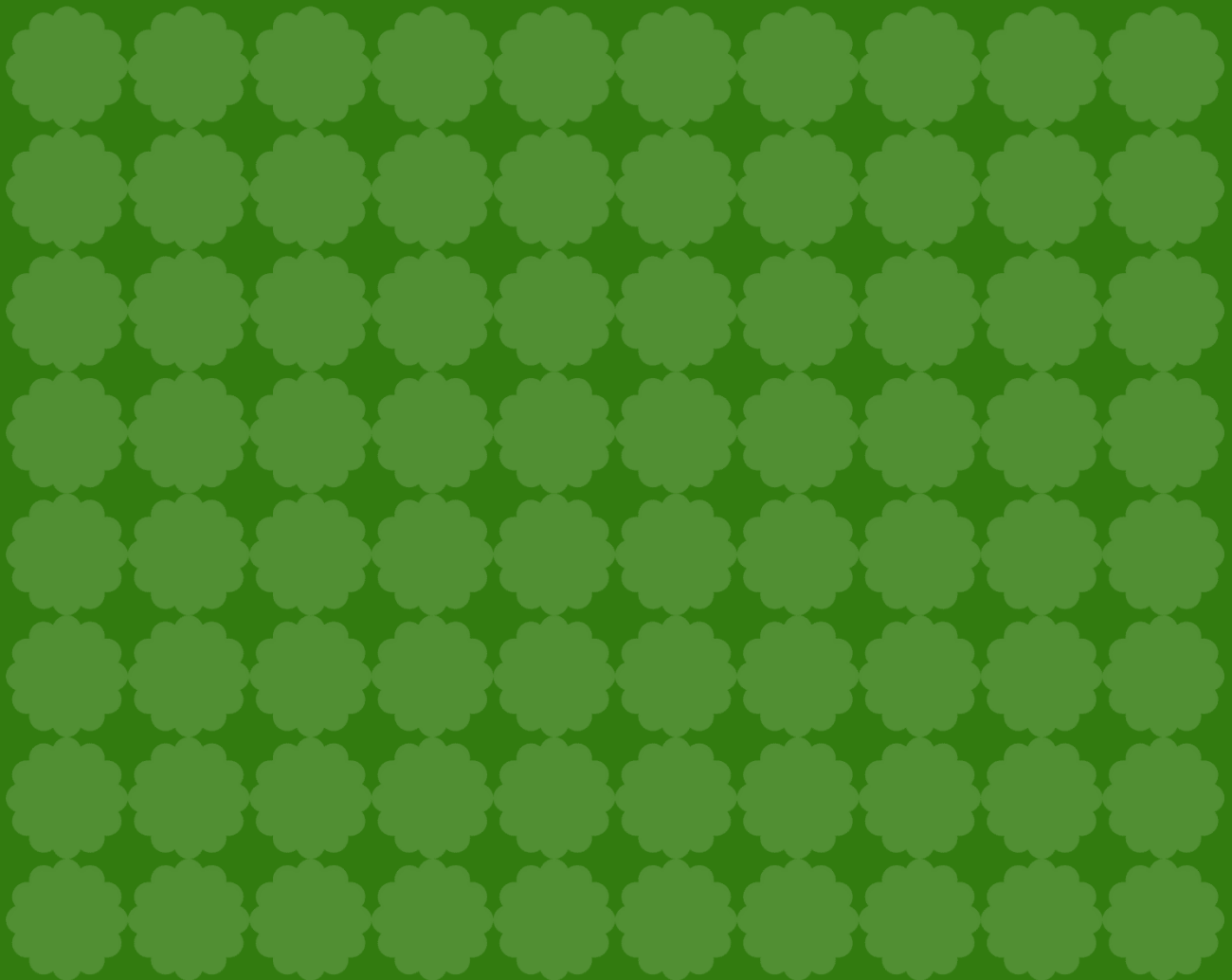


# Greater Manchester Local Nature Recovery Strategy

## Appendix 3 – State of Nature report



# Greater Manchester State of Nature

March 2024



**GREATER  
MANCHESTER**  
DOING THINGS DIFFERENTLY FOR THE ENVIRONMENT

*Photo credit: Andy Hankinson*

## Our headline findings



### Our wildlife populations are declining

Individual bird species population has declined up to 40% over the last 40 years and populations of common mammals have dropped by between 20-40% since 1995.



### Our protected sites are valuable refuges for wildlife

...but cover only 11% of GM, are highly fragmented, and are not in as good a condition as they could and should be.

Our natural environment provides us with around

**£1bn**

of benefits each year

...but these are under threat with the continuing decline in nature.



Our peatlands have been degraded by human activity over two centuries and now emit carbon rather than locking more of it away.



### 80% of our waterbodies have been heavily modified by human activity

...and none of our rivers are assessed as being in good ecological condition.

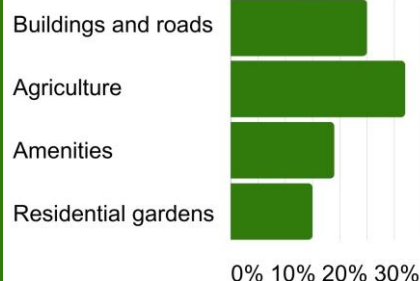
### Our tree canopy covers

**16%**

### of Greater Manchester

with the management of existing woodlands and trees under-resourced when compared to the creation of new woodlands and planting of new trees.

### Estimated land use in GM



...leaving less than 10% dedicated to nature.

**93%**

of residents surveyed consider it important or very important to live close to greenspace. But an estimated third of GM's population do not live within 15 minutes of a greenspace.

# Introduction

## **What is the Greater Manchester State of Nature Report?**

Greater Manchester's first State of Nature Report has been compiled to highlight the urgent challenges faced by nature across the city-region, reflected in the declaration of a biodiversity emergency in Greater Manchester in March 2022. The report covers trends in our wildlife and most important spaces for nature, the use of land and pressures on nature, the wider benefits we receive from nature and people's access to nature and engagement with it.

## **How was it created?**

This report brings together available open-access local environmental data to report on some of the major trends in nature across our city-region. Where no local data are available, regional or national data have been included. A 'call for evidence' was also run during summer 2023, where anyone could submit relevant evidence regarding the state of nature.

## **Who compiled this report?**

The Greater Manchester Combined Authority (GMCA), in collaboration with a range of partners, has compiled this report. In doing so, GMCA recognises that the data available on the state of nature is far from complete and that we need to understand more about the historic and current trends in species and habitat decline across Greater Manchester. GMCA will continue to work with partners to improve our understanding of these trends.

## **How will it be used?**

The report will be used to help develop Greater Manchester's Local Nature Recovery Strategy, which will set out how we can all play our part in turning around the alarming and continuing decline in biodiversity in the city-region. GMCA hopes all those working with and with an interest in nature will be able to use this report to inform the action they can take to help nature recover.



## Summary

In compiling Greater Manchester's first State of Nature report, we have sought to bring together openly available data which can provide insight across a range of environmental issues at a city-region scale.

Some of our headline findings are:

- Echoing national trends, key species of birds and mammals in Greater Manchester and the North West of England are declining. Individual bird species population show declines of up to 40% over the last 40 years and the abundance of once common mammals has dropped by between 20-40% since 1995.
- Our protected sites provide valuable refuges for nature but cover just 11% of Greater Manchester and are highly fragmented rather than forming a connected network for nature. Although recovering at present they are not in as good a condition as they could be.
- 80% of our water bodies have been heavily modified by human activities. Currently none of our rivers are in good ecological condition and we are far from meeting national targets for 75% of our waterbodies to reach this status.
- Our tree canopy covers 16% of Greater Manchester and significant efforts are being made to increase the number of trees being planted across the city-region. However, our existing woodlands could be much better managed for nature.
- Most residents surveyed considered it important or very important to live close to green space. However, an estimated third of Greater Manchester's population do not live within 15 minutes travel of a decent sized green space.
- Our natural environment provides us with a range of benefits, from improved health and wellbeing to carbon sequestration and reduced air pollution. Every year Greater Manchester residents benefit from around £1bn in free services from our natural environment.

In compiling this review, we recognise that the data we have available is far from complete and provides just a high-level snapshot into the Greater Manchester environment. We acknowledge the need to understand more about the historic and current trends in species and habitat decline across Greater Manchester. We will continue to work with our partners to improve our understanding of these trends.

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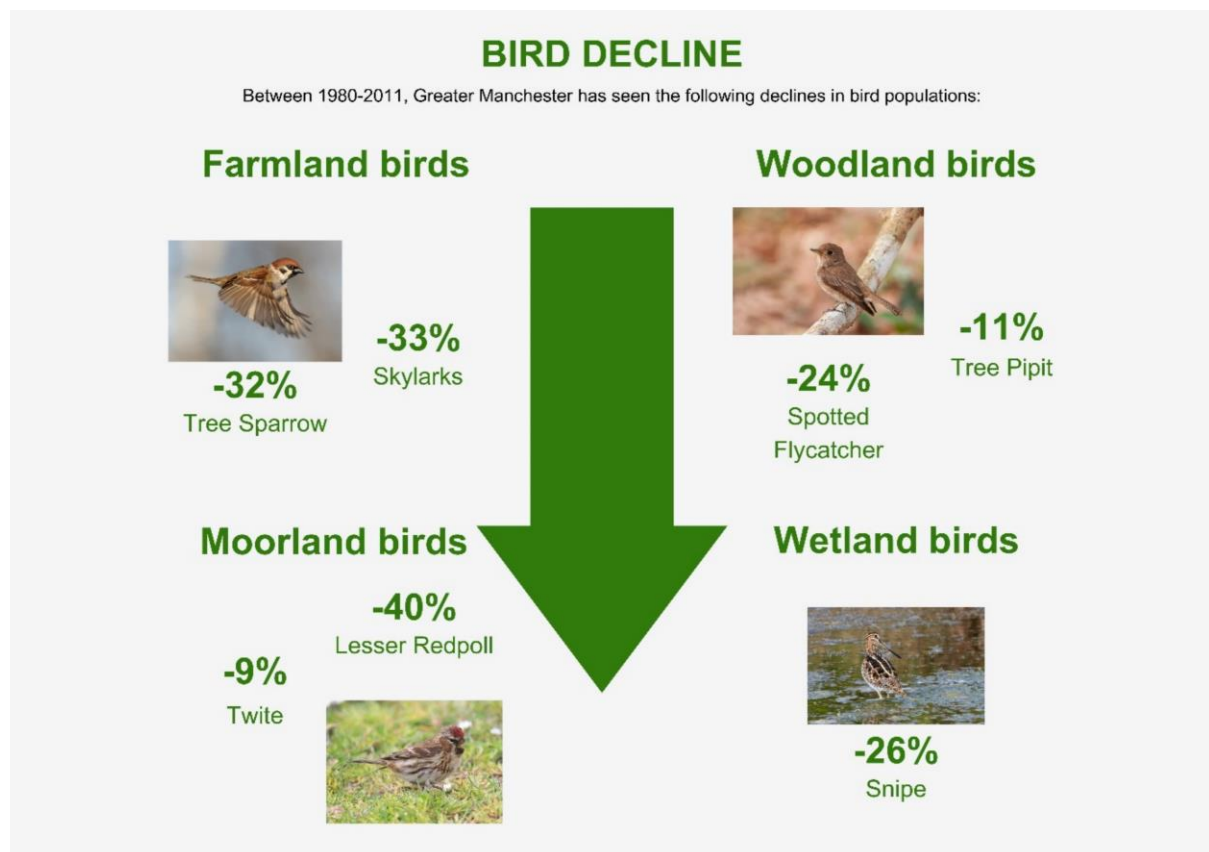
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## Our wildlife

Over the last 50 years we have seen a drastic loss in global wildlife populations, with a reported decrease of 69% in their abundance<sup>1</sup>. Nationally, 1 in 6 UK species are now threatened with extinction and over the past 500 years, an estimated 200 species have likely been lost<sup>2</sup>. For mammals the threat is higher with 1 in 4 land mammals in the UK facing extinction<sup>1,2</sup>. UK populations of species of greatest concern have declined by 37% since the 1970s and wider populations have fallen by on average by 20%<sup>2,3</sup>. We do not have a comparable assessment for Greater Manchester, however local data show a similar decline.

