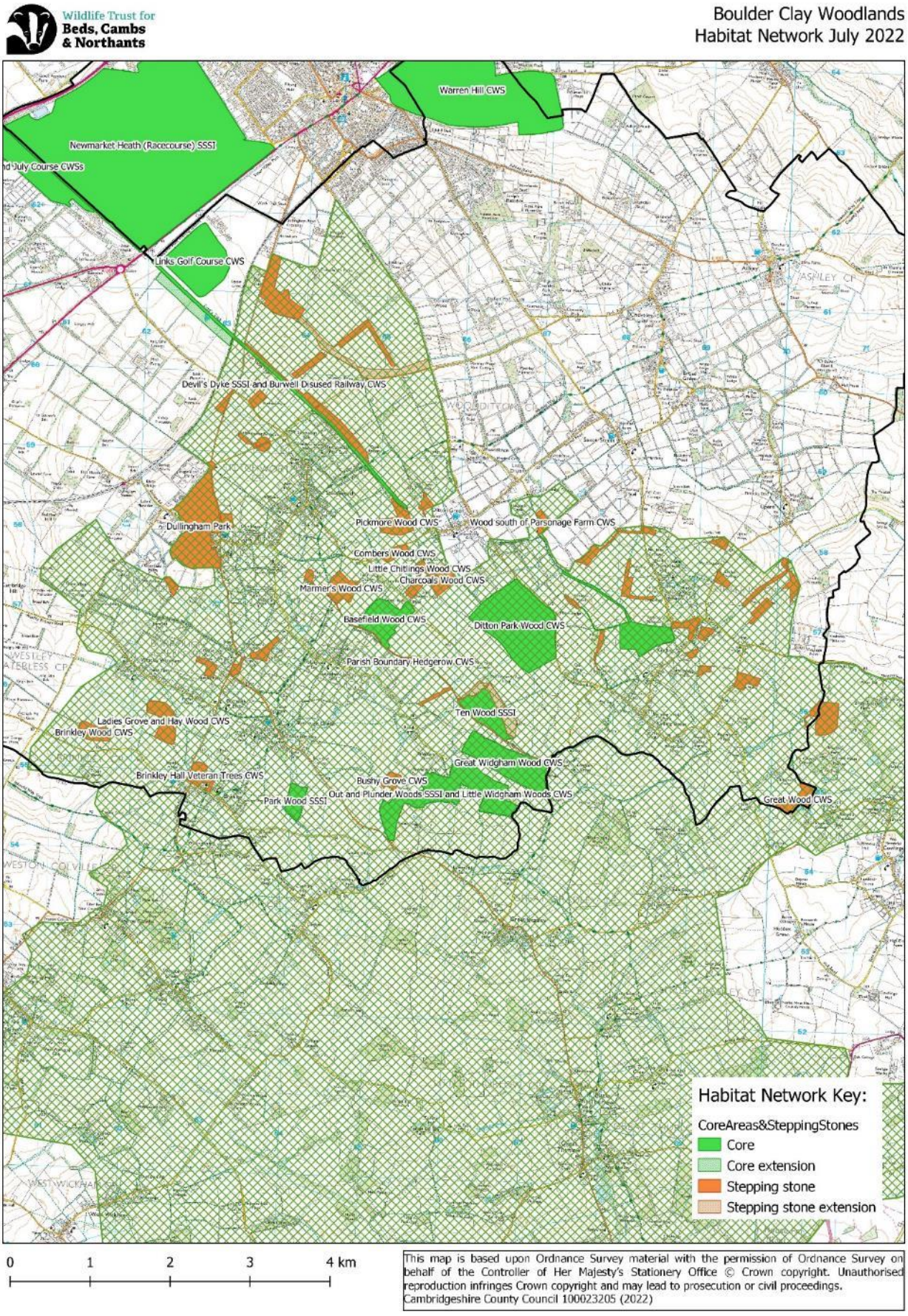
Arable farming will continue to be the predominant land use, but with greater use of regenerative farming practices and provision of farm and field edge habitats, there will be larger and more extensive populations of farmland birds and rare plants present across the area, and more carbon will be stored in the soils. In places, the hedgerow network will be expanded to achieve the density of 8 Km / Km^2 required to maximise bird species-richness. The fields will support strong populations of grey partridge, corn bunting and skylark, while in the hedgerows linnet, yellowhammer and whitethroat will breed amongst many other birds. A network of ponds will allow the population of great crested newt to expand.

