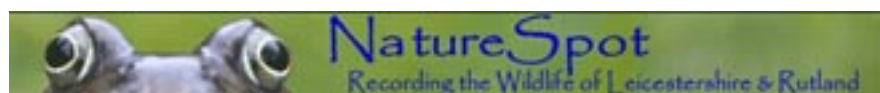




Leicestershire & Rutland
Mammal Group



Leicestershire
& Rutland
Wildlife Trust



Leicester's Biodiversity Action Plan 2021 – 2031

Part 2

HABITAT AND SPECIES ACTION PLANS



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Introduction



Leicester's Biodiversity Action Plan

1. Introduction to Plans

1.1 THE VISION

Create a city rich in biodiversity where nature is able to disperse across well-connected, diverse and high-quality habitats capable of supporting characteristic species and safe-guarding them from further decline with the support of people fully engaged in helping species and conserve areas across Leicester.

This set of Habitat and Species Action Plans (HAPs and SAPs) have been agreed in consultation and discussion with stakeholders and partners involved in nature conservation in the city. The Plans are set out for a 5-year programme and will be reviewed against what has been achieved during that time and to enable agreement on future actions with partners.

Part 2 of the Plan should be cross-referenced with Part 1, but it is worth re-emphasising that whilst Leicester is a biodiverse city located ecologically in the middle of the country and well-placed for ecological restoration, it is also mindful of the continuing decline of many habitats and species of conservation (and human) importance. Demands for species to exist (and provide benefits to humans) within the city are high and the required ecological enhancements to ensure their continuation (and the continuation of the benefits given to humans) requires space for breeding, nesting, feeding and growing.

The principles set out in the 25-year Environment Plan are:

Thriving plants and animals – to be achieved by:

- Restoration to favourable status of 75% of protected sites
- Creation and restoration of wildlife-rich habitats
- Pro-active species recovery of threatened plants, animals and fungi
- Increase woodland cover

Using resources from nature more sustainably and efficiently

- Introduce tools and guidance that support biodiversity net gain approaches
- Review standards for Green Infrastructure and include wider natural capital benefits e.g. flood protection, water and air quality) to compliment biodiversity enhancements
- Support community forests through restoration and enhancement of existing woodland and urban tree planting schemes, appointing Tree Champions

Enhanced beauty, heritage and engagement with the natural environment

- Create a Nature Recovery Network to include wildflower-rich meadows and woodland
- Provide better access for people alongside improved habitat for pollinating insects
- Connect people with the environment to improve health and well-being

These over-arching principles have been taken into consideration in helping to formulate the actions and targets set out in the Habitat and Species Action Plans.

Each Plan is divided into a number of sections that provide an introduction to the habitat type or species, together with why they are threatened or in decline and their current status and distribution in Leicester. The Plans each contain specific actions on Management/Advice, Research/Monitoring, and Engagement to help achieve the aims and objectives of the BAP and contribute to the policies set out in the Environment Plan.

The Plans should not be read in isolation, for example the Habitat Plan for Watercourses (Rivers and Brooks) should also reference Species Plans for Amphibians and Reptiles, Water vole and Otter. Each plan is cross-referenced where this applies. Planning, Policy and Legislation is applicable to all Actions Plans and is referred to separately in Section 5 of Part 1 with specific opportunities and/or legislation referenced where appropriate. Similarly, Biosecurity and Invasive Non-native Species (INNS) have a separate Action Plan as these species of plants and animals are likely to impact on the conservation status of all priority habitats and species.

1.2 LEICESTER BIODIVERSITY ACTION PLAN AIMS

To conserve and enhance a range of habitats and associated species that characterise the city of Leicester, contributing to the regional and national biodiversity whilst providing an attractive and sustainable natural environment in which to live, work, learn and enjoy.

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery
- Create nature recovery networks by identifying, creating and improving green corridors and by creating and enhancing ecological connectivity
- Improve ecological resilience by promoting good design to optimise biodiversity and achieve multiple benefits in projects and planning
- Promote biodiversity conservation as an essential element of sustainable development and adaptation to climate
- Raise awareness of biodiversity and nature conservation and its importance and encourage active participation at all levels

1.3 LEICESTER BIODIVERSITY ACTION PLAN OBJECTIVES

The council will work in partnership with others wherever possible to achieve the following:

- Oversee the production and implementation of the Leicester Biodiversity Action Plan
- Strengthen and improve the duty of the local authority to make sure it carries out its function to conserve and enhance biodiversity
- Identify and map the current green network of priority sites and identify opportunities for biodiversity enhancement that will contribute to an overall Nature Recovery Network
- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Seek out ways to commit landowners to a binding agreement to secure the long-term sustainability where wildlife-rich sites have been created or restored
- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level
- Champion and promote Leicester's biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities



Biosecurity and Invasive Non-native species



Leicester's
**Biodiversity
Action Plan**

2. Biosecurity and Invasive Non-native species

Invasive non-native species (INNS) are defined as non-native species (i.e. those species that do not occur naturally within the UK before people first arrived) and are considered to be one of the largest threats to biodiversity at a global scale.

They include species that have been transported outside of their natural range and that can significantly damage our environment, services, economy, health and life-style. They threaten the survival of rare native plants and animals as well as damaging sensitive ecosystems and habitats.

Biosecurity literally means ‘safe life’ and refers to taking action to minimise the risk or prevent the movement or transmission of invasive non-native species and diseases.

2.1 INTRODUCTION

This generic plan focuses solely on “invasive” non-native species and not simply non-natives. It covers both terrestrial and freshwater species found in Leicester/Leicestershire or deemed likely to colonise the city and/or county.

Biosecurity issues are considered in relation to the potential introduction and spread of a priority list of INNS, diseases and parasites.

The Convention on Biological Diversity considers the combined effect of climate change and invasive species to be the main driver of biodiversity loss across the planet. INNS are the greatest threat to biodiversity being capable of colonising a wide range of habitats and excluding native flora and fauna. In the last 400 years INNS have contributed to 40% of animal extinctions.

Examples of freshwater INNS found in Leicester and their ability to adapt, survive and disperse from one site to another are:

- Killer shrimp (*Dikerogammarus villosus*) survives for 48 hours in dry conditions and 15 days in damp conditions;
- Floating pennywort (*Hydrocotyle ranunculoides*) can reproduce from a tiny fragment and grow up to 20cm/day;
- Japanese knotweed (*Fallopia japonica*) can reproduce and spread from a piece of root/rhizome only 0.6 grams;
- A single plant of Himalayan balsam (*Impatiens glandulifera*) produces up to 800 seeds;
- The crayfish plague (*Aphanomyces astaci*) is a fungus which can survive between 6-22 days without a host under damp conditions.

Costs of mitigation, control and eradication of INNS and diseases are high. There are currently hundreds of INNS established in the UK with new non-native species arriving each year and the issue is known to be intensifying. The threat of INNS on freshwater and terrestrial habitats is exacerbated by climate change which improves the establishment conditions, pollution and habitat disturbance with a correspondingly greater socio-economic, health and ecological cost.

The need to have a co-ordinated and pro-active approach in tackling INNS at a local level with BAP partners and other environmental organisations across the Midlands is a necessity. This plan sets out to establish the need to prevent the introduction of INNS before they become established where ever possible and how to deal with those already present.

2.2 GLOBAL AND NATIONAL ACTION

The issues associated with INNS were re-addressed and prioritised at The Convention on Biological Diversity (2010). Aichi target No.9 specifically addressed this issue (Note, the term alien is used interchangeably with invasive nonnative).

Target 9

By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

Defra first reviewed their policy on non-native species in 2001 and published a report in 2003. This was further updated in 2008 with the publication of “The Invasive Non-Native Species Framework Strategy” which has been subsequently reviewed and updated in 2015 “The Great Britain Invasive Non-native Species Strategy” which is the current national advice on the programme of work being undertaken centrally and practical measures on how to tackle INNS.

The government has also specifically referred to biosecurity in their 25-year Environment Plan with a priority which states:

We will enhance biosecurity to protect our wildlife and livestock, and boost the resilience of plants and trees. We will do this by:

- managing and reducing the impact of existing plant and animal diseases; lowering the risk of new ones and tackling invasive non-native species
- reaching the detailed goals to be set out in the Tree Health Resilience Plan of 2018
- ensuring strong biosecurity protection at our borders, drawing on the opportunities leaving the EU provides
- working with industry to reduce the impact of endemic disease

The EU Invasive Alien Species (IAS) Regulation came into force in 2015. It balances prevention, early warning and rapid response, and long-term control measures, with an emphasis on prevention as the most cost effective and efficient approach. This regulation added considerably to pre-existing domestic legislation, and was considered essential by environmentalists to combat the threat of INNS. Defra converted this regulation into domestic law (in preparation for the UK leaving the EU) via a Statutory Instrument (‘Draft Invasive Non-native Species (Amendment etc.) (EU Exit) Regulations 2019’) and it became law in January 2019.

2.3 CURRENT STATUS

The current status of individual INNS in Leicester is not well understood as these species are generally only recorded at a site level for management purposes or when surveys are undertaken for development of a particular site and establish a method of eradication where necessary.

Some records are available locally from the Leicestershire & Rutland Environmental Resource Centre (LRERC) and National Biodiversity Network (NBN) but these are likely to be under-recorded and considerably under-estimate species in terms of frequency and distribution.

Those species most relevant to Leicester and Leicestershire and which are likely to have the most impacts are listed below.



Freshwater INNS

Common Name	Scientific Name
Fauna	
American mink	<i>Neovison vison</i>
Bloody-red mysid	<i>Hemimysis anomala</i>
Killer shrimp	<i>Dikerrogammarus vilosus</i>
Red-eared terrapin	<i>Trachemys scripta</i>
Ruddy duck	<i>Oxyura jamaicensis</i>
Signal crayfish	<i>Pacifastacus leniusculus</i>
Zebra mussel	<i>Dreissena polymorpha</i>

Flora	
Canadian pondweed	<i>Elodea canadensis</i>
Floating pennywort	<i>Hydrocotyle ranunculoides</i>
New Zealand Pigmyweed	<i>Crassula helmsii</i>
Nuttall's waterweed	<i>Elodea nuttallii</i>
Parrot's feather	<i>Myriophyllum aquaticum</i>
Water fern	<i>Azolla filiculoides</i>
Water hyacinth	<i>Eichhornia crassipes</i>

Terrestrial INNS

Common Name	Scientific Name
Fauna	
Asian hornet	<i>Vespa velutina nigrithorax</i>
Canada goose	<i>Branta canadensis</i>
Grey squirrel	<i>Sciurus carolinensis</i>
Muntjac deer	<i>Muntiacus reevesii</i>

Flora	
Cotoneaster	<i>Cotoneaster</i>
Giant hogweed	<i>Heracleum mantegazzianum</i>
Indian balsam	<i>Impatiens glandulifera</i>
Japanese knotweed	<i>Fallopia japonica</i>

2.4 THREATS

The main impacts on biodiversity are as follows:

Habitat Quality

- Reduced habitat quality and diversity created by establishment of monocultures of the INNS that out-shade and out-compete native and less vigorous plants e.g. Japanese knotweed, Indian balsam
- Oxygen starvation of invertebrates and fish in watercourses where invasive plants shade-out and use up oxygen e.g. Floating pennywort;

Disease

- Spread of disease through pathogens e.g. loss of White-clawed crayfish due to spread of crayfish plague by American signal crayfish;

Completion

- Loss of native species due to completion for food, habitat etc e.g. Harlequin ladybird

Predation

- Direct population reduction due to killing target species e.g. American mink impact on Water vole populations

2.5 BIOSECURITY AND INNS ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Habitat Creation/Species Recovery			
Enhance biodiversity value through habitat restoration and species recovery where impacted by INNS	Ensure appropriate measures taken to eradicate INNS from development sites through mitigation plans in accordance with legislation and	On-going	Planning, EA, C&RT, STW
	Use S215 T&CP Act to enforce effective control of land to control spread of invasive species if necessary	On-going	Planning
	Minimise use of invasive and non-native species in terrestrial and freshwater landscape schemes/projects	2025	Planning, EA, C&RT, STW

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
Management/Advice			
Produce Plan on Biosecurity and INNS	Use advice from central government, statutory authorities and BAP partners to produce plan to advise locally and take proactive action on eradication	2021	Flood, Nat Con
Update Management Plans and key strategies to include sections on INNS to inform on appropriate actions and management where present	Overall Plan to advise on inclusion. Service area to be agreed to oversee this task and ensure implementation as updated plans come forward – reference in Climate Change Strategy	On-going	Sustainability
Consider active control of INNS fauna if required to safeguard native species	Agreement to be sought from BAP partners and methods prior to any action being carried out	On-going	Nat Con

- Monitor and review biodiversity trends in Leicester and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Collate records on INNS in Leicester and evaluate	Collate data from all partners associated with freshwater sites (LRERC, EA, STW, C&RT, Flood, Parks –	2021	Flood
	Collate data from partners on terrestrial sites – i.e. Japanese knotweed (T&W, Parks, Nat Con), Mink	2021/2022	T&W
	Identify and prioritise locations where control of species is required	2023	Nat Con, Flood, T&W, Parks
Monitor and evaluate spread of INNS and impacts of control mechanisms	Monitor extent and spread of invasive freshwater plants and animals	On-going	EA

- Champion and promote Leicester’s biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Engagement			
Promote positive management that will enhance biodiversity value and control INNS	Promote good practice and case studies on LCC and partner websites; promote existing information on INNS and management and update where required	2022-2025	EA, Parks, Nat Con
	Promote regularly with national/local campaigns and promote through	On-going	EA, Parks, Nat Con
Organise events with partners to target “hotspots” where INNS present	Organise 2 x events annually with BAP partners aimed at eradication of INNS on part of water course or ponds (review subject to Covid measures)	2022 onwards	EA, Parks
	Organise 2 Green Lifeboat sessions per year with partners and volunteers aimed at eradication of INNS on watercourses (review subject ot Covid measures)	On-going from 2022	Parks, EA



Habitat Action Plans



Leicester’s
Biodiversity
Action Plan

3. Habitat Action Plans

The plans are divided into the main habitat groups found in Leicester considered Priority and/or Protected Habitats. An Urban category is included as these sites are likely to support a range of species associated with the mosaic of conditions at each site. Generally the categories are:

- Trees - Woodland, Hedgerows and Mature/Veteran trees
- Water - Rivers and brooks; Ponds, canals and lakes
- Grassland – neutral and floodplain grassland meadows
- Urban – Allotments, Urban Parks, Roadside verges

The list of urban habitats is not exhaustive and sites such as cemeteries and churchyards, gardens and school grounds as well as post-industrial brownfield sites are all likely to support biodiversity and in some case rare species of flora and fauna. Whilst open to review, these habitat types are well documented in other Plans such as the Green Infrastructure Strategy, Pollinator Strategy and a broad range of publications by conservation organisations.

Many of the objectives and actions set out within the Habitat and Species Action Plans will also be relevant for these types of sites. So, where school grounds contain woodlands or ponds it will be possible to refer to those Plans for guidance. Likewise some of the larger cemeteries and churchyards can refer to the neutral grassland and mature tree plans for information and actions. Those considered of high biodiversity value are already designated as Local Nature Reserves (LNRs) or Local Wildlife Sites (LWS) with their own specific management plans to optimise their biodiversity value and contribute to the Nature Recovery Network.

Naturally vegetated areas such as scrub which may be common and widespread within an urban context are not identified as priority habitats or within HAPs, but should nevertheless not go unrecognised. Whilst limiting opportunities for anti-social behaviour and keeping sites safe with open with clear routes, sites that contain areas of scrub and tall herbs are especially important for supporting species such as pollinating insects, nesting birds, small mammals and reptiles. Across the city, these sites occur frequently and provide a mechanism of dispersal that fits into the wider green network. They should be considered in relation to the species and the significant biodiversity they support in a local context. Even small or low distinctive habitat patches may be important if they are able to be part of a wider Nature Recovery Network or are in a desirable location that will remain undisturbed.

Allotments



1.1 HABITAT DEFINITION AND CURRENT STATUS

Allotment means land being allotted to an individual under an enclosure award and is defined as a portion of a field assigned to a cottager to labour for themselves, or a piece of ground let out for spare time cultivation under a public scheme.

Some urban allotments originated from the traditions of the Pleasure Garden or Guinea Garden – to grow things for pleasure and beauty such as flower gardens, whilst others were set aside to grow fruit and vegetables for the urban poor.

Allotments are widespread throughout Leicester and some cover relatively large areas such as Queens Road, RowleyFields and Redhill allotments. Currently there are 43 allotment sites across Leicester offering 3200 cultivated plots.

33 city allotments are managed by local allotment societies and the remainder are managed by the City Council and leased directly to users.

1.2 CHARACTERISTIC SPECIES

Allotments have been found to have approximately 30% higher species diversity than urban parks as a result of the range of habitats found within them. These include hedgerows, ditches, grassy banks, compost heaps and ponds. Seed and fruit sources of tended plots and scrubby cover of un-tended plots help to complete the diversity.

Species associated with this environment include invertebrates such as bumblebees, butterflies and other pollinating insects. Birds such as sparrows, thrushes, finches, tits and robins nest in the hedgerows and scrub. Foxes and badgers will build dens/setts under huts and sheds whilst mice and field voles will nest in undisturbed margins. Ponds and ditches provide breeding grounds for frogs, toads and newts; and field margins and brick/wood piles create ideal over-wintering habitat.

Associated Habitat Action Plans

Grassland
Woodland

Associated Species Action Plans

Insects/Pollinators
Birds

1.3 THREATS

Main factors affecting allotments in Leicester are:

- Previous de-commissioning of allotments that are largely un-managed and identified for potential development.
- Use of pesticides and inorganic fertilisers affecting plants and reducing invertebrate and amphibian populations.
- Lease and tenancy agreements may impose certain restrictions on use, cultivation, crop type and structures erected;
- Planting of non-native plants can inhibit the development of allotments as a resource for species conservation
- Over-management and disturbance of plots that decrease the value to wildlife.
- Management of boundaries and communal areas;
- Fluctuating demand – over-subscribed in some areas and under-subscribed in others

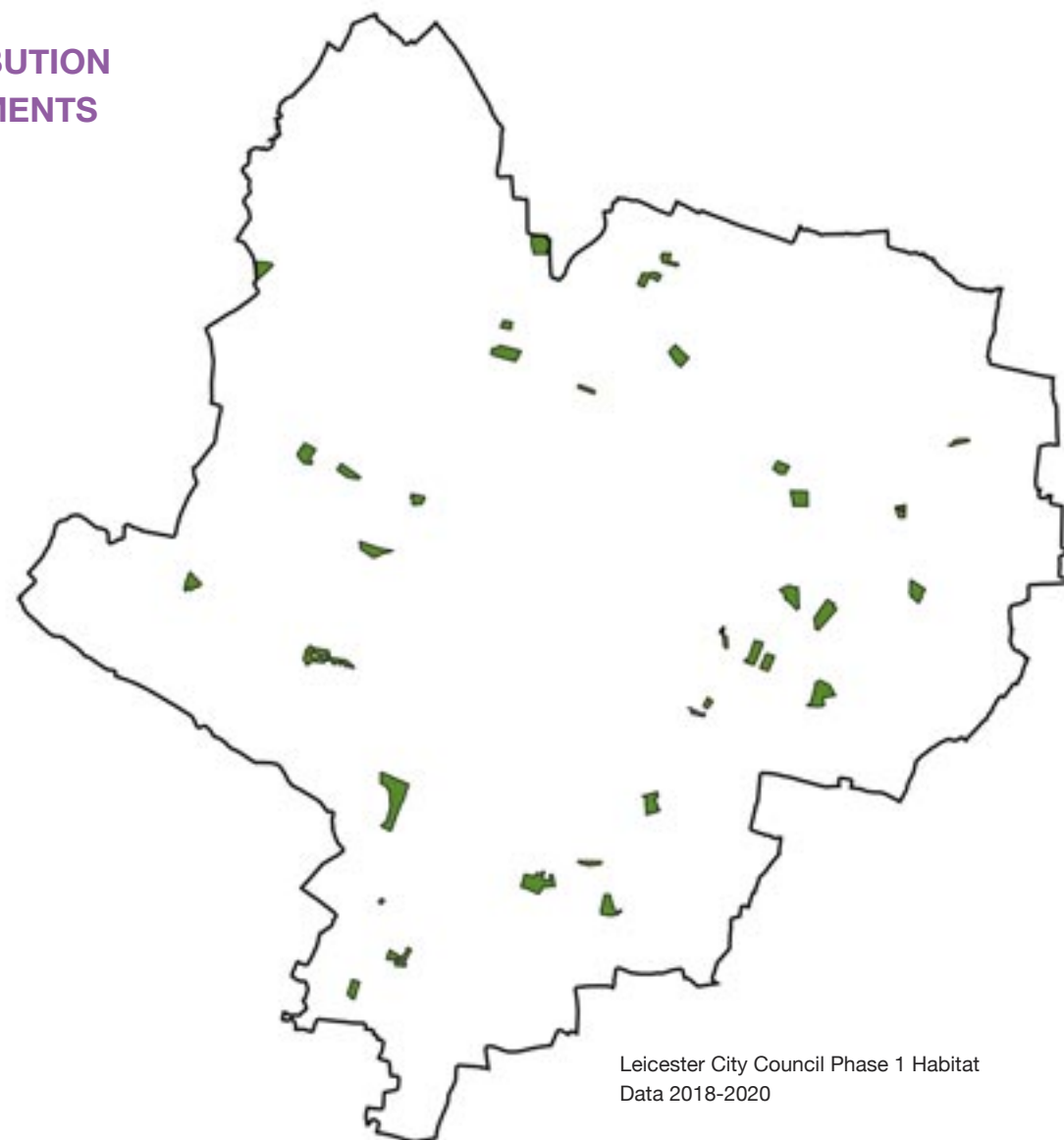
1.4 USEFUL INFORMATION

Links to websites containing guidance on Wildlife on allotments

[http://www.wlgf.org/ne20wildlife_on_allotments\[1\].pdf](http://www.wlgf.org/ne20wildlife_on_allotments[1].pdf)

<https://www.rspb.org.uk/birds-and-wildlife/advice/gardening-for-wildlife/plants-for-wildlife/allotments-and-vegetable-gardens/#>

1.5 DISTRIBUTION OF ALLOTMENTS



1.6 ALLOTMENTS ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Habitat Creation/Species Recovery			
Enhance biodiversity value through habitat restoration and species recovery where impacted by INNS	Create and maintain ponds on at least 50% of allotment sites	2025	Nat Con, Froglife
	Create edible hedgerows on at least 25% of allotment sites	2025	Nat Con, LEV
	Create green roofs on at least 25% sheds, storage areas	2025	Nat Con, LRWT

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
Management/Advice			
Review Allotment Strategy re use of herbicides and pesticides	Update Plan if required to reduce use and encourage organic production where	2022	Stds & Development
Provide advice to allotment holders and others on wildlife	Focus on sites where protected species may be impacted	2022	LCC Nat Con

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Work with Naturespot to publicise their website and process of recording	Encourage allotment societies to regularly record wildlife using NaturesSpot and/or other apps and to help publicise on their website	2021	Nat Con, NatureSpot
Arrange 2 x recording events with Naturespot and allotment holders	Arrange 2 x recording events with Naturespot and allotment holders	2025	Nat Con, NatureSpot
Create at least 2 Allotment Wild Places on Naturespot to encourage	Create at least 2 Allotment Wild Places on Naturespot to encourage recording	2025	Nat Con, NatureSpot
Identify potential research projects re habitat value of allotments and food production	Identify at least one long-term study which uses Leicester allotments as focus of study	2025	University

- Champion and promote Leicester's biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Engagement			
Provide information packs to societies and individuals promoting good practice and case-studies	Produce a leaflet on how to encourage wildlife on allotments	2022	TCV
Promote positive management that will enhance biodiversity value of allotments	Identify 2 x exemplar allotment sites to host an biennial event at each to promote good practice for wildlife	2022-2025	TCV

Broad-leaved and Wet Woodland



2.1 HABITAT DEFINITION AND CURRENT STATUS

Broadleaf woodland is defined as those woodlands containing no more than 10% coniferous trees. It is a particularly scarce habitat with only ~ 80 ha of public and privately owned woodland located in Leicester. Most woodland is recent plantation or relics of former farmland or parkland which have been planted for timber, shelter or fox coverts. All plantations are important for birds, mammals and invertebrates as well as having value as a landscape feature.

