West Midlands Local Nature Recovery Strategy 2025

Draft for public consultation

West Midlands Combined Authority

Greener Together

Contents

1. Foreword

The UK is one of the most nature depleted countries in the world; this has implications for the environment, for society and for the economy. Nature recovery is a priority for the UK Government, but also for the West Midlands Combined Authority (WMCA) region and the 3 million people who live here. Creating places that people can easily access to enjoy nature is important for health and well-being; a thriving natural environment will help us respond better to climate change; and nature also provides economic value for the region.

The Department for Environment, Food and Rural Affairs (Defra) have a Nature Recovery Network in place. The West Midlands is one of 48 'responsible authorities' that have been asked to lead a local strategy to support the national network. I am delighted to present the Local Nature Recovery Strategy (LNRS) for the region. This new strategy will drive nature recovery for all those who live, work and enjoy the West Midlands.

Our West Midlands Local Nature Recovery Strategy is a call to action. For the first time, we now have clear priorities, and locations, where we see the need to safeguard and improve nature. We also have clearly identified actions that everyone can get involved in delivering, from large organisations down to individual people and communities.

This document has been developed through extensive collaboration with our constituent local authorities, environmental organisations, businesses, and residents. Their insights and contributions have helped us to shape a strategy that is both ambitious and achievable and I would like to take this opportunity to thank them for the time they have taken to provide input.

Together, we can ensure that the West Midlands remains a vibrant and thriving region, where nature and people coexist in harmony. With your support, we can achieve the priorities set out in this strategy to create a legacy of environmental stewardship for future generations. Thank you for your commitment to nature recovery in the West Midlands.

Richard Parker
Mayor of the West Midlands

2. Acknowledgements

The WMCA is very grateful for the time given, advice and insight of the following organisations for their involvement in the production of the West Midlands LNRS:

Birmingham & Black Country Local Nature Partnership
Birmingham & Black Country Wildlife Trust
Birmingham City Council
Canal & River Trust
Coventry City Council
Dudley Metropolitan Borough Council
Environment Agency
EcoRecord
Forestry Commission
HS2
National Trust
Natural England
NetworkRail
RSPB
Sandwell Metropolitan Borough Council
Solihull Metropolitan Borough Council
Transport for West Midlands
trent rivers trust
University of Birmingham
Walsall Council
Warwickshire County Council
Warwickshire Coventry & Solihull Local Nature Partnership
Warwickshire Wildlife Trust
City of Wolverhampton Council
West Midlands Combined Authority

Further to this, our thanks goes to all other organisations and individuals who took the time to engage with us directly, or through our survey. The findings of these engagements were integral to establishing priorities for the West Midlands LNRS, as well as potential actions for nature recovery. We also acknowledge the expertise of EcoRecord and SLR Consulting, which provided technical input throughout.

3. Executive summary

The natural environment across the WMCA region is a vital regional asset - supporting biodiversity, climate resilience, public health, and economic prosperity. Spanning 90,000 hectares, and encompassing seven local authorities, it comprises a unique patchwork of heavily populated urban and post-industrial landscapes, **520 miles of canals,** parks, brownfield sites, surrounding agriculture and an estimated **4.9 million urban trees** that form a rich and complex landscape. Despite being a largely urbanised region, it holds significant ecological value and potential.

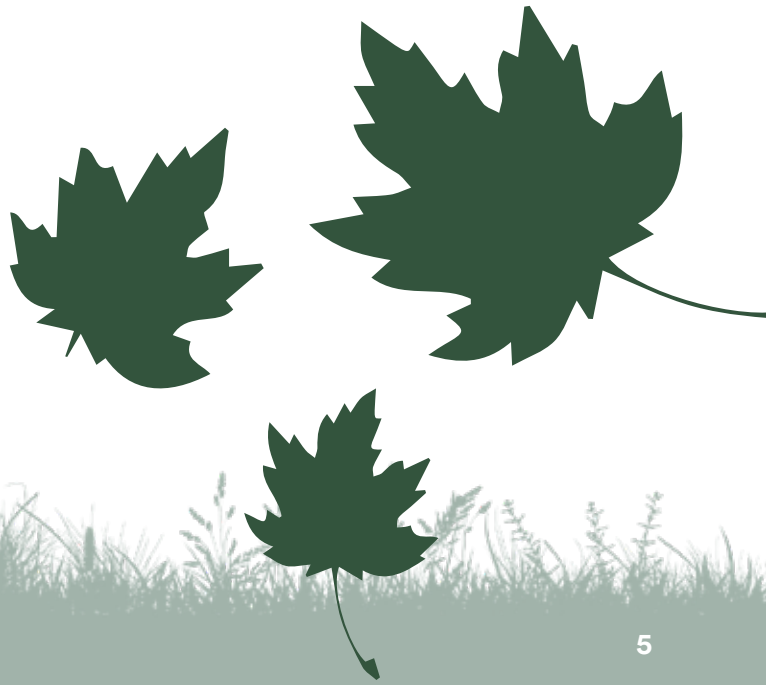
Nature in the WMCA region contributes **£676 million in ecosystem services** annually, regulating climate, supporting physical and mental health, reducing pollution, and increasing property values 1. The tree canopy alone (14.4% of land cover) stores **1.9 million tonnes of carbon,** removes **206 tonnes of pollutants annually,** and provides **£73.45 million in yearly benefits.**

However, our region's nature is under pressure from a range of risks including, **habitat loss** due to land development, **poor land management** and fragmented ecological networks, **pollution** from roads, industry, and agriculture, **invasive species** such as Japanese knotweed, **recreational pressure** damaging sensitive habitats and **climate change** accelerating habitat degradation and species loss. Addressing this will require **urgent and large-scale action.**

The West Midlands Local Nature Recovery Strategy marks the first time a detailed, unified view of nature in the WMCA region, along with clear priorities for nature recovery and target locations for action, has been brought together in one place. Building on years of work by regional stakeholders, the LNRS provides a shared vision and coordinated strategy that transcends administrative and political boundaries to deliver greater impact for nature.

It enables everyone, from environmental organisations and local authorities to landowners, businesses, and engaged citizens, to see where nature recovery efforts will be most effective. This collective approach supports the national goal of halting biodiversity loss while ensuring local priorities are met.

LNRSs were mandated by the **Environment Act 2021** and regulated by the **2023 LNRS Regulations** 2 3**.** The West Midlands LNRS is one of **48 strategies,** forming a national **Nature Recovery Network,** ensuring comprehensive, connected nature recovery across England.



The LNRS provides a **strategic vision and priorities for restoring biodiversity** while aligning with local and national priorities. It includes:

- **A West Midlands LNRS vision and aims**
- **10 priority themes and 62 associated actions with case studies** to demonstrate how the priority is already being effectively delivered by stakeholder(s) within the West Midlands
- **An interactive online map** identifying areas for targeted action
- **Next steps – monitoring, governance and nature finance**
- **Supplementary information in appendices**

The LNRS is an enabling framework designed to align local action with shared environmental goals, providing a **collaborative roadmap for nature recovery** and how we can **use nature to address other societal challenges.** More specifically, it will drive more effective regional collaboration to:

- Guide investment and funding applications
- Inform local plans and policies
- Support cross-sector collaboration for nature recovery
- Empower communities and individuals to take action

The LNRS defines actions and areas for focus for a wide range of stakeholders. Some of the main ways that different stakeholders will use it are:

- **Local authorities:** Integrate LNRS in planning and lead partnerships
- **Developers:** Align development with LNRS priorities and Biodiversity Net Gain (BNG) metrics
- **Environmental organisations:** Use LNRS to focus efforts and guide collaboration
- **Farmers and landowners:** Identify and deliver habitat improvements; form land clusters
- **Businesses:** Align ESG goals with LNRS; invest in nature projects
- **Educational organisations:** Supporting the skills we will need for the delivery of the LNRS.
- **Community groups and individuals:** Participate in local initiatives, access funding, share knowledge

The LNRS is **non-regulatory.** It:

- **Does not mandate land use change**
- **Does not impose restrictions on development**
- **Does not designate new protected areas**
- **Does not exclude action outside of mapped priorities**

The overall vision for the West Midlands LNRS is as follows:

By 2030, through collective action, nature in the West Midlands will be thriving, valued by all, and central to a healthier, more resilient and prosperous region. We will recover nature by restoring habitats and species and use nature-based solutions to ensure that people and wildlife can flourish together - now and for future generations.

The **10 West Midlands LNRS priorities** fall into 3 broad thematic areas. These listed below and are the overall outcomes that the strategy is seeking to achieve.

Themes	Priorities
Nature recovery	A. Our most important terrestrial habitats and ecosystems are maintained and improved, making them more resilient to existing and future pressures and threats B. Terrestrial habitats are more joined up to create stronger ecological networks C. The ecological functionality of freshwater networks and wetland habitats are maintained and improved at a landscape and catchment scale D. Increased long-term sensitive management of rural land for nature, soils and agriculture E. The urban environment is improved to become nature rich F. Species populations are maintained and improved across the region, including suitable species reintroductions
Delivering wider environmental benefits	G. Public access to nature is improved across the region, focusing on equitable opportunities that support biodiversity H. Nature-based solutions (NbS) are adopted to help address climate related impacts and risks faced by our land, nature and communities
Enabling delivery for nature recovery	I. Improved evidence and knowledge to enable scaled-up delivery of nature recovery J. Improved capacity of stakeholders to contribute to nature recovery

The strategy will be **reviewed every 3–10 years,** in accordance with the LNRS regulations and Secretary of State instruction. The **WMCA will continue as the Responsible Authority** under the 2024 Devolution White Paper, with an expanded role in convening action, coordinating funding, and monitoring delivery.

4. Local Nature Recovery Strategy context

4.1 Why do we need to take action?

Nature underpins human society and our global economy. The ecosystem services that flow from nature provide food, water, energy and the raw materials that we rely on. These ecosystem services, across all spatial scales, are the foundations on which our society and economy rests.

Globally there is acknowledgement that there have been significant losses to our biodiversity. The World Wildlife Fund for Nature (WWF) stated in 2023 that 'The climate and nature crises are now more serious than ever before. Since 1970 global wildlife populations – indicators of healthy ecosystems – have plummeted by almost 70%, and the UK itself is in the bottom 10% for biodiversity globally'. Most of these losses are attributed to the impacts of the activities of the human population over the last few centuries.

Across the world, nature continues to face significant threats. In recognition of this, the 196 Parties to the Convention on Biological Diversity (CBD) came together in December 2022 to adopt the Kunming-Montreal Global Biodiversity Framework (GBF), which includes a historic set of four goals and 23 targets for biodiversity 4. The four goals are as follows:

A: Protect and restore | B: Prosper with nature
C: Share benefits fairly | D: Invest and collaborate

Those signed up to the GBF agreed to update their National Biodiversity Strategies and Action Plans (NBSAPs) to outline how they would implement the GBF in line with their own national circumstances. The UK National Biodiversity Strategy and Action Plan (2025) was published in 2025 5.

Nationally the UK is now one of the most nature-depleted countries on earth, and the main causes of biodiversity decline are clear. In England (the part of the UK where LNRSs are mandated), evidence from the last 50 years shows that on land and in freshwater, significant changes in land management, particularly for agriculture, and climate change are having the greatest impacts on wildlife.

Statistics from English State of Nature report 6

- Average 32% decline in species' abundance
- Average 18% decrease in the distributions of invertebrate species
- Decreases in the distributions of over half (68%) of plant species
- 13% of species are threatened

The erosion of UK and global natural capital generates significant and long-term risks to society and the UK economy and financial sector. The compounding impacts of climate and nature loss would have a very material impact on UK GDP; equivalent to several lost years of growth. 7

The UK National Biodiversity Strategy and Action Plan (2025) sets out a blueprint for halting and reversing biodiversity and sets out the policy frameworks for each of the devolved nations.

For England, The Environment Act 2021 set legally binding targets to improve the environment (including establishing a national network of LNRSs). The Environment Act requires the government to publish a plan for significantly improving the environment, this is known as the Environmental Improvement Plan (EIP). 8 The most recent EIP was published in January 2023 and this is currently under review.

The revised EIP will provide delivery information to help meet each of the 13 ambitious Environment Act targets alongside key, wider commitments such as 30 by 30 (a commitment to protect and conserve a minimum of 30% of land and sea for biodiversity by 2030). The EIP identifies a number of tools and mechanisms to help with delivery of the targets, the Local Nature Recovery Strategy (LNRS) is one of these. The Environmental Improvement Plan (EIP) '30 by 30' objectives include:

- Strengthen - enhancing policy and statutory protections
- Extend and create - designating new protected areas and recognising other effective area-based conservation measures)
- Invest (in habitat restoration within and beyond protected areas

To demonstrate regional commitment to natural environment targets, the WMCA region published its Natural Environment Plan in 2021 9. The Natural Environment Plan set out objectives for creating and restoring important wildlife corridors, restoring the region's rivers, increasing the tree canopy cover, creating greater equity in access to nature and to support the creation of jobs in the natural environment. These co-benefits are important as the WMCA region is home to almost 3 million people but comes with challenges that a heavily urbanised landscape brings, including reduced opportunities for habitats and species.

In 2023, the Secretary of State appointed the WMCA as the 'Responsible Authority' for the region to prepare the LNRS, identifying priorities and actions to support nature recovery. The West Midlands LNRS will feed into the national Nature Recovery Network (NRN). The NRN is a national initiative led by Natural England aiming to:

- Expand, improve, and connect existing wildlife-rich habitats.
- Create a network of nature-rich places across towns, cities, and countryside.
- Support biodiversity, climate resilience, and wellbeing.

It is part of the UK Government's 25 Year Environment Plan (25YEP) and is essential for meeting legally binding targets to halt and reverse nature's decline. 10 The LNRS is the local delivery mechanism for the NRN.

The West Midlands LNRS vision
The overall vision for the West Midlands LNRS is as follows:

By 2030, through collective action, nature in the West Midlands will be thriving, valued by all, and central to a healthier, more resilient and prosperous region. We will recover nature by restoring habitats and species and use nature-based solutions to ensure that people and wildlife can flourish together - now and for future generations.

It is intended that the LNRS provides a framework that will enable the delivery of the following aims for the region:

- Deliver actions that recognise the urgency and scale required for nature recovery in the WMCA region that support the EIP's '30 by 30' aims.
- Increase the region's tree canopy cover to at least 25% by 2050 with at least 20% tree canopy cover in every ward, creating greater equity in the distribution of tree canopy cover across the region.
- Strengthen and create habitat networks that provide an environment for our species to thrive across and beyond the region.
- Create a region where everyone can experience and access nature ('Green in 15').
- Create greater awareness and drive for the use of nature-based solutions to address key societal challenges.

4.2 What is the LNRS?

The LNRS provides a strategic vision with priorities and actions for restoring and enhancing biodiversity. It provides an opportunity to identify how we can draw on nature to provide wider environmental or societal benefits using nature-based solutions.

The key outputs of the LNRS are to:

- Map the most valuable existing areas for nature;
- Agree priorities for nature recovery; and
- Map specific proposals for creating or improving habitat for nature and wider environmental goals (adopting nature-based solutions) with guidance on actions.

The LNRS is designed to align local actions with broader regional and national priorities for biodiversity and ecosystem restoration. There are actions for everyone, enabling them to contribute to the region's nature recovery – from activities in gardens or streets, to large scale habitat creation aimed at public and private organisations.

How the LNRS came about

The requirement for LNRSs across the whole of England were set out in the Environment Act 2021 which passed through parliament in November 2021. In March 2023, Defra published the 'Local nature recovery strategy statutory guidance', which outlines what each LNRS should contain and sits alongside 'The Environment (Local Nature Recovery Strategies) (Procedure) Regulations 2023 (LNRS Regs)'. 11

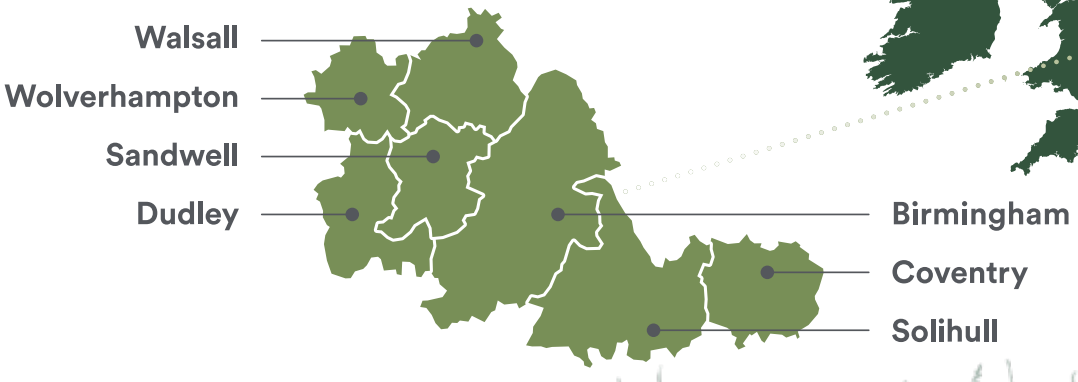
In June 2023, the Secretary of State appointed the WMCA as the 'Responsible Authority' for the region with responsibility for preparing the LNRS.

The government has stated that LNRS will be reviewed in 3-10 years, at a time that will be determined by the Secretary of State.

The Geography of the LNRS

Across England, 48 LNRSs are being produced to create a nature network that is locally meaningful but connected across the country with no gaps and no overlaps. This combination of all 48 LNRSs is referred to as the Nature Recovery Network.

The West Midlands LNRS covers the 7 constituent authorities of the WMCA, which comprises Birmingham, Coventry, Dudley, Sandwell, Solihull, Walsall and Wolverhampton. Within the LNRS, these are referred to as 'WMCA region'.



How will the LNRS help us?

The LNRS will serve a number of functions. Specifically, it will:

- Provide clarity on what the West Midlands' priorities are for nature recovery and where we should take action.
- Identify where the delivery of nature-based solutions would be best placed to address those communities in greatest need.
- Help guide all regional stakeholders as to the steps they can take to contribute to nature recovery.
- Help farmers, landowners and local partnerships leverage and target funding for environmental projects to areas where they could have the most impact for nature and the wider environment.
- Inform the planning process helping to shape emerging and new local plans and policies.
- Help guide communities, businesses and investors to take action for nature.
- Ensure Defra arms-length bodies carry out existing functions to better support nature recovery by drawing on LNRS priorities and proposals when providing advice and delivering their own projects.
- Provide a framework for investors and ecosystem service buyers to understand how best to support local action.

Looking beyond the strategy, the UK Government has confirmed continuation of the Responsible Authority role for the WMCA. Under the Devolution White Paper (December 2024) the WMCA will be mandated to perform a key role in the delivery of LNRS ambitions. 12 This will include convening partnerships, helping coordinate action, funding, and investment in nature recovery and wider environmental delivery across their areas, and monitoring and reporting on delivery.

4.3 What is included in the LNRS and how to use it?

The Strategy contains:

1. Vision
The LNRS represents a significant opportunity for the West Midlands to set out our ambitions for nature recovery across the region. Our vision outlines five bold aims that will support improvements for nature. Delivering them will require collective effort, and the LNRS provides clear direction on where action is needed, how it can be achieved, and who should be involved.

2. Priority themes and actions
Section 6 of this document outlines the 10 priority themes for the region's nature with 62 associated actions. Each of the priorities outlines what success would look like, and information is provided on why this priority is important, referring to:

1. Relevant data
2. Existing pressures
3. Opportunities for recovery actions to be taken and
4. Ecosystems services that will benefit the region.

A list of the actions that are most clearly aligned with that priority (as sometimes they can deliver several outcomes) is also included.

Further details on each of the actions is then provided with suggestions on what could practically be done. This list is not exhaustive, and alternative actions may well be equally effective.

3. An LNRS map
The LNRS includes two maps, these are both available to be viewed HERE.

1. The first shows the **Areas of Particular Importance for Biodiversity (APIB)** and this helps to support the description of the region as set out in Section 5.
2. The second, and more interactive, map is that described in the regulations as **'the habitat map'.** This shows all the locations where LNRS priority actions have been mapped (see Section 6 for details of priorities and actions). The mapped areas represent the locations of greatest strategic significance for delivery of the LNRS actions where it is appropriate to do so (such mapping does not indicate consent or that such actions are feasible in a particular place and further consideration before delivery would be required).

Delivery of some actions may still be relevant outside mapped areas and some actions are, by their very nature, applicable for the whole region and these have not been mapped.

4. Appendices:
- **Appendix 1: Glossary**
- **Appendix 2: Actions alignment with national and regional policy**
- **Appendix 3: How actions deliver for different habitats**. If you have an interest in a particular habitat, or you wish to create a particular habitat type, you can use this table to identify the relevant actions for that habitat type.
- **Appendix 4:** Mapping methodology
- **Appendix 5:** References

The LNRS will NOT:

- Require owners or managers of land to make specific proposed land use changes – this will remain their choice.
- Place new restrictions on developing land – it will, however, be one source of evidence used to inform the preparation of plans that will determine where development should occur.

4.4 Who will deliver nature recovery?

The LNRS priorities and actions can be applied and delivered by a wide range of stakeholders, from individuals to businesses, local authorities, educational institutions and environmental bodies. The section below sets out how different stakeholders can use the LNRS to take action at a broader level to play a role in delivering nature recovery:

Local authorities

- Have 'regard' to the LNRS in plan and policy making
- Proactive strategic planning to increase connectivity for nature and create new areas of wildlife rich habitat
- Consider how LNRS actions relate to the Biodiversity Net Gain (BNG) metric when advising on and assessing planning applications
- Lead/be part of partnerships with stakeholders to assist the delivery of the LNRS
- Consider how to deliver LNRS actions on its own estate

Development professionals

- To work to deliver the LNRS through development proposals, creating more nature rich development and delivering connectivity, high quality green space and nature rich areas
- Consider how LNRS actions relate to the Biodiversity Net Gain (BNG) metric when preparing planning applications, target your BNG delivery on site or within the WMCA region
- Take a nature-based solutions approach as first choice wherever feasible

Environmental organisations (government and non-governmental)

- Incorporate LNRS actions into plans or strategies
- Collaborate with all other stakeholders to focus actions in a co-ordinated way
- Use the LNRS priorities and actions to focus nature recovery work and project design

Farmers, landowners and land managers

- Take stock of nature and consider how you could be part of LNRS delivery
- Identify and deliver LNRS actions that could be undertaken on your land
- Seek opportunities to collaborate with community groups, water companies, and environmental groups and charities to deliver actions
- Join up actions with neighbouring farms/ land owners creating farm/land clusters for greater scale of impact
- Use LNRS priorities and actions to guide and target applications for grants or funding
- Understand additional nature related income opportunities and benefits of nature stewardship to current practices
- Share skills, knowledge and learnings

Businesses

- Take stock of how your business relies upon or impacts nature
- Explore how your Environmental, Social and Governance (ESG) policies address nature and align them with the local LNRS ambitions
- For those seeking to report to the Taskforce for Nature Related Financial Disclosures (TNFD) initiative, explore how you could incorporate support of LNRS actions as part of this
- Incorporate actions into your own business strategy and policies to contribute to a nature positive world by investing in local nature restoration projects
- Examine the potential for and deliver LNRS actions on your own land or buildings
- Collaborate with community groups to undertake actions
- Encourage and support employees to undertake actions as individuals

Educational institutions

- Vital role in informing perceptions of young people on the importance of nature and environment
- Support young people interested in environmental careers and identify routes they can take to pursue them
- Skills provision for natural environment careers to ensure there is a workforce to deliver regional priorities

Community groups and individuals

- Explore how you can play a role, no matter how small, in the recovery of nature using the LNRS as a point of reference and inspiration
- Identify and deliver LNRS actions within your garden or community project
- Support or get involved with nature conservation projects in the local area
- Use LNRS priorities and actions to guide and target applications for grants or funding
- Organised volunteer groups and citizen science volunteers will play an active part in helping to deliver LNRS through monitoring, reporting, and recording wildlife
- Share skills, knowledge and learnings

Implications for planning and development

Biodiversity Net Gain and Strategic Significance - There is potential for the delivery of LNRSs to be supported by BNG. This was made mandatory for most new planning applications in 2024. BNG is an approach aiming to leave biodiversity in a measurably better state than before the development took place. It focuses on creating new habitats as well as enhancing existing ones. Developers must deliver at least a 10% gain in biodiversity units, over and above the original baseline value of the development site, as measured by the statutory biodiversity metric.

There are three ways a developer can achieve BNG. They can create biodiversity on-site (within the red line boundary of a development site) or they can purchase off-site BNG compensation units from a growing BNG habitat bank market (or a adopt a mix of both approaches).

While the LNRS is not a delivery plan, the local habitat map identifies strategic areas where action for nature recovery and delivery of other environmental benefits would have the greatest impact. The local habitat map includes those priorities and actions of the LNRS which are suitable for mapping and are priority areas for delivery. Where LNRS actions for habitats have been mapped these areas are referred to as being 'strategically significant' in the BNG metric.

All strategically significant mapped areas offer a 15% uplift in the value of biodiversity units compared with such habitats outside mapped areas (a x1.15 multiplier in the BNG Metric calculation). Therefore, developers and habitat bank owners are incentivised to deliver those LNRS priority actions in these areas which will promote the delivery of the LNRS ambitions. In addition, as set out under Principle 6 of The Statutory Biodiversity Metric User Guide, 'this biodiversity metric is designed to inform decisions in conjunction with locally relevant evidence, expert input, or guidance'. When interpreting the strategic significance element of the BNG metric it is key that other local authority guidance that may be relevant is also considered. 13

Duty on public authorities to conserve and enhance the environment – LNRSs will inform how all public authorities in England meet their legal duty to conserve and enhance biodiversity. The duty applies to many national and local government organisations, as well as some private utilities such as water companies. Public authorities must understand which LNRSs are relevant to them and how they can contribute.

Planning law – Changes to planning law, expected to come into force later in 2025, will make it a legal requirement for plan-makers to "take account" of LNRSs. Like the existing requirements on Local Plans, this will help the needs of nature recovery to be properly reflected in the planning system. It will also apply to a wider range of similar spatial plans, at larger (Spatial Development Strategies) and smaller scales than local plans (Neighbourhood Plans).

5. Nature in the West Midlands Combined Authority region

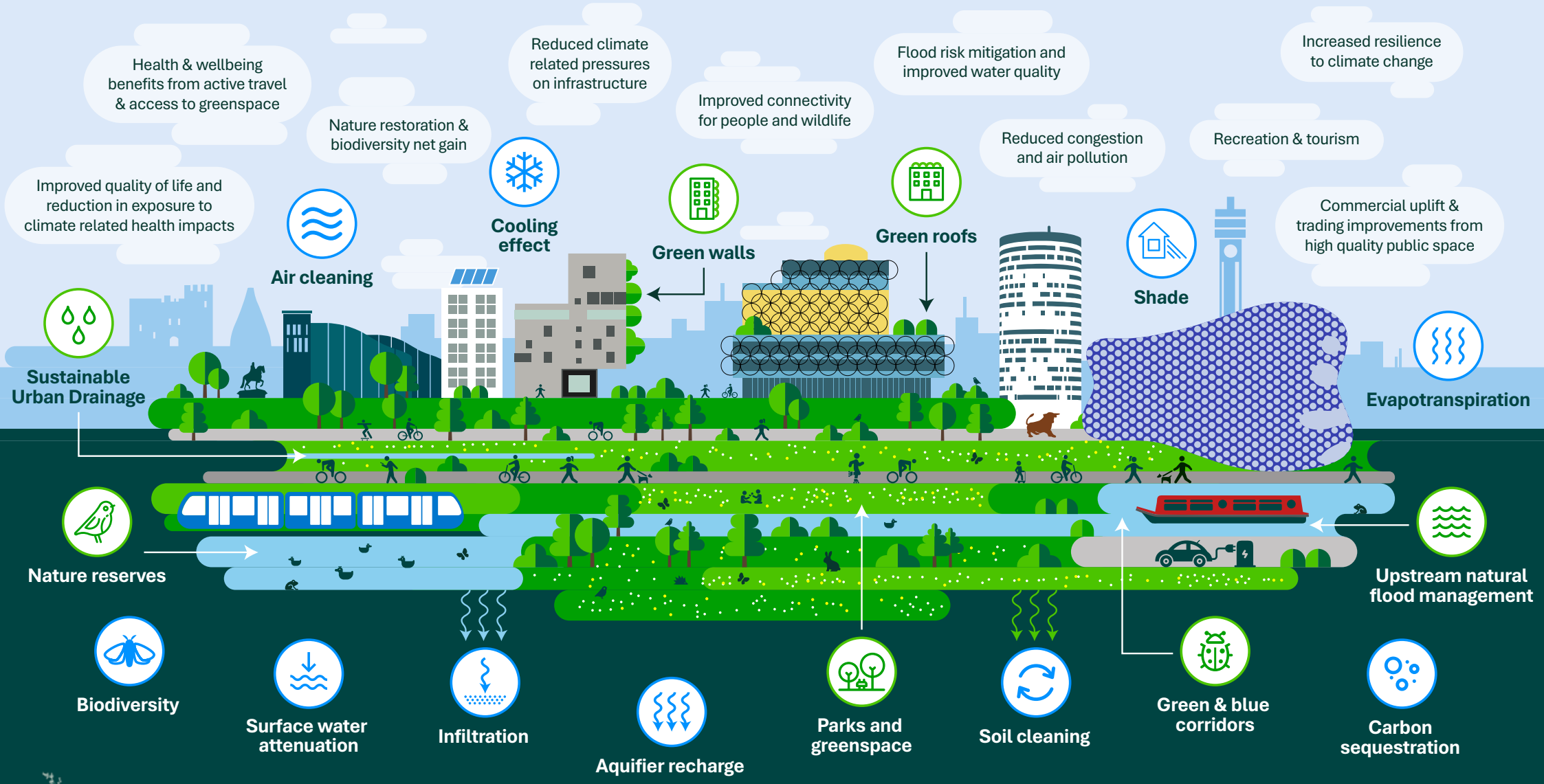
5.1 What does nature do for us?

The state of nature in the West Midlands: A vital asset for people, prosperity and planet.

Though the WMCA region is heavily built up, it is still home to a distinctive and diverse natural environment. This is fully described in our State of Nature report. A unique patchwork of heavily populated urban and post-industrial landscapes, **520 miles of canals,** parks, brownfield sites, surrounding agriculture and an estimated **4.9 million urban trees** form a rich and complex landscape. This natural capital holds immense potential, not only to reverse biodiversity decline and build climate resilience, but also to support the West Midlands in becoming a more prosperous, healthier, and attractive place to live, work and visit.

Nature is a vital asset. The natural environment of the WMCA region contributes **£676million annually** in socio-economic co-benefits to communities and businesses. It regulates climate, provides food, raw materials, and energy, and supports health and wellbeing. By adopting a 'natural capital' approach, we can better account for these ecosystem services and value nature alongside infrastructure, energy, skills and technology.

Figure 1: Nature in an urban environment



The natural environment character of the WMCA region

Covering an area of **90,000 ha,** the WMCA includes seven local authorities. The region's varied geology, topography and historical land use, from agriculture to heavy industry, have shaped a mosaic of natural and semi-natural habitats. Nearly **60%** of the land is built-up or garden, while farmland comprises less than **25%,** mainly in the Meriden Gap and margins of the region.

Despite its urban nature, the West Midlands contains key **habitats** including woodland, grassland, heathland, open water, and post-industrial landscapes. Some of the region's most significant sites are legally protected, due to their value to nature and as places where wildlife can thrive. These include designations at an international scale, including Special Areas of Conservation (SAC); the national scale, including Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR); and locally important places for both nature and people, which include Local Nature Reserves (LNRs).

These statutory designated sites cover over 3,800 hectares (ha) in the WMCA region (though it should be noted that some of these sites have overlapping designations, for example Cannock Extension Canal is designated as both a SAC and a SSSI).

Local designations are based on criteria typically devised by local conservation partnerships and local authorities and therefore they may reflect species and habitats that are more important locally. Within the WMCA region these are called **Local Wildlife Sites (LWS), Sites of Importance for Nature Conservation (SINC) or Sites of Local Importance for Nature Conservation (SLINC). Over 6,400 ha is designated in such a way.** Though not legally protected these sites are recognised in national planning policy, the National Planning Policy Framework (NPPF) and the planning policies of our the WMCA's constituent authorities, which offers some protection through the development control system. 14

Figure 2: Areas of sites designated for nature conservation in the WMCA

Statutory designated sites	Area(ha)	% of WMCA Area
Special Areas of Conservation	21	0.02%
Special of Special Scientific Interest	1,253	1.39%
National Nature Reserves	914	1.01%
Local Nature Reserves	1,618	1.79%
Non - statutory designated sites		
Sites of Importance for Nature Conversation	2,559	2.83%
Sites of Local Importance for Nature Conversation	2,300	2.55%
Local Wildlife Site	1,599	1.77%
Total[6]	**10,264**	**11.36%**

Due to their critical role as core sites to form the basis of connecting and expanding our ecological networks these protected sites are mapped on the Areas of Particular Importance for Biodiversity (APIB) map that forms part of the LNRS.