4.8.5 Delivery Mechanisms:

Achieving the desired nature network within this Priority Area will involve a variety of approaches. The dominant approach across most of the area will be the adoption of nature-friendly farming and Environmental Land Management Schemes, implemented through the work of individual landowners and possibly an active farmer cluster.

However, in specific locations, there may be opportunities to create new priority habitats funded by a more diverse range of sources that may include woodland carbon payments or Biodiversity Net Gain related to development elsewhere in East Cambridgeshire or Newmarket.

Map 8: Boulder Clay Woodlands Habitat Network



4.9 Chettisham Meadows to Ely North Country Park Priority Area

4.9.1 Key Facts

Total area: 288 Ha
Area of core habitats: 28.82 Ha (10% of total area)
Area of core and stepping stone habitats: 36.51 Ha (12.7% of total area)

Core sites: Chettisham Meadows SSSI, Chettisham Meadows CWS, Little Downham LNR.

Important habitats: Lowland meadows, hedgerows, ponds & ditches.

Important species:
Fauna: Farmland birds, great crested newts.
Flora: Green-winged orchid.

4.9.2 Network Approach:

Better Management
Chettisham Meadows SSSI and nature reserve is already managed appropriately. However, the greater part of the Chettisham Meadows complex within the County Wildlife Site would benefit from a more consistent and conservation focussed grazing and hay-cutting regime. Many of the meadows are relatively species-poor and many of the hedgerows are out-grown and have become lines of trees. There is significant potential to restore and enhance the meadows and hedgerows to support a wider range of flora and fauna. There may also be potential to restore or create some new ponds.

Little Downham Nature Reserve is management by the local community. There is some potential to enhance the species-richness of the meadows through restorative approaches to meadow management.

Buffering & Extending Core Areas
Chettisham Meadows SSSI would benefit from being connected to the wider Chettisham Meadows habitat complex, through the creation of new species-rich grassland habitats to the north, east and south of the meadow. The field to the north has been put taken out of arable production and put down to a species-poor grassland mix to buffer the SSSI. This has significant potential to be further enhanced, possibly through the use of species-rich green hay collected from the nature reserve. A similar approach would be worthwhile on the arable land to the east and south of the reserve, to create a larger grassland management unit, which would also help to better support high quality management of the SSSI.

There are a couple of other potential extensions to the core Chettisham Meadows complex. The first is a small link at the west to connect Muriel's Meadow with a couple of small grassland paddocks along Marshall Drove. The second is the "northern arm" to extend the Chettisham Meadows complex along Beild (Coffue) Drove to connect with two grass fields at the western end.

Stepping Stones
The creation of Ely North Country Park as part of the expansion of Ely, will provide scope to create wildflower meadows of different types including some lowland meadow priority habitat. Hedgerows and areas of scrub and woodland are also likely to be included as may water features, either ponds or the components of a sustainable drainage system. This will provide a major new stepping stone habitat complex at the eastern end of this Priority Area, connecting towards the Great Ouse river corridor.

It would also be desirable to create another species-rich grassland stepping stone to the east of Little Downham LNR. There are a couple of grassland paddocks used for pony grazing, but other fields remain in arable production. The creation of a new species-rich meadow on one or more of these fields, perhaps with additional boundary hedgerow creation, would provide a valuable stepping stone between the LNR and Chettisham Meadows complex.

Nature Friendly Farming

Across the remainder of this Priority Area, arable farming would be expected to continue. Adoption of nature-friendly farming approaches, together with regenerative farming could support the various species-rich meadows, helping to buffer them from adjacent land uses. It would also provide a range of feeding and breeding opportunities for farmland birds and invertebrates, and allow species to build up stronger populations as well as assist more mobile species to move between the groups of meadows.

4.9.3 Objectives:

Short-term

- To create a species-rich meadow buffer around the north, east and south of Chettisham Meadows SSSI.
- To enhance and restore the meadows within Chettisham Meadows CWS to species-rich lowland meadow priority habitat.
- To restore species-rich lowland meadow in the paddocks off Marshall Drove.