Only one of Leicester's woodlands (Meynell's Gorse) may be truly ancient in origin (i.e. has been in existence since at least 1600). There are a number of small but mature woodlands and spinneys such as Highway Spinney, Knighton Spinney, Kingsway spinney and Her Ladyship's Covert distributed across Leicester that provide important stepping stones for wildlife. Areas of wet woodland are also located adjacent to the River Soar on land designated as LNRs at Aylestone and Watermead.

Leicester's trees are facing unprecedented threats to the city tree stock from a range of pests and diseases that have entered the country and been dispersed through the importing of contaminated nursery stock as well as wind-blow from Europe and Africa.

Additional pressures from climate change will likely exacerbate levels of pest and disease activity as well as demands to plant more trees to sequester carbon and provide mitigation. Managing our existing woodlands to optimise the many associated benefits as they mature is paramount as well as ensuring any new woodlands are located in the right place (avoiding other habitats of value) with a secure maintenance programme attached.

2.2 CHARACTERISTIC SPECIES

Woodlands in Leicester are characterised by Ash (*Fraxinus excelsior*) and Field maple (*Acer campestre*) on heavy clay soils and Pedunculate oak (*Quercus robur*), Hazel (*Corylus avellana*) and brambles (*Rubus sp*) on more acid soils. They contain a diverse range of plant communities including Bluebells (*Hyacinthoides non-scripta*), Wood anemone (*Anemone nemorosa*) and Wood sorrel (*Oxalis acetosella*) found on lighter soils.

The Local Wildlife Site woodland criteria are based on its classification as ancient woodland, with at least 4 woodland indicator species or is colonised by willow/alder or bluebells. To meet some of the criteria the sites have to be 0.25 to over 2 ha. Nevertheless, broad-leaved woodland is increasingly recognised as important in a local context and therefore considered a priority habitat irrespective of its age.

Associated Species Action Plans

Amphibians/Reptiles Bats Birds Insects/Pollinators

2.3 THREATS

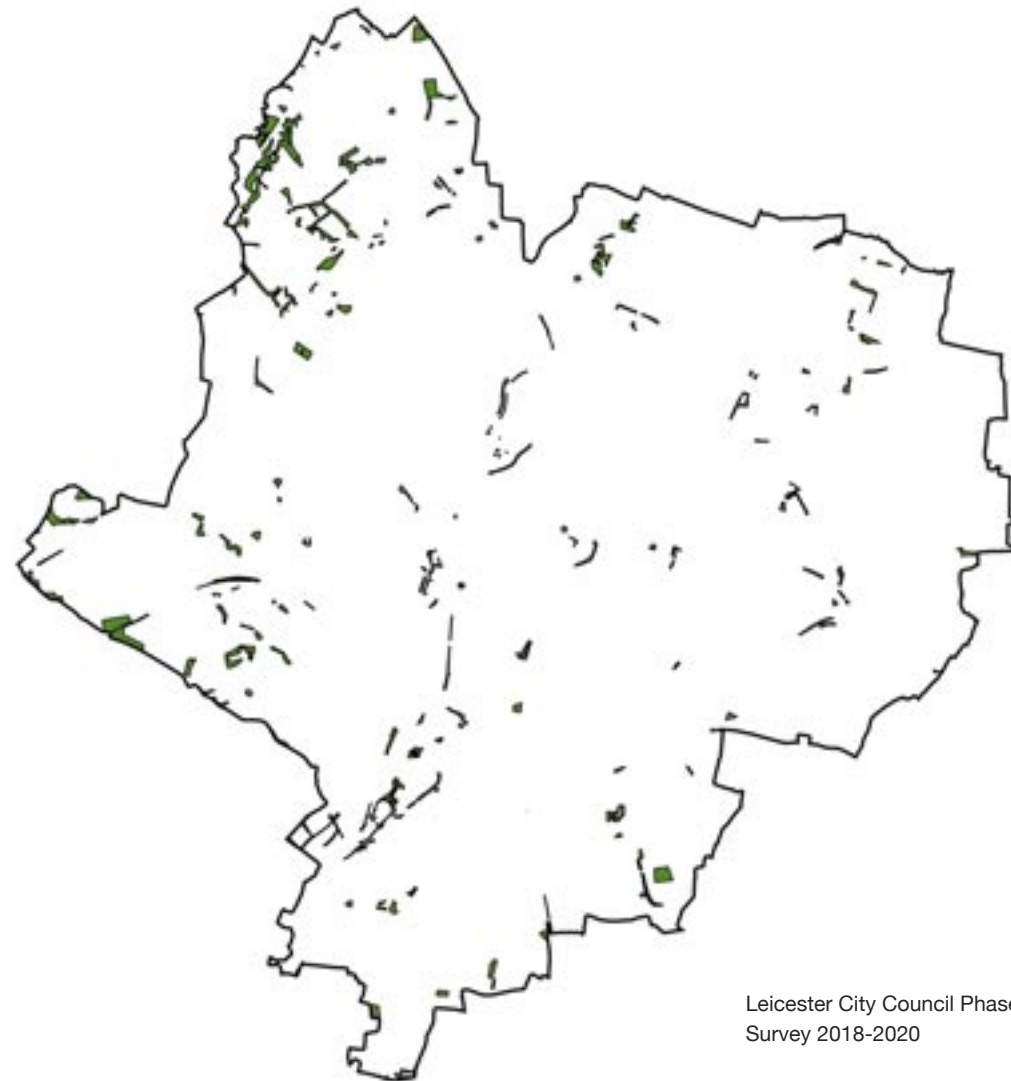
Main factors affecting broadleaf woodland in Leicester are:

- Habitat loss due to development sited too close to woodland impacting on RPZs;
- Anti-social behaviour - fly-tipping and garden waste from adjacent properties into woodland;
- Diseases such as Dutch elm disease, Horse chestnut bleeding canker, although pathogens affecting Alder, Oak and Ash die-back are currently low;
- People pressure - off-road cycling, informal and desire-line footpaths, vandalism (graffiti, paint, arson), cutting for wood-burning stoves;
- Works to mature trees next to paths or clearance of under-storey for health and safety;
- Atmospheric nutrient input

2.4 USEFUL INFORMATION

- Phase 1 Habitat Woodland and Local Wildlife Sites designated as woodland
<https://maps.leicester.gov.uk/map/Aurora.svc/run?script=%5CAurora%5Cw3%5CPLANNING%5Cw3HnC.AuroraScript%24&nocache=2572193c-551c-52e6-43ce-4f690453847b&resize=always>

2.5 DISTRIBUTION OF BROAD-LEAVED WOODLANDS



Leicester City Council Phase 1 Habitat Survey 2018-2020

2.6 BROAD-LEAVED AND WET WOODLAND ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Habitat Creation/Species Recovery			
Create, restore and enhance woodland habitat across Leicester to create larger and better connected habitat	Increase woodland area by 5% at a range of sites across Leicester	2025	Parks, T&W, Nat Con
	Plant edible orchards at 25% with minimum of 10 trees wherever possible 5% schools	2021 - 2025	Sustainability
	Restore woodland habitat to improving or favourable status and secure on-going maintenance programme at 50% of existing woodland (5% annually)	2021 - 2030	Parks, T&W, Nat Con
	Seek funding/contributions from BNG, Council and other funding opportunities to support creation and maintenance	2020 - 2025	Parks, T&W, Nat Con

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
Management/Advice			
Set up Woodland Group to identify sites for planting new and managing existing woodlands that can also help alleviate impacts of climate change	Complete Biodiversity Opportunity Mapping and agree on sites for new woodland – consider wider benefits of flood prevention to create areas of wet woodland	2021	Parks, Nat Con
Set up a Group to agree on how to manage woodlands affected by Ash die-back and other pathogens impacting on native tree-	Agree an Action Plan on how the council will conserve native woodlands wherever possible and manage them effectively	2022	T&W, Parks, Nat Con
Ensure priority sites have a Management Plan that contributes towards achieving favourable status and is regularly reviewed	Update Management Plans for Knighton Spinney and Highway Spinney	2021	Nat Con, T&W
Ensure priority sites have a Management Plan that contributes towards achieving favourable status and is regularly reviewed	Update Management Plans on all designated sites containing significant woodland	2025	Nat Con, T&W
Promote positive management with landowners of designated sites and where possible offer incentives and funding opportunities	Carry out pro-active management on council sites annually – ensure species of local provenance planted, control knotweed and other non-native species	2021 - on-going	Parks, T&W
Provide information to publicise good management practice	Collate central database of projects and/or case studies to demonstrate good practice - share with partners and publicise on website	2021-2025	Nat Con, Parks

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Identify sites that meet LWS criteria and agree designation where	Monitor and review 25% annually existing woodland sites and designate where	2021-2025	Nat Con
Establish base-line of woodland habitat and condition	Review Phase 1 data of woodlands and update database and digitised maps	2021/22	Nat Con

- Champion and promote Leicester's biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Engagement			
Provide formal/informal training in techniques to land managers, site wardens, volunteers etc	Review training needs with Council Services and organise 1-2 training event	2021	Nat Con, T&W, TCV
	Continue to support existing FoGs and PuGs in woodland management programme and organise 2 x volunteer sessions a year with each group	On-going	Parks
	15 tree wardens trained in 2019 – identify and agree monitoring areas annually and allocate to officers/wardens	On-going	Parks, Nat Con
Use a range of media to regularly promote projects and public/partner engagement	Promote woodlands on national or international biodiversity/nature days	On-going	Nat Con
	Publicise in annual Making Wildlife Count report	On-going	Nat Con



3.1 HABITAT DEFINITION AND CURRENT STATUS

A hedgerow habitat generally resembles woodland edge and scrub in a linear form. They are a particularly important feature due to the relatively low percentage of woodland cover in the city, but also because they help to connect one habitat with another. This makes them valuable to mobile species such as bats, birds and insects which use the hedgerows to forage and commute and so act as a corridor for wildlife dispersal.

Older and more mature hedgerows can also be features in an historic landscape, often denoting the boundary between parishes or landowners. In Leicester most of the hedgerows were planted after the Enclosures Act in the 18th/19th centuries to divide and enclose former common land.

Hedgerows at Anstey Lane, Gorse Hill, Stokes Drive, Ratby Lane and Gartree Road may be “ancient” relics from past agricultural use and show signs of having been previously laid, or have associated features such as banks, ditches and mature trees at regular intervals along its length. The heritage and biodiversity value of such hedgerows affords them protection from being removed under the Hedgerow Regulations (1997).

Some hedgerows meet the LWS criteria and have been designated because they have up to six or more locally native trees and shrubs per 30 m section on average or 5 species plus additional features of biodiversity value.

3.2 CHARACTERISTIC SPECIES

Typical Midlands hedgerows contain common hawthorn (*Crataegus monogyna*) and sometimes Midland hawthorn (*Crataegus laevigata*). Older hedgerows contain species such as Field maple (*Acer campestre*), Dogwood (*Cornus sanguineus*), Buckthorn (*Rhamnus catharticus*) and Spindle (*Enonymus europaeus*). Mature trees such as Ash (*Fraxinus excelsior*) and Oak (*Quercus robur*) are traditionally planted at intervals to define the boundary and add to the diversity and habitat value.

Typical bird species associated with hedgerows are those that like dense cover such as Blackbird (*Turdus merula*), Song thrush (*Turdus philomelos*), Bullfinch (*Pyrrhula pyrrhula*) and Wren (*Troglodytes troglodytes*). Hedgerows provide valuable habitat shelter for invertebrates, birds and small mammals and nesting sites for birds whilst bats will use hedges to navigate and migrate between roosts and foraging site.

Associated Habitat Action Plans

Woodland
Mature/Veteran Trees

Associated Species Action Plans

Bats
Birds
Hedgehogs
Amphibians/Reptiles

3.3 THREATS

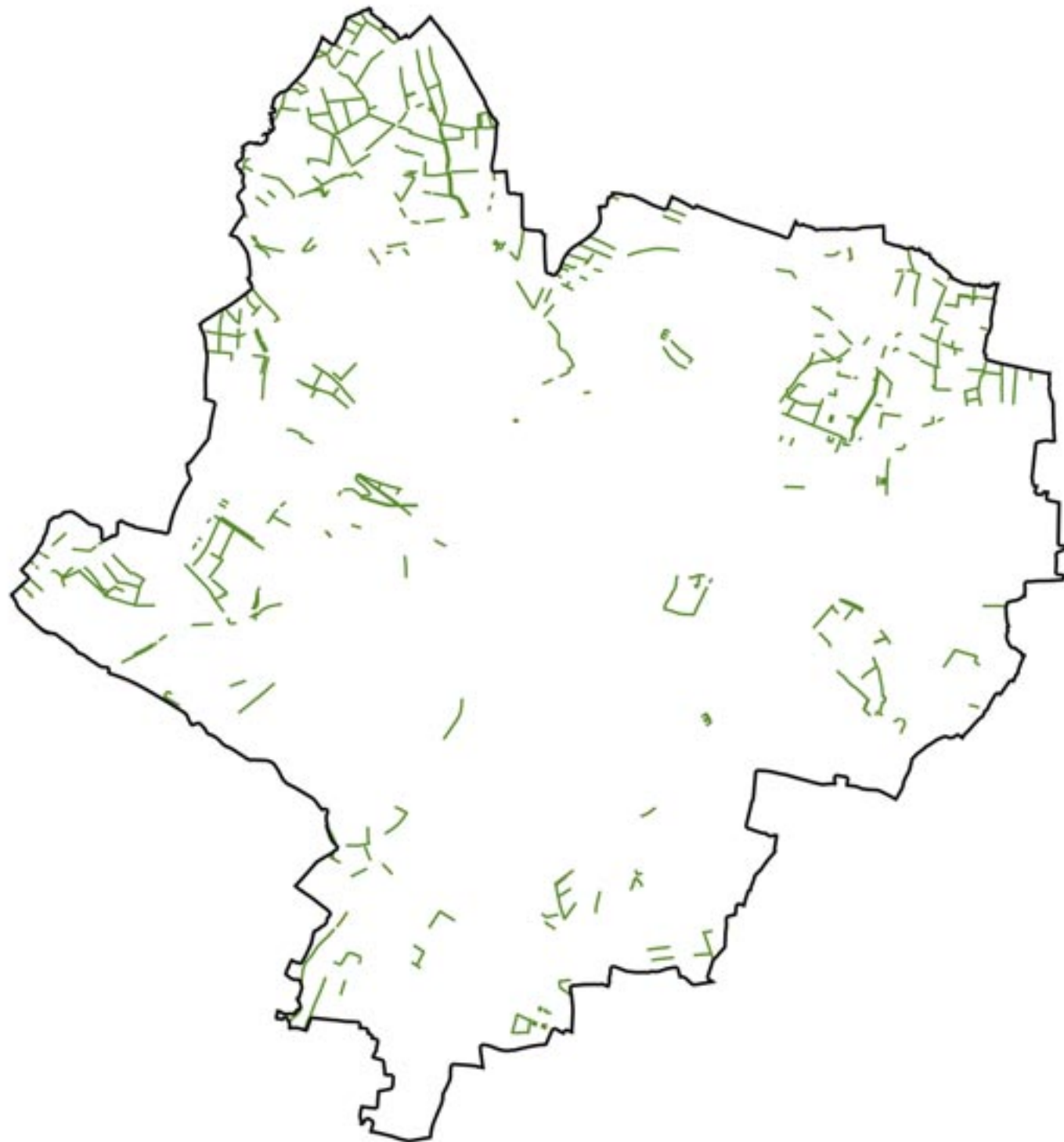
Main factors affecting hedgerows in Leicester are:

- Removal of hedgerows for urban/suburban development.
- Inappropriate or ad-hoc management when retained within a development.
- Lack of management over an extensive period of time (i.e. over a 20-30 year period).
- Over-management – especially hard annual flailing which can damage trees and replacement saplings;
- People use – short-cuts through hedgerows, crown-lifting for better surveillance and damage to structure
- Application of herbicides and pesticides along base of hedgerows
- Damage and general vandalism to newly-planted hedgerows at most vulnerable growth

3.4 USEFUL INFORMATION

- Links to websites containing guidance on management of hedgerows
<https://www.gov.uk/government/publications/hedgerow-survey-handbook>

3.5 DISTRIBUTION OF HEDGEROWS



Source: Leicester City Council Phase 1
Habitat Survey 2018-20

3.6 HEDGEROW ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Habitat Creation/Species Recovery			
Create, restore and enhance hedgerow habitat across Leicester to create more and better connected habitat	Plant 10 km of new hedgerows at sites across Leicester (public and private land)	2025	Parks, T&W, Nat Con
	Plant edible orchards at 25% with minimum of 10 trees wherever possible 5% schools	2021 - 2026	Sustainability
	Restore hedgerow habitat to improving or favourable status and secure on-going maintenance programme at 50% of existing hedgerows (5% annually)	2021 - 2030	Parks, T&W, Nat Con
	Seek funding/contributions from BNG, Council and other funding opportunities to support creation and maintenance	2021 - 2030	Parks, T&W, Nat Con

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
Management/Advice			
Set up Woodland Group to identify sites for planting new and managing existing hedgerows that can also help	Complete Biodiversity Opportunity Mapping and agree on sites for new woodland – consider wider benefits of	2021	Parks, Nat Con
Provide specific management advice on hedgerows	Produce Information pack for planners, land managers and householders and	2021	Nat Con
	Remove deer and rabbit tubes from 10%	2021-2026	Parks
	Lay 2 x hedgerows annually	2021-2025	Parks
Review management schedules	Review from baseline data and add into management schedule	2025	Stds & Developm

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Identify sites that meet LWS criteria and agree designation where	Monitor and review 25% annually existing hedgerow sites and designate where appropriate	2021-2026	Nat Con
Establish base-line of hedgerow habitat and condition	Review Phase 1 data of hedgerows and update database and digitised maps	2021	Nat Con
Encourage research related projects with Universities, Schools and Colleges to increase understanding of the value of hedgerows	Develop locally based research on value of hedgerows for foraging wildlife, seasonality of blossom, impacts of lighting with 3 x research projects	2026	Nat Con, LRWT

- Champion and promote Leicester's biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Engagement			
Provide formal/informal training in techniques to land managers, site	Review training needs with Council Services and organise 1-2 training event	2022	Nat Con, T&W, TCV
Raise awareness of the value of hedgerows	Design and install 5 x interpretation boards at sites containing important hedgerow habitat (Hamilton, Western,	2025	Parks
	15 tree wardens trained in 2019 – identify and agree monitoring and work areas annually and allocate to officers/wardens	On-going	Parks, Nat Con
Use a range of media to regularly promote projects and public/partner	Publicise in annual Making Wildlife Count report and digital media	On-going	Nat Con

4. Mature and Veteran Trees



4.1 HABITAT DEFINITION AND CURRENT STATUS

Mature/Notable –a tree which is significant locally because it is special or particularly large compared to the trees surrounding it. Notable trees are usually mature, that is, they produce fruits or flowers at an age when they are most productive. The age of maturity is dependent on the species with some trees maturing faster than others e.g. a Silver birch matures more quickly than a slow-growing Oak tree

Ancient – a tree that has reached a great age in comparison with others of the same species. The age of the tree will differ between species depending on the growth rate and usual life expectancy

Veteran – a tree which can be any age, but shows ancient characteristics; they are usually hollow or contain rotting heartwood which is essential for many species, but especially fungi and invertebrates. They are defined as those that occur as individuals or small groups rather than in woodlands. (Ancient Tree Forum 2020)

The current extent of mature trees in Leicester is based on data collected from various sources from 1997-2018. The trees are on Council-owned land managed by Trees & Woodlands. Sites include roadside verges, parks and cemeteries. Currently there are no formally designated trees in private gardens

4.2 CHARACTERISTIC SPECIES

Trees soften and “green” the landscape by screening, reducing noise pollution and mitigate impacts of climate change, especially by sequestering carbon, cooling temperatures by shading and reducing the urban heat island effect, reducing air pollution from vehicle emissions and alleviating flooding. They contribute to health and well-being and provide an important habitat for many species – particularly birds for nesting, bats for roosting and small mammals generally.