### Our birds

Bird populations are used to provide a good indication of the broad state of wildlife in the UK. Greater Manchester is home to many populations of birds. Mirroring national trends, we have seen some worrying declines in our bird populations<sup>3</sup>.



## Our mammals

The population trends for mammals are relatively poorly known in Greater Manchester and we are reliant on data for the whole of the North West<sup>4</sup>. 25-year trends for the North West show us that we are losing once common species.

### MAMMAL DECLINE

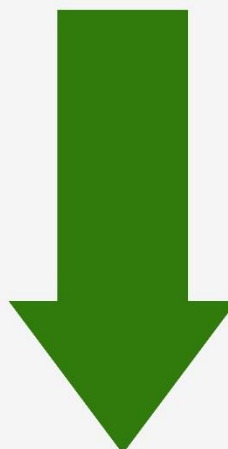
Between 1995-2021, the North West has seen the following declines in mammal populations:



**-44%**  
Red Fox



**-64%**  
Rabbits



**-8%**  
Brown Hare



**-24%**  
Hedgehogs



## **Species return**

Across Greater Manchester there are also reasons to be optimistic that nature can recover and stories of species returning:

### **Otters**

Between the 1950s and the 1970s the **Otter population** in the UK dwindled to near extinction. In recent years there have been increasingly regular sightings of Otters across Greater Manchester. Otters have now been sighted in over half of Greater Manchester's catchments<sup>5</sup>. A strong indication that they are now resident and increasing their distribution.

### **Fish**

Our post-industrial legacy of poor water quality meant that the River Mersey and its tributaries were devoid of **fish populations** by the early 1970s. Surveys completed in 2018 found that fish and Mayflies have now returned to all areas of the river<sup>6</sup>.

### **Butterflies**

The Large Heath Butterfly, locally named as the **Manchester Argus Butterfly**, died out in Greater Manchester due to habitat loss and destruction. However successful reintroductions by the Great Manchester Wetlands Species Reintroduction project have introduced a new self-sustaining population on Astley Moss<sup>7</sup>.

### **Birds**

An iconic heathland and moorland species, **Nightjars** were lost as a breeding bird in Greater Manchester when its habitats on Chat Moss were destroyed. Following three years of peatland restoration efforts, Nightjars and other bird species are now beginning to return to Chat Moss<sup>8</sup>.

### **Bog plants**

Following successive reintroductions of specialised **bog plants** in recent years, tens of thousands now thrive on Greater Manchester's lowland peatlands, thanks to work of Lancashire Wildlife Trust and the North West Rare Plants Initiative. Sundew one of the UK's few native carnivorous plants can now be found on the mosslands, along with Lesser Bladderwort, Bog Asphodel and White Beak Sedge.

## Our spaces protected for nature

Nature reserves and protected wildlife sites provide wildlife with vital refuges. Safeguarded due to their value for nature, they benefit from limits on activities in and near them that might adversely affect wildlife. These sites vary in type, purpose and in the level protection they have, from national to local level designations.

### Sites protected for nature

Since the 1980s there has been an increase in the number and area of new sites for nature conservation in Greater Manchester.

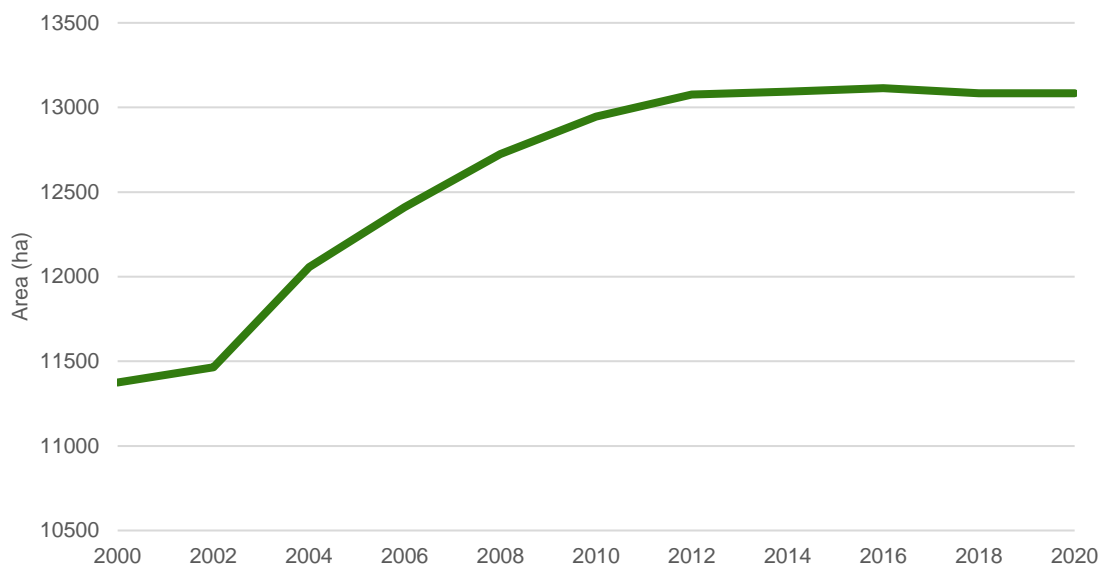
11% of land in Greater Manchester is now protected for nature through a variety of different designations<sup>9</sup>. In comparison 14% of Liverpool is designated<sup>10</sup> and 24% of Lancashire. The total area of sites designated for nature has risen from around 5,000ha in the 1980s to over 14,000ha in 2019<sup>11</sup>.



Highest level of protection, primarily for nature conservation	Area (ha)	Percentage of GM's total land area
Special Areas of Conservation and Special Protected Areas	4,093	3.2%
Sites of Special Scientific Interest (excluding above)	1,088	0.9%
National Nature Reserves (excluding above)	650	0.5%
Local Nature Reserves (excluding above)	1,750	1.4%

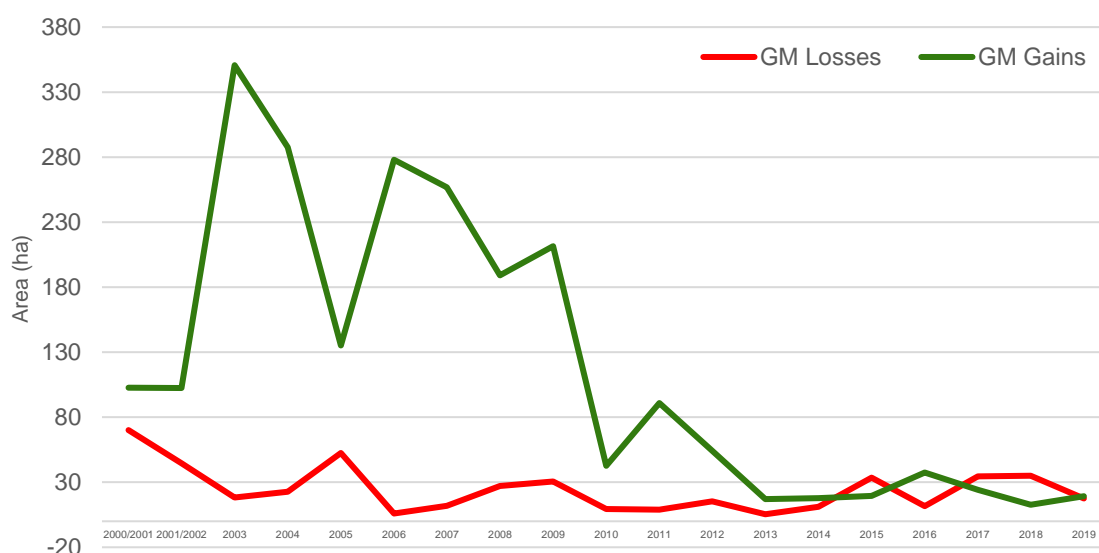
Designated for high biodiversity value but not fully protected	Area (ha)	Percentage of GM's total land area
Local Wildlife Sites (Sites of Biological Importance) (excluding above)	6,821	5.4%
<b>Total</b>	<b>14,402</b>	<b>11.3%</b>

Over the last decade, the positive trend of annual increase in the amount of our land protected for nature has plateaued.



*Total area of Local Wildlife Sites in Greater Manchester (ha)<sup>11</sup>*

Although new sites have been designated – for example the [Flashes of Wigan and Leigh National Nature Reserve \(external website\)](#) and the [Local Nature Reserve at Kenworthy Woods in Manchester \(external website\)](#) – some sites, or parts of sites, are also being lost due to lack of appropriate management and land use change<sup>11</sup>. The annual losses and gains over the last decade are shown below. Over the past decade the total area of sites selected as Local Wildlife Sites has remained stagnant.



*Annual losses and gains in the area of Local Wildlife Sites in Greater Manchester (ha)<sup>11</sup>*

### **Condition of sites protected for nature**

The fact that areas of protected sites are being lost highlights the need for their appropriate management, to ensure they are best condition possible for nature. We know more about the condition of sites that are designated at a European (SAC and SPA) and national (SSSI and NNR) level than we do about those designated locally (LNR and LWS).

### **Condition of our Sites of Special Scientific Interest (SSSIs)**

National goals target 50% of our most protected sites (our SSSIs) to have actions on track to achieve “favourable” condition by 2028 and that 75% of sites should reach “favourable” condition by 2042<sup>12</sup>. In Greater Manchester, all Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are also designated as SSSIs, so this target applies to all of these sites (5,831ha).