Long-term

- To create a mosaic of species-rich habitats including wildflower meadows at Ely North Country Park, as a new strategic natural greenspace for Ely, to be paid for through new development.
- To create the other potential extensions to the Chettisham Meadows complex, to achieve a core area of at least 50 Ha.
- To create a species-rich meadow stepping stone between Little Downham LNR and the Chettisham Meadows complex.
- To adopt nature-friendly farming across the vast majority of the priority area.

4.9.4 Priority Area Vision:

To create an expanded network of wildflower-rich meadows supporting orchids and cowslips and thick hedgerows supporting populations of breeding song birds, all connected by the droveways around Little Downham. Nature-friendly farming will provide the backdrop to the expanded area of priority habitats, providing greater breeding, sheltering and foraging opportunities for larger populations of birds, amphibian, reptiles and invertebrates. Ely North Country Park will be created as a wildlife-rich strategic natural greenspace for the growing population of Ely and will connect to the existing Ely Country Park, located within the Ely part of the River Corridors Priority Area.

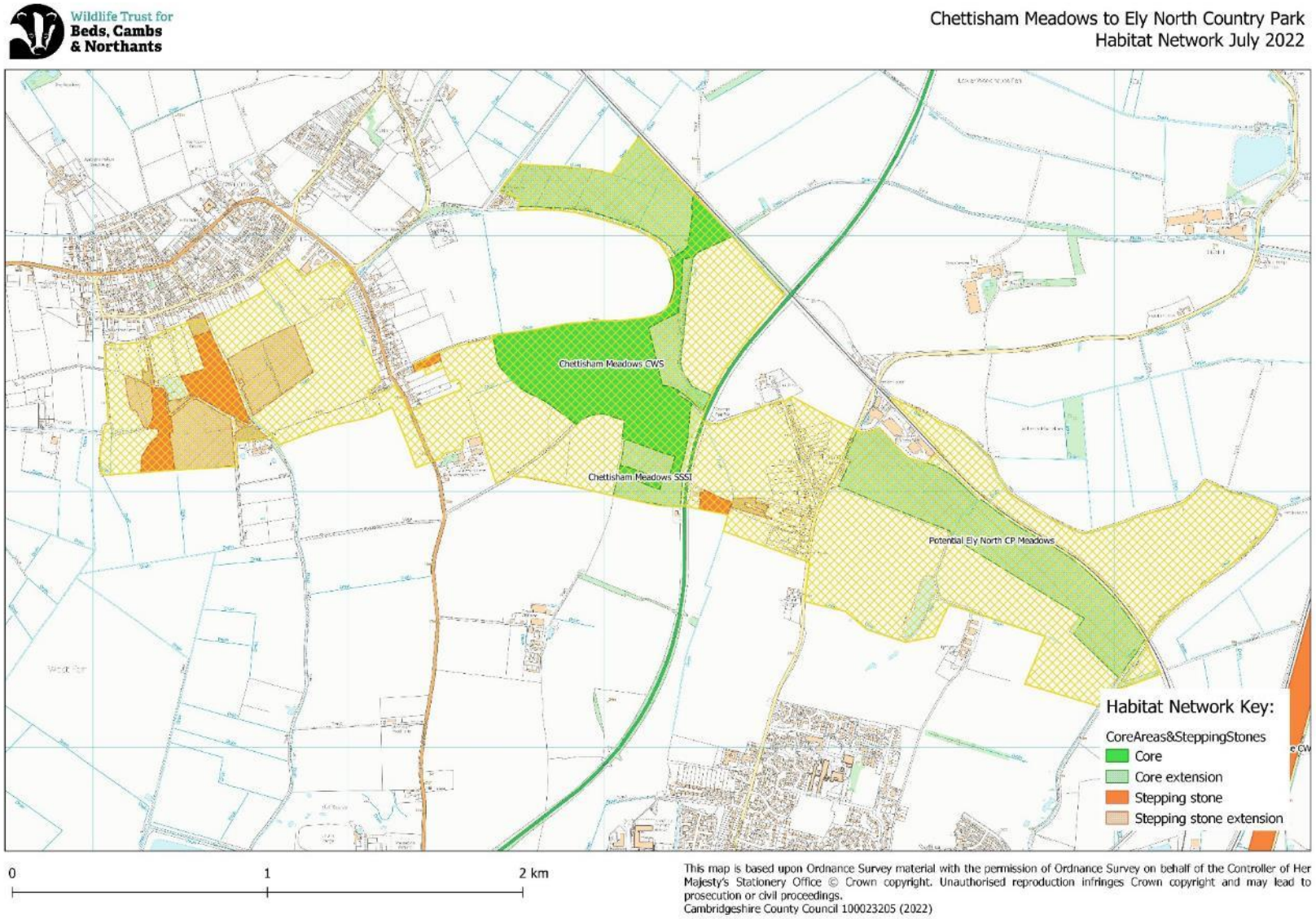
4.9.5 Delivery Mechanisms:

The main delivery mechanism across much of this Priority Area will be the use of agri-environment schemes, whether to create and restore species-rich grasslands, enhance and restore hedgerows, or to support nature-friendly farming.

New areas of lowland meadow creation in key locations could be delivered via biodiversity offsetting and the creation of a habitat bank by one or more landowners working together.

The creation of Ely North Country Park will primarily, at least in the early set up stages, be paid for through development contributions.

Map 9: Chettisham Meadows to Ely North Country Park Habitat Network



4.10 River Corridors (Great Ouse, Cam, Lark, Little Ouse, Soham Lode) Priority Area

4.10.1 Key Facts

Total area: 1,207 Ha

Core sites: Cam Washes SSSI, Kingfishers Bridge Wetland CWS, Ely Pits and Meadows SSSI, Ely Washes, Havacre Meadows and Deal Nook CWS.

Important habitats: Floodplain Wetland Mosaic, reedbeds.

Important species:
Fauna: Breeding and wintering water birds, bittern, marsh harrier, dragonflies, e.g. scarce chaser, fish e.g. spined loach, otter and water vole.
Flora: Fen ragwort, water germander.

4.10.2 Network Approach:

Better Management
The main rivers running through East Cambridgeshire all flow through the Fens and are embanked and engineered to protected adjacent low lying areas, including some of the most productive farmland in England, from flooding.

The width of the floodplain between the raised embankments varies considerably, being quite wide at the Cam Washes SSSI and by the Great Ouse at Ely (up to 300m), but much narrower north of Ely and on the River Lark or Little Ouse (50m).

The habitats within the embankments generally comprise floodplain wetland mosaics or wet grassland on the flat floodplain areas adjacent to the river and species-poor grassland on the embankments. Where the floodplain is wider, there may also be networks of ditches such as on the Cam Washes and around Ely. At Ely, there is also an area of clay pits (Roswell Pits) and the former beet washing pits at Queen Adelaide. These, along with parts of the floodplain grassland form the Ely Pits and Meadows SSSI. The site supports breeding bittern and marsh harrier, along with a wide range of other wetland birds.

The main conservation priority along the river corridors is to maintain and enhance the quality of floodplain habitats. Many areas would benefit from enhanced management, particularly through retaining more water on the land for longer, through the ditch networks and through the creation of shallow foot drains or scrape and inundation areas. The aim would be to support larger numbers of waders and water birds, particularly in winter, but also potentially facilitating the return of breeding waders. This will likely require additional management of the willow trees and other scrub areas to reduce the number of perches for avian predators.

The embankments are generally species-poor having been created from clay supplemented with nutrient-rich river dredgings. However, there is scope to enhance some less nutrient-rich areas to increase the abundance of wildflowers to provide better habitats for pollinators.

In some of the upper reaches of the catchment area, for instance at Havacre Meadows and Deal Nook CWS which lies along the River Kennett east of Chippenham, the rivers are not as embanked and straightened, although they have all undergone modification to some degree. In these areas priority should be given to restoring and enhancing riparian habitat and in-river features such as pools and riffles, along with working with landowners to reduce diffuse pollution and improve water quality.

Many areas are still grazed, usually with cattle but sometimes with sheep on the larger embankments. Other areas are mown. Grazing management should be continued, but refined to help provide better wetland habitats on the floodplain and more flower-rich areas on the embankments. Likewise, mowing

regimes should be reviewed to promote more wildflower-rich habitats. This may require some additional, targeted seeding of locally native wildflowers species, where species are absent and soil conditions are suitable.