They are also particularly important for invertebrates, for example more than 75 nationally important species of beetle were recorded living in mature oak trees within Braunstone Park. Large numbers of lichen are also associated with long-lived mature trees.

The Local Wildlife Site mature tree criteria specify the girth, its native status and additional features such as dead branches, heart-rot and other signs of decay. The trees are designated individually or as small groups of up to 20 trees/ha. Examples of such groups are located in Western Park, Abbey Park, Braunstone Park and Welford Road Cemetery.

Mature trees have also been identified during surveys which have an intrinsic wildlife and amenity value and are a material consideration in planning. These trees may not have attained the girth for designation or be classified as veteran, but they are still considered an important asset and priority habitat.

Associated Habitat Action Plan

Woodland
Mature/Veteran Trees

Associated Species Action Plans

Bats
Birds
Hedgehogs
Amphibians/Reptiles

4.3 THREATS

Main factors affecting mature trees in Leicester are:

- Diseases such as Dutch-elm disease, Horse Chestnut Scale, Ash die-back and Phytophthora in Alder;
- Climate-change extremes – drought, flooding and high winds may be exacerbated in an urban environment;
- Development impacting on the Root Protection Zone (RPZ) from excavation works and cycle lanes;
- Public safety issues – removal of moribund and dead specimens near to POS;
- Breaches of TPOs and inadequate protection of trees within Conservation Areas are not always identified; fines and replanting may not address losses
- Atmospheric nutrient input and air borne pollution

4.4 DISTRIBUTION OF MATURE AND VETERAN TREES



Leicester City Council Phase 1 Habitat
Survey 2018-2020

4.5 MATURE AND VETERAN TREE ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Habitat Creation/Species Recovery			
Create, restore and enhance veteran tree habitat across Leicester to create more and better connected habitat	Retain all mature/veteran trees wherever possible and if maintain database of veteranised trees and report annually to	On-going	T&W
	Seek funding/contributions from BNG, Council and other funding opportunities to support creation and maintenance	2021 - 2025	Parks, T&W, Nat Con

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
Management/Advice			
Provide specific management advice on the value of mature/veteran trees to site managers and private landowners	Produce leaflet and links to this technique and publish on website to promote good practice on public/private owned sites	2022	T&W

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Identify trees that meet LWS criteria and agree designation where appropriate	Monitor and review 25% annually notable tree sites and designate where appropriate	2021-2026	Nat Con
Review street trees that meet the criteria	Map 25 % roads with avenues of trees of significant biodiversity and aesthetic value that may contribute to the Nature Recovery Network – link to Leicester Bee Roads for	2021/22	Nat Con, Tree Wardens
Set up a Veteran Tree Group with conservation organisations and tree specialists to identify research to further understand relationship and inter-actions	Deliver 2 x research projects related to biodiversity and wildlife value of veteran trees	2026	UoL, Nat Con

- Champion and promote Leicester's biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Engagement			
Provide formal/informal training in techniques to land managers, site wardens, volunteers etc	Organise training event with arboriculture contractors in Leicester on best practice, wildlife legislation and techniques	2021/22	T&W
Raise awareness of the value of veteran trees	Install 5 x interpretation boards at sites containing important veteran tree habitat (CHCP, Western, Braunstone, Knighton	2025	Parks
Support LEV tree warden scheme and encourage survey and monitoring tree	Identify and agree monitoring and work areas annually	On-going	Parks, Nat Con
Use a range of media to regularly promote projects and public/partner engagement	Publicise in annual Making Wildlife Count report and digital media	On-going	Nat Con

5. Neutral Grassland and Flood Meadow



5.1 HABITAT DEFINITION AND CURRENT STATUS

Leicester once supported large areas of wildflower-rich grassland but little of this habitat now remains due to continued expansion of the city and demands of an increasing population.

The habitat can be divided into two major types: flood-meadow grasslands and grasslands in drier areas. The former are managed traditionally by grazing and as hay meadows when fields are set-aside to rest, while the traditional management of grasslands in drier areas is either as hay-meadow and after-graze or as pasture.

Most of these areas are now limited to remnant sites contained within parks or on the outer edge of the City within the green wedges. Examples include grassland around Aylestone, Birstall, Braunstone Park, Kirby Frith and Anstey.

5.2 CHARACTERISTIC SPECIES

Common Knapweed (*Centaurea nigra*), Cowslip (*Primula veris*), Yellow-rattle (*Rhinanthus minor*), Pepper-saxifrage (*Silene acaulis*) and Adder's-tongue Fern (*Ophioglossum vulgatum*) are characteristic of species-rich grasslands in Leicester and Leicestershire. Most are declining in value and there has been a loss of this habitat type since the 1930s which has accelerated in recent years.

The wetter flood meadows support typical species associated with a higher water table such as Meadowsweet (*Filipendula ulmaria*), Marsh marigold (*Caltha palustris*), Great burnet (*Sanguisorba officinalis*) and Ragged robin (*Lychnis flos-cuculi*). Aylestone Meadows has some particularly good areas of flood meadow due to periodic flood events and inundation with water.

Locally rare plants such as Tubular water dropwort (*Oenanthe fistulosa*), Crow garlic (*Allium vineale*), Spiny restharrow (*Ononis spinosa*), and Grass-leaved vetchling (*Lathyrus nissolia*) still survive in some of the quality grasslands in the city and these sites are likely to meet UK BAP criteria.

The Local Wildlife Site grassland criteria include fairly species-rich semi-improved grassland if it contains seven indicator species that are present as "Occasional" or more. Species include Meadow buttercup, Bird's-foot trefoil, Red clover, Meadow vetchling and Sorrel prevail where the geology, soil is supported by appropriate management.

Associated Habitat Action Plans

Allotments
Urban Parks and Roadside Verges

Associated Species Action Plans

Insects/Pollinators
Birds
Bats
Hedgehog

5.3 THREATS

Main factors affecting neutral grassland in Leicester are:

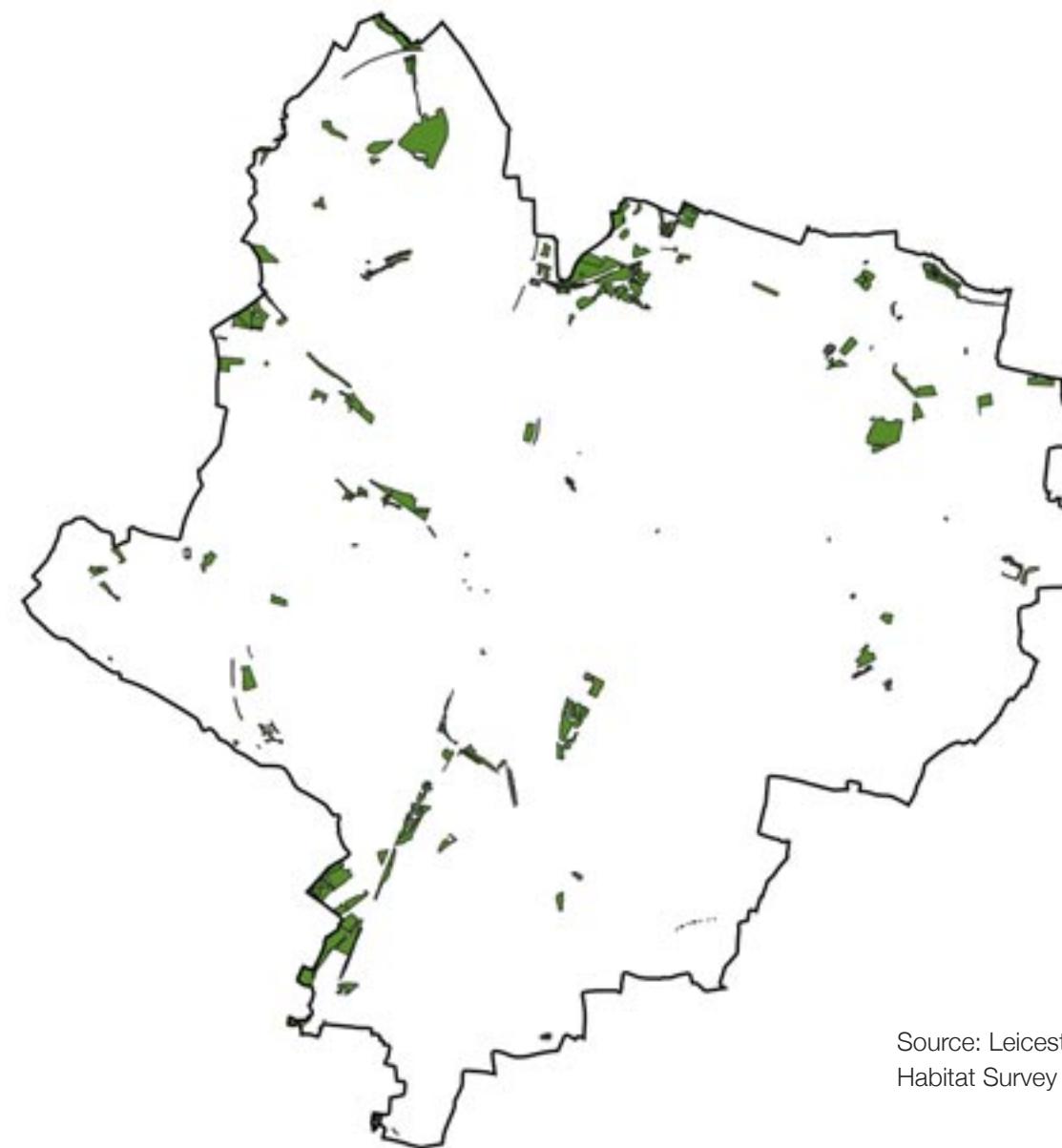
- Change of hay-meadow grazing to grazing including intensive horse grazing.
- Inappropriate management or lack of any management resulting in changes to rank grassland and scrub.
- Loss of sites to development.
- People pressure – sites on the edge of urban areas used regularly by dog walkers, cyclists resulting in increased nutrients, localised erosion and transfer of more common ruderal species;
- Inability to use grazing as a management technique due to difficulties associated with an urban setting
- Anti-social behaviour – including fly-tipping and arson
- Application of herbicides and pesticides
- Atmospheric nutrient input
- Long-term impact of climate change with sites lost due to severe periods of drought or flooding

5.4 USEFUL INFORMATION

- Guidance on management of lowland grassland

<http://publications.naturalengland.org.uk/publication/35034>

5.5 DISTRIBUTION OF MEADOW GRASSLANDS



Source: Leicester City Council Phase 1
Habitat Survey 2018-20

5.6 NEUTRAL GRASSLAND AND FLOOD MEADOWS ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Habitat Creation/Species Recovery			
Create, restore and enhance grassland habitat across Leicester to create more and better connected habitat	Identify areas as BOS to create species-rich grassland – survey 50% of sites each	2021/22	Nat Con
	Create areas of species-rich grassland on 25% of sites identified of low diversity within Parks (5% annually)	2021-2026	Parks, Nat Con
	Seek funding/contributions from BNG, Council and other funding opportunities to support creation and maintenance	2021-2026	Parks, Nat Con

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
Management/Advice			
Review Grassland Strategy and management schedules	Review from baseline data, map all areas of meadow and relaxed mowing within Parks and add into management schedule	2021	Stds & Development, Parks, Nat Con
	Update Parks Development Plans and LNR Plans and LWS Schedules with agreed maintenance	2025	Parks, Stds & Development, Nat Con
Review grazing regimes and bring LWS and LNR into favourable status	Review and agree good grazing practice on designated sites managed by short-term tenancies to secure favourable	Review 2021 Favourable status	Nat Con, E&BS
Review Longhorn cattle and extend use across sites grazed wherever possible	Work with partners to secure long-term future use of Longhorn cattle on sites of wildlife value to secure appropriate	2021	Nat Con, LRWT
Increase the number of grassland sites in favourable condition	50 % LCC species-rich grassland to be in favourable conservation status	2030	Parks
Arrange regular training days and reviews of equipment	Arrange 2 x Grassland Management days for LCC and partners to inform on management in an urban setting. Repeat	2021-2025	Parks
Provide advice to Parks on creation and management of meadows	Produce specification for creation and maintenance of wildflower-rich verges and include as standard in Highway schemes	2021	Nat Con

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Identify grasslands that meet LWS criteria and agree designation where	Review all sites identified and designate any meeting the criteria as LWS or as cLWS	2022	Nat Con, LRWT
Review meadow areas and Phase 1 maps of species-rich or unimproved grassland to inform on Local Plan, BNG and NRN	Visit 50% sites annually to update Phase 1 maps and annual monitoring for Single-Status and OEP reporting to report on condition status	2021/22	Nat Con

- Champion and promote Leicester’s biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Engagement			
Add further Wild Places (NatureSpot) and Parks for Pollinators Projects to raise awareness	Add 5 Wild Places where species-rich grassland areas are present on POS and review as more areas created	2021	Nat Con
Update Parks and Biodiversity	Promote Projects – Parks for Pollinators	On-going	Parks, Nat Con
Use a range of media to regularly promote projects and public/partner	Publicise in annual Making Wildlife Count report and digital media	On-going	Nat Con

6. Urban Parks and Road Verges



6.1 HABITAT DEFINITION AND CURRENT STATUS

Although not a priority habitat in its own right, this type of land use is widely distributed across Leicester and provides valuable spaces for wildlife to thrive and disperse.

Urban parks, open spaces and roadside verges include areas that are publically accessible and are maintained and managed by the council primarily for amenity and recreation, but increasingly for wildlife too. This habitat type includes roadside verges across Leicester.

There are over 130 parks and open spaces which vary in size and formality. They include waterways, formal parks and flower gardens, country parks, sports fields and wildlife areas. Some of these areas are designated for their nature conservation value as Local Nature Reserves (LNRs) or Local Wildlife Sites (LWS) whilst others are part of the green infrastructure network (GINs) due to their strategic position in the wildlife corridor or opportunity to improve their value for wildlife.

Most of the Parks and green spaces have at least a small area set aside for wildlife which may include long grass and wildflower areas, ponds, bee posts, insect-friendly planting and nest boxes.

Roadside verges are made up of avenues of mature trees, shrubs and generally species-poor amenity grass. In the past few years a number of areas have been sown with wildflower seed to increase their wildlife value and add amenity to the area. The purpose is to create habitats of value to our declining pollinators whilst improving the connectivity of sites for wildlife generally across the city. These areas have been promoted as part of the over-arching Leicester Bee Road project and further information on actions is available in Leicester’s Pollinator Strategy 2020 - 2025.

There are opportunities for re-wilding some of our Parks and creating or enhancing more habitat. Many of the Parks could accommodate new meadows, ponds and hedgerows. Locations for more woodland, orchards,

brownfield-type sites are possible with agreement on how they can be managed to achieve their optimum value in the future.

Associated Habitat Action Plans

Neural Grassland
Woodlands, Mature/Veteran Trees
Lakes/Ponds

Associated Species Action Plans

Insects/Pollinators
Birds
Mammals - all

6.2 CHARACTERISTIC SPECIES

The network of green spaces provides a mosaic of differing habitats that help to support a range of species by providing a mix of breeding sites, foraging areas and shelter.

Despite the types of habitat and their regular use, they support national or local BAP species associated with these habitats and frequently support populations of priority species such as Song thrush (*Turdus philomelos*), Bullfinch (*Pyrrhula pyrrhula*), Green and Great Spotted Woodpeckers, Bumble bees, Solitary bees, Great Crested Newts (*Triturus cristatus*) and Hedgehogs (*Erinaceus europaeus*).

They are also important host sites for pollinators and many more common species and due to their accessibility may provide a primary point of contact for many people within an urban and otherwise busy environment.

6.3 THREATS

Main factors affecting urban parks and open spaces in Leicester are:

- The differing needs of management for biodiversity and amenity/landscape demands – including mowing regimes;
- Development opportunities and loss of areas to house building or road schemes;
- Disturbance, trampling and heavy-use of parks and open spaces by public and dog walkers, cyclists etc.;
- Increased incidents of anti-social behaviour e.g. vandalism and damage to structures, habitats and disturbance to associated species;
- Isolation and lack of connectivity to other open space and/or similar habitats;
- Resourcing – staffing and equipment to manage areas adequately – infrequent management and increased disturbance when areas are cut back severely

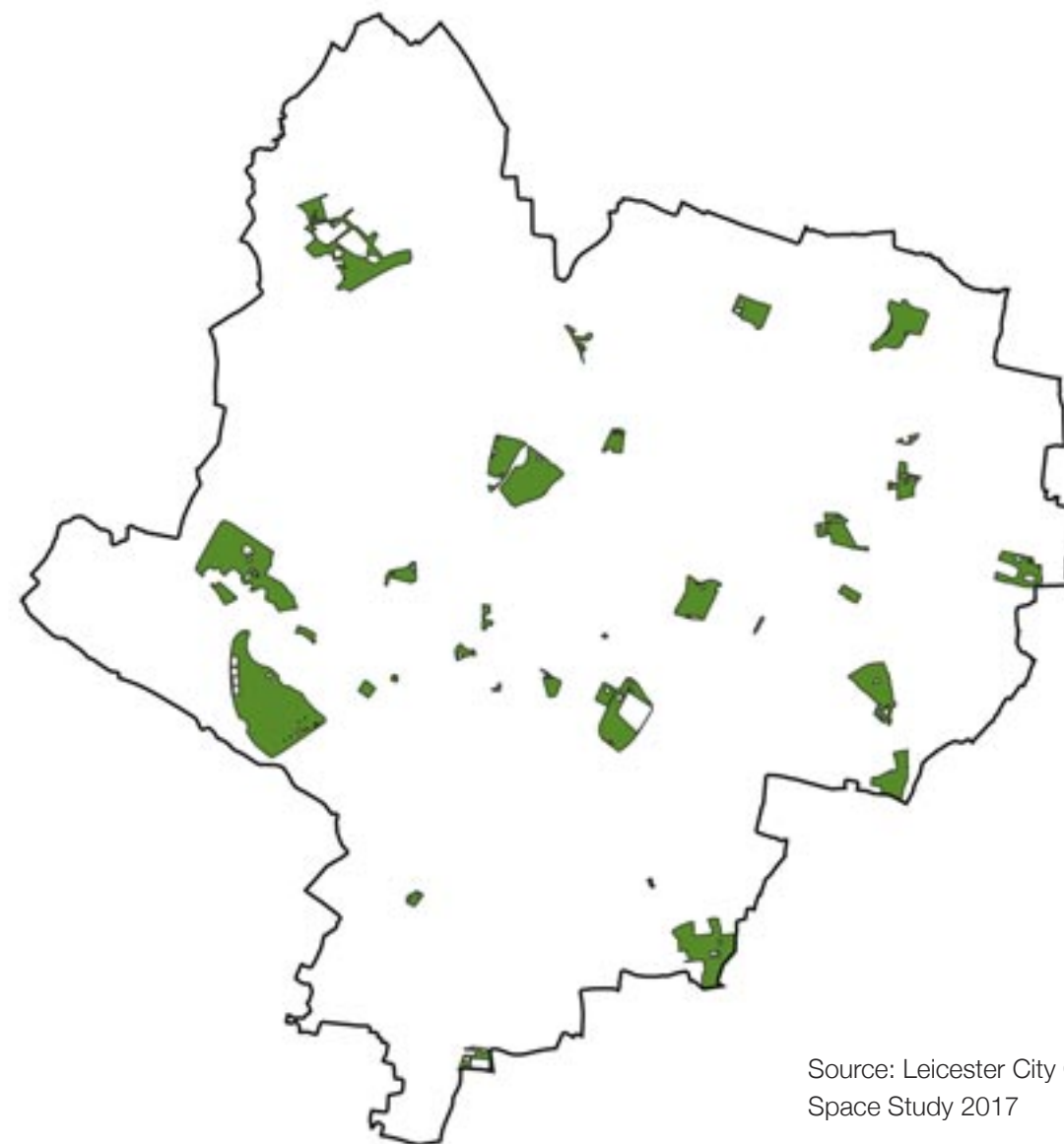
6.4 USEFUL INFORMATION

- Links to websites to manage and value urban areas for wildlife

<https://www.designcouncil.org.uk/sites/default/files/asset/document/the-value-of-public-space1.pdf>

<https://www.rspb.org.uk/fun-and-learning/for-kids/facts-about-nature/facts-about-habitats/urban-and-suburban/>

6.5 DISTRIBUTION OF URBAN PARKS



Source: Leicester City Council Green Space Study 2017

6.6 URBAN PARKS AND ROAD VERGES ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Habitat Creation/Species			
Create, restore and enhance habitat across Leicester to create more and better connected habitat	Identify areas as BOS to create specie-rich grassland – survey 50% of sites each year	2021/22	Nat Con
	Seek funding/contributions from BNG, Council and other funding opportunities to support creation and maintenance	2021-2026	Parks, Nat Con
Increase number of roadside wildflower-rich verges	Increase length/area of roadside verge annually with wildflower/pollinator species (10% annually)	2021-2026	Parks, Nat Con

7. Watercourse (Rivers and Brooks)

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address

Objective	Actions	Achieved by	Lead
Management/Advice			
Encourage a flexible approach to management with greater emphasis on “Re-Wilding” areas where appropriate	Review Phase 1 data, ground-truth and identify sites that may be appropriate for re-wilding. Agree with Service areas and secure future management through BNG	2021/22	Nat Con, Parks, Std & Dev
	Review from baseline data, map all areas relaxed mowing on parks and roadside verges and add into management	2021	Stds & Development, Parks, Nat Con
	Update Parks Development Plans and LNR Plans and LWS Schedules with agreed maintenance	2025	Parks, Stds & Development, Nat Con
Identify sites that may meet criteria for Urban ELMs	Secure 1 x site under ELMs and review	2026	Nat Con, Parks, Std & Dev,
Provide advice to Parks and highways on creation and management of meadows and wildflower-rich verges	Produce specification for creation and maintenance of wildflower-rich verges and include as standard in Highway schemes	2021	Stds & Development

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Establish baseline of data for Leicester to show natural capital assets associated with green space	Update database and LRERC records for Phase 1 and Species data on Parks and Open Spaces	2021/22	Nat Con, LRERC, LRWT
Identify research projects linked to green space, natural capital and associated benefits	Support funding bids in city-wide research linked to benefits of green space, biodiversity and impacts of climate change	2021/22	UoL, Nat Con, Sustainability
Improve understanding of value of roadside verges for pollinators	Annual survey and record plants and animals at roadside verges where wildflower-rich verges created	2021-2026	Nat Con, UoL

- Champion and promote Leicester’s biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Engagement			
Add further Wild Places (NatureSpot) and Parks to raise awareness of wildlife on parks	Add 5 Wild Places on POS and review as more areas created and encourage more people to record. Cross-reference on LCC and partner webpages	2022	Nat Con
Update Parks and Biodiversity	Promote Projects – Parks for Pollinators	On-going	Parks, Nat Con
Use a range of media to regularly promote projects and public/partner	Publicise in annual Making Wildlife Count report and digital media	On-going	Nat Con
Run events and activities to encourage recording of wildlife and raise awareness	Run 2 x wildlife-related events annually and link to partner events such as 30-Days	2021- 2026	Nat Con, LRWT
	Organise 6-8 guided walks per year with wildlife specialists as part of the Walk on the Wild side series at key sites	On-going	Highways, NatureSpot



7.1 HABITAT DEFINITION AND CURRENT STATUS

The River Soar along with the Grand Union Canal with which it is partially integrated provides a strategic corridor for wildlife which helps link the city to the surrounding countryside. These watercourses form part of the larger Soar catchment with the River Soar flowing through the central part of Leicester from Aylestone (south) towards Watermead and Birstall (north). The river has been altered along some stretches such as the “Mile Straight” and parts are referred to as the “old River Soar” which follows the original watercourse.