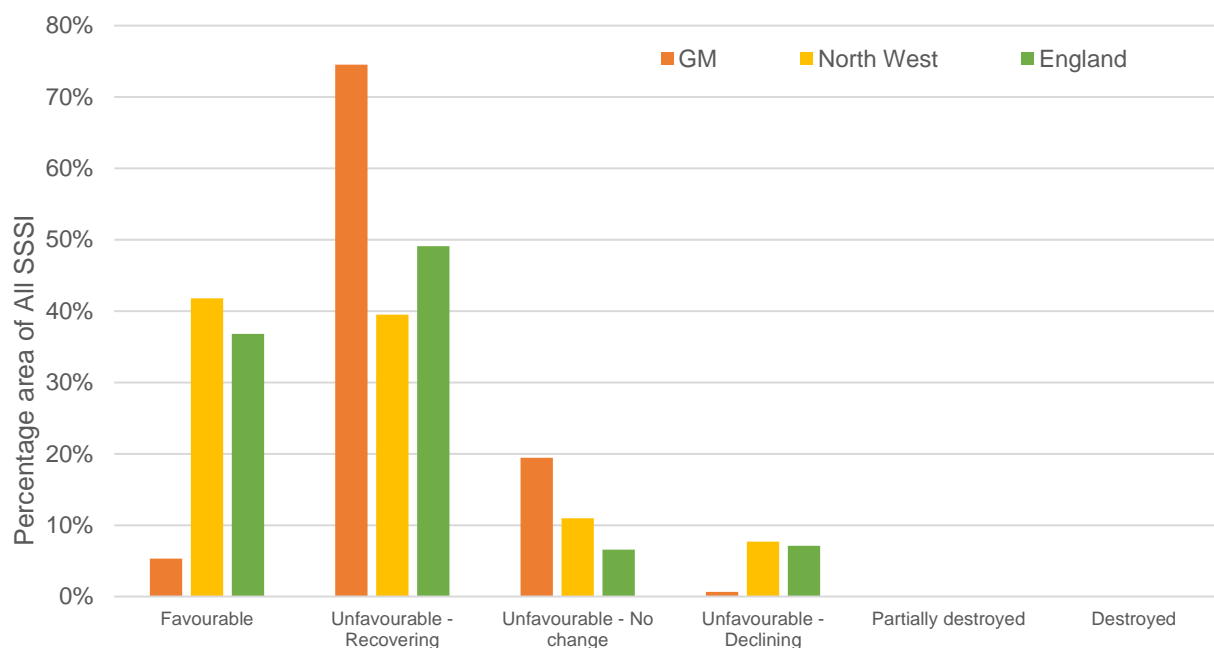
At present in Greater Manchester:

- 75% of sites “unfavourable – recovering”
- 19% of sites “unfavourable – no change”
- 0.08% of sites “destroyed”
- 0.06% of sites “unfavourable – declining”

At present only 5% of these sites (less than 300ha) are in “favourable” condition, with a further 75% in “unfavourable – recovering” condition<sup>13</sup>.

Compared to national and North West level trends, Greater Manchester has:

- Significantly fewer of these sites in “favourable” condition.
- More sites in “unfavourable – recovering” and “unfavourable – no change” condition.
- Significantly fewer sites in “unfavourable – declining” condition.



*Condition of Sites of Special Scientific Interest in Greater Manchester, North West and England<sup>13</sup>*

Since 2000, most of our SSSI sites have improved and have moved towards being managed for recovery rather than remaining “unfavourable – no change”. The proportion of sites in decline has dropped from near 20% to under 1%.

However, these improvements have not been universal across all habitat types:

- **Our grasslands, woodlands and bog** have largely improved towards “favourable” or “unfavourable – recovering” condition.
- **Our water ways, open and standing water** have largely regressed from “favourable” to “unfavourable – recovering” condition.

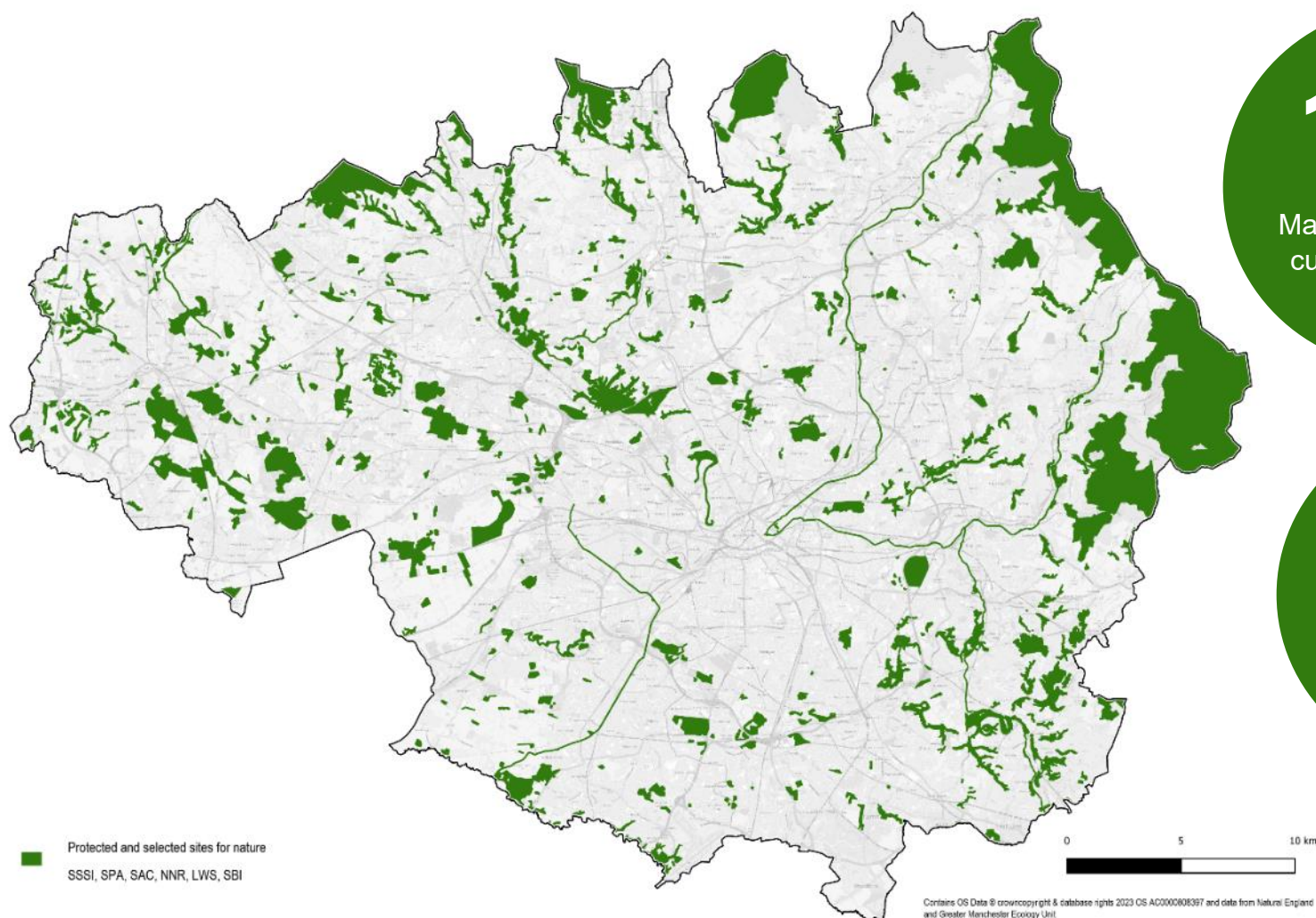


### **Connectedness of sites protected for nature**

Even for those sites that are in good condition, when looked at as a network, they are still highly fragmented, meaning there are large distances between them, and they are not well-connected.

At a national level, a review of protected sites for nature concluded that, although important, they do not comprise a coherent and resilient ecological network<sup>14</sup>. Many sites are too small, with loss of habitats so great that the area remaining protected is not enough to halt the loss in biodiversity<sup>1</sup>. Instead, there needs to be more sites, that are bigger and in better condition, and that are more joined up.

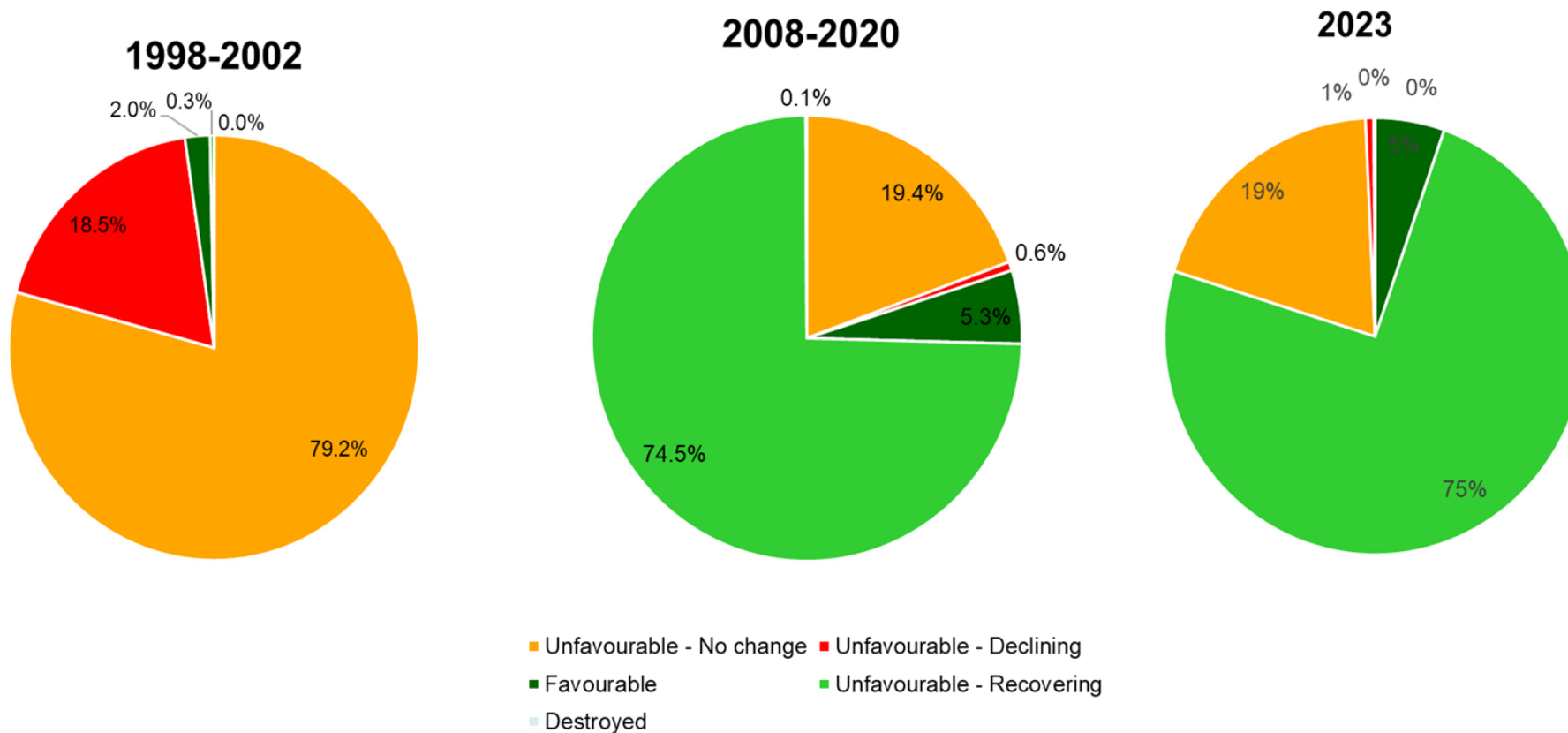
This is likely to be even more pertinent for a city-region like Greater Manchester, where these sites are more fragmented and under greater pressure than in less urbanised areas. In Greater Manchester there is an absence of nature corridors, beyond the upland moors, the canal and river corridors and woodlands, as shown in the map on the next page.



