



**Cambridge City
Council
Biodiversity
Strategy
2021 – 2030**



Draft for consultation July 2021

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Foreword

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Executive Councillor for Open Spaces, Sustainable Food and Community Wellbeing

When the City Council declared a biodiversity emergency in May 2019, we said that we wanted to put in place a clear plan of action for how we would tackle the growing challenges facing not just our city but also the wider world.

I'm delighted to present to you our new Biodiversity Strategy, which offers exactly that – a robust plan of action, well supported by evidence gathered through our work with key stakeholders including conservation groups, experts and local residents. We have carried out a comprehensive biodiversity audit to help us fully understand the different local pressures and threats such as habitat loss, fragmentation and degradation that have been caused by increasing urbanisation, recreational pressure from increased demands on our green spaces, and depletion of our water supply.

This strategy sets out a clear vision of the direction in which we need to be heading, in order to achieve our objective of a net biodiversity gain across Cambridge, alongside our objective of tackling climate change by becoming a net zero council by 2030.

We will continue to develop our core biodiversity sites, including our nature conservation areas, as well as more widely in neighbourhoods across the city, working closely with local communities. We will also embed biodiversity across all the council's different areas of work – planning, housing, transport.

Protecting biodiversity is not an optional extra – it is one of the most important things we do as a local authority. The last fifteen months has really shown the importance of our open spaces and the habitats they support. There is a lot of work ahead of us all to meet the challenge, but this new biodiversity strategy is an essential first step.

1. Introduction

The term 'biodiversity' describes all forms of life, their interactions and the ecosystems that support them and us. It includes all species, both common and rare, which combine to provide us with the air we breathe, water we drink and the food we eat.

In 2019, the City Council declared a biodiversity emergency¹ in recognition of the pressures facing our natural world, both locally and internationally. We pledged to review our 2006 Nature Conservation Strategy which provided an ambitious 20-year biodiversity net gain vision; however, it was in need of updating to meet current legislation, policy and challenges. Written with expertise from the BCN Wildlife Trust the original document identified the key sites and habitats within the City and proposed more than 80 projects to deliver enhancements on City Council managed land and influence others through policies and partnerships. Many of the objectives and actions within the 2006 plan involve ongoing management and will be continuing within the revised strategy.

We have delivered much of the 2006 plan for our wildlife and communities, however, as demonstrated nationally and internationally, we continue to see local biodiversity loss and not the natural recovery that is required. A key achievement from the previous strategy has been the designation of the City's 12 Local Nature Reserves (LNRs) to give these precious sites greater statutory protection. This has been successful in protecting them from inappropriate development, attracting capital funding for projects and revenue resources for habitat management, however, the accompanying habitat baseline report shows that many still require further efforts to enhance their habitat conditions. We also need to monitor our progress against this baseline to be sure we are delivering on our 'Biodiversity Net Gain' commitments and Natural Cambridgeshire's 'Doubling Nature' ambitions.

¹ <https://www.cambridge.gov.uk/biodiversity-emergency>

As with the Council's climate change emergency, the biodiversity emergency requires all City Council services to consider their net impact on biodiversity within their operations. This new strategy attempts to embed biodiversity principles and considerations across all Council service areas and the communities they serve.

For many years, we have worked with our Friends Groups, Local Nature Reserve volunteers and partners such as the Wildlife Trust and Cam Valley Forum to maintain and improve the rich diversity of habitats which can still be found in and around Cambridge. We greatly value this shared expertise and passion, recognising that we cannot hope to reverse the decline and help our species adapt to a changing climate alone. For this reason, the new strategy seeks to further engage with other city property owners, businesses, community groups and visitors to respect, protect and enhance our city's wildlife and the multiple benefits it provides our communities.

We are partners in the recently launched Cambridge Nature Network, which incorporates our iconic riverside commons and LNRs and we look forward to working more closely with other Network land owning/managing partners and the wider local community to conserve and enhance the Network as a vital strategic piece of green infrastructure for the city.

Due to the success of Cambridge and the local region, major growth sites which were identified within the 2006 Nature Conservation Strategy have now been built, along with new country parks and habitats to complement the existing network of LNRs, woodlands and water courses. Trumpington Meadows Country Park and Hobsons' Park are now vibrant new strategic green spaces, providing welcome respite for communities during the Covid pandemic and also new homes for farmland and wetland species. These schemes demonstrate that with good design and planning policy, biodiversity net gain is achievable on multifunctional spaces. The new Greater Cambridge Shared Planning Service between the City and South Cambridgeshire District Council allows us to help plan on a strategic Greater Cambridge Geography for existing and new green infrastructure and measurable biodiversity net gain within our emerging shared local plan. Identifying land not just

for new homes but for new habitats and connections to meet our duty under the Environment Act due Autumn 2021.

2. Biodiversity in context

The biodiversity emergency we are experiencing is not just local but also global. Current global species extinction rates are 100 to 1000 times higher than the expected baseline rate, and they are increasing. Some of the key driving forces which are causing the emergency are increasing demands for food and energy production. These result in habitat loss, habitat degradation, habitat fragmentation and environmental pollution. They also contribute to, and exacerbate, the effects of climate change. The result is a decrease in species diversity, but also impacts on other elements of biodiversity, such as genetic diversity within species, or the functional characteristics of ecosystems. Ultimately these declines and changes undermine nature's productivity, resilience and adaptability placing it at risk of damage or collapse.

All of these pressures are damaging to the intrinsic value of biodiversity, and also the ecosystem services that we rely on for our social, economic and environmental health and wellbeing - including clean air, urban cooling, flood alleviation and food to name but a few. A thriving biodiverse environment is critical for life with a growing evidence base to suggest that we lead healthier lives, both mentally and physically, if we have more opportunities to interact with nature.

The UK is one of the most nature depleted countries in the world (ranked 189 out of 218). Almost 15% of all species in the UK are at risk from extinction. With 72% of the UK land area managed for agriculture it is no surprise that changes in this industrial sector, responding to Government policy and societal changes, have one of the greatest impacts on our nation's biodiversity. Other drivers for change include urbanisation, inappropriate woodland management, invasive species, hydrological change and, of course, climate change. It is thought that climate change is responsible for 40% of the significant decline in UK moth abundance. At the same time, it has resulted in significant growth for some pest species with aphid abundance increasing by 60%.

In comparison to other parts of the UK Cambridgeshire has some of the lowest proportions of Priority Habitats and land designated for nature conservation, and it has the second lowest proportion of woodland coverage. Within the region agricultural change has also been instrumental in land use changes and biodiversity losses. Grassland cover has decreased from around 30% in the 1930s to less than 10% in 2018, being replaced in large part by arable farmland. Cambridgeshire also contains relatively little accessible green infrastructure for people, with growing populations this places greater recreational pressures on those greenspaces.

The same suite of threats impact on the biodiversity of our city as they do throughout the rest of the world. Our city and its associated sub region is experiencing rapid urban growth, including housing, commercial and institutional development. Whilst this helps support a thriving local economy it places significant pressure on our green infrastructure² and the biodiversity it supports. Within Cambridge we have immediate threats such as habitat loss or fragmentation. In urban environments recreational pressures are more prevalent with a higher population density. There are also broader fundamental threats such as the impacts of climate change or hydrological changes which continue to place pressure on our biodiversity at a local level.

It is challenging in an urban environment to balance the needs of both wildlife and people. If we are to really halt the declines in biodiversity, we will have to work hard to make space for nature in the urban communities where we live and in the surrounding countryside. This will mean protecting and enhancing the precious biodiversity resources that we have left, but also ensuring there is sufficient outdoor recreational space for residents to be able to access and enjoy.

The very fact that these pressures are occurring at a local level does mean that it is within our power to do something about them. Biodiversity is resilient, and particularly in our towns and cities; and has the capacity to bounce back. The suite of actions set out within this strategy is the response of Cambridge City Council to the

² The term green infrastructure also includes the blue infrastructure of our city such as rivers and streams

biodiversity emergency we face locally, nationally, and internationally. We recognise the importance of a healthy and biodiverse environment that is sustainably planned and managed to ensure the current and future prosperity and health and wellbeing of all sections of our city community, but especially the sick, poor and vulnerable. Our aim is to go beyond simply halting the decline in biodiversity but to actively restore the quality of our natural environment and leave our city's wildlife in a better state than that in which we found it. We hope the following strategy will inspire you to join us and help to deliver the proposed actions and associated changes needed to achieve this.

3. Legislation and policy

This Biodiversity Strategy considers and is aligned with a range of national, regional and local policies and plans, as outlined below, to ensure cohesion and a net positive contribution to wider strategic initiatives. Legislative documents, policy reports and reviews or policy drivers are discussed in further detail in the Appendix 1.

National Legislation

- Environment Bill 2019 - 2021
- The Wildlife and Countryside Act 1981 (as amended)
- The Conservation of Habitats and Species Regulations 2019 (EU Exit)
- Natural Environment and Rural Communities (NERC) Act 2006
- The Countryside and Rights of Way (CROW) Act 2000

Policy documents (national, regional and local)

- National Planning Policy Framework (NPPF) 2012 (last updated February 2019)
- South Cambridgeshire Local Plan (2018) and Cambridge Local Plan (2018) - currently being updated to the Greater Cambridge Local Plan
- Cambridgeshire & Peterborough Biodiversity Action Plan
- UK Post-2010 Biodiversity Framework
- Biodiversity 2020: A strategy for England's wildlife and ecosystem services.

Reviews, plans and policy drivers (national, regional, and local)

- Greater Cambridge Green Infrastructure Opportunity Mapping 2020/2021
- Greater Cambridge chalk streams project report
- CCC/MKA Ecology Ltd Biodiversity Audit
- Natural England Nature Networks

- 25 Year Environment Plan 2018
- Making Space for Nature: A review of England's Wildlife Sites and Ecological Network (The Lawton Report, 2010)
- Dasgupta Review (2021)

4. Local initiatives

The continued decline in biodiversity has prompted a number of local and regional initiatives that seek to protect, restore and enhance biodiversity through both development and land management practices. Many of these seek landscape scale restoration of habitats to ensure that ecosystems are resilient. The City Council seeks to support these through both policies and projects to ensure that opportunities are realised on our land holdings and we deliver measurable biodiversity net gain through our statutory functions, operational services and activities and community influence.

Natural Cambridgeshire (Local Nature Partnership) Doubling Nature Vision

Natural Cambridgeshire is a partnership of leaders from businesses, local authorities, the health sector, farming, wildlife and environmental organisations that exists to champion, influence and enable the fulfilment of the Doubling nature vision <https://naturalcambridgeshire.org.uk/wp-content/uploads/2019/07/Doubling-Nature-LR.pdf>

Cambridge Nature Network Stage 2 report

The Cambridge Nature Network is a landscape scale biodiversity initiative led by the Local Wildlife Trust and Cambridge Past Present and Future with support from the City Council and other key landowning partners. The initiative is founded on an evidence based spatial plan for protecting and enhancing nature, focussed on the best of the remaining habitats within 10km of the city and key opportunities and locations for creating new habitats and associated linkages. Through collaboration with landowners and communities it represents an ambitious but achievable vision for local nature recovery.

<https://www.cambridgeppf.org/cambridge-nature-network>

Cambridge Canopy Project

This EU Interreg 2 Seas Programme funded city wide project aims to significantly increase the tree and shrub canopy cover in Cambridge from 17% to 19% of the area of the city (the average canopy cover in England is 16%) and enhance its resilience to the impacts of a changing climate, in line with the goals of the Council's Citywide Tree Strategy 2016-2026.

<https://www.cambridge.gov.uk/cambridge-canopy-project>

South Cambridgeshire District Councils Doubling Nature Strategy

This document lays out how South Cambridgeshire District Council will seek to 'Double Nature' through their land management, community support and shared planning function with Cambridge City Council.

<https://www.scambs.gov.uk/media/16668/digital-final-doubling-nature-strategy.pdf>

Cambridge University Biodiversity Action Plan

Representing considerable land holdings across the City, this plan seeks to deliver a significant and measurable improvement in the biodiversity of the University of Cambridge estate, and the Greater Cambridge Area more generally, in a manner that educates and inspires an appreciation of the natural environment, and that encourages interventions, research and innovation to enhance and protect biodiversity for future generations. It seeks to further collaborative working with the City Council on biodiversity initiatives.

