

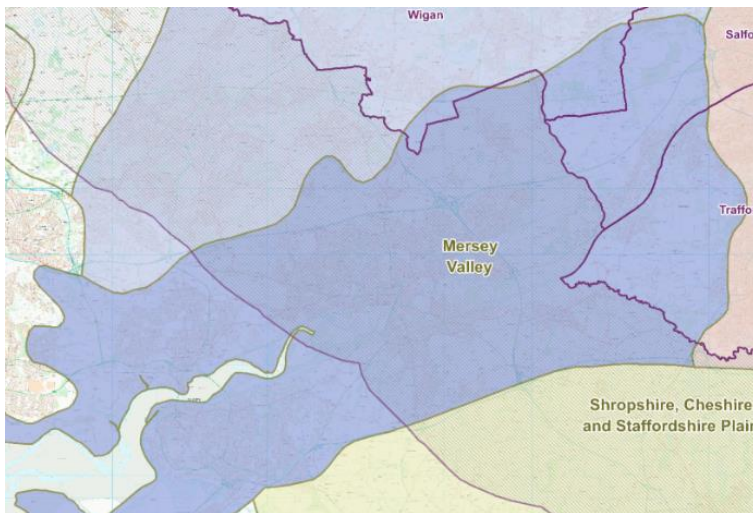
Appendix 6. Detailed Description of Greater Manchester landscapes and habitats

Greater Manchester's Landscapes

Greater Manchester's landscapes are described through its six National Character Areas. National Character Areas are areas that overlay all of England, 159 in total, which follow natural boundaries according to landscape, biodiversity, geodiversity and economic activity.

Each National Character Area is detailed below, with a map, description of the landscape, its habitats and species, key sites for nature, the wider benefits it provides, the pressures it faces and examples of successful nature recovery. A summary of the priority outcomes relating to each area is provided.

Mersey Valley



This lowland area forms parts of western Salford, western Trafford and parts of south-eastern Wigan. The M62 and both Manchester to Liverpool railway lines cut across the area. Beyond Greater Manchester this area stretches west along key wetland habitats of the River Mersey to its estuary. The Manchester Ship Canal/River Mersey continue south-westwards to the wide Mersey

estuary with intertidal mudflats/sand flats and salt marsh.

The area contains important lowland peatland across the Chat Moss area of Salford and Wigan. The peat here supports remaining internationally important lowland raised bog habitat including species such as common lizard, brown hare, black darter dragonfly and sundew plants. The high agricultural quality of this land has resulted in much of it being converted to farmland following drainage. Peat extraction has impacted significant areas of lowland raised bog which are now degraded. Restoration and management are underway on a number of sites, with attempts being made to reintroduce bog-building sphagnum moss species and to manage water levels to aid their recovery.

Habitats and species

- **Mossland (lowland raised bog)** – there are remnant pockets of lowland raised bog, including the Manchester Mosses Special Area of Conservation (SAC), centring on a once extensive area of mossland.
- **Lowland farmland** – significant areas of former mossland have been reclaimed and converted to agriculture, mainly arable and improved grassland.
- **Rivers and streams** – the River Mersey, its major tributary the River Bollin, and several brooks cross the area from east to west.

- **Trees and woodland** – these are mainly associated with urban areas with some along watercourses as well as isolated woodland blocks, including ancient pasture and paddock woodland at Dunham Massey.
- **Urban areas** – significant areas of the former mossland have been reclaimed for development. The area is bisected in two by development along the River Mersey and Manchester Ship Canal, including the towns of Irlam, Partington, Caddishead and Carrington, which contain parks, green spaces and gardens.
- **Parkland** – country parks (particularly Dunham Massey) offer opportunities for people to enjoy the local natural environment.

Key sites for nature

The Mersey Valley is home to the Manchester Mosses Special Area of Conservation for its remnant pockets of lowland raised bog.