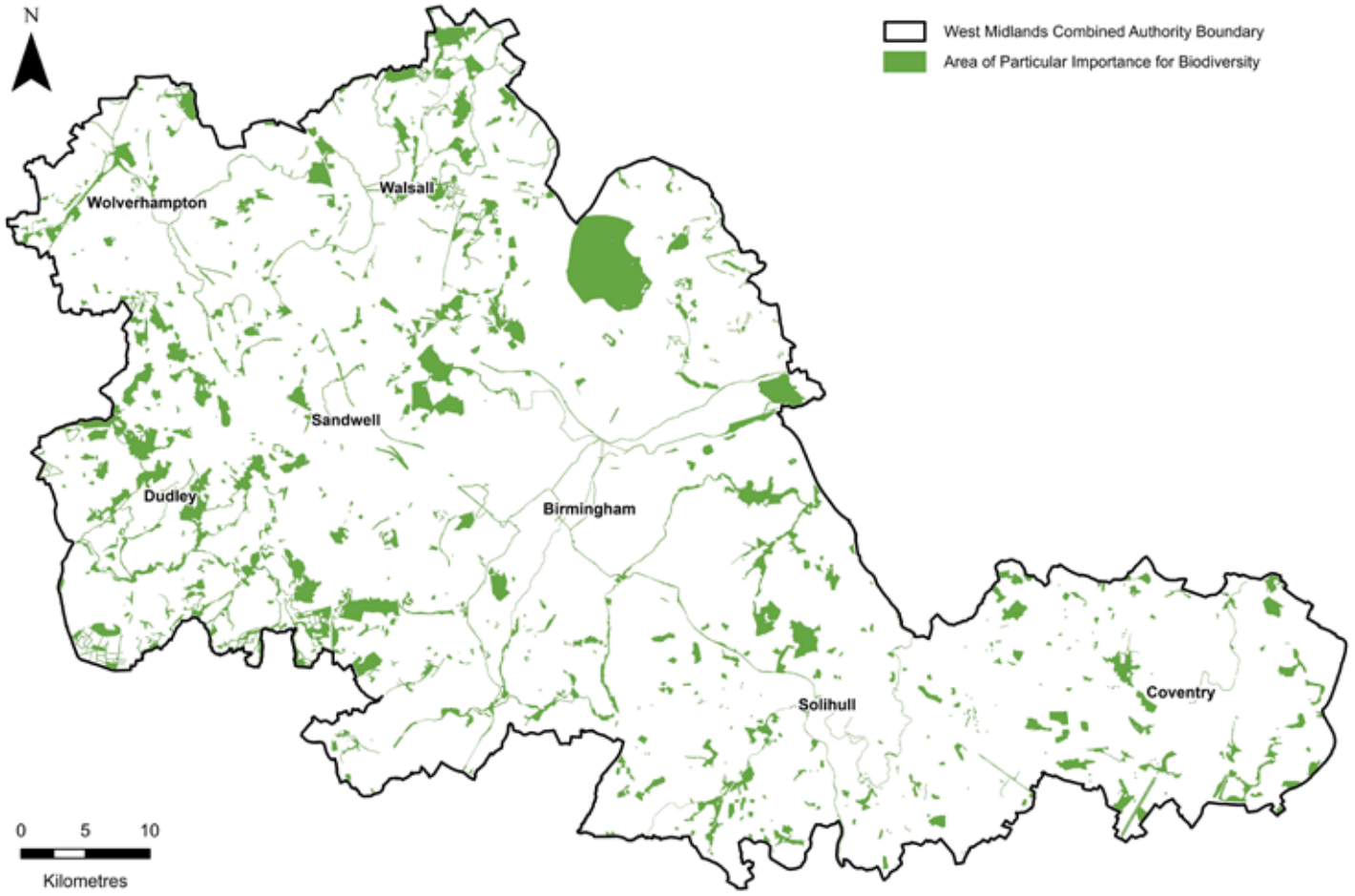
Though it is possible to create many habitats where the right conditions exist, some, due to their age, uniqueness, species diversity and rarity, are classed as **'irreplaceable' and are particularly valuable.** This means it is very difficult (or takes a very long time) to restore, create or replace once it has been destroyed.

There are only a small number of habitats that are considered to be irreplaceable; within the WMCA region we have three, these being ancient woodland, ancient and veteran trees, and lowland fen. The irreplaceable habitats that we have records for in the WMCA region are also included on APIB map.

Sites like Walsall Arboretum and Castle Bromwich Hall Gardens demonstrate their importance, especially in urban and semi-urban settings. The Arden landscape that covers parts of Solihull and Coventry has ancient and veteran trees in a more open rural setting. **The region has 738 ha of ancient woodland, representing 0.8% of the land area.**

The LNRS Areas of Particular Importance for Biodiversity (APIB) is shown below but it can be fully explored to show the distribution and extent of those sites and features described above HERE.

Figure 3: The LNRS Areas of Particular Importance for Biodiversity (APIB)



Biodiversity and habitat connectivity
The WMCA region supports a wide range of species, some adapted to city life (e.g. peregrine falcons, swifts, house sparrows), others reliant on specific habitats like the tormentil mining bee in heathlands. However, urban development has led to fragmentation and loss of habitat.

Connectivity between natural areas is vital. Even small green spaces act as stepping stones across the urban matrix. Green corridors, waterways, and vegetated verges enable wildlife movement and genetic exchange, making ecosystems more resilient. Transport infrastructure like roads and railways can fragment habitats, but with the right management, they can also enhance connectivity. This aligns with the Lawton Principles, which call for 'more, bigger, better and more joined-up' spaces for nature.

The most dominant habitat types after built up areas, gardens and farmland include grasslands, woodland standing water and open water, heathland and scrub. These are illustrated in Figures 4 and 5 below.

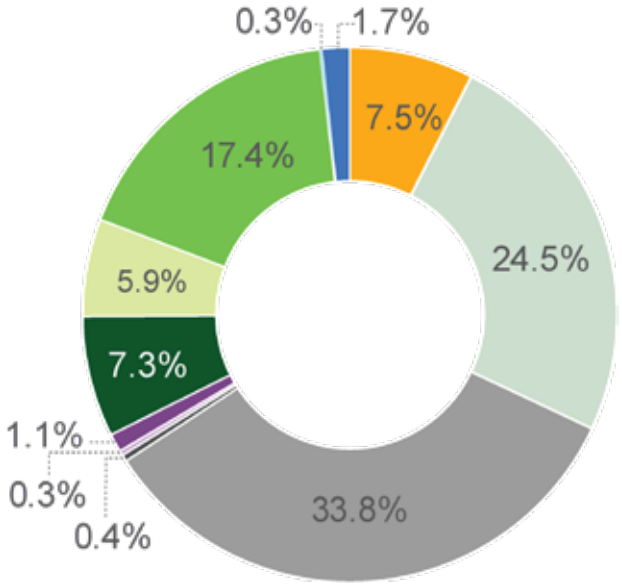


Figure 4: Habitat composition across the WMCA region

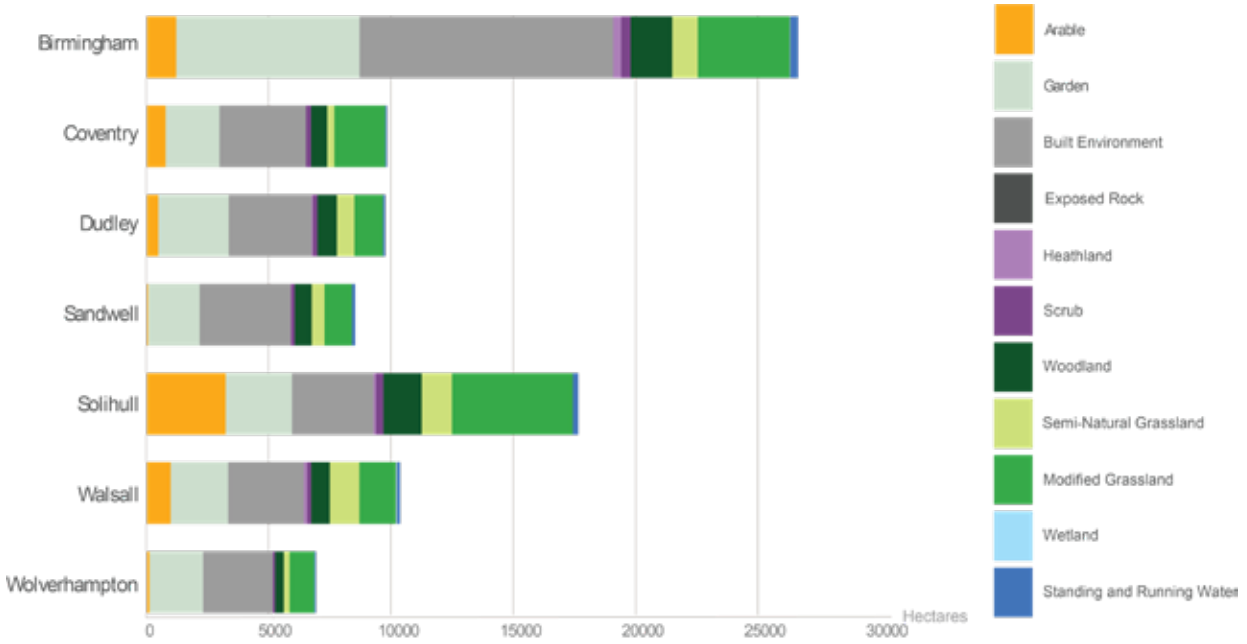
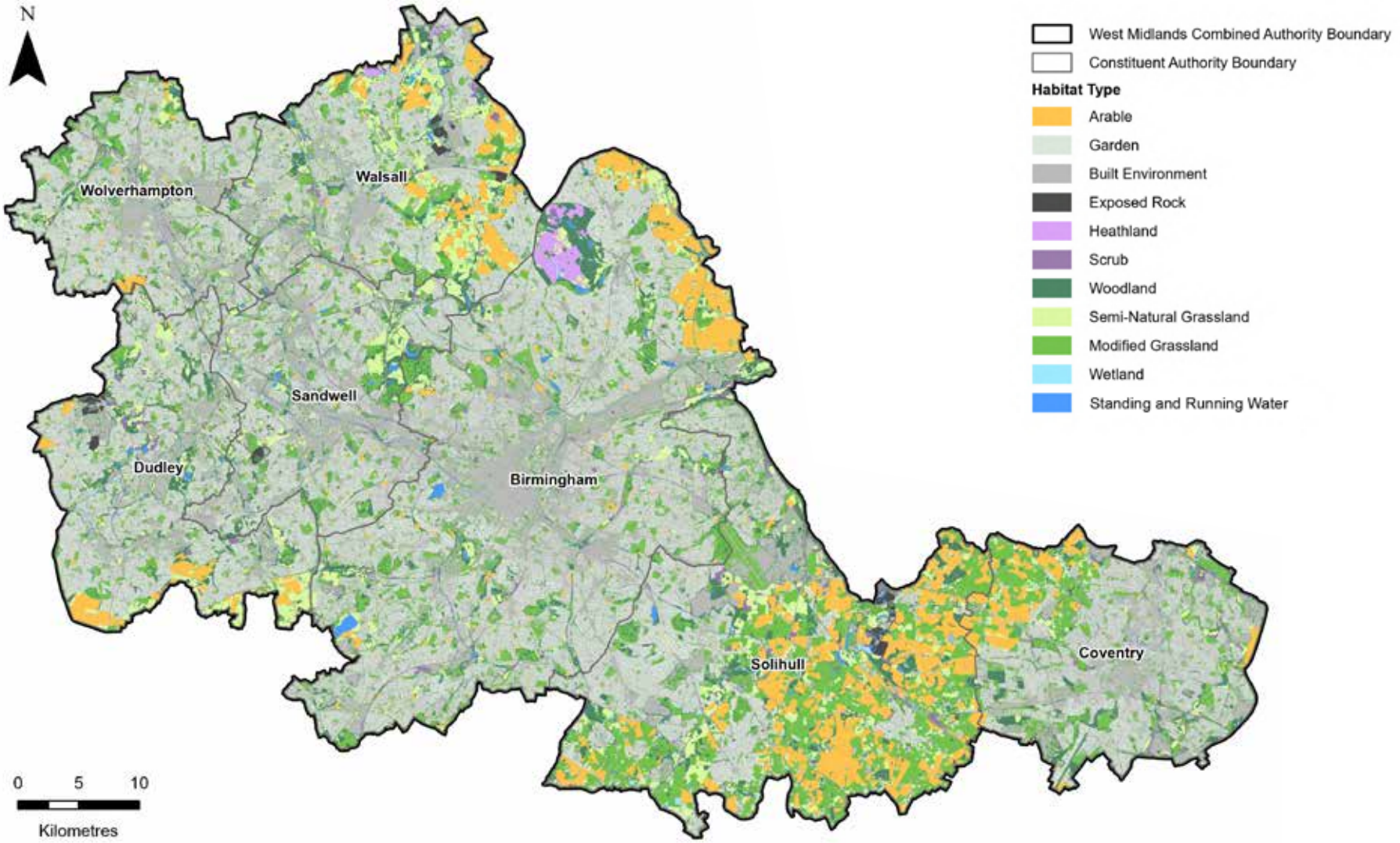


Figure 5: Habitat composition within the WMCA constituent areas

Figure 6: Habitat map of the WMCA region



A healthier region through nature
Access to green space is linked to significant health improvements. It is estimated that **£2.1 billion per year** could be saved in health costs if everyone in England had good access to outdoor spaces for physical activity. People with better access to nature report higher life satisfaction, improved general health, and lower rates of depression and anxiety.

In the WMCA region, where health outcomes are poorer than the national average and access to green space is among the most inequitable in the country, this presents both a challenge and an opportunity. Mental ill health is the UK's single largest cause of disability, costing **£105 billion per year** in wider economic terms.

Greener environments help mitigate this, particularly for socioeconomically disadvantaged groups. Some of the wider benefits are:

- Nature benefits workplaces. Views of greenery can reduce sick leave by **23%**, saving employers an average of **£1,600 per employee annually.**
- The region's tree canopy contributes directly to public health. Pollution removal by trees is valued at **£15 million annually,** while roadside trees can **halve indoor pollution levels** and reduce airborne particulate matter by **9% - 24%.**
- In Birmingham alone, the annual net societal benefit of parks and green space is valued at **nearly £600 million**, including **£192 million in health benefits.**

In total the region has just over 7000ha of accessible green space (8% of region) however this is unequally distributed across our 2.9m population, with less than a third of the WMCA region meeting the 'doorstep' standard (where people have access to areas of at least 0.5ha within 15 minutes of their home).

Blue spaces
In terms of **hydrology**, many of the watercourses present within the West Midlands include the headwaters for the Severn and Trent catchments; therefore, the impacts of water management within this region can have significant impacts further downstream. The region's industrial history also left a legacy of river pollution.

The River Tame catchment, with tributaries starting in Wolverhampton, Walsall and Sandwell, is the most urbanised in the UK, containing 1.7 million people in its catchment before joining the River Trent.

Canals are artificial waterways that were built to allow industrial water traffic to pass through. **The WMCA region has 149 miles (240 km) of canals which are managed to improve biodiversity and are used for recreational activities.**

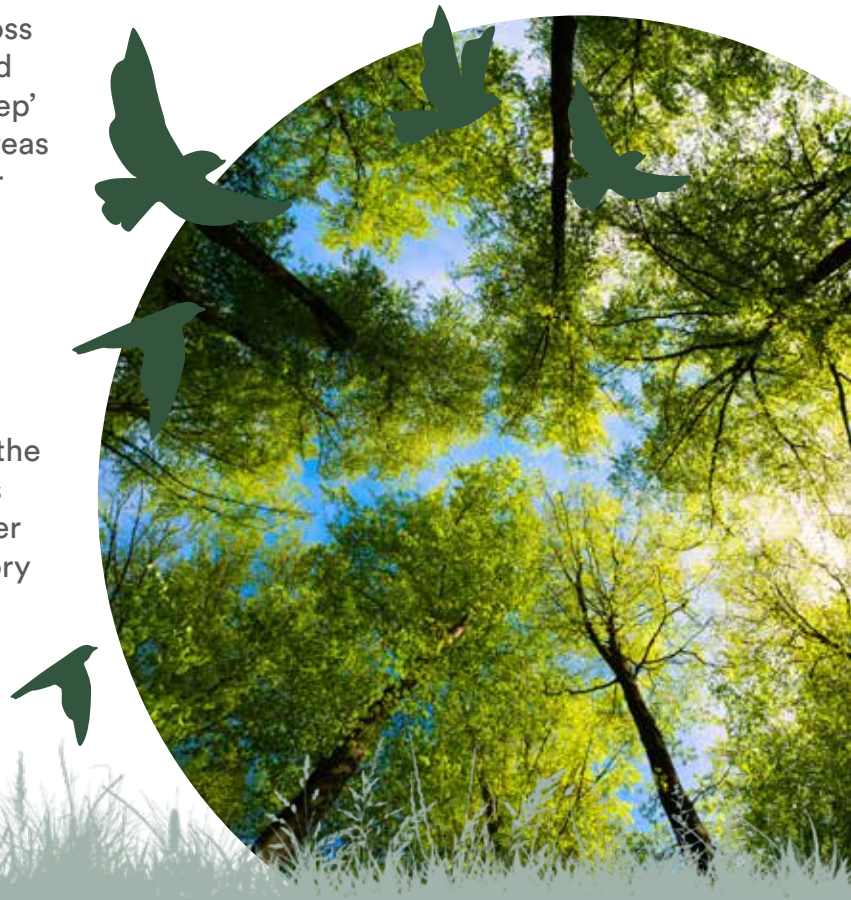
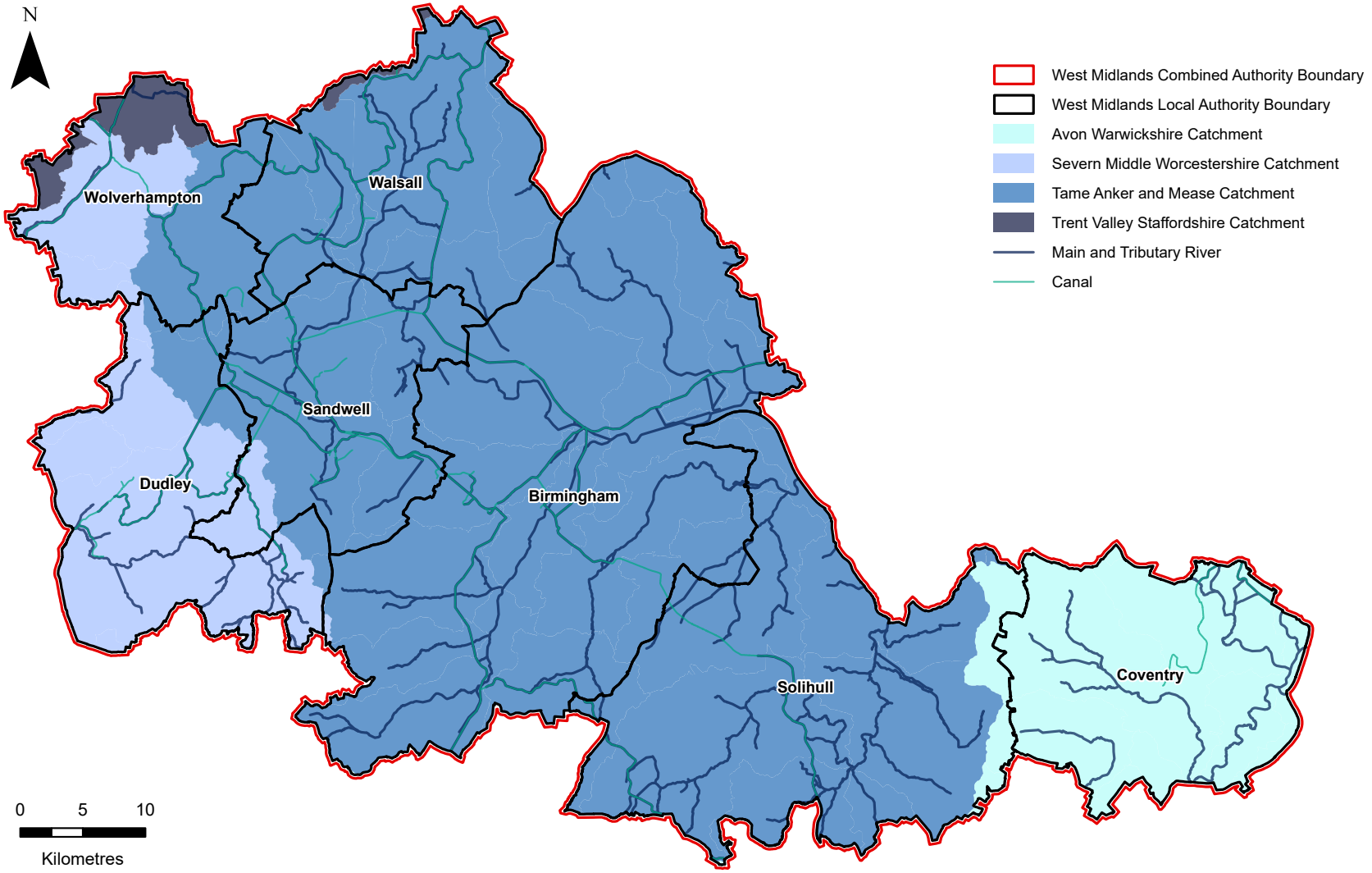


Figure 7: Waterbodies and catchments within WMCA region



Building climate resilience with nature
Nature provides powerful, cost-effective solutions to climate adaptation. Across the UK, nature-based solutions offer **£billions annually** in climate change mitigation services such as carbon sequestration, flood protection, urban cooling and aquifer recharge.

Within the WMCA region, climate-related damage from just three severe weather events (2017 Storm Doris, 2022 summer heatwave and 2023 August flash floods) cost around **£21 million** and, by 2030, climate change could reduce the region's GVA by **£350–£638 million annually**. 15

Urban nature can protect cities from the worst climate impacts. Nature-based solutions could provide **30% of the adaptation needed** for towns and cities by 2030. Trees alone can reduce ambient air temperatures by **3°C**, with shaded surfaces cooling by up to **12°C**. Trees also intercept rainwater, preventing flooding; **up to 45%** of rainfall may be intercepted before reaching the ground.

Green growth and business benefits
Nature is a commercial asset too. Investing in green infrastructure can boost economic activity:

- **40% increase in commercial trading** after green space investment
- **10 - 50% increased spending** by consumers in business districts with trees
- **30 - 50% rise in restaurant patronage** thanks to attractive natural settings

Green workplaces improve staff satisfaction and retention. Business in the Community research shows employees with views of nature take an average of **11 fewer hours** of **sick leave** annually, reducing costs and improving morale.

Valuing our trees and forests

The WMCA region's **tree canopy**, estimated at **14.4%** of the region, plays a key ecological and economic role. Trees represent the most widespread habitat feature across the WMCA region as they are important components of many different habitat types and settings, such as woodland, parkland, streets and gardens where they provide key services to nature either as solitary trees or in small or large groups. They can provide specific habitats for certain species or create stepping stones or corridors across the landscape for species creating more resilient ecosystems. A tree survey (iTree) 16, conducted across the WMCA region, found that trees provide the following annual benefits:

- **Carbon stored: 1,912,000 tonnes (£1.86 billion)**
- **Annual carbon sequestration: 57,620 tonnes (£55.98 million)**
- **Annual pollution removal: 206 tonnes (£14.97 million)**
- **Avoided runoff: 1,551,000 m³ (£2.5 million)**
- **Total annual value: £73.45 million**

These trees span diverse environments, including streets, gardens, woodlands, and parks, and act as vital green corridors for wildlife.

Natural capital for a thriving West Midlands

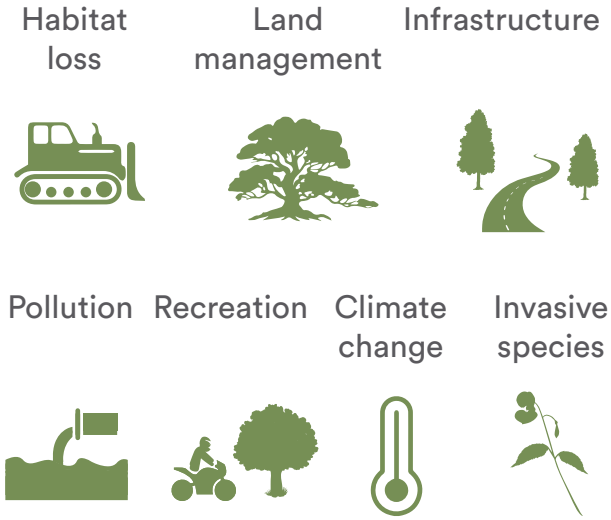
The natural environment in the West Midlands is not only a legacy of its past, but a foundation for its future. It offers wide-ranging benefits, from health and climate protection to economic productivity and biodiversity.

To ensure a resilient, prosperous, and equitable future, we must invest in and protect our natural capital. By recognising its true value, ecologically, socially and economically, we can build a region where nature and people thrive together.

To find out more about nature in the West Midlands and for a detailed account of the habitats **read The State of Nature report.**

5.2 Pressures and risks to nature in the WMCA region

The UK is one of the most nature-depleted countries in the world. Much of this decline is due to direct land use changes, such as converting farmland to built development, and indirect impacts like pollution and altered water flows from drainage or abstraction.



Many of these pressures stem from past policy decisions and changing economic or social needs. In the West Midlands, key threats include:

1. Land use change and infrastructure development
The region faces ongoing pressure to provide more housing, employment land, transport and other infrastructure. This can result in the **direct loss and fragmentation of habitats** and the **fragmentation** or **isolation** of species populations. Land conversion can also create **physical barriers** to species movement, further reducing ecosystem resilience.

2. Recreational pressure
Increasing use of green spaces can lead to e**rosion, disturbance, noise, increased artificial light and littering**, especially near sensitive habitats. As the regional population grows and developments expand closer to these areas, r**ecreational pressures are likely to intensify**.

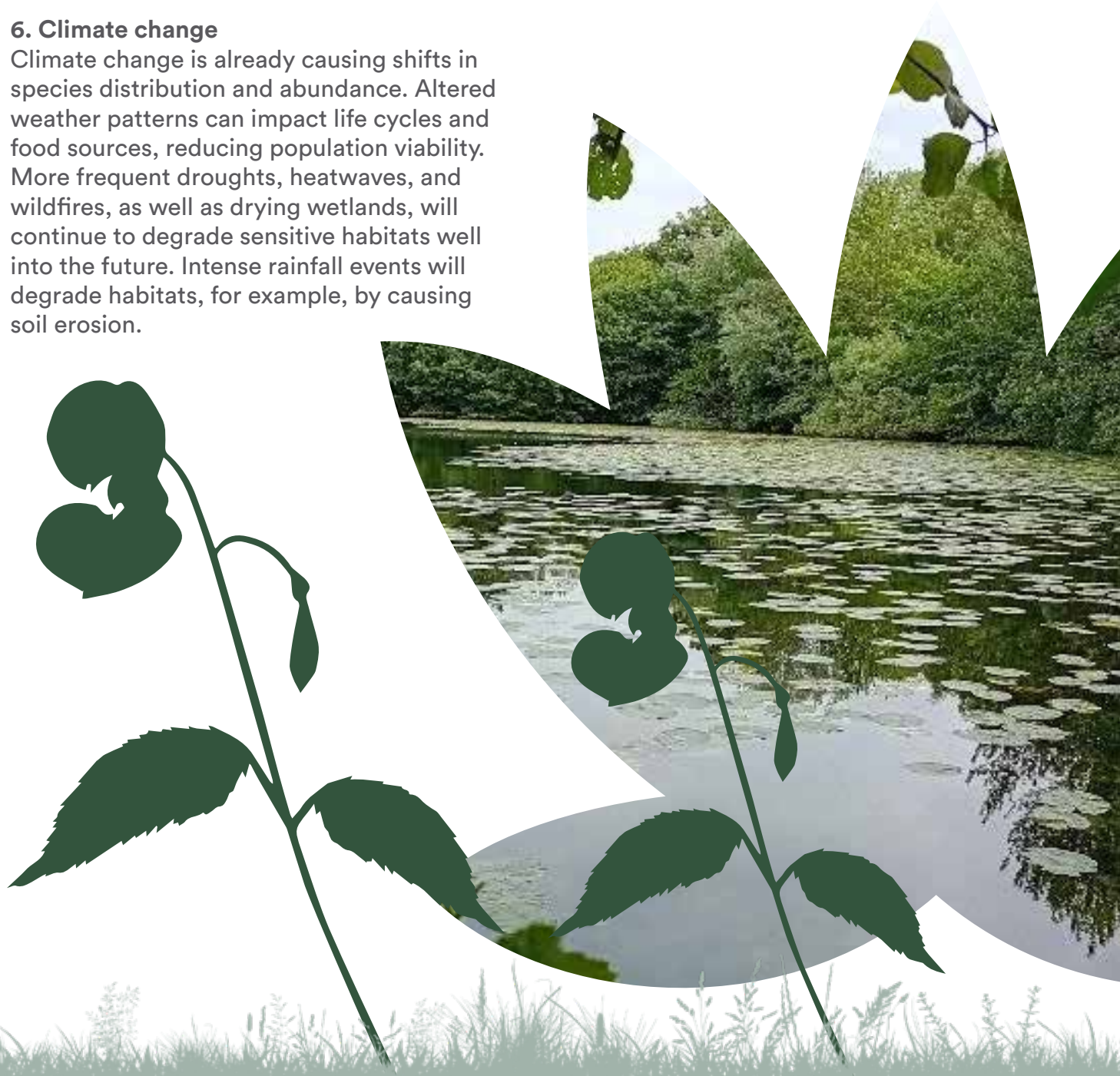
3. Pollution from urban, agricultural, and industrial sources
Despite historic improvements, **pollution remains a significant threat**:

- **Surface water contamination** from urban and agricultural runoff affects river quality and aquatic habitats.
- **Air pollution** from vehicles and legacy industry continues to impact both nature and health.
- **Combined sewer overflows** contribute further to waterway degradation.
- **Noise, light, and vibration** pollution from transport and infrastructure can disrupt wildlife behaviour, migration, and breeding.

4. Agricultural practices
Agriculture still shapes a large part of the WMCA landscape. Intensive farming can reduce habitat diversity and quality, as well as the condition of soil and water. Farmers also face economic pressures and shifting policy incentives, which may hinder the adoption of nature-positive practices unless well-supported.

5. Poor site management and invasive species
Some high-value biodiversity sites are inappropriately or inadequately managed, leading to habitat degradation, such as tree encroachment on heathlands. There is sometimes a lack of resources or capacity for maintenance and management. Invasive non-native species (INNS) and species with detrimental effects e.g. Himalayan balsam, are a growing concern, especially in wetlands and waterways, where they outcompete native species, spread disease, or alter ecosystems.

6. Climate change
Climate change is already causing shifts in species distribution and abundance. Altered weather patterns can impact life cycles and food sources, reducing population viability. More frequent droughts, heatwaves, and wildfires, as well as drying wetlands, will continue to degrade sensitive habitats well into the future. Intense rainfall events will degrade habitats, for example, by causing soil erosion.



5.3 What do WMCA residents think about nature?

While expert knowledge has been critical in developing the Local Nature Recovery Strategy (LNRS), it is equally important to understand the views of people who live and work in the region. This information has been gathered in three main ways from people across the WMCA region.

1. Environmental Attitudes Survey
The WMCA Environment Team runs a six-monthly Environmental Awareness Tracking Survey (EATS) to understand public attitudes toward environmental and net zero issues. Whilst not specific to the LNRS consultation, this longitudinal study, conducted by MEL Research over three years, surveys 2,000 residents annually and includes a section on the natural environment.