<https://www.environment.admin.cam.ac.uk/biodiversity-and-ecosystems>

The Fens Biosphere

The Fens Biosphere designation proposal seeks to give global recognition to this unique and valuable area. Biosphere status is achieved by applying to UNESCO. The application process is usually managed by a group of relevant organisations, charities, and local authorities with one lead partner (in this case, Cambridgeshire

ACRE) and must be endorsed by a wide range of stakeholders. Once an area has been granted Biosphere status its stated activities will be managed by a constituted partnership drawn from local organisations and community members. There are a number of golden threads linking the activities of all Biospheres:

- Biospheres will meet the needs of their current and future residents and work towards providing secure and happy futures for all.
- Biospheres will improve the natural environment.
- Biospheres will use new ideas, science, and technology to explore new ways of living every day that solve global challenges.

Within the proposed designation Cambridge is recognised as a key gateway to the Fenland landscape north of the City.

<https://www.fensbiosphere.org.uk/>

Wicken Fen Vision

The National Trust's Wicken Fen Vision is an ambitious, 100-year plan to create a diverse landscape for wildlife and people stretching from Wicken Fen to the edge of Cambridge. By restoring natural processes, careful management of water and grazing will allow the land to evolve a mosaic of habitats for a wide variety of abundant wildlife. People will be able to enjoy access and recreation opportunities across a beautiful, tranquil natural fenland landscape, with opportunities for volunteering, education, and interpretation.

<https://www.nationaltrust.org.uk/wicken-fen-nature-reserve/features/wicken-fen-vision>

5. Cambridge City Council role

Cambridge City Council manages more than 80 parks and open spaces totalling over 742 hectares. Some of these sites are designated and managed predominantly as nature reserves, for their wildlife value and form part of the key Cambridge Nature Network, whilst others provide valuable predominantly recreational open space for residents and visitors to enjoy. Whatever the primary purpose and size of these spaces, combined they provide a huge potential for increasing the extent, quality and connectivity of habitats within the City and their contribution to the wider associated Cambridge Nature Network. Therefore, we have an obligation and opportunity to ensure that all sites maximise their potential for biodiversity, provide good examples of habitat management and creation and hopefully influence other landowners to do the same.

We manage approximately 23 kilometres of awarded watercourses, including some of our precious chalk streams, by ensuring management is sensitive to biodiversity, whilst providing our statutory drainage functions, we can protect such iconic species as water vole, kingfishers and brown trout in the City. We are also riparian owners of a significant stretch of the main riverbank through the City. wherever possible we are seeking to 'naturalise' previously engineered banks such as at Stourbridge Common, creating new backwaters and wetland such as on Logan's Meadow Local Nature Reserve (LNR) and providing passage for fish around artificial obstructions, such as at the weir at Byron's Pool LNR and 'The Rush' fish pass at Sheep's Green LNR.

We are custodians of our precious common land and oversee the historic grazing management practice that retains a flood meadow landscape and iconic cattle grazing in the heart of the City. These grasslands form a key part of the network of Cambridge spaces and offer potential for enhanced management to benefit biodiversity.

Through implementation of our tree strategy we manage over 30,000 trees, contributing to the urban forest that provide both wildlife and communities with a

range of ecosystem services, making our neighbourhoods cooler, cleaner and more attractive places to live

Our property estate includes rental units, iconic buildings such as the Guildhall and council housing properties with gardens and communal open spaces. How we manage, renovate, and invest in these assets will impact upon existing species present and provide huge opportunities for restoring nature where people live and work.

Through our Streets and Open Spaces Community Engagement Team we offer support to local Friends Groups, providing opportunities for volunteering in our parks and open spaces, and work closely with local community groups including On The Verge promoting new wildflower meadows and Action for Swifts, with swift box provision such as on Queen Ann Terrace car park and at Edgecombe Flats.

As a local authority we are often a key partner in many local initiatives and projects with links to community groups. By promoting biodiversity through raising awareness in communities and public stakeholders we can ensure that opportunities to protect, enhance and appreciate nature are realised.



6. Cambridge's biodiversity resource

The geological and landscape setting

There are three National Character Areas (NCA) around Cambridge, each with distinctive geological features which dictate the landscape character and biodiversity contained within them.

To the north and west is NCA 88 Bedfordshire and Cambridgeshire Clay lands. A broad gently undulating lowland plateau with shallow rivers, and notably the Great Ouse and Nene, which broaden as they reach the Fens. The area is dominated by intensive arable farming. There is an underlying clay geology which is overlain by glacial deposits of chalky boulder clays which add great character to the ancient woodlands in the area.

To the south and east is NCA 87 East Anglian Chalk. Characterised by smooth rolling chalkland hills with large irregular field enclosed by low-lying hedgerows. Much of the area is under cereal production but important semi-natural habitats include lowland calcareous grassland and the chalk streams which are under significant threat from modification and abstraction.

Further north and east of the City, and with a narrow corridor alongside the River Cam, is NCA 46 The Fens. Characterised as an expansive low-lying wetland landscape. Woodland cover is sparse, and the open fields are bounded by drains and river systems which provide an important ecological network. An important area for biodiversity with several internationally recognised areas of nature conservation value.

Within the City of Cambridge, it is possible to see the influence of each of these regions on the habitats and species that are present. Directly to the south-east of the city are chalky grasslands with exposed chalk (such as East Pit). To the north and east are areas which have characteristics of fenland with reedbeds and drains (such as Wilbraham Fen). To the west, and running right through the heart of the city, are

riverside meadows and pastures which are characteristic of the semi-natural habitats of the claylands (such as Granchester Meadows or Midsummer Common).

The ecological setting

Statutory and non-statutory designated areas

Within Cambridge there are a range of areas designated for their nature conservation value. These include statutorily designated Sites of Special Scientific Interest (SSSI) which are of national significance for the biodiversity and geological features they support. The statutory sites also include LNRs which are of statutory local significance for both people and wildlife.

Non-statutory sites include County Wildlife Sites (CWS), which represent some of the most important habitats in Cambridgeshire. Within the city itself are a suite of City Wildlife Sites (CiWS). These areas do not meet national criteria for designation, but they do meet important criteria at a local level and contain many locally significant habitats and species.

The habitats and species at these locations are varied but typically reflect the wider landscape with woodlands, chalky grasslands and rivers and streams. Some are designated for the species they support, such as water vole *Arvicola amphibius*. Some habitats and species within Cambridge are listed as Habitats of Principal Importance and Species of Principal Importance, or Priority Habitats and Species. These are listed on the NERC Act (2006) and represent some of the most valued habitats and species in the UK.

Other greenspaces

Cambridge is fortunate to have a host of other greenspaces which all make a significant contribution to our biodiversity. These include country parks, such as those at Milton and Trumpington Meadows. There are also other accessible

greenspaces including Granchester Meadows, Hobson's Park, and new areas of open space at Eddington and Darwin Green in north-west Cambridge.

Cambridge is a 'green' city. Beyond the formal greenspaces such as designated areas and parks, there are also numerous informal greenspaces, backlands, gardens as well as college grounds, street trees and, more frequently, green roofs. Canopy cover from trees in the city is estimated to average 17% across the wards, and these trees alone make a significant contribution to the biodiversity resource in Cambridge.

The Cambridge Nature Network

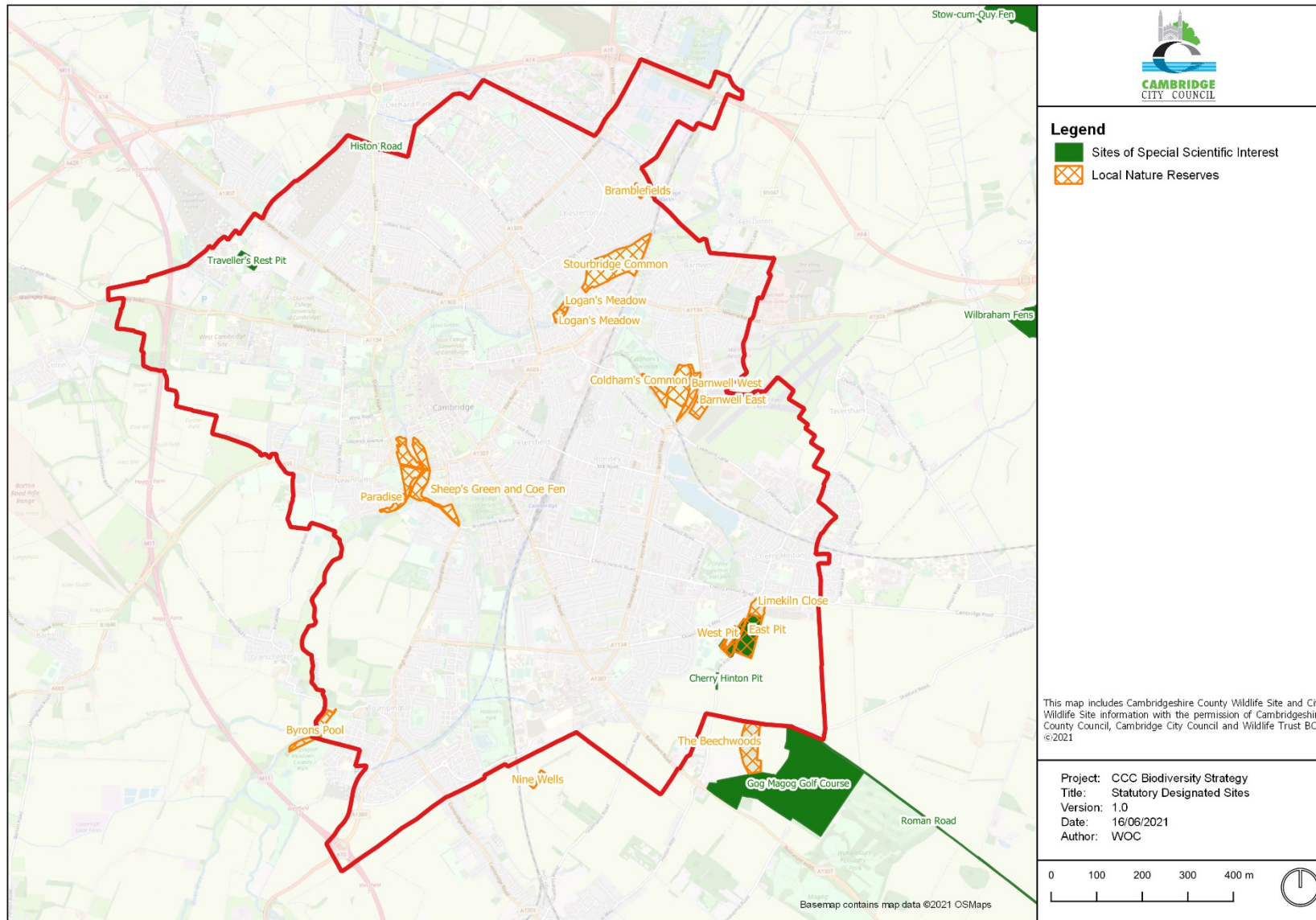
Two priority areas of the Cambridge Nature Network directly interact with the City. The Cambridge Nature Network Priority Areas have been identified by grouping core sites based on landscape features, topography, and hydrology. Within these areas, potential extension habitats (or 'steppingstones') are proposed with a view to creating coherent joined up nature networks, which are resilient to the modern day pressures on our biodiversity. The Cambridge Nature Network target is to achieve a 30% coverage of wildlife rich habitats within each Priority Area.

The River Cam Corridor Priority Area passes right through the heart of Cambridge following the course of the Cam. This Priority Area also includes the tributaries of the Cam which flow from the south, such as Cherry Hinton Brook or Hobson's Brook. This is a critical Priority Area within the network as it provides the connection linking other Priority Areas to the north, south, east and west. Many of these sites and watercourses are managed by Cambridge City Council so we are uniquely placed to help deliver the network through the city.