Many smaller brooks flow into the Soar from the west and east boundaries with major tributaries such as the Melton, Braunstone, Saffron, Rothley and Willow Brooks providing a continuous source of water and important blue-green network along to help wildlife disperse.

Many sections of these watercourses have been modified either to reduce flooding or to allow navigation, but more natural sections still persist such as at Aylestone Meadows where the River Biam and River Soar meander through the water meadows; the Saffron Brook with its earth banks, pools and riffles flowing through Knighton Park and Rothley Brook forming a diverse range of habitats along the boundary of Castle Hill Country Park to the north-west.

The River Soar and several tributaries are designated as LWSs with adjacent sites also having potential to support wildlife and contribute to the wider green/blue ecological network.

7.2 CHARACTERISTIC SPECIES

The River Soar supports a diverse range of wildlife, partly due to a significant improvement in water quality in recent years. Plants such as Yellow water lily (*Nuphar lutea*) and Floating sweet grass (*Glyceria fluitans*), often associated with clear, unpolluted water are now readily colonising areas. The more natural banks of the River Soar and tributaries provide habitat for Water vole (*Arvicola amphibius*), Kingfisher (*Alcedo atthis*) and Otter (*Lutra lutra*) while all watercourses provide some habitat for water fowl such as Moorhen (*Gallinula chloropus*), Mallard (*Anas platyrhynchos*) and Mute Swan (*Cygnus olor*). Major predators such as Pike (*Esox Lucius*) have been observed throughout the Soar and indicate fish populations are healthy.

Plants such as Skullcap (*Scutellaria lateriflora*), Angelica (*Angelica sylvestris*), Common reed (*Phragmites australis*) and Branched bur-reed (*Sparganium erectum*) fringe the natural banks and provide a haven for pollinators and aquatic wildlife.

Associated Habitat Action Plans

Wetlands
Mature/Veteran Trees

Associated Species Action Plans

Bats
Birds
Amphibians/Reptiles
Otter
Wetervole

7.3 THREATS

Main factors affecting watercourses in Leicester are:

- Climate change – excessive drought or floods;
- Direct and indirect threats from development – including historic and on-going development resulting in loss of ecological processes;
- Hydrological changes resulting from artificial processes, artificial drainage, abstraction
- Carrier to dispersal – from weirs and dams – also impacting on natural hydrology within water courses
- Pollution – outfall pipes from industrial estates, outfall from misconnections on washing machines, runoff from roads etc; Litter, plastics and fly-tipping
- Sedimentation of tributaries from upstream and urban runoff
- Conflicting use and disturbance e.g. recreational activities – boating, canoeing, wild swimming, access by dogs;
- Lack of management or inappropriate management;
- In-filling with fear of to public health and safety from death or injury;
- Release and spread of non-native species of flora and fauna

7.4 USEFUL INFORMATION

- Links to websites to manage and value watercourses areas

<https://www.ada.org.uk/advice/>

<https://www.leicester.gov.uk/your-environment/flooding-and-severe-weather>

7.5 DISTRIBUTION OF OPEN WATERCOURSES



Source: Leicester City Council Phase 1
Habitat Survey 2018-20

7.6 WATERCOURSES (RIVERS AND BROOKS) ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Habitat Creation/Species			
Create, restore and enhance wetland habitat across Leicester to create more and better connected habitat	Identify areas as BOS and complete BOMs on target areas to restore, enhance or re-naturalise watercourses	2021/22	Nat Con
	Complete Scoping study for Saving the Saffron Project to identify and prioritise suitable sites for GI and biodiversity	2021	SCP, EA, Flood
	Seek funding/contributions from BNG, Green Lifeboat contributions, Council and other funding opportunities to	2021-2026	Parks, Nat Con
Work with partners to identify and prioritise new projects that meet BAP aims and contribute to wider NRN	Consider Natural Flood management schemes to contribute to blue-green network and target BOS. Identify all potential sites based on flood risk and	2021/22	Flood, Nat Con, SCP, S&GUC
Create and restore water courses and associated floodplain at appropriate	Complete works at Aylestone Meadows, Everards Meadow, Marsden Lane	2021	Regen, Landscape, Nat

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
Management/Advice			
Develop guidance and strategies on appropriate management to optimise biodiversity value	Produce Management Plans for new sites at Thurnby Lodge Nature Area, Aylestone Meadows (River Biam)	2021	Nat Con, Parks
	Complete Riverside Management Plan to co-ordinate management of River corridor from Aylestone to Birstall	2022/23	Nat Con, Parks
Programme in sensitive conservation management of riparian habitats along Soar	Review from baseline data, map all areas add into management schedule	2021/22	Stds & Development,
	Identify and agree works undertaken by Parks (GM and LEV), develop programme of work to enhance biodiversity 1 km/yr	2021-2030	Parks, Nat Con
Review conservation management of brooks under council and EA responsibility and agree appropriate management to conserve and enhance	Update Watercourses Management Guidance and schedule annual programme of work to be phased in across the city (3 km/yr)	2022-2030	Flood

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Encourage local Universities to study correlation between water environment and plastics; impacts of climate change	Continue work with UoL to develop research projects related to plastics pollution (1 x research project)	2021/22	UoL, SCP, Nat Con

- Champion and promote Leicester’s biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Engagement			
Promote conservation volunteers, plastics and project case studies	Work with partners to promote good practice and publish on webpages	On-going	Parks, Nat Con, Flood
Use a range of media to regularly promote projects and public/partner	Publicise in annual Making Wildlife Count report and digital media	On-going	Nat Con
Programme in conservation management of watercourse re collection of litter/plastics etc	Schedule in programme of conservation days on boats to collect litter/plastics (10/yr- subject to review)	On-going	Parks

8. Wetlands – (Canal, Lakes and Ponds)



8.1 HABITAT DEFINITION AND CURRENT STATUS

This habitat includes eutrophic (nutrient-rich) fresh water with little or no flow and man-made structures such as the Grand Union Canal, lakes and ponds. Although generally containing high levels of nutrients, they also support high levels of biodiversity.

The Grand Union Canal is partially designated as a LWS and is also part of the strategic Blue-Green Network which readily connects with the River Soar as it flows through the city. Large areas of open water at Watermead CP are also designated as LNR and LWS whilst the lakes at Abbey Park and Braunstone Park provide attractive areas for waterfowl to nest and breed.

Well-established ponds have been designated for their species assemblages and support locally important populations of amphibians at Western Park, Evington Park and the University Arboretum. A significant number of new wetland areas have been created through development and flood alleviation schemes in the last ten years. These have been designed to mimic natural systems and some of the best examples are Hamilton lagoons, Ellis Meadows and more recently at Ashton Green.

A series of recent interventions running adjacent to the Soar have created a number of complimentary habitats whilst providing temporary water storage at times of flood. Examples include destination sites such as Cardinal's Meadow, Swans Nest Wetland, Little Meade and Birstall Meadows, waterfowl, mammals and plants. The range and size of the wetlands form part of an extensive and expanding network of sites across the city – linked to requirements for flood alleviation, these water bodies are now more sustainable and less likely to dry out at key times of the year when used for breeding.

8.2 CHARACTERISTIC SPECIES

Typical species associated with this habitat are water fowl such as Mute swan (*C.olor*), Coot (*Fulica atra*) and Moorhen (*G. chloropus*) with more unusual species such as Teal (*Anas crecca*) and Oystercatcher (*Haematopus ostralegus*) associated with the less disturbed wetlands. Common frog, Toad and Smooth newt are all frequent together with Grass snake to the north and south of the city along with protected species such as Great crested newt.

Associated Habitat Action Plan

Rivers and Brooks

Associated Species Action Plans

Bats
Birds
Amphibians/Reptiles
Otter
Watervole

8.3 THREATS

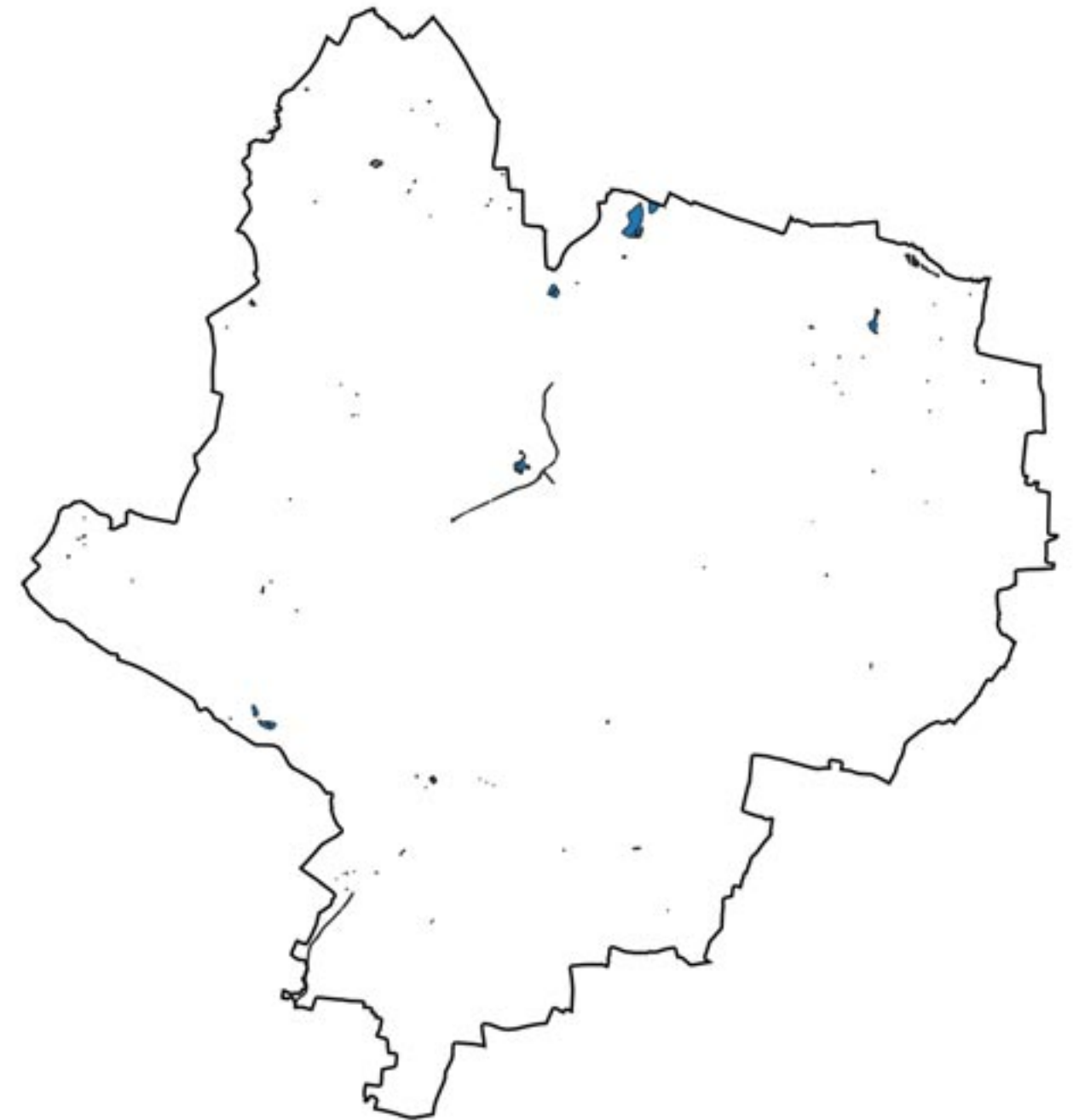
Main factors affecting wetlands in Leicester are:

- Climate change – excessive droughts or floods
- Direct and indirect threats from development;
- Pollution – outfall pipes from industrial estates, outfall from misconnections on washing machines, runoff from roads etc; litter and plastics
- Conflicting use and disturbance e.g. recreational activities – access by dogs and people
- Lack of management or inappropriate management;
- In-filling with fear of health and safety;
- Release and spread of non-native species of flora and fauna

8.4 USEFUL INFORMATION

- Links to websites to manage and value wetland areas
<https://www.trentriverstrust.org/soar/>
<https://www.froglife.org/>

8.5 DISTRIBUTION OF WETLANDS



Source: Leicester City Council Phase 1
Habitat Survey 2018-20

Ponds and Lakes and their Designation in Leicester

Lake	Abbey Park	Abbey Park Road	Parks	
Pond	Appleton Park	Peebles Way	Parks	
Pond	Ashton Green	Bluebell Walk/Glebelands	Parks	
Pond	Ashton Green - includes former Churchbell Way pond	Leicester Road	Parks	
Pond	Astill Park	Bennion Road	Parks	
Pond	Aylestone	Canal Street	Parks	LNR
Pond	Aylestone - boardwalk ponds	Evesham Road	Parks	LWS/LWS
Pond	Aylestone - Evesham Road and gasholder ponds	Evesham Road	Parks	LWS/LNR
Pond	Aylestone - pond near St Andrew's	Canal Street	Parks	LWS/LNR
Pond	Aylestone - Whippet fields	Braunstone Lane East	Parks	LWS/LNR
Pond	Beaumont Park	Bennion Road	Parks	
Pond	Bennion Pools	Bevan Road	Parks	
Pond	Birstall Meadows 5 ponds	Birstall Road	Estates & BS	LWS/LNR
Lake	Braunstone Park Ecology Lake - Southern Lake	Cort Crescent	Parks	
Lake	Braunstone Park Fishing Lake - Northern Lake	Cort Crescent	Parks	
Pond	Cardinal's Meadow	Abbey Park Road	Parks	cLWS
Pond	Castle Gardens	Castle Street	Parks	
Ponds	Castle Hill Country Park - 6 ponds	Rothley Brook Meadow, Anstey	Parks	cLWS/cLNR
Pond	Churchfields, Braunstone	Woodshaw Rise	Parks	cLWS
Lake	Ellis Meadows	Corporation Road	Parks	cLWS
Pond	Evington Park - near house	Ethel Road	Parks	LWS
Pond	Evington Park - off Cordery Road	Ethel Road	Parks	LWS
Pond	Fulford Road Open Space	Fulford Road	Parks	LWS
Pond	Gilmorton Open Space	Gilmorton Avenue	Parks	cLWS
Pond	Glenfrith Ponds	Lady Hay Road	Parks	
Pond	Goss Meadows	Anstey Lane	Estates & BS	LWS/LNR
Canal	Grand Union Canal		C&RT	LWS/GIN
Pond	Greenlife pond, Humberstone Park	Uppingham Road	Parks	LWS/LNR
Pond	Hamilton Meadow	Hamilton Meadow Ponds	Private	cLWS
Lake	Hamilton Park	Sandhills Avenue	Parks	
Pond	Humberstone Community Gardens	Vicarage Lane	Parks	
Pond	Humberstone golf course	Gipsy Lane	Private	LWS
Pond	Knighton Park - Heath Garden	Palmerston Way	Parks	
Pond	Lily Marriot gardens	Coleman Road	Parks	
Pond	Little Meade	Thurcaston Rd	Parks	cLWS
Pond	Mountain Road Flood Meadow	Mountain Road	Estates & BS	LWS
Pond	Nelson Mandela Park	Welford Road	Parks	
Pond	Oaklands Nature Reserve	Oakland Avenue	Parks	LWS/LNR
Pond	Orchards pond (near garage)	Grobby Road	Estates & BS	LWS/LNR
Pond	Orchards/City Farm pond	Grobby Road	City Farm	LWS/LNR
Pond	Piper Way Nature Garden	Piper Way	Parks	
Pond	Prebend Gardens	Prebend Street	Parks	
Pond	Rancliffe Gardens	Priestley Road	Parks	
Pond	Roode Meade	Loughborough Road	Parks	
Pond	Shady Lane Arboretum	Shady Lane	Parks	LWS
Pond	Sir John's Wood	Featherstone Drive	Parks	
Pond	SSSI and Adjacent Land LWS	Lewisher Road	Estates & BS	
Pond	Stokeswood Park	Grobby Road	Parks	LWS/cLNR
Pond	Swan's Nest Wetland	Corporation Road	Parks	LWS
Pond	Victoria Park Nature Area	Victoria Park Road	Parks	
Pond	Washbrook Nature Area	Knighton Lane East	Parks	LWS
Lake	Watermead Country Park	Alderton Close	Parks	LWS/LNR
Pond	Watermead Country Park (4 ponds)	Melton Road	Parks	LWS/LNR
Pond	Western golfcourse (former)	Sudamore Road	Parks	LWS
Pond	Western Park	Park View - top meadow	Parks	
Pond	Western Park - adjacent to lower meadow	Hinckley Road	Parks	
Pond	Western Park - hedge pond	Hinckley Road	Parks	LWS
Pond	Willowbrook Park/Thurnby Lodge	Thurncourt Road	Parks	LWS
Pond		Bedale Drive	Parks	
Pond		Brompton Road	Parks	
Pond		Bryony Road	Parks	
Pond		Celendine Road	Parks	
Pond		Hughenden Drive	Parks	
Pond		Kestrel Close	Parks	

8.6 WETLANDS (CANAL, LAKES AND PONDS) ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
<i>Habitat Creation/Species</i>			
Create, restore and enhance wetland habitat across Leicester to create more and better connected habitat	Identify areas as BOS and complete BOMs on target areas to restore, enhance or re-naturalise wetlands 50% of sites each year in preparation for future funded schemes and/or to create or restore 5 x wetlands	2021/22 and 2025	Nat Con, Landscape, Flood
	Complete Scoping study for Saving the Saffron Project to identify and prioritise suitable sites for GI and biodiversity improvements	2021	SCP, EA, Flood
	Work with partners to support existing landscape projects e.g. Soar-Wreake Initiative and identify new funding opportunities	2021-2026	Nat Con, SCP, LRWT, EA
Create additional ponds on sites where future management can be secured through BNG	Establish a minimum of 10 sites suitable to support amphibians and/or reptile populations, monitor and publish findings	2026	Nat Con, Sustainability, NE
Consider options for district licensing for GCNs	Review requirements for pond creation, licensing and mitigation inform LPA regarding implementation	2021	Planning, Nat Con, NE

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
<i>Management/Advice</i>			
Develop guidance and strategies on appropriate management to optimise biodiversity value	Produce Management Plans for new sites recently completed at Cardinal's Meadow and Swans Nest Wetlands	2021	Nat Con, Parks
	Update Management Plan and maintenance schedule for Ellis Meadows	2021	Nat Con, Parks
Programme in sensitive conservation management of riparian habitats along Soar	Review from baseline data, map all areas add into management schedule	2021	Stds & Development, Parks, Nat
Provide guidance to land managers on appropriate management of ponds, wetlands and terrestrial habitat	Produce a series of leaflets and publish on website to ensure availability, cross-reference with case studies and good practice	2021	Nat Con, LRWT

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Review site designation for field ponds and/or which support populations of amphibians	Review Phase 1 Habitat maps and update pond locations, ground truth and designate if meet criteria (50% ponds/yr)	2021	Nat Con
Encourage recorders and public to submit records to organisations collating	Maintain records on local database and exchange with LRERC	On-going	Nat Con, LRERC
Encourage schools/public in National Recording Schemes run by Froglife and Herpetofauna Group	Encourage 10 schools to participate in Earthwatch and target species	2025	Sustainability
	Set up Pond Watch to coincide with Amphibian/Reptile Conservation Day (1	2022 and annually	Parks - CDT

- Champion and promote Leicester's biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Engagement			
Schedule in programme of work with volunteers and corporate organisations with focus on ponds and designated sites	Programme in conservation tasks – to include rolling programme of pond work (6/yr – subject to review)	On-going	Parks, Nat Con
Use a range of media to regularly promote projects and public/partner engagement	Publicise in annual Making Wildlife Count report and digital media	On-going	Nat Con
Work with partners to promote good practice and publish on webpages – link to relevant species action plans	Include 1 x site (WMCP) as a Destination Park to promote biodiversity and wildlife opportunities	2023	Parks, Nat Con, SCP



Species Action Plans



Leicester's
Biodiversity
Action Plan

Species Action Plans

The broad BAP objectives are set out fully in Part 1 of the Plan and in this section each Species Action Plan (SAP) will specify objectives and actions for individual species where appropriate.