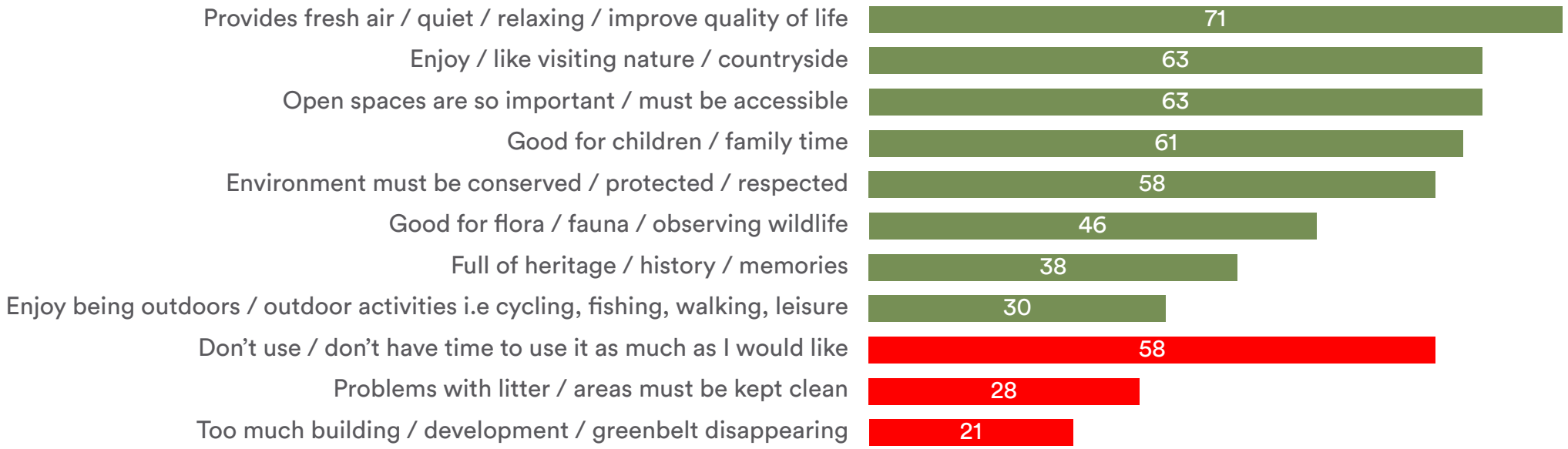
The first year of data (conducted in 2024) from the natural environment section tells us that people thought the following:

- **56%** were concerned about climate change's impact on plants and animals.
- The most widely perceived impacts were **species decline** (**64%**) and lower water levels (**59%**).
- Only **36%** rated their local green space access as good or very good.
- **62%** said green spaces were important or very important to them, particularly older people and those with higher education levels (both **68%**), but less so for younger respondents (**46%**).
- Green spaces were valued for **fresh air and quality of life** (**71%**) and being **enjoyable places to visit** (**63%**).
- Those less interested in green spaces often cited **lack of time** (**58%**) to use it.

Characteristics of the region's population

- Estimated population: Around 2.9 million people (as of the most recent data).
- Younger population compared to the UK average, especially in Birmingham and Coventry.
- The WMCA region has the second most diverse population in the UK.
- Significant deprivation in parts of the region, especially in urban centres. Almost a third are living in England's top 10% most deprived areas.
- Generally lower educational attainment compared to the national average, though improving.
- Health outcomes are generally worse than national averages, with higher rates of long-term illness and lower life expectancy in some boroughs.
- Inequalities in health across ethnic and socio-economic groups.

Figure 8: Opinion on green spaces



2. WMCA Greener Together Citizens' Panel
The Greener Together Citizens' Panel ran from 2023 to 2024, involving 30 residents from across the region to discuss key environmental topics. On 18th May 2024, the LNRS was introduced to the Panel. As part of this session, Panel members explored local and strategic nature-based solutions and discussed the roles different stakeholders such as local government, housing associations, utilities, and communities, could play in delivery.

Key themes that emerged:

- **Cost, value and impact:** for example, big tree-planting schemes seemed to be good value for the impact they could have, especially considering the co-benefits for wildlife and communities.
- **Creating resources which communities can enjoy together:** schemes which resulted in new local amenities were amongst the top priorities, reflecting enthusiasm for projects which could improve people's daily lives and build social connections.
- **Involvement:** schemes that involved people in creating local resources together were most appealing and projects which gave local people opportunities to get involved were thought more likely to be successful than those which excluded them.
- Engagement and ease of gaining support: if local residents are unsupportive of schemes there is less chance they will come to fruition, so organisations should do proper engagement early to build understanding and support.
- Timeframe and complexity: schemes that appeared to be less complex and with fewer barriers to implementation were more popular, and especially where they seemed to have the potential to be delivered relatively quickly and at scale – whether that be tree planting, rewilding of public land or other kinds of habitat creation. This reflected the impatience and sense of urgency amongst some Panel members.

3. LNRS Public Survey
To directly inform the LNRS, an online public survey was carried out in November 2024, promoted via Transport for West Midlands' research networks and WMCA partners. A total of **633 people** responded.

The research aimed to better understand West Midlands' residents:

- Relationship with nature
- Barriers to accessing nature
- What they think is most important about the natural environment in the West Midlands
- Their community involvement with nature schemes
- Future opportunities and challenges to improve nature in the West Midlands

The sections below summarise the findings from this survey work. It is likely that these people were particularly motivated to reply to a survey on the natural environment, which should be considered when reviewing responses.

Relationship with nature:

- **Over 75%** of people accessed green space at least weekly; **27%** did so daily.
- Parks, canals, woodlands, and nature reserves were most frequently visited.
- The top motivations were enjoying nature, peace and quiet, fresh air, and improved mental health.
- Just under **20%** rarely visited green spaces; disabled people were most likely to be infrequent users.
- Over half reported **barriers** to access, especially younger, disabled, and ethnic minority respondents. Common barriers were **safety, distance, cost, and health.**

What people value:

- Most important green spaces were **canals, woodlands, rivers, and urban parks.**
- Birds were seen as the top priority species, followed by **pollinators, invertebrates and plants.**

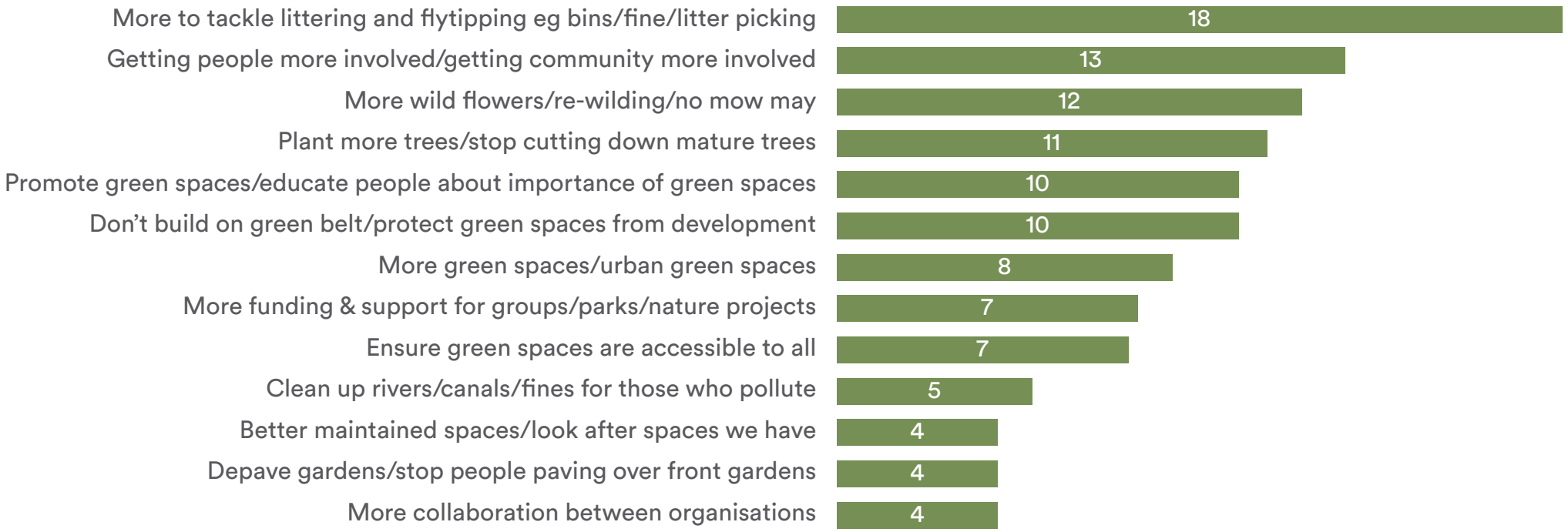
Community action:

- **Half of respondents** had personally or collectively done something to support nature, including **litter picking, tree or flower planting, and community gardens**.

Opportunities and challenges:

- The most common suggestions were to **tackle litter/fly tipping** and **involve more people** in nature recovery.
- The main challenge was **lack of funding** (**46%**), followed by **public engagement** (**16%**), **political will** (**11%**), and **development pressures** (**7%).**
- When asked about key pressures on nature, habitat **loss and fragmentation** ranked as the most significant.

Figure 9: Main suggestions to improve nature (%)

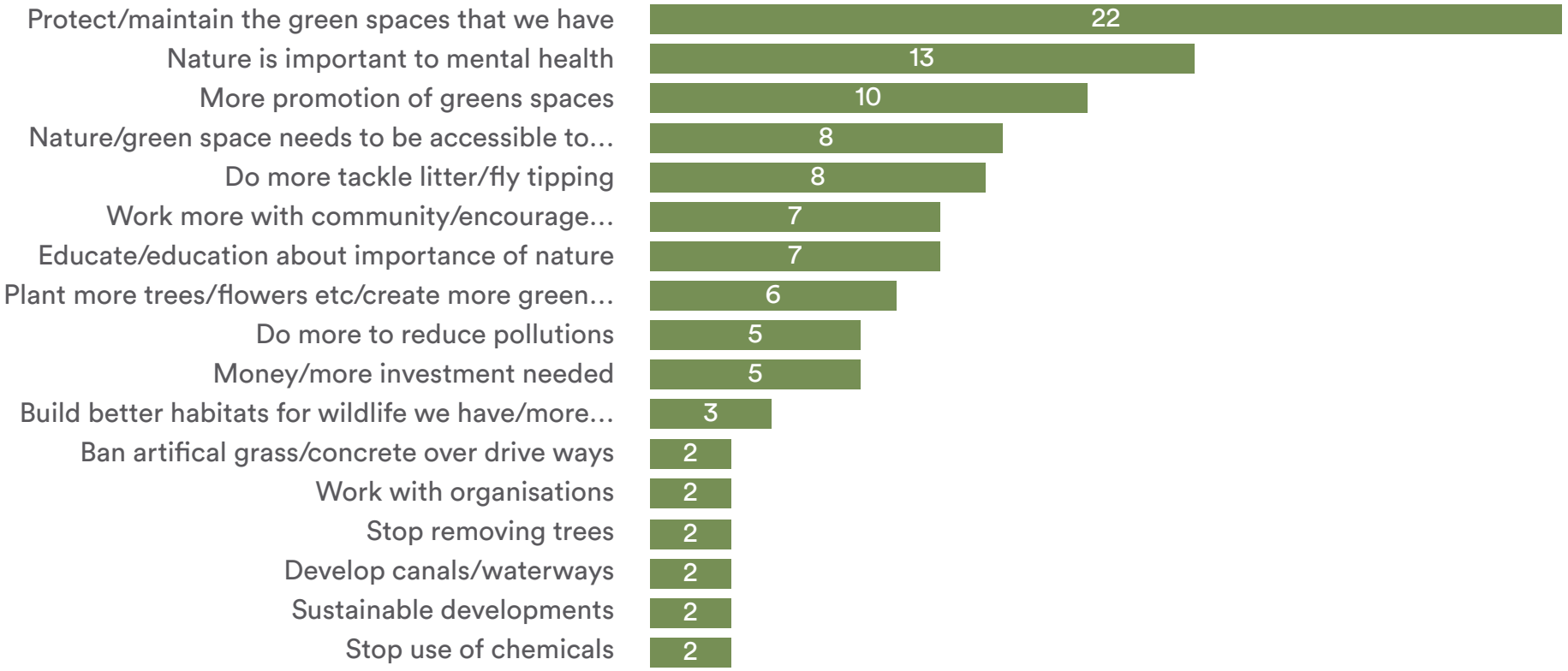


Additional comments:
The survey also wanted to provide the opportunity for people to add anything additional, in relation to their concerns about nature. We asked: 'Is there anything else that you would like to tell us about nature, your experience of it and what you think should be in a plan to prioritise it in the West Midlands?'.

The main further comments focused on the need to protect and maintain the green spaces that we have. Over 1 in 10 noted the importance of nature to mental health and recommended the promotion of green spaces. Others commented that nature/ green spaces need to be available to all and that more needs to be done to tackle litter/ fly tipping.

This question, more than some of the others, highlights the importance of green space and nature for people, particularly in highly urbanised areas like the West Midlands. The importance of involving local people in nature recovery is highlighted alongside the need to educate and provide education about the importance of nature.

Figure 10: Further comments (%)



Summary from the public engagement work:
1. Green space and nature are seen, by people across the West Midlands, as important for everyone for multiple reasons. Maintaining existing green space is as important as creating new space.
2. Getting people more involved in protecting and enhancing nature is critical – this might be from maintaining a cleaner environment, or through active involvement in nature projects. But this opportunity needs to be equitable.
3. People recognise the challenge of funding/ financing this kind of work and therefore projects should be developed with scale and/or impact in mind.
4. We need to think about how we reduce barriers to accessing space and/or getting involved in projects and work that protects and supports it.
5. There is awareness of the threat that climate change might pose to the region's natural environment, with people expressing concern about this.

6.1 Working with regional stakeholders

As the appointed Responsible Authority, the WMCA co-ordinated and convened key stakeholders to co-produce the LNRS for the West Midlands. The core organisation of, and input to, the LNRS was carried out across several working groups that met regularly throughout 2024 and 2025.

The LNRS Working Group steered the overall direction of the LNRS, providing key input and feedback on all stages of its development. Its members consisted of the statutory supporting authorities for the West Midlands LNRS (our seven local authority members and Natural England) as well as the core 'nature organisations' in the region that also represent our Local Nature Partnerships.

The production of the LNRS also required expert technical input from specialists, which was organised through three themed Task and Finish Groups. These groups provided specialist input, knowledge and data. EcoRecord (collaborating closely with Warwickshire County Council) were primarily responsible for collecting regional habitat and species evidence and data.

Defra arm's length bodies including Natural England, Forestry Commission and Environment Agency provided support and guidance throughout the process.

The West Midlands LNRS Working Group

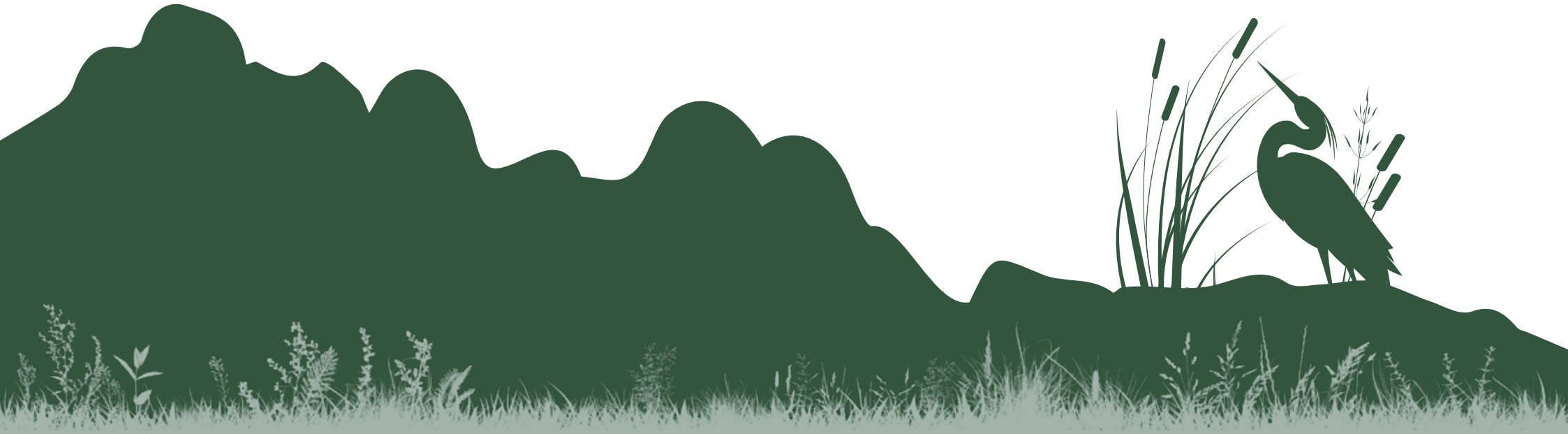
- West Midlands Combined Authority (Chair)
- Birmingham City Council
- City of Wolverhampton Council
- Coventry City Council
- Dudley Metropolitan Borough Council
- Sandwell Metropolitan Borough Council
- Solihull Metropolitan Borough Council
- Walsall Metropolitan Borough Council
- Birmingham and Black Country Wildlife Trust
- Canal and River Trust (also representing the Birmingham and Black Country Local Nature Partnership)
- Natural England
- Warwickshire Wildlife Trust (also representing the Warwickshire Local Nature Partnership)

Task and Finish Groups		
Species, habitats and protected sites	**Blue infrastructure**	**Climate adaptation and nature-based solutions**
• Birmingham and Black Country Wildlife Trust • Natural England • RSPB • University of Birmingham • Warwickshire Wildlife Trust	• Birmingham and Black Country Wildlife Trust • Canal and Rivers Trust • Environment Agency • Natural England • Severn Rivers Trust • Severn Trent • Trent Rivers Trust	• University of Birmingham • Environment Agency • West Midlands Combined Authority • Natural England

Methods of engagement used to produce the West Midlands LNRS

- Regular online progress meetings
- Online workshops aimed at landowner, community and business groups
- LNRS webpage with its own contact email address
- Online whiteboards for input
- An invitation to contribute data in Summer 2024
- One-to-one catch ups
- Online questionnaire and survey
- In-person workshops in May, October and November 2024

As a result of this stakeholder engagement, we have produced the 10 priorities and 62 actions that sit at the heart of the West Midlands LNRS.



6.2 LNRS priorities and actions

The **priorities** listed below are split into three themes with overall outcomes that the strategy is seeking to achieve.

Themes	Priorities
Nature recovery	A. Our most important terrestrial habitats and ecosystems are maintained and improved, making them more resilient to existing and future pressures and threats B. Terrestrial habitats are more joined up to create stronger ecological networks C. The ecological functionality of freshwater networks and wetland habitats are maintained and improved at a landscape and catchment scale D. Increased long-term sensitive management of rural land for nature, soils and agriculture E. The urban environment is improved to become more nature rich F. Species populations are maintained and improved across the region, including suitable species reintroductions
Delivering wider environmental benefits	G. Public access to nature is improved across the region, focusing on equitable opportunities that support biodiversity H. Nature-based solutions (NbS) are adopted to help address climate related impacts and risks faced by our land, nature and communities
Enabling delivery for nature recovery	I. Improved evidence and knowledge to enable scaled-up delivery of nature recovery J. Improved capacity of stakeholders to contribute to nature recovery

Each priority has a set of actions that can deliver the intended outcome.

- Each action is accompanied by supporting text, which provides further explanation of the action, setting out why it is important and what we are aiming to achieve as well as examples of how to progress the action.

- Actions are referred to as ‘measures’ within the statutory guidance.

- It is important to understand that the examples provided are not an exhaustive list and there are plenty of other steps you can take to support the achievement of our priorities for the LNRS. Further guidance will be provided for all actions in an interactive way.

- Actions can cover multiple priorities, but to avoid duplication they have only been included under the most relevant priority. It is indicated which actions support other priorities.

- When implementing the actions for the West Midlands LNRS, it is crucial to ensure each action is paired with appropriate ongoing management and monitoring. Our goal is for each action to contribute to our priorities, and nature recovery efforts require sustained commitment to ensure their long-term success.

Benefits relating to priorities

Each of the priorities includes icons that identify how delivery of the priority also supports a wider range of societal and environmental benefits. Benefits that are delivered through a priority are in white, those that are not, are greyed out. Benefits include:

Icon	Explanation	Icon	Explanation
 Culture and heritage	Natural environment is also part of cultural identity and regional heritage – actions will enhance this.	 Carbon Sequestration	Potential for removal of carbon through implementation of particular actions within a priority
 Health and wellbeing	Opportunity for actions to improve both mental and physical health for people.	 Climate adaptation	Actions could improve resilience to the impacts of climate change this could be either/ both flood and overheating
 Access for people	Potential to increase access to high quality green space, especially where this is currently lacking	 Biodiversity	Delivers nature recovery through the improvement of the environment for our flora and fauna
 Jobs and skills	Providing opportunities for training and employment in natural environment	 Cleaner water	Delivery of actions has the potential to improve water quality within ponds, canals and rivers in the region
 Cleaner air	Potential to reduce some of the main regional pollutants, especially NO2 and PM2.5	 Soil health	Contributes to maintaining soil as a functioning ecosystem that sustains plants, animals and humans.

Mapping and place-based priorities
When considering where actions will have greatest impact for delivering our priorities, a number of map layers have been created in the form of the **local habitat map**.

While the LNRS is not a delivery plan, the local habitat map identifies strategic areas where action for nature recovery and delivery of other environmental benefits would have the greatest impact. The local habitat map includes those priorities and actions of the LNRS which are suitable for mapping and are a priority for delivery.

The areas of mapped priorities fall into two main types:

- Areas of existing habitat that is already identified to be of value to nature, and the priorities here will often relate to maintaining, to halt declines in extent and value, and improving these areas; and
- Those areas where actions will be best located to deliver nature recovery and other environmental benefits.

These are not, however, the only locations where actions can be delivered and any action delivering nature recovery in the region, whether mapped or not, is very much encouraged and supported. Some priorities and actions are equally important wherever they are delivered, and these have not been mapped.

The mapping is a modelled output based on best available data, use of nationally accepted methodologies and bespoke approaches developed to address our particular local circumstances. As with any map developed in such a way and at such a scale, it is indicative only. **Any suggested areas for action should be assessed and checked by people with appropriate skills and knowledge before being delivered**. Section 4.4 sets out how different stakeholders can use the LNRS to deliver nature recovery across the region.

Mapped areas can be under various existing land uses and the mapping in the LNRS does not provide protection of such areas or create any constraint to current or future land uses or changes in management.

Designated sites and irreplaceable habitats as mapped on the **Areas of Particular Importance for Biodiversity (APIB)** map layer are recognised as features that require protection in national and local planning policy.

It is not the role of the LNRS to 'protect' such areas, though some of the actions set out may help to safeguard some of those habitats and species making them more resilient to the pressures and threats they face now and in the future. The mapped areas do however give an opportunity for the application of a 'high' score for 'Strategic Significance' under the Biodiversity Net Gain (BNG) metric when habitats are created or improved for biodiversity net gain as part of the planning process.

The criteria used to determine mapped areas for action is provided in Appendix 4. A tutorial on how to use the LNRS map is available on the WMCA website.

Priority A – Maintaining and improving terrestrial habitats and ecosystems

Our most important habitats and ecosystems are maintained and improved, making them more resilient to existing and future pressures and threats.

What does success look like? The region's woodlands, ancient and veteran trees, heathlands, grasslands and hedgerows will contain a diverse array of species, both plants and animals. They will be managed in ways to support high quality natural habitats, making up strong ecosystems that can flourish in the future.

Habitats and ecosystems within the WMCA region, like many of those across the UK, face an alarming number of pressures and threats. These are resulting in significant losses for biodiversity and decreasing nature's ability to thrive, adapt or even survive these conditions. Though habitats can be lost through changes in land use, the lack of, or inappropriate management, of such areas, can ultimately lead to the decline in their biodiversity value.

Further to this they also face pressures and threats from pollution, inappropriate recreational use and Invasive Non-Native Species (INNS). Climate change can cause additional environmental stresses and exacerbate the situation thus causing further negative changes to nature. Our most important terrestrial habitats and ecosystems within the WMCA region include:

- Established woodlands
- Ancient or veteran trees
- Heathlands
- Semi-natural grasslands
- Hedgerows

Our freshwater networks and their associated wetland habitats are also key to the region's nature and actions for these are set out in Priority C.

These habitats support, and sometimes provide the only refuge, for a diverse range of plant and animal species that exist in the WMCA region, such as bluebells (a species that thrives in ancient woodlands) and the rare tormentil mining bee (which is found on some of the region's heathlands).

These habitats are vital to maintain, not only for the biodiversity that they support, but also for the numerous ecosystems services that they provide including; improving air and water quality, reducing heat and flood risk, carbon storage, improving soil health and access to nature for people's health and wellbeing.

Though only a fraction of the region's high value habitats have been identified with some form of nature designation offering a degree of protection (these are shown on the APIB map), it is equally pressing that we take action to maintain and improve habitats of importance that are not designated in such a way.

Though it is essential that we halt further losses and damage to these habitats, we must go further with positive actions, in some cases, just to maintain them as important natural assets before we even consider improvements. This means managing them sensitively and, where we can, controlling other activities and pressures that may cause harm such as high levels of recreational use or inappropriate levels of grazing.

Improvement to these habitats should focus on the condition and quality of the different habitat types. This can be achieved through maintenance and management, which must be secured for the long-term and aim to tackle the existing and future pressures and threats which can, if not addressed, lead to further losses and degradation. There are many different stakeholders who can get involved in habitat management at different scales to help achieve this priority allowing our most important habitats and ecosystems to survive, adapt and thrive into the future.

There are other important habitats (such as wetlands, rivers and open mosaic habitats) for the WMCA region that are outlined in actions aligned with other priorities that follow. The Actions described under Priority A very much represent a key cornerstone of the LNRS and, through their implementation, other priorities and actions listed later will also be supported.

Benefits relating to this priority:

Actions:

Icon	Explanation
A1	Maintain and improve existing established woodland
A2	Maintain and improve ancient and veteran trees
A3	Maintain and improve heathland
A4	Maintain and improve semi-natural grasslands
A5	Maintain and improve hedgerows

Delivering nature recovery

Purple Horizons
Purple Horizons is a flagship nature recovery project spanning 12,000 hectares across Walsall and Staffordshire. A partnership of local authorities, environmental charities and community groups has formed, with funding and coordination from Natural England. Together they aim to restore fragmented habitats, heathlands, wetlands, grasslands, and woodlands, linking Cannock Chase and Sutton Park.

In Walsall, one of England's most deprived areas, the project focuses on connecting people with nature. Over 42 hectares of habitat have been created, with rare pollinators like the Tormentil Mining Bee returning. The initiative supports sustainable land management, offering financial incentives to farmers and landowners.

By combining ecological restoration with social impact, Purple Horizons is building a resilient, nature-rich landscape that benefits both wildlife and local communities.

NATURAL ENGLAND

Solihull Habitats and Nature Improvement Projects
Solihull Habitat and Nature Improvement Project undertook a wide range of habitat and nature improvement projects across the borough. The project was an ambitious three-year programme of habitat creation and ecological enhancement schemes in over 20 publicly accessible green spaces within urban areas of Solihull.

The projects have provided wildflower meadows and verges, tree and hedgerow planting, created new ponds, extended existing and created new woodlands, restored woodland structure and diversity, restored river sections, and removed invasive non-native species. For example, around 30 hectares of public grassland was improved restoring a species-rich habitat.

This series of grassland, wetland, woodland and tree planting improvements have maintained and improved important habitats across Solihull.

Solihull METROPOLITAN BOROUGH COUNCIL
URBS IN RURE

Action ID	Action
A1	**Maintain and improve existing established woodland** Established woodlands (some of which are identified as being 'ancient') support a diverse range of wildlife; play a key role in carbon storage and sequestration; help to improve air quality; and, reduce heat and flood risk. Some ancient woodlands have historically been cleared and replanted, sometimes with a more commercial mix - these Plantations on Ancient Woodland sites (PAWs) offer great potential for restoration and improvement as the soils often retain a seedbank of ancient woodland ground flora species. Within the fabric of an existing woodland it is not unusual to find ancient and veteran trees have survived to significant age, actions for these are found in A2. These habitats must be maintained and improved not just for nature but to ensure they continue to deliver these wider environmental benefits. Activities that could contribute to progressing this action: • Retain mature trees and trees with damage, and manage fallen and standing deadwood, including limbs • Increase the number of different tree species (appropriate to the ground conditions, woodland type and region) within woodlands • Manage woodlands for a range of ages (seedlings, saplings, shrubs/scrub, young trees and mature trees) and for varied structure, through thinning and coppicing, allowing natural regeneration to occur • Create rides and scalloped woodland edges to create more opportunities for a range of woodland flora and fauna • Minimise disturbed or damaged ground and exclude access to the most sensitive areas • Manage invasive species with detrimental effects, such as grey squirrel, rhododendron and deer Note that wet woodland is addressed under Priority C. When undertaking any management or improvement activities in such habitats it is key that a person with appropriate skills and knowledge assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present.
	Also contributes to delivering priorities: B and F	The priority places for delivery of this action are found HERE.

A2	**Maintain and improve ancient and veteran trees** Ancient and veteran trees provide habitat for a wide range of species, including insects, birds, bats, and fungi. They also contribute to the ecological stability and resilience of woodlands, parklands, hedgerows and fields. Even after they die, these trees retain significant biodiversity value for many decades. The protection and retention of ancient and veteran trees is set out in the National Planning Policy Framework (NPPF). However, beyond protection and retention, these trees need to be maintained and sympathetically managed to maximise their lifetimes and the ecosystems they support. Activities that could contribute to progressing this action: • Prevent damage to the root systems of ancient and veteran trees through land management and buffer zones • Where such trees occur in a woodland setting, provide selective thinning around them to prolong survival • Allow adequate spreading room for tree crowns • Design open space to allow for management of ancient or veteran trees • Manage parkland and wood pasture habitats sympathetically for ancient and veteran trees, providing replacement trees for the future • Similarly manage mature trees so that they can age and develop those features of interest that characterise veteran and ancient trees (i.e. the next generation of ancient and veteran trees) • Use 'veteranisation' methods (eg. creating holes and stub cuts, coronet cuts, targeted bark damage, creation of linear bored features and stag headed limbs) where appropriate on mature trees to accelerate their path towards providing veteran tree features • Only remove deadwood where it can be separated from the tree by hand or by kicking When undertaking any management or improvement activities in such habitats it is key that a person with appropriate skills and knowledge assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present.	
	Also contributes to delivering priorities: B and F.	The priority areas for delivery of this action are found HERE.

A3	**Maintain and improve heathland** As well as being important as a habitat in its own right, heathlands support an assemblage of specialist ground-nesting birds, reptiles and invertebrates with species able to use the mosaics of different micro-habitats for basking, shelter and foraging. A substantial isolated area of this habitat is present within the WMCA region at Sutton Park, with other significant areas to the north in Walsall, along with other smaller remnants around the region. They can, when managed well, play a crucial role in carbon storage, helping to mitigate climate change. Management is essential to maintain and improve heathland biodiversity and prevent encroachment by other habitat types through the natural process of succession. Heathland is most biodiverse when it forms part of a mosaic of different habitat patches and structures that together provide a more viable environment for heathland flora and fauna. Activities that could contribute to progressing this action: • Maintain a diverse vegetation structure, including: areas of bare ground (1-10%), mosses and lichens, low herbs, grasses, dwarf shrubs of varying ages, flower-rich areas, wet heath and mire, scattered trees and shrubs, dead wood, and rivers/ streams • Support the introduction and continued use of sympathetic grazing of heathland • Manage public pressure and access • Manage scrub invasion and vegetational succession (allowing some existence of tree and shrub species as part of the overall habitat assemblage) When undertaking any management or improvement activities in such habitats it is key that a person with appropriate skills and knowledge assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present.	
	Also contributes to delivering priorities: B and F.	The priority areas for delivery of this action are found HERE.

A3	**Maintain and improve semi-natural grasslands** Semi-natural grasslands are in decline across the UK and in the WMCA region, covering only 5.9% of the region in comparison to modified grasslands at 17.4%. These habitats are often threatened by changes in land use, agricultural improvement or a lack of management resulting in succession from grassland towards tall herbs and scrub. Semi-natural grasslands support a wide range of plant and animal species unique to these habitats. They can, when managed well, play a crucial role in carbon storage helping to mitigate climate change and contribute to healthy soils rich in microorganisms. Effective management is crucial for maintaining and enhancing these habitats. Activities that could contribute to progressing this action: • Implement management practices tailored to the specific type of grassland (acid, neutral or calcareous) • Create and maintain a variety of grass (sward) heights • Reduce the accumulation of nutrients by removing cuttings or reducing run off from surrounding land • Minimise or avoid the use of fertilisers, herbicides or pesticides to maintain the natural composition of grasslands • Utilise bespoke seed mixes of local provenance or use green hay to increase species diversity of existing grasslands • Ensure appropriate levels of grazing for the grassland type • Where appropriate undertake a traditional hay cut utilising two cuts, one early spring and one late summer, to allow floral species to set seed prior to cutting When undertaking any management or improvement activities in such habitats it is key that a person with appropriate skills and knowledge assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present.	
	Also contributes to delivering priorities: B and F.	The priority areas for delivery of this action are found HERE.