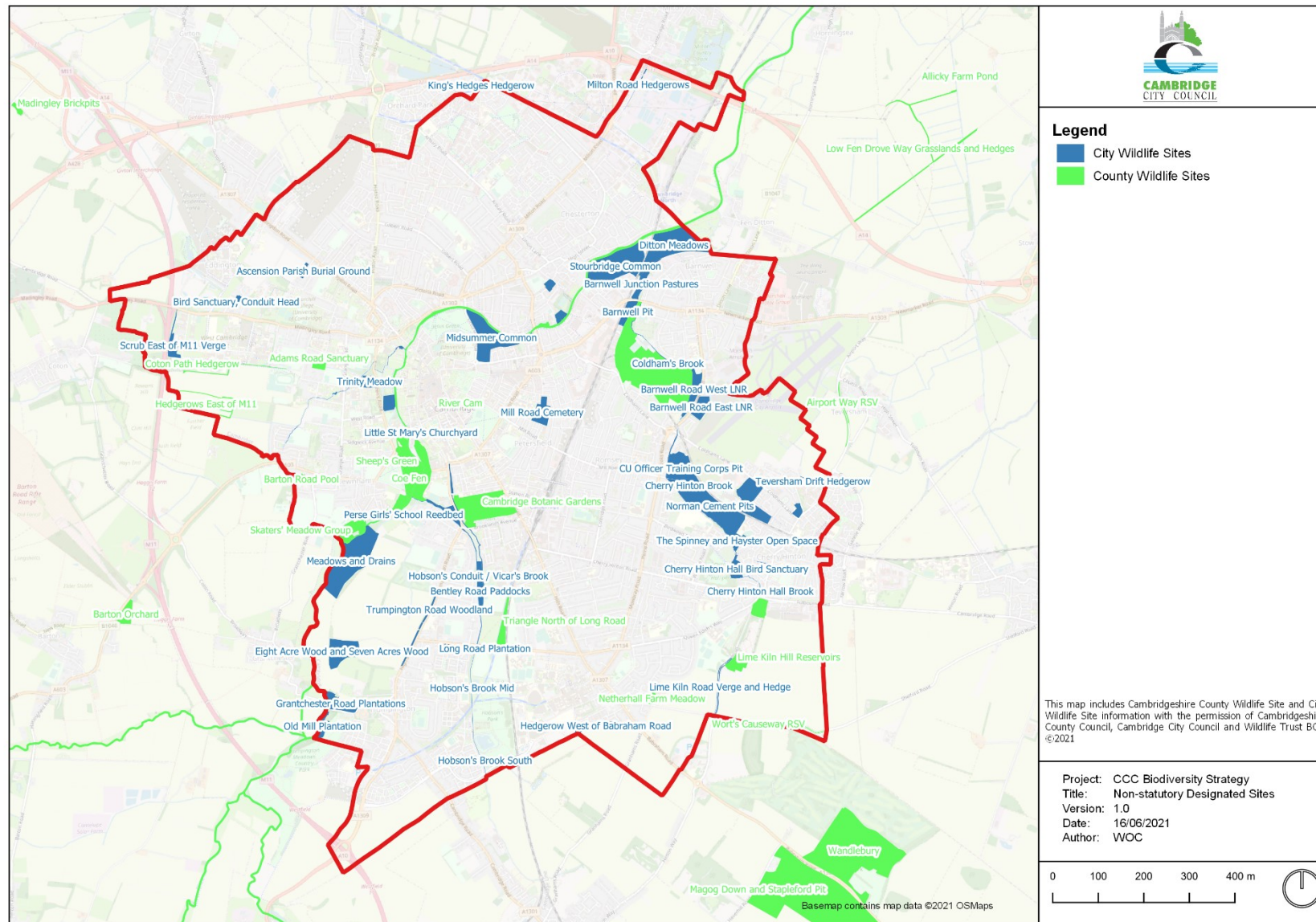
Just south of Cambridge, the Gog Magog Hills Priority Area reaches to the fringe of the city. This Priority Area is characterised by the underlying chalk with the key sites of nature conservation importance located at the Cherry Hinton chalk pit complex at this point on the edge of Cambridge. It stretches further south and east of the city with other important chalk habitats, such as the Roman Road SSSI.

There are four other Cambridge Nature Recovery Network Priority/Opportunity Areas. Directly to the north and east are the Cambridge Fens Priority Areas and Wicken Fen Vision South Priority Area. To the west lies the Boulder Clay Woodlands Priority Area and further north is the Fen Edge Orchards and Drovers Opportunity Area.

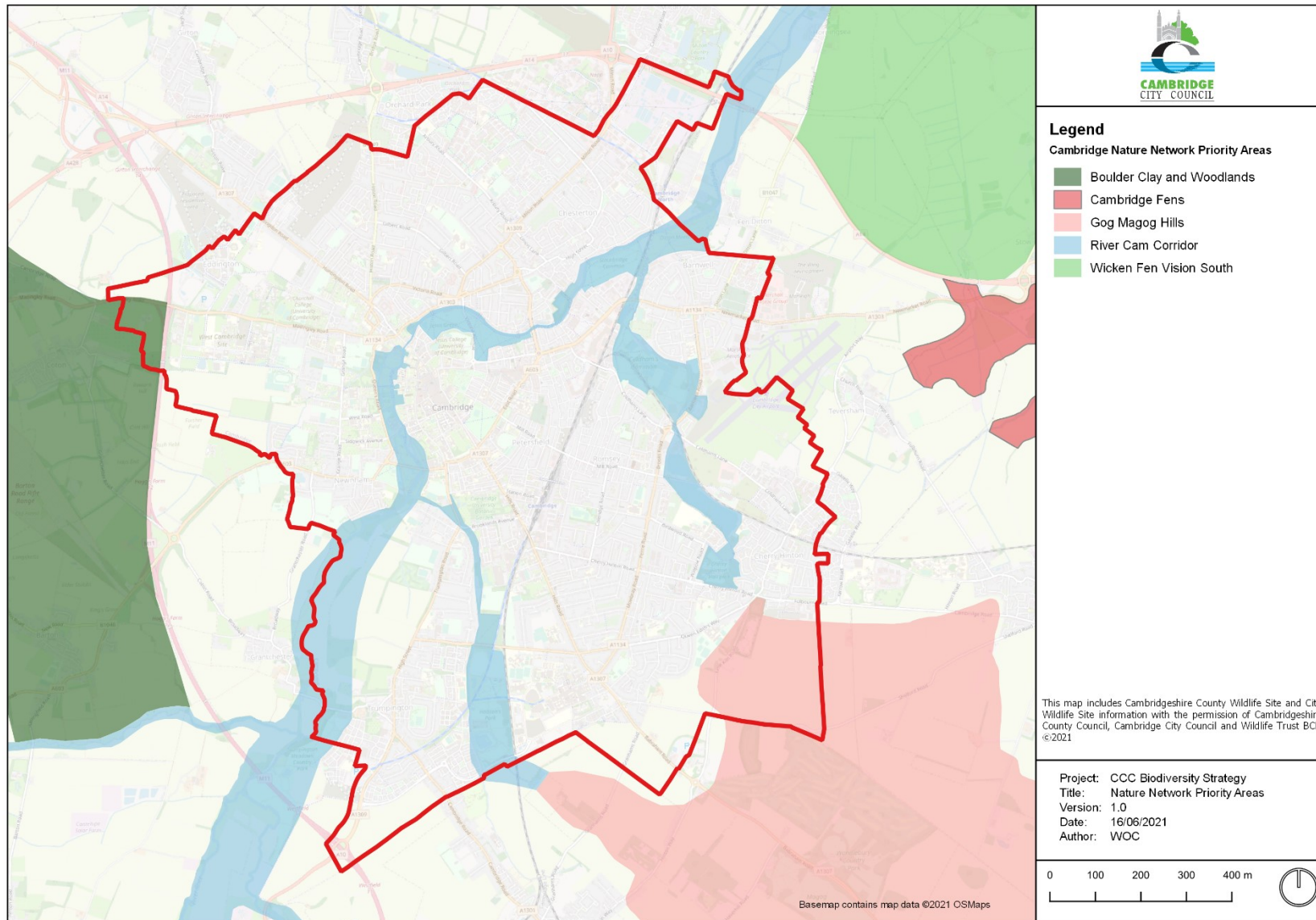
Map 1 showing statutory designated areas in Cambridge



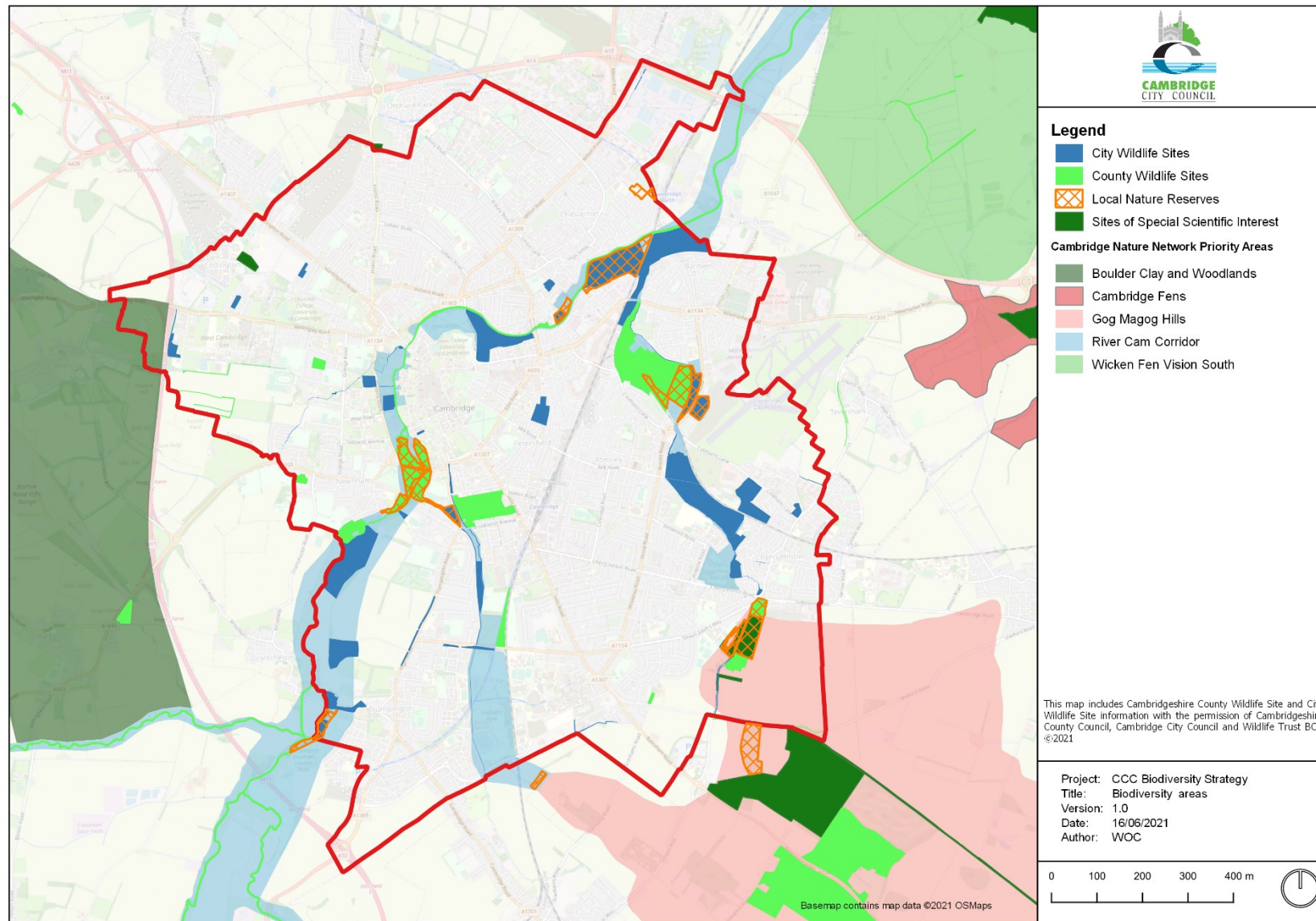
Map 2 showing non-statutory designated areas in Cambridge



Map 3 showing Cambridge Nature Network Priority Areas in Cambridge



Map 4 showing biodiversity sites and areas in Cambridge



Grasslands

Cambridge grasslands range from species-rich lowland calcareous grassland to wide expanses of species poor amenity grasslands, which are widespread throughout the city. Significant grassland habitats are present along the Cam corridor and these run through the centre of Cambridge including Sheep's Green, Midsummer Common and Stourbridge Common. These areas, with their frothing cow parsley and grazing cows, give Cambridge its rural character. Coldham's Common provides further large areas of grassland with a mix of amenity grassland through to more species diverse neutral and calcareous grasslands. There have been significant additions to the species-rich grassland resource in recent years with the creation of Trumpington Meadows and Hobson's Park.

Priority grassland types within Cambridge include;

- Lowland calcareous grassland
- Lowland meadows

A nationally important population of moon carrot *Seseli libanotis*, which grows in the chalk grasslands at Cherry Hinton. Snails thrive within these chalky grasslands and they are preyed upon by glow-worms *Lampyrus noctiluca*. The female glow-worms can be observed as pinpricks of bioluminescence in the grasses on summer evenings. The rare Whorl-grass *Catabrosa aquatica* grows on the damp mud at the edges of the ditches at Coe Fen and Sheep's Green. Key grassland sites within the City include Cherry Hinton Chalk Pits SSSI and the neighbouring verges with their lowland calcareous grassland, and the Skater's Meadow complex with lowland meadow habitats on more neutral soils.