Buffering & Extending Core Areas

The rivers provide a continuous, but relatively narrow habitat corridors across the district. The floodplain is constrained by the embankments, so there are few opportunities to buffer or extend habitats in the traditional sense. However, while it might not help in flood management, creation of grassland or other habitat immediately beyond the embankments would serve to widen the habitat corridor, buffering the riparian zone and affording greater protection to species which use it.

Stepping Stones

The creation of farm-scale wetland habitats on low lying land adjacent to and outside the river embankments can provide complementary habitats to the river corridors. This has been done on a larger-scale at Kingfishers Bridge Wetland, and on a smaller scale at Green Farm, Prickwillow and elsewhere.

Beyond Kingfishers Bridge, there are no other proposed larger-scale wetland creation projects known. However, there is the potential for the creation of smaller, farm-scale wetlands to provide complementary wetland stepping stone habitats close to the river corridor floodplain habitats.

Nature Friendly Farming

The farmland adjacent to, but outside of the river corridors can help support some of the wildlife associated with the river and wetlands. The Ely Nature Friendly Farming Zone covers over 20 farms, and the participating farmers have undertaken a range of naure-friendly farming measures. These range from the creation of small farm wetlands, enhancement and use of field margins to buffer ditch networks, provision of bird seed mixes and pollen and nectar mixes, and regenerative cropping.

There is more scope to provide small farm-scale wetlands to complement the river corridors. This might include irrigation reservoirs that include some shallow margins, or the creation of small reedbeds for their biodiversity value or as part of natural water cleaning solutions.

4.10.3 Objectives:

Short-term

- Ensure the existing important conservation sites, the SSSIs at Cam Washes and Ely Pits and Meadows, and Kingfishers Bridge Wetland are well managed.
- Review the management of embankments to identify areas to increase wildflowers for pollinators.
- Continue the work of the Ely Nature Friendly Farming Group.

Long-term

- Enhance the floodplain grasslands around Ely to create higher quality wetland habitats, to increase populations of wintering waders and water birds, and facilitate the return of breeding waders.
- Expand the influence of the Ely Nature Friendly Farmer Group to cover a higher proportion of the adjacent farmland.

4.10.4 Priority Area Vision:

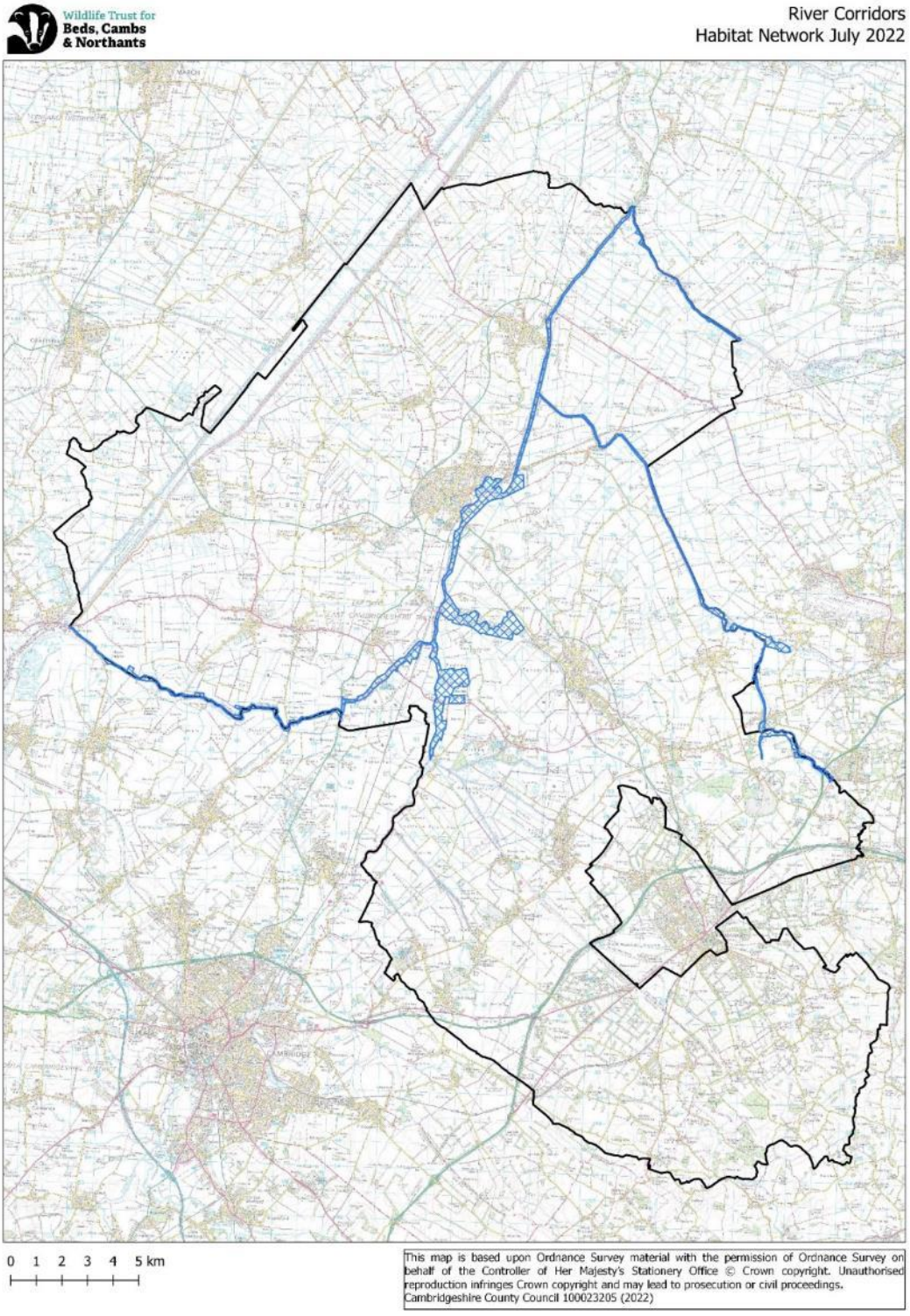
The vision is to enhance the quality of the whole river corridor network throughout the district, mainly through the adoption of more conservation focussed grazing and mowing management practices within the floodplain and on the raised embankments. Long-term it would be beneficial to widen the area of the embanked floodplains to allow more natural river processes and riparian habitats to develop. The priority locations for more targeted conservation action are the Cam Washes and Kingfishers Bridge and the Ely Washes and Pits. Elsewhere, the creation of small farm-scale wetlands and adoption of nature-friendly farming practices on land immediately either side of the river embankments would help support more wildlife-rich river corridors.