**11%**  
of Greater  
Manchester's land is  
currently protected  
for nature.

**5%**  
of Greater Manchester  
is selected as Local  
Wildlife Sites and  
receives the least  
protection

*Greater Manchester sites selected or designated for nature conservation<sup>11</sup>*



*Historic Sites of Special Scientific Interest condition across Greater Manchester<sup>13</sup>*

## Our land, water and networks for nature

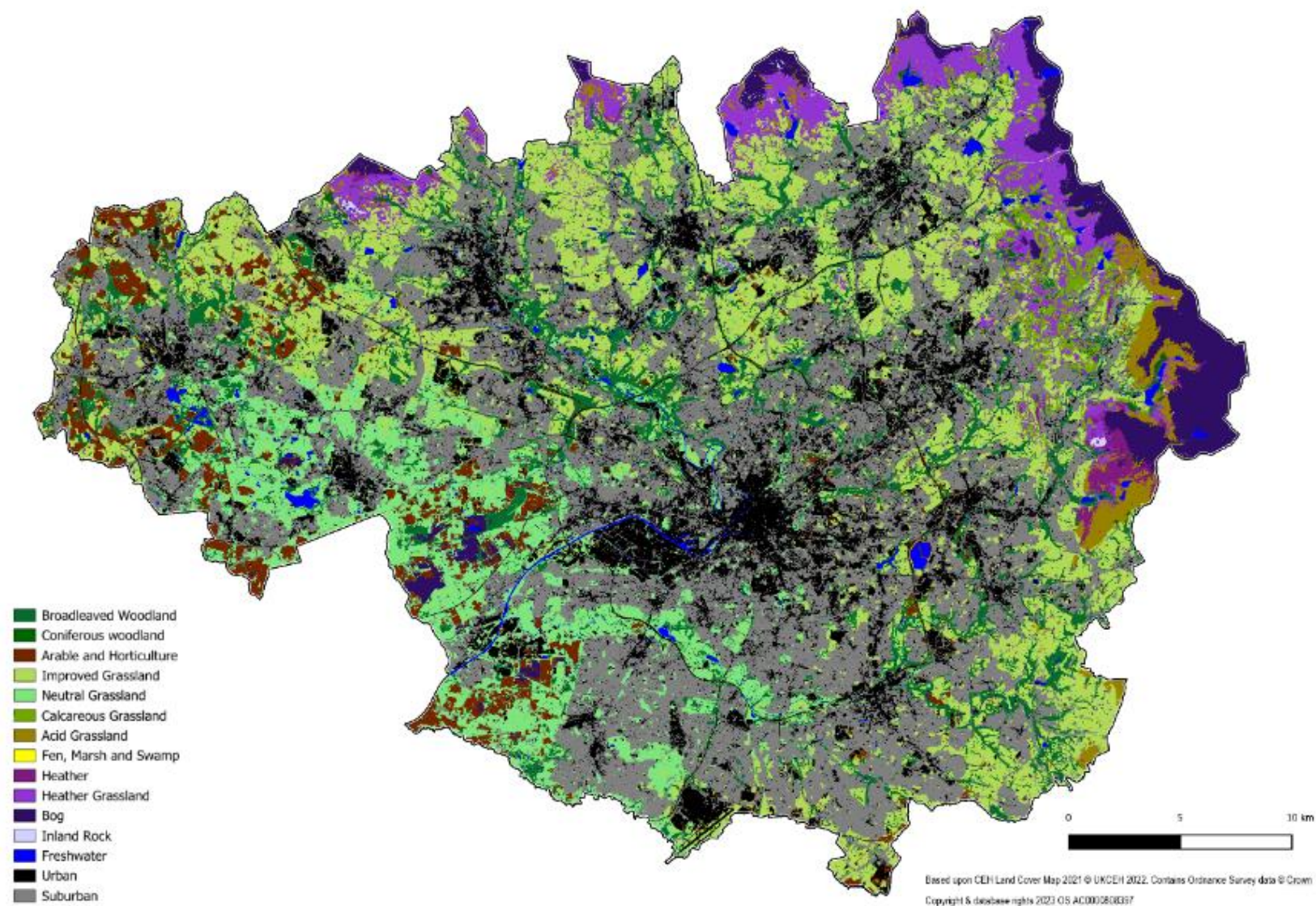
Nature in Greater Manchester is not just confined to our protected sites and nature reserves. A variety of habitats are found outside these sites, from our upland moorlands to woodlands and from our grasslands to our rivers, canals and wetlands<sup>15</sup>.

The key networks for nature in our wider landscape include our:

- Trees and woodlands
- Rivers and waterways
- Peatlands

Habitat type	Percentage of GM's total land cover <sup>15</sup>
Woodlands ( <i>including broadleaved, coniferous and plantations</i> )	9%
Grasslands ( <i>from grazing or farmed grasslands, as well as amenity grasslands and semi-natural grasslands</i> )	30%
Urban and suburban areas	46%
Heath and heather grasslands	5%
Arable croplands	4%
Wetlands ( <i>bog, marsh and fen</i> )	4%
Waterways and waterbodies	1%





*Land cover and habitats in Greater Manchester<sup>15</sup>*



## Our trees and woodlands

Trees and woodlands provide spaces for nature across Greater Manchester. Our Greater Manchester Trees and Woodland Strategy<sup>34</sup> provides an in-depth picture of the trees and woodlands present across our city-region and the benefits they deliver.

Trees benefit us all by greening our roads and streets, capturing air pollutants and carbon, helping manage rainwater and providing shade during heatwaves. During heatwaves our tree cover can cool the temperature of the environment at significant scale, primarily through transpiration reducing air temperatures. Studies have found that in Manchester, inner-city areas with fewer trees and green spaces were 3.12°C hotter than those with more tree cover and plant life during 2022's hottest day on record<sup>16</sup>.

Over the last decade we have seen a significant rise in tree planting with City of Trees working to plant 1 million trees by 2024, supported by multiple partners across the city-region<sup>17</sup>. However, the management of much of our existing woodland remains under resourced and there is huge potential for our woodlands to better support biodiversity.



There are an estimated 11.3 million trees in Greater Manchester

...made up of 192 different species – the three most common are Hawthorn, Sycamore and English Oak.



16.5% of Greater Manchester is covered by tree canopy

...above the national and European averages, but below other urban areas such as London (21%) - and tree canopy cover varies widely across the city-region.



Management of our existing woodlands and trees is under-resourced

...particularly when compared to creating new woodlands and planting new trees.

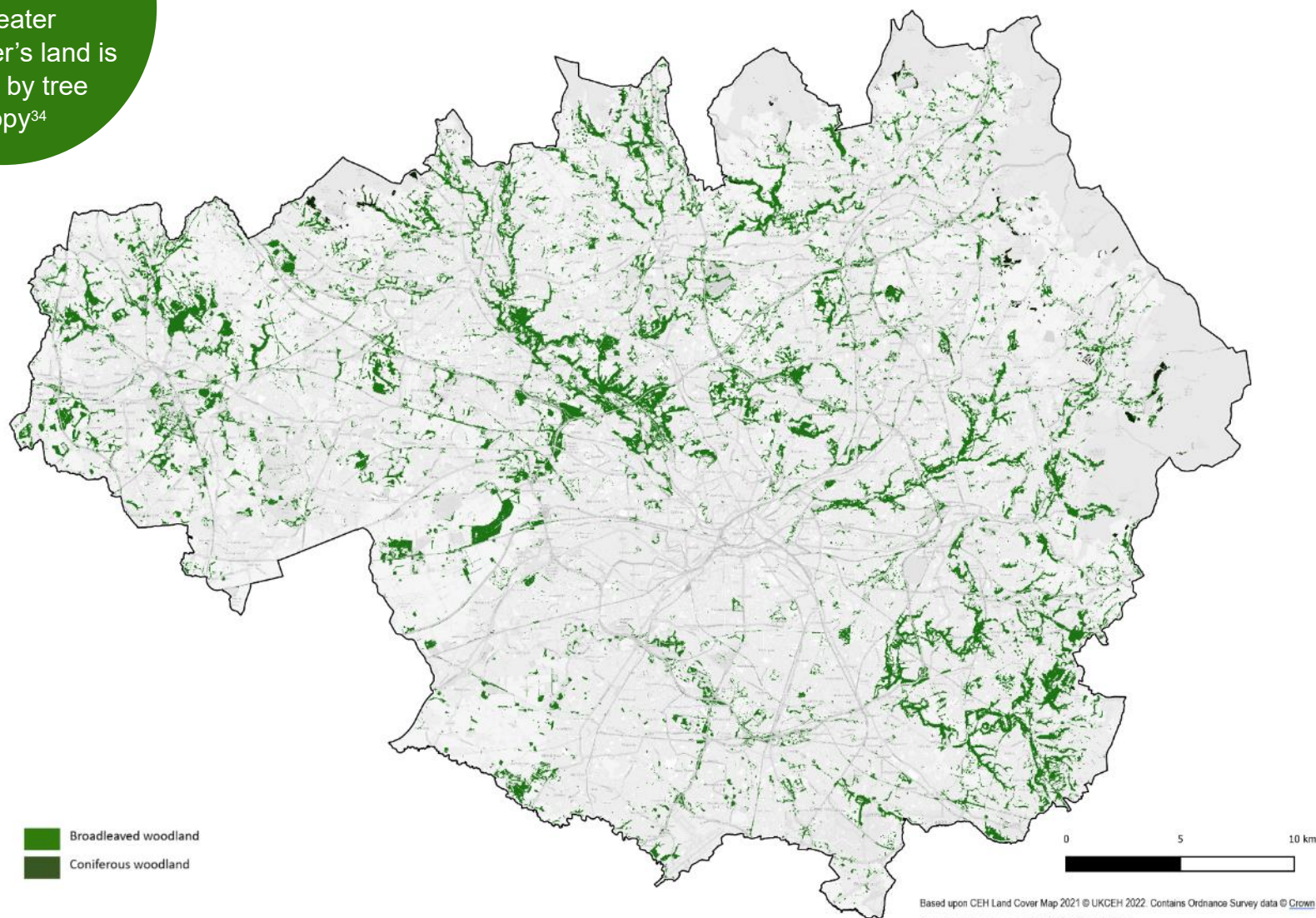
Over  
**857,000**  
trees

planted in the last decade

with City of Trees on target to plant 1m trees by the end of 2024.