Woodland

Woodlands are uncommon in Cambridge with very few areas of ancient woodland remaining. Areas of naturally regenerated woodland are present throughout the city however and include Byron's Pool in Trumpington and the Bird Sanctuary, The

Spinney and Limekiln Road LNR, all situated in Cherry Hinton. Several areas of wet woodland occur, primarily at Paradise and Logan's Meadow LNR.

Priority woodland types within Cambridge include;

- Lowland beech and yew woodland
- Wet woodland
- Lowland mixed deciduous woodland

Sheep's Green contains wood pasture habitat which comprises mature trees set within semi-natural grassland habitats. This combination of habitats, and particularly the veteran and ancient pollard willows, is important for numerous invertebrates including the scarce musk beetle *Aromia moschata*. These woodlands and mature trees also provide roosting and foraging habitats for a range of bat species, such as common pipistrelle *Pipistrellus pipistrellus* and brown long-eared bat *Plecotus auritus*.

Hedgerows and scrub

Old and mature hedgerows are uncommon in the city with a few remaining examples at King's Hedges, Coton and Cherry Hinton. There are significant areas of scrub habitats, particularly around Coldham's Common and Barnwell within the designated sites at these locations.

Priority hedgerow and scrub habitats within Cambridge include:

- Hedgerows

These old hedgerows and scrub habitats provide important habitats through the city and particularly for bird species which use them for breeding during the spring and summer months and for foraging and cover in the autumn and winter months.

Wetlands

The River Cam corridor contains a variety of wetland habitats, including wet grasslands, reedbeds, and the chalk streams which form tributaries to the Cam. The chalk streams around and within the City are very scarce habitats of worldwide importance. Other wetland habitats occur away from the Cam and these include ponds, lakes, and ditches.

Priority wetland habitats within Cambridge include:

- Reedbeds
- Ponds
- Rivers (including Chalk Streams)

The River Cam presents one of our most important wetland habitats, and, combined with its tributaries, forms a network of habitats through the city. To the north Teversham and Wilburton Fen are biodiversity 'hotspots', which are home to a wealth of specialist birds, invertebrates and other species which reside in the reedbed and wetland habitats there.

Our wetland habitats are home eels *Anguilla anguilla*, kingfisher *Alcedo atthis*, grey wagtail *Motacilla cinera*, otter *Lutra lutra* and water vole. Water vole has suffered significant declines as a species but Cambridgeshire, and Cambridge in particular, remains a stronghold for the species. They thrive in the slow-flowing, well-vegetated ditches found through the city. Pike *Esox lucius* lurk within the backwaters of the river, and can often be seen resting along Garret Hostel Lane drains. Within west Cambridge is a significant population of great crested newt living in the ponds and associated terrestrial habitat throughout this area.

Urban

Urban habitats dominate the City and are not necessarily devoid of wildlife. There are pockets of habitats for species to thrive, including gardens, allotments, and street trees. Increasingly the built environment is purposefully designed to accommodate biodiversity with integrated bird and bat boxes or green roofs.

Priority urban habitats within Cambridge include:

- Open mosaic habitat on previously developed land

The David Attenborough Building on the New Museums Site is an example of how biodiversity can work with the built environment. Here green roofs provide habitats high above street level, and swift boxes are built into the towers. Swifts are charismatic birds that form part of the backdrop to a Cambridge summer with squadrons of screaming birds swooping through the streets and nesting within the cracks and crevices of the buildings in Cambridge. Similarly, house martins use our buildings as nesting sites, for example along Mill Road or in the gatehouse at King's College. The buildings of Cambridge also host peregrine falcon, which can regularly be seen surveying the city from the spires of King's College Chapel. Many species of bat roost in the buildings in the city, and some are specialists that will typically only roost in buildings. This includes serotine bat *Eptesicus serotinus*, which can be seen hawking and swooping for prey over Nightingale Recreation Ground. As you move towards the edge of the city where the gardens are bigger you are more likely to encounter other important species such as song thrush, or even part of the thriving urban badger population.

The cultural setting

Cambridge is a place of naturalists and conservationists and has been for many years. Cambridge has perhaps one of the most studied natural histories of any city. It is possible to trace this history through just one plant in the city. The butterbur stand which grows alongside the River Cam at Paradise LNR was first recorded in that

location in the 1600s by the notable botanist John Ray. It has been recorded in that location ever since by countless natural historians who still express surprise at the appearance of its flowers in very early spring before the leaves.

Cambridge is home to many individuals, trusts, societies, groups, and institutes with nature conservation at the heart of what they do. Some groups have been well-established in the city for considerable periods of time, such as the Cambridge Natural History Society which has been studying the biodiversity of the area for over 164 years. Other more recently established organisations such as the Cambridge Conservation Initiative, a collaboration of the University and conservation organisations, have a world-wide reach far beyond the perimeter of the city. Whilst these groups are varied and diverse, they each have a shared goal to conserve and promote biodiversity. Collectively they present an enormous opportunity for successful collaboration to help Cambridge lead the way in the world as an example of how biodiversity and communities can co-exist and thrive together in a city geography.

7. Biodiversity net gain and doubling nature

In agreeing its previous Nature Conservation Strategy in March 2016, the Council set an aspiration for the city of Cambridge to achieve biodiversity net gain (BNG) by 2026. However, this has not been methodically measured to date. As part of the development of this new Biodiversity Strategy, we have established a baseline of habitat types and their condition for the key natural green spaces in our ownership so that we can plan and monitor management and enhancements to deliver a measurable BNG. Monitoring will include habitat areas, conditions (using a DERFA metric) as well as specific species surveys.

Biodiversity Net Gain and the associated Biodiversity Metric is a tool developed by Natural England in partnership with DEFRA, The Environment Agency and other organisations to provide developers, planners and land managers with the means of measuring the value of the biodiversity under their jurisdiction. It uses the size, type, and condition of habitats as a proxy for their importance and value for nature (Crosher *et al.*, 2019b).

Using a variation on the DEFRA Biodiversity Metric 2.0, the following attributes of the habitats within our natural green spaces were recorded:

- *Distinctiveness*: The type and importance of a habitat. Habitats that are rare and/or support a wide range of species are more distinctive.
- *Condition*: A measure of the quality of a given habitat type. It should be stressed that condition in biodiversity terms is not to be confused with traditional perceptions of condition or maintenance. A grassland that might be perceived to be well maintained (e.g. regularly mown) is very likely to be in poor condition. Distinctiveness and condition are also not wholly independent. Some of the factors that lead to a habitat being in poor condition may also lead to its definition as being a lower distinctiveness.
- *Strategic significance*: Any site that possesses a designation, or falls within the Cambridge Nature Network Priority Area, is considered High, those deemed ecologically valuable but without designation are considered Medium,

and those with limited ecological value and no designation are classed as Low.

Each of these factors or scores is given a weighting and the scores multiplied together along with the area of habitats or lengths of linear features (e.g., hedgerows) to create a 'Biodiversity Unit'. Areas with large areas of rare habitats in good condition have the highest number of units. Whilst the biodiversity unit can appear to overly simplify the complexity of the natural world, it does at least provide a method of measuring it; to formally double nature, there should be a way of measuring it in the first place.

The baseline habitat audits for these important areas of green space within the city of Cambridge was conducted in the summer of 2020. It encompassed 32 sites ranging from SSSI to recreation grounds and parks in all areas of the city and included key City Council owned or managed locations.

A total of 1350 habitat units and 122 hedgerow/tree-line units were recorded across the 32 sites. Sites that scored highly were generally large or supported highly distinctive habitats in good condition. The top six sites listed in Table 1 account for 60% of the total biodiversity units within the audit. They comprise a mix of sites which highlight the methodological principles behind BNG.

Larger sites or areas will naturally hold more biodiversity; Hobson's Park (25ha) and Coldham's Common (41ha) are the two largest sites within the audit and are at the top of the list.

Even in smaller sites, more distinctive (i.e., rarer or more valuable) habitats in good condition also score highly; East Pit, a unit within the Cherry Hinton Pits SSSI is a third of the size of Hobson's Park and a fifth of Coldham's Common, but holds over 40% of the biodiversity units of each. East Pit is dominated by the highly distinctive chalk grassland in good condition.

Table 1: The top six most valuable sites within the Biodiversity Audit, as measured using the DEFRA Metric 2.0

Site	Area Units	% Total area units	% Total survey area
Hobson's Park	263.1	19.5	12.4
Coldham's Common	251.2	18.6	19.9
East Pit (Cherry Hinton Pits SSSI)	109.7	8.1	3.9
Byron's Pool	80.3	5.9	2.1
Stourbridge Common	60.6	4.5	9.3
Limekiln Close LNR	53.8	4.0	1.4

Woodland provides the most biodiversity units among the habitats found within the surveyed sites, accounting for 32% of the total. Some of these units are associated with the highly distinctive 'wood pasture and parkland', a habitat found in large areas within the River Cam floodplain, particularly in Sheep's Green. Neutral grassland is the second most productive accounting for 21%. It is noteworthy that nearly half of the units from neutral grassland come from a single site - Hobson's Park.

The largest areas of habitat within the surveyed sites are modified and amenity grasslands. Many of the sites surveyed are large recreational areas (Pieces and recreation grounds) or Commons, which are dominated by these highly managed and therefore low value and poor condition habitats. By contrast, a much smaller area of habitat that nevertheless provides a relatively high proportion of the total is found in lowland calcareous grassland, a high distinctiveness habitat.

As well as measuring the distinctiveness of a given habitat, an assessment of its condition using published assessment guidelines (Crosher *et al.*, 2019a) was made. Overall, 123 ha (63%) of the total area of the audit is in poor condition, accounting for 28% of all the biodiversity units. A number of common observations emerged

from the Audit. Several of these relate directly to constraints on the condition of some habitats:

- *Larger sites hold more biodiversity.* This presents both an opportunity for habitat creation; the large commons, pieces and recreation grounds offer enormous potential for habitat creation or restoration. It also highlights a risk; at present, a lot of the biodiversity under City Council control is contained within a small number of sites.
- *Recreation pressure.* Many of the woodland and grassland sites suffer from high recreation pressure, particularly from dog-walking. The associated damage can be the main reason for a site's poor condition.
- *Less is more.* The large areas of grassland habitats within the city are intensively managed. Cutting less often will both promote higher value grasslands and improve their condition. Similarly, many of the Commons are over grazed and a relaxation of grazing pressure will benefit these areas; the right amount of grazing can bring the best results for grasslands.
- *Deadwood.* Woodlands across Britain are usually stripped of their deadwood and those in Cambridge are no different. Introduction of deadwood, either from selective felling within sites or from outside, plus techniques to 'veteranise' existing trees will lead to improvements in the condition of the City's woodland.³
- *Habitat succession and species.* The more objective approach taken in this audit is naturally habitat focussed. However, conservation objectives for particular species, particularly those of Local or National Importance is still an important consideration when determining future management strategies.

As well as providing a tool for calculating the value of current habitats, BNG and the DEFRA Metric that guides it provides a framework to calculate whether changes to those habitats will lead to an increase or decrease in the biodiversity value of a given place. Typically, these comparisons are made in the context of development, but

³ We leave deadwood where it is safe to do so, specify conservation deadwood where appropriate to, shorten existing deadwood so that it is safe, leave both fallen and standing deadwood where appropriate, and deploy veteranisation techniques by employing a managed-decline approach to many trees.

they also provide a method for planners and land managers to more easily identify how biodiversity under their jurisdiction can be improved. This is one of the key outcomes of the audit and it helps us identify areas of green space where there are opportunities.

In order to demonstrate on a more practical level how an increase in measurable biodiversity can be achieved, we include four case studies within the Audit Report. The case studies have been selected to highlight different approaches to increasing measurable biodiversity in Cambridge:

- *Habitat enhancement*: In many cases improving the *condition* of what is already there will bring about significant gains.
- *Habitat restoration*: There are opportunities, at both small and large scales, to create new or restore historical habitats and in so doing, improve the *distinctiveness* of habitats.

By estimating the *predicted* habitat types and their conditions, a comparison between the current and future value of land can be made and, if the changes are positive, a *net gain* will arise.

In addition to these specific case studies, below are three scenarios which also demonstrate how gains in biodiversity can be met by enhancing habitats within the city.