4.10.5 Delivery Mechanisms:

The main delivery mechanism is likely to be the Environmental Land Management Scheme (ELMS), whether that be enhancement of the larger areas of floodplain habitats, or the management of the farmland adjacent to the river corridors.

The Environment Agency may however play a role where they control the management of the river embankments or parts of the floodplain. Review of grazing licences and mowing regimes could help promote conservation outcomes.

Map 10: River Corridors Habitat Network



5. EAST CAMBRIDGESHIRE INTERIM NATURE RECOVERY STRATEGY SUMMARY

5.1 A Coherent Nature Recovery Network

This report describes the building blocks for a coherent Nature Recovery Network across East Cambridgeshire, by identifying Priority Areas for nature conservation across the district and their links to neighbouring areas. The nine Priority Areas in total cover approximately 35% of the land area of East Cambridgeshire district.

Some of the best opportunities for the creation of priority habitats have been identified within each Priority Area, together with long-term objectives. Collectively these will contribute to the delivery of the Cambridgeshire Doubling Nature aspirations within the study area, as well as contribute towards the minimum 30% land dedicated to nature required for a coherent and functioning ecological network within each Priority Area.

Table 1 below shows the area and percentage land cover of the core areas and stepping stone habitats for the nine main Priority Areas identified. There are opportunities to significantly increase the area of priority habitats within the nine Priority Areas, from just under 30% to over 40% land cover. At this level of land cover, ecological networks become more robust and better able to support a more complete range of expected species across the landscape.