Astley and Bedford Mosses SSSI is one of the largest remaining fragments of Chat Moss, and despite being subject to some agriculture-related drainage and peat cutting, is still higher than the surrounding countryside with remaining areas of deep peat. It provides a range of habitats including modified mire communities, heathland, woodland and acidic grassland, all developed over the cut peat surface and subject to variations of wetness depending on the topography and drainage. It hosts cottongrass, deer grass and patches of mosses, along with tussocks of purple moor grass. It has areas of dense birch woodland and grasslands. The site is important for birds, in particular wintering raptors such as hen harrier, short-eared owl and merlin, and it supports breeding species such as curlew and long-eared owl. The condition of the majority of this SSSI is *Unfavourable, Recovering* with one unit classified as *Favourable*. Encroachment of purple moor grass and birches needs to be managed to stop the site from ‘scrubbing up’ or becoming covered in trees, and drainage needs to be reduced to retain the wet moss characteristics and species.

Brookheys Covert SSSI is an unusual mixture of woodland and wetland habitats for Greater Manchester. It comprises well-established common (or English) oak, hazel, ash woodland with a large number of small pools. Beneath the main tree canopy is a diversity of species including hazel, holly, hawthorn, field roses, elder and honeysuckle. And underfoot is an array of woodland plants and flowers including bracken, bluebells and wood anemones. Pools, created by Marl-digging (historical digging of lime-rich subsoil for fertiliser), provide habitats for watery plants such as water and marsh horsetail, marsh marigold, pondweeds and water violet. Brookheys Covert is also a Nature Reserve and important for educational purposes. It is in *Favourable* condition – volunteers have helped to nearly eradicate invasive Himalayan balsam.

Dunham Park SSSI owned by the National Trust, and in *Favourable* condition, has been park-woodland since medieval times. The main tree species are common/English oak and beech with ash, common lime, elm, birch and some alder. A large number of the oak and beech trees are ancient, with some dating back to the 17th Century. It is one of few remaining sites in the UK and the only North West site with such a large number of ancient trees. All these trees provide a rich habitat for invertebrates including over 350 species of flies, and Dunham Park has national importance for its mature timber fauna – including the 181 species of

dead wood beetle, including the very rare *Drophephylla grandiloqua*, that live there. The herd of fallow deer there support a rare forest dung beetle.

Local Wildlife Sites/Sites of Biological Importance include:

- Hope Carr Nature Reserve
- Carrington Moss
- Jack Lane Wellacre
- Davyhulme Millenium Park.

How nature helps

Lowland peat provides significant opportunities for:

- carbon sequestration to tackle climate change
- water management
- engaging people in the heritage of the landscape
- recreation and exercise in nature.

Pressures on habitats and species

As for other areas of the city-region, there are modern pressures on this landscape and its habitats from town, industry and transport development to meet the need for housing and industrial/employment sites.

But this area has been ravaged over time; Chat Moss spanning from Salford, Trafford and Wigan out to Cheshire and Warrington is a prime example of a lowland raised bog that has been largely lost to development, agriculture and peat extraction, starting in the 19th century with the growth of the city and the Liverpool Manchester railway. Only around 2% of the peat bog is in a near-natural state; many sites are in poor condition and bear the damage from peat extraction.

This has a knock-on effect on important species. Since 1998, corn bunting has declined over the ten-year period 2010-2019 from nine pairs to three. The loss has been even more dramatic over the 22-year period with 21 territories assessed in 1998.

Helping nature to recover

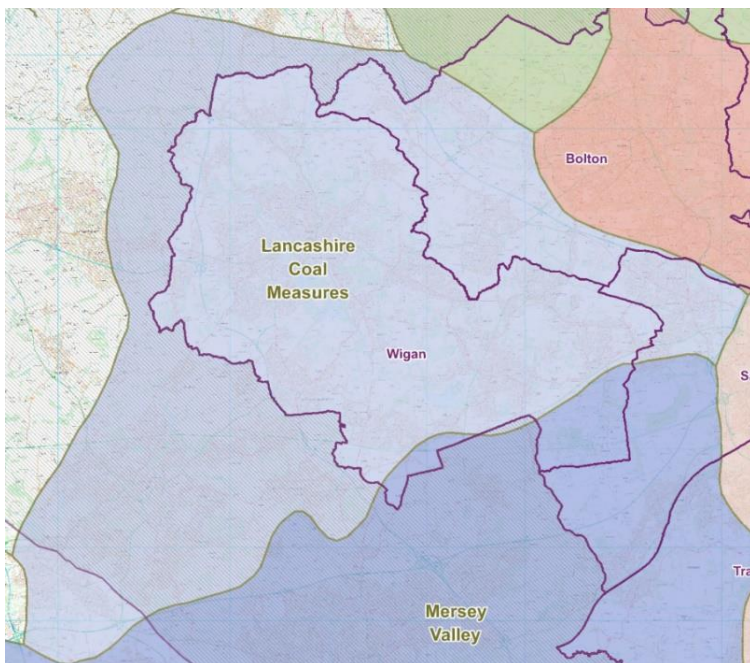
The work of the Lancashire Wildlife Trust and its volunteers and supporters aims to restore Astley Moss, SSSI, reintroducing sphagnum moss and blocking drains to rewet and restore this important site for birds, mammals and plants. At Caddishead and Little Woolden Moss, where peat extraction has caused significant damage, steps are progressing to restore the habitats through rewetting and recolonising moss and cotton grass. These sites provide multiple benefits to bird and mammal species which are returning, storing carbon in the peat and provide public access to nature.