Table 2: Scenarios of city-wide habitat enhancement

Scenario	Current Units	Potential Units	% Increase	Notes
All (8.3ha) calcareous grassland in poor condition to moderate	57	68.3	20	80% of this scenario could be met at one site: Coldham's Common

Scenario	Current Units	Potential Units	% Increase	Notes
50% (5.5ha) of all neutral grassland from poor to moderate condition	50.5	68.3	35	63% of all neutral grassland is also at Coldham's Common
25% (10.5ha) of all amenity grassland to wildflower (assuming poor condition)	91.3	112	23	The potential value of adding wildflower areas to Recreation grounds and Pieces

The Audit provides a number of specific recommendations for each site. However, a number are common. These include, but are not limited to:

- Relaxation of grazing pressure or reduced mowing frequency on grasslands - to improve both value and condition of grassland, whilst potentially saving costs and allowing other work elsewhere.
- Restricting or limiting the impacts of recreation (especially dog walking) on grasslands, woodlands and waterways.
- 'Meadow creation'. Many of the city's parks already have 'wildflower corners'. These could be made bigger and more permanent.
- Increase the volume of deadwood in woodlands.
- Wetland restoration on the River Cam floodplain.
- Improving the structural (e.g., widening by less frequent cutting) and floristic component of hedgerows and their ground flora.
- Improving the connectivity of sites and habitats, particularly south of the City centre.

8. Local threats and pressures

As with many other urban areas there are pressures and threats in Cambridge which degrade and deplete our biodiversity resource. To understand the opportunities and threats to biodiversity in Cambridge we commissioned the Biodiversity Audit and the Greater Cambridge Chalk Stream Project. These reports also identified a number of threats and pressures which are specific to our local area. The key pressures on biodiversity within Cambridge include:

- Habitats loss: Direct loss of biodiverse habitats and the species they support
- Habitat fragmentation: Removal of the links between areas resulting in smaller, less resilient habitats
- Habitat degradation: A deterioration in the condition of the habitat, such as reduction in species diversity

The key local causes of these are:

- Urbanisation: This can result in direct habitat loss and fragmentation. It could also lead to a degradation of habitats, for example from the effects of artificial light. Other indirect effects include poor air quality from increasing traffic. Nitrogen from exhaust fumes can over time increase nutrients in greenspaces and alter the composition of these habitats.
- Recreational pressure: As the population grows there is increasing demand on our greenspaces. Many habitats and species in the city are sensitive to disturbance. Impacts include trampling, or disturbance and nutrient deposition from the increasing popularity of dog walking in the city. Dog fouling deposits nutrients in sensitive habitats and this can change the vegetative composition of the area. Dogs off leads can have significant effects on ground nesting birds or disturbance of other animals such as mammals.
- Hydrological change: The Greater Cambridge Chalk Stream Project identified hydrological change as a major driver for negative impacts on our chalk streams and rivers. This includes channel modification or depleted aquifers

leading to low flow and poor water quality. These result in habitat loss and degradation.

There are also wider causes, such as climate change which has the potential to alter habitats and species populations, thereby making them more scarce or unviable.

9. Biodiversity strategy

Cambridge City Council recognises the global biodiversity emergency and the local impact this will have, and is having, on the city and associated communities we serve. Therefore, in May 2018 we pledged to provide leadership and to ensure that we work with all sections of the community, including university colleges, businesses and residents to reverse the decline in biodiversity and deliver measurable net gain within Cambridge and the wider sub-region. Within this section we have defined our objectives and set out our proposed actions to enable us to achieve this.

Our aim is to put biodiversity at the forefront of everything that we do, our vision is a vibrant, thriving, biodiverse Cambridge. By maximising opportunities for collaboration, we will work in partnership with residents, businesses, and institutions, and build upon existing strategies for climate and trees, to achieve this goal.

We will promote the principles set out in the Lawton Report: bigger, better, more joined up. This will require improvements and enhancements to our core sites in the City to create a biodiverse blue and green thread through the heart of Cambridge. In doing so our work will dovetail with the Cambridge Nature Recovery Network River Cam Priority Area. We will see a healthy river and tributaries flowing through their natural floodplain habitats. Areas of existing grasslands will be improved, former wetland features will be restored, and new ones created. This network will help to restore healthy populations of species such as otter, eel, and water vole.

The biodiversity emergency is intricately linked with the climate emergency. Many of the proposed actions set out below will also serve to alleviate the climate emergency. The actions set out within our climate strategy will contribute to resolving the biodiversity emergency. Therefore, our climate and biodiversity strategies will work together to ensure we do what we can to confront these threats. Where relevant we have highlighted which biodiversity actions will contribute to our climate emergency response.

Beyond this core area we will strive to create a city that is more permeable for nature. We have made a commitment to enhance our own estate to maximise the opportunities for biodiversity. And we have also made a commitment to engage and enable others in the City to do the same. Building upon our core network this will help to join the dots, creating a city where birdsong and buzzing invertebrates can be heard and experienced by everyone everywhere who lives, works, and studies in Cambridge.

Our strategic objectives are:

1. To secure a measurable net gain in biodiversity across the City by 2025 and support the Natural Cambridgeshire Doubling Nature Vision by 2030
2. To ensure designated sites and priority habitats are in good / favourable condition and connected, where possible, to increase resilience to a changing climate and contribute to the Cambridge Nature Network
3. To promote awareness of biodiversity and wellbeing, supporting coordinated action in our communities, businesses, and institutions
4. To ensure that biodiversity is considered by all council service functions and projects
5. To maximise the potential of our buildings, parks, open spaces, watercourses and tree stock to support biodiversity, whilst balancing their multifunctional needs
6. To harness the wealth of local professional and amateur knowledge and experience in identifying and solving local issues.
7. To establish long term, species and habitat surveys and monitoring to measure the impact of activities and identify new threats and opportunities across the city

In order to meet the objectives, the proposed actions have been grouped within the three main themes. These themes are:

Biodiversity mainstreaming: This theme is about embedding biodiversity into everything that we do, whether that is constructing new houses, buying materials, or undertaking our role as a planning authority. We will ensure that our actions minimise impacts on biodiversity as well as seek opportunities to enhance it. We will aim to develop cross-cutting strategies and solutions between all services that promote biodiversity and focus on nature-based solutions.

The core: This theme is about developing our core of biodiversity sites in the City. This includes reviewing and updating management plans for our most important nature conservation areas and working with partners to ensure a coherent and resilient nature network through Cambridge.

Nature in your neighbourhood: This theme is about encouraging nature to flourish across the city through collaboration with communities, businesses and institutions. The aim is to ensure nature is not restricted to a few precious locations and that it can be enjoyed, understood, and experienced by all.

10. Action plan

As part of the final adopted strategy, a fully costed action plan will be developed to provide clarity and guidance on who does what, when and how. This will ensure that we can maintain the commitment over the long-term and ensure that the resources are available to sustain it. The final action plan will be informed and defined by the responses to this public consultation.

Biodiversity mainstreaming

Our ambition is to consider conserving and enhancing biodiversity, as part of everything that we do. We will take steps to ensure that we review the effects of our activities and decisions on biodiversity and that, wherever feasible, we can be working to promote and enhance the biodiversity of the city. We will take our objectives concerning biodiversity policy and consider them within all other areas of our work, for example our housing, transport, and economy. We will take biodiversity from the fringes of our policy into the mainstream where it will be considered equally with our other policy domains.

We can achieve this by recognising that nature conservation interests make a significant contribution to our lives in Cambridge by generating economic, community and health and well-being benefits. Such an approach will also help us to explore sustainable nature-based solutions across the city. This means we can use nature to help us solve some of the biggest issues that face us today including climate change, water and flood management or atmospheric pollutants from vehicles. This process will transform nature into an asset that delivers multiple benefits to us.

Biodiversity Checklist

We will develop a checklist to ensure that all operational departments consider biodiversity within their service and project planning or procurement decisions and that this is available for scrutiny by decision makers and our communities. This will enable early consideration of biodiversity constraints and ensure that appropriate

avoiding or mitigating measures are put in place. If such measures are required, then their consideration at an early stage will mean that they are thoroughly integrated and planned. The checklist will also prompt officers to consider nature-based solutions to other project constraints, such as water management. It will help to encourage project planners to actively consider positive biodiversity interventions that can be delivered alongside other goals. This will help us to deliver biodiversity net gain across the city and help us to promote a corporate led approach to biodiversity.

The checklist will ensure that procurement actively considers the sustainability of services and goods providers and their potential impacts on biodiversity. The procurement process will also include biosecurity checks to eliminate risks of introducing pests and diseases or invasive species. These can present a significant risk to our habitats as we have experienced in recent years with the arrival of ash dieback and floating pennywort in the UK and Cambridge. We will develop biosecurity guidance and policy to inform the checklist.

Action: Develop biodiversity checklist

Biodiversity Net Gain

Cambridge City Council projects will seek to go beyond a 10% biodiversity net gain and will aim for a 20% gain. Where possible will use the biodiversity metric to help us establish a measurable net gain across our estate. Where it is not feasible to deliver these gains within our project sites, we will deliver them in other parts of our estate.

Action: Achieve 20% biodiversity net gain on Cambridge City Council projects

Environmental Management System

Our Streets and Open Spaces team will have a new operational Environmental Management System by summer 2021 which we will seek to have accredited to ISO14001. The system will help to ensure the biodiversity constraints and

opportunities, based on the principle of continuous improvement, are embedded into the work that the team undertake. It will help to ensure that positive steps for promoting biodiversity are enacted and that appropriate measures for managing existing features are always clear and available to the team .

Action: Implement Environmental Management System

The Cambridge Green Roof Project

We will undertake a systematic review of the buildings within Cambridge City Council estate to identify opportunities to retrofit green roofs. We will also ensure that new Cambridge City Council projects with flat roofs have green roofs installed. Green roofs are one of the most effective measures to integrate biodiversity into the fabric of our built environment. They offer excellent opportunities for invertebrates to thrive in unique habitats which are floristically rich with areas of bare ground - a combination that is generally scarce in Cambridge.

Action: Implement the Cambridge Green Roof Project

The Cambridge Swift Project

Swifts are charismatic birds which are regularly seen screaming and swooping through the skies of Cambridge. However, the species is suffering with a decline of nearly 60% since 1995. The drivers of this change are very difficult to establish but there is some concern that modern and refurbished buildings no longer contain the cracks and crevices within which the species breeds. The Cambridge City Swift Project will review all the Cambridge City Council estate to understand where we can appropriately retrofit boxes specifically designed for this species. As part of this project we will continue to work closely with Action for Swifts to encourage and advise others on suitable measures to enhance the populations of this species, and others such as house sparrow, in Cambridge.

Action: Implement the Cambridge Swift Project

Cambridge Citywide Tree Strategy 2016-2026

We will work across services to help deliver the biodiversity benefits associated with our adopted tree strategy, which seeks to achieve a 19% canopy cover across the city by 2030.

We will seek to plant and encourage the planting of a range of native and non-native species to improve resilience of the 'urban forest' to pests, disease and a changing climate. The strategy will help the city to mitigate and adapt to the effects of climate change through carbon storage, storm water attenuation and urban cooling. Strategic planting of trees can also help to alleviate and filter some of the effects of atmospheric pollution from vehicle emissions. By delivering these regulatory services, the urban forest will help buffer and mitigate the adverse effects of a changing climate on the network of sites with a high biodiversity value within the city. It is important to recognise that tree planting within these sites must be carefully planned in appropriate locations that will not have a detrimental effect, for example, on existing habitats such as chalk grassland, even when currently in poor condition.

Action: Promote biodiversity through implementation of the Citywide Tree Strategy

Peat free Cambridge

We are committed to ensuring that we are peat free in all the work that we do. The extraction of peat from the natural environment reduces its carbon storage capacity and has significant negative consequences for the climate emergency. We will ensure that peat is not used within our projects and maintenance activities. As part of this work we will encourage others throughout the city, such as our allotment holders, to find alternatives to peat to help us achieve our aim of a peat free Cambridge.

Action: To make Cambridge City Council peat free, and to encourage others to do so

Greater Cambridge Planning Service

Our planning function is carried out in partnership with South Cambridgeshire District Council through the Greater Cambridge Shared Planning Service. We set local policy and manage development in line with Government policies laid out in the National Planning Policy Framework. The current Cambridge City Local Plan was adopted in 2018. It includes a suite of policies to help ensure that new development in the area reduces its environmental impact by minimising carbon emissions, flood risk, pollution and pressure on resources such as water and helping to protect and enhance biodiversity. We are developing a joint Biodiversity Supplementary Planning Document that expands on policies to ensure that biodiversity is adequately protected and enhanced throughout the development process. Our planners have been able to work with developers and communities using these policies to secure good outcomes for nature, as demonstrated at Trumpington Country Park and Hobson's Park.