Table 1: Priority Areas - Habitat Areas & Percentages

Priority Area	**Area (Ha) within East Cambs**	**Core & Stepping stone habitat area 2022 (Ha / %)**	**Minimum potential long-term habitat area (Ha / %)**
Wicken Fen (NT Vision & extensions)	6,030	985 (16.3%)	2,412 (40%)
Ouse Washes & surrounds	5,750	1,854 (32.2%)	2,671 (46%)
Newmarket chalk grasslands	2,150	1,150 (53.5%)	1,320 (61%)
Chippenham Fen & River Snail	949	295 (31%)	440 (46%)
Breckland edge	1,325	368 (27.8%)	400 (30%)
Soham grasslands	1,124	196 (17.4%)	310 (27%)
Boulder clay woodlands	4,086	635 (15.5%)	1,020 (25%)
Chettisham Meadows to Ely North CP	288	36.5 (12.7%)	100 (35%)
River Corridors	1,207	1,207 (100%)	1,207 (100%)
TOTAL	**22,909**	**6,757 (29.5%)**	**9,880 (43%)**

The majority of the land within the Priority Areas will continue to be farmed. However, opportunities from the new environmentally-focussed agricultural support regime will result in areas of new habitat on farmland to buffer, connect and provide stepping-stones between the core habitat areas. The best opportunities identified within each Priority Area are not the only areas where landowners and individuals can take action. Over time other opportunities may arise whether from change of ownership, changes to agricultural policies and farming or through land use planning.

New nature areas and green spaces will be created in specific locations within the Priority Areas through philanthropy, fund-raising, and payments for ecosystem services such as carbon offsetting. The planning system / Local Plan will play an important role in supporting this network, for example through biodiversity net gain and offsetting, provision of strategic natural greenspace through developer contributions, and by ensuring that any green spaces being created as part of new developments link to and support the Nature Recovery Network.

The Nature Recovery Network described is the minimum required to provide space for nature's recovery within the study area. The Priority Areas also connect to the surrounding landscape, and form part of a bigger connected network across the rest of Cambridgeshire and neighbouring counties.

5.2 Nature Beyond the Priority Areas

While this study has deliberately focussed on the Priority Areas for a Nature Recovery Network, this does not preclude landowners, individuals or community groups from taking action in the areas outside of the Priority Areas.

Outside of the Priority Areas there are important nature conservation sites and areas of semi-natural habitat but these are fewer and more isolated from others. In these areas, at the present time, it will be very difficult to achieve the agglomeration benefits of landscape-scale conservation. However, nature-friendly farming can occur anywhere. Wildlife friendly management of open spaces, gardens and buildings can occur throughout the towns and villages. A coherent Nature Recovery Network and nature's recovery will also depend on action being taken across the countryside and within urban areas, if we are to restore a truly connected landscape for nature and people.

While the creation of priority habitats might be focussed with the Priority Areas, there is scope for all farmers to adopt nature-friendly farming or regenerative farming methods, wherever they farm. Farmers can provide more space around field margins and headlands, optimise and limit use of agricultural chemicals and manage hedgerows better.

Within the towns and villages there is a network of public open spaces. Some of them such as the Soham Commons, Ely North Country Park or Warren Hill, Newmarket are within a Priority Area. However, others lie beyond the Priority Area boundaries, but these still provide space for people to interact with nature. In some towns and villages they provide the only access to nature within walking distance for residents.

East Cambridgeshire has recognised the environmental importance of their open spaces with some specifically managed for their environmental value, often with community groups. Parish Councils will also often manage small open spaces. There are significant opportunities to work with local residents and community groups to achieve even more for nature across these public parks and open spaces.

There is a wealth of private gardens across the market towns which can provide a potential 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 a detached house with large garden, a typical modern estate small garden or window boxes in flats.

The public open spaces and gardens provide the basis for the "urban forest", but 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 recreation. Buildings can also be made greener through green roofs and green walls.

In a similar vein to the public open spaces and gardens within towns, the parish and village open spaces and rural gardens can also support wildlife, whether through introduction of wildflowers, pond restoration and creation, or more wildlife friendly mowing and hedge cutting regimes. Each parish or group of parishes could prepare their own Parish Nature Recovery Plan, to guide actions on parish land, within gardens and by the farming and landowning community of their parish.

Across town and country communities working together can help create a Nature Recovery Network within and beyond the Priority Areas.

6. NEXT STEPS

6.1 Informing the Statutory Local Nature Recovery Strategy

Over the next 18 months to two years, local partners and stakeholders will be preparing a Local Nature Recovery Strategy for Cambridgeshire and Peterborough. This interim Nature Recovery Network will provide an evidence base to help inform the county-wide strategy.

6.2 Informing local land-use policy

This Interim Nature Recovery Network supports the East Cambridgeshire Natural Environment (SPD) by identifying priorities for landscape-scale action for nature and informing locations for delivery of biodiversity net gain, including biodiversity offsetting.