Part of the Mersey Rivers Trust, BEACON (Bollin Environmental Action and Conservation) is a group of people working towards controlling and eradicating invasive non-native species (INNS) and improving water quality within the Bollin catchment, which includes all the tributaries, meres, brooks and streams connected to the River Bollin. Volunteers have been trained in spraying giant hogweed and pulling up Himalayan balsam across the catchment

area; over 40 volunteers are trained as River Guardians, they take water samples and carry out invertebrate kick sampling to identify pollution. Now trout has returned and migrating salmon are seen.

Lancashire Coal Measures

Situated in the north-west of Greater Manchester, Lancashire Coal Measures includes the town



and surroundings of Wigan and neighbouring parts of Salford and Bolton. It is an area profoundly influenced by its geology and industrial past. Rocks from the Carboniferous Coal Measures underlie most of the area forming gentle hills and valleys.

The area is noted for its industrial heritage and individual flashes - wetlands formed as a result of ground subsidence associated with deep mining for coal. Former mines and spoil heaps have left a legacy of polluted sites but in recent decades conditions have improved and an area that was

once heavily polluted has become important for people and wildlife.

Today, many of the former industrial areas have been reclaimed, resulting in a network of lowland wetland habitats and open water-bodies and ponds. This mosaic of reedbed, open water, wet meadows, lowland fen and carr scrub supports an array of wetland specialist species such as bittern, willow tit, water vole and an array of invertebrates including 15 species of dragonfly. Surrounding this is a matrix of farmland that provides habitat for farmland birds and brown hare.

Habitats and species

- **Wetlands** – widespread ground subsidence, caused by coal mining activities, has resulted in the formation of subsidence flashes. These have created many areas of open water and

wetlands, while scattered ponds and fragmented pockets of semi-natural habitat remain elsewhere with large populations of great crested newts.

- **Trees and Woodlands** – cover 10% of the area, and include ancient woodland. Community woodlands have been established on many post-industrial sites, and bring multiple benefits. This area is a national hotspot for willow tits.
- **Farmland pasture, lowland meadows and arable** – with associated farmland birds and brown hare.
- **Post-industrial landscape** – brownfield sites with willow scrub and willow tits.
- **Lowland raised bog habitats** – joining with the mosslands of the Salford and Wigan lowlands (see Mersey Valley).

Key Sites for Nature

Abram Flashes is the leading site for assemblages of breeding birds associated with lowland open waters and wet grassland in the Greater Manchester and Merseyside areas. The breeding waterfowl community includes mute swan, mallard, tufted duck, pochard, garganey, shoveler, gadwall and ruddy duck. Yellow wagtails and waders such as lapwing, snipe and redshank breed in the wet grassland, itself a nationally declining habitat. Reed bunting, reed warbler and sedge warbler are found in the swamp and fen. Hey Brook provides suitable conditions for species such as kingfisher and grey wagtail. The site is also locally important for wintering waterfowl which use the whole Wigan Flashes complex, and lower water levels, particularly in autumn, can provide valuable feeding and roosting habitat for migrant waders such as greenshank, ruff and dunlin.