Revisions to the National Planning Policy Framework since the 2018 Local Plan was adopted have created new opportunities to achieve net gains for nature. The current Framework states that planning policy should identify and pursue opportunities for securing measurable gains for biodiversity. Using the Government's pilot biodiversity accounting tool, we are doing this, and have succeeded in securing biodiversity net gain on several major development sites (for example Newbury Farm, Netherhall Gardens and Hobson's Park). The Government has indicated that biodiversity net gain will become mandatory in the new Environment Bill, meaning that developers will be required to ensure habitats for wildlife are enhanced and left in a measurably better state than they were pre-development.

Greater Cambridge Local Plan - Through the Greater Cambridge Shared Planning Service we are preparing a new joint Local Plan, which will set out planning policy in Greater Cambridge (Cambridge City and South Cambridgeshire) for the next 20

years. Both Cambridge City and South Cambridgeshire District Councils recognise the pressure on the natural environment and are committed to exploring how the new Local Plan can do more to improve natural and semi-natural spaces, known in planning terms as 'green infrastructure', across the area of Greater Cambridge. This will include how we can make use of new powers to mandate biodiversity net gain. We have made biodiversity and green spaces one of the four big themes that will influence how homes, jobs and infrastructure will be planned in the new Local Plan. In a novel move which underlines the priority we are giving to our biodiversity and green spaces theme we included a Call for Green Sites in our Call for Sites process. A Call for Sites is a normal part of plan making, providing a way for landowners, developers, individuals, and other interested parties to suggest sites for development. The Call for Green Sites specifically allowed anyone to submit suggestions of land to grow and enhance the green space network; and provided an important signal to landowners of the importance of working with them to identify suitable land, such as for community forests.

Green Infrastructure Opportunity Mapping - To inform the development of policies to deliver the City and South Cambridgeshire doubling nature joint aspiration, we have commissioned a Greater Cambridge Green Infrastructure Opportunity Mapping study. The baseline report provides robust evidence on the quantity and quality of existing green infrastructure assets and networks within Greater Cambridge and identifies broad opportunity areas to enhance and expand the network. Later stages of the study will identify a range of deliverable projects to enhance the green infrastructure network. The baseline report can be viewed on the Greater Cambridge Shared Planning website. The final report will be published in autumn 2021 to support the Greater Cambridge Local Plan Preferred Options consultation. Plan making takes a long time due to the need to do it rigorously and in dialogue with our communities. As the new Greater Cambridge Local Plan nears adoption it will carry ever greater weight in planning decisions. However, it is not expected to be finally adopted until 2023.

Making policies stick - An important aspect of our influence through policies is in how we ensure that they are implemented effectively. Through the Development

Management process our planning team ensures that planning applications address matters relating to the protection and enhancement of nature, and provision of green space. They impose planning conditions to make otherwise unacceptable developments acceptable, and negotiate planning obligations, also known as section 106 agreements, to secure measures that are needed.

Tackling water quality and scarcity - We know water is an important issue to our local communities, and we have commissioned an Integrated Water Management Study to inform the new Greater Cambridge Local Plan. The interim study (published in November 2020) highlights that there is no environmental capacity for additional growth levels, being tested for the new plan, to be served by increasing abstraction from the chalk aquifer which supplies much of the water to the Cambridge area. It also shows that water quality in the surface water bodies assessed under the Water Framework Directive is at best moderate with three bodies assessed as poor. This is mainly because of abstraction, wastewater treatment (point source discharges) and agricultural diffuse pollution. The study will help us to develop a sustainable development strategy for the Local Plan and robust policies on water quality and efficiency, and we are working collaboratively with a number of bodies on this, including Water Resources East who are planning regional solutions to address these issues.

New Supplementary Planning Documents - We are developing a new Biodiversity Supplementary Planning Document to support current Local Plan policies to protect and enhance biodiversity, and to provide a framework by which mandatory biodiversity net gain can be achieved across all development within the district. We aspire to achieve 20% net gain through development while recognising we cannot require this unless and until adopted in planning policy.

Action: Project and enhance biodiversity through our statutory planning functions

Climate actions: A biodiverse Cambridge is more resilient to climate change and more, higher quality green infrastructure assists with urban cooling and

carbon capture. This will be achievable through improvements to our estate and encouraging wider engagement with these themes through our statutory planning functions. Green roofs ensure buildings are more sustainable, helping with energy efficiency and water management, as well as promoting biodiversity. Greater tree cover will mean more urban cooling. Helping to make our city peat free will ensure the conservation of key carbon sinks.

The core

The Lawton Report encourages 'bigger, better and more joined up'. The aim of this theme is to focus on our core sites, many of which are situated within the Cambridge Nature Recovery Network. Here we aim to focus on 'bigger and better' by improving biodiversity management of our core greenspaces, and wherever possible making more space for nature at these locations.

Many of these sites fall within the Cambridge Nature Recovery Network and our work there will help us make a meaningful contribution to this initiative to deliver a joined up and resilient biodiversity network. The City Council will work to achieve a measurable biodiversity net gain in these core locations to contribute to our commitment to double nature.

Local Nature Reserves, County Wildlife Sites and City Wildlife Sites

We will prepare/review and implement Management Plans for all Cambridge City Council owned Local Nature Reserves, County Wildlife Sites and City Wildlife Sites. Opportunities for biodiversity net gain are set out in the Cambridge City Council Biodiversity Audit and the Greater Cambridge Chalk Stream Project. We will ensure that resources are allocated to help achieve these goals.

In some locations, particularly the accessible Local Nature Reserves the emphasis will be on striking the right balance between recreation and biodiversity. In other locations it will be important to reassess the grazing regimes to ensure that they are compatible with ambitions to improve the floristic diversity and conditions of the

grasslands. Unfortunately, many of the commons have undergone significant, sustained pressures over a long period of time. This means that it may never be possible to regain flourishing wildflowers without more proactive interventions, including scarification and reseedling. Such interventions are sensitive as the desired approach is always to try and allow the habitat to flourish from its own seedbank. The Biodiversity Audit has highlighted what a significant positive impact improving the condition of these grasslands would have on the city's biodiversity.

Many of these core sites are situated along the River Cam within the Cambridge Nature Network Priority Area. Around these core sites are numerous other green spaces, which are managed by other organisations such as colleges. We recognise the complex ownership issues, in addition to the many other interest groups and stakeholders, associated with the River Cam in the City. However, these boundaries are not recognised by nature and biodiversity and therefore a collaborative approach is required to ensure that measures to enhance biodiversity are coherent throughout the corridor. The overarching River Cam Priority Area in the Nature Recovery Network will provide the framework for this coherent approach and Cambridge City Council will be fully supportive of developing this project. We will facilitate collaboration where we can do so, and we will work to ensure that our approach to management of our core sites is fully integrated into the Nature Recovery Network.

Action: Prepare/review and implement Management Plans for all Cambridge City Council owned Local Nature Reserves, County Wildlife Sites and City Wildlife Sites

Grazing Project

Grazing is an essential management tool for many of our core sites, and particularly the commons through the city such as Midsummer Common, Stourbridge Common, Coldham's Common as well as Sheep's Green and Coe Fen. The action of grazing animals is critical within the grasslands to create the micro-niches within which wildflowers can flourish, and to ensure that some species are not allowed to dominate. Cattle dung provides an ecosystem for a diverse range of invertebrates,

which in turn feed birds and bats. However, grazing performs other functions, not least the sustainable production of food, as well as creating a sense of place in our city. In order for grazing to effectively perform each of these roles a careful balance is required which meets the needs of biodiversity, graziers and the welfare of livestock. Our aim is to develop a grazing strategy that meets these requirements through review of grazing management plans and liaison with graziers. The aspiration would be to achieve sustainable grazing for graziers and floristic diversity across our core sites but also those of other organisations within the city such as the Colleges or conservation organisations like the Wildlife Trust or Cambridge Past Present and Future. A key element of this project would be to measure change and success for all stakeholders.

Action: Develop and implement the Cambridge Grazing Project

Veteran trees, ancient trees, and pollard willows

We will continue our programme of management of pollard willows along the River Cam and associated floodplain sites. Pollard and old willows hold considerable value for invertebrate species as well as contributing to a sense of place in our riverside environments in Cambridge. The target is to maintain a proportion of trees, and particularly pollards, as over mature veteran, and ancient trees with some allowed to collapse naturally. We will seek to enhance connectivity of this resource through the city. We will also implement our veteran tree plan for Sheep's Green, and as part of this process we will be engaging other organisations within the city for training purposes.

Action: Continue work on pollard willows around Cambridge and implement the recommendations of the 2018 Veteran and Ancient Tree Survey

Chalk streams

Together with Cambridge Water we have commissioned a report to understand the threats and opportunities for our chalk streams. These habitats are incredibly scarce

with only 200 chalk streams found mainly in the UK and northern France. They possess a unique and diverse ecology which is a result of the gin clear spring fed water filtered by the chalk aquifer and the constant temperatures though both summer and winter maintained by the spring water. These are a globally rare habitat and they occur on our doorstep. Almost all our chalk streams are degraded with the key threats being low flow pressure, channel modification and poor water quality.

The key actions to address these threats and to restore our chalk streams include managing our water resource in a more sustainable way and, where feasible, making interventions to improve the conditions of the streams. These interventions include removal of historical barriers to movement, bank reprofiling, altering flow with brash and branches, creating riffles and fast flowing water over gravels to aid fish spawning and flow variety. We will support these measures in the following ways:

- Working in partnership with key stakeholders to promote the sustainable management of our water resource. This is key to ensure that water flow and quality in the chalk streams are restored. Our Integrated Water Management Study will inform this process.
- Work in partnership to support the restoration projects proposed for the Cherry Hinton Brook, Coldham's Brook and Hobson's Brook and Conduit which lie within our core sites.

Water vole is a key species which occurs within these habitats. The chalk stream enhancement measures will ensure that habitat is provided for these species. In order to understand how the species is responding to these changes we will undertake regular monitoring. This will establish populations in established areas, and also if the species is colonising new locations.

We will also continue our collaboration with CamEO, The Cam and Ely Ouse Catchment Partnership (<http://www.cameopartnership.org/>) to improve the quality and resilience of the water environment in our area.

Action: Implement and support the enhancement measures in the Greater Cambridge Chalk Stream Project

Commons' waterways

As part of our work to enhance the riverside commons we will explore opportunities to enhance existing waterways and to reinstate waterways which have been lost or infilled over time. Target locations for such work include Jesus Ditch where there are opportunities to soften and naturalise banks to provide a greater species diversity for invertebrates and water voles. On Midsummer Common we are beginning to develop plans for reinstating former ditches and channels across the area which have been lost in the past. These, together with the formation of other wetland features will help to create biodiverse hotspots right in the heart of Cambridge. Similar opportunities are available at Stourbridge Common. Together with proposed enhancement works at Logan's Meadow and the development of Chesterton Fen these projects will allow Cambridge City Council to make a major contribution to the Cambridge Nature Network River Cam Priority Area.

Action: Deliver opportunities for the creation/reinstatement/enhancement of waterways and wetland areas on the Cambridge commons

Logan's Meadow Local Nature Reserve

We will continue our commitment to extending the statutory designation of our major enhancement scheme which is proposed at Logan's Meadow. Here we will build upon our current baseline of wet woodland, ponds, reedbeds and ditches to deliver a substantial wetland mosaic and grassland enhancement scheme. This area will be designated as an extension of the existing Local Nature Reserve.

Action: Implement the agreed enhancement plan at Logan's Meadow and extend the designated Local Nature Reserve

Promoting positive management of core sites and beyond

We will continue to work with the Wildlife Trust to provide practical advice to landowners and managers to promote the sensitive management of privately owned City Wildlife Sites and County Wildlife Sites. This advice and support will ensure that habitat conditions are improved delivering biodiversity net gain. Undertaking this work within the Nature Recovery Network will help to deliver wider goals. We will also work with partners to encourage positive management of steppingstone sites within the network between the core sites.

Action: Continue our work with the Wildlife Trust to provide advice to private landowners and managers

Biodiversity Audit

We will undertake Biodiversity Audit reviews every five years. This will ensure that we are meeting our targets for a measurable biodiversity net gain and will help to measure the success of our projects. As part of this process we will endeavour to incorporate more of our Council's estate into the audit to allow for a greater understanding of the biodiversity in our city.