A5	**Maintain and improve hedgerows** Hedgerows provide shelter and food sources for a range of wildlife, including birds, insects, and small mammals, such as hedgehogs, and they can provide essential connections and corridors for such wildlife. They also help prevent soil erosion, improve water quality by reducing runoff, and contribute to the landscape's aesthetic and historical value as well as providing some carbon sequestration. They can often be dominated by one species, native or non-native/ornamental, with a lack of ongoing management resulting in gappy hedgerows. It is essential to maintain and improve hedgerows, ensuring they remain dense, healthy, and capable of supporting diverse wildlife while providing ecosystem services. Activities that could contribute to progressing this action: • Allow hedgerows to grow to over 1.5m high and wide, where feasible • Increase the number of native species present (tree, shrub and ground flora) • Increase the structural diversity of the hedgerow, which may include planting of standard trees within hedgerows • Manage established hedgerows through rotating trimming years, targeting different sections each year to maintain sufficient levels of blossom and food resource • Provide buffer strips of undisturbed ground either side of the hedgerow or protection from browsing livestock or deer • Return neglected hedgerows back under traditional management • Plant up gappy hedgerows When undertaking any management or improvement activities in such habitats, it is key that a person with appropriate skills and knowledge assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present.	
	Also contributes to delivering priorities: B, D and F.	The priority areas for delivery of this action are found HERE.

Priority B – Connecting habitats

Habitats are more joined up to create stronger ecological networks.

What does success look like? Each of our habitats within the WMCA region will be interconnected, allowing species to move freely across the region. New habitats will be created focusing on areas where their creation can support existing habitats, through buffering and reconnecting, to increase the resilience of the wider ecosystems they support.

Increased habitat connectivity across the WMCA region with complementary land uses will help to safeguard our most important habitats and create stronger ecological networks. More robust ecological networks will allow species to move freely between habitats for different aspects of their life cycles, such as feeding, resting, breeding, overwintering and hibernating. This will also allow for greater genetic diversity between populations, helping species to adapt to changing climates and environments and reduce the risk of inbreeding.

As climate change impacts upon plant and animal populations, both regionally and nationally, an improved ecological network will be increasingly important for their survival as their ranges may need to expand or move.

Habitats which are more joined up will also help to maintain the ecosystem services that they deliver, such as pollination and improved air, water and soil quality whilst also benefitting people as they too will have greater access to natural habitats across the region, bringing benefits to their mental and physical wellbeing.

Better functioning and more robust ecological networks will be provided through the creation of complimentary land uses to buffer existing habitats or reconnect areas which are currently isolated. The creation of such complementary habitats can be undertaken by many different stakeholders at varying scales, from within individual gardens through to landscape-scale habitat creation. Each new habitat connection will function to allow animals and plants to thrive in a region where they can move freely.

The connecting up of freshwater networks and wetlands is discussed further in Priority C and actions relating to the urban environment are addressed in Priority E. In all cases, where actions are being considered, they should be assessed at site level by someone with appropriate skills and knowledge.

Benefits relating to this priority:

The actions outlined below will also help to support priorities A to G, which also identify other habitats that could become more joined up to create stronger ecological networks across the WMCA region.

Actions:

Icon	Explanation
B1	Create buffering and connecting habitats between existing woodland
B2	Create new heathland to reconnect with existing heathland
B3	Create new species-rich grasslands which are well-connected
B4	Expand the hedgerow network
B5	Reduce barriers to species movement in areas where habitat connectivity is important
B6	Collaborate to enable development of large-scale rewilding projects to support nature recovery and greater resilience of biodiversity

Delivering nature recovery

Birmingham and Black Country Nature Improvement Area – meadow creation in Birmingham
Between 2012 and 2016 several species-rich meadows were created in parks and open spaces across Birmingham as part of the Birmingham and Black Country Nature Improvement Area project. The project was led by Birmingham and Black Country Wildlife Trust with support from Birmingham City Council and volunteers.

Existing areas of species-poor grassland were prepared by cutting, raking and harrowing the ground. The areas were then strewn with species-rich green hay cut from local donor sites including Eades Meadow, Draycote Meadow and Illey Pastures. Seeds of other native meadow species such as Yellow-rattle were also sown.

Sites where meadows were created included Perry Hall Playing Fields, Highbury Park, Castle Vale Conservation Area and Ley Hill Park. Most of the created meadows have established successfully. Some, such as the one in Castle Vale, have even become species-rich hay donor sites for other meadows created locally.

Birmingham & Black Country Wildlife Trust

Birmingham City Council

Wildlife Ways
Wildlife Ways is a £17 million programme to lead nature improvements across Solihull. This has focused on using the development of more cycling and walking routes in the area as an opportunity to create wildlife corridors, with widened path/cycleways surrounded by new trees and wildflowers. The improved or new routes chosen have prioritised connecting green spaces, which have also been improved using the funding.

The programme has seen thousands of trees and over three million bulbs have been planted across Solihull. Millions of wildflowers have also been planted and the habitat value of 56 hectares of parks and open spaces have been improved for the benefit of people and wildlife – equivalent to more than 90 football pitches. These projects have helped to join up and improve habitats and create stronger ecological networks.

Solihull Metropolitan Borough Council

Action ID	Action	
B1	**Create buffering and connecting habitats between existing woodland** Existing woodland habitats are present in a variety of landscapes, and the establishment of buffers would allow existing woodland to be protected from harmful activities. Increased connectivity will also support species movements and resilience to climate change, resulting in a stronger woodland network. Buffering will reduce edge effects and extend the scale of woodlands, further protecting the core habitat from external pressures. Connectivity will allow woodland networks to function as a joined-up unit at scale. Activities that could contribute to progressing this action: • Target tree planting to create wooded corridors and connections between existing woodland habitat • Create complementary habitats adjacent to or between woodlands, such as scrub, grasslands, tree or hedge lines and, where appropriate, allow natural regeneration • Prioritise planting a range of native species (appropriate for the local soil conditions and the region) for buffering around existing woodlands expanding their extent • Seek long-term management solutions for new habitat When undertaking any such activities it is key that a person with appropriate skills and knowledge assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present.	
	Also contributes to delivering priorities: A, E, F and G.	Using the Natural England Natural Networks mapping methodology as a base the areas where greatest benefit for nature can be achieved by woodland creation are shown HERE.

B2	**Create new heathland to reconnect with existing heathland** Heathland within the WMCA region tends to be found in localised areas that over time have become fragmented and/or isolated. As such, these areas are less resilient when faced with threats and pressures such as recreational disturbance. Reconnecting these areas will strengthen this habitat, creating a much more robust ecosystem for the specialist plants and animals that reside in it, ensuring it is more resilient in the future, whilst still providing amenity value and supporting rare species, such as the tormentil mining bee. Activities that could contribute to progressing this action: • Seek to extend and or link between existing heathland habitat pockets • Focus heathland creation where the soils and hydrology are best suited to this habitat, where necessary using methods like soil/turf stripping to create better conditions for establishment • Create new heathland, where feasible, using seed/brash (cut vegetation) harvested from other sites in the region • Incorporate micro-habitats, such as bare ground and pools, into areas of newly created habitat • Manage grassland, scrub and woodland to allow heathland to naturally expand and regenerate where ground conditions are most suitable • Where conditions are not ideal for heathland, buffer and reconnect with complementary habitats such as broad-leaved woodland, scrub and grassland (managed to complement the heathland and maintain the mosaic of habitats) • Seek long term management solutions for new habitat • When undertaking any such activities it is key that a person with appropriate skills and knowledge assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present.	
	Also contributes to delivering priorities: A, E, F and G.	The priority areas for expansion and connecting up of our existing heathland resource are shown HERE.

B3	**Create new species-rich grasslands which are well-connected** Species-rich grasslands should be created where they will buffer and link together areas of existing semi-natural grassland. Modified grasslands, such as those with low species diversity, could also be improved to increase the connectivity of species-rich grasslands. This action will support species movements between these areas for plants, fungi and invertebrates as well as improving soil health and increasing carbon storage within the undisturbed soils of these species-rich grasslands. Activities that could contribute to progressing this action: • Where the soil and underlying geology permits focus effort to create or restore acid or calcareous grasslands • Create species-rich grassland using bespoke seed mixes appropriate for the existing soil conditions • Allow for natural regeneration and/or use locally harvested seeds or green hay, where feasible, to increase species diversity • Reduce the use of artificial fertilisers and pesticides and implement more sensitive cutting (with removal of arisings) and or grazing regimes • Incorporate yellow rattle into grassland creation, where appropriate to reduce grass dominance • Seek long term management solutions for new habitat When undertaking any such activities it is key that a person with appropriate skills and knowledge assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present.	
	Also contributes to delivering priorities: A, E, F and G.	Our priority areas for grassland creation where greatest benefit will arise are mapped HERE.

B4	**Expand the hedgerow network** Hedgerows are vital corridors for species to use to move between other habitats. They often form boundaries or are used as shelterbelts in farmland areas. By expanding the network of hedgerows, species movements across the WMCA region will be improved as hedgerows link up suitable habitats and provide food and shelter for invertebrates, birds and small mammals, such as hedgehogs. Activities that could contribute to progressing this action: • Prioritise a range of native species for hedgerow planting (tree, shrub and ground flora) • Plant new hedgerows to create new links between existing hedgerows and woodland • Incorporate appropriate native trees into new hedgerows • Create new hedgerows with space to allow for growth over 1.5m high and wide, where feasible and incorporate uncultivated species-rich strips alongside them • Seek long-term management solutions for new habitat When undertaking any such activities it is key that a person with appropriate skills and knowledge assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present.	
	Also contributes to delivering priorities: A, D, E, F and G.	As long as this is the most appropriate habitat to create in a particular location (considering our other priorities) we welcome and support the creation of new hedges, especially where they expand upon and join up existing networks. This action is relevant across the whole area and has therefore it has not been mapped.

<table>
<tr><td rowspan="2">B5</td><td colspan="2">Reduce barriers to species movement in areas where habitat connectivity is important
Although habitats may be connected across a landscape, there can still be barriers which stop species moving safely between these areas. These can include roads, railways, culverts, fencing or street lighting. Any actions to improve habitats should also include measures to remove the barriers or to help species travel across them if that is not possible.

Activities that could contribute to progressing this action:
• Install green bridges in strategic locations where evidence supports this
• Install wildlife underpasses in strategic locations where evidence supports this
• Include otter ledges within culverts
• Maintain unlit corridors or install bat friendly lighting, especially along waterways
• Install amphibian kerbs where such populations may be present an impacted by a constructed barrier
• Remove fish passage barriers (e.g. weirs)
• Create hedgehog highways in fencing
• Manage linear features (highways, road verges, railways, tramways, canals etc.) as wildlife corridors</td></tr>
<tr><td>Also contributes to delivering priorities: A, C and F.</td><td>The priority areas for this action, mapped HERE, have been based upon where our major infrastructure barriers exist along with those areas identified as being of particular importance in stakeholder discussions.</td></tr>
</table>

B6	**Collaborate to enable development of large-scale rewilding projects to support nature recovery and greater resilience of biodiversity** Rewilding is the restoration of ecosystems to the point where nature is allowed to take care of itself. Typically, rewilding works best at scale on sites of 100ha or more, but smaller sites can still deliver similar benefits using this approach. Rewilding seeks to reinstate natural processes and, where appropriate, missing species, allowing them to shape the landscape and the habitats within. Though it may be essential to adopt proxy measures or species to provide the ecosystem services of some species that may not be feasible for reintroduction, there can still be significant benefits to adopting the approach. Rewilding works hand in hand with communities, and it has been proven to have a range of benefits beyond nature, including climate adaptation and improving economic and social outcomes. Activities that could contribute to progressing this action: • Raise awareness of the rewilding principles through the creation of explanatory resources and guidance • Bring together organisations and landowners in identifying opportunities for large-scale rewilding projects, over 100 hectares • Work on an evidence base for identifying opportunities, collaborating with landowners to bring them together around large-scale opportunities When undertaking any such activities it is key that a person with appropriate skills and knowledge assesses what is most appropriate.	
	Also contributes to delivering priorities: A significant range of priorities dependent upon the proposed scheme.	This action is not mapped as it is relevant for the whole region.

Priority C – Freshwater networks

The ecological functionality of freshwater networks and wetland habitats are maintained and improved at a landscape and catchment scale.

The WMCA region supports a wide range of freshwater habitats, including rivers and streams, canals, ditches, ponds, wetlands and wet woodland. As many of these occur as linear features, they have the potential to provide important ecological corridors and networks throughout the WMCA region. These offer vital opportunities for increased habitat connectivity to maintain the ecological functioning of these freshwater ecosystems and the aquatic and semi-aquatic species that they support.

Though the urbanisation of the region has resulted in many of our watercourses being heavily engineered, reducing their potential for nature, it has also resulted in the creation of a network of man-made canals that provide additional habitats for our wildlife. These provide connectivity across river catchments and under other infrastructure (roads/rail) that means wildlife can move through some of the most urban areas of our region. The network of freshwater habitats is threatened by abstraction, pollution from discharges or run-off, loss to development, invasive non-native species (INNS), lack of habitat management and climate change (impacts from flashy floods and loss of smaller freshwater waterbodies when excessively dry). By maintaining connectivity, the watercourses and waterbodies can continue to support biodiversity and provide multiple ecosystem services such as reducing flood risk, regulation of temperatures (contributing to urban cooling) and providing areas for access to nature for recreational activities.

The connectivity between freshwater habitats is driven by hydrological or water pathways and must be considered at a landscape and catchment scale to realise the multiple ecosystem services they can provide. Therefore, collaboration between stakeholders that can work across these larger areas, such as environmental bodies and large landowners, will play a key role in delivery. As will connections with objectives and actions from our neighbouring LNRS areas, where catchments extend across boundaries. In more urban areas, or where other built infrastructure exists, it will be increasingly important to assess how these man-made environments will impact our freshwater networks. Other priorities (H in particular) across this strategy introduce the importance of Sustainable Drainage Solutions (SuDS) for playing a part in addressing such impacts.

Though only a fraction of the region's high-value habitats have been identified with some form of nature designation that offers a degree of protection (these are shown on the APIB map), it is equally pressing that we take action to maintain and improve habitats of importance that are not designated in such a way.

Though it is essential that we halt further losses and damage to these habitats we must go further with positive actions, in some cases, just to maintain them as important natural assets before we even consider improvements. This means managing them sensitively and, where we can, controlling other activities and pressures that may cause harm such as impacts of polluting discharges into them or the increasing spread of Invasive Non Native Species (INNS). The assessment of opportunities for actions to improve our freshwater and wetland habitat networks will, at times, require specialist input from hydrologists, hydrogeologists and engineers as well as ecologists.

The actions outlined opposite will also help to support priorities A, B, E, F and H as our freshwater ecosystems are important and valuable for the WMCA region.

Benefits relating to this priority:

Actions:

Icon	Explanation
C1	Maintain, improve and create wet woodlands
C2	Maintain, improve and create new pond networks
C3	Maintain, improve and create wetland habitats
C4	Maintain, improve and create naturalised riparian buffer zones along watercourses, including canals
C5	Re-naturalise watercourse channels
C6	Install Natural Flood Management measures in upper catchments and areas of high pluvial and fluvial flood risk

Delivering nature recovery

Connecting the Cole-Urban Trout
The Environment Agency, Birmingham Black Country Wildlife Trust, Birmingham River Champions and the University of Birmingham have been working to create the best urban trout river in England. The project will restore natural processes and enable fish migration including brown trout, throughout the entire length of this main river flowing through England's second largest city.

The project will also deliver significant social benefits. The river flows through the heart of the city passing through multiple communities with very high levels of social and economic deprivation. Improving the natural environment and access to it will have significant benefits on the health and wellbeing of local communities.

Community engagement will be delivered through the river monitoring citizen science programme Birmingham River Champions and the development of a community driven River Cole Restoration Plan.

Environment Agency

Birmingham & Black Country Wildlife Trust

Coalface to Wildspace
Led by The Froglife Trust and funded by the National Lottery Heritage Fund and WMCA, Coalface to Wildspace is transforming Walsall's urban landscape.

The project creates eight neighbourhood wildlife corridors, focusing on amphibian and reptile conservation through 40 habitat interventions, including pond creation, wildflower meadows, and 'Toad abodes'. The local community have taken part in wildlife gardening, LEGO® heritage workshops, and the co-creation of "Speaking Sculptures" which can be found in parks across Walsall, as well as engaging over 5000 primary school children in immersive storytelling through the 3D film Frogglebox.

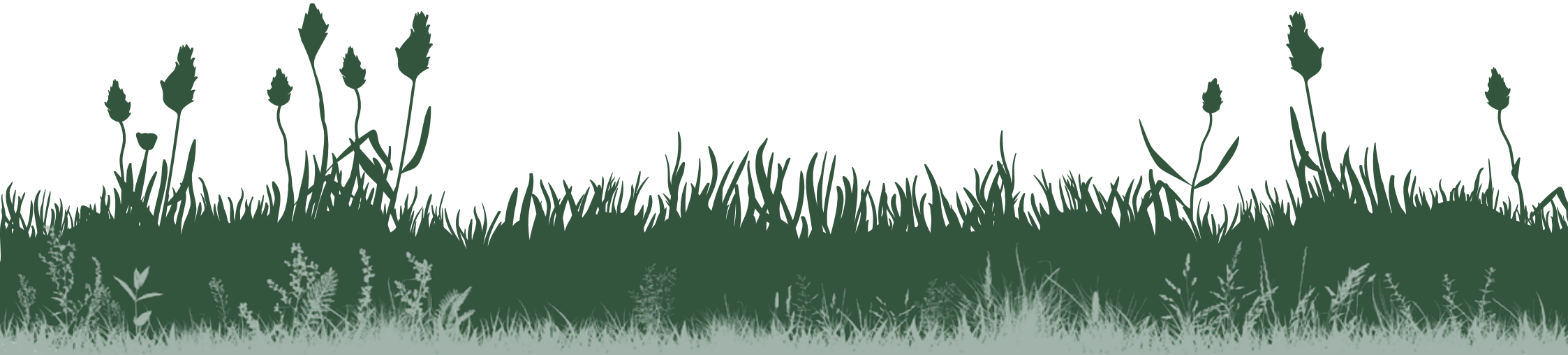
By blending ecological restoration with creative education, the project connects people with nature and celebrates Walsall's geological and natural heritage, improving wellbeing and biodiversity in one of the region's most deprived areas.

froglife
leaping forward for reptiles & amphibians

Action ID	Action	
C1	**Maintain, improve and create wet woodlands** Wet woodlands provide a unique home for wildlife and help to stabilise banks of watercourses, reduce flood risk by holding water back or 'slowing the flow' and improving water quality. This habitat is often threatened by abstraction or land drainage within the catchment, leading to the risk of transition to dry woodland. Wet woodlands must be maintained, improved and created to allow them to continue to support wet woodland species and numerous ecosystem services. Activities that could contribute to progressing this action: • Seek to understand the whole site hydrology and restore hydraulic function • Retain and manage fallen and standing deadwood, including limbs • Manage woodlands for a range of ages (seedlings, saplings, shrubs/scrub, young trees and mature trees) and for varied structure potentially introducing appropriate nature species • Manage invasive species with detrimental effects, such as Himalayan balsam • Install leaky woody dams, ponds, ditches and streams to increase wetness and humidity within wet woodland • Target tree planting (using native species appropriate to the region) to create wet woodland along riparian corridors, and where ground conditions are suitable for buffering around existing wet woodlands expanding their extent • Seek long term management solutions for new habitat When undertaking any such activities it is key that a person with appropriate skills and knowledge assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present.	
	Also contributes to delivering priorities: A, B, E and F.	The priority areas for delivery of this action are found HERE.

C2	**Maintain, improve and create new pond networks** Ponds and pond networks provide essential habitats for a variety of aquatic plants and animals (such as great crested newts and toads), as well as helping to mitigate climate change and flood risk, reducing pollution by holding water and providing recreational use. Ponds are often at risk of filling with silt and/or fallen vegetation, causing them to become shallow or dry out, and they can suffer from algal blooms or invasive species. They require careful management to maintain and improve both seasonal and permanent ponds. They provide greatest value to other wildlife when they form part of a pond cluster/ network and, historically, ponds have been a key part of pastoral landscapes and it is here where restoration and extension of existing networks will be particularly beneficial. Pond creation could also be incorporated with other habitat creation or restoration actions, such as for hedgerows. Activities that could contribute to progressing this action: • Manage trees and scrub overshadowing ponds appropriately, to minimise encroachment and drying of the ponds, especially maintaining an open south-facing bank • Remove silt or mud to re-establish the original pond size • Reduce disturbing activities, such as allowing dogs to access ponds or feeding of waterfowl • Prevent the introduction of and remove Invasive Non-Native Species (INNS) such as New Zealand pigmyweed • Create a variety of pond types within the landscape considering levels of shade, seasonality (e.g. ephemeral scrapes within floodplains), depth, size and adjacent land use • Create ponds with marginal habitat to buffer and protect existing ponds, including artificial hibernacula or log piles • Avoid tree or shrub planting on the southern side of new ponds (to avoid shading) • Ensure local pondscapes include differing pond types to increase biodiversity potential. • Create new ponds adjacent to rivers to create additional wetland habitat and assist with urban cooling. • Create ponds within garden habitats. When undertaking any such activities it is key that a person with appropriate skills and knowledge assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present. It should also be noted that the creation in new ponds within the air safeguarding area around Birmingham Airport should be considered ahead of any such work being planned. Guidance on this is issued by the Civil Aviation Authority (CAA).

	Also contributes to delivering priorities: E, F and H.	Ponds are key habitats locally that often require management and intervention just to maintain their interest and value to nature. Greatest impact for nature can be achieved where existing pond networks are improved and expanded but the creation of ponds in any suitable location is welcomed. For this reason, priority areas for delivery of this action have not been mapped



C3	**Maintain, improve and create wetland habitats** Wetlands are a broad habitat type, which are restricted in their range by high water levels or water which remains close to the ground for much of the year. Of particular importance in the West Midlands is the irreplaceable habitat lowland fen. Wetlands provide habitat for both aquatic and terrestrial species, mitigate flood risk, sequester carbon and help to improve water quality. It is vital to maintain, improve and create wetlands (seasonal and permanent) to enable this habitat to continue to support several ecosystem services. Activities that could contribute to progressing this action: • Identify lowland fen habitat, assess pressures upon them and develop management strategies to maintain and enhance their value • Create wetlands of different types, sizes, shapes, aspects and topography to increase opportunities for wildlife and species diversity • Restore hydrological connections between wetland habitats to maintain the required conditions for this habitat type • Increase the diversity of wetlands through the creation or restoration of priority habitat types (such as floodplain grazing marsh, purple moor grass and rush pasture; and reedbeds), marsh and wet scrub • Identify and address any pollution sources impacting water quality and seek ways to correct this • Connect habitats by creating additional wetland or other semi-natural habitats As long as this is the most appropriate habitat to create in a particular location (considering our other priorities) we welcome and support the creation of new wetlands especially where they expand upon and complement existing habitat networks. When undertaking any such activities it is key that a person with appropriate skills and knowledge (in some cases this may be hydrologists or hydrogeologists) assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present.	
	Also contributes to delivering priorities: E, F and H.	This action is relevant across the whole area and has therefore it has not been mapped.

C4	**Maintain, improve and create naturalised riparian buffer zones along watercourses, including canals** Riparian buffer zones include the transitional areas between land and water on both banks of a watercourse or a canal. These zones have a large impact on how the water and land interact and influence the natural processes occurring within the channel, allowing it to function. Naturalised riparian buffer zones, of at least 10 metres or more, offer the greatest benefits to the ecological function of the watercourse, providing suitable conditions for a variety of aquatic and riparian species to thrive. This action must be undertaken carefully considering the navigational use of canals. Activities that could contribute to progressing this action: • Identify and address any pollution sources impacting water quality (consider where SuDS may be an option) • Manage invasive species and species with detrimental effects • Plant with suitable native species to provide structural diversity in the riparian buffer zone and prevent over-domination or over-shading • Identify opportunities for bank re-naturalisation within watercourse to include meanders, berms, benches and planting of marginal species • Remove artificial elements – where hard engineered banks or elements cannot be removed, more sustainable engineering options could be considered and, in appropriate circumstances, the planting of coir rolls with native wetland plants or floating islands could be undertaken • Install fencing to reduce poaching of watercourse banks, where appropriate to do so • Work with farmers to create and maintain buffer strips and encourage activities that reduce surface water run-off in winter • Be responsible when we engage in watercourse activities (wild swimming, canoeing, paddle boarding, boating) that we minimise impacts on marginal and aquatic vegetation e.g. on the shoreline when entering waterbodies. When undertaking any such activities it is key that a person with appropriate skills and knowledge assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present.	
	Also contributes to delivering priorities: B, E, F and H.	Riparian buffer zones not only provide opportunities for the creation of new biodiverse habitats they also increase the resilience of, and help to protect, existing valued riparian habitats. The priority areas for delivery of this action are found HERE.

C5	**Re-naturalise watercourse channels** Many of the watercourses in the WMCA region have been heavily modified and suffer from poor water quality. This limits the range of ecosystem services they could provide if they were to have a more natural form, such as for biodiversity or flood prevention. Re-naturalisation is one of several river restoration actions which should be implemented where feasible to allow watercourse channels to return to their natural state and re-naturalise their ecological processes. Rivers are dynamic ecosystems, and restoration should be accompanied with careful consideration of wider environmental impacts as a result of any works. Activities that could contribute to progressing this action: • Create varied conditions in the channel of rivers by restoring gravel beds, creating riffles and pools, to allow different river habitats to develop and colonisation by different species • Focus on removal of hard engineered elements • Create deeper water for wildlife to shelter in • Reconnect watercourses with their floodplains, addressing connectivity to riverside habitats • Address barriers to longitudinal (up and downstream) connectivity within the river and the vertical connection with the groundwater • Opening up and daylighting of culverted urban water courses • Identify and address any pollution sources impacting water quality • For canals, where feasible, add areas where marginal vegetation can colonise (use of coir rolls for establishing marginal vegetation for example) When undertaking any such activities it is key that a person with appropriate skills and knowledge (in some cases this may be hydrologists or hydrogeologists) assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present.	
	Also contributes to delivering priorities: E, F and H.	Much of the river system in the West Midlands has been physically altered by human activities. Changes, no matter how small or localised, to create a more natural river channel are encouraged. Areas of greatest priority are identified HERE.

C6	**Install Natural Flood Management measures in upper catchments and areas of high pluvial and fluvial flood risk** Natural Flood Management (NFM) uses natural processes to reduce the risk of flooding, whilst also protecting, restoring and mimicking the natural functions of catchments and floodplains to slow and store water. These measures should target the upper catchments to reduce flood risk downstream. Areas of high pluvial (rainfall) and fluvial (river or stream) flood risk should also be targeted and are often associated with urban environments where nature-based sustainable drainage systems (NBSuDS) could be implemented. Activities that could contribute to progressing this action: • Install leaky woody dams within watercourses to slow and store high flows • Consider where beaver, a key stone species, can be re-introduced to provide NFM (see Priority F) • Create wet woodlands, ponds and wetlands adjacent to watercourses supporting ecological connectivity • Locate NFM measures adjacent to existing habitats, along corridors or in stepping stone habitats • Incorporate nature-based sustainable drainage systems (NBSuDS) into new developments, but also consider retrofit opportunities (see Priority H) • Support retention of floodplain meadows and re-creation of these where feasible as natural nature-based solutions. When undertaking any such activities it is key that a person with appropriate skills and knowledge (in some cases this may be hydrologists or hydrogeologists) assesses what is most appropriate to that site as in some cases other key habitats/species or even protected species may be present.	
	Also contributes to delivering priorities: E, F and H.	Natural Flood Management interventions are best located in the upper catchment areas, such actions are encouraged and supported where appropriate, and they have not been mapped due to the extent and scale of such catchments.

Priority D – Rural land management

Increased long-term sensitive management of rural land for nature, soils and agriculture

What does success look like? Healthy soils are the foundations of healthy ecosystems, which will be evident across a bustling rural landscape of fields, hedgerows and tree lines. Sustainable land management will play a key role alongside agricultural practices which combine nature with productive systems.

Though some farmland can support a diverse assemblage of nature, the more intensively managed agricultural land has historically been a key driver of nature losses. Increases in productivity, driven by policy, have met increased demand for food but have had negative impacts on biodiversity. Rural land, taking up approximately 30% of the WMCA region, is an important and significant part of our landscape.

There is ample opportunity to manage these agricultural systems and habitats in ways which will support both productivity and a diverse range of plant and animal species. The largest extent of such land, the Meriden Gap, is a largely undeveloped corridor of rural land between Solihull and Coventry, which could lead the way in demonstrating sustainable land management practices that preserve resilient farmland habitats.

There are a variety of grants, environmental land management schemes and funding routes which can be voluntarily taken up to support agricultural businesses as they diversify to bring about multiple ecosystem services. Rural land can provide food, drink and materials, which we use in our everyday lives. It can also store carbon, control erosion or run-off and improve water quality and flood resilience, improve soil condition and provide opportunities for social interaction and community building across these landscapes.

The enhancement of existing, and integration of additional, habitats within agricultural systems and practices which promote biodiversity, soil health and productivity will support several species, most notably those often associated with arable habitats. Farmers and land managers will be key players in delivery of this priority but must be supported through collaboration with environmental bodies.

In some circumstances arable field margins, when managed for wildlife, meet the definition of the arable field margins UK BAP priority habitat type. The agricultural landscape is also particularly important for a range of UK BAP priority bird species that have suffered serious declines, these include yellowhammer, corn bunting and skylark.

The actions outlined on the next page will also help to support priorities A, B, F and H as long-term management of rural land will create habitats and healthy soils to benefit nature and the WMCA region.

Benefits relating to this priority:

- Culture and heritage
- Health and wellbeing
- Access for people
- Jobs and skills
- Cleaner air
- Carbon Sequestration
- Climate adaptation
- Biodiversity
- Cleaner water
- Soil health

Actions:

Icon	Explanation
D1	Maintain, improve and create arable field margins
D2	Increase the extent of silvopasture and silvoarable systems
D3	Increase the number of sites implementing conservation grazing
D4	Increase sustainable soil management practices tailored to local knowledge and resilient to future climate challenges

Delivering nature recovery

Arden Farm Wildlife Network
A farming cluster, located in the Meriden Gap, the Arden Farm Wildlife Network brings together farmers and land managers to share best practice on how to improve their farm for wildlife, whilst maintaining a productive business. This supports farmers to collectively deliver benefits for soil, water and wildlife at a landscape scale. The Network has over 50 members, covering over 12,000 hectares.

With support of the Warwickshire Wildlife Trust, the Network has run a number of successful landscape scale projects, helping to:

- Restore over 30 hectares of wildflower meadows
- Create tree sparrow villages with 120 nest boxes
- Provide habitat for barn owls with 20 barn owl boxes erected
- Supply 23.5 tonnes of supplementary bird seed for feeding during the winter months
- Distribute over 20,000 trees for hedgerow and woodland planting and restoration.

Warwickshire Wildlife Trust

Solihull Metropolitan Borough Council

<table>
<tr><th>Action ID</th><th colspan="2">Action</th></tr>
<tr><td>D1</td><td colspan="2">Maintain, improve and create arable field margins
Arable field margins are herbaceous strips or blocks around arable fields that are managed to provide benefits for wildlife or to reduce water and soil run-off into watercourses. They are classified as UK BAP priority habitat when they are managed for wildlife, and their maintenance and creation should be targeted to increase biodiversity and improve connectivity of habitats across an arable landscape.