Within the Hey Brook area, Bryn Marsh and Ince Moss is the leading example of swamp and tall fen vegetation in Greater Manchester and Merseyside as well as important populations of dragonflies and breeding birds.

Nearer Bolton, Red Moss is important for its peat forming vegetation and hydrology, including sphagnum moss and cotton grass, while Highfield Moss is noted for being a last remaining example of a raised mire, home to a rare flower – the marsh gentian.

Local Wildlife Sites/Sites of Biological Importance include several country parks and local nature reserves some of which together form a 9km wetlands habitat alongside the Leeds Liverpool Canal. These local sites include:

- Haigh Hall and Country Park
- Low Hall Park Nature Reserve
- Wigan Flashes (this includes Abram Flashes and Bryn Marsh and Ince Moss)
- Pennington Flash
- Hall Lee Bank Park.

How nature helps

Lowland peat and the flashes provide opportunities for:

- carbon sequestration to tackle climate change
- water management
- engaging people in the heritage of the landscape

- recreation and exercise in nature, particularly access to open space, nature reserves and parks.

Pressures on habitats and species

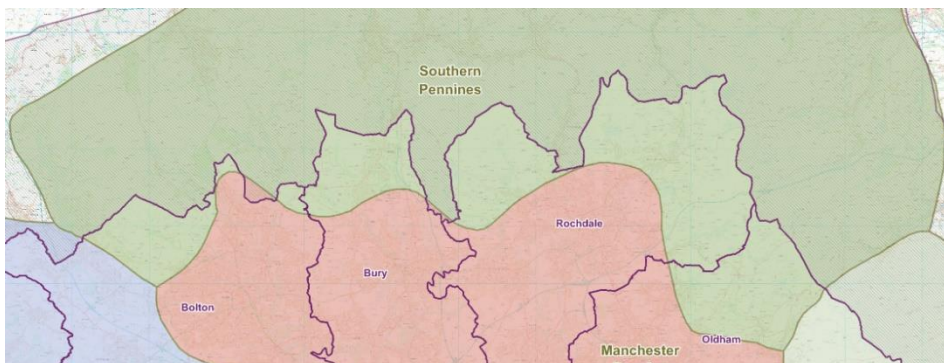
Nature in this area has historically been under pressure from dense population and industry, although its industrial past has shaped current habitats. Today it faces pressure from housing and industrial development.

Helping nature to recover

The Great Manchester Wetlands Partnership has been working since 2011 bringing together experts from over 20 organisations. It works together at a landscape scale for nature by restoring habitats, reintroducing lost species and engaging local communities with the wonderful wetland world on their doorstep.

Abram Flashes, SSSI in Wigan is being restored and is categorised as *Unfavourable, Recovering*, meaning it is being managed for nature recovery. Scrub is being cleared, ditches blocked and work carried out to provide clear areas of water. Invasive species such as Himalayan balsam are being tackled. Across other areas of the site, restoration is still needed to restore the wetlands and avoid over-grazing, and to tackle Himalayan balsam.

Southern Pennines



This upland area takes in north-eastern Oldham, north-eastern and northern Rochdale and the northernmost parts of Bury and Bolton. The area

is bordered by the towns of these three districts in its southern flank. Beyond that, this area extends to the similarly upland parts of the Dark Peak in the east.

The predominantly peat soils of this moorland area contain blanket bog, upland heathland and acid grassland. Cloughs, although small, have specialised flora, often containing a mix of dwarf shrubs with lichens and mosses. They can also contain a variety of native tree species such as oak, birch and rowan. Waterbodies provide crucial ecological links in this area. Partially restored sections of the Rochdale Canal contain important habitats for plants growing in and by the water, including extensive colonies of the internationally scarce floating water plantain species, stands of water violet and a diversity of pondweeds.

The upland areas provide a mosaic of habitats that support a range of bird species, particularly merlin, golden plover, dunlin, twite, snipe, curlew, wheatear, whinchat, redshank, common sandpiper, ring ouzel and lapwing. Cloughs provide habitat for woodland birds including tree pipits, redstarts and pied flycatchers.

Streams and rivers provide crucial ecological links while reservoirs support wintering and breeding habitats for birds. Stone structures close to waterbodies also provide good sites for bat populations (e.g., Daubenton's bat).