Part 2 of the Plan is divided into the main species groups found in Leicester that are considered Priority and/or Protected Species, namely Birds and Mammals. Plans for species within those Groups have a specific Species Action Plan outlining the key habitat requirements, reasons for decline and what actions are necessary to help their conservation.

Other species groups such as Amphibians and Reptiles are included as general Action Plans and may be subject to review. Species such as Great Crested Newts (GCNs) (*Triturus cristatus*) and Common toad (*Bufo bufo*) are a protected and priority species. Similarly Reptiles such as Grass snake (*Natrix natrix*), Common lizard (*Zootoca vivipara*) and Slow worm (*Anguis fragilis*) have all been recorded as present in Leicester, albeit in small numbers and in specialised habitats. The actions to safeguard and enhance the habitat types associated with these species and strengthening of Planning and Policies to safeguard appropriate mitigation and biodiversity net gain will continue to be central to the welfare and conservation status without necessitating a separate Action Plan for each species.

Although invertebrates generally are not addressed in the Plan, it is also recognised that many are Priority and/or Protected Species and should be considered a material consideration if likely to be present within Leicester. Leicester's Pollinator Strategy 2020 – 2025 has gone a long way to recognising the importance of this species group and forms part of a series of documented Actions to aid conservation.

These action plans should also be cross-referenced to the Species Action Plans within the Leicester, Leicestershire & Rutland Biodiversity Action Plan (LLR BAP) (2016 – 2026) which considers the wider conservation status and strategic actions to support habitats and species across the city and counties.

Links to these documents and other information can be found in Section 8 Useful References of Part 1 Leicester's Biodiversity Action Plan 2021 – 2031.



Amphibians and Reptiles



Amphibians and Reptiles

1.1 INTRODUCTION

These species are collectively referred to as *Herpetofauna* and although there are significant differences between Amphibians and Reptiles and their habitat requirements, they are often grouped together for conservation, monitoring and research purposes.

Herpetofauna are cold-blooded vertebrates which rely on external sources of heat to warm their blood. For this reason Reptiles often bask in the sun on open bare soil, short vegetation or log piles whilst Amphibians gain heat by burrowing into warm mud or sheltering on the edges of ponds.

1.2 KEY HABITATS

Amphibians will hibernate under piles of damp leafs, rotting logs or underground tunnels and because Frogs are capable of breathing through their skin to survive, they can live at the bottom of muddy ponds during the winter months where temperatures are less prone to fluctuation. Reptiles tend to hibernate underground where they may use disused mammal burrows, buried stonework, dense tussocky grass and even tree roots. In urban areas they have been found in drains along with Amphibians.

Herpetofauna rely on diurnal changes and as the days become slightly longer, they emerge from their hibernation and immediately make their way to their breeding waterbodies. Usually this is the pond in which they hatched and which they return to year after year. This is especially the case with Toads which often use the same migratory route to return to the larger ponds compared to those frequented by Frogs.

In Leicester the main species found are listed below along with their associated habitat.

Species Group	Common Name	Scientific Name	Habitat Type	Status
Amphibian	Common Frog	<i>Rana temporaria</i>	Damp woodland, grassland, hedgerows, marshes. Breed in small shallow ponds, margins of larger	Partially Protected
Amphibian	Common Toad	<i>Bufo bufo</i>	Open woodland, hedgerows, grassland and gardens, Tolerates dry conditions outside of breeding	Partially Protected Priority Species
Amphibian	Great Crested Newt	<i>Tritus cristatus</i>	Prefer larger ponds or small lakes, but will breed in smaller ponds and ditches. Often co-exist with Smooth newt. Terrestrial habitat deciduous	Fully protected Priority Species
Amphibian	Smooth Newt	<i>Lissotriton vulgaris</i>	Prefer small fish-free ponds, garden ponds and ditches with a neutral to alkaline pH. Outside of breeding inhabit hedgerows, undisturbed	Partially Protected
Amphibian	Alpine Newt*	<i>Mesotriton alpestris</i>	Introduced and generally found in garden ponds, ditches and drains	
Reptile	Common Lizard	<i>Zootoca vivipara</i>	Open, undisturbed habitat such as railway and road embankments	Partially Protected Priority Species
Reptile	Grass Snake	<i>Natrix natrix</i>	Open woodland and rides, hedgerows, golf courses, road and railway embankments. Requires lakes and pond for food source, but	Partially Protected Priority Species
Reptile	Slow Worm	<i>Anguis fragilis</i>	Open woodland, rough grassland, hedgerows, gardens, allotments, road/rail embankments and brownfield sites.	Partially Protected Priority Species
* Non-native				

Associated Habitat Action Plans

Wetlands
Rivers and Brooks
Mature/Veteran Trees

Associated Species Action Plans

Otter
Watervole

1.3 THREATS

Amphibians and Reptiles found in the UK are on the edge of their Northern territory and the more common species tend to be more adaptable and found in a wider range of habitat than the rarer species.

The most significant threats to these species are:

- Loss of habitat – pressure from development and poor management can cause habitats to be lost
- Loss of connecting habitat – creating isolated pockets of habitat. When linking habitat is lost or physical barriers are created by development and road construction. Isolated populations have reduced genetic diversity making them more vulnerable to disease as well as predation and breeding;
- Fish predation – the Common frog is particularly vulnerable to predation from fish which readily eat the tadpoles;
- Climate change and weather conditions – drought causing loss of ponds during the breeding season, floods causing loss of spawn, eggs and larvae if flooded out or nearby rivers/brooks flood into ponds – introducing fish and other invertebrates; desiccation and de-hydration during severe heat; hypothermia and freezing during cold temperatures – impacts on prey/food source too;
- Changes in metabolism and metamorphic rate caused by milder winters which reduce hibernation length and intensity creating poorer body condition in which to breed

1.4 CURRENT STATUS

Amphibians are generally under-recorded in Leicester probably because their presence is in part taken for granted. Anecdotal evidence of Frogs and frog spawn present in the Parks ponds and local gardens has generally been confirmed through garden surveys and information gathered at wildlife events.

The presence of Smooth and Great Crested newts is gathered from ecological survey data from the local record office, Council's nature conservation officers, EA and consultancies. Populations are known and co-exist on several sites with Smooth newts more prevalent on allotment sites and garden ponds. A number of Alpine newt records have been reported in the Evington suburbs and are likely to be associated with garden escapees.

Records of Common lizard are quite rare with occasional records found on sites adjacent to railway lines. It is likely they are under-recorded due to access and lack of survey work. Similarly Slow worms are occasionally recorded on undisturbed habitat such as de-commissioned allotments and hedgerows. These habitats are frequent in Leicester but their population continues to decline. Grass snakes thrive where habitats are suitable such as Aylestone, Watermead and Birstall. There are records of Grass snake on undisturbed banks of the canal by Abbey Park and they are likely to frequent a number of brownfield sites awaiting development along the river corridor.

1.5 LEGAL STATUS

All native species of amphibians and reptiles are offered protection under the Wildlife and Countryside Act 1981 (as amended). This partial protection means that:

- Reptiles are protected from being killed, injured or sold
- Amphibians are protected from being sold

Great Crested Newts are given additional protection under the Habitat & Species Regulations (2017) from their habitat disturbed whilst being used a place of shelter or breeding

1.6 DISTRIBUTION OF AMPHIBIANS AND REPTILES IN LEICESTER

Species Group	Common Name	Scientific Name	2000 - 2020 Records	Distribution
Amphibian	Common Frog	<i>Rana</i>	258	Well dispersed, but under-recorded
Amphibian	Common Toad	<i>Bufo bufo</i>	406	Mainly alongRiver corridor and pond networks
Amphibian	Great Crested Newt	<i>Tritus cristatus</i>	82	Glenfield, Birstall, Knighton, Evington
Amphibian	Smooth Newt	<i>Lissotriton vulgaris</i>	266	Evington, Hamilton, Glenfield, River Soar, Aylestone, Birtall
Amphibian	Alpine Newt*	<i>Mesotriton alpestris</i>	9	Knighton
Reptile	Common Lizard	<i>Zootoca</i>	7	Near to mainline railway south of city
Reptile	Grass Snake	<i>Natrix natrix</i>	60	Along River Soar corridor
Reptile	Slow Worm	<i>Anguis fragilis</i>	12	Outer areas of city associated with records from School developments

1.7 AMPHIBIAN AND REPTILE ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Habitat Creation/Species Recovery			
Create, restore and enhance wetland habitat across Leicester to create more and better connected habitat to support recovery of amphibians and reptiles	Identify areas as BOS and complete BOMs on target areas to restore, enhance or re-naturalise wetlands 50% of sites each year in preparation for future funded schemes and create or restore 5 x	2021/22 and 2025	Nat Con, Landscape, Flood
	Complete Scoping study for Saving the Saffron Project to identify and prioritise suitable sites for GI and biodiversity	2021	SCP, EA, Flood
	Work with partners to support existing landscape projects e.g. Soar-Wreake Initiative and identify new funding	2021-2026	Nat con, SCP, LRWT
Create additional ponds on sites where future management can be secured through BNG	Establish a minimum of 10 sites suitable to support amphibians and/or reptile populations, monitor and publish findings	2026	Nat Con, Sustainability, NE
Consider options for district licensing for GCNs	Review requirements for pond creation, licensing and mitigation inform LPA regarding implementation	2021	Planning, NE
Improve and safeguard routes to breeding waterbodies	Include specification for highway drains and kerbs to reduce risk of injury to amphibians to inform planning	2022	Highways, Flood, Nat Con

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
Management/Advice			
Develop guidance and strategies on appropriate management to optimise biodiversity value	Produce Management Plans for new sites recently completed at Cardinal's Meadow and Swans Nest Wetlands	2021	Nat Con, Parks
	Update Management Plan and maintenance schedule for Ellis Meadows	2022	Parks
Programme in sensitive conservation management of riparian habitats and	Review from baseline data, map all areas add into management schedule	2021	Stds & Development,
Provide guidance to land managers on appropriate management of ponds, wetlands and terrestrial habitat (hibernacula)	Produce a series of leaflets and publish on website to ensure availability, cross-reference with case studies and good practice	2021	Nat Con, LRWT

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Review site designation for field ponds and/or which support populations of amphibians	Review Phase 1 Habitat maps and update pond locations, ground truth and designate if meet criteria (50% ponds/yr)	2021	Nat Con
Encourage recorders and public to submit records to organisations collating records	Maintain records on local database and exchange with LRERC	On-going	Nat Con, LRERC
Encourage schools/public in National Recording Schemes run by Froglife and Herpetofauna Group	Encourage 10 schools to participate in Earthwatch and target species	2025	Sustainability
	Set up Pond Watch to coincide with Amphibian/Reptile (1 day/yr)	2022 and annually	Parks - CDT

- Champion and promote Leicester's biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Engagement			
Schedule in programme of work with volunteers and corporate organisations with focus on ponds and designated	Programme in conservation tasks – to include rolling programme of pond work (6/yr – subject to review)	On-going	Parks, Nat Con
Use a range of media to regularly promote projects and public/partner	Publicise in annual Making Wildlife Count report and digital media	On-going	Nat Con
Work with partners to promote good practice and publish on webpages – link to relevant species action plans	Include 1 x site (WMCP) as a Destination Park to promote biodiversity and wildlife opportunities	2023	Parks, Nat Con, SCP
Encourage homeowners and private landowners to create ponds	Link to national pond creation schemes and encourage creation of 5 ponds/yr	2025	LRWT



Birds



Leicester's Biodiversity Action Plan

Birds

1.1 INTRODUCTION

Birds are probably the best-known of all animals that frequent our towns and cities. Leicester is no exception with over 300 species having been recorded across the different seasons. The wealth of habitats that can support them help to bring diversity and interest to the city.

Our parks and gardens are particular havens and support traditional woodland birds that frequently visit bird feeders and nest in the shrubs, bushes and mature trees. With both seeds and insects in abundance these birds do not have far to fly to get to their food sources. Tolerant of disturbance and regular management of these sites, typical species include the Robin (*Erithacus rubecula*), Chaffinch (*Fringilla coelebs*), Great tit (*Parus major*), Blue tit (*Cyanistes caeruleus*) and Blackbird (*Turdus merula*).

Common, but usually quite elusive species such as the Grey heron (*Ardea cinerea*) and Moorhen (*Gallinula chloropus*) can be observed next to brooks and ponds and appear much more tolerant of people and noise than their rural counterparts. The colourful Ring-necked parakeet (*Psittacula krameri*) has become the UK's most abundant naturalised parrot and can be heard or seen flying over the tall trees in parks whilst the migratory Swifts (*Apus apus*), Swallows (*Hirundo rustica*) and House martins (*Delichon urbicum*) favour certain parts of the city to build nests and feed within the green spaces.

Some birds such as Swifts and Sparrows are associated with being urban as they breed almost entirely in or on buildings; others such as Pied wagtail (*Motacilla alba*) and Starlings (*Sturnus vulgaris*) are also highly dependent on buildings for nest sites.

Larger birds such as the Tawny owl (*Strix aluco*) and Cormorant (*Phalacrocorax carbo*) favour mature trees in parks and wetlands whilst birds such as the Oystercatcher (*Haematopus ostralegus*), Skylark (*Alauda arvensis*) and Little Ringed Plover (*Charadrius dubius*) show how much our wetland reserves have matured to support these birds on the edge of the city.

Birds have largely learnt to adapt to changing conditions and to nest where it is considered safe to do so, using nesting material readily available within the urban environment such as traffic cones, telephone wiring, plastic bottles and ledges of traffic lights and windows. Perhaps, of more concern is the impact of building materials on our bird populations. Over 100 million birds are estimated to be killed in the UK alone each year by flying into glass. Birds cannot "see" glass windows unless it is treated with a UV coating which changes the colour wavelength and enables birds to avoid impacts. The design of the building however, remains unaltered to the human eye and appears as "normal" transparent glass.

1.2 PRIORITY BIRD SPECIES

Leicester supports a number of birds that are considered of conservation concern. The Red List criteria includes species that are globally threatened, species showing a decline of at least 50% in the UK breeding population in the last 25 years, or species showing a contraction of at least a 50% in their UK breeding range in the last 25 years.

The Amber List criteria include species with unfavourable conservation status in Europe, species showing a decline of between 25-50% in the UK breeding population in the last 25 years, or species showing a contraction of at between 25-50% in their UK breeding range in the last 25 years." Additional priority species are those noted under the NERC Act 2006 which have also suffered serious decline in recent decades or Schedule 1 of the Wildlife & Countryside Act (1981)



Species Group	Taxon group	Taxon name	Common name	Status
Vertebrates	Bird	<i>Tyto alba</i>	Barn owl	Sch 1
Vertebrates	Bird	<i>Branta leucopsis</i>	Barnacle Goose	Amber
Vertebrates	Bird	<i>Chroicocephalus ridibundus</i>	Black-headed Gull	Amber
Vertebrates	Bird	<i>Phoenicurus ochruros</i>	Black Redstart	Sch 1, Red
Vertebrates	Bird	<i>Botaurus stellaris stellaris</i>	Bittern	NERC, Sch 1, Amber
Vertebrates	Bird	<i>Fringilla montifringilla</i>	Brambling	Sch 1
Vertebrates	Bird	<i>Pyrrhula pyrrhula pileata</i>	Bullfinch	NERC
Vertebrates	Bird	<i>Cuculus canorus canorus</i>	Common Cuckoo	NERC, Red
Vertebrates	Bird	<i>Prunella modularis</i>	Dunnock (Hedge	NERC, Amber
Vertebrates	Bird	<i>Turdus pilaris</i>	Fieldfare	Sch 1, Red
Vertebrates	Bird	<i>Bucephala clangula</i>	Goldeneye	Sch 1, Amber
Vertebrates	Bird	<i>Locustella naevia naevia</i>	Grasshopper Warbler	NERC, Red
Vertebrates	Bird	<i>Motacilla cinerea</i>	Grey wagtail	Red
Vertebrates	Bird	<i>Larus argentatus argenteus</i>	Herring Gull	NERC, Red
Vertebrates	Bird	<i>Delichon urbicum</i>	House Martin	Amber
Vertebrates	Bird	<i>Falco tinnunculus</i>	Kestrel	Amber
Vertebrates	Bird	<i>Alcedo atthis</i>	Kingfisher	Sch 1, Amber
Vertebrates	Bird	<i>Passer domesticus</i>	House Sparrow	NERC, Red
Vertebrates	Bird	<i>Vanellus vanellus</i>	Lapwing	NERC, Red
Vertebrates	Bird	<i>Charadrius dubius</i>	Little Ringed Plover	Sch 1
Vertebrates	Bird	<i>Larus fuscus</i>	Lesser Black-backed Gull	Amber
Vertebrates	Bird	<i>Dendrocopos minor</i>	Lesser Spotted	NERC, Red
Vertebrates	Bird	<i>Anas platyrhynchos</i>	Mallard	Amber
Vertebrates	Bird	<i>Parus palustris</i>	Marsh Tit	NERC, Red
Vertebrates	Bird	<i>Turdus viscivorus</i>	Mistle thrush	Red
Vertebrates	Bird	<i>Cygnus olor</i>	Mute Swan	Amber
Vertebrates	Bird	<i>Haematopus ostralegus</i>	Oystercatcher	Amber
Vertebrates	Bird	<i>Falco peregrinus</i>	Peregrine Falcon	Sch 1
Vertebrates	Bird	<i>Anser brachyrhynchus</i>	Pink-footed Goose	Amber
Vertebrates	Bird	<i>Aythya ferina</i>	Pochard	Red
Vertebrates	Bird	<i>Emberiza schoeniclus</i>	Reed Bunting	NERC, Amber
Vertebrates	Bird	<i>Milvus milvus</i>	Red Kite	Sch 1
Vertebrates	Bird	<i>Turdus iliacus</i>	Redwing	Sch 1, Red
Vertebrates	Bird	<i>Asio flammeus</i>	Short-Eared Owl	Amber
Vertebrates	Bird	<i>Alauda arvensis arvensis</i>	Sky Lark	NERC, Red
Vertebrates	Bird	<i>Turdus philomelos clarkel</i>	Song Thrush	NERC, Red
Vertebrates	Bird	<i>Muscicapa striata striata</i>	Spotted Flycatcher	NERC, Red
Vertebrates	Bird	<i>Sturnus vulgaris vulgaris</i>	Starling	NERC, Red
Vertebrates	Bird	<i>Apus apus</i>	Swift	Amber
Vertebrates	Bird	<i>Strix aluco</i>	Tawny Owl	Amber
Vertebrates	Bird	<i>Anas crecca</i>	Teal	Amber
Vertebrates	Bird	<i>Passer montanus montanus</i>	Tree Sparrow	NERC, Red
Vertebrates	Bird	<i>Mareca penelope</i>	Wigeon	Amber
Vertebrates	Bird	<i>Parus montanus kleinschmidt</i>	Willow Tit	NERC, Red
Vertebrates	Bird	<i>Phylloscopus trochilus</i>	Willow Warbler	Amber
Vertebrates	Bird	<i>Scolopax rusticola</i>	Woodcock	Red
Vertebrates	Bird	<i>Lullula arborea arborea</i>	Wood Lark	NERC, Sch 1
Vertebrates	Bird	<i>Phylloscopus sibilatrix</i>	Wood Warbler	NERC, Red
Vertebrates	Bird	<i>Motacilla flava flavissima</i>	Yellow Wagtail	NERC, Red
Vertebrates	Bird	<i>Emberiza citrinella citrinella</i>	Yellowhammer	NERC, Red

1.3 NESTING BIRDS

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended), and are given additional protection whilst they are actively nesting or roosting. Section 1 of this Act, makes it an offence to kill, injure or take any wild bird, and to intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built.

It is also an offence to take or destroy any wild bird eggs.

Bird species listed under Schedule 1 of the Act receive extra protection. The Act states that ‘it is an offence to intentionally or recklessly disturb any wild bird listed in Schedule 1 while it is nest building, or at (or near) a nest containing eggs or young, or disturb the dependent young of such a bird’. The maximum penalty for each offence in the Magistrates’ Court is a £5000 fine and/or six months imprisonment and a £5000 fine and two years imprisonment in the Crown Court.

1.4 WILD BIRDS AND LEGISLATION

The Habitat & Species Regulations (2017) Section 10 has largely superceded original requirements in the Birds Directive (2009/147/EC 2) which set out to maintain and restore the populations of all naturally occurring wild bird species present in the EU at a level that will ensure their long term survival

The directive requires that Member States do more than simply prevent the further deterioration of these species and habitat types. They must also undertake **positive management** measures to ensure their populations are maintained at, or restored to, a favourable conservation status throughout their natural range within the EU. Favourable conservation status can be described as a situation where a habitat type or species is prospering (in both quality and extent/population) and has good prospects to do so in future as well.

Section 10 of the Regulations (Duties under wild bird habitat) has updated this requirement and state “Local Authorities (and others) are required “To help preserve, maintain and re-establish habitats for wild birds” including by means of upkeep, management and creation of such habitat ...”