**16%**

of Greater  
Manchester's land is  
covered by tree  
canopy<sup>34</sup>



## Our rivers and canals

There are over 884km of rivers across Greater Manchester, along with streams and brooks. Split into 73 rivers with eight main river catchments, the majority of the water in Greater Manchester drains into the Irish Sea via the River Mersey and a much smaller portion (from the North West of the city-region) flows to the sea via the River Douglas. These rivers flow alongside nearly 400ha of lakes and nearly 160km of canals.

The vast majority, 80%, of our rivers, streams and brooks have been significantly changed by human activity<sup>18</sup>. Just over 112km of our rivers are estimated to have been “culverted” – meaning that they have been buried, built over, and now run below our streets, highways and buildings, in artificial channels or even pipes. There are thought to be over 1,000 obstacles and barriers to species movement in our rivers, which fragment our aquatic habitat and restrict fish movement<sup>19</sup>.

Despite improvements over the last 40 years, using internationally accepted standards<sup>20</sup>, none of Greater Manchester’s rivers or canals are in good ecological status and invasives species are increasingly problematic.

11% of our rivers and canals are in poor or bad condition, and all of our assessed lakes are in poor or moderate condition. This means that none of Greater Manchester’s waterbodies meet the best ecology that they can achieve, even when accounting for human activities continuing.

Nationally, a target to restore 75% of waterbodies to good ecological status by 2043 has been set. The trend over recent years has been for a greater proportion of waterbodies to be classified as “moderate” in Greater Manchester. Taking these into “good” status will be challenging to achieve, not only due to pollution but also due to the heavily modified nature of Greater Manchester’s waterbodies.

Ecological status - Rivers and Canals	Greater Manchester	North West England	England
<b>Bad</b>	2%	3%	3%
<b>Poor</b>	9%	13%	19%
<b>Moderate</b>	89%	84%	62%
<b>Good</b>	0%	0%	16%

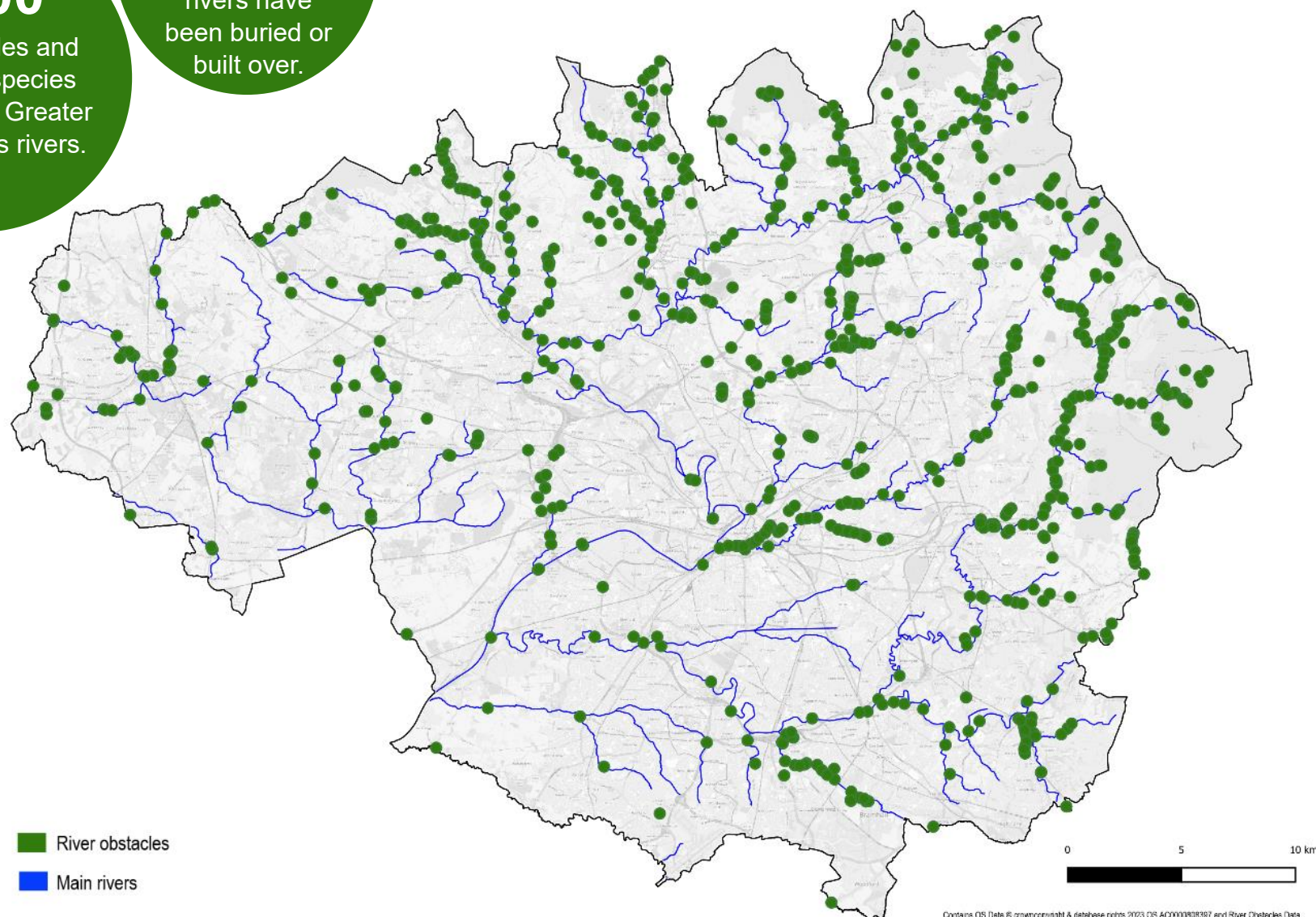


**1,000**

river obstacles and  
barriers to species  
movement in Greater  
Manchester's rivers.

**100km**

of Greater  
Manchester's  
rivers have  
been buried or  
built over.



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## Our peatlands

When in good condition, peatlands can be carbon-rich wetlands, which are naturally waterlogged and provide important habitats for mammals, birds, insects, and plants. In addition to the wildlife they support, peatlands can provide a range of other benefits, particularly for carbon storage, flood risk management and water quality enhancements.

Large parts of Greater Manchester sit on top of peaty soils, with 15,500ha in the uplands and 5,000ha in lowland areas<sup>22</sup>.

However only 44% of our peaty soils (deep and shallow peat soils) are in positive management (either being protected and/or via an agri-environment scheme). Due to their poor condition our degraded peatlands are emitting an estimated 187,525 tonnes CO<sub>2</sub>-equivalent per year<sup>21,22</sup>.

### Upland Peat

In the uplands, large tracts of peatlands have been subject to drainage, and unsustainable grazing and management.

- Only 10% of upland peatlands are in good condition.
- 66% needing improvement.
- 24% in poor condition.

Our upland peatlands are emitting around 60,000 tonnes CO<sub>2</sub> equivalent per year, rather than locking more carbon away<sup>21,22</sup>.

### Lowland Peat

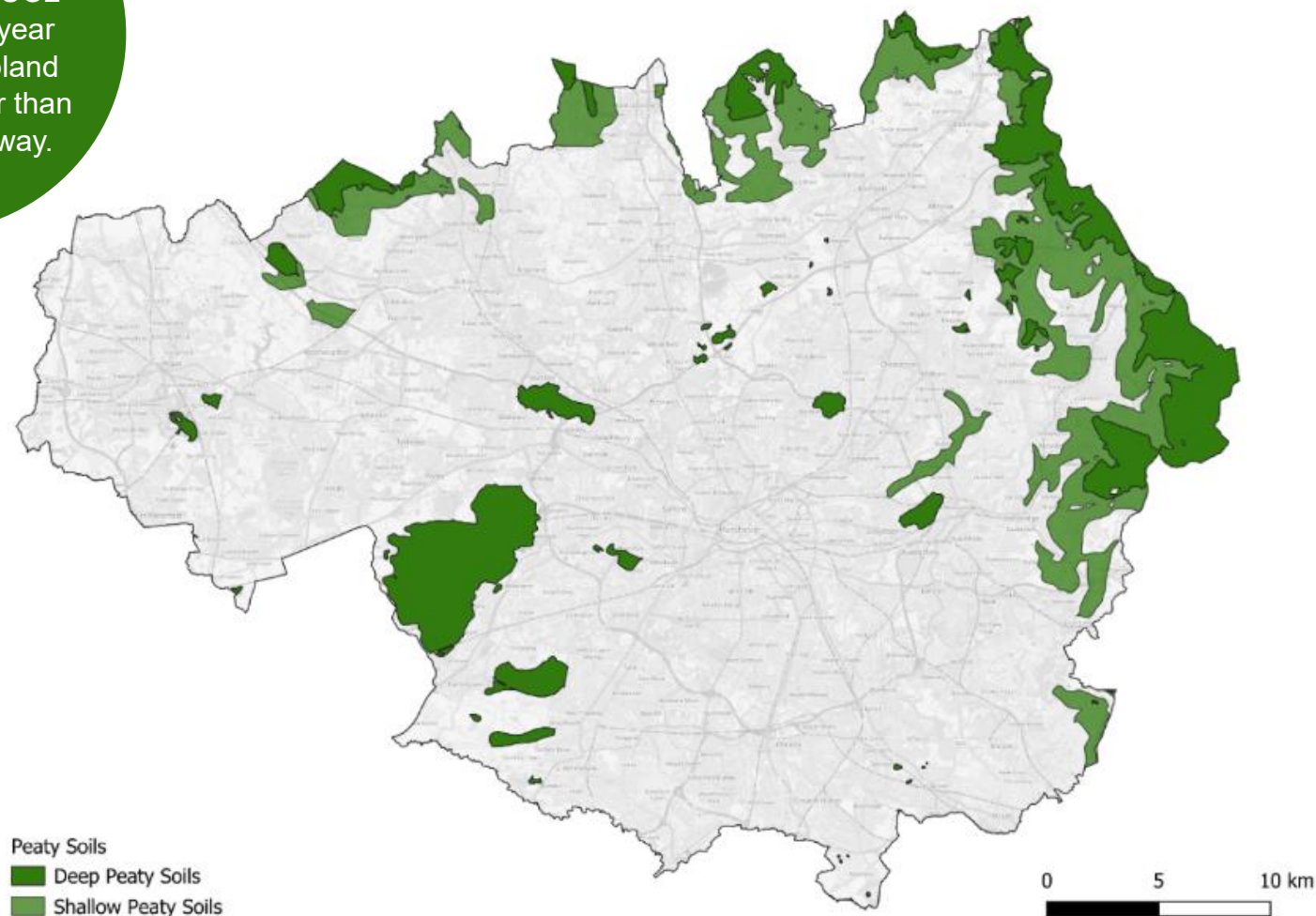
In the lowlands, large tracts of lowland peatlands were drained during the 19<sup>th</sup>/20<sup>th</sup> century, peat soils removed or converted to agricultural uses.