Activities that could contribute to progressing this action:
• Sow seed-bearing cover crops for wild birds within the margins, providing a winter food source
• Sow wildflower-rich grasslands or agricultural legumes and manage to provide food sources for invertebrates
• Limit fertiliser and herbicide application within margins to create habitat for annual weeds
• Control injurious or problem weeds
• Create skylark plots in cropped areas
• Incorporate beetle banks, two metre grass strips through the middle of arable fields greater than 20ha</td></tr>
<tr><td></td><td>Also contributes to delivering priorities: F.</td><td>Actions relating to the farming landscape have the potential to provide a positive outcome wherever they are delivered. If they are appropriate to the specific location and are compatible with other LNRS priorities, they are encouraged and supported. Priority areas for such actions have not been mapped.</td></tr>
</table>

<table>
<tr><td rowspan="2">D2</td><td colspan="2">Increase the extent of silvopasture and silvoarable systems
Silvopasture and silvoarable systems are the two main types of agroforestry (the integration of trees and/or shrubs within agricultural systems) in the UK. A good example of where such systems have been employed in the region is through the establishment and management of orchards. Traditional orchards can be of significant biodiversity value and they are recognised as a UK BAP priority habitat. This integration provides additional habitat for wildlife, protects soil health and water quality, improves welfare of livestock and protects crops and livestock within a changing climate. An increase in the extent of these systems will provide greater resilience within the agricultural systems to climate change and wider benefits for biodiversity and soil health.

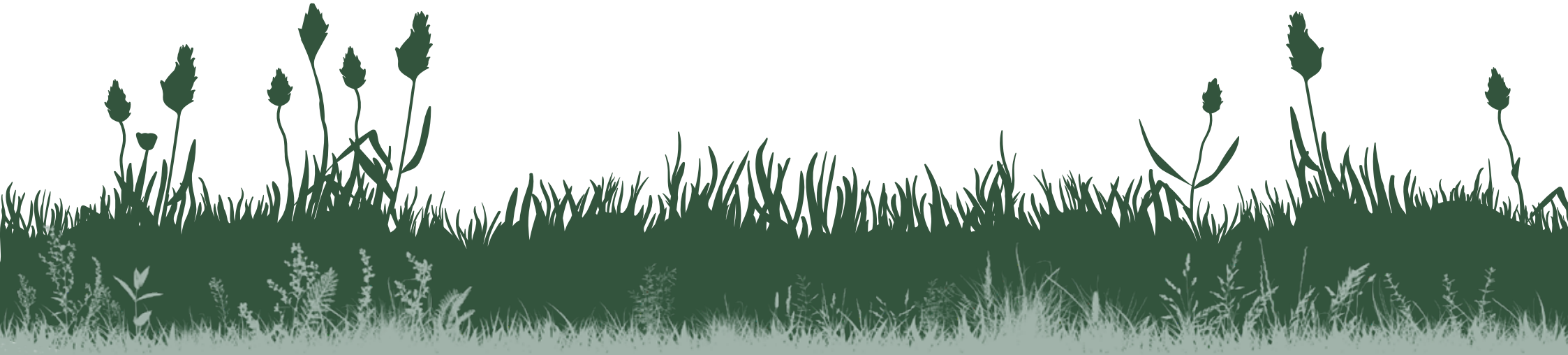
Activities that could contribute to progressing this action:
• Plant species resistant to drought and/or flood conditions
• Plant to reduce run off, particularly establishing riparian buffer zones
• Restore priority habitat, wood pasture and parkland
• Prioritise locations which can support existing woodland habitats</td></tr>
<tr><td>Also contributes to delivering priorities: F and H.</td><td>Actions relating to the farming landscape have the potential to provide a positive outcome wherever they are delivered. If they are appropriate to the specific location and are compatible with other LNRS priorities, they are encouraged and supported. Priority areas for such actions have not been mapped.</td></tr>
</table>

<table>
<tr><td rowspan="2">D3</td><td colspan="2">Increase the number of sites implementing conservation grazing
Conservation grazing includes the use of grazing livestock to maintain and increase the biodiversity of the site, which can be applied to several different habitats: grassland, heathland, wood pasture, floodplain grazing marsh (including areas with breeding and wintering wetland birds), wetlands such as fen, scrub and scrub mosaics. It is a sustainable land management practice that can also improve soil health and support species of biodiversity importance. Therefore, a greater number of sites using grazers to increase species diversity will help to secure long-term management of several habitats.

Activities that could contribute to progressing this action:
• Consider the most appropriate grazer (sheep, horses/ponies, cattle and/or goats) for the site and habitats as well as interaction with people
• Plan stocking density considering impacts of natural grazers with access to the site, such as deer or rabbits</td></tr>
<tr><td>Also contributes to delivering priorities: A, B and F.</td><td>Actions relating to the farming landscape have the potential to provide a positive outcome wherever they are delivered. If they are appropriate to the specific location and are compatible with other LNRS priorities, they are encouraged and supported. Priority areas for such actions have not been mapped.</td></tr>
</table>

<table>
<tr><td rowspan="2">D4</td><td colspan="2">Increase sustainable soil management practices tailored to local knowledge and resilient to future climate challenges
Soils are a vital component of biodiversity and ecosystem health and underpin the habitats that we see across the WMCA region. Healthy soils are important for food production, storing carbon, supporting root systems and providing habitat for fungi and invertebrates. Sustainable soil management practices will help to restore healthy soils resilient to drought and flood risk.

Activities that could contribute to progressing this action:
• Maintain and manage soils appropriately to the local conditions; soils with varying species richness support different habitats
• Limit degradation or contamination of soils through reducing pesticide, herbicide or fertiliser use
• Rotate crops
• Maintain vegetation cover to limit soil erosion
• Create drinking bays or use off-stream watering troughs or pasture pumps to reduce poaching of watercourse banks
• Provide assistance to farmers</td></tr>
<tr><td>Also contributes to delivering priorities: F and H.</td><td>Actions relating to the farming landscape have the potential to provide a positive outcome wherever they are delivered. If they are appropriate to the specific location and are compatible with other LNRS priorities, they are encouraged and supported. Priority areas for such actions have not been mapped.</td></tr>
</table>



Priority E – Urban nature

The urban environment is improved to become more nature rich.

What does success look like? Urban habitats will be vibrant, biodiverse and will be accessible to the public. These green spaces will connect to larger habitats via habitat stepping stones and will support nature within urban environments as well benefiting as human health, wellbeing and climate resilience.

The WMCA region is densely populated, with nearly 3m people, and it faces challenges like many other regions within the UK, from unemployment, lack of affordable homes, transport issues, limited access to green spaces, air pollution, and vulnerability to climate change through flooding events and heatwaves. Transforming urban environments into nature-rich spaces using nature-based solutions (NbS) is essential for addressing these issues. NbS, such as creating stepping stone habitats, increasing tree canopy cover, and integrating green infrastructure, can enhance biodiversity, improve air and water quality, and provide safe accessible spaces for communities to connect with nature. These actions will also help to mitigate climate risks and create resilient urban areas.

Enhancing public access to nature also has multiple benefits for public health and wellbeing. Accessible green spaces reduce stress, improve mental health, and promote physical activity.

The importance of nature and green infrastructure in the urban setting providing these additional benefits is recognised in priorities G and H which set out further actions for delivery.

Additionally, increasing habitat diversity supports greater levels of biodiversity, creates habitats for wildlife and improves connectivity for urban species, such as urban bird populations.

Almost 60% of the WMCA region is dominated by built up and garden habitats which means much of our existing habitat resource is fragmented. For this reason, the urbanised areas are of significance for the recovery of nature too. Though small interventions and actions may be all that are possible in this setting, it is the is the delivery of these in multiple locations that will aggregate to create scale of impact. Though existing urban parks and public spaces (universities, schools, hospitals, cemeteries etc.) provide a huge opportunity for enhancement to provide nature enrichment in our urban centres, the opportunity to 'design in' more nature into new developments is also key.

Transforming urban spaces into nature-rich environments can be undertaken by different stakeholders of varying scales, from within individual gardens to installing green roofs on private, public and commercial buildings where feasible.

The actions outlined below will also help to support priorities A to D and H, which will also lead to habitat creation and improved connectivity within an urban area like the WMCA region.

Benefits relating to this priority:

Actions:

Icon	Explanation
E1	Create stepping stone habitats in areas where corridors cannot be established
E2	Implement Natural England's Green Infrastructure Framework, within new and existing developments across both public and private spaces
E3	Increase the structural and species diversity of habitats within public and private green spaces, and gardens
E4	Maintain, improve and create open mosaic habitats (OMH) on previously developed land

Delivering nature recovery

Let's Get Potting
Let's Get Potting was a three-part training and networking project funded by Natural England's Green Community Hub programme. It supported Birmingham-based organisations to run inclusive, nature-connected wellbeing activities—encouraging planting in community spaces, gardens, balconies and windowsills to benefit both people and nature.

Hosted at Birmingham Settlement's Nature & Wellbeing Centre by Edgbaston Reservoir, the sessions were led by ecobirmingham and Natural England. They blended mindful walks, hands-on seed sowing, and peer learning. Participants explored ways to help service users 'notice nature'—from seasonal change and birdsong to growing edible and pollinator-friendly plants.

Attendees came from organisations supporting people facing challenges such as poor mental health, disability and the cost of living crisis. Many have since launched their own projects, and the peer support network continues to grow.

NATURAL ENGLAND

City of Nature
Birmingham City Council's City of Nature initiative is a bold, long-term plan to transform the city into a greener, healthier, and fairer place. Through community-led projects, the plan empowers residents to co-create and care for local green spaces, with a goal of establishing at least one community garden in every ward.

It prioritises environmental justice by focusing efforts in areas with the greatest need, and supports local "Green Champions" to lead nature-based activities. The initiative also promotes skills for green jobs, climate resilience, and public health. By 2047, the council aims to expand accessible green spaces from 600 to 1,000, making Birmingham a truly inclusive City of Nature.

Birmingham City Council

Action ID	Action
E1	**Create stepping stone habitats in areas where corridors cannot be established** Across the WMCA region, there are areas where the creation of corridors between established areas of habitat (e.g. protected areas) is not feasible due to the urbanised nature of the landscape; therefore, stepping stone habitats should be created. Stepping stone habitats are smaller, isolated fragments of habitats that provide critical links for species to move between larger areas of suitable habitat, particularly in urban areas. These stepping stones can also provide local communities with access to nature, improving health and wellbeing, and can contribute to reducing air pollution and improving water quality. Activities that could contribute to progressing this action: • Review public parks and open spaces for opportunities to create greater value for nature (aim to achieve at least 30% of nature positive management) • Create insect friendly / wildflower rich grasslands within the existing green spaces • Promote the reduction of mowing regimes within green spaces and road verges • Install bat and bird boxes into the fabric of buildings and structures • Create hedgehog highways (create holes and gaps in fences and walls) • Install bug hotels, integrated bee bricks within buildings or structures, or create bee banks for ground-nesting bees (locate alongside existing or new invertebrate food sources) • Create piles of logs, rocks and earth to create hibernacula where amphibians and reptiles may be present locally or have the potential to colonise • Create small wetlands or pond areas in gardens or allotments • Install biodiverse 'extensive' green roofs on new developments or retrofit to existing buildings where feasible • Create new areas to mimic niches for open mosaic habitats (allow 'meanwhile' (short term) habitats to establish) • Plant 'tiny forests' with native/locally suitable species • Create new green spaces in the form of pocket parks • Plant native, wildlife-friendly or pollinator-friendly plants (flowers, shrubs or trees) or allow areas to develop naturally without intensive management such as mowing

	Also contributes to delivering priorities: B, C, F, G and H.	The urban landscape is extensive and dominant in parts of the West Midlands; this can be to the detriment of nature. There are, however, many ways in which nature and green infrastructure can be integrated into this urban setting. Changes, no matter how small or localised, are relevant to all areas. The priority is focusing on addressing inequity in access to existing green infrastructure and these areas have been mapped to show where greatest impact can be achieved.

<table>
<tr><td>E2</td><td colspan="2">Implement Natural England's Green Infrastructure Framework, within new and existing developments across both public and private spaces
Green infrastructure allows nature to be restored and thrive in all places, including in urban areas, whilst also providing opportunities to connect with nature, benefitting people's physical and mental health and wellbeing. It also helps to support thriving communities, reduces flood risk and improves water quality, allowing places to be more resilient to climate change.

Activities that could contribute to progressing this action:
• Provide support and evidence to key regional stakeholders to incorporate into planning policy or strategies
• Plan new developments following the Green Infrastructure Principles, Design Guide and Standards
• Review the existing green infrastructure opportunities and issues local to your project
• Create links between rural and urban areas
• Plant urban trees, create pocket parks and create areas of Sustainable Drainage Solutions (SuDS)
• Plant native, wildlife-friendly or pollinator-friendly plants (flowers, shrubs or trees) or allow areas to develop naturally without intensive management such as mowing</td></tr>
<tr><td></td><td>Also contributes to delivering priorities: F, G and H.</td><td>The urban landscape is extensive and, in places, dominant in the West Midlands; this can be to the detriment of nature. There are however many ways in which nature and green infrastructure can be integrated into this urban setting. Changes, no matter how small or localised, are relevant to all areas and as such they have not been mapped.</td></tr>
</table>

<table>
<tr><td rowspan="2">E3</td><td colspan="2">Increase the structural and species diversity of habitats within public and private green spaces, and gardens
Public and private green spaces and gardens are a key component of the WMCA region and should therefore be improved by increasing the structural and species diversity within these areas. This includes parks, gardens, allotments, schools, universities, cemeteries, churchyards and sports grounds. A greater floral species diversity will help to improve climate resilience and provide habitat for a greater number of species, with a variety in structure providing different niches for several urban species.

Activities that could contribute to progressing this action:
• Plant native, wildlife-friendly or pollinator-friendly plants (flowers, shrubs or trees) or allow areas to develop naturally without intensive management such as mowing
• Allow for natural regeneration
• Selectively manage public pressure and access (where it could be detrimental to nature)
• Minimise or avoid the use of fertilisers, herbicides or pesticides
• Create and maintain a variety of sward heights for grasslands or different ages of trees in urban woodlands</td></tr>
<tr><td>Also contributes to delivering priorities: F, G and H.</td><td>The urban landscape is extensive and, in places, dominant in the West Midlands; this can be to the detriment of nature. There are however many ways in which nature and green infrastructure can be integrated into this urban setting. Changes, no matter how small or localised, are relevant to all areas and as such they have not been mapped.</td></tr>
</table>

<table>
<tr><td>E4</td><td colspan="2">Maintain, improve and create open mosaic habitats (OMH) on previously developed land
OMH are priority habitats that meet specific criteria. They establish on areas that have had industrial activity or development and have been left abandoned or unused, allowing for a diverse patchwork of habitats to form. These areas often include habitats representing various stages of colonisation and development on a range of substrates, creating biodiverse ecosystems which can support important invertebrates. Brownfield land should be carefully considered as this has potential to support OMH, especially if left untouched for some time. Smaller areas with similar early successional communities to OMH, which can be temporary, also remain valuable in supporting species, providing stepping stones of habitat within an urban environment. OMH does also occur on former quarry sites in the WMCA region that have nature conservation designations.

Activities that could contribute to progressing this action:
• Engage and educate landowners on brownfield and OMH sites
• Identify key sites with potential to support OMH, survey and develop management plans where it is practicable to do so
• Manage important areas to prevent succession into scrub or grassland, maintaining a mosaic of sward heights and bare ground
• Promote the adoption of ‘eco-mimicry’ methods for habitat creation on development sites and public green spaces to compensate for the loss of OMH
• Encourage the acceptance of ‘meanwhile’ habitats that provide opportunities, even if short-lived, for OMH species</td></tr>
<tr><td></td><td>Also contributes to delivering priorities: F, G and H.</td><td>OMH is a dynamic habitat that will occur in man-made conditions, along with other factors such as long-term dereliction. It is dynamic in its nature and can occur anywhere. For this reason, action should be focused across the whole region where suitable opportunities occur, and no priority areas have been mapped.</td></tr>
</table>

Priority F – Species

Species populations are maintained and improved across the region, including suitable species reintroductions.

What does success look like? Species populations will be thriving across the region. Their habitats will be of sufficient size to support viable and healthy populations, with management of threats to each species. Any potential species reintroductions will be carefully planned and will consider the benefits and risks to people and the natural environment.

Species are a vital component of nature within the WMCA region, and many are common and widespread. As part of the LNRS process, specific species and species assemblages have been identified through review of species records held by EcoRecord and Warwickshire Biological Record Centre, as well as engagement with local experts and species recording groups. The species described in the actions below are those which the LNRS can best support due to their declining populations. This also reflects the species issues that are of greatest importance to the strategy, local people and organisations. These species issues include: water, light and air pollution, presence of INNS and habitat loss from urbanisation, intensive farming practices and climate change. Sutton Park, an important regional site, and the species that it supports, has also been identified as requiring specific actions.

Maintaining and improving these species populations will also help to deliver ecosystem services they provide through their interaction with their habitats and ecosystems. This includes pollination, nutrient cycling and pest control. It is also possible that some species will attract visitors to the region and help to encourage the WMCA region's residents to experience nature and to learn more about the importance of the habitats and the species they support.

Supporting species populations can be undertaken by many different stakeholders at varying scales, from people taking actions within their own gardens to large-scale habitat creation by environmental organisations collaborating with landowners or INNS management projects.

These species will also benefit from other actions which relate to an increase in habitat types and improved habitat connectivity. Therefore, the relevant habitats and actions listed in other priorities are referred to within the action tables, where relevant. The actions outlined below will also help to support these other priorities as many of these species play key roles in maintaining and supporting the habitats in which they live.

Several species groups of note, that were identified in the short-listing process, will be delivered under actions set out in priorities A, B, C, E and other actions under F were as follows:

- Deadwood invertebrates (such as greater thorn-tipped longhorn beetle, net-winged beetle and goat moth)
- Wet woodland land birds (such as willow tit, marsh tit and lesser spotted woodpecker)
- Riparian birds (such as the kingfisher, sand martin and dipper)
- Urban gardens and allotment species (such as hedgehog, bats, amphibians, pollinators and slow worm)

In some cases, it will be necessary that a person with appropriate skills and knowledge is engaged with the planning or implementation of such actions especially when protected species could be present or are the focus of such actions.

Benefits relating to this priority:

Actions:

Icon	Explanation
F1	Water vole
F2	Otter
F3	White-clawed crayfish
F4	Glow worm
F5	Harvest mouse
F6	Osprey
F7	Hedgehog
F8	Black poplar
F9	Urban birds
F10	Farmland birds
F11	Heathland insects
F12	Amphibians and reptiles
F13	Brownfield butterflies
F14	Grassland fungi
F15	Sutton Park mire vegetation
F16	Arable weeds
F17	Bats
F18	Elm-associated insects
F19	Pollinators
F20	Marsh fritillary
F21	Beaver
F22	Strategically control and manage Invasive Non-Native Species (INNS) using a catchment-based approach, working upstream to downstream

Delivering nature recovery

Buglife: The Midlands Crayfish Partnership
The Midlands Crayfish Partnership operates across Birmingham, Dudley, Sandwell and Wolverhampton, as well as the wider Midlands, to protect the endangered white-clawed crayfish. This native species is under threat from habitat loss, pollution and the invasive American signal crayfish.

The project maps crayfish populations, coordinates conservation, and collaborates with the National Sea Life Centre in Birmingham, on a rescue and quarantine programme. A key milestone was the release of white-clawed crayfish rescued a year ago from a threatened population and held in quarantine all winter at Sea Life Centre. They were recently released into a remote upland stream, now designated as an ark site. These ark sites offer safe habitats for reintroduction and population recovery.

Ongoing efforts include public engagement through educational events and promoting biosecurity. Next steps involve expanding ark sites, conducting targeted rescues, and strengthening partnerships to ensure the long-term survival of the White-clawed Crayfish in the Midlands.

BrumBats: Bat Sensitive Lighting
The Birmingham and Black Country Bat Group (BrumBats), plays a vital role in conserving urban bat populations and promoting biodiversity awareness. One of their key focuses is mitigating the impact of artificial lighting on bats. Bats are nocturnal and highly sensitive to light, which can disrupt their feeding, commuting, and roosting behaviours.

BrumBats supports the use of bat-sensitive lighting, a strategy that reduces light intensity, uses warmer colour temperatures, and directs light away from key bat habitats. This approach aligns with updated national guidance from the Institution of Lighting Professionals (ILP), which emphasises avoidance and careful design to protect bat species.

BrumBats collaborates with planners, ecologists, and communities to ensure lighting schemes are wildlife-friendly, especially near roosts and green corridors. Their work helps balance urban development with ecological responsibility, ensuring bats continue to thrive in the city's evolving landscape.

Action ID	Action	
F1	**Water vole** The water vole is a small, brown rodent that lives along watercourses, around ponds and lakes, and in marshes and reedbeds. Water voles foraging and burrowing benefits a wide array of species, including plants, butterflies, bees, bats and birds of prey. Water vole populations are threatened by habitat loss, pollution and invasive species, particularly the American mink which has been responsible for a 97% decline in the species in the UK in the last 50+ years. Actions for watercourses and wetlands will also help to maintain and improve this species' population. Activities that could contribute to progressing this action: • Monitor and control American mink aiming to eradicate from headwaters through to downstream channel • Manage riparian vegetation for the benefit of water vole, if cutting is required, complete this from late September on a two-year cut rotation (or longer), leaving one bank uncut each year • Where de-silting of ditches is needed reduce frequency and avoid damage to banks It is necessary that a person with appropriate skills and knowledge is engaged with the planning or implementation of such actions especially due to the protections afforded to this species.	
	Also potentially benefitting from and assisting with delivery of the following actions: B5, C2-5 and H1-2.	Though actions are welcomed across all areas of suitable habitat the priority for delivery has been mapped HERE close to/connected with locations where this species has been recorded.

F2	**Otter** The otter is a large mammal, with grey-brown fur, a broad snout and pale chest and throat which is found in freshwater and marine environments. They play an important role in the maintenance of healthy aquatic ecosystems. As predators they regulate populations of fish, which prevents overpopulation and provides opportunities for aquatic plants and insects to thrive. Otters are also an important indicator of a healthy ecosystem as they require clean water, abundant supplies of prey and vegetation to conceal their underground burrows (holts). Though their populations severely declined during the 20th century due to several factors, for example hunting, habitat loss, climate change and road traffic mortality, they are recovering and, where habitats are suitable, there is a high chance they can return. Actions for watercourses, including canals, will also help to maintain and improve this species' population. Activities that could contribute to progressing this action: • Leave the root plates of fallen trees along watercourses • Encourage occasional areas of thick scrub • Install artificial holts along watercourses • Leave flood debris (trees, branches etc.) within the watercourse channel, where feasible • Identify any hot spots for road kill and install ledges on/under road bridges for use in time of flood, and suitable fencing where relevant to prevent access to main roads It is necessary that a person with appropriate skills and knowledge is engaged with the planning or implementation of such actions especially due to the protections afforded to this species.	
	Also potentially benefitting from and assisting with delivery of the following actions: B5, C2-5 and H1-2.	Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped. A number of other actions delivered under different priorities will also be beneficial to this species.

F3	**White-clawed crayfish** The white-clawed crayfish is a native freshwater crustacean distinguished by its bronze coloration and pale cream or rose undersides on its claws. This species typically inhabits small, shallow freshwater streams. They are also an important food source for other species, such as otter, herons and dragonfly larvae. Although it has a lifespan of 8 to 12 years, the white-clawed crayfish faces significant threats from habitat degradation/loss and the INNS, American signal crayfish. This INNS can outcompete our native species and also carries a lethal disease (crayfish plague). The white-clawed crayfish remains rare, and its population should be maintained and improved. Activities that could contribute to progressing this action: • Survey for remaining native populations across the area. Use of eDNA (a method of sampling water for residual DNA left by this species which confirms presence) would assist to identify any positive locations. • Monitor and control the American signal crayfish, including disease control of crayfish plague through strict biosecurity measures • Create refuges within watercourses • Create 'ark sites', suitable habitats (e.g. ponds lakes or streams) where white-clawed crayfish can be relocated to away from signal crayfish or poor water quality to re-establish populations • Translocate or reintroduce to ark sites to expand current range and create more robust population • Work with partners to improve water quality It is necessary that a person with appropriate skills and knowledge is engaged with the planning or implementation of such actions especially due to the protections afforded to this species.	
	Also potentially benefitting from and assisting with delivery of the following actions: B5, C2-5 and H1-2.	Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped. A number of other actions delivered under different priorities will also be beneficial to this species.

<table>
<tr><td rowspan="2">F4</td><td colspan="2">Glow worm
The glow worm is a medium-sized, narrow beetle. Females emit a yellow-green glow at night. Glow worms burrow under the soil of woodlands and grasslands during the daytime and emerge at night. Glow worms are declining, threatened by light pollution, climate change and habitat degradation. Therefore, key populations such as that at Sutton Park, must be maintained and improved by addressing these threats. Where glow worm is recorded (or has been historically recorded) elsewhere in the region this action will be equally important.

Activities that could contribute to progressing this action:
• Identify, monitor and manage key areas for this species
• Where suitable habitat exists undertake new surveys to check for presence
• Limit disturbance (physical and light) in, and nearby, key areas</td></tr>
<tr><td>Also potentially benefitting from and assisting with delivery of the following actions: A4, B3, D3, E1 and G4.</td><td>Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped. Though an important regional site has been mapped HERE as a priority for delivery for this action, this does not preclude delivery on other areas where suitable habitats exist.</td></tr>
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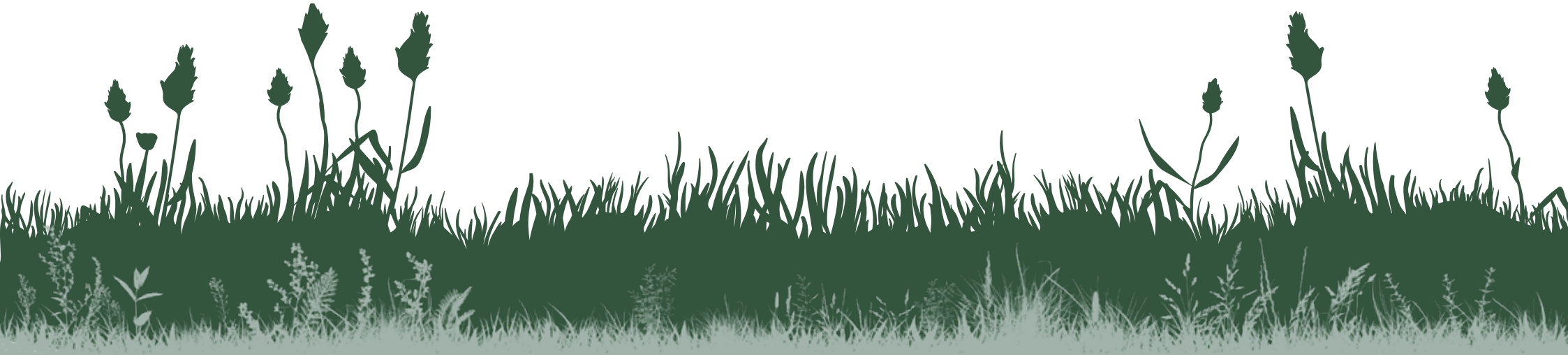

<table>
<tr><td rowspan="2">F5</td><td colspan="2">Harvest mouse
Harvest mice are the smallest rodents in Europe, and the only British mammal to have a prehensile tail, allowing them to grasp plant stems as they move through long vegetation. They are found in cornfields, hedgerows, reed-beds, brambles and long grasses. The harvest mouse population in the WMCA region is sporadic and threatened by habitat loss, predation and unpredictable weather patterns as a result of climate change, impacting survival rates through winter. Actions for arable field margins and grasslands will help to support the maintenance and improvement of the harvest mouse population.

Activities that could contribute to progressing this action:
• Identify, monitor and manage key areas for this species
• Reduce the use of pesticides

It is necessary that a person with appropriate skills and knowledge is engaged with the planning or implementation of such actions especially due to the protections afforded to this species.</td></tr>
<tr><td>Also potentially benefitting from and assisting with delivery of the following actions: A4, B3, C3 and D1.</td><td>Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped.</td></tr>
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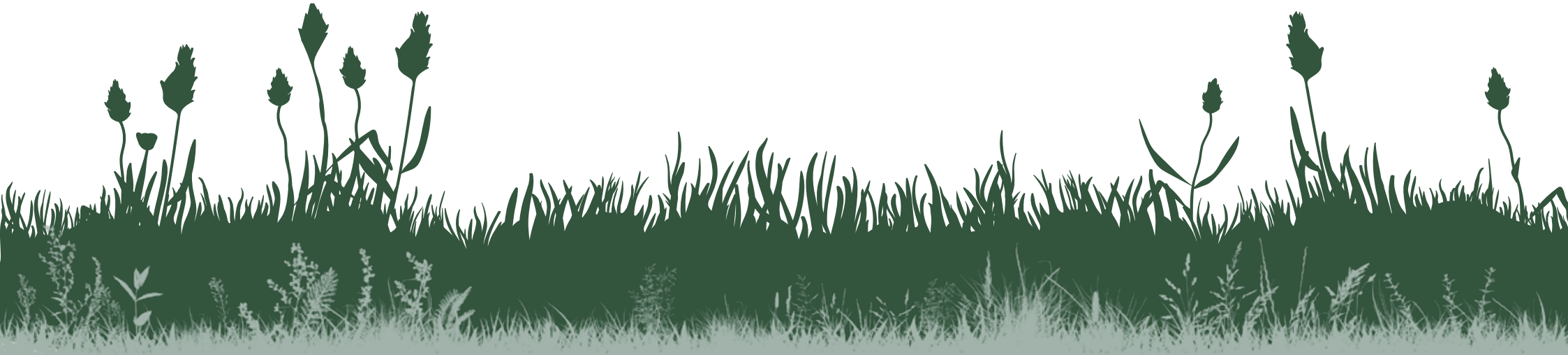
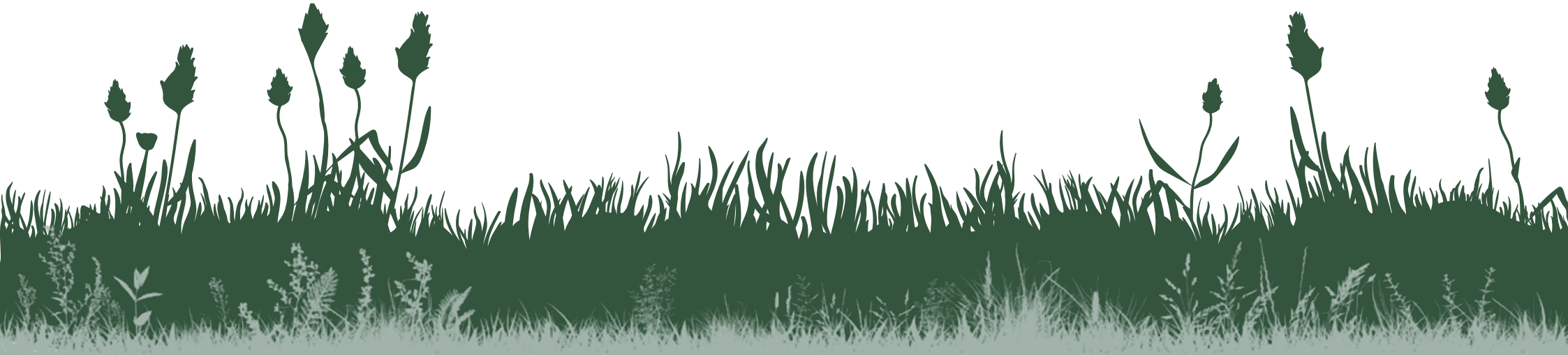


<table>
<tr><td rowspan="2">F6</td><td colspan="2">Osprey
Ospreys are large birds of prey which feed on fish. They are migratory birds and are present in the UK during the summer months and overwinter in West Africa. Osprey populations are not severely threatened when they are in the UK, as they face the greatest threats when migrating. However, there are limited suitable nesting sites for this species. Therefore, actions for watercourses and large waterbodies will help to maintain and improve the osprey population as they breed in the UK.

Activities that could contribute to progressing this action:
• Install nest platforms in suitable locations near large waterbodies

It is necessary that a person with appropriate skills and knowledge is engaged with the planning or implementation of such actions especially due to the protections afforded to this species.</td></tr>
<tr><td>Also potentially benefitting from and assisting with delivery of the following actions: C3 and G2.</td><td>Priority for delivery of action on waterbodies greater than 2ha is mapped HERE.</td></tr>
</table>



F7	**Hedgehog** The European hedgehog is a small mammal that can be found across many habitats in the WMCA region ranging from open agricultural land (pasture and hedgerows) to our urban gardens and parks. It is carnivorous and has a broad diet from most things it encounters on its nocturnal foraging sessions, including beetles, worms, caterpillars and slugs. Hedgehog numbers have fallen by up to 30% in urban areas and 50% in rural areas since the year 2000. Due to these declines the hedgehog is now listed as a UK BAP priority species. Activities that could contribute to progressing this action: • Ensure gardens and parks provide a diverse range of biodiverse habitats to encourage hedgehog prey • Reduce the use of pesticides in gardens and parks • Install habitat piles and hedgehog homes in suitable locations • Reduce barriers to movement by creating hedgehog highways between gardens with gaps in fences (at least 13cm2) • Raise awareness and provide guidance on how to create better habitats for hedgehogs	
	Also potentially benefitting from and assisting with delivery of the following actions: E1-3.	Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped.