Habitats and species

- **Blanket bog** – there is a large expanse of blanket bog (areas of deeper peat), although only small pockets of this have been restored. Much of this habitat has been degraded by overgrazing, burning and industrial pollution.
- **Upland heathland** - on shallower peat, heather dominated upland heathland covers significant areas but has been similarly degraded by agricultural land improvements.
- **Cloughs** – these are small valleys carved out by streams which make their way from the higher moorlands to the lowland areas. They can contain:
 - Flushes, where water seeps away, and where diverse plants and animals can be supported.
 - Woodland, supporting tree species, wildflowers and a range of wildlife (e.g. birds, bats and mammals).
- **Waterbodies** – streams and rivers (particularly the Irwell and Roch) provide a key ecological link to the lowlands. Reservoirs are also a feature of the area, as is the Rochdale canal.

Key sites protected for nature

South Pennine Moors SSSI, Special Area of Conservation and Special Protection Area (for birds) is a larger area extending from the east of Rochdale and Oldham further into the moorland of West Yorkshire. The moors are made up of extensive blanket bog, with peat that is over 9,000 years old. They also feature upland dry heath with heather, and clough woodlands containing dwarf shrub, lichens and mosses edged by old sessile oak woods.

West Pennine Moors SSSI extends north from Horwich and Bolton and Ramsbottom into Lancashire, and supports an extensive mosaic of upland and upland-fringe habitats. Its nationally important features include blanket bogs, wet and dry heathlands and acid and lime-rich flushes. The moorland fringes in the Greater Manchester area of this SSSI include rush pastures and mire grasslands, acid grasslands and neutral hay meadows and pastures combined with wet and dry broadleaf woodlands and scrub. The grasslands and meadows are species-rich, benefitting from years of careful management with low or no nutrient inputs, a hay cut and grazing, or simply low intensity grazing. These grasslands support populations of nationally rare lady's-mantles.

Gale Clough and Shooterslee Wood, as part of West Pennine Moors SSSI, is semi-natural broad-leaved woodland and is the best example of a clough woodland on acid soils in the city-region. The upper reaches of the ravine support birch-oak woodland, and lower down is wetter woodland with alder and ash sheltering a scrub layer beneath of hazel, cherry, goat-rose and willows. Flushes give rush habitat growing from a moss carpet featuring a diversity of flowering plants. This is bordered by scrub heathland and acid grassland dominated by heather, bilberry and wavy-hair grass. Part of the site is *Favourable*, while part is *Unfavourable, No Change* due to the presence of large of beech trees.

Rochdale Canal SSSI and SAC features in this area (see below, Manchester Conurbation for more information).

Local Wildlife Sites/Sites of Biological Importance include:

- Hollingworth Lake, an important leisure and recreation area near to Rochdale
- Watergrove Reservoir
- Heally Dell
- Nader Valley
- Redisher Wood Local Nature Reserve
- Castleshaw Reservoirs.

How nature helps

Uplands provide significant opportunities for:

- carbon sequestration in peat and soils to tackle climate change
- water storage and management including reducing flood risk downstream in the urban areas.
- leisure and recreation in open spaces and around waterbodies.

Pressures on habitats and species

The Southern Pennine habitats and species are subject to some pressure from development nearer to the urban areas in the south, and increased tourism and recreational demand. Farmsteads continue to be sold off separately from the land, including the division of adjacent fields into equestrian facilities and paddocks. Many mills have been converted into other uses, including retail and housing. Grazing pressures are still present, farm size remains small and livestock numbers remain high, although they have dropped significantly since 2000. In places, drystone walls are collapsing through lack of maintenance and some intensification of grassland management has occurred. The semi-natural areas experience pressure from shooting, grazing, recreational access and development.

The Southern Pennines area is at risk of the impacts of climate change including:

- more frequent extreme weather events with heavy rain causing erosion, flooding and changes to water courses, causing or reactivating landslides.
- droughts making peatland habitats vulnerable to erosion or damage from wildfire.
- climate change could affect species migration and biodiversity, with ranges and climatic envelopes of its characteristic birds (listed above).
- plant diseases may spread more readily affecting moorland dwarf shrubs and trees.