- Intensive agriculture (turf production, cropland, intensive grassland), covers 55% of our previous lowland peatlands.
- Research indicates that degraded lowland peatlands are emitting around 130,000 tonnes of CO<sub>2</sub> equivalent per year.



**60,000**

tonnes approx. CO2  
equivalent per year  
emitted from upland  
peatlands, rather than  
being locked away.



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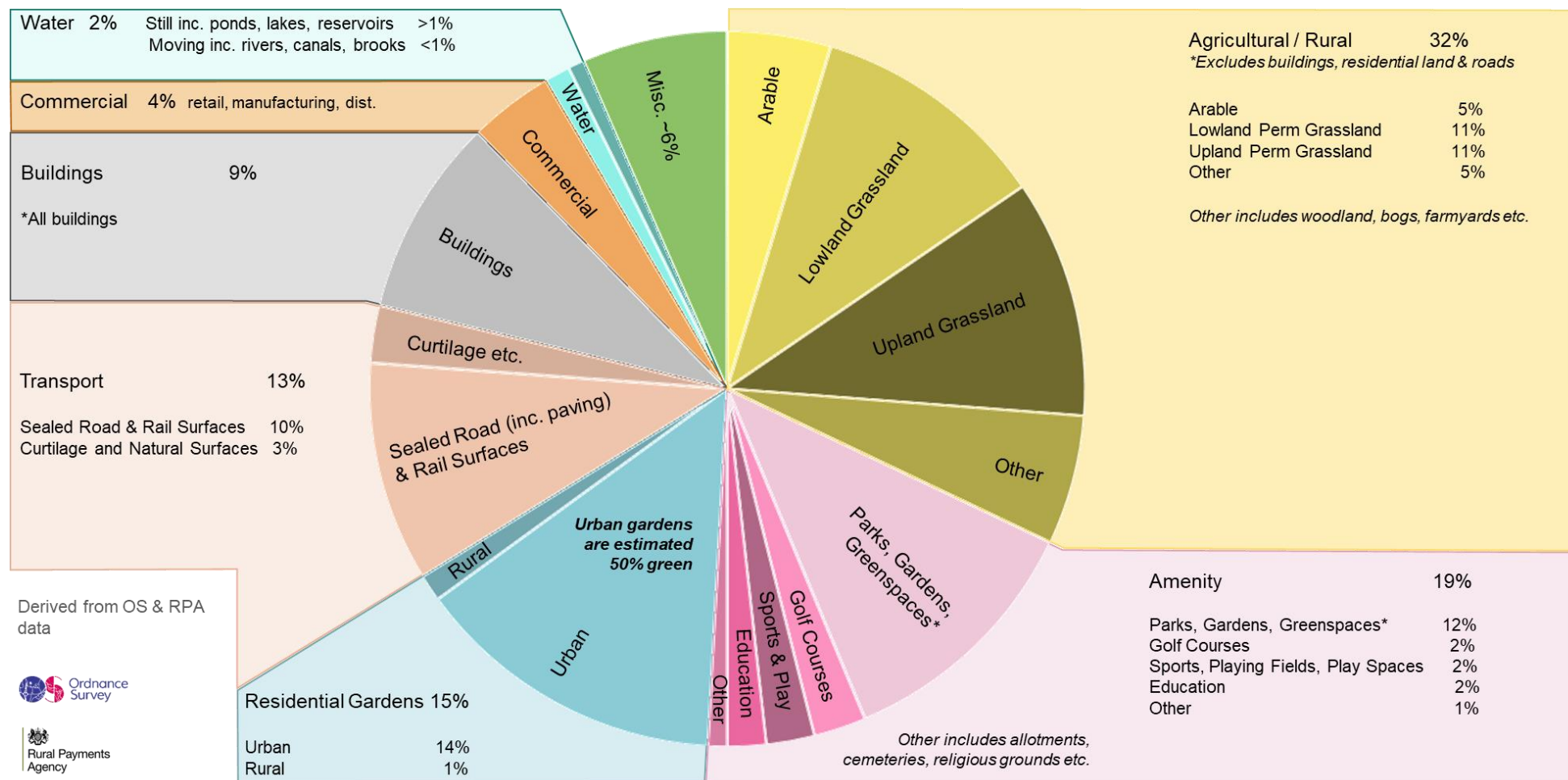
*Peat soils across Greater Manchester<sup>21</sup>*

## Our land use

Land across Greater Manchester is used for a variety of different purposes and owned by a range of different people, from larger landowners (e.g., developers and farmers) to local councils and individual homeowners:

- Alongside our urban areas, agricultural and rural land makes up an estimated 30% of our land<sup>23</sup>. Uptake of grants for nature-friendly farming is thought to be lower in Greater Manchester than surrounding areas.
- Our residential gardens account for 15% of our land use<sup>23</sup>. These can be fantastic urban refuges for nature. However, research by the Manchester Metropolitan University has revealed that in Manchester only 50% of the average garden is greenspace<sup>24</sup>.
- Amenity and leisure spaces, such as public parks, school grounds, and sports pitches make up nearly 20% of Greater Manchester. We have some fantastic new green spaces in our city centres. However, since 2017, we have also seen a year-on-year decline in the number of our parks holding green flag status.
- Our transport network, including pavements, roads, highways, streets and motorways makes up 13% of the city-region. These areas often have potential to also act as highways or corridors for wildlife.
- Buildings and commercial areas, from residential houses to industrial warehouse and skyscrapers cover an estimated 9% of Greater Manchester.
- Water ways and water bodies, including the River Mersey and River Irwell, reservoirs, lakes and ponds cover 2% of the city-region. Many of these have been heavily modified, built over and even buried or piped through our urban areas.

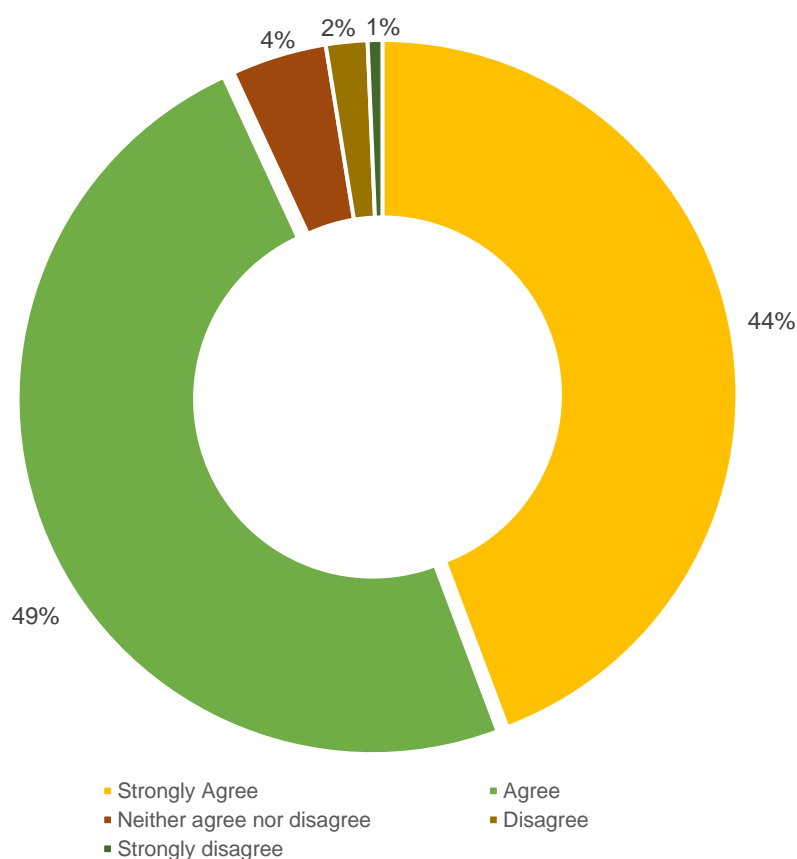
## Main land uses across Greater Manchester



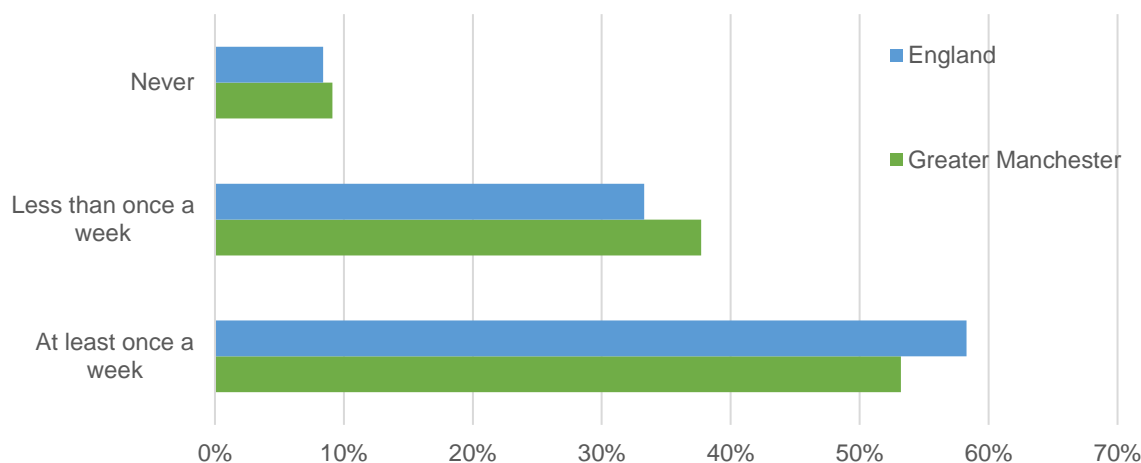
## Our access to nature

The number of people living and working in Greater Manchester has grown rapidly. Over 2.8 million people now call the city-region home and the population could reach 3 million by the 2050s. Many Greater Manchester residents value having access to nature near where they live and are concerned about the environment:

- On average **93% of Greater Manchester** residents surveyed over a 10-year period think that having open greenspace close to where they live is important<sup>25</sup>.
- A recent survey<sup>26</sup> of Greater Manchester residents found that together the state of the environment generally and the threat of climate change ranked as the **4<sup>th</sup> top national concern**. Other top concerns include the cost of living, the quality of the NHS service and the state of the economy.
- Although access to nature is clearly valued, only just over 50% of Greater Manchester residents are thought to be regularly accessing green spaces<sup>25</sup>.



*Residents' views on whether having open access to green spaces is important to them in Greater Manchester<sup>25</sup>*



*Greater Manchester residents reporting visits to green space<sup>25</sup>*

### What stops Greater Manchester residents spending time in nature?

A survey of just over 1,000 Greater Manchester residents reported that they were put off spending time in nature due to<sup>27</sup>:



A lack of accessible  
quality greenspace  
(14%)



A lack of biodiversity  
(16%)



Encroaching housing  
developments (16%)



Greenspaces in poor  
condition (18%)



## Equal access to green space

One factor causing low visits to greenspace is that many people do not have access to nature near to where they live or work.