<table>
<tr><td rowspan="2">F8</td><td colspan="2">Black poplar
The black poplar is a tree of wet woodland and stream sides, particularly in the floodplains of lowland rivers. It is now the UK's most endangered and rarest native timber tree and has declined close to extinction with an estimated population of around 7000 trees across the whole of the UK. Though present in the WMCA region the numbers are low. Black poplar is dioecious, meaning male and female flowers are found on separate trees and this means that when the trees are neither common or widespread there is lower change of fertilisation and seed production. For this reason, much of the propagation of black poplar is undertaken using cuttings.

Activities that could contribute to progressing this action:
• Identification and monitoring of existing trees
• Appropriate management of existing trees and their surrounds to prolong tree life
• Propagation of black poplar from local genetic stock
• Improve genetic variability of the local black poplar population</td></tr>
<tr><td>Also potentially benefitting from and assisting with delivery of the following actions: A1, B1 and C1, 3 and 5, and G3.</td><td>Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped.</td></tr>
</table>

F9	**Urban birds** These are species that have adapted to live in urban environment, and examples of those found within the WMCA region include swift, house martin, house sparrow, black redstart and starling. These birds utilise man-made resources, such as buildings for nesting and parks for foraging. Urban birds can help to reduce insect pests in gardens. They are threatened by human activity through habitat loss and fragmentation, noise and light pollution, domestic animals (particularly from cats) and collisions with vehicles and buildings. Actions in urban environments should support such declining bird species, as many of our developments no longer provide suitable built structures for nesting. Activities that could contribute to progressing this action: • Identify, monitor and manage key nesting sites • Prioritise integration of nest boxes, such as nest bricks or lofts, into new developments rather than retrofitting • Provide nesting opportunities that are universal (provide for a range of species) and species-specific nest boxes (such as swift bricks or sparrow terraces) • Encourage people to maintain suitable crevices in buildings rather than covering, e.g. with new plastic soffits • Encourage habitat creation that provides shelter and food sources for urban birds • Create biodiverse 'extensive' green roofs	
	Also potentially benefitting from and assisting with delivery of the following actions: A2, E1-3 and G1-3.	Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped.

F10	**Farmland birds** These are species that rely on agricultural landscapes for nesting, foraging and roosting in fields, hedgerows, and pastures. There are a variety of farmland birds within the WMCA region, such as corn bunting, linnet, skylark, yellowhammer, yellow wagtail, lapwing and barn owl. Farmland birds can contribute to the control of pest species by feeding on insects and rodents and reducing the need for chemical pesticides. Their populations are threatened by habitat loss and fragmentation due to intensive farming practices reducing the availability of nesting and foraging sites, as well as climate change. The use of pesticides and herbicides also diminishes their food sources and can directly harm the birds. Furthermore, changes in agricultural practices, such as the removal of hedgerows and conversion of grasslands to arable fields, have led to declines in suitable habitats. Actions for hedgerows, grasslands and arable habitats will support the maintenance and improvement of farmland bird populations. Activities that could contribute to progressing this action: • Avoid using broad-spectrum insecticides after the 15th March (breeding season) • Maintain short, thick hedges and ditches with wide margins • Install barn owl nest boxes • Create skylark plots within cereals crops • Manage grazing pressures to avoid overgrazing and avoid grazing (or cutting) between April and May • Leave stubbles with weeds through the winter to provide a food source (seeds) • Increase crop diversity, where feasible, by including spring cereals in arable rotation, areas of arable crops on livestock farms or increasing the range of crops in rotation (include winter wheat)	
	Also potentially benefitting from and assisting with delivery of the following actions: A2, A5, B4 and D1-4.	Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped.

F11	**Heathland insects** Heathland insects, such as the four-spotted furrow bee, black-headed mining bee, shiny sun beetle and early sunshiner (a ground beetle), thrive in the unique structure and conditions provided by heathland habitats. They often inhabit areas with sandy soils, bare ground and diverse plant life. They face several threats, including habitat loss and fragmentation due to urbanisation, or pollution from airborne pollutants like nitrogen and ammonia. Inappropriate management practices, such as overgrazing or even no grazing and suppression of soil disturbance, can lead to uniformity in vegetation, reducing habitat diversity. Fires, both accidental and deliberate, pose significant risks to heathland insects by destroying their habitats. The WMCA region is home to nearly 397ha of lowland heathland, therefore appropriate management of this land is essential for maintaining and supporting the insects which rely on this habitat. Activities that could contribute to progressing this action: • Reduce nutrient enrichment of heathland habitats from fertilisation and diffuse pollution • Plant/encourage the following foodplants for heathland insects: o Tormentil - tormentil mining-bee o Sheep's fescue - small heath (a butterfly) o Cat's-ear - buff-tailed mining bee o Mouse-ear hawkweed - buff-tailed mining bee o Hawkbeards - buff-tailed mining bee o Knapweed - black-headed mining bee o Tansy - black-headed mining bee	
	Also potentially benefitting from and assisting with delivery of the following actions: A3, B2 and B5.	Priority for delivery of action on heathland sites is mapped HERE.

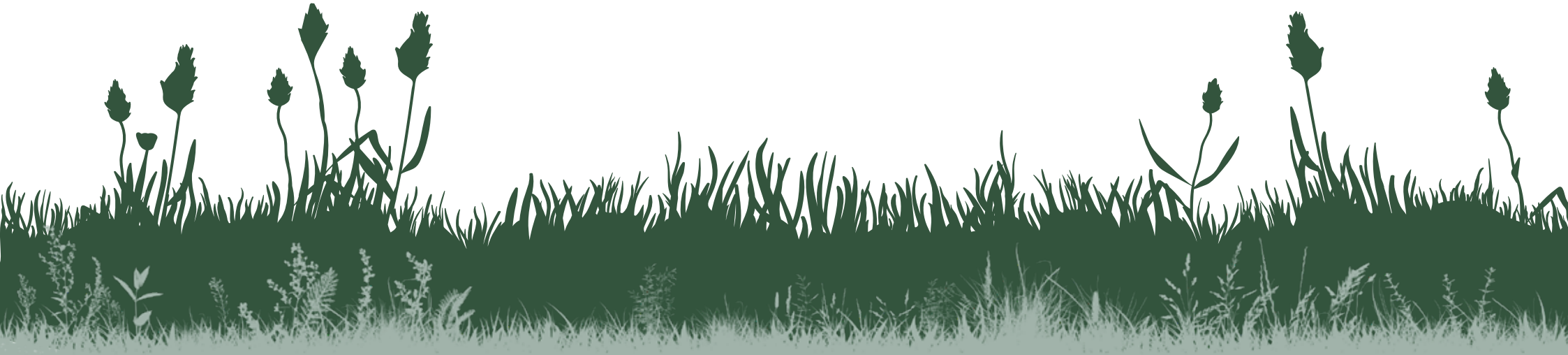
F12	**Amphibians and reptiles** In the WMCA region there are records for 5 species of native amphibian comprising common frog, common toad, great crested newt, smooth newt and palmate newt. Though these species breed in ponds they also rely upon other surrounding terrestrial habitats for their survival too. This requirement for a mix of habitats, and the vulnerability of ponds to pollution and drying out, can present challenges to our regional population as their key habitats are at risk of loss, fragmentation and isolation. Key amphibian species for the region include great crested newt, which has a key breeding sites at Fens Pools Special Area of Conservation (SAC) and Fibbersley Local Nature Reserve, and common toad which has seen significant declines in recent times. Both the great crested newt and common toad are UK BAP Priority species. The WMCA region also has records for our native reptiles including common lizard, slowworm, grass snake and adder (historically). Again, habitat loss and fragmentation have resulted in national declines and all these reptiles are now listed as UK BAP Priority species. Though many of the broader actions being delivered under habitat priorities are beneficial for these species there are additional activities that could be delivered, as follows, that could contribute to progressing this action: • Increase awareness for planning professionals as to the threats and opportunities that development may bring to our region's amphibians and reptiles • Raise awareness with the public of the challenges these species face, and provide guidance on how local level habitat improvements can help • Develop citizen science survey and monitoring projects and gather more evidence on our amphibian and reptile populations • Seek to make hard engineering features, such as roadside kerbs and drainage near to known breeding sites, more amphibian-friendly • Ensure that ponds are created and managed to provide suitable breeding opportunities for our amphibians • Allow for rougher uncultivated areas, hibernacula and compost heaps in our gardens, parks and allotments for reptiles It is necessary that a person with appropriate skills and knowledge is engaged with the planning or implementation of such actions especially due to the protections afforded to this species.	
	Also potentially benefitting from and assisting with delivery of the following actions: A3-5, B2-6, C2-3, D1-3 and E1 and 3.	Actions for these species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped.

F13	**Brownfield butterflies** These are a species that thrive in brownfield environments (previously developed, redundant land). These habitats typically feature a mix of bare ground, short grassland, patches of weedy tall herbs and flower-rich grassland, creating a mosaic of habitats that support a variety of butterfly species. The WMCA region is home to a number of key species of brownfield butterfly, including the dingy skipper, small blue, grizzled skipper and green hairstreak. These species are threatened by habitat loss due to redevelopment, as brownfield sites are often seen as prime locations for new housing or industrial projects. Pollution and the use of pesticides can also negatively affect the vegetation and soil quality, reducing the availability of food and suitable habitats for butterflies. Climate change poses additional challenges by altering the conditions of these habitats. Habitat actions to preserve brownfield and open mosaic habitats will help to maintain and improve brownfield butterfly populations. Activities that could contribute to progressing this action: • Identify, monitor and manage key sites • Reduce the use of pesticides • Plant/encourage the following larval foodplants: o Kidney vetch – small blue o Common bird's-foot trefoil – dingy skipper, green hairstreak o Greater bird's-foot trefoil – dingy skipper o Wild strawberry – grizzled skipper o Creeping cinquefoil – grizzled skipper o Agrimony – grizzled skipper o Wavy hair grass – wall • Promote the adoption of 'eco-mimicry' methods for habitat creation on development sites and public green spaces to compensate for the loss of open mosaic habitat (OMH) • Encourage the acceptance of 'meanwhile' habitats that provide opportunities, even if short lived, for OMH species	
	Also potentially benefitting from and assisting with delivery of the following actions: B5, E1, E4, G1 and G4.	Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped.

F14	**Grassland fungi** Grassland fungi thrive in grassland habitats like meadows and pastures, often found in nutrient-poor soils. The WMCA region is home to six different species of waxcaps and three species of earthtongues. Grassland fungi are crucial for nutrient cycling, breaking down organic matter and supporting soil health. They form symbiotic relationships with plants, aiding nutrient uptake and enhancing resilience. Grassland fungi face threats from habitat loss due to agricultural intensification, urban development and climate change. Fertilisers and pesticides also disrupt soil nutrients and harm fungal communities. Actions associated with grasslands will help to maintain and improve grassland fungi populations. Activities that could contribute to progressing this action: • Identify, monitor and manage key sites • Avoid tree planting in key sites • Minimise or avoid the use of fertilisers, herbicides or pesticides to maintain the natural composition of grasslands • Avoid compaction by heavy vehicles and use management methods that will not cause unnecessary disturbance • Avoid mowing at sensitive times	
	Also potentially benefitting from and assisting with delivery of the following actions: A4, B3 and E1.	Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped.

F15	**Sutton Park mire vegetation** Sutton Park is a large medieval park located 10km to the west of Birmingham city centre and surrounded by the urban areas of Sutton Coldfield and Walsall. Within Sutton Park, there is an area of marshy grassland and valley mire, which is a unique feature of the designated Site of Special Scientific Interest (SSSI) and National Nature Reserve (NNR). This area supports a wide range of mire species, including common cottongrass, hare's-tail cottongrass, bogbean, grass-of-parnassus, marsh lousewort and common butterwort. These plants thrive in the wet, acidic conditions of the mire and contribute to the unique ecological character of the area. Vegetation in this area of Sutton Park faces a number of pressures, mainly down to the heavily urbanised setting. Additionally, the mire is susceptible to drying out, which can be exacerbated by climate change and alterations in water management. INNS also threaten the native plant communities by outcompeting them for resources. The Sutton Park mire vegetation must be maintained, addressing the threats posed to this unique habitat and to improve its condition. Activities that could contribute to progressing this action: • Monitor and maintain mire areas of Sutton Park • Control pollution and recreational disturbance of mire areas • Control scrub encroachment and implement appropriate grazing regimes	
	Also potentially benefitting from and assisting with delivery of the following actions: A3, B2 and C3.	The area for delivery of this location specific action is mapped HERE.

F16	**Arable weeds** Arable weeds of biodiversity importance are plant species that grow in agricultural fields alongside crops. They are not necessarily a pest species and very rarely become a threat to crop production. Examples in the WMCA region include corn marigold, corn mint, prickly poppy and corn buttercup. They provide food and habitat for insects, which in turn support farmland birds. Arable weeds face threats from intensive farming practices, herbicide use and habitat loss. Climate change also impacts their growth and distribution. Actions for arable habitats will help to maintain and improve the populations of arable weeds. Activities that could contribute to progressing this action: • Identify, monitor and manage key sites • Uncover buried seed through deep ploughing • Reduce sowing density and/or a variety with reduced or no tillage (e.g. minimises soil disturbance and protects soil health) • Rotate crops • Consider species reintroductions	
	Also potentially benefitting from and assisting with delivery of the following actions: D1-2.	Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped.



F17	**Bats** Bats are small, nocturnal mammals which roost and forage in a wide variety of habitats, including broad-leaved woodlands, rivers, mixed farmland and buildings and suburbs. There are 18 species of bat in the UK, 14 of which have been recorded in the WMCA region. In the UK, bat populations have faced severe declines. Bats are under threat from loss of habitat and habitat fragmentation, climate change, pesticide use, urbanisation and threats from animals such as cats. Actions within woodlands, along watercourses, arable land and within the urban environment will help to maintain and improve populations of bats. Activities that could contribute to progressing this action: • Identify, monitor and manage key roosting sites, particularly for Bechstein's bat and lesser horseshoe bat • Preserve woodland bat roosting features, such as old woodpecker holes and crevices in trees • Mitigate effects of light and noise in key areas and corridors, particularly for Bechstein's bat and other light-sensitive bat species • Seek to reduce light levels within the urban infrastructure and incorporate 'bat-friendly' lighting design • Monitor bat populations through acoustic monitoring, e.g. of western barbastelle bat in suitable habitats • Reduce the use of pesticides It is necessary that a person with appropriate skills and knowledge is engaged with the planning or implementation of such actions especially due to the protections afforded to this species.	
	Also potentially benefitting from and assisting with delivery of the following actions: All actions under priorities A-D, E and H.	Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped.

F18	**Elm-associated insects** Species such as the white-letter hairstreak butterfly, the white-spotted pinion moth and the jewel beetle rely on elm trees for their survival and reproduction. Elm trees have declined significantly as a result of Dutch elm disease, which has in turn led to a decline of the insects that rely on the trees for their survival. In addition, these insects face threats from habitat loss, pollution, climate change and the spread of INNS. Habitat actions to incorporate elms within woodland, hedgerow and urban environments will help to maintain and improve the insect population reliant on elm species. Activities that could contribute to progressing this action: • Plant elm species such as wych elm or English elm in appropriate woodlands and hedgerows • Where appropriate and practical, monitor and reduce impacts of Dutch elm disease through pruning of infected branches and planting of resistant (native) strains	
	Also potentially benefitting from and assisting with delivery of the following actions: A1-2, A5, B1 and B5.	Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped.

F19	**Pollinators** The WMCA region is home to several pollinating species such as bees, hoverflies, butterflies, moths and flower-visiting beetles. These pollinators play a crucial role in ecosystems by supporting plant diversity, which in turn sustains other wildlife. Their activities benefit agricultural productivity and contribute to the health of natural habitats. Protecting pollinators is vital for maintaining biodiversity and ensuring the resilience of ecosystems. Pollinator populations have been in decline due to factors such as habitat fragmentation, climate change and the widespread use of pesticides. Many of the habitat actions will help to maintain and improve the pollinator population in the WMCA region. Activities that could contribute to progressing this action: • Reduce the use of pesticides • Educate stakeholders on how to create and manage pollinator friendly habitats • Work towards developing a strategic plan for enhancing road verges for pollinators • Relax mowing regimes on areas such as road verges • Encourage pollinator friendly planting on new developments, including tree and shrub species that blossom across the seasons	
	This species group will also potentially benefit from and assist delivery of the following actions: A4, B3, B5, D1, E1, H1 and H4.	Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped.

F20	**Marsh fritillary** The marsh fritillary is a butterfly found in wet and boggy habitats such as damp meadows. It feeds primarily on devil's-bit scabious, with caterpillars living communally in silk webs spun around the leaves of their food plant. This species face threats from habitat loss due to urban development, pollution and climate change. Marsh fritillaries are pollinators and support ecosystems by pollinating plants and serving as food for other wildlife. Their presence supports biodiversity and helps maintain ecological balance. As one of the UK's most threatened butterflies, reintroduction within the WMCA region is important for the future survival of this species. Activities that could contribute to progressing this action: • Identify suitable sites for reintroduction • Create flower-rich damp meadows • Plant or introduce the foodplant, devil's bit scabious, in key areas • Allow areas of scrub to remain for overwintering larvae	
	This species will also potentially benefit from and assist with delivery of the following actions: A4 and B3.	Actions for this species are welcomed across all areas of suitable habitat, and they should be carefully assessed before implementation in any one location. As such no priority areas have been mapped.

F21	**Beaver** Beavers are Britain's largest rodent. Their habitat is in the freshwater environment, and they are herbivorous, feeding on aquatic plants, tree bark and leaves. Beavers are widely recognised as keystone species due to the crucial role they play in ecosystems, creating wetland habitats that support biodiversity, improving water quality, and reducing flood risk. Their activities also benefit other species, including otters, amphibians and various birds and invertebrates. Beavers were hunted to extinction in the UK in the 16th century, however they have since been successfully reintroduced at several locations across Scotland and England. Whilst a beaver population is not present in the WMCA region, reintroduction has the potential to bring about the wider benefits this keystone species delivers. Activities that could contribute to progressing this action: • Identify suitable sites for reintroduction • Plant trees within the riparian zone of slow-flowing watercourses • Inform and educate land managers and public about beaver ecology and needs, and benefits of their presence in the area, as part of making the area beaver ready and to address concerns of land managers. • Develop an approach to address any conflicts on sites in future, with potential for compensation to landowners if needed It is necessary that a person with appropriate skills and knowledge is engaged with the planning or implementation of such actions especially due to the legal provisions relating to this species.	
	Also potentially benefitting from and assisting with delivery of the following actions: C4 and C5.	Priority delivery areas have not been mapped as such reintroductions are complex and detailed site appraisals and consents would be required.

F22	**Strategically control and manage Invasive Non-Native Species (INNS) using a catchment-based approach, working upstream to downstream** Many INNS are aquatic plants or those which can spread quickly across and beside watercourses, such as New Zealand pygmyweed, giant hogweed, water fern or Himalayan balsam. Watercourses cover a significant proportion of the region and provide pathways for INNS to spread within the WMCA region and further afield. These species can cause damage to the local environment (including outcompeting native species), economy or people's health and lifestyles. They should therefore be targeted across whole catchments to increase effectiveness of management. Activities that could contribute to progressing this action: • Focus on upstream areas to reduce downstream spread of INNS • Monitor catchment areas regularly • Implement control measures • Provide the public with information on biosecurity practices to reduce the spread of INNS • Inform public regarding issues of INNS and actions that can be taken to record and address INNS	
	Also potentially benefitting from and assisting with delivery of the following actions: C1 and C5.	No priority areas have been mapped as the location and focus of INNS control should be based upon site-by-site appraisals.

Priority G – Accessing nature

Public access to nature is improved across the region, focusing on equitable opportunities that support biodiversity.

What does success look like? Nature will be accessible to all communities and evenly distributed across the region, by targeting the creation of new green and blue spaces and increasing tree canopy cover in areas with low access to nature. Community green spaces will provide areas where people can meet, collaborate, and engage with nature, fostering a sense of community and stewardship.

Public access to nature across the WMCA region is currently limited and inequitable, with significant disparities in the availability and quality of green spaces across the region. Enhancing public access to nature has multiple benefits as it improves public health and wellbeing by providing spaces for recreation and relaxation, reducing stress, and promoting physical activity.

Accessible green spaces can also support greater levels of biodiversity, creating habitats for wildlife and improving connectivity for urban species. Therefore, delivering publicly accessible spaces for nature will maximise benefits for biodiversity and humans through improved air and water quality, reduced heat risk, and provision of aesthetic and recreational value.

There are many different stakeholders who could contribute to the delivery of public access to nature, for example landowners, businesses and developers.

The actions outlined below will also help to support priorities A to F and H, as new habitats will be created for biodiversity and nature recovery in light of climate change.

Benefits relating to this priority:

- Culture and heritage
- Health and wellbeing
- Access for people
- Jobs and skills
- Cleaner air
- Carbon Sequestration
- Climate adaptation
- Biodiversity
- Cleaner water
- Soil health

Actions:

Icon	Explanation
G1	Create new accessible green spaces that benefit nature and people
G2	Improve awareness on sensitivity of sites and habitats to increased access
G3	Increase equity in tree canopy cover
G4	Maintain and sympathetically manage the unique characteristics of our geodiversity sites

Delivering wider environmental benefits

Birmingham Tree People
Birmingham Tree People is a community-led charity working to improve access to nature by planting, protecting, and promoting trees across the city. Their mission is rooted in tree equity and ensuring that every neighbourhood, especially those with limited green space, benefits from the environmental and wellbeing advantages of trees.

Through partnerships with Birmingham City Council and local groups, they support tree planting in underserved areas like Alum Rock and Balsall Heath, helping to create pocket parks and green corridors. Their work includes community orchards, street tree surveys, and accessible tree trails, making nature more visible and reachable for all residents.

By involving volunteers in planting and care, and offering free arboriculture training, Birmingham Tree People empowers communities to take ownership of their local environment. Their efforts are a vital part of Birmingham's wider City of Nature plan, helping to embed nature into everyday urban life.

Birmingham TreePeople

Dudley's Path to Nature Recovery
Launched in 2024 with funding support from the WMCA, Dudley's Path to Nature Recovery is a pioneering initiative led by the Birmingham and Black Country Wildlife Trust. The project aims to reconnect communities with nature across Dudley's iconic hills through key strands: conservation, community engagement, citizen science, and partnership working. These activities are brought together through walking, with the Trust developing new routes and guiding local schools, residents, and others along these paths.

Conservation efforts focus on restoring habitats for species like the Lesser Horseshoe Bat and Green Hairstreak butterfly. Local schools and residents are actively involved in environmental education and wildlife monitoring.

By improving access to greenspace and fostering local stewardship, the project has created a more inclusive and biodiverse landscape for both people and nature.

Birmingham & Black Country Wildlife Trust

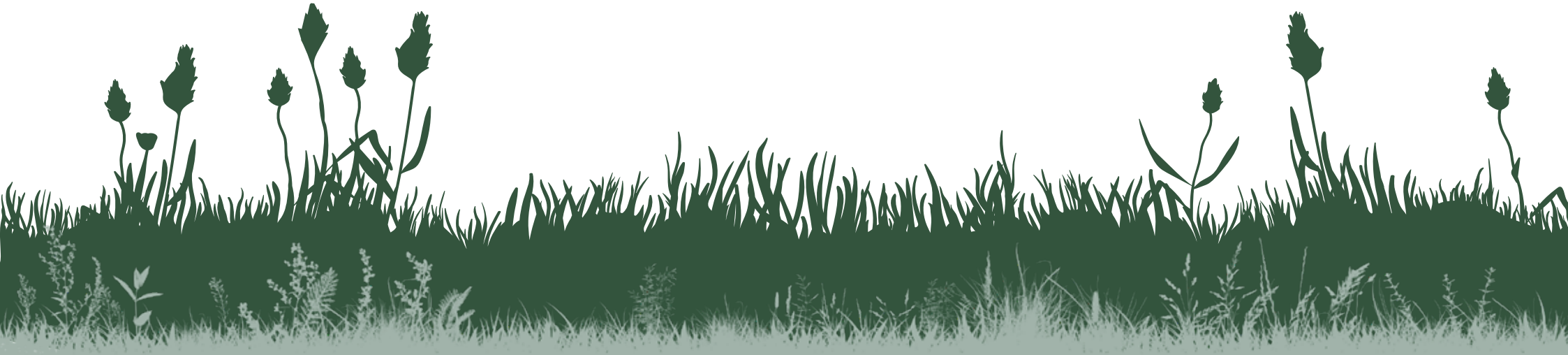
Action ID	Action	
G1	**Create new accessible green spaces that benefit nature and people** Green spaces include wellbeing gardens, community growing spaces, pocket parks, allotments or orchards. They can be designed to be nature friendly, to provide habitats and improve connectivity for urban species and benefit people. They can also provide respite from the urban heat island effect for those that do not have access to private gardens and they can provide a buffer from nearby sources of air pollution. This would support greater levels of biodiversity across the region and bring benefits to people's health and wellbeing, as well as provide opportunities to empower the public to engage with nature. Our LNRS survey identified that 58% of respondents felt they faced barriers preventing them getting into green spaces, with safety concerns being the top reason, followed by distance and lack of green spaces nearby as the second and third barriers. Activities that could contribute to progressing this action: • Identify and promote green spaces within the areas known to have limited accessible green space provision • Design green spaces with safety and biodiversity in mind, incorporating Green Infrastructure Framework principles • Improve facilities for users such as seating, accessible paths and toilets • Improve public rights of way, local knowledge of these routes and areas linked by these routes • Promote connectivity to new and existing accessible green spaces with improved public transport and active travel links • Engage with landowners and local communities on existing green spaces that are underutilised by people and wildlife to understand opportunities for improvement • Work to ensure users feel safe in such spaces • Promote community engagement in incorporating habitat for wildlife within community spaces • Explore mechanisms and secure funding for new accessible green space	
	Also contributes to delivering priorities: A-C and H.	Accessible green space is beneficial for both nature and people wherever it is located. The priorities for new areas are mapped HERE and these take into account the current level of provision and needs of the communities (greatest weighting being given to those areas of higher deprivation).

G2	**Improve awareness on sensitivity of sites and habitats to increased access** Public access to nature, including specific sites or habitats, provides benefits to people's physical and mental wellbeing, offers recreational opportunities and supports engagement with nature and its future protection. However, it is important to consider the sensitivity of sites or habitats to increased public access, which may lead to detrimental effects on biodiversity rather than supporting it and its wider benefits. Activities that could contribute to progressing this action: • Encourage more monitoring and recording of visitor pressure and visitor behaviour to inform management and mitigation of impacts • Identifying sites where public access or recreational pressure is an issue and set out how this can be better managed • Limit access, where necessary, dependent on species and habitat vulnerabilities • Create resources to educate people on the importance of responsible access to nature, including topics such as litter, dogs on leads, biosecurity, keeping to existing footpaths and reducing wildfire risk	
	Also contributes to delivering priorities: A-F.	This action is not mapped as it is relevant for the whole region.

G3	**Increase equity in tree canopy cover** Data across the WMCA region identifies significant inequalities in tree canopy cover across our communities. An increase in tree canopy equity will enable more people to access (be in the presence of) nature, thus improving health and wellbeing, providing amenity value, improving air and water quality and reducing heat risk in urban areas. Activities that could contribute to progressing this action: • Prioritise planting trees in constituent authority areas with lower canopy cover and local areas lacking trees • Aim for an urban tree canopy to include no more than 10% of any one species, 20% of any one genus, or 30% of any family • Plant fruit and nut trees to provide community benefits • Plant trees that have flowers that attract pollinators through the seasons • Plant the right tree in the right place (consider historic environment, people, soil, biodiversity, climate change, water and landscape) • Maintain and monitor condition of trees, through local communities or "friends of" groups or adopting a tree • Explore and develop funding streams to secure initial planting costs and long-term care	
	Also contributes to delivering priorities: A – D and H.	Tree canopy cover is far from equitable across the region. The priorities for new areas are mapped HERE and take into account the current level of provision and needs of the communities (greatest weighting being given to those areas of higher deprivation).

<table>
<tr><td rowspan="2">G4</td><td colspan="2">Maintain and sympathetically manage the unique characteristics of our geodiversity sites
The WMCA region has a high geodiversity with locally designated geological sites as well as the Black Country Global Geopark, collectively referred to as geodiversity sites. Maintaining and sympathetically managing these sites is crucial for preserving the unique geological features and processes that underpin biodiversity and provide valuable scientific, educational, and cultural insights. Effective management ensures these sites remain intact and accessible for future generations, whilst also supporting important habitats and ecosystems.

Activities that could contribute to progressing this action:
• Promote maintenance of geological features alongside biodiversity features
• Manage public access and disturbance to these sites
• Improve awareness of geodiversity sites and their important geology and biodiversity</td></tr>
<tr><td>Also contributes to delivering priorities: A - C and F.</td><td>The region has a particularly important resource of geological heritage sites, the most important of these being recognised as the UNESCO Geopark and it is this assemblage of sites that are mapped HERE as priority areas for this action. Many other geological sites exist (though not mapped) across the region and action G4 is also relevant to these.</td></tr>
</table>



Priority H – Nature-based solutions

Nature-based solutions (NbS) are adopted to help address climate related impacts and risks faced by our land, nature and communities.

What does success look like? NbS will become a tool which is widely understood and used across the region, playing a key role in mitigating and adapting to climate change. Climate-adapted species will be integrated into new habitats, particularly urban environments and areas vulnerable to the effects of climate change.

The West Midlands Climate Risk and Vulnerability Assessment (CRVA) has identified areas with high climate risks and vulnerabilities, particularly densely populated urban areas with lower tree coverage. These areas face heightened risks from extreme weather events like flooding and heatwaves, and they often lack accessible green spaces that can provide relief and support biodiversity.

There is also a strong correlation between those areas of greatest climate impact and the communities that are subject to a greater degree of social, economic and health deprivation. It is these more deprived communities that will be impacted first and hardest by climate change.

Climate change is having a significant impact on urban areas and placing them at risk of extreme weather events such as heatwaves and flooding. An example of a NbS which would be beneficial in the WMCA region is the integration of new habitats with climate-adapted species into vulnerable environments. This can improve resilience to climate change and provide green spaces for communities. NbS are self-sustaining as they rely on natural systems which require minimal maintenance over both the short- and long-term.

The creation of new green and blue spaces, the planting of urban trees and the restoration of waterways are examples of potential NbS which will be implemented in the region. These solutions will benefit key species through providing new habitats and enhancing existing ones.

This will also offer public health benefits and help to address inequalities in the accessibility of natural spaces across the region, whilst also improving air and water quality, and reducing heat and flood risk.

There are many different stakeholders who can get involved in the delivery of NbS at different scales to help achieve this priority, from individuals creating a raingarden or community groups rewilding an area in a community space to planners targeting tree planting across a constituent local authority area. The focus on NbS will also help to restore natural processes and habitats to benefit numerous species.

As approximately 30% of our climate adaptation needs can be met through the adoption of NbS they can play an important role for more vulnerable communities across the WMCA region.

The actions outlined below will also help to support priorities A - G, I and J as climate change is considered in nature recovery.

Benefits relating to this priority:

Actions:

Icon	Explanation
H1	Increase and integrate natural habitats into areas of greatest climate risk and vulnerability
H2	Incorporate Nature-based Sustainable Drainage Systems (NbSuDS) into new and existing urban environments
H3	Increase awareness within the business and real estate community of the value of ecosystems services to support delivery of NbS
H4	Prioritise habitat creation with climate-adapted species

Delivering wider environmental benefits

Liveable Earlsdon
The Liveable Earlsdon scheme in Coventry, part of the city's first Liveable Neighbourhood pilot, integrates nature-based solutions to create safer, greener, and more accessible streets. Developed with extensive community input, the scheme includes widened pavements, new seating, and sustainable urban drainage systems (SuDS) to manage rainwater naturally.

Greening measures, such as planting and pocket parks, enhance biodiversity and provide shaded, welcoming spaces for walking and socialising.

These interventions not only support climate resilience but also promote everyday access to nature in a dense urban setting. The scheme reflects Coventry's commitment to healthier, more inclusive neighbourhoods through thoughtful, nature-led design.