Action: Undertake the Biodiversity Audit every five years to monitor change

Climate actions: Maintaining and improving the biodiversity of our core sites will help to improve climate resilience in Cambridge. New areas of green space, such as wetland features, will provide better carbon storage. Bigger, better core sites will help to ensure that there is sufficient opportunity for key species in a changing climate.

Nature in your neighbourhood

The biodiversity emergency is too big a problem to solve alone. In this theme we have developed actions which require a collaborative approach to the problem and

to help encourage nature on your doorstep. Many of the actions relate to how you interact with nature in Cambridge and we will provide the means and inspiration to help facilitate and encourage positive steps to be taken at a local level. We have developed actions to promote collaborative working in the city, drawing on the wealth of biodiversity expertise that we are fortunate to have in Cambridge. Other actions provide you with the information or resources you need to help biodiversity in your neighbourhood. We will continue our commitment to existing initiatives, such as our hedgehog and Neighbourhood Canopy projects.

Our aim is to encourage engagement with nature to ensure that it is pervasive throughout the entire city. It is vitally important that we work hard to ensure that our key sites of nature conservation are protected and managed effectively. However, we need to go beyond these islands of biodiversity and work to create greater connectivity for nature. Within this theme we are focussing on the Lawton's Report 'more joined up'. This will also help to eliminate nature deficits in some parts of Cambridge.

Parks Biodiversity Toolkit

Published in tandem with this Biodiversity Strategy is the Parks Biodiversity Toolkit. This is designed to help local groups and community engagement officers to select from a wide range of small-scale biodiversity interventions that could be implemented in the parks and open spaces across the city. As the City Council we will encourage the implementation of these measures and provide the necessary support for groups wishing to make the most for biodiversity in their area. This will help to ensure that we maximise the potential of all of our open spaces to help address the biodiversity emergency.

Action: Publish, promote, and implement the Parks Biodiversity Toolkit

Wild about Cambridge

We will work with partners to provide greater interpretation materials for our greenspaces and particularly our Local Nature Reserves. Our aim is to provide a suite of tools to help everyone understand and care for the natural world in Cambridge. We will use traditional methods such as interpretation boards but also explore new technologies to inform visitors about the biodiversity of each site. New technologies will allow us to provide greater interaction for visitors, and it will also provide an easier platform to update and to signpost users to related information.

Action: Develop and enhance the provision of interpretive materials for our Local Nature Reserves

Cambridge Sustainable Food

Working in partnership with Cambridge Sustainable Food we will help them to achieve their aims of promoting sustainable food production and minimising ecological impacts. This is to be achieved through sharing ideas and support through a vibrant network in the city. As determined in the City Council Sustainable Food Strategy we will continue to support urban agriculture and aim to secure a 'silver award' as a Sustainable Food City. We will continue our support of the CoFarm initiative situated between Coldham's Common and Barnwell East LNR.

We manage or lease to associations numerous allotment sites cross Cambridge, representing significant area of green space with the potential to host a rich array of wildlife and provide corridors and stepping stones though the City (<https://www.cambridge.gov.uk/allotment-sites>). We will continue to work with groups at these allotments and the community orchards and gardens to promote biodiversity.

Action: Continue support for Cambridge as a Sustainable Food City

Recreational pressure

The Biodiversity Audit identified that some locations through the city are suffering a reduction in condition because of recreational pressures, for example at Byron's Pool, Sheep's Green and Coldham's Common. This was particularly apparent with impacts from dog walking observed in woodland, grassland and waterways. These are lowering the condition and consequently the biodiversity value of these greenspaces. Effects are diverse but typically comprises trampling and nutrient enrichment which damage sensitive habitats. However, less obvious impacts are also fundamental, and these include regular disturbance in sensitive areas, or dogs disturbing ground nesting birds when they are off the lead. The grazing stock within the City perform a vital role in managing the vegetation in some of our more sensitive sites. We need to ensure the welfare of the livestock and avoid any disturbance that may be caused by recreational activities.

We will explore options to protect our most sensitive locations from these impacts, at the same time recognising that recreation, and contact with nature, is an equally vital part of everyday life. It may be necessary to introduce zoning, or regulations on control of dogs at certain times of year. Combined with this we will take measures to engage dog walkers with what is appropriate, and where, through signage and information campaigns.

Action: Implement recreational pressure campaign

Volunteering

There is a wealth of enthusiasm and expertise for the natural world in Cambridge and our communities play a critical role in conserving and enhancing biodiversity in the city. Our aim is to provide the opportunities for all sections of the community to work with us to conserve and enhance the biodiversity of our local greenspaces. We will continue to work with volunteers through our work with the Wildlife Trust and Local Nature Reserves volunteers. Our Streets & Open Spaces community engagement teams will work with individuals and groups throughout the city to help

promote biodiversity, particularly by encouraging the use of the Parks Biodiversity Toolkit to inspire and engage communities to enhance their open spaces. Our Streets and open Spaces volunteers will also have the opportunity to assist with new and existing campaigns such as Hedgehog highways, the Tree canopy project and litter picking events.

We already have several Friends Groups for our Local Nature Reserves, Commons and open spaces, who work hard to protect, enhance and monitor the biodiversity of their local patch. We will continue to support these groups and offer further opportunities to help revise management plans, deliver new projects plan and monitor the results.

We have many annual student requests to undertake biodiversity based research on our sites, subject to health and safety requirements, these are welcomed and we request that all relevant findings are shared with the Cambridgeshire & Peterborough Environmental Records Centre as part of the agreement of use.

Action: Continue to engage with volunteers and groups around the City in practical actions to protect, enhance and monitor biodiversity

Collaboration for conservation

Cambridge is home to a huge number of organisations, societies and trusts all with the same aim - nature conservation. Working collaboratively with these partners we can pool skills, knowledge and resources to facilitate a better understanding of our wildlife and develop ways to protect it and measure change. This includes organisations such as Cambridge University, Cambridge Conservation Initiative and Cambridge Natural History Society. Cambridge City Council will devote resources to help facilitate and influence initiatives across the city to help deliver positive biodiversity interventions. We are currently working with On the Verge Cambridge and Keep Britain Tidy on creating pollinator corridors on City land and Cambridge Water, The Wildlife Trust and The Wild Trout Trust on Chalk Stream enhancements.

Action: Maximise opportunities for conservation collaboration across the City

Annual Biodiversity Campaigns

Cambridge City Council will run annual biodiversity campaigns through the city to focus on particular habitats, species or aspects of biodiversity. This will include social media and events to promote our related activities and articles in our Cambridge Matters and Open-Door magazines. Some examples of forthcoming campaigns include:

- Water for Wildlife 2021. Working with partners throughout the city to improve the quality of our waterways and to create new wetland habitats such as ponds.
- Green roofs
- Swifts, House Martins and House Sparrow
- Deadwood is good
- Fruit trees and community orchards

Action: Implement annual campaigns to promote biodiversity across the City

Keep Cambridge Buzzing

We will continue our work with Cambridgeshire County Council, On the Verge Cambridge and Keep Britain Tidy to encourage the growth of wildflowers across the verges, parks, and roundabouts in Cambridge. This will be achieved through the combination of habitat creation via seeding, and sensitive cut and collect regimes that are timed to maximise the opportunities for flowering plants and at the same time remove too many nutrients that encourage the less desirable vigorous grass species. Our approach is driven by the Plantlife Good Verge Guide which promotes the use of cut and collect machinery and sensitive timings of cuts through the year. We are committed to 'no mow May' although there are some situations where regular mowing activities are required, for example with critical sight lines on verges, around play areas and within designated amenity spaces.

Action: Continue our work on the Keep Cambridge Buzzing project

Pesticide use reduction plans

We have ceased the routine use of pesticides, including herbicides, in our City Council owned parks and green spaces (<https://www.cambridge.gov.uk/restricted-use-of-herbicides>). We will only consider the use of specific herbicides in these areas, when we are unable to use viable, non-chemical alternatives. For example, we might need to do this to control the invasive Japanese Knotweed.

We are committed to ceasing the routine use of pesticides across the city's wider public realm estate at the earliest feasible opportunity and will engage with the County Council and Pesticide Action Network (PAN) to achieve this, including on hard surfaced public realm areas of our commercial and housing estate; and the County Council's public highway facilities, including adopted roads, streets and cycle/ footways.

We are currently working with the County Council to achieve Plantlife managing grassland road verges best practice standards for biodiversity, in line with our Biodiversity Emergency Motion. This work includes the following ongoing commitments:

- Undertake a review of street furniture and public realm to design out areas that require herbicide treatment.
- Ensure that any new environmental improvement schemes and adopted open spaces do not require herbicide maintenance.
- Adopt the Plantlife guidance on changes to verge maintenance.
- Reduce the need for the use of herbicides by adopting other viable alternatives and integrated weed control management system, including mechanical and non-chemical treatments.
- Make modifications and changes to maintenance regimes to enable achievement of the Plant life guidance.

- Develop best practice and offer advice and maintenance services to others.

Part of this work also involves raising public awareness of ecologically sensitive weed management practices and that ‘weeds’ are wildflowers that support wider biodiversity.

Key targets are:

- To end the use of pesticides in the routine maintenance of the City and County Council's public realm estate in Cambridge
- Bring in other key stakeholders to follow suit in ending the use of pesticides on land under their control.
- Encourage the public to stop the use of pesticides in gardens, allotments and other areas.
- Lead and support making Cambridge a Pesticide-Free City

Action: Continue with action to reduce the use of herbicides in the city's public realm, phasing out its routine use as soon as feasibly possible, and engaging with other land managers and residents to follow suit.

Hedges for King's Hedges.

We will implement a project to recreate the historical network of hedgerows throughout King's Hedges. Our aim is to build upon the currently depleted and fragmented hedgerow network that gave this part of Cambridge its name. We will create new hedgerows along roadsides and other estate areas to provide habitat and connectivity for a range of species. As part of this work we will also incorporate other hedgerow features such as banks and ditches that provide further structural diversity to benefit biodiversity.

Action: Develop and implement the Hedges for King's Hedges project

Wild About Art

We will build on previous successes which have combined both art and biodiversity. Previous projects include the Chesterton Swift Tower or the 'Bird sculptures' at Mill Road Cemetery. These projects aim to celebrate the biodiversity of Cambridge through artistic endeavours, which at the same time provide habitats in themselves.

Action: Continue to work with artists around the city to facilitate understanding and interest in our biodiversity

North-west Cambridge great crested newt project

We will undertake an assessment of the great crested newt populations in the north-west of Cambridge to help us understand and subsequently protect and enhance the population of this charismatic and scarce amphibian. The assessment will help us understand distribution, population size and availability of habitat. We will then work with partners to provide advice to landowners and managers.

We will continue our work with Cambridge Amphibian and Reptile Group and Natural England to deliver more ponds in the area as part of the Natural England District Licencing process, including exciting proposals for new ponds, meadows and scrub on land adjacent to our Bar Hill Crematorium site. We will also run a campaign to encourage and provide advice to landowners and managers in the area, such as the colleges, to create new ponds and terrestrial habitats.

Action: Develop and implement the North-west Cambridge Great Crested Newt Project

Bioblitz

We will continue to run and assist with Bioblitz campaigns across our Local Nature Reserves and other sites. A Bioblitz enlists the help of species experts from all groups to spend one day at each location to collect as many records as possible,

aided by volunteers and residents. These enable a greater understanding of the species biodiversity of our reserves and also help to develop an interest and understanding in the wider public about the biodiversity on their doorstep.

Action: Continue our work with Bioblitz events across the City

Biodiversity data

In order to understand the biodiversity of our city it is important that we have accurate, comprehensive, and up to date information available. This will ensure that we can make informed decisions on the implications of land management, development, and projects. We will continue our support for Cambridge and Peterborough Environmental Records Centre which provides a repository for biodiversity data in Cambridge. This will include financial support through our Service Level Agreement and guidance through the steering group. We will ensure that all biodiversity data we gather as part of our projects and audits are submitted to the records centre.

Action: Continue our support of Cambridge and Peterborough Environmental Records Centre

Climate actions: More connectivity for biodiversity throughout Cambridge will help to ensure that species are given more opportunity to cope with a changing climate and environment. Encouraging others to take action for biodiversity will contribute to a reduction in climate impacts too, for example through sustainable food production or reducing the use of chemical treatments in our environment.