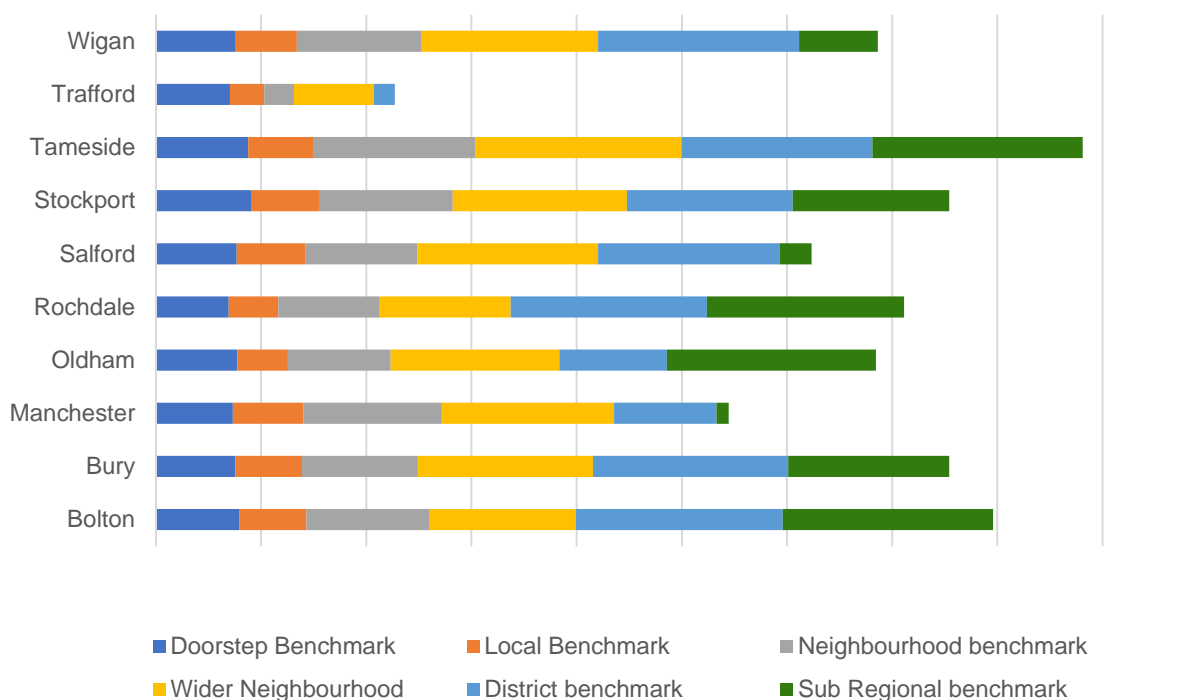
National greenspace standards<sup>28, 29</sup> have been set to ensure everyone has access to good quality public green and blue spaces close to home. Across Greater Manchester many people still do not have access to local green spaces near to where they live or work.

**An estimated third of Greater Manchester's population do not live within 15 minutes of green space.**

- Only an estimated 40% of our population live close (within 200m) of a small greenspace (0.5ha or bigger)<sup>30</sup>.
- Only an estimated 30% of our population live within 300m of a 2ha green space.

Accessible green space standard		Achieving standard	Not achieving standard
<b>Doorstep</b>	≥0.5ha within 200m	39%	61%
<b>Local</b>	≥2ha within 300m	29%	71%
<b>Neighbourhood</b>	≥10ha within 1km	56%	44%
<b>Wider Neighbourhood</b>	≥20ha within 2km	77%	23%
<b>District</b>	≥100 ha within 5km	73%	27%
<b>Subregional</b>	≥500ha within 10km	55%	45%

Access to nature across Greater Manchester is also unequal. The national greenspace standards, shows how access to greenspace varies across each Local Authority area.



### *Greenspace standard per Local Authority<sup>30</sup>*

Echoing national trends<sup>31</sup>, people experiencing multiple inequalities in Greater Manchester tend to live in areas with less greenspace, compared to more affluent areas<sup>32</sup>. Assessment of local trends also suggests that generally those experiencing racial inequalities are also nearly twice as likely to live in areas with the least greenspace.

## Pressures on nature

Nature is under pressure in several different ways, including:

- Competing demands for the use of land.
- Pressure on water and waterbodies
- Pathogens and diseases

These, and other pressures, are already being exacerbated by the impacts of climate change.

### **Pressures on land use**

Land in Greater Manchester is limited and is under increasing demand to meet a variety of needs. These include: to provide homes, commercial space, transport and utilities for the city-region; to support energy generation, carbon sequestration (e.g., tree planting and peatland restoration) and climate adaptation (e.g., nature-based solutions); for food growing and recreation.

Land is needed for  
**170,000**  
new homes by 2039.



Land needed for  
commercial development  
and new transport  
infrastructure.



250 potential sites identified for  
ground mounted solar PV  
installations, covering 5,458ha.

**32%**

of land in Greater  
Manchester is used for  
agriculture.

### Pressures on water and waterbodies

Water in Greater Manchester is under pressure from a range of sources. Over 20% of the water in most Greater Manchester rivers has been discharged from a Wastewater Treatment Works. For some rivers this is as high as 60-80%. Across Greater Manchester our waterways are under pressure from:



Heavy modification of  
waterbodies due to human  
activities.

Greater Manchester  
has 793 combined  
sewer overflows, that  
spilt an estimated

**21,391**

times in 2022 for an  
average of over 4 and a  
half hours per spill.



The use of fertilisers and pesticides in agriculture.

20%

reduction in water consumption per person needed by 2038 to achieve sustainable water abstraction levels.

Japanese Knotweed found on

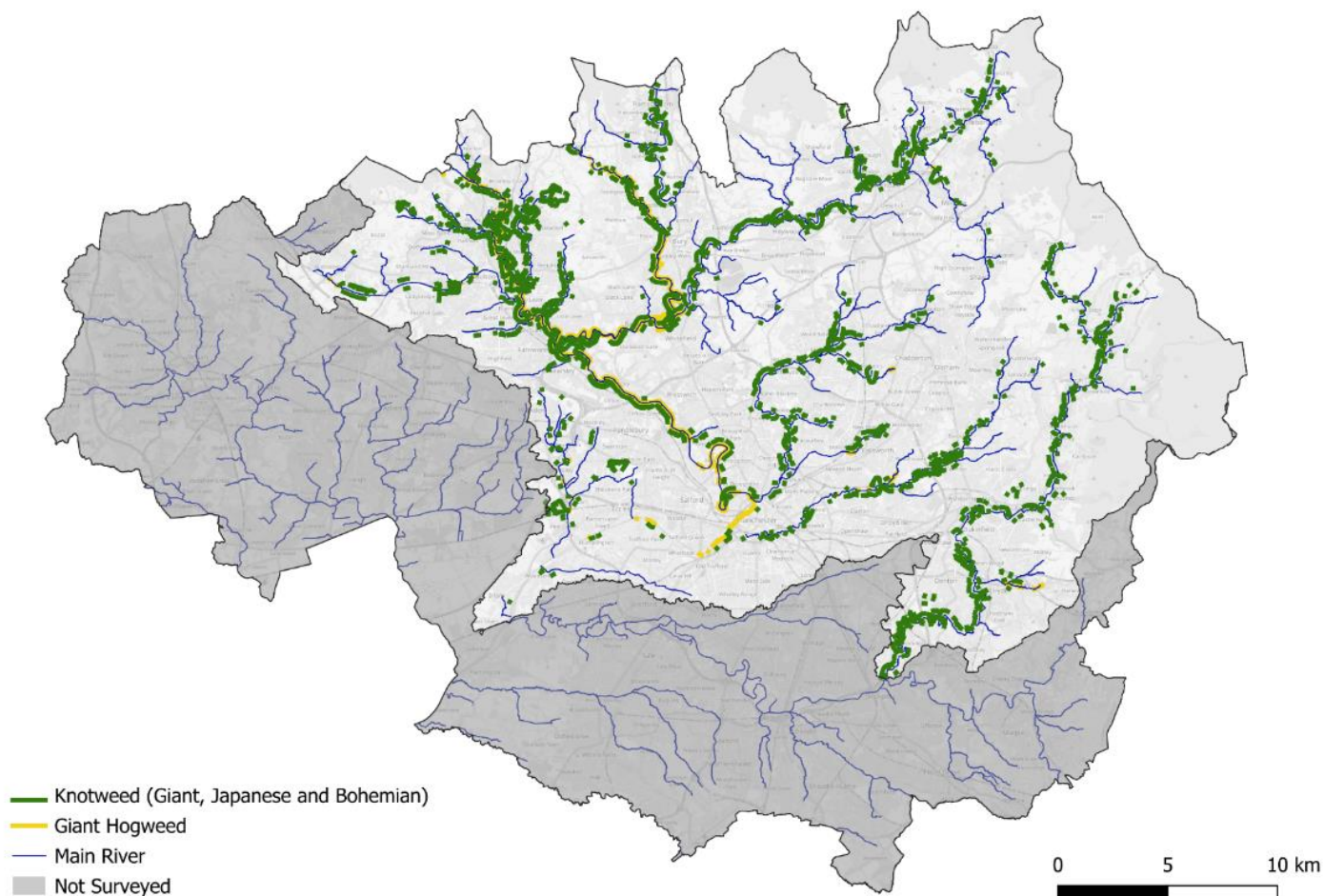
11%

of riverbanks

...with Giant Hogweed across 4% and Himalayan Balsam across 100%.



Diffuse pollution from urban areas including runoff from roads, and from emerging forms of contaminations such as micro plastics.



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*Invasive species within the River Tame and River Irwell Catchments<sup>33</sup>*



## Pathogens and diseases

As well as invasive plant species, microorganisms that cause disease pose a threat to wildlife and ecosystems. The most significant of these currently affecting Greater Manchester and the rest of the UK is ash dieback.

Ash dieback is expected to lead to the decline and death of the majority (c. 80%) of Ash trees in the UK. It is present across Greater Manchester – European Ash is the fourth most common tree species across the city-region, with around 900,000 Ash trees at risk from the disease. Ash trees can be large in stature and provide a significant quantity of ecosystem services to Greater Manchester; their replacement should they perish would be costly, estimated at over £350m<sup>34</sup>. There are 953 species in the UK associated with Ash trees in some way, including 106 species which are highly or completely dependent on Ash trees<sup>35</sup>.



Other diseases, like avian influenza, may emerge to pose threats to wildlife (in that instance, to birds). And climate change is likely to increase risk of the introduction and spread of pathogens.

## Climate change

Climate change has already impacted biodiversity in Greater Manchester as species shift northwards. As temperatures increase, climate zones will move northwards at 5km per year by 2050 – equivalent to moving from the south to north of Greater Manchester in 8 years, a process which took 800 years at the end of the last ice age<sup>36</sup>.

Risk assessments for species in England show that more species are expected to increase their ranges rather than decrease. However, upland habitat species in the north and east of the city-region are particularly vulnerable to climate change due to

northwards and upwards range contraction. Given the importance of uplands to water management and carbon storage, this may have knock on impacts.