Helping nature to recover

The peat on the South Pennine and West Pennine Moors (and the Dark Peak) have been described as possibly the most degraded upland landscape in Europe, possibly the world¹.

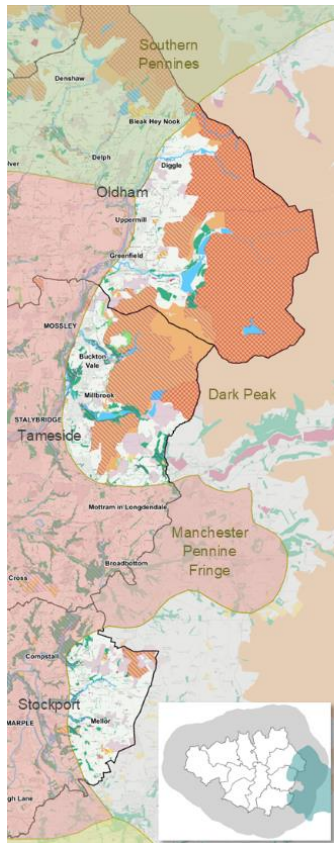
As well as projects to restore blanket bog (see Moors for the Future, Dark Peak section below), measures to stop human impact on the important peat in our uplands is underway. Operation Dragster is a police-backed scheme supported by local neighbourhood forums to

¹ <https://www.moorsforthefuture.org.uk/our-work/restoring-blanket-bog>

deter and prevent illegal off-road activities from causing significant damage to the peat and disturbance to ground-nesting birds.

The Woodland Trust has acquired the 685 ha Smithills Estate, near Bolton, which is home to areas of valuable habitat, particularly moorland - which is part of the West Pennine Moors SSSI - along with clough woodland and important grassland. It is now working to ensure the land is managed appropriately and is creating a variety of habitats that will encourage wildlife to thrive and turn around the decline it has seen in recent years.

Dark Peak



This upland area covers south-east Oldham and north-east Tameside. The towns of Stalybridge, Mossley, Greenfield and Diggle mark the western limit of this large area of moorlands, which extend beyond Greater Manchester across a large part of the higher and wilder parts of the Peak District National Park.

The predominantly peat soils of this moorland-dominated area contain the key habitats of blanket bog, upland heathland and acid grassland which naturally only support a limited diversity of species.

Cloughs (valleys), although small, have specialised plants – often with carpets of sphagnum bog moss and sedges. They can also contain a variety of native tree species such as oak, aspen, rowan, bird cherry and birch, as well as shrub species including hazel and bilberry, alongside woodland wildflowers. The upland areas provide a key habitat for birds including golden plover and dunlin. Blanket bog sees redshank and teal breed in small numbers while upland heath supports merlin, short eared owl, red grouse, curlew and twite. Acid grassland provides important habitats for upland birds such as curlew, lapwing, ring ouzel and snipe and for mammals such as brown hare. Cloughs provide habitat for woodland birds including tree pipits, redstarts and pied flycatchers.

Habitats and species

- **Blanket bog**– there is a large expanse of blanket bog (areas of deeper peat), although only small pockets of this have been restored, such as that at Dovestone. Much of this habitat has been degraded by overgrazing, burning and industrial pollution. It is recovering now but remains at risk of overgrazing, drainage and moorland fires.
- **Upland heathland** – on shallower peat, heather dominated upland heathland covers significant areas but has been similarly degraded by agricultural land improvements.
- **Cloughs** – these are small valleys carved out by streams which make their way from the higher moorlands to the lowland areas. They can contain:
 - Flushes, where water seeps away, and where diverse plants and animals can be supported.

- Woodland, supporting tree species, wildflowers and a range of wildlife (e.g. birds, bats and mammals).
- **Acid grassland** – this is relatively common; although it is usually species poor, with purple moor-grass, it is a valuable habitat for upland birds including curlew and lapwing.

Key Sites for Nature

Nearly half of the entire Dark Peak area is designated as a Special Protection Area and Special Area of Conservation and covered by SSSIs. However, Greater Manchester's footprint in this landscape area is around the edges of these protected areas. The only SSSI in its area is the Huddersfield Narrow Canal with its array of rare plant and aquatic life, which continues through Manchester Conurbation and Manchester Pennine Fringe.