This is a statutory requirement in accordance with the NERC Act (2006) for all statutory agencies including the service areas within the Local authority to have regard to biodiversity in undertaking their duties. The actions for management of key habitats referred to in this document should be cross-referenced to minimise those practices that may impact negatively on wild birds and to promote good practice and optimise the creation and management of habitats to support wild birds.

Species Action Plans for the following birds are provided which specify additional opportunities to promote the conservation status in addition to the above:

- Black redstart (*Phoenicurus ochruros*)
- Peregrine falcon (*Falco peregrinus*)
- Swifts (*Apus apus*)

2. Black Redstart



2.1 INTRODUCTION

The Black redstart (*Phoenicurus ochruros*) is a member of the “Old World” flycatcher and is similar in size and shape to a Robin. The name redstart originates from the Saxon red steort which means red tail – the male has a striking bright chestnut rump and tail and the female is a paler chestnut.

The main population of Black redstarts is concentrated in London, the West Midlands and the coast of Norfolk and Suffolk. It is, however, likely to be under-recorded and although there have been infrequent historical records, was noted more regularly in Leicester approximately five years ago by local bird specialists monitoring Peregrine falcon activity in the city. It is estimated that up to three breeding pairs have previously been identified in Leicester.

The Black redstart is a rare breeder in the UK with an estimated population of only 80 to 120 pairs making it one of the rarest breeding birds. It is estimated that one to three breeding pairs have been identified in Leicester.

2.2 KEY HABITATS

The species breeds in a range of habitats but has become known as the “Bomb Site” bird due to its association during and after World War II when it largely bred on bomb sites in central London.

It favours areas that are characterised by sparse vegetation and rocky, craggy terrain. The frequency and convenience of nest sites in walls or roofs of buildings has enabled the species to adapt to urban surroundings where buildings have replaced the rocky crags. The presence of waste land colonised by weed species with areas of bare, undisturbed soils and an ample supply of song posts at least 20 m above the ground has allowed the Black redstart to colonise cities across Europe.

In particular, areas around railways, canals, warehouses and large buildings have been preferred by this species compared to the leafy suburbs, parks and other landscaped areas. Their diet has been found to be rich in midges and other invertebrates associated with slow-moving watercourses such as canals.

2.3 THREATS

The main factor associated with decline or threatened decline of this species is due to the large-scale development of city centre sites as part of the redevelopment and regeneration in the city. While this is supported in terms of economic development and prosperity for the city, it also means a loss of the types of habitat, namely brownfield or open-mosaic habitats.

This, together with the difficulty of surveying and finding the species combined with the very low breeding density within city centres means that the presence of the species may often go un-noticed and could be un-planned for unless active conservation work is in place to safeguard the species.

2.4 CURRENT STATUS

The Black redstart is afforded full protection as a Schedule 1 breeding species under the Wildlife & Countryside Act (1981) as amended and is also listed as a Red Data Book species. It is also on Appendix II of the Berne Convention on the Conservation of European Wildlife & Natural Habitats as amended. A total of 64 records for Leicester and the immediate area have been recorded between 2007 and 2017 with most observations of males singing between April and June 2014-2016 on certain roof-tops in the city centre.

2.5 USEFUL INFORMATION

- Links to websites to manage and value wetland areas
<https://www.blackredstarts.org.uk/pages/sitesurvey.html>

2.6 DISTRIBUTION OF BLACK REDSTARTS IN LEICESTER



Source: Leicestershire & Rutland Environmental Resource Centre 2020

2.7 BLACK REDSTART ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Habitat Creation/Species Recovery			
Create, restore and enhance habitat across Leicester to create more and better connected habitat to support species recovery of the Black restart	Prioritise the creation and/or enhancement of green/brown roofs to support Black redstarts in target areas where previously	2020-2025	Planning, Nat Con
	Create a minimum of 20 brown/green roof sites across the city centre and environs specifically for Black redstart conservation using a third of suitable roof space or minimum of 5m2 x 5m2 on new build sites	2020 - 2025	Planning, Nat Con
	Identify inner city schools within target areas that may have suitable buildings to create brown roofs. Identify potential grant sources and create 5 brown roofs	2020 - 2025	Sustainability, LRWT
Work with landowners to review temporary/permanent use of brownfield sites to encourage use of natural habitat and create site-specific management	Identify key habitat for retention and enhancement as a brownfield site owned by large landowners e.g. Network Rail (500 m2)	2026	Nat Con, Sustainability, NE

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
Management/Advice			
Provide generic guidance on the creation and establishment of green and brown roofs suitable to support this species	Update council and partner webpages to provide advice to developers, planners and private landowners	2021	Nat Con

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Establish status of Black redstarts in Leicester and key target areas for	Update 2014/16 surveys to inform on current status and locations	2021/22	Nat Con, LROS
Monitor brown roofs and nest box use by Black redstarts	Annual survey of sites to review and update	On-going	Nat Con, LROS

- Champion and promote Leicester's biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Engagement			
Organise an event with partners specifically on Birds and Buildings – link with other Species Action Plans for	Organise 1 x event aimed at planners, developers, council and private landowners	2022/3	Nat Con, LROS
Promote good practice and highlight good case studies through range of	Identify 3 key case studies which show good practice and promote widely	On-going	Nat Con
Work with partners to promote good practice and publish on webpages – link to relevant species action plans	Promote good practice in newsletters, social media and TV, radio and written articles	On-going	Nat Con, LROS

3. Peregrine Falcon



3.1 INTRODUCTION

The Peregrine is a large and powerful falcon. It has long, broad, pointed wings and a relatively short tail. It is blue-grey above, with a blackish top of the head and an obvious black 'moustache' that contrasts with its white face. Its breast is finely spotted. It is swift and agile and catches most of its prey in flight.

In certain parts of the UK, they suffer illegal killing from gamekeepers and landowners, and are a target for collectors of their egg and young. Better legal protection and control of pesticides (which indirectly poisoned birds) have helped the population to recover considerably from a low in the 1960s.

Peregrines do not build a nest as such but make a shallow scrape in stones or debris where the female normally lays a clutch of three or four eggs in late March or April at 2-3 day intervals. Both birds share the incubation, which begins with the last or penultimate egg, and takes approximately 32 days.

The chicks hatch over a period of a couple of days. Most of the brooding and feeding of the small young is carried out by the female, while the male hunts to supply the food. After the first couple of weeks, the female shares the hunting and allows the male to feed and incubate the chicks.

The young fledge at around 40 days but are still dependent on their parents for two or more months. During this time, the adult Peregrines teach the young to hunt and handle prey in flight. Less than a third of Peregrines reach breeding age but those that do can expect to live 7 or more years. The oldest known Peregrine was over 21 years old, identified through ringing data.

3.2 KEY HABITATS

Peregrines are very territorial, and the size of the territory is usually determined by the abundance of food. In an urban environment their territories are likely to be smaller due to the amount of prey available; mainly feral pigeons. They have been known to feed on species ranging in size from Goldcrest to Grey Heron.

Their natural environment is mountain or moorland uplands on craggy rocks, or sea cliffs. Recently, they have adapted well and now high-rise buildings and other constructions such as hotels and churches are used as nest sites.

Peregrines require tall buildings in a city centre to view their surrounds – both for prey and other predators which include Peregrines wanting to establish or take over territories. In Leicester, the Peregrines have several favourite buildings from which to view their nest and surrounds

3.3 THREATS

The following factors could impact on the conservation status of this species in an urban environment

- Collisions with glass used in building construction – birds unable to see glass.
- Illegal persecution due to egg collecting – which does occur in urban areas where sites are not under good surveillance
- Pollution, emissions and poor air quality which could impact on their prey and bio-accumulate
- Re-development of buildings to include previously un-occupied buildings or to change to an alternate use which may increase disturbance from noise or lighting
- Maiden flights of fledgling birds may result in road kill
- Disturbance to territory from other raptors seeking food or used to control “pest” species such as feral pigeons

3.4 CURRENT STATUS

Peregrines have been recorded in Leicester since the 1970s and were observed around the University of Leicester campus taking advantage of some of the tallest buildings such as the Attenborough building constructed from 1968-70. The nearby Welford Road Cemetery and city centre also proved good foraging grounds, but the Peregrine seemed to have disappeared from the late 1990s until it began to be regularly spotted at the former Council offices at New Walk.

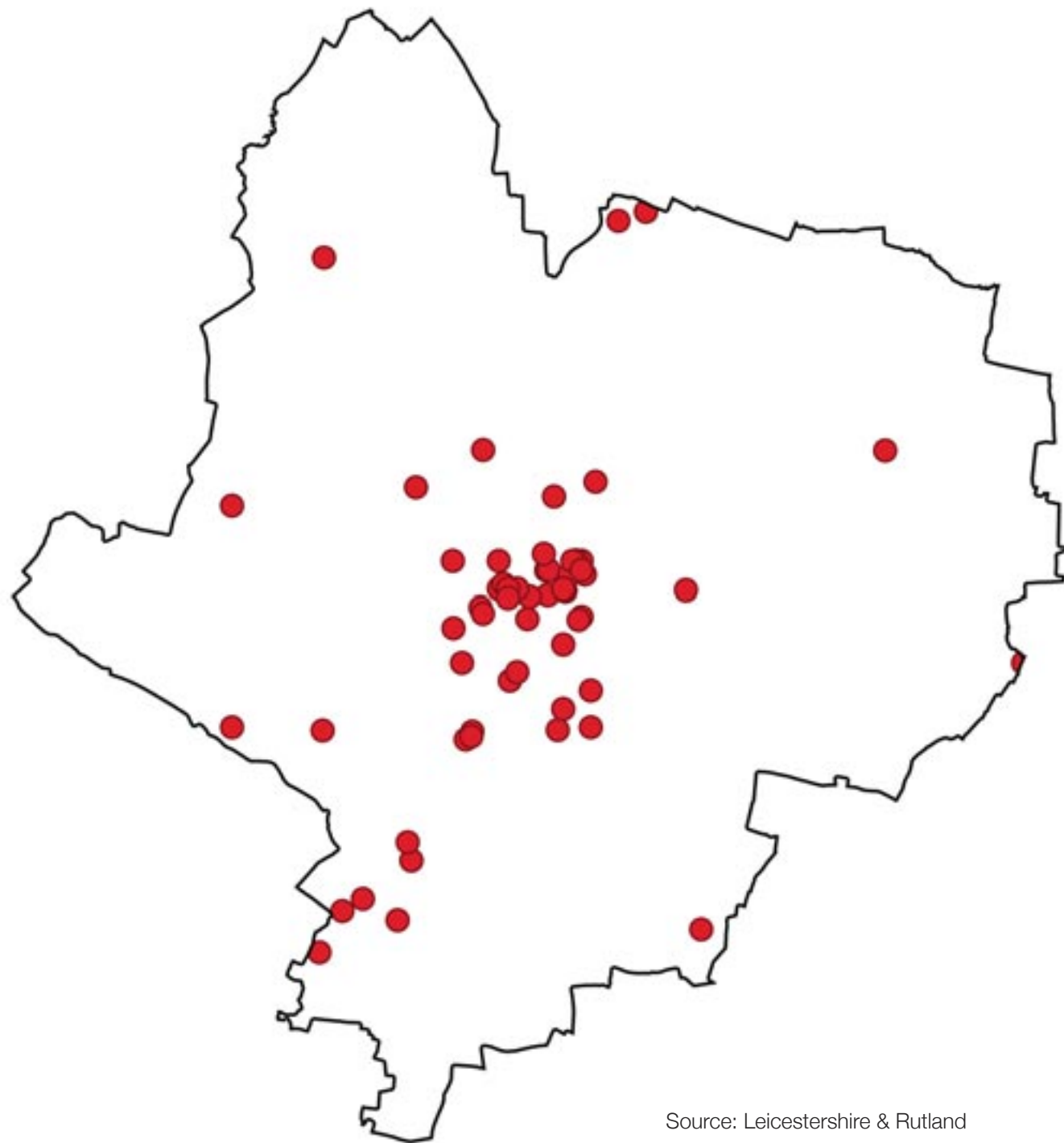
Since then a total of 280 records for Leicester and the immediate area have been recorded between 2006 and 2019. In 2014 it was proven that a pair bred on a derelict building in the city centre and moved to another site in 2016, possible due to disturbance. In 2017, they moved to a purpose-built nesting box located at Leicester Cathedral. Although most of the sightings are centred on Leicester and in particular the Cathedral and a nucleus of sites in the inner-city associated with tall buildings, there is also a reasonable distribution of sightings on the outer areas of the city which may be associated with their hunting areas, juveniles and other birds passing through.

3.5 LEGAL STATUS

In the UK the Peregrine Falcon is afforded full protection as a Schedule 1 breeding species under the Wildlife and Countryside Act, 1981 (as amended). It is also listed as a Red Data Book species and is on Appendix II of the Berne Convention on the Conservation of European Wildlife and Natural Habitats, 1979.

The UK conservation status of Peregrine is green since 2009, previously Amber (1996-2008).

3.6 DISTRIBUTION OF PEREGRINE FALCONS IN LEICESTER



Source: Leicestershire & Rutland
Environmental Resource Centre 2020

3.7 PEREGRINE FALCON ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Habitat Creation/Species Recovery			
Create, restore and enhance habitat across Leicester to create more and better connected habitat to support species recovery of the Peregrine falcon	Review and secure a suitable maintenance programme of raptor platforms through Planning conditions on new-builds	2020-2025	Planning, Nat Con

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
Management/Advice			
Provide support, advice and information to all sites where Peregrine platforms been constructed	Contact sites where platforms been installed with agreement from landowners, check for use and update/inform landowners of the Project	2022	Nat Con, LROS
Produce interpretative material about Peregrines appropriate to target audiences	Update LROS and council webpages, produce case study of project and publish on website	2022/23	LROS, Nat Con

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Set up research group to identify Projects and seek out Universities in the Midlands interested in research	Organise 1 major research project to be undertaken	2022	Nat Con, LROS
Maintain and review species data held locally and at local record office. Update Species Alert maps	Review species data and update Species Alert maps to help prioritise target areas for conservation work	On-going	Nat Con, LRERC

- Champion and promote Leicester's biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Engagement			
Organise a schedule of events for general public to have access to observe and learn about Peregrines	Organise 1 x event aimed at planners, developers, council and private landowners	2022	Nat Con, LROS
Promote good practice and highlight good case studies through range of media	Organise monthly Peregrine Watch at Cathedral Square, advertise on website and in Wild About Leicester	On-going	LROS
Seek Crowd-funding to support continuation of Project	Apply for funding/sponsorship opportunities to support	2022	Nat Con, LROS
Seek maximum publicity if Peregrines nesting at Cathedral	Write two press articles to inform public of Peregrine eggs and update when fledge to encourage media interest at local and regional level	2021-2026	LROS, Nat Con

4. Swifts



4.1 INTRODUCTION

Swifts (*Apus apus*) are the black, sickle-winged birds that characteristically wheel at speed high in the summer sky, readily identified by their frenzied fast wing beats between long glides. They often make high pitched single note calls in flight, hence the old country name of Devil Screechers, but they aren't noisy on the nest.

Over-wintering in Africa, the birds arrive in early May and depart in early August. Swifts usually nest in colonies, but this depends on the availability of nest sites. Swifts will breed from their second year and very little material is used for the nest which is glued together with saliva. They lay two or three eggs, and these are incubated for up to 20 days.

The young usually fledge at about six weeks old. They are fed food balls containing approximately 300 insects every hour or so although nesting sites are not necessarily close by to areas likely to support high numbers of insects and as Swifts will fly a reasonable distance to good foraging grounds, there is no direct association between nest ing sites and foraging areas. On average, individual Swifts may return for up to six years, firstly as non-breeding individuals, and only two years for successful rearing of replacements.

4.2 KEY HABITATS

Their natural tree, cave and cliff nest sites are rare in Britain, and so the birds depend almost exclusively on manmade sites such as houses, typically high up under the eaves, in ventilators and other available cavities. Most nest sites are at least five metres above ground and all have a drop to allow the birds to pick up speed as they leave the nest.

They are highly adapted to flying and flying at speed. They feed, sleep and even mate while in the air. Although not related to swallows or house martins, many of their habits and reliance on man-made structures are similar. Swifts pair for life and are likely to return to the same nest sites year after year. Nestlings will also return to the vicinity where they were reared. Thus, where there are swifts nesting, it is likely to be a local population with links to that locality going back many years. Swifts will use both old and new buildings.

4.3 THREATS

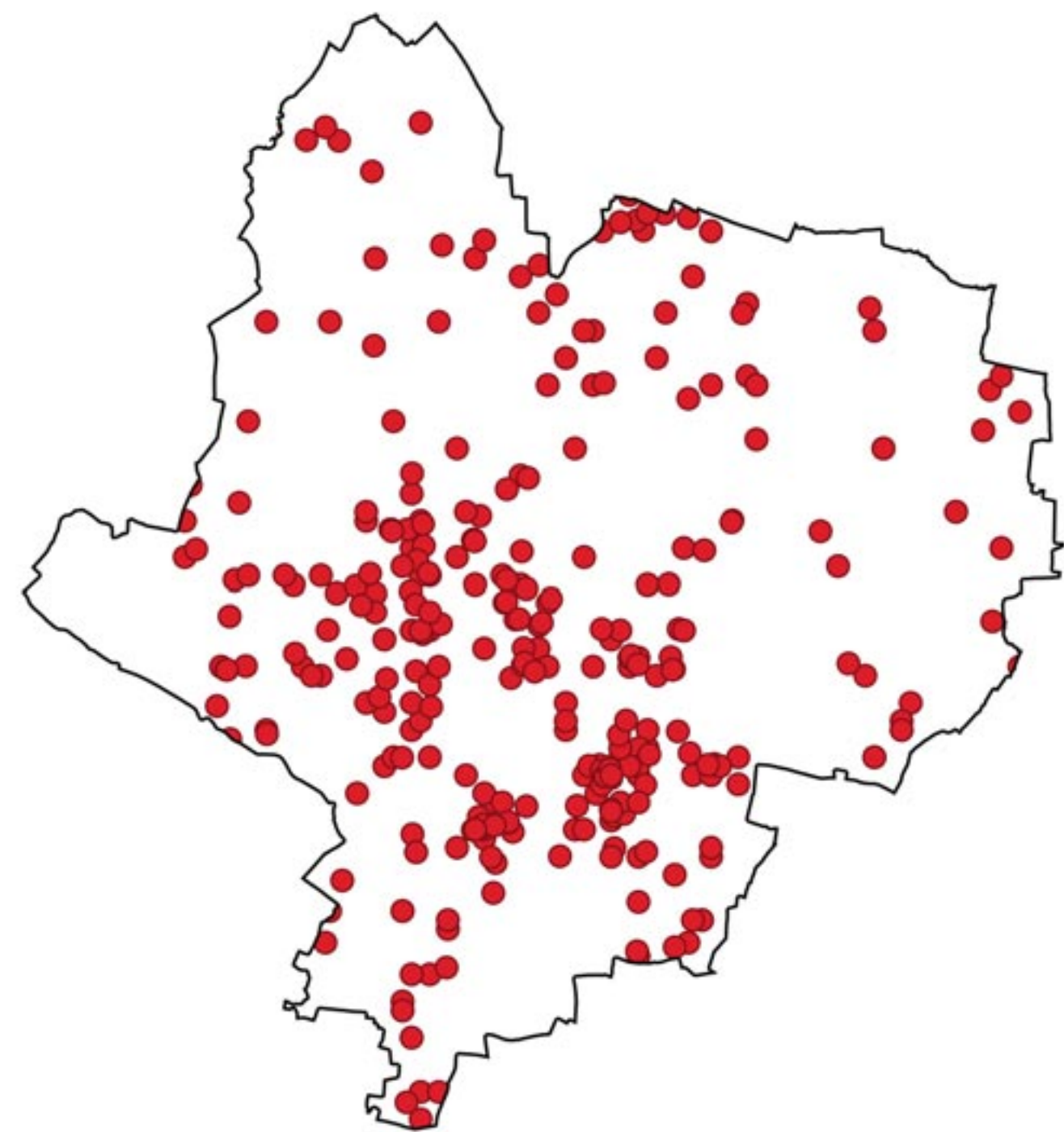
Modern building methods, changes in building regulations and better maintenance of properties all contribute to excluding swifts from their usual nesting places in roofs.

Over time, building regulations, particularly those governing efficiency, have meant that there are fewer spaces, if any, for swifts to nest in buildings. Even older buildings that may traditionally have supported nesting swifts may not be suitable any longer due to renovations or roof insulation adhering to modern building regulations, and the retro-fitting of insulation. If traditional sites are no longer available swifts may not breed at all.