Coventry City Council

<table>
<tr><th>Action ID</th><th colspan="2">Action</th></tr>
<tr><td>H1</td><td colspan="2">Increase and integrate natural habitats into areas of greatest climate risk and vulnerability
The West Midlands Climate Risk and Vulnerability Assessment (CRVA) identifies where climate risks may be concentrated in areas across the region. This is based on climate hazards (such as high temperatures), socio-economic vulnerability (health, income and demographics) and exposure (population density). The results indicate that areas with the greatest vulnerability are those in densely populated and urban areas, which are also areas with lower tree coverage. An increase in tree canopy cover, and integration of green and blue infrastructure, into these areas will support biodiversity as well as mitigate heat risk.

Activities that could contribute to progressing this action:
• Provide support and evidence to key regional stakeholders to incorporate into planning policy or strategies
• Plan new developments to design in NbS to contribute to climate adaptation
• Create tree-lined streets (and more trees in built up areas) to provide shade and increase evapotranspiration leading to urban cooling
• Plant ‘tiny forests’ with native/locally suitable species
• Create new parks, green spaces and urban forests to mitigate the urban heat island effect
• Create or restore wetlands and watercourses which will combine stormwater management and heat reduction
• Create small wetlands or pond areas in gardens or allotments
• Install biodiverse ‘extensive’ green roofs on new developments or retrofit to existing buildings where feasible
• Integrate green walls and green pillars into the built environment</td></tr>
<tr><td></td><td>Also contributes to delivering priorities: A, B, C, E-G.</td><td>The priority delivery areas are mapped HERE. These represent the areas of greatest need when considering both climate risk and vulnerability.</td></tr>
</table>

H2	**Incorporate Nature-based Sustainable Drainage Systems (NbSuDS) into new and existing urban environments** NbSuDS are specific water systems which mimic natural water processes to address flood risk and water quality alongside increased biodiversity and amenity benefits. They provide multiple benefits within new and existing urban environment for economic, social, health and wellbeing and climate related factors. Activities that could contribute to progressing this action: • Strengthen local planning policy and supporting guidance for incorporation of NbSuDS • Incorporate NbSuDS into design for new developments, such as infiltration and detention basins or ponds and wetlands • Retrofit NbSuDS into existing urban environments • Install biodiverse 'extensive' green roofs on new developments or retrofit to existing buildings where feasible • Create raingardens • Replace hard impermeable surfaces with porous green infrastructure • Incorporate rainwater down pipe planters in gardens or existing buildings, such as educational facilities	
	Also contributes to delivering priorities: C, E-G.	This action is not mapped as it is relevant for the whole region.

H3	**Increase awareness within the business and real estate community of the value of ecosystems services to support delivery of NbS** The business and real estate community are key players in delivering NbS as they can incorporate nature and natural processes into their developments and surrounding land. Ecosystem services are provided by the natural environment and benefit people in multiple ways, such as providing food, appreciation of nature, climate regulation and purification of air and water. The monetary valuation of these services enables investment in this market and support NbS. Activities that could contribute to progressing this action: • Create tools and resources on nature markets and valuation of ecosystem services • Share case studies demonstrating the benefits of valuing ecosystem services and delivery of NbS • Additional specialist training for staff involved in the management and/or maintenance of council-owned sites of particular local importance for habitats and/or species • Facilitate networking events for the business and real estate community to learn more about opportunities	
	Also contributes to delivering priorities: A – G, I and J.	This action is not mapped as it is relevant for the whole region.

<table>
<tr><td rowspan="2">H4</td><td colspan="2">Prioritise habitat creation with climate-adapted species
The impacts of climate change will result in the WMCA region experiencing warmer, wetter winters and hotter, drier summers as well as more unpredictable and severe weather events. Habitat creation actions must be planned with this at the forefront to avoid wasted efforts and ensure that actions taken will be sustainable in the long-term, and able to adapt or survive these changing conditions.

Activities that could contribute to progressing this action:
• Include consideration of climate change when planning habitat creation activities, incorporating into policies or guidance
• Create resources or tools to identify climate-adapted species</td></tr>
<tr><td>Also contributes to delivering priorities: A – F.</td><td>This action is not mapped as it is relevant for the whole region.</td></tr>
</table>

Priority I – Evidence and knowledge

Improved evidence and knowledge to enable scaled-up delivery of nature recovery.

What does success look like? We will have a comprehensive understanding of the region's biodiversity and natural capital, with the ability to measure and monitor how these change over time. We will have a greater understanding of our vulnerability to climate change, allowing us to target and plan future nature recovery to maximise our positive impacts on nature and the wider benefits nature recovery brings.

Understanding our natural capital assets is essential for targeting nature recovery efforts in the most beneficial areas for both the environment and local communities. By knowing where our natural assets are, and how they are changing, we can prioritise actions that enhance biodiversity, improve ecosystem services, and increase resilience to climate change.

For instance, areas critical for carbon sequestration or flood mitigation can be prioritised for maintenance and restoration.

This knowledge, and further data insights, will also help us to address data gaps and understand our vulnerability to climate change and other environmental pressures. Accurate data allows us to develop strategies that address these vulnerabilities, ensuring that our nature recovery efforts are adaptive and resilient. It will also provide the strong evidence base for assigning monetary values or investments into nature recovery or NbS.

Environmental bodies should lead the way in determining coordinated surveys of the region's biodiversity, which can be easily repeated to build up a strong evidence and knowledge base. Each of the other stakeholders can play a role in undertaking monitoring within their individual gardens, community spaces, own land or business premises to provide data and evidence for planners and developers to make informed decisions on nature delivery across the whole of the WMCA region.

This priority will help to support the delivery of all other priorities and numerous species will also benefit as our actions will be better-informed by evidence and knowledge to maximise the outcome for nature recovery.

Benefits relating to this priority:

Actions:

Icon	Explanation
I1	Increase coordinated monitoring of the region's biodiversity
I2	Collect further evidence to evaluate the risk of climate change upon our region's nature
I3	Create a strong evidence base to support and develop nature finance opportunities to drive nature recovery and nature-based solutions forwards.

Enabling delivery for nature recovery

West Midlands i-Tree Eco survey
An i-Tree Eco survey was undertaken across the seven metropolitan areas of the WMCA to assess the structure and benefits of the region's urban forest, including the species, age, and size of the trees.

The survey revealed the environmental and economic value of urban trees, such as carbon storage, air pollution removal, flood mitigation, reduction of urban temperatures and creating a nicer environment in which to live. It also highlighted potential vulnerabilities like disease susceptibility and lack of protection to climate change. Understanding the structure and vulnerabilities of the region's trees enables long term plans for their management to be accurately planned and targeted.
The findings will guide future tree planting and management strategies under LNRS, ensuring a healthier, more resilient urban canopy for the region.

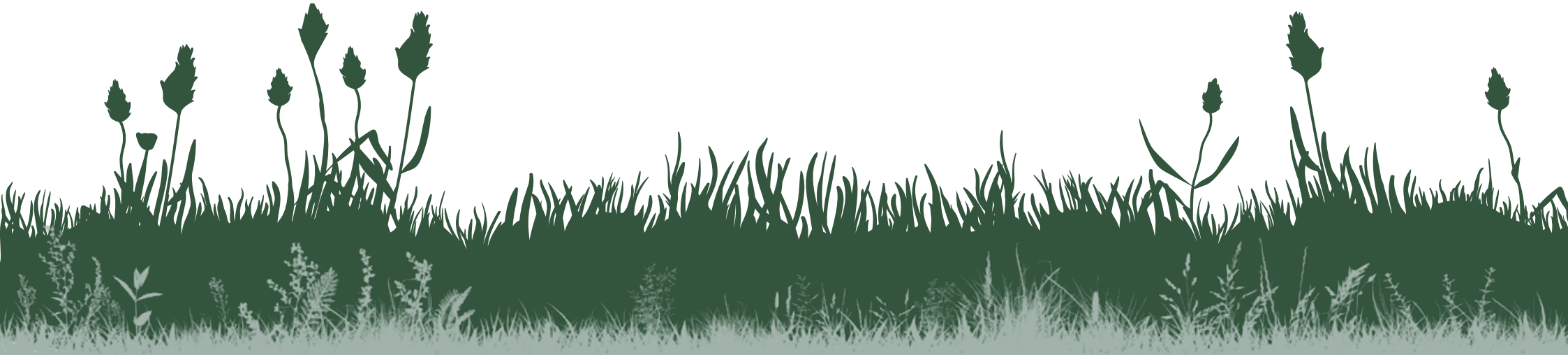
West Midlands
Combined Authority

WMCA guidance documents: BNG and brownfield land
The West Midlands Combined Authority (WMCA) has published guidance to support the delivery of Biodiversity Net Gain (BNG) on brownfield land, recognising the ecological value these sites can offer.

The Brownfield Habitats and Biodiversity Net Gain: Compensatory Habitat Guide provides practical advice for developers, planners, and landowners to ensure that urban regeneration contributes positively to nature. It outlines how to assess, retain, and enhance existing habitats, and where necessary, create high-quality compensatory habitats.
The guidance promotes locally contextualised solutions that integrate biodiversity into the design of new developments, supporting both ecological resilience and community access to nature. By embedding nature into brownfield regeneration, the WMCA aims to deliver environmental uplift alongside housing and infrastructure, aligning with its wider goals for sustainable, inclusive growth.

<table>
<tr><th>Action ID</th><th colspan="2">Action</th></tr>
<tr><td>I1</td><td colspan="2">Increase coordinated monitoring of the region's biodiversity
Across the WMCA region, coordinated biodiversity and environmental monitoring will establish a comprehensive understanding of trends and highlight the need for targeted actions.

Activities that could contribute to progressing this action:
• Provide training courses focused on priority species (Priority F) and key indicator species or other environmental parameters such as water quality
• Establish monitoring across locally designated sites
• Provide training courses or resources on how to submit records or sightings of species to local environmental records centres or via apps such as iRecord
• Submit records to local environmental records centres, EcoRecord or Warwickshire Biological Records Centre</td></tr>
<tr><td></td><td>Also contributes to delivering priorities: All priorities.</td><td>This action is not mapped as it is relevant for the whole region.</td></tr>
</table>



I2	**Collect further evidence to evaluate the risk of climate change upon our region's nature** The West Midlands Climate Risk and Vulnerability Assessment (CRVA) map focused on the vulnerability and exposure in terms of human populations and factors, which should be further developed with a focus on our natural resources and their vulnerability to climate change. This should draw together evidence on our region's habitats and species, their condition/ quality, and their abundance and extent. Activities that could contribute to progressing this action: • Identify habitats and their adaptability to different climate hazards • Track species populations and ranges • Monitor and review resilience of habitats and species to climate change • Collaborate with environmental organisations within the region to create funding bids for large-scale projects and opportunities • Collaborate with specialists with the region's higher education establishments to further their research on key topics and support their grant and funding applications • Feedback lessons learnt to other regional stakeholders	
	Also contributes to delivering priorities: All priorities.	This action is not mapped as it is relevant for the whole region.

I3	**Create a strong evidence base to support and develop nature finance opportunities to drive nature recovery and nature-based solutions forwards** There are already many regional stakeholders developing natural environment projects across the WMCA region that will deliver several of the actions set out in this LNRS. It is estimated that the current pipeline of such projects has a funding gap of more than £150m. The work of the WMCA on the Local Investment in Natural Capital (LINC) programme has built strong foundations towards addressing this funding gap and supporting our ambitions to deliver at scale in the region. It is, however, essential that we grow our evidence base to support this. Activities that could contribute to progressing this action: • Continue to develop baseline data on our region's natural capital • Support and accelerate key projects, and use the learnings to inform and advance other projects through the delivery pipeline • Work with the nature investment and outcome buyer communities to understand their needs to help optimise our regional project offering • Collaborate with environmental bodies within the region to create funding bids for large-scale projects and opportunities • Collaborate with specialists with the region's higher education establishments to further their research on key topics and support their grant and funding applications • Feedback lessons learnt to other regional stakeholders	
	Also contributes to delivering priorities: All priorities.	This action is not mapped as it is relevant for the whole region.

Priority J – Capacity building

Improved capacity of stakeholders to contribute to nature recovery.

What does success look like? A wide range of individuals, including local people, communities, professionals, educational institutions, businesses and landowners will have the skills and capacity to contribute to nature recovery across the region. These stakeholders will collaborate and work towards shared nature recovery priorities and actions. They will have the skills and support to maintain, improve and monitor their local environments.

Nature recovery requires the collective action of various stakeholders, including local communities, professionals, environmental NGOs, educational institutions, businesses and landowners. Engaging, supporting, connecting and upskilling individuals who live in the WMCA region as well as those who visit, enjoy or work in the region, is crucial for the successful delivery of the LNRS.

This priority aims to support and facilitate partnerships between similar stakeholders, for example ecologists, rangers, environmental bodies, community groups, businesses and landowners. These partnerships will ensure that a joined-up approach is taken to nature recovery within the WMCA region, and that a diverse range of perspectives are considered when planning actions. These contributions can come from individuals volunteering for community-led monitoring projects or environmental professionals educating and sharing knowledge.

This priority will support nature but will also provide other benefits to local people, such as supporting wellbeing through increasing access to green and blue spaces, fostering a sense of connection to the natural world and purpose through working towards a common goal.

This priority will help to support the delivery of all other priorities and numerous species will also benefit as a greater number of stakeholders will be able to contribute to all our nature recovery actions.

Benefits relating to this priority:

Actions:

Icon	Explanation
J1	Develop initiatives to build professional capacity for monitoring and delivery of nature recovery
J2	Support local people in managing and improving their local environment for nature
J3	Enable communities and environmental Non-Governmental Organisations (eNGOs) to form partnerships with educational institutions, businesses and landowners to deliver nature recovery
J4	Facilitating partnerships to develop nature finance opportunities to drive nature recovery and nature-based solutions forwards.

Enabling delivery for nature recovery

WMCA Local Investment in Natural Capital
The WMCA has received over £1million from Defra for the Local Investment in Natural Capital (LINC) programme. WMCA's LINC programme aims to enable the region to be in a state of readiness to attract private finance into natural capital projects by building the capacity, effective governance arrangements, and capability of local leaders and partner organisations.

A West Midlands Natural Capital Project Pipeline is in development, with over 200 projects included, covering a combined 43,000ha. At first estimates, pipeline delivery costs are more than £100 million.

LINC is in the process of developing a Nature Investment Hub to begin attracting private finance for nature projects in the West Midlands. As detailed in Section 7.2 of the LNRS, LINC will be critical for creating a sustainable funding mechanism to finance the delivery of aspects of the LNRS.

West Midlands
Combined Authority

Wild Walsall
Wild Walsall is an ambitious nature recovery initiative led by the Birmingham and Black Country Wildlife Trust, supported by the National Lottery Heritage Fund.

Focused on the peri-urban landscapes east of Walsall, the project aims to restore 55 hectares of vital habitats, including globally rare lowland heathland, while engaging local communities. Target areas include Shire Oak, Barr Beacon, and Park Lime Pits. The project supports flagship species such as the willow tit, green hairstreak butterfly, and white-clawed crayfish.

Alongside habitat restoration, Wild Walsall offers citizen science events, school sessions, and wellbeing walks. By combining ecological action with inclusive community engagement, the project is reconnecting people with nature and building a more resilient, biodiverse future for Walsall.

Birmingham &
Black Country
Wildlife Trust

<table>
<tr><th>Action ID</th><th colspan="2">Action</th></tr>
<tr><td>J1</td><td colspan="2">Develop initiatives to build professional capacity for monitoring and delivery of nature recovery
Professionals working within nature recovery, and related biodiversity conservation and ecology roles within the region, will be key players in supporting the delivery of the LNRS ambitions. Their expertise could be strengthened, with a focus on monitoring and delivery to increase their contributions and build skills as well as strengthen connections or partnerships across the region.

Activities that could contribute to progressing this action:
• Identify knowledge or skills gaps
• Incorporate monitoring of habitats and species into current roles
• Provide opportunities for development of green skills or entry into a green career
• Develop a ‘nature literacy’ type programme, providing online training opportunities
• Facilitate networking events for nature recovery professionals to connect and share learnings</td></tr>
<tr><td></td><td>Also contributes to delivering priorities: All priorities.</td><td>This action is not mapped as it is relevant for the whole region.</td></tr>
</table>

J2	**Support local people in managing and improving their local environment for nature** Nature within the local environment is important to those that live and enjoy those areas for their physical and mental wellbeing. These spaces can often be undervalued and lack sustainable management to create safe and accessible spaces for local people to connect with nature and provide a sense of community. Activities that could contribute to progressing this action: • Create tools and resources on habitat management techniques, including appropriate timings for habitat clearance, including wildlife friendly gardening • Provide meeting space for stakeholders to come together and plan nature recovery actions • Provide relevant training to community groups on different designations of sites for biodiversity and geology • Working through the Community Environment Network find out what tools and resources would be helpful for community groups to sustain and grow their impact • Produce more detailed guidance and tools to help the different groups understand how they can play their part in the delivery of the LNRS actions, building on the tables within this document	
	Also contributes to delivering priorities: All priorities.	This action is not mapped as it is relevant for the whole region.

J3	**Enable communities and environmental Non-Governmental Organisations (eNGOs) to form partnerships with educational institutions, businesses and landowners to deliver nature recovery** These partnerships are vital for successful implementation of the LNRS and nature recovery actions, as different stakeholders will bring different perspectives and opportunities for collaboration. Strong partnerships will ensure a comprehensive approach across the region and foster a sense of ownership and responsibility for nature recovery, enabling more sustainable and long-term actions to be achieved. Activities that could contribute to progressing this action: • Facilitate regular meetings or provide meeting spaces for collaboration • Collate a directory of stakeholders working or interested in delivering nature recovery • Collate a list of nature recovery projects which could be built upon through involvement with another organisation	
	Also contributes to delivering priorities: All priorities.	This action is not mapped as it is relevant for the whole region.

J4	**Facilitating partnerships to develop nature finance opportunities to drive nature recovery and nature-based solutions forwards** There are already many regional stakeholders developing natural environment projects across the WMCA region that will deliver several of the actions set out in this LNRS. These projects range from nature recovery through to delivery of nature-based solutions, including addressing some of the health and wellbeing challenges we face, along with making our communities more resilient to climate change. It is estimated that the current pipeline of such projects has a funding gap of more than £150m. The work of the WMCA on the Local Investment in Natural Capital (LINC) programme has built strong foundations towards addressing this funding gap and supporting our ambitions to deliver at scale in the region. To attract investment, we need to deliver at scale and to the expected standards of the finance community; to achieve this more collaboration and partnership working is required. Activities that could contribute to progressing this action: • Continue to work with the investment and outcome buyer communities to build lasting trusted relationships for the benefit of our regional stakeholders • Support and enable project owners to collaborate on a geographic or thematic level to deliver at scale • Grow strategic relationships at national, regional and local levels to promote collaborative working to deliver our ambitions	
	Also contributes to delivering priorities: All priorities.	This action is not mapped as it is relevant for the whole region.

7. LNRS next steps

The LNRS marks the first time a detailed, unified view of nature in the WMCA region, along with clear priorities and target locations for action, has been brought together in one place. Building on years of work by regional stakeholders, the LNRS provides a shared vision and coordinated strategy that transcends administrative and political boundaries to deliver greater impact for nature.

It enables everyone, from environmental organisations and local authorities to landowners, businesses, educational institutions and engaged citizens, to see where nature recovery efforts will be most effective. This collective approach supports the national goal of halting biodiversity loss while ensuring local priorities are met.

As part of its ongoing role, the WMCA will continue to develop an evidence base and resources to influence change and action for nature alongside building upon the existing partnerships that exist in the region to enable delivery. An important part of this will be to find novel and engaging ways to provide guidance on how to use the LNRS material to achieve greatest impact – this will particularly be targeted at policymakers and planners.

7.1 Monitoring and governance

The production of the LNRS is an important step for the WMCA and its partners. Whilst we recognise that there has already been significant work taking place to safeguard and improve the natural environment, there is now a baseline, set of agreed actions and spatial understanding of key sites across the WMCA region. The next step will be to move from the production of this strategy into LNRS delivery, providing additionality to work already underway in the region, as well as identifying new opportunities for collaboration. A clear monitoring framework, overseen by appropriate governance, will be critical to accelerate our collective activity.

Monitoring and reporting on actions
Understanding progress towards delivering across the priorities and actions will be an essential part of the next phases of the LNRS. This will allow for review and iteration of the delivery of the strategy document to keep the region on track for nature recovery. We propose an annual monitoring process that reports to the LNRS Delivery Group (below) with a five yearly report (or aligned with the LNRS statutory update if this comes sooner) that is presented to WMCA Board and Overview and Scrutiny Committee.

Regional indicators of nature will also be incorporated into the annual State of the Region report.

Governance
The government has already identified that strategic authorities such as the WMCA will have a clear mandate to take a leadership role on LNRS and wider environmental delivery. This will include convening partnerships, helping coordinate action, funding, and investment in nature recovery and wider environmental delivery across their areas, and monitoring and reporting on delivery.

'We will empower these authorities, which are already operating at county or combined authority scales, with a clear mandate to take a leadership role on Local Nature Recovery Strategies and wider environmental delivery. This will include convening partnerships, helping coordinate action, funding, and investment in nature recovery and wider environmental delivery across their areas, and monitoring and reporting on delivery.'
English Devolution White Paper, 2024

The establishment of a **West Midlands LNRS Delivery Group**, defined ways of working and defined governance will guide the delivery in an efficient manner. This will ensure that there is representation from relevant stakeholders and that work is driven forward in a responsible way, whilst maximising outcomes across the West Midlands. As a minimum, this group will contain representatives from the WMCA, constituent local authorities, Local Nature Partnerships, Natural England, Environment Agency, Forestry Commission and Defra. As the LNRS Delivery Group is established, terms of reference will be agreed to understand the role this plays alongside existing structures, such as the Local Nature Partnerships, to ensure added value and to avoid replicating work already underway.

Task and finish groups will support the development and delivery of specific actions. This will allow for wider representation from regionally significant environmental organisations, landowners, community groups, health organisations (including NHS/ UK Health Security Agency as appropriate), infrastructure providers, and businesses in the delivery of the LNRS.

7.2 Financing nature recovery delivery

The ambitions in this Local Nature Recovery Strategy will require funding and investment to bring them to fruition. The priorities and actions set out in Section 6 will need to secure resourcing to be delivered, and this needs to take account of both scale and 'investment readiness'. The WMCA's Local Investment in Natural Capital (LINC) programme is the route for the West Midlands to deliver a sustainable funding mechanism to finance the Local Nature Recovery Strategy.

The WMCA was selected as one of four areas in the UK to deliver a LINC programme. This £1million programme is part of the government's Green Finance Strategy and will build the capacity and capability of local leaders and partners to attract finance at scale to:

- Create a nature-positive future, restoring habitats and biodiversity, and connectivity for people and nature.
- Deliver nature-based solutions to climate risks; improve water quality; reduce flood risk; sequester carbon; improve air quality; and provide urban cooling.
- Address socio-economic related inequalities in health by improving the quality quantity, and access to green and blue space.
- Strengthen the region's green economy to provide environmental improvements and sustainable growth.

There are three leading ways in which the LINC programme will provide support for the LNRS:

1. There is a clear methodology, and process, developed to build and grow a pipeline of projects ready for nature finance
2. A Nature Investment Hub provides a route to make publicly available those that are 'investment ready'
3. A regional BNG Habitat Bank will provide opportunities for the sale of credits to finance nature in the West Midlands

It should be noted that it is not just the methodology that has been developed, but also the organisational expertise to understand how natural environment projects can be packaged and published in a way that will attract investment.

8. Appendix 1 – Glossary

- Abstraction - refers to the process of taking out water from natural sources, such as rivers and lakes.
- Agricology - ecofriendly farming, that works with nature, not against it. For instance, growing plants whilst taking care of the soil.
- Algal blooms - sudden overgrowth of algae in water, caused by nutrient pollution (such as nitrogen and phosphorus), causing the water to appear green.
- Amenity value - the worth of something that makes people appreciate its pleasantness and benefits. For instance, a clean river has amenity value as people can enjoy swimming in it.
- Amphibian – relating to animals of the class Amphibia, cold-blooded vertebrates with gilled aquatic larvae and air-breathing adults. These include frogs, toads and salamanders.
- Amphibian kerbs - provides a safe, sloped section on the road for small animals, such as amphibians, to safely move.
- Ancient and veteran trees- old trees that have lasted a long period of time. For instance, a hundred-year-old tree.
- Arable - land that can be used for farming crops. For instance, fertile land being used to grow wheat.
- Bee banks - artificial hills or small moulds of soil created to provide a safe place for bees to rest and nest.
- Biodiversity - the variety of species found in a place.
- Biodiversity Net Gain - a mandatory measure that ensures developers must deliver a net gain on biodiversity of 10%, ensuring a development will result in more or better quality natural habitat than there was before development.
- Biodiversity Net Gain Habitat Bank - a habitat that has been created or restored for the sale of biodiversity units.
- Buffer - refers to something that acts as a protective space or barrier between different objects. For instance, a tree line between the road and the river acts as a buffer to prevent pollution reaching the river.
- Calcareous - refers to something that contains a lot of calcium, often coming from crushed shells, old sea creatures or chalky rocks.
- Carbon sequestration - refers to the mechanism of capturing and storing carbon dioxide so that it doesn't enter the atmosphere and contribute to climate change.
- Climate-adapted species - species that have evolved to be better adapted to the changing climate.
- Climate Risk and Vulnerability Assessment (CRVA) - mapping that identifies where climate risks across an area might be concentrated. The maps consider three factors: climate hazards (like high temperatures and flood risk), socio-economic vulnerability (like income, health and demographics) and exposure (like population density). These factors are combined to produce a map of climate risk and vulnerability.

- Coir rolls - long rolls made from coconut husk fibres (called coils) and are usually used in riverbanks, ponds and wetland areas to prevent erosion and support plant growth.
- Culverts - a structure, typically a tunnel or a pipe, that allows water to flow under and obstacle, such as a road or railway.
- Detention basins - a man-made, bowl-shaped area in the ground designed to temporarily hold rainwater to prevent floods.
- Devolution white paper - a UK Government document that explains plans for combined authorities and local authorities to get more power and resources devolved to them.
- Environmental Improvement Plan (EIP) - the UK Government's plan to protect and improve the environment.
- Eco-mimicry methods - ways of designing solutions by copying nature. For instance, forest floors soak up rainwater slowly, filtering through layers of soil and vegetation. Some cities implement this idea to use forest floors as natural drainage system, saving money whilst helping ecosystems thrive.
- Ecosystem Services - the benefits that nature provides to people and its surroundings. For instance, by planting trees, we reduce the amount of CO2 emissions in the atmosphere, reducing the rate of climate change.
- Environment Act - UK law that sets out how the country will protect and improve the environment.
- Ephemeral scrapes - shallow, temporary ponds that fill with water after rain, but dry up quickly.
- Evapotranspiration - process of water leaving the earth's surface into the earth's atmosphere as part of the water cycle.
- Farmland birds - birds that are completely reliant on farmland at some stage of the year, whether for nesting, food or shelter.
- Fluvial flood risk - refers to the risk of flooding from rivers and streams from overflowing its banks.
- Geodiversity - the variety of rocks, landforms, minerals, fossils, sediments and soils, alongside the natural processes which form and alter them.
- Grazing marsh - refers to a flat, wet grassland used for animals to feed from. They are typically found near rivers, coastal lowlands and flood plains.
- Green in 15 - refers to a target for everyone to live within a 15 minute walk of green or blue space.
- Grey belt - land in the Green Belt that was previously developed and/or does not strongly contribute to the Green Belt purposes of: checking the unrestricted sprawl of large built-up areas; preventing neighbouring towns from merging; persevering the setting and special character of historic towns.
- Hard engineered elements - man-made structures built to control natural processes, such as flooding and erosion. For instance, a concrete sea wall built along the coastline, designed to prevent erosion and protect the land.
- Heathland - refers to a type of open land with low-height plants, such as small bushes and grasses. It usually grows on sandy soil that doesn't have many nutrients.
- Herbaceous - refers to plants that have soft, green stems that are non woody and die back to the ground each year.
- Hibernacula - refers to a hideout for animals to avoid predation (being hunted), typically during the winter. For instance, a cave where bats sleep through winter.

- HS2 - 'high speed 2' refers to the UK's second high-speed railway line, which is currently being constructed between Birmingham and London.
- Hydrology - the study of water, focusing on how it moves, where it goes and how it affects the environment.
- Infiltration basins - a man-made shallow dip in the ground that is designed to collect rainwater and let it soak into the soil.
- Invasive species - refers to non-native plants, animals or insects that enter an environment either intentionally or unintentionally, and cause harm to the environment, economy and human health.
- Invertebrate - animals with no skeleton. For instance, a mosquito.
- Lawton principles - refers to a 2010 UK law focusing on protecting and restoring nature more effectively.
- Local Nature Partnership - they bring together local organisations, businesses and people who want to improve their local natural environment.
- Local Nature Reserve - they are a statutory designation made under Section 21 of the National Parks and Access to the Countryside Act 1949 by principal local authorities. They are places with wildlife or geological features that are of special interest locally.
- Local Wildlife Site - they are areas of land that are especially important for their wildlife, having been identified and selected locally using scientifically determined criteria and surveys.
- Lowland fen - refers to a type of wetland found in low, flat areas characterised by waterlogged grounds being rich in nutrient and minerals.
- Meanwhile habitats - temporary green spaces or homes for wildlife, created on baron land.
- Natural Capital Approach- recognising the value of nature to society and the economy.
- Natural flood management - this involves working with nature to reduce the risk of flooding. It uses a number of techniques to restore or mimic the natural functions of rivers, floodplains and the wider catchment.
- Nature-based services - working with nature and getting benefits out of it. For instance, a well-designed urban green space offers various benefits, such as cooling the city, improving air quality and soaking up rainwater, acting as a natural drainage system.
- Nature-based solutions - working with nature to solve environmental, social or economic problems, e.g. planting trees to reduce the rate of climate change.
- Overshading - refers to a plant blocking the sunlight from another plant, limiting photosynthesis and the plant's ability to grow.
- Pluvial flood risk - risk of surface water flooding in urban areas caused by heavy rainfall, overwhelming the drainage system.
- Poaching - refers to livestock damaging wet grounds by trampling over them.
- Priority habitat - they are habitats identified in the UK Biodiversity Action Plan and listed as being of principal importance for the purpose of conserving or enhancing biodiversity, under Section 41 of the Natural Environment and Rural Communities Act (2006).
- Reptiles - relating to animals of the class Reptilia, they are animals that produce eggs and uses the heat of the sun to control their blood temperature. These include snakes and lizards.
- Rewilding - the process of restoring nature to how it was before urbanisation.
- Riparian - refers to the area of land that is directly adjacent to the riverbed. For instance, the vegetative strip of land before the river and land meet.
- Seed bearing cover crops - plants grown to improve soil health and fertility to produce seeds that can be harvested or can be used for livestock feed.

- Shelterbelts - a line of trees or shrubs planted to protect land and wildlife from weathering.
- Silvoarable - growing crops and trees together on the same land, often in rows to enhance environmental benefits.
- Silvopasture - the practice of integrating trees and grazing animals on the same land, which is mutually beneficial for nature and livestock.
- Site of local importance for nature conservation - wildlife sites that are designated by local authorities, primarily through Local Development Plans, as areas of locally important nature to safeguard the biodiversity and geodiversity.
- Site of importance for nature conservation - important wildlife sites that aren't notified as SSSIs but still need designation and protection as significant habitats.
- Site of Special Scientific Interest (SSSI) - the land notified as an SSSI under the Wildlife and Countryside Act (1981). They are the finest sites for wildlife and natural features in England, supporting many characteristic, rare and endangered species, habitats and natural features.
- Spatial Development Strategy - prepared by an elected Mayor or a Combined Authority. They provide strategic policies for the development and use of land in the area they cover.
- Special Area of Conservation - the land designated under Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.
- Stocking density - the number of animals on a part of land or habitat for a certain portion of time.
- Stubbles - refers to the short stalk of crops (such as wheat or barley) that are left as a result of harvesting.
- Tillage - amount of soil disturbance caused during planting or land preparation for crops.
- Tree canopy - the layer of branches and leaves that spread out at the top of trees.
- Tree crowns - top part of a tree, where the leaves and branches are found.
- Urban heat island effect - phenomenon where cities and urbanised areas are warmer than the surrounding rural areas.