Biodiversity Net Gain through the planning system is measured using the [6]Defra Biodiversity Metric (latest version 3.1 as at July 2022). In calculating the biodiversity units allocated to each habitat, a strategic significance score is applied, which if high or medium will increase the number of biodiversity units. There are three strategic significance scores:

- High Strategic Significance - Within area formally identified in local strategy
- Medium Strategic Significance - Location ecologically desirable but not in local strategy
- Low Strategic Significance - Area / compensation not in local strategy

This report formally identifies the nine Priority Areas as being the locations within East Cambridgeshire where the High Strategic Scores can be used for calculating biodiversity units.

The Priority Areas can also be used to inform future locations for development or provision of strategic green infrastructure and provide a framework within which sustainable development across East Cambridgeshire can occur. They can be used to inform and target action by landowners through the prioritisation of agri-environment schemes, and they provide a basis for individual landowners and managers to take action to address the biodiversity crisis locally.

6.3 Landowner / stakeholder engagement

Creating a Nature Recovery Network has to involve local stakeholders and particularly landowners, especially where there is a desire to initiate changes to their land and provide space for public access.

During this work we have had high level discussions with a number of key landowners to identify potential issues and opinions relating to delivery of the Nature Recovery Network, whether that be creation of high quality habitats, nature-friendly farming approaches, or the provision of new public access in the form of permissive routes across farmland or through the creation of accessible natural greenspaces. This has allowed us to better understand landowner aspirations and their views of the opportunities available and potential constraints. From these discussions we have been able to identify a number of opportunities that can be taken forward in the Priority Areas, some in the short-term and others as longer-term endeavours.

Continuing landowner and stakeholder engagement will be critical to successful delivery of an East Cambridgeshire Nature Recovery Network. Some discussions are already taking place with a number of major landowners, exploring the potential for delivering the opportunities and for establishing one or more habitat banks.

6.4 Other Natural Capital & Ecosystem Services

This study only looked at the habitat component of a Nature Recovery Network, and has not considered natural capital. However, the Priority Areas identified will also provide a strong focus for delivering wider natural capital benefits.

For example, Ely North Country Park and the expansion of habitats in the Soham Grasslands Priority Areas will help to provide natural greenspace for the growing populations of Ely and Soham respectively.

Elsewhere, the creation of habitats on the peat soils within the north of the Wicken Fen Priority Area and close to the Ouse Washes at Coveney and Sutton will help to reduce carbon emissions from farming and could in time also help to build soil carbon. Creation of habitats in all Priority Areas will increase soil carbon levels, while woodland and hedgerow creation in the Boulder Clay Woodland Priority Area will sequester carbon.

Taking action within the river corridors to retain more water within the floodplains for longer will help to manage flood risk. Likewise, habitat creation adjacent to the streams of the Boulder Clay Woodlands Priority Area and other natural flow measures will help to slow the flow of water and reduce the risk of flooding downstream. Habitat creation on the Newmarket chalk, around Chippenham Fen and the River Snail, and in the Breckland Edge has the potential to help recharge the underlying aquifer by capturing rainwater and allowing it to percolate into the ground.

The forthcoming county-wide Local Nature Recovery Strategy is likely to explore these natural capital benefits in greater detail.

6.5 Monitoring & Evaluation

Monitoring of outcomes is essential in order to demonstrate success to stakeholders, funders and the public alike. Ultimately success of a Nature Recovery Network will be judged by a number of measures, including:

- The quantity of high value and priority habitats;
- The quality of priority habitats and designated nature conservation sites;
- Landscape connectivity; and
- Increasing or stable populations of key species.

Natural Cambridgeshire is developing a series of indicators of success to measure the “Doubling Nature” initiative, as well as methods and projects to address each of the above measures, in priority landscape areas as well as across the county as a whole. There are a number of sources of help including Local Records Centre and volunteer species groups.

It is hoped that as part of this initiative a citizen science monitoring framework and programme could be developed. This would enable the conservation NGOs and others to involve their volunteers and supporters in citizen science programmes as well as providing opportunities to involve the wider public in measuring change and success of the Nature Recovery Network. However, further work is needed to bring together relevant experts and develop these measures into a coherent programme.

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