List of actions

Biodiversity mainstreaming

- Develop biodiversity checklist
- Achieve 20% biodiversity net gain on Cambridge City Council projects
- Implement Environmental Management System
- Implement the Cambridge Green Roof Project
- Implement the Cambridge Swift Project
- Promote biodiversity through implementation of the Citywide Tree Strategy
- To make Cambridge City Council peat free, and to encourage others to do so
- Project and enhance biodiversity through our statutory planning functions

The core

- Prepare/review and implement Management Plans for all Cambridge City Council owned Local Nature Reserves, County Wildlife Sites and City Wildlife Sites
- Develop and implement the Cambridge Grazing Project
- Continue work on pollard willows around Cambridge and implement the recommendations of the 2018 Veteran and Ancient Tree Survey
- Implement and support the enhancement measures in the Greater Cambridge Chalk Stream Project
- Deliver opportunities for the creation/reinstatement of waterways and wetland areas on the Cambridge Commons
- Implement the agreed enhancement plan at Logan's Meadow and designate as a Local Wildlife Site
- Continue our work with the Wildlife Trust to provide advice to private landowners and managers
- Undertake the Biodiversity Audit every five years to monitor change

Nature in your neighbourhood

- Publish, promote, and implement the Parks Biodiversity Toolkit
- Develop and enhance the provision of interpretive materials for our Local Nature Reserves
- Continue support for Cambridge as a Sustainable Food City
- Implement recreational pressure campaign
- Continue to engage with volunteers and groups around the City in practical actions to protect, enhance and monitor biodiversity
- Maximise opportunities for conservation collaboration across the City
- Implement annual campaigns to promote biodiversity across the City
- Continue our work on the Keep Cambridge Buzzing project
- Continue with action to reduce the use of herbicides in the city's public realm, phasing out its routine use as soon as feasibly possible, and engaging with other land managers and residents to follow suit.
- Develop and implement the Hedges for King's Hedges project
- Continue to work with artists around the city to facilitate understanding and interest in our biodiversity
- Develop and implement the North-west Cambridge Great Crested Newt Project
- Continue our work with Bioblitz events across the City
- Continue our support of Cambridge and Peterborough Environmental Records Centre

11. References

Crosher, I., Gold, S., Heaver, M., Heydon, M., Moore, L., Panks, S., Scott, S., Stone, D. & White, N. (2019a). *The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement* (Beta version, July 2019). Natural England

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12. Appendix

Appendix 1

National Legislation

National Planning Policy Framework (NPPF) 2012 (last updated February 2019)

The revised NPPF was updated on 19 February 2019 setting out the Government's planning policies for England and the process by which these should be applied. The policies within the NPPF are a material consideration in the planning process. The key principle of the NPPF is a presumption in favour of sustainable development, with sustainable development defined as a balance between economic, social and environmental needs.

Policies 170 to 183 of the NPPF address conserving and enhancing the natural environment, stating that the planning system should:

- Contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes;
- Recognise the wider benefits of ecosystem services; and
- Minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

Furthermore there is a focus on re-use of existing brownfield sites or sites of low environmental value as a priority, and discouraging development in National Parks, Sites of Specific Scientific Interest, the Broads or Areas of Outstanding Natural Beauty other than in exceptional circumstances.

Where possible, planning policies should also "promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and

recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity”.

Environment Bill 2019 - 2021

The Environment Bill, currently delayed but intended to be passed through Parliament in 2021, sets out key legislation after the UK's exit from the European Union. Promising to contain the largest changes to green regulations in decades, the bill includes the establishment of an Office for Environmental Protection, targets on air pollution, water quality and biodiversity, and the enshrinement of the 25 Year Environment Plan in law.

The Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) provides legal protection to natives UK species and enhances the protection of SSSIs. In addition to affording protection to some species, The Act also names species which are considered invasive and require control. Section 14 of the Act prohibits the introduction into the wild of any animal of a kind which is not ordinarily resident in, and is not a regular visitor to, Great Britain in a wild state, or any species of animal or plant listed in Schedule 9 to the Act. In the main, Schedule 9 lists non-native species that are already established in the wild, but which continue to pose a conservation threat to native biodiversity and habitats, such that further releases should be regulated.

The Conservation of Habitats and Species (UK Exit) Regulations 2019

The Conservation of Habitats and Species (UK Exit) Regulations 2019 is secondary legislation which puts into domestic law the EU Habitats Directive (Council Directive 92/43/EEC) and certain elements of the EU Wild Birds Directive (Directive 2009/147/EC). These Directives contain rules for the protection of habitats and species, the proper management of habitats and preventing exploitation of species. The Regulations ensure that the UK will continue to meet international commitments under the Bern Convention and the Bonn convention.

Schedule 2 offers protection to a number of notable species such as great crested newts, hazel dormouse, otter, and all bat species. Schedule 2 protects these species from deliberate capture, death, or injury as well as disturbance both to themselves and their breeding sites or resting places.

Natural Environment and Rural Communities (NERC) Act 2006

Many of the species covered by The Conservation of Habitats and Species Regulations 2017, along with a host of others not afforded additional protection, are listed on Section 41 of the NERC Act 2006.

Section 41 (S41) of the Natural Environment and Rural Communities (NERC Act 2006) requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The list (including 56 habitats and 943 species) has been drawn up in consultation with Natural England and draws upon the UK Biodiversity Action Plan (BAP) List of Priority Species and Habitats.

The S41 list should be used to guide decision-makers such as local and regional authorities to have regard to the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006. The duty applies to all local authorities and extends beyond just conserving what is already there, to carrying out, supporting and requiring actions that may also restore or enhance biodiversity.

The Countryside and Rights of Way (CRoW) Act 2000

The CRoW Act (2000), as well as implementing the “right to roam”, also contains changes for nature conservation updating aspects of the Wildlife and Countryside Act 1981 such as strengthening punishment for killing, injuring or disturbing protected species, and extending the regulations to cover reckless behaviour as well as intentional acts against protected species.

Section 74 of the act contains a list of habitats and species of Principal Importance for the conservation of biodiversity in England, which falls in accordance with the 1992 UN Convention on Biological Diversity.

Policy documents (national, regional and local)

South Cambridgeshire Local Plan (2018) and Cambridge Local Plan (2018) - currently being updated to the Greater Cambridge Local Plan

South Cambridgeshire District Council adopted their Local Plan in 2018, with the overall environmental objectives of: “contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, prudent use of natural resources, minimising waste and pollution, and mitigating and adapting to climate change including moving to a low carbon economy”.

Key policies include:

Policy NH/4, which prevents developments from occurring that result in the loss, deterioration or fragmentation of irreplaceable habitats, and also outlines that new developments must aim to maintain, enhance, restore or add to biodiversity;

Policy NH/5, which sets out protection for sites of biodiversity or geological importance; and

Policy NH/6, which encourages proposals that reinforce, link or create new green infrastructure in line with the Cambridgeshire Green Infrastructure Strategy (2011).

Cambridge City Council also adopted their Local Plan in 2018, with a small selection of key policies including:

Policy 4: Green belt - New development in the Green Belt will not be approved except in very special circumstances, in line with Green Belt policy in the National Planning Policy Framework;

Policy 7: River Cam - development proposals that are situated along the River Cam should where possible enhance the natural resources of the River and provide opportunities for renaturalisation of the river; and Policy 31 f: Any flat roofs should be a green or brown roof, as part of a key measure in Cambridge's climate change adaptation policy.

Cambridge City Council and South Cambridgeshire District Council are preparing a Greater Cambridge Local Plan, which will set out plans for infrastructure, new homes and economic growth in the region over the next 20 years to 2041.

Cambridgeshire & Peterborough Biodiversity Action Plan

UK Biodiversity Action plans were written following the signing of the Convention on Biological Diversity at the Earth Summit 1992. These plans have been periodically reviewed and are now known as Priority Habitats and Species. Cambridgeshire and Peterborough still have local Habitat Action Plans, but these are supplemented by a local list of Priority Habitats and Species. These lists ensure that practical conservation projects can be targeted towards these species including in development proposals and site management plans. Such species include: barbastelle bat, common lizard, eel, house sparrow and white-letter hairstreak.

UK Post-2010 Biodiversity Framework

The DEFRA/JNCC UK Post-2010 Biodiversity Framework, published in 2012, outlines at a UK-wide level ways to achieve the "Aichi Targets" and the EU Biodiversity Strategy produced in 2011. Overall, 23 areas were identified that would benefit from a targeted UK focus, and these formed part of an implementation plan with defined milestones for 2013 - 2015. The revised plan in 2018 was simplified to focus on high-priority activities.

Biodiversity 2020: A strategy for England's wildlife and ecosystem services

DEFRA produced the Biodiversity 2020: A strategy for England's wildlife and ecosystem services with the strategy mission defined to: "halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people". The first two action areas include developing an integrated landscape-scale approach to conservation on land and at sea, and to "put people at the heart of biodiversity policy". The actions themselves are supported by numerous grants, campaigns and competitions.

Reviews, plans and policy drivers (national, regional and local)

Greater Cambridge Green Infrastructure Opportunity Mapping 2020/21

The Green Infrastructure (GI) assessments undertaken as part of the local plan development have identified numerous opportunities to ensure natural networks across Greater Cambridge are maintained and enhanced as part of the local plan. The GI Opportunity Mapping project performed by LUC produced an evidence base on the existing quality of GI networks within Greater Cambridge and have been successful in identifying opportunities to enhance and expand the network. Underlying these opportunities are seven GI themes with associated maps. The final report will be published in autumn 2021 to support the Greater Cambridge Local Plan Preferred Options consultation.

Greater Cambridge chalk streams project report

This report, published in late 2020, comprises an audit of chalk streams in the upper Cam catchment. This audit provides an overview of issues and opportunities affecting each watercourse, some of which are organised into projects and ambitions. Some overarching results included a paucity of chalk streams in "good" condition, primarily due to low flow pressures from over abstraction, channel modifications and poor water quality. Key opportunities to improve the watercourses include providing in-stream woody habitats, gravel placement and bank re-profiling.

CCC/MKA Biodiversity Audit

The Biodiversity Audit, released in conjunction with this Biodiversity Strategy, is a report calculating a baseline estimate of biodiversity across several statutorily and non-statutorily designated sites owned by Cambridge City Council. Habitat and condition maps provide the data on the existing value of sites, with opportunities for enhancement and alterations to management regimes also provided. Sites were assessed using the Defra Biodiversity Metric 2.0 (Crosher et al., 2019b) with the intention of providing measurable biodiversity gain in the future.

Natural England Nature Networks

Natural England have published a range of resources regarding Nature Networks including an “Evidence Handbook” and a “Summary for Practitioners”. These documents outline the planning and creation of nature networks, promoting the concept of conservationists working with dynamic natural processes at a landscape scale and the role of nature network planning in delivering climate-resilient nature-based solutions. The Evidence Handbook provides priority actions which range from improving core wildlife sites to creating corridors, whereas the Summary for Practitioners, amongst other information, provides models and tools to support the decision-making process when creating Nature Networks.

Making Space for Nature: A review of England’s Wildlife Sites and Ecological Network (The Lawton Report, 2010)

The Lawton Report (2010) is an independent review of wildlife sites across England, with the key aim of assessing whether these sites are capable of responding and adapting to climate change. Professor Lawton reached this conclusion: “England’s collection of wildlife sites are generally too small and too isolated, leading to declines in many of England’s characteristic species. With climate change, the situation is likely to get worse... We need more space for nature”. The report outlines 24 recommendations to improve the situation, with key themes of “more, bigger, better and joined”.

25 Year Environment Plan 2018

The 25 Year Environment Plan published by DEFRA outlines long term government actions that prioritise environmental health in agriculture, fishing, land use and other areas. One of the six key areas identified for further action include “Recovering nature and enhancing the beauty of landscapes”, under which the development of a Nature Recovery Network (NRN) and the opportunity to reintroduce native species are outlined. Through the NRN, the goal is to provide half a million hectares of additional wildlife habitat to provide linkages and promote connectivity between existing protected areas. Ensuring environmental net gain in housing and infrastructure developments is also discussed as a key method of achieving economic growth whilst providing measurable improvements for the environment.

The Dasgupta Review 2021

The Dasgupta Review was prepared by Professor Sir Partha Dasgupta and released in February 2021. The review’s critical message is that nature can no longer be ignored within economic decisions, and that human demands vastly outpace the capacity of the natural environment to provide the “goods and services” required. In direct relation to ecology, the review discusses the importance of biodiversity in increasing the stability of ecosystem functioning, and that the loss of biodiversity reduces the productivity of communities and their ability to produce biomass. The review also outlines a fundamental flaw in Gross Domestic Product (GDP), highlighting its lack of consideration of the depreciation of natural capital, and the economic costs of these losses.