9. Appendix 2 – Actions alignment with national and regional policy

The West Midlands LNRS has been developed to contribute and align with both national and local policies, including the UK Government's Environmental Improvement Plan (EIP) 2023 and West Midlands National Environment Plan (NEP) as show in Section 4.1. The EIP represents the first review of the 25 Year Environment Plan (25YEP) published in 2018, which set out the framework and vision across ten goals:

- **Goal 1:** Thriving plants and wildlife - this goal is considered at the apex of the EIP, as all of the other goals will help to achieve it.
- **Goal 2:** Clean air
- **Goal 3:** Clean and plentiful water
- **Goal 4:** Managing exposure to chemicals and pesticides
- **Goal 5:** Maximise our resources, minimise our waste
- **Goal 6:** Using resources from nature sustainably
- **Goal 7:** Mitigating and adapting to climate change
- **Goal 8:** Reduced risk of harm from environmental hazards
- **Goal 9:** Enhancing biosecurity
- **Goal 10:** Enhanced beauty, heritage, and engagement with the natural environment

The EIP outlines the progress against these ten goals, with specific targets and commitments in relation to each goal and the plan to continue to deliver these targets and overarching goals. Priorities I and J will contribute towards each of the goals as their actions aim to improve evidence, skills and capacity for nature recovery actions.

The West Midlands NEP sets out to deliver five outcomes:

1. Everybody can access high quality green space within a 300m walk of their home.
2. Forestry cover should be increased from approximately 1.5% today to 13%, aligning as much as possible with the long-term aims for England (this equates to planting an additional 5.7 million trees by 2026 and 19m by 2041).
3. Creation /restoration of 6 wildlife corridors along the Rivers Cole, Rea, Sherbourne, Stour and Blythe and HS2 development in line with our key stakeholder's priorities. We will also support work on the region's canals as important wildlife corridors.
4. All rivers to be restored to good condition by 2030, targeting 5 by 2025
5. Support the creation of 200 jobs in natural capital by 2026 (and 700 by 2041), in line with the evidence in the Five Year Plan.

These are associated with actions falling under four themes:

- Access to green and blue spaces
- Tree and hedgerow planting
- Wildlife corridors
- Enablers of change

Matrix of priorities and actions which contribute and align with national and regional policy

Action ID	Action	EIP Goals									West Midlands NEP Outcomes					
		1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
Priority A: Our most important terrestrial habitats and ecosystems are maintained and improved, making them more resilient to existing and future pressures and threats		■											■	■		
A1	Maintain and improve existing established woodland	■											■	■		
A2	Maintain and improve ancient and veteran trees	■											■	■		
A3	Maintain and improve heathland	■												■		
A4	Maintain and improve semi-natural grasslands	■												■		
A5	Maintain and improve hedgerows	■												■		
Priority B: Terrestrial habitats are more joined up to create stronger ecological networks		■						■					■	■	■	■
B1	Create buffering and connecting habitats between existing woodland	■											■	■		
B2	Create new heathland to reconnect with existing heathland	■												■		
B3	Create new species-rich grasslands which are well-connected	■												■		
B4	Expand the hedgerow network	■												■		
B5	Reduce barriers to species movement in areas where habitat connectivity is important	■											■	■		
B6	Collaborate to enable development of large-scale rewilding projects to support nature recovery and greater resilience of biodiversity	■						■					■	■	■	■

Action ID	Action	EIP Goals										West Midlands NEP Outcomes				
		1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
Priority C: The ecological functionality of freshwater networks is maintained and improved at a landscape and catchment scale		■		■				■	■				■	■	■	
C1	Maintain, improve and create wet woodlands	■		■				■	■				■	■	■	
C2	Maintain, improve and create new pond networks	■		■				■	■					■	■	
C3	Maintain, improve and create wetland habitats	■		■				■	■					■	■	
C4	Maintain, improve and create naturalised riparian buffer zones along watercourses, including canals	■		■				■	■					■	■	
C5	Re-naturalise watercourse channels	■		■				■	■					■	■	
C6	Install Natural Flood Management measures in upper catchments and areas of high pluvial and fluvial flood risk	■		■				■	■					■	■	
Priority D: Increased long-term sensitive management of rural land for nature, soils and agriculture		■			■		■	■					■	■		
D1	Maintain, improve and create arable field margins	■					■	■						■		
D2	Increase the extent of silvopasture and silvoarable systems	■					■	■					■	■		
D3	Increase the number of sites implementing conservation grazing	■					■	■					■	■		
D4	Increase sustainable soil management practices tailored to local knowledge and resilient to future climate challenges	■			■		■	■						■		
Priority E: The urban environment is improved to become more nature rich		■	■						■				■	■		
E1	Create stepping stone habitats in areas where corridors cannot be established	■											■	■		

Action ID	Action	EIP Goals										West Midlands NEP Outcomes				
		1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
E2	Implement Natural England's Green Infrastructure Framework, within new and existing developments across both public and private spaces	■	■						■					■		
E3	Increase the structural and species diversity of habitats within public and private green spaces, and gardens	■	■											■		
E4	Maintain, improve and create open mosaic habitats (OMH) on previously developed land	■												■		
Priority F: Species populations are maintained and improved across the region, including suitable species reintroductions		■			■					■			■	■	■	
F1	Water vole	■			■									■	■	
F2	Otter	■			■									■	■	
F3	White-clawed crayfish	■			■									■	■	
F4	Glow worm	■			■									■		
F5	Harvest mouse	■			■									■		
F6	Osprey	■			■									■		
F7	Hedgehog	■			■									■		
F8	Black poplar	■			■									■	■	
F9	Urban birds	■			■									■		
F10	Farmland birds	■			■									■		
F11	Heathland insects	■			■									■		
F12	Amphibians and reptiles	■			■									■		
F13	Brownfield butterflies	■			■									■		
F14	Grassland fungi	■			■									■		
F15	Sutton Park mire vegetation	■			■									■		

Action ID	Action	EIP Goals										West Midlands NEP Outcomes				
		1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
F16	Arable weeds	■			■									■		
F17	Bats	■			■								■	■		
F18	Elm-associated insects	■			■								■	■		
F19	Pollinators	■			■									■		
F20	Marsh fritillary	■			■									■		
F21	Beaver	■			■								■	■		
F22	Strategically control and manage Invasive Non-Native Species (INNS) using a catchment-based approach, working upstream to downstream	■			■								■	■	■	
Priority G: Public access to nature is improved across the region, focusing on equitable opportunities that support biodiversity					■	■					■	■	■			
G1	Create new accessible green spaces that benefit nature and people										■	■	■			
G2	Improve awareness on sensitivity of sites and habitats to increased access				■	■					■	■				
G3	Increase equity in tree canopy cover										■	■	■			
G4	Maintain and sympathetically manage the unique characteristics of our geodiversity sites										■	■	■			
Priority H: Nature-based solutions (NbS) are adopted to help address climate related impacts and risks faced by our land, nature and communities				■				■	■				■			
H1	Increase and integrate natural habitats into areas of greatest climate risk and vulnerability							■	■				■			
H2	Incorporate Nature-based Sustainable Drainage Systems (NbSuDS) into new and existing urban environments			■				■	■							

Action ID	Action	EIP Goals										West Midlands NEP Outcomes				
		1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
H3	Increase awareness within the business and real estate community of the value of ecosystems services to support delivery of NbS			■				■	■							
H4	Prioritise habitat creation with climate-adapted species							■	■				■			
Priority I: Improved evidence and knowledge to enable scaled-up delivery of nature recovery								■								■
I1	Increase coordinated monitoring of the region's biodiversity															■
I2	Collect further evidence to evaluate the risk of climate change upon our region's nature							■								■
I3	Create a strong evidence base to support and develop nature finance opportunities to drive nature recovery and nature-based solutions forwards															■
Priority J: Improved capacity of stakeholders to contribute to nature recovery																■
J1	Develop initiatives to build professional capacity for monitoring and delivery of nature recovery															■
J2	Support local people in managing and improving their local environment for nature															■
J3	Enable communities and environmental Non-Governmental Organisations (eNGOs) to form partnerships with educational institutions, businesses and landowners to deliver nature recovery															■
J4	Facilitating partnerships to develop nature finance opportunities to drive nature recovery and nature-based solutions forwards.															■

10. Appendix 3 – How actions deliver for different habitats

The table below sets out how each of the actions shall deliver for the broad habitat types present across the WMCA region and may be utilised if you have identified that you could take action for a certain habitat.

Action ID	Action	Arable	Private gardens/grounds	Parks and public spaces (including allotments)	Urban environment	Exposed rock, includes Open Mosaic Habitat	Heathland	Scrub	Hedgerow	Woodland	Semi-natural grassland	Wetland	Watercourse and / or waterbody
Priority A: Our most important terrestrial habitats and ecosystems are maintained and improved, making them more resilient to existing and future pressures and threats													
A1	Maintain and improve existing established woodland			■						■			
A2	Maintain and improve ancient and veteran trees			■						■			
A3	Maintain and improve heathland			■			■						
A4	Maintain and improve semi-natural grasslands			■							■		
A5	Maintain and improve hedgerows			■					■				
Priority B: Terrestrial habitats are more joined up to create stronger ecological networks													
B1	Create buffering and connecting habitats between existing woodland			■				■	■	■			
B2	Create new heathland to reconnect with existing heathland			■				■					
B3	Create new species-rich grasslands which are well-connected			■							■		
B4	Expand the hedgerow network			■					■				

Action ID	Action	Arable	Private gardens/grounds	Parks and public spaces (including allotments)	Urban environment	Exposed rock, includes Open Mosaic Habitat	Heathland	Scrub	Hedgerow	Woodland	Semi-natural grassland	Wetland	Watercourse and / or waterbody
B5	Reduce barriers to species movement in areas where habitat connectivity is important	■	■	■	■	■	■	■	■	■	■	■	■
B6	Collaborate to enable development of large-scale rewilding projects to support nature recovery and greater resilience of biodiversity	■	■	■	■	■	■	■	■	■	■	■	■
Priority C: The ecological functionality of freshwater networks is maintained and improved at a landscape and catchment scale													
C1	Maintain, improve and create wet woodlands			■						■			
C2	Maintain, improve and create new pond networks			■									■
C3	Maintain, improve and create wetland habitats			■								■	
C4	Maintain, improve and create naturalised riparian buffer zones along watercourses, including canals			■									■
C5	Re-naturalise watercourse channels			■									■
C6	Install Natural Flood Management measures in upper catchments and areas of high pluvial and fluvial flood risk	■		■	■								■
Priority D: Increased long-term sensitive management of rural land for nature, soils and agriculture													
D1	Maintain, improve and create arable field margins	■									■		
D2	Increase the extent of silvopasture and silvoarable systems	■								■			

Action ID	Action	Arable	Private gardens/grounds	Parks and public spaces (including allotments)	Urban environment	Exposed rock, includes Open Mosaic Habitat	Heathland	Scrub	Hedgerow	Woodland	Semi-natural grassland	Wetland	Watercourse and / or waterbody
D3	Increase the number of sites implementing conservation grazing	■		■			■	■	■	■	■	■	
D4	Increase sustainable soil management practices tailored to local knowledge and resilient to future climate challenges	■		■									
Priority E: The urban environment is improved to become more nature rich													
E1	Create stepping stone habitats in areas where corridors cannot be established	■	■	■	■	■	■	■	■	■	■	■	■
E2	Implement Natural England's Green Infrastructure Framework, within new and existing developments across both public and private spaces		■	■	■								
E3	Increase the structural and species diversity of habitats within public and private green spaces, and gardens		■	■	■								
E4	Maintain, improve and create open mosaic habitats (OMH) on previously developed land				■	■							
Priority F: Species populations are maintained and improved across the region, including suitable species reintroductions													
F1	Water vole		■									■	■
F2	Otter		■									■	■
F3	White-clawed crayfish		■										■

Action ID	Action	Arable	Private gardens/grounds	Parks and public spaces (including allotments)	Urban environment	Exposed rock, includes Open Mosaic Habitat	Heathland	Scrub	Hedgerow	Woodland	Semi-natural grassland	Wetland	Watercourse and / or waterbody
F4	Glow worm		■							■	■		
F5	Harvest mouse	■		■				■	■		■		
F6	Osprey			■									■
F7	Hedgehog		■	■				■	■	■			
F8	Black poplar			■					■			■	■
F9	Urban birds		■	■			■						
F10	Farmland birds	■									■		
F11	Heathland insects						■						
F12	Amphibians and reptiles		■	■			■	■	■	■	■	■	■
F13	Brownfield butterflies			■	■	■							
F14	Grassland fungi			■							■		
F15	Sutton Park mire vegetation			■							■	■	
F16	Arable weeds	■											
F17	Bats	■	■	■	■		■	■	■	■	■	■	■
F18	Elm-associated insects		■	■					■	■			
F19	Pollinators	■	■	■	■				■	■	■		
F20	Marsh fritillary	■	■	■	■	■	■	■	■	■	■	■	■
F21	Beaver											■	■
F22	Strategically control and manage Invasive Non-Native Species (INNS) using a catchment-based approach, working upstream to downstream				■	■	■	■	■	■		■	■

Action ID	Action	Arable	Private gardens/grounds	Parks and public spaces (including allotments)	Urban environment	Exposed rock, includes Open Mosaic Habitat	Heathland	Scrub	Hedgerow	Woodland	Semi-natural grassland	Wetland	Watercourse and / or waterbody
Priority G: Public access to nature is improved across the region, focusing on equitable opportunities that support biodiversity													
G1	Create new accessible green spaces that benefit nature and people		■	■	■								
G2	Improve awareness on sensitivity of sites and habitats to increased access	■	■	■	■	■	■	■	■	■	■	■	■
G3	Increase equity in tree canopy cover		■	■	■					■			
G4	Maintain and sympathetically manage the unique characteristics of our geodiversity sites			■	■	■	■	■	■	■	■	■	■
Priority H: Nature-based solutions (NbS) are adopted to help address climate related impacts and risks faced by our land, nature and communities													
H1	Increase and integrate natural habitats into areas of greatest climate risk and vulnerability	■	■	■	■	■	■	■	■	■	■	■	■
H2	Incorporate Nature-based Sustainable Drainage Systems (NbSuDS) into new and existing urban environments		■	■	■								
H3	Increase awareness within the business and real estate community of the value of ecosystems services to support delivery of NbS	■	■	■	■	■	■	■	■	■	■	■	■
H4	Prioritise habitat creation with climate-adapted species	■	■	■	■	■	■	■	■	■	■	■	■

Action ID	Action	Arable	Private gardens/grounds	Parks and public spaces (including allotments)	Urban environment	Exposed rock, includes Open Mosaic Habitat	Heathland	Scrub	Hedgerow	Woodland	Semi-natural grassland	Wetland	Watercourse and / or waterbody
Priority I: Improved evidence and knowledge to enable scaled-up delivery of nature recovery													
I1	Increase coordinated monitoring of the region's biodiversity												
I2	Collect further evidence to evaluate the risk of climate change upon our region's nature												
I3	Create a strong evidence base to support and develop nature finance opportunities to drive nature recovery and nature-based solutions forwards												
Priority J: Improved capacity of stakeholders to contribute to nature recovery													
J1	Develop initiatives to build professional capacity for monitoring and delivery of nature recovery												
J2	Support local people in managing and improving their local environment for nature												
J3	Enable communities and environmental Non-Governmental Organisations (eNGOs) to form partnerships with educational institutions, businesses and landowners to deliver nature recovery												
J4	Facilitating partnerships to develop nature finance opportunities to drive nature recovery and nature-based solutions forwards												

11. Appendix 4 - Mapping methodology

This section and Table 1 provide an overview of the approach and methodology used to develop the Local Habitat Map element of the Local Nature Recovery Strategy (LNRS). The Local Habitat Map includes those priorities and actions of the LNRS which are suitable for mapping and should be read alongside the further detailed information on priorities and actions within the LNRS.

When considering where actions will have greatest impact for delivering our priorities, a number of map layers have been created in the form of the local habitat map.

While the LNRS is not a delivery plan, the local habitat map identifies strategic areas where action for nature recovery and delivery of other environmental benefits would have the greatest impact. The local habitat map includes those priorities and actions of the LNRS which are suitable for mapping and are a priority for delivery.

It is not the intention of the mapping to set out all suitable opportunities for delivery of an action but to show the locations where its delivery would have the greatest impact.

The areas of mapped priorities fall into two main types:

- Areas of existing habitat that is already identified to be of value to nature, and the priorities here will often relate to maintaining, to halt declines in extent and value, and improving these areas; and
- Those areas where actions will be best located to deliver nature recovery and other environmental benefits.

These are not, however, the only locations where actions can be delivered and any action delivering nature recovery in the region, whether mapped or not, is very much encouraged and supported. Some priorities and actions are equally important wherever they are delivered, and these have not been mapped.

The mapping is a modelled output based on best available data, use of nationally accepted methodologies and bespoke approaches developed to address our particular local circumstances. As with any map developed in such a way and at such a scale, it is indicative only. **Any suggested areas for action should be assessed and checked by people with appropriate skills and knowledge before being delivered.**

Mapped areas can be under various existing land uses and the mapping in the LNRS does not provide protection of such areas or create any constraint to current or future land uses or changes in management. Designated sites and irreplaceable habitats as mapped on the Areas of Particular Importance for Biodiversity (APIB) map layer are recognised as features that require (and currently have some degree of) protection under national and local planning policy.

It is not the role of the LNRS to 'protect' such areas, though some of the actions set out may help to safeguard some of those habitats and species making them more resilient to the pressures and threats they face now and in the future. The mapped areas do however give an opportunity for the application of a 'high' score for 'Strategic Significance' under the Biodiversity Net Gain (BNG). All strategically significant mapped areas offer a 15% uplift in the value of biodiversity units compared with such habitats outside mapped areas (a x1.15 multiplier in the BNG Metric calculation).

Therefore, developers and habitat bank owners are incentivised to deliver those LNRS priority actions in these areas which will promote the delivery of the LNRS ambitions. In addition, as set out under Principle 6 of The Statutory Biodiversity Metric User Guide, 'this biodiversity metric is designed to inform decisions in conjunction with locally relevant evidence, expert input, or guidance'. When interpreting the strategic significance element of the BNG metric it is key that other local authority guidance that may be relevant is also considered.

Limitations

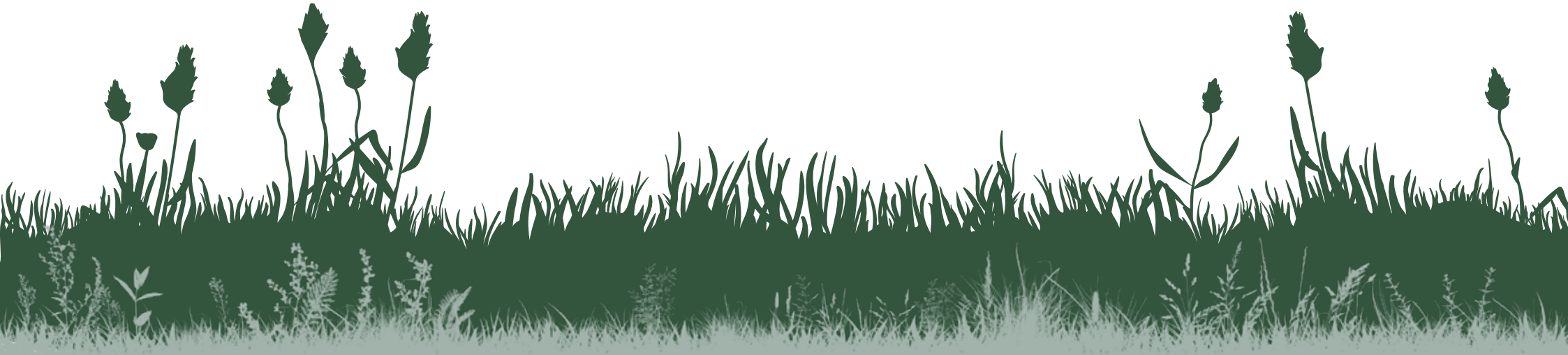
The data sources outlined below have been chosen to indicate the relevant actions and provide consistency with data used to inform the LNRS, for example using the baseline habitat data provided from EcoServR for habitat types. They are unlikely to be exhaustive and may be subject to change at a later date; however, publicly available data sources are unlikely to significantly alter, and the data sources used provide the necessary context from which the LNRS has been developed.

Species records were provided from the Local Environmental Records Centres (LERCs) and provide only a 'snapshot' of species distributions across the WMCA area but they are often far from comprehensive. It should be noted that a lack of records does not preclude presence and large numbers of records for particular species may indicate surveyor bias at key recording locations, rather than large species populations. Therefore, habitats associated with species have been used wherever feasible or in conjunction with species record data.

Action ID	Action	Data sources included	Mapping Approach
Priority A: Our most important terrestrial habitats and ecosystems are maintained and improved, making them more resilient to existing and future pressures and threats			
A1	Maintain and improve existing established woodland.	Woodland habitats from EcoServR baseline habitat data.	Existing areas of woodland have been mapped.
A2	Maintain and improve ancient and veteran trees.	Ancient Woodland Inventory from Natural England and ancient and veteran trees provided from Local Environmental Records Centres (LERCs) and Ancient Tree Inventory (Woodland Trust).	Ancient and veteran trees mapped on Ancient Tree Inventory.
A3	Maintain and improve heathland.	Heathland habitats from EcoServR baseline habitat data.	Existing heathlands have been mapped.
A4	Maintain and improve semi-natural grasslands.	Semi-natural grassland habitats from EcoServR baseline habitat data.	Existing semi-natural grasslands have been mapped.
A5	Maintain and improve hedgerows.	Hedgerow data from the UK Centre for Ecology & Hydrology.	Existing hedgerows have been mapped.

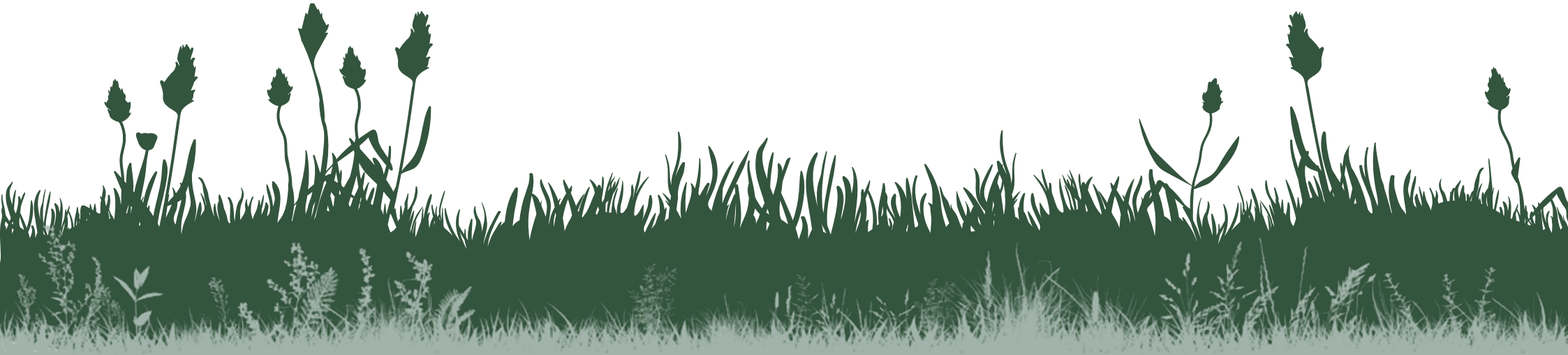
Priority B: Terrestrial habitats are more joined up to create stronger ecological networks			
B1	Create buffering and connecting habitats between existing woodland.	Woodland habitats from EcoServR baseline habitat data, Ancient Woodland Inventory from Natural England and variable buffers.	Variable buffers of existing woodland parcels using the below criteria: • Ancient Woodland = 100m buffer regardless of size • Non-Ancient Woodland 1-5ha = 100m buffer • Non-Ancient Woodland >5ha = 500m buffer • Woodlands <1ha = No buffer applied, unless Ancient Woodland Existing woodlands have been removed from this layer.
B2	Create new heathland to reconnect with existing heathland.	Heathland habitats from EcoServR baseline habitat data and Midlands Heartlands Heathland Opportunity Mapping, heathland creation opportunity areas 1 and 2 (data coverage was extended by EcoRecord to include Birmingham and the Black Country).	Heathland opportunity mapping provided by EcoRecord replicating methodology to cover Birmingham and the Black Country.
B3	Create new species-rich grasslands which are well-connected.	Species rich grasslands, as defined by Priority Habitat Inventory (PHI), and modified or semi-natural grassland areas from EcoServR baseline habitat data which are located within 100m of species-rich grasslands, as defined by PHI.	Species rich grasslands, as defined by PHI, and modified or semi-natural grassland areas within 100m of species-rich grasslands, as defined by PHI.

B4	Expand the hedgerow network.	N/A – not suitable for mapping. Action is welcomed in suitable locations across the LNRS region.	
B5	Reduce barriers to species movement in areas where habitat connectivity is important.	River obstacles point data from the Environment Agency and a 30m buffer, A roads and motorways and a 50m buffer as well as data provided by the WMCA on known crossing locations presenting barriers (collated views from key stakeholders).	Environment Agency river obstacles data layer and 30m buffer to cover associated riparian areas; A roads and motorways and a 50m buffer; Data provided by WMCA on known crossing locations presenting barriers.
B6	Collaborate to enable development of large-scale rewilding projects to support nature recovery and greater resilience of biodiversity	N/A – not suitable for mapping.	



Priority C: The ecological functionality of freshwater networks is maintained and improved at a landscape and catchment scale			
C1	Maintain, improve and create wet woodlands.	Wet woodland habitats from EcoServR baseline habitat data and 50m buffer, as well as woodland habitats from EcoServR baseline habitat data which are located within 10m of a watercourse.	Wet woodlands and 50m buffer and other woodlands within 10m of a watercourse (i.e. within the riparian zone). Excludes areas beside canals due to lack of hydraulic connectivity.
C2	Maintain, improve and create new pond networks.	Waterbodies from EcoServR baseline habitat data which fall below 2ha.	Waterbodies which are below 2ha, in line with Priority Habitat definition . (Nb, creation of new ponds is welcome anywhere and it is not mapped.)
C3	Maintain, improve and create wetland habitats.	N/A – limited availability of habitat mapping of wetlands. Action is welcomed in suitable locations across the LNRS region.	
C4	Maintain, improve and create naturalised riparian buffer zones along watercourses, including canals.	Watercourses and canals from OS MasterMap Topography Watercourses and a 50m buffer.	Watercourses and canals with 50m buffer.
C5	Renaturalise watercourse channels.	Watercourses from OS MasterMap Topography Watercourses.	All watercourses have been mapped.
C6	Install Natural Flood Management measures in upper catchments and areas of high pluvial and fluvial flood risk.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	

Priority D: Increased long-term sensitive management of rural land for nature, soils and agriculture		
D1	Maintain, improve and create arable field margins.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.
D2	Increase the extent of silvopasture and silvoarable systems.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.
D3	Increase the number of sites implementing conservation grazing.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.
D4	Increase sustainable soil management practices tailored to local knowledge and resilient to future climate challenges.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.



Priority E: The urban environment is improved to become more nature rich			
E1	Create stepping stone habitats in areas where corridors cannot be established.	Areas which are over 15-minute walk from a High Quality Accessible Natural Spaces layer, created for Evidence Maps, areas with the highest score for tree canopy cover deficit from the WMCA Climate Risk and Vulnerability Assessment (CRVA) and national Indices of Multiple Deprivation (IMD).	Areas which are over a 15-minute walk from greenspace, for consistency with the Environmental Improvement Plan and reas which have the highest score for tree canopy cover deficit along with top 30% highest scoring areas nationally for Indices of Multiple Deprivation (IMD).
E2	Implement Natural England's Green Infrastructure Framework, within new and existing developments across both public and private spaces.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
E3	Increase the structural and species diversity of habitats within public and private green spaces, and gardens.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
E4	Maintain, improve and create open mosaic habitats (OMH) on previously developed land.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	

Priority F: Species populations are maintained and improved across the region, including suitable species reintroductions			
F1	Water vole.	Watercourse sections (derived from OS MasterMap Topography Watercourses), wetlands and waterbodies from EcoServR baseline habitat data which fall within 50m of species records provided by LERCs.	Sections of watercourses (before a major tributary), wetlands and waterbodies within 50m of species records.
F2	Otter.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
F3	White-clawed crayfish.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
F4	Glow worm.	Sutton Park site boundary.	The boundary for Sutton Park has been mapped.
F5	Harvest mouse.	N/A – Constrained by poor data and not mapped as action is welcomed in suitable locations across the LNRS region.	
F6	Osprey.	Waterbodies from EcoServR baseline habitat data which are greater than 2ha.	Waterbodies over 2ha.
F7	Hedgehog	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
F8	Black Poplar	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
F9	Urban birds.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
F10	Farmland birds.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
F11	Heathland insects.	Heathland habitats from EcoServR baseline habitat data and Midlands Heartlands Heathland Opportunity Mapping, heathland creation opportunity areas 1 and 2 (data coverage was extended by EcoRecord to include Birmingham and the Black Country).	As mapped for A3 and B2: existing heathland and areas to reconnect existing heathlands.

F12	Amphibians and reptiles.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
F13	Brownfield butterflies.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
F14	Grassland fungi.	N/A – Constrained by poor data and not mapped as action is welcomed in suitable locations across the LNRS region.	
F15	Sutton Park mire vegetation.	Sutton Park site boundary.	The boundary for Sutton Park has been mapped.
F16	Arable weeds.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
F17	Bats.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
F18	Elm-associated insects.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
F19	Pollinators.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
F20	Marsh fritillary.	Lowland meadows from Priority Habitat Inventory (PHI).	Lowland meadows from PHI.
F21	Beaver	N/A – not mapped as action is welcomed in suitable locations across the LNRS region but requires detailed feasibility studies.	
F22	Strategically control and manage Invasive Non-Native Species (INNS) using a catchment-based approach, working upstream to downstream.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	

Priority G: Public access to nature is improved across the region, focusing on equitable opportunities that support biodiversity			
G1	Create new accessible greenspaces that benefit nature and people.	Areas which are over 15-minute walk from a High Quality Accessible Natural Spaces layer, created for Evidence Maps and national Indices of Multiple Deprivation (IMD).	Areas which are over a 15-minute walk from greenspace, for consistency with the Environmental Improvement Plan and top 30% highest scoring areas nationally for Indices of Multiple Deprivation (IMD).
G2	Improve awareness on sensitivity of sites and habitats to increased access.	N/A – not suitable for mapping.	
G3	Increase equality in tree canopy cover.	Areas with the highest score for tree canopy cover deficit from the WMCA Climate Risk and Vulnerability Assessment (CRVA) which are also areas with highest score for national IMD.	Areas which have the highest score for tree canopy cover deficit and top 30% highest scoring areas nationally for IMD.
G4	Maintain and sympathetically manage the unique characteristics of our geodiversity sites.	UNESCO Geopark boundaries.	UNESCO Geopark boundaries.

Priority H: Nature-based Solutions (NbS) are adopted to help address climate related impacts and risks faced by our land, nature and communities			
H1	Increase and integrate natural habitats into areas of greatest climate risk and vulnerability.	Areas with the highest CRVA Total Risk score from WMCA CRVA.	Areas which have the highest score for climate risk and vulnerability.
H2	Incorporate Nature-based Sustainable Drainage Systems (NbSuDS) into new and existing urban environments.	N/A – not mapped as action is welcomed in suitable locations across the LNRS region.	
H3	Increase awareness within the business and real estate community of the value of ecosystems services to support delivery of NbS.	N/A – not suitable for mapping.	
H4	Prioritise habitat creation with climate-adapted species.	N/A – not suitable for mapping.	

Priority I: Improved evidence and knowledge to enable scaled-up delivery of nature recovery		
I1	Increase coordinated monitoring of the region's biodiversity.	N/A – not suitable for mapping.
I2	Collect further evidence to evaluate the risk of climate change upon our region's nature.	
I3	Create a strong evidence base and partnerships to develop nature finance opportunities to drive nature recovery and nature-based solutions forwards.	

Priority J: Improved capacity of stakeholders to contribute to nature recovery		
J1	Develop initiatives to build professional capacity for monitoring and delivery of nature recovery.	N/A – not suitable for mapping.
J2	Support local people in managing and improving their local environment for nature.	
J3	Enable communities and environmental Non-Governmental Organisations (eNGOs) to form partnerships with educational institutions, businesses and landowners to deliver nature recovery.	
J4	Facilitating partnerships to develop nature finance opportunities to drive nature recovery and nature-based solutions forwards.	

12. Appendix 5 - References

1. WMCA (2025), Natural capital baseline data report (awaiting publication)
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