4.4 CURRENT STATUS

- Between 1995 and 2015, the UK population declined by 51% and is now approximately 40 000 (Swift Partnership Project)
- Locally the records of Swifts have continued to be reported in several areas of Leicester where they have historically nested. These include areas of the West end, Tudor Road and parallel terraced streets, Fosse Road, Braunstone and Glenfrith.
- These sites are vulnerable as many houses are generally rented out and sometimes as buildings of multiple occupancy with many tenants. Building regulations, increased insulation and roof repairs to ageing buildings mean niches that provided nests for Swifts are no longer in place
- The swift is protected under the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally take, damage or destroy the eggs, young or nest of a swift whilst it is being built or in use. The Act allows for fines or prison sentences for every bird, egg or nest destroyed. There is no such legal protection for swift nest-sites in the non-breeding season, despite the bird being highly nest-site faithful

4.5 DISTRIBUTION OF SWIFTS IN LEICESTER



4.6 SWIFT ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Habitat Creation/Species Recovery			
Create, restore and enhance habitat across Leicester to create more and better connected habitat to support species recovery of the Swift	Target public buildings within Swift Alert Areas and arrange installation of 20 Swift boxes/ yr at key sites (installed in groups)	2021-2026	Planning, Nat Con
	Install 50/yr Swift boxes via Planning conditions in Site Alert areas	On-going	Nat Con, Planning

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
Management/Advice			
Update Swift Guidance documents for planners, and developers on legal status, survey and mitigation	Update advisory leaflets for planners and landowners and publish on website	2022	SPP, LRWT

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Identify and map Swift Alert areas to show records of nesting Swifts in the city and 250 m² radius	Review species data and update Species Alert maps to help prioritise target areas for conservation work	On-going	Nat Con, LRERC
	Organise training event for volunteers and allocate survey areas	2021/22	SPP
	Support volunteers, collate data and map results	2021-2025	SPP, LRERC

- Champion and promote Leicester's biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Engagement			
Arrange advice and training to key Service areas responsible for buildings	Organise and deliver training to Building Control, E&BS, and Housing areas to raise awareness and contribute to	2022	SPP
Link to other Swift Conservation initiatives	Support and work with Swift project within Soar Wreake Living Landscape	2021	LRWT
Organise and deliver a schedule of events to help inform local communities and residents on how to help	Organise an event in a Site Alert area to link in with the local community e.g. Tudor Rd Housing Services and	On-going	SPP, Nat Con
Install a Swift-cam at a known Swift nest site and link to webpage	Work with developers and/or LRWT within Waterside area to install webcam and feed live footage on website	2021	SPP, LRWT
Promote via Making Wildlife Count publications and annual report	Include World Swift Day and UK Swift Awareness Week Jun-July	2021-2025	SPP



Mammals



Mammals

1.1 INTRODUCTION

Leicester supports a wide range of mammals from top predators such as the Red fox (*Vulpes vulpes*) and Badger (*Meles meles*) to the smallest of our mammals such as the Pygmy shrew (*Sorex minutus*) and Harvest mouse (*Micromys minutus*).

Many of the mammals are heard or leave signs behind to show their presence, but they are seldom seen. This is because many are nocturnal and have adapted to foraging and hunting during the hours of darkness, largely to avoid being killed or injured. The exception to this is the Grey squirrel (*Sciurus carolinensis*) which is seen across our Parks and Open Spaces and is a frequent visitor to many gardens, taking advantage of bird feeders and discarded food.

Other mammals have similarly learnt how to forage and find food not normally as available in the countryside. These include scavengers such as the Red fox, Brown rat (*Rattus norvegicus*), House mouse (*Mus musculus*) and Wood mouse (*Apodemus sylvaticus*) as well as the much loved Hedgehog (*Erinaceus europaeus*) thanks to supplementary food and rescues.

Voles and shrews are likely to be severely under-recorded in the city. Their secretive lives in Parks, gardens and road verges often go un-noticed, but they continue to be an important part of the food chain. The presence of predators such as the Tawny owl and Kestrel whose diet relies heavily on these species is evidence of their continued presence across the green network.

Certain species such as the Water vole (*Arvicola amphibius*) have recently re-colonised parts of the city where they had all but disappeared and the Otter (*Lutra lutra*) having been re-introduced during the 1990s into parts of the East and West Midlands, has now re-colonised every catchment in Leicestershire and been recorded using watercourses in Leicester since 2009.

Rabbits (*Oryctolagus cuniculus*) including the infamous black rabbits found at Aylestone are frequently seen on the outer edges of the city, although Brown hare (*Lepus europaeus*) has seldom been recorded and continues to be associated with a more rural environment – recorded only at Hamilton and Ashton Green. The extremely secretive Muntjac deer (*Muntiacus reevesi*) is also a relatively recent and now frequently recorded and has successfully used the old railway lines and woodland cover to inhabit sites throughout the city including those such as Castle Gardens, Rally Park and St Marys Open Space.

Perhaps with the threat of climate change, those mammal species most at risk are those adapted to hibernation such as the Hedgehog and Bats. Whilst the Hedgehog is recovering reasonable well in Leicester, Bats continue to be vulnerable to climate conditions which can impact on them coming out of hibernation at inappropriate periods during winter when food sources are limited. This species above all, is associated and reliant on made-made structures, mature trees and green space and much can be done to conserve and safeguard Bats associated with the habitat types.

1.2 PRIORITY MAMMAL SPECIES

Leicester supports a range of large and small mammals that are considered of conservation concern and should be given additional consideration in planning and development or maintenance of sites. None of the species are on the Red list, but the Otter is still considered “Near threatened” and many of the species are protected by both European and UK legislation.

All species in the table below are Priority species noted under the NERC Act (2006) because of their serious decline in recent decades.

Species Group	Taxon group	Taxon name	Common name	Status
Vertebrates	Mammal	<i>Meles Meles</i>	Badger	Protection of Badgers Act
Vertebrates	Mammal	<i>Lepus europaeus</i>	Brown Hare	NERC
Vertebrates	Mammal	<i>Plecotus auritus</i>	Brown Long-eared bat	NERC, EPS, W&C Act 1981
Vertebrates	Mammal	<i>Micromys minutus</i>	Harvest Mouse	NERC
Vertebrates	Mammal	<i>Erinaceus europaeus</i>	Hedgehog	NERC
Vertebrates	Mammal	<i>Nyctalus noctula</i>	Noctule	NERC, ESP
Vertebrates	Mammal	<i>Lutra lutra</i>	Otter	NERC, ESP, Near threatened
Vertebrates	Mammal	<i>Pipistrellus pygmaeus</i>	Soprano Pipistrelle	NERC, ESP
Vertebrates	Mammal	<i>Arvicola amphibius</i>	Water Vole	NERC, ESP

1.3 PROTECTED MAMMAL STATUS

The species noted in the table below are mainly protected by the European Habitat & Species Regulations (2017) and the Wildlife & Countryside Act (1981) as amended. It is expected that the UK will review wildlife legislation post-Brexit to avoid duplication and update according to the conservation status of the species.

Badgers are present and frequent throughout Leicester. The species and their setts are protected under the Protection of Badgers Act 1992. Impact and losses to foraging habitat should also be considered under HMSO 06/2005 when considering planning applications.

Species Action Plans for the following species of mammals provide opportunities to promote the conservation status in addition to the above:

- Bats (*Chiroptera sp*)
- Hedgehog (*Erinaceus europaeus*)
- Otter (*Lutra lutra*)
- Water vole (*Arvicola amphibius*)

2. Bats



2.1 INTRODUCTION

There are 18 species of bats recorded in the UK of which 17 are breeding. Evidence has found that there continues to be an overall decline in bats generally which has given rise to their protected status. Both the ecology of the species in terms of their restrictive habitat range, dependence on insects, ability and rate of reproduction and reliance on built or natural structures that may be vulnerable to change or loss has resulted in an increasingly vulnerable species. The predicted impacts of climate change may also alter their behaviour and that of their prey as well as their ability to hibernate or roost at certain sites due to risk of hypothermia or dehydration leading to death.

2.2 KEY HABITATS

All UK bats are insectivorous found in most habitats often feeding on the wing at dusk over hedgerows, rough grassland and wetland. They feed on airborne insects such as midges, caddisfly, mosquitoes, lacewings and small moths. Their habitats include woodland and woodland edges, wetlands and open water as well as pasture and meadow.

Bats frequent buildings and built structures in particular with both old and relatively recent buildings being occupied.

During the summer they will also roost under bridges, in caves or tunnels. In the autumn/winter they will seek out alternative habitats in which to hibernate where they hope to be undisturbed, draft-free and a stable cool environment. These can also include deep within caves and tunnels as well as parts of buildings which they tend to favour and return annually

2.3 IMPACTS ON BAT SPECIES

The following factors are likely to lead to the death or injury of a bat or disturbance/destruction of their roost or habitat

- Loss, destruction and/or disturbance to roosts through toxic timber treatment chemicals or inappropriate roof lining which poisons the bats or traps them as they get caught in the lining;
- Inappropriate building practices that cause noise and vibration near to roosts e.g. repointing brickwork, repairing or replacing a roof, insulating or converting a loft, renovating, converting or demolishing a house;
- Cutting down or removing branches from a mature tree
- Inappropriate lighting – either in a roost or outside an entrance that deters bats entering or leaving the roost
- Loss of foraging habitat and fragmentation of insect-rich feeding habitat especially along hedgerows and watercourses
- Pesticide build-up from consuming insects as major part of diet leading to bio-accumulation in food chain
- Impacts of climate change causing bats to wake up during winter or food source impacted when temperatures low or excessive rainfall
- Widespread misunderstanding of legislation that protects bats which leads to the loss or damage of many roosts when consultation procedures are not carried out
- Injury from domestic cats

2.4 CURRENT STATUS

Ten of the 18 UK species of bats have been recorded in Leicester. The status of these bats is shown below

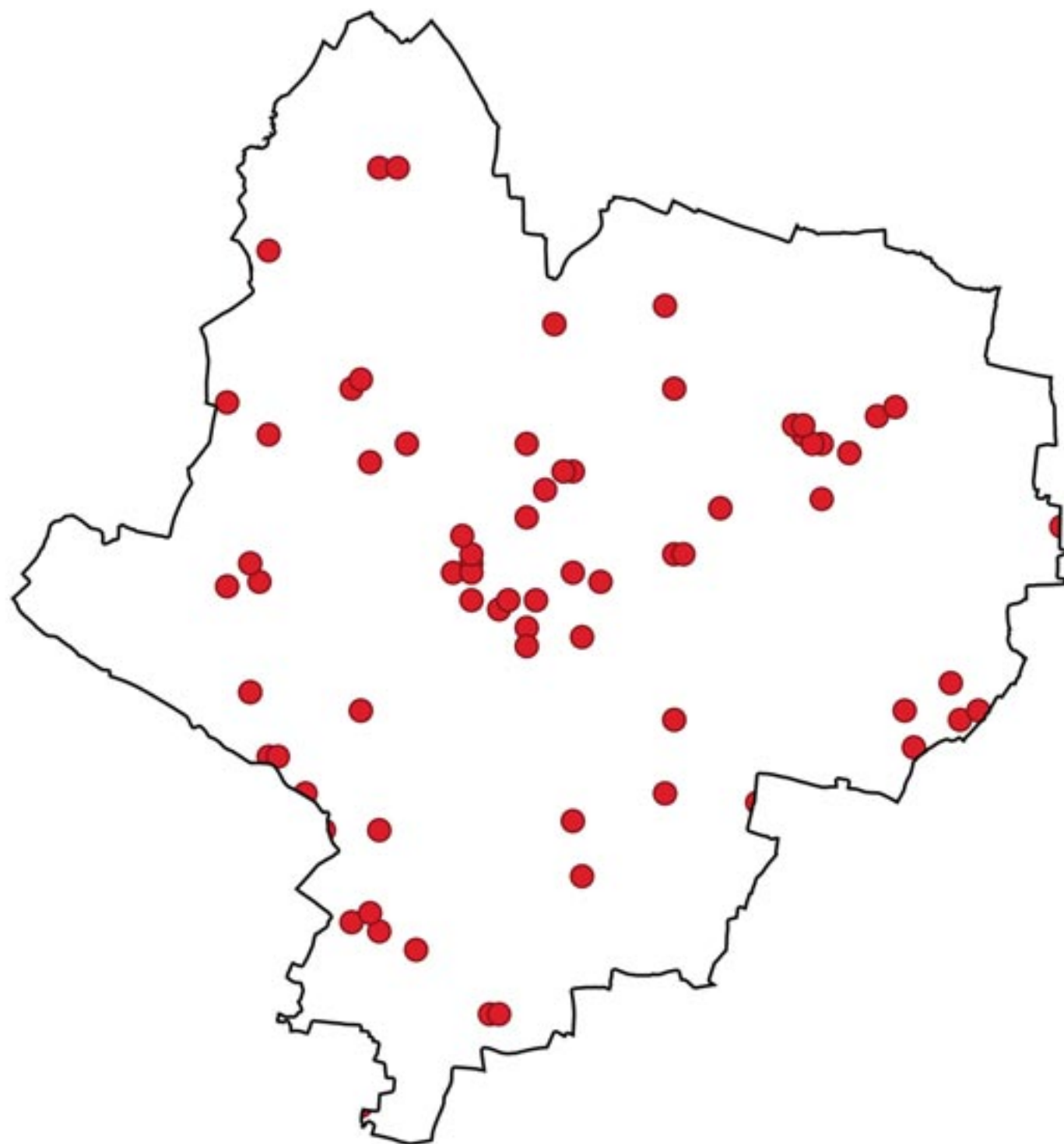
Species	Regional Status	Main Habitats	
		Feeding	Roosting
Common pipistrelle (<i>Pipistrelle pipistrelle</i>)	Widespread and Common	Woodland edge, hedgerows and gardens	Modern houses and built structures
Soprano pipistrelle (<i>Pipistrellis pygmaeus</i>)	Widespread and Common	As above an associated with water	Modern houses and built structures
Whiskered Bat (<i>Myotis mystacinus</i>)	Uncommon	Deciduous and mixed woodland	Modern houses and built structures
Brown Long-eared (<i>Plecotus auritus</i>)	Uncommon	Deciduous and mixed woodland	Old houses, barns and tunnels
Daubenton's Bat (<i>Myotis daubentonii</i>)	Uncommon	Rivers, streams, lakes and ponds	Bridges and tunnels
Noctule (<i>Nyctalus noctula</i>)	Uncommon	Deciduous and mixed woodland	Holes in trees
Brandt's Bat (<i>Myotis brandtii</i>)	Rare/Uncommon	Deciduous and mixed woodland	Buildings and houses
Natterer's Bat (<i>Myotis nattererii</i>)	Rare/Uncommon	Rivers, streams, lakes, ponds, deciduous and mixed woodland	Barns, churches, bridges and tunnels
Serotine (<i>Eptesicus serotinus</i>)	Rare/Uncommon	Pasture, open woodland, tall hedgerows and suburban areas	Houses and older buildings
Grey Long-eared (<i>Plecotus austriacus</i>)	Rare/migratory species	Woodland and open meadow	Old houses, barns and tunnels
Nathusius Pipistrelle (<i>Pipistrellus nathusii</i>)	Rare/migratory species	Ponds, lakes, watercourses, mixed woodland and parkland. Always near water	Buildings and trees

2.5 LEGAL STATUS

All bats irrespective of their regional status are protected under the following legislation

- Schedule 5 Wildlife & Countryside Act (1981)
- Schedule 2 Conservation (Natural Habitats etc) Regulations 1994 (Amendments 2017)

2.6 DISTRIBUTION OF BATS IN LEICESTER



2.7 BAT ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Habitat Creation/Species Recovery			
Create, restore and enhance habitat across Leicester to create more and better connected habitat to support species recovery of Bats	Protect all mature trees and standing deadwood and ensure that if felling or pruning is required that an appropriate	2021-2026	Planning, T&W
	Avoid loss of bat roosts wherever possible and ensure appropriate mitigation is implemented and completed	On-going	Planning, Nat Con
	Plant or enhance 5 km of hedgerows to provide good foraging habitat for bats – see link to Hedgerow HAP	2021-2026	Nat Con, Planning
	Create/enhance 2 ha of species-rich and rough grassland – see link to Grassland	2021-2026	Parks
	Review policy on use of herbicide and pesticide to help support insects (links to	2021	Parks, Nat
Only light areas in appropriate places and base decisions on species and population size of bats present	Where lighting cannot be avoided ensure designed to minimise impact on wildlife and is below 1 lux	On-going	Planning, Nat Con

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
Management/Advice			
Provide guidance for permitted development and/or where bat roosts identified which may impact on roosts from inappropriate building practices	Ensure works are carried out in accordance with NE and BCT guidelines or licence requirements	2021	Nat Con, Planning

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Collate records on number and distribution of bat roosts to inform on future management and advisory works	Collate all records from ecology consultants submitted with planning applications, record and send to LRERC	On-going	Nat Con, LRERC
Work with Bat Group to establish presence of roosts in city centre	Commission a series of annual surveys to help inform and provide advice	2022 - 2030	Nat Con, Bat Group
Encourage work with colleges and university to further understanding of impacts of development on bats	Works with UoL Biodiversity Working Group to identify research projects to further understand mitigation techniques	2021-2025	Nat Con, UoL

3. Hedgehog



3.1 INTRODUCTION

The Western European Hedgehog (*Erinaceus europaeus*) is easy to identify due to their unique appearance as being the only British mammal with spines. When alarmed, the species will roll itself into a tight ball so that the head and underside are protected by the layer of spines.

They have been voted the UK's favourite garden creature in a survey by the Royal Horticultural Society and the Wildlife Trusts, but they have suffered severe declines in numbers and are recognised as a priority species in need of conservation.

3.2 KEY HABITATS

Hedgehogs are found in nearly all lowland habitats, but are most abundant where grassland is close to woodland, scrub or hedgerows. Allotments, gardens and parks are particularly important for food and nesting where their main diet of caterpillars, beetles, slugs, earth worms and small mammals are abundant alongside undisturbed areas to sleep or hibernate. They will travel up to 3 km a night and have a home range of 10 – 30 ha.

Hedgehogs hibernate during the late autumn/winter in nests built from leaves and grass under hedgerows, or in old rabbit burrows and underneath compost heaps or sheds. The sleep is triggered by a drop in temperature which warns the hedgehog that food will be scarce. Milder autumn and winters has extended the breeding season from May to September and now young are born well into November. This, along with periods when hedgehogs wake from hibernation during warmer spells in winter (or when captive sometimes do not hibernate at all) and the birth of litters in late autumn has increased their vulnerability to survive over-winter.

3.3 IMPACTS ON SPECIES STATUS

The most important factors affecting species are:

- Road collisions with large numbers killed on our roads
- Loss of suitable habitat and the creation of barriers to dispersal
- Lack of habitat to hibernate and/or disturbance during hibernation
- Poisoning from slug pellets and pesticides
- Mowing and strimming of long grass causing injury
- Drowning in garden ponds
- Predation from Badgers, Foxes and Crows

3.4 CURRENT STATUS

Hedgehogs are found throughout the UK, but recent data considers the species has declined by 66% since 1995 with a population now estimated at approximately 522 000 based on data from improved grasslands and urban areas only.

The local status of Hedgehogs in Leicester is not known, but surveys have helped inform on the distribution of the species over the last 20 years with the last survey having been conducted in 2013 -14. The Hedgehog Rescue charity collates records in Leicestershire (including the City) that are present in gardens or that have been killed or injured on roads and since the City HOGWATCH survey in 2013 Hedgehog Rescue have submitted annual records of all hedgehogs taken into care and noting the reason why this was necessary. Other records are collated from observations from the public and/or reported on the local NatureSpot website.

3.5 LEGAL STATUS

Hedgehogs are partly protected by Schedule 6 of the Wildlife & Countryside Act (1981) as amended. It is illegal to kill or trap without a licence. Their habitat is not protected.

3.6 DISTRIBUTION OF HEDGEHOGS IN LEICESTER



Source: Leicestershire & Rutland
Environmental Resource Centre 2020

3.7 HEDGEHOG ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Habitat Creation/Species Recovery			
Create, restore and enhance habitat across Leicester to create more and better connected habitat to support species recovery of Hedgehogs	Create ponds on 25% allotments and edible hedgerows on 50% allotments –	On-going	Nat Con, Std & Development
	Encourage wildlife-friendly gardens with features to support hedgehogs	On-going	Hedgehog Rescue, LRWT
	Plant or enhance 2 km of hedgerows to provide good foraging habitat for hedgehogs – see link to Hedgerow HAP	2020-2025	Nat Con, Planning
	Create/enhance 2 ha of species-rich and rough grassland – see link to Grassland	2020-2025	Parks
	Review policy on use of herbicide and pesticide to help support insects (links to	2021	Parks, Nat Con
	Connect gardens in new development with gaps in fence boards where hedgehogs locally recorded enforced with planning conditions	On-going	Planning, Nat Con

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

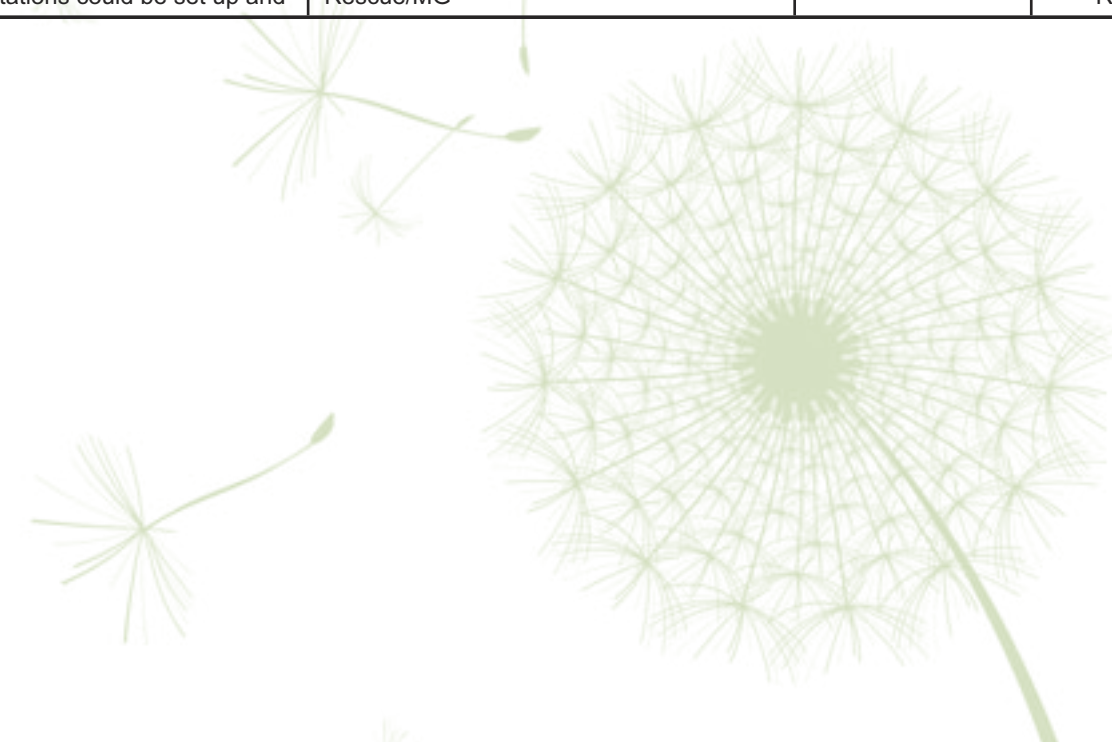
Objective	Actions	Achieved by	Lead
Management/Advice			
Increase value of allotments, gardens and parks	Reduce cutting regime on mature hedgerows	On-going	Std & Development, Parks, LRWT
	Use conservation volunteers and hand tools to reduce impact or injury where hedgehog habitat present	On-going	Parks
	Check logs, bricks, and stone piles prior to removal if near to vegetation and/or prior to use on bonfire	On-going	Parks, Hedgehog Rescue
Encourage people to provide a hedgehog friendly environment in gardens and allotments	Work with partners Hedgehog Rescue and Mammal Group to produce leaflet and publish on website	2022	Nat Con, MG, Hedgehog Rescue

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
Monitoring/Research			
Determine the status of hedgehogs in Leicester	Collate, analyse and evaluate current records of hedgehogs in Leicester	2021	MG
	Establish and run a Citizen Science project to record hedgehogs in Leicester	2021	Nat Con, MG, LRWT

- Champion and promote Leicester's biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
Engagement			
Use a selection of media sources to promote hedgehogs to a wider audience	Link to World Hedgehog Day – and specifically promote	2021-2026	Hedgehog Rescue, MG
Involve volunteers in making hedgehog boxes	Organise volunteers to make and help install 50 hedgehog boxes in suitable allotments and gardens	2022	Nat Con, MG
	Make 50 boxes annually and work with Hedgehog Rescue and MG to collate data on use of boxes– schedule into Making	2023-2025	Nat Con, Hedgehog Rescue, MG
Develop awareness raising programme	Provide regular advice via media and target different seasons when most	2021-2025	Hedgehog Rescue, MG
Set up Hedgehog Streets neat to allotments and large gardens	Create 4 Hedgehog Streets in established communities and/or new build with	2021	Nat Con, Hedgehog
Organise and support Wildlife events and activities	Link in with annual wildlife events such as 30 Days Wild or similar and other events held by mammal organisations – 5 per	On-going	Hedgehog Rescue, MG
Identify inner-city schools with secure ecology areas where hedgehog boxes and feeding stations could be set up and	Identify 5 schools, provide advisory leaflets and organise visit from Hedgehog Rescue/MG	2021	Sustainability, Hedgehog Rescue



4. Otter



4.1 INTRODUCTION

The Eurasian Otter (*Lutra lutra*) is one of our largest terrestrial mammals and considered a top predator in the food chain, but its survival has been precarious over the last 60 years with its demise attributed to the introduction of organo-pesticides in the 1960s. This poisoned fish populations – the main diet of the otter while at the same time otters numbers declined due to organised hunts and game-keeping control.