These effects will be exacerbated further by the projected increase in hazardous fire weather conditions in summer, meaning greater risk of wildfires in the uplands and possible extension of the wildfire season into late summer and early autumn<sup>37</sup>.

- The North West of England has the highest number of wildfire incidents compared to any other region in England. Over 55,635 wildfires occurred in the North West of England between 2009-2021. The North West region also had the greatest area of land burn by wildfires, over 45,000ha<sup>38</sup>.
- Greater Manchester already experiences the greatest area burnt by wildfires, over 30,000ha, in England. In comparison, Lancashire experiences around 11,000ha of burnt land<sup>38</sup>.

## The wider benefits of nature

Our natural environment provides us with a range of other benefits. It is particularly important to our health and wellbeing, especially in urban areas where residents might not have regular access to nature.

The [Greater Manchester Natural Capital Accounts](#)<sup>39</sup> measure the benefits provided by the city-region's natural assets to its businesses, public services and residents.

These benefits include:

**50,000  
tonnes**

of CO<sub>2</sub>e is taken out of the atmosphere each year by Greater Manchester's woodlands and peat.

Vegetation improves air quality which prevents

**370**

hospital admissions each year.

**1m  
people**

receive mental health benefits by accessing green spaces in Greater Manchester.



135,000 people use green spaces to meet their physical activity needs

...which adds up to around 4,600 quality adjusted life-years.

In total we receive an estimated £1bn in benefits from our natural environment each year. However, these benefits are under threat given the array of challenges set out in this report and the continued decline in biodiversity we are seeing.

## Abbreviations and Acronyms

Abbreviation or Acronym	Definition
CO <sub>2</sub>	Carbon dioxide
GM	Greater Manchester
GMCA	Greater Manchester Combined Authority
LNRS	Local Nature Recovery Strategy
NW	North West England
NNR	National Nature Reserves
SSSI	Special Site of Scientific Interest
SAC	Special Area of Conservation
SPA	Special Protected Areas
LWS	Local Wildlife Site
SBI	Site of Biological Interest

## References and Notes

<sup>1</sup> **World Wildlife Fund and Zoological Society of London (2022)**. Living Planet Report 2022, WWF/ZSL. [Available on the Living Planet Index website \(external link\)](#).

<sup>2</sup> **Burns et al. (2023)**. State of Nature 2023, The State of Nature Partnership. [Available on the State of Nature website \(external link\)](#).

<sup>3</sup> **British Trust for Ornithology (c1980 and c2010)**. Breeding Bird Survey (Bird Atlas) c1980 & c2010 Data. [Available on the British Trust for Ornithology website \(external link\)](#).

<sup>4</sup> **British Trust for Ornithology (c1990 and c2021)**. British Trust for Ornithology Mammal Survey Data. [Available on the British Trust for Ornithology website \(external link\)](#).

<sup>5</sup> **Natural Course (2023)**. Otters Return to Greater Manchester, [Available on the Natural Course website \(external link\)](#) and Greater Manchester Ecology Unit internal analysis.

<sup>6</sup> **Mersey Rivers Trust (2019)**. Biological Change in the Rivers of the Mersey Catchment 1970-1994-2018.

<sup>7</sup> **Lancashire Wildlife Trust (2023)**. Rare Manchester argus butterflies flourishing after reintroduction, The Wildlife Trust for Lancashire, Manchester and North Merseyside. [Available on the Lancashire Wildlife Trust website \(external link\)](#).

<sup>8</sup> **Lancashire Wildlife Trust (2023)**. Nightjars return to Greater Manchester Peatlands. The Wildlife Trust for Lancashire, Manchester and North Merseyside. [Available on the Lancashire Wildlife Trust website \(external link\)](#).

<sup>9</sup> Some of our protected sites for nature are covered by multiple different designations (i.e. they can be designated a SSSI, SAC and also as a LWS), whereas some have just one single designation (e.g. only a LWS).

<sup>10</sup> **Liverpool City Region Combined Authority (2022)**. State of Nature Report for the Liverpool City Region. [Available on the Liverpool City Region Combined Authority website \(external link\)](#).

Designated sites cover approximately 41% of the Liverpool City Region area. This figure includes extensive marine intertidal habitats which form 66% of all designated sites in Liverpool City Region. To establish a comparable figure to Greater Manchester intertidal habitats have not been included. After the exclusion of intertidal habitats designated sites cover approximately 13.9% of Liverpool city region.

<sup>11</sup> Internal officer analysis completed by Greater Manchester Combined Authority and Greater Manchester Ecology Unit. [Analysis using a variety of datasets made available on data.gov \(external link\)](#).



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- <sup>12</sup> **Department for Environment, Food and Rural Affairs (2023)**. Environmental Improvement Plan 2023 – First Revisions of the 25-year Environment Plan, DEFRA. [Available on the Assets Publishing Service website \(external link\)](#).
- <sup>13</sup> **Natural England (2023)**. Sites of Special Scientific Interest Units (England), Natural England Open Data Publication. [Available on the Natural England website \(external link\)](#).
- <sup>14</sup> **Lawton et al. (2010)**. Making Space for Nature: a review of England's wildlife sites and ecological network. Report to Defra. [Available on the National Archives website \(external link\)](#).
- <sup>15</sup> **Marston et al. (2022)**. Land Cover Map 2021 (10m classified pixels, GB). NERC EDS Environmental Information Data Centre. [Available on the Environmental Information Data Centre website \(external link\)](#).
- <sup>16</sup> **Friends of the Earth (2023)**. Maps showing city cooling by trees and greenspace. [Available on the Friends of the Earth website \(external link\)](#).
- <sup>17</sup> **Greater Manchester Combined Authority (2023)**. Greater Manchester's Natural Environment, NE1: Plant one million trees by 2024. [Available on Gm tableau website \(external link\)](#).
- <sup>18</sup> Environment Agency and GMCA officer analysis, based on data [available on the catchment data explorer website \(external link\)](#).
- <sup>19</sup> **The Rivers Trust (2021)**. River Obstacles. [Available on the Rivers Trust website \(external link\)](#).
- <sup>20</sup> The **Water Framework Directive**, introduced by the European Commission in 2023, standardised the way river condition is measured across Europe.
- <sup>21</sup> **Smart et al. (2020)**. England Peat Strategy: Greater Manchester Peat Pilot Report for Defra. Natural England.
- <sup>22</sup> **Natural England (2020)**. England Peat Strategy: Greater Manchester Combined Authority Peat Pilot Report for Defra, Defra.
- <sup>23</sup> **Greater Manchester Ecology Unit and Greater Manchester Combined Authority** internal analysis completed based on a variety of datasets from the Ordnance Survey and the Rural Payments Agency.
- <sup>24</sup> **Manchester Metropolitan University (2016)** Research Summary – My Back Yard. Overview [available on the Manchester Metropolitan University website \(external link\)](#).
- <sup>25</sup> **Natural England (2009-2019)**. Monitor of Engagement with the Natural Environment, Natural England 2009-2019.

Data reported is the average for GM respondents over the 10 years between 2009-2019.

<sup>26</sup> **Public First Survey (2023).** Climate Emergency Perception and Behaviours in Greater Manchester. Commissioned by GMCA/TFGM. [Overview available on the Greater Manchester Combined Authority website.](#)

<sup>27</sup> **GMCA (2021).** Nature Recovery Survey, GM Consult. [Available on the GM Consult website.](#)

<sup>28</sup> **Natural England (2023).** National Green Infrastructure Standards. [Available on the Natural England website \(external link\).](#)

<sup>29</sup> **DEFRA (2023).** National Environmental Improvement Plan 2023, DEFRA. [Available on the GOV.UK website \(external link\).](#)

<sup>30</sup> **Greater Manchester Combined Authority** internal analysis completed by combining data from [Natural England ANGST standard maps \(external link\)](#) and [Office for National Statistics population estimates \(external link\).](#)

<sup>31</sup> **The Ramblers' Association (2021).** The grass isn't greener for everyone: Why access to green space matters, Ramblers. [Available on the Ramblers' Association website \(external link\).](#)

The Ramblers' Association report shows that the richest 20% of areas in England have 5 times the greenspace of the most deprived areas.

<sup>32</sup> **Lindley et al. (2020).** Nature and Ageing Well in Towns and Cities: Why the natural environment matters for healthy ageing. [Available on the GHIA website \(external link\).](#)

<sup>33</sup> **Greater Manchester Combined Authority (2023).** River Tame INNS Survey 2023. [Available on the Natural Course Website \(external link\).](#) **Greater Manchester Combined Authority (2022) River Irwell INNS Survey (2022).** [Available on the Natural Course Website \(external link\).](#)

<sup>34</sup> **City of Trees (2020).** All our Trees – Greater Manchester's Tree and Woodland Strategy. [Available on the City of Trees website \(external link\).](#)

<sup>35</sup> **Mitchell et al. (2014).** Ash dieback in the UK: A review of the ecological and conservation implications and potential management options. Biological Conservation. [Available on the Science Direct website \(external link\).](#)

<sup>36</sup> **Environment Agency, Chief Scientist's Group (2022).** Working with Nature – Chief scientist's Group Report. [Available on the GOV.UK website \(external link\).](#)

<sup>37</sup> **Perry et al. (2022).** Past and future trends in fire weather for the UK. Nat. Hazards Earth Syst. Sci., 22, 559–575, 2022. [Available on the DOI website \(external link\).](#)

<sup>38</sup> **Forestry Commission (2023).** Wildfire Statistics for England 2020-21. [Available on the Assets Publishing Service website \(external link\).](#)

<sup>39</sup> **GMCA and the Environment Agency (2019).** The Value of Greater Manchester's Natural Capital. [Available on the Greater Manchester Combined Authority website.](#)



## Appendices 1. Greater Manchester Land Use

Land Use Type	Percentage of Greater Manchester	Land Use Sub-Type	Percentage of Greater Manchester
Agricultural/Rural*	32%	Arable	5%
		Lowland permanent grassland	11%
		Upland permanent grassland	11%
		Other*	5%
Amenity	19%	Parks, gardens, greenspaces*	12%
		Golf courses	2%
		Sports, playing fields, play spaces	2%
		Education	2%
		Other*	1%
Residential Gardens	15%	Urban	14%
		Rural	1%
Transport	13%	Sealed road and rail surfaces	10%
		Curtilage and Natural surfaces	3%
Buildings*	9%		
Commercial*	4%		
Water	2%	Still water including ponds, lakes, reservoirs	>1%
		Moving water inc. rivers, canals, brooks	<1%
Misc	~6%		

- \* Agricultural/Rural excludes buildings, residential land and roads
- \* Other agricultural areas includes woodland, bogs, farmlands etc
- \* Amenity parks, gardens and greenspaces includes allotments, cemeteries, religious grounds
- \* Commercial includes retail, manufacturing and distribution

## **Appendices 2. Invasive species within the River Tame and River Irwell Catchments**

<b>River</b>	<b>Kilometres of riverbank covered by Japanese Knotweed</b>	<b>Kilometres of riverbank covered by Giant Hogweed</b>
River Irwell	109	45
River Tame	14	0.3
Total	123	45.3