The Otter did however manage to survive naturally in some parts of Leicestershire and since Otters were reintroduced on watercourses in the Lower Trent Catchment, the numbers recorded since 1990 has risen with a significant increase recorded in the County in the last decade.

The Otter has now been recorded on the River Soar and Grand Union Canal in Leicester as well as many of the minor tributaries with both adults and their young observed or filmed on wildlife cameras close to reasonably built-up and populated areas of the city.

4.2 KEY HABITATS

The Otter exploits a range of habitats from large rivers, canals, reservoirs and lakes to small ponds and ditches. Their territory ranges from 40-70 km and they will readily travel 20-25 km over 24 hours. A reasonable quantity of their main food source – fish along with suitable places of refuge need to be present. These vary from large bankside trees with exposed roots to woody debris, scrub and bramble to lie-up in.

4.3 IMPACTS ON SPECIES STATUS

The most important factors affecting species are:

- Road collisions with more frequent killed on our roads
- Disease
- Development: loss, degradation and fragmentation of habitat
- Pollution and poor water quality impacting on food sources
- Direct persecution
- Disturbance from increased levels of leisure activity and adjacent land uses
- Mink and illegal crayfish traps

4.4 CURRENT STATUS

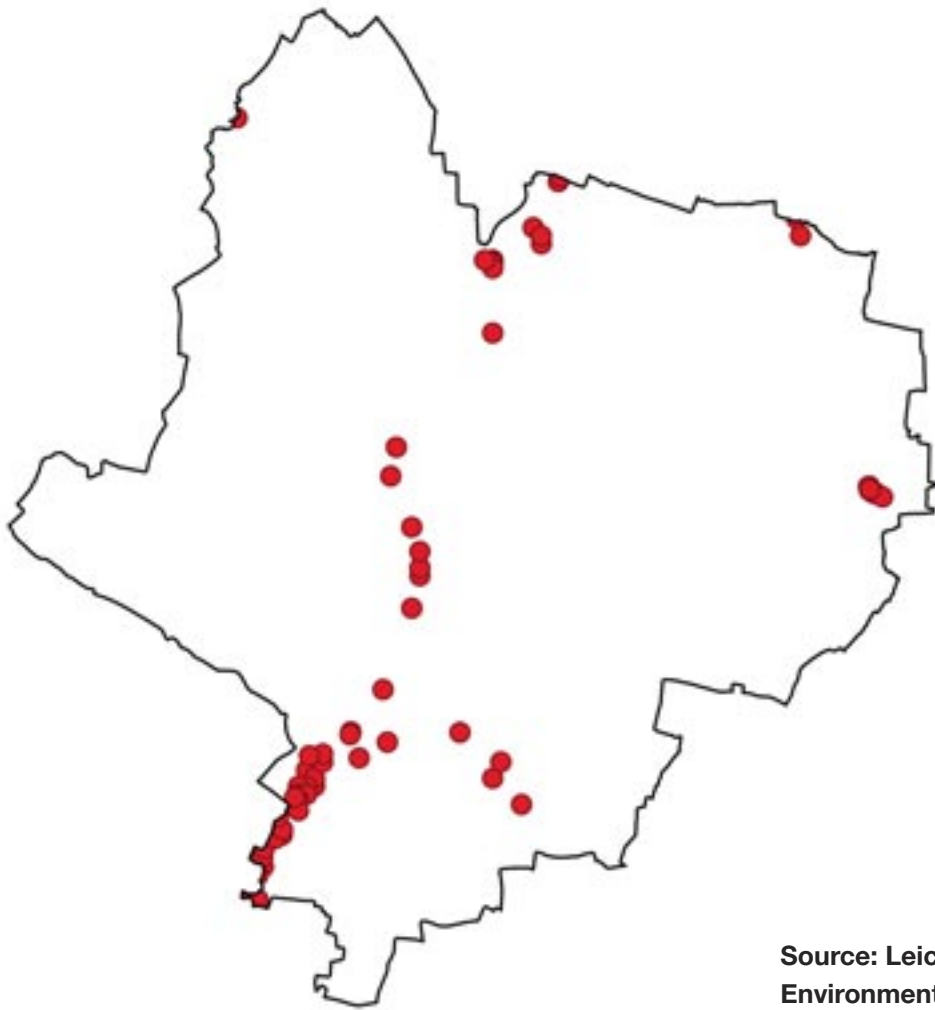
National surveys conducted by the Environment Agency in 2003 and 2010 determined the status and distribution of this species. Following the re-introduction programme, regular monitoring by local recorders together with a number of student projects have helped to identify the key hotspots where Otter activity is regularly recorded.

The Soar and Grand Union canal continue to be the main focus of Otter activity with the species regularly sighted or their spraints found. Fortunately few road casualties have been recorded in Leicester compared to Leicestershire, but there is still concern at casualties from barges and other leisure-craft as the Soar becomes more popular.

4.5 LEGAL STATUS

The Otter is a priority species in the UK BAP and classified as Near Threatened on the IUCN Red List (2004). They are fully protected under the European Habitats & Species Regulations 1994 (as amended) and Section 5 of the Wildlife & Countryside Act 1981 (as amended).

4.6 DISTRIBUTION OF OTTERS IN LEICESTER



Source: Leicestershire & Rutland Environmental Resource Centre 2020

4.7 OTTER ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
<i>Habitat Creation/Species Recovery</i>			
Create, restore and enhance habitat across Leicester to create more and better connected habitat to support species recovery of Otters	All development to avoid destruction or damage to watercourses and bankside habitat and to provide adequate	On-going	Nat Con, Std & Development
	Design and implement NFM scheme at Aylestone Meadows and Thurnby Lodge Nature Area to enhance habitat for Otters	2021	Econ Dev Landscape, Nat Con
	Implement NFM scheme at Ashton Green as part of wider GI between LCC and	2022	Planning, Nat Con, Econ Dev
	Identify programme of sites along watercourses where NFM can be implemented (see Rivers & Brooks and	2021-2025	Nat Con, EA, SCP, Soar & GUC

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
<i>Management/Advice</i>			
Develop guidance and strategies on appropriate management to optimise biodiversity value for otters	Produce Management Plans for new sites at Thurnby Lodge Nature Area, Aylestone Meadows (River Biam)	2021	Nat Con, Parks
	Complete Riverside Management Plan to co-ordinate management of River corridor from Aylestone to Birstall	2022	Nat Con, Parks
Programme in sensitive conservation management of riparian habitats along Soar	Review from baseline data, map all areas add into management schedule	2021	Stds & Development,
	Identify and agree works undertaken by Parks (GM and LEV), develop programme of work to enhance biodiversity and use by	2021	Parks, Nat Con
Review conservation management of brooks under council and EA responsibility and agree appropriate management to conserve and enhance	Update Watercourses Management Guidance and schedule annual programme of work to be phased in across the city (5 km/yr)	2022-	Flood

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
<i>Monitoring/Research</i>			
Establish and monitor extent and range of Otters in Leicester	Collate records, survey Soar and GUC. Map all records and share with LRERC	2021	MG, Nat Con
	Collate records, survey Rothley Brook and minor Brooks in Leicester. Map all records and share with LRERC	2023	MG, Nat Con
Monitor locations and causes of death	Collect all Otter corpses for post-mortem analysis where practical. Continue current arrangement with EA and MG	On-going	EA, MG

- Champion and promote Leicester's biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
<i>Engagement</i>			
Provide generic guidance to planners, and developers on habitat creation and means of dispersal to wider network to help conserve this species	Update Council and partner websites to provide generic guidance and cross-reference to other relevant websites	2021/22	Nat Con, Planning
Provide a programme of training and guidance for land managers and information for community groups	Work with Mammal Group, EA and Wildlife Trust to agree programme of training to local communities, volunteers to help with surveys and conservation work	2021	MG, LRWT, Parks
	Work with Mammal Group, EA and Wildlife Trust to agree programme of training to land managers and link to NFM and ELMs	2021	EA, MG, LRWT

5. Water Vole



5.1 INTRODUCTION

The Water vole (*Arvicola amphibius*) is the largest British vole and is rat sized and often mistaken for the Brown rat. Its appearance is slightly different – usually darker fur, a rounder body and a much shorter, chubby face with small eyes and ears that are close to the body rather than protruding.

It is a good swimmer and is often seen either swimming with its head just above the water line or sat on banks nibbling vegetation. It is a fully protected species due to its severe decline with an estimate 94% loss since the mid-1980s due to predation and habitat fragmentation although recent reports suggest that the population is now stable.

5.2 KEY HABITATS

In the UK the Water vole is primarily riparian and usually occurs within 2 m of water. It prefers slow-flowing rivers, streams, canals and marshes with dense vegetation that can provide protection from predators.

The species needs a diverse range of vegetation that is available throughout the year to survive. This mainly comprises of reeds and grasses, but they will eat bark from willow in winter months when other vegetation is not available.

The species is best found in areas where watercourses have steeper earth banks that enable them to burrow into and create a series of chambers that can be above or below water level or some distance from the bank. The burrows provide a range of needs – maternity burrows away from the water to rear young and those under water to directly hide or escape from predators.

5.3 IMPACTS ON SPECIES STATUS

The most important factors affecting species are:

- Predation from American mink in water vole locations
- Loss and fragmentation of habitat with culvert construction and concrete channels
- Changes or inappropriate land management of ditches and river banks
- Unfavourable hydrological regimes – with severe flooding
- Pollution events

5.4 CURRENT STATUS

The species is on the IUCN Red list with an estimated British population of 132 000.

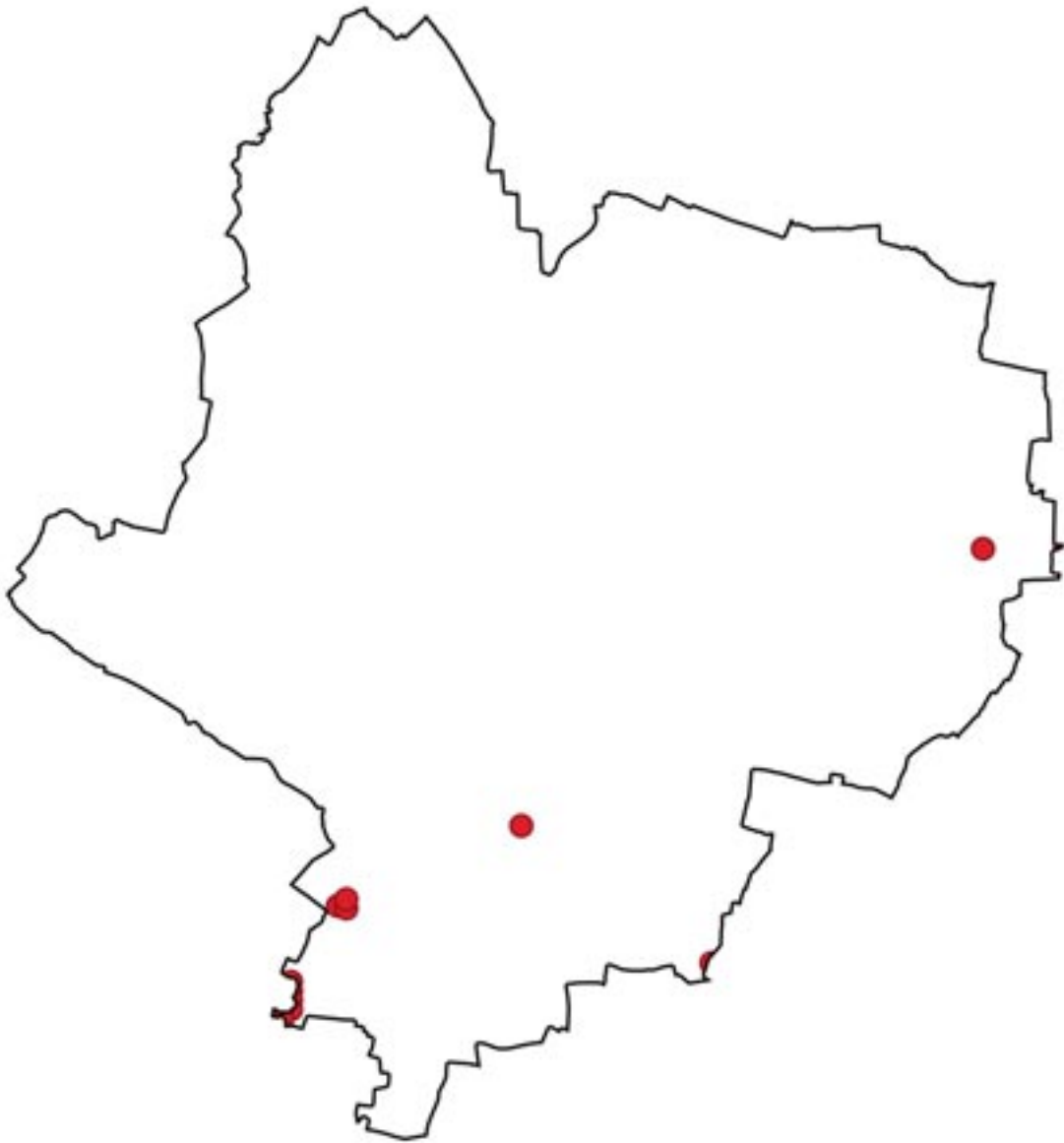
The status of Water voles in Leicestershire is largely unknown with the last survey having been undertaken in 2002/03 which found only six significant colonies of water voles while the last survey in Leicester was undertaken in 1998 and found no water voles to be present in any of the watercourses where the species had been previously recorded.

There have been 21 records of Water vole recorded in Leicester and the surrounding areas since 2000. The species all but disappeared from the city during the 1990s largely due to engineering flood works which removed the earth banks and replaced them with walls which isolated populations and their habitat from nearby areas. Mink predation also wiped out colonies that were unable to recover. However, Water voles have recently been re-discovered in Leicester and the most recent records are for the Aylestone area recorded by fully qualified ecology consultants where optimum habitat is present along the river banks and within the ditch networks of the Local Nature Reserve.

5.5 LEGAL STATUS

The Water vole is fully protected under UK and European legislation - Wildlife & Countryside Act (1981) as amended and the Habitats & Species Regulations (2017) which protect both the species being killed or injured and its habitat being damaged or destroyed except under licence.

5.6 DISTRIBUTION OF WATER VOLES IN LEICESTER



5.7 WATER VOLE ACTIONS

- Seek opportunities for joint projects and partnership working with internal and external stakeholders to create or restore priority habitats and recover important species of animals, plants and fungi
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
<i>Habitat Creation/Species Recovery</i>			
Create, restore and enhance habitat across Leicester to create more and better connected habitat to support species recovery of Water voles	All development to avoid destruction or damage to watercourses and bankside habitat and to provide adequate mitigation/compensation for losses	On-going	Nat Con, Std & Development
	Design and implement NFM scheme at Aylestone Meadows and Thurnby Lodge Nature Area to enhance habitat for Otters	2021	Econ Dev Landscape, Nat Con
	Implement NFM scheme at Ashton Green as part of wider GI between LCC and	2022	Planning, Nat Con, Econ Dev
	Identify programme of sites along watercourses where NFM can be implemented (see Rivers & Brooks and Wetlands HAPs) to link to NRN	2021-2025	Nat Con, EA, SCP, Soar & GUC

- Create, conserve and enhance all habitats wherever possible and increase the biodiversity value of designated and/or priority habitats back to favourable status
- Conserve protected and priority species by highlighting threats and issues, agree targets and actions to address them and help with their recovery

Objective	Actions	Achieved by	Lead
<i>Management/Advice</i>			
Develop guidance and strategies on appropriate management to optimise biodiversity value for otters	Produce Management Plans for new sites at Thurnby Lodge Nature Area, Aylestone Meadows (River Biam),	2021	Nat Con, Parks
	Complete Riverside Management Plan to co-ordinate management of River corridor from Aylestone to Birstall	2022/3	Nat Con, Parks
Programme in sensitive conservation management of riparian habitats along Soar	Review from baseline data, map all areas add into management schedule	2021	Stds & Development,
	Identify and agree works undertaken by Parks (GM and LEV), develop programme of work to enhance	2021	Parks, Nat Con
Review conservation management of brooks under council and EA responsibility and agree appropriate management to conserve and enhance	Update Watercourses Management Guidance and schedule annual programme of work to be phased in across the city (5 km/yr)	2021 -	Flood

- Monitor and review biodiversity trends in Leicester to and report on progress and achievements at a national and local level

Objective	Actions	Achieved by	Lead
<i>Monitoring/Research</i>			
Establish and monitor extent and range of Water voles in Leicester	Collate records, survey Soar and GUC and main tributaries. Map all records and	2021	MG, Nat Con
	Collate records, survey and monitor main lakes, large ponds and minor water courses in Leicester. Map all records and	2023	MG, Nat Con
Monitor known populations	Monitor river Soar and record any expansion in population dispersal	2021	MG, Nat Con

- Champion and promote Leicester's biodiversity using a range of publicity to fully engage with stakeholders at all levels
- Support and provide inspiration for conservation projects, events and activities involving the local communities

Objective	Actions	Achieved by	Lead
<i>Engagement</i>			
Provide generic guidance to planners, and developers on habitat creation and means of dispersal to wider network to help conserve this species	Update Council and partner websites to provide generic guidance and cross-reference to other relevant websites	2021	Nat Con, Planning
Provide a programme of training and guidance for land managers and information for community groups	Work with Mammal Group, EA and Wildlife Trust to agree programme of training to local communities, volunteers to help with surveys and conservation work (e.g.	2021	MG, LRWT, Parks
	Work with Mammal Group, EA and Wildlife Trust to agree programme of training to land managers and link to NFM and ELMs	2021	EA, MG, LRWT

Acronyms

BAP Biodiversity Action Plan	Resource Centre
BNG Biodiversity Net Gain	LROS Leicestershire & Rutland Ornithological
BOM Biodiversity Opportunity Mapping	Society
CHCP Castle Hill Country Park	LRWT Leicestershire and Rutland Wildlife Trust
Con Conservation	LWS Local Wildlife Site
CPD Continued Professional Development	MG Mammal Group
CRT Canal & River Trust	Nat Con Nature Conservation
EA Environment Agency	NE Natural England
ELMS Environmental Land Management Scheme	NERC Natural Environment & Rural Community
FOGS Friends of Groups	PUGS Park User Groups
GCN Great Crested Newt	RPZ Root Protection Zone
GI Green Infrastructure	SAP Species Action Plan
GIN Green Infrastructure Network	SCP Soar Catchment Partnership
GUC Grand Union Canal	SCT Swift Conservation Trust
HAP Habitat Action Plan	SPP Swift Partnership Project
HEG Hedgerow Evaluation Grade	SuDS Sustainable Urban Drainage Schemes
HR Hedgehog Rescue	TPO Tree Preservation Order
JPK Japanese Knotweed	T&W Trees and Woodlands
LBAP Local Biodiversity Action Plan	UoL University of Leicester
LCC Leicester City Council	
LEV Leicester Environmental Volunteers	
LNR Local Nature Reserve	
LRERC Leicestershire & Rutland Environmental	