The Huddersfield Narrow Canal is an important example of a flowing water body with high levels of minerals and nutrients. Its main habitats present of standing and running water support tall herb fen and water-side plants, with a high diversity of aquatic plants, and stands of bulrush, bur reed, sweet flag, royal fern, perfoliate pond weed and (the nationally rare) grass wrack pond weed and floating water plantain. It also has the best occurrence of the fresh water sponge in the natural area. Sadly, the condition is *Unfavourable, No Change* indicating that there is no evidence of management for recovery.

Local Wildlife Sites/Sites of Biological Importance include:

- Dovestone Reservoir, RSPB reserve
- Alphin Pike and Buckden Moor
- Stalybridge Country Park.

How nature helps

Uplands provide significant opportunities for:

- carbon sequestration in peat and soils to tackle climate change
- water storage and management including reducing flood risk further downstream
- leisure and recreation in open spaces and around waterbodies.

Pressures on habitats and species

The Dark Peak habitats and species are subject to some pressure from development nearer to the urban areas, and increased tourism and recreational demand, while maintaining a sense of remoteness and tranquillity.

The Dark Peak area is at risk of the impacts of climate change including:

- more frequent extreme weather events with heavy rain causing erosion, flooding and changes to water courses, causing or reactivating landslides.
- droughts making peatland habitats vulnerable to erosion or damage from wildfire.
- climate change could affect species migration and biodiversity, with ranges and climatic envelopes of its characteristic birds (listed above).
- plant diseases may spread more readily affecting moorland dwarf shrubs and trees.

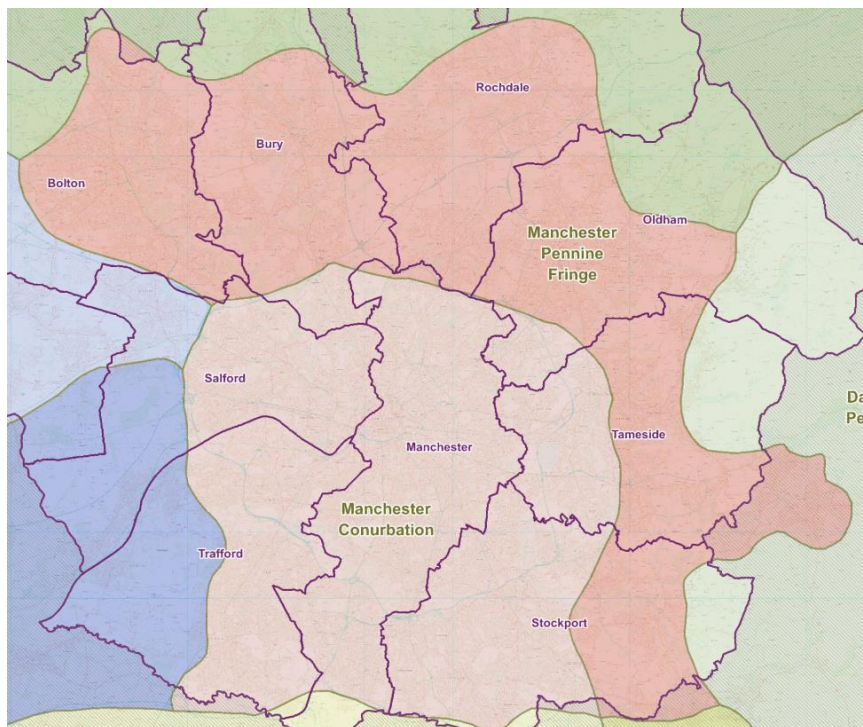
Helping nature to recover

At the RSPB Reserve at Dovestone Reservoir, conservation work has been carried out in partnership with the landowner (United Utilities), aiming to make the bog wetter again, blocking the gullies with stone and heather bales and revegetating the bare peat by planting sphagnum mosses with the help of local volunteers. This not only prevents peat being washed out into our drinking water but helps lock in carbon to tackle climate change. Vitally, it benefits breeding waders such as curlews, golden plovers, red grouse and dunlins whose numbers are now increasing at Dovestone in the restored areas.

While much of the conservation work is carried out on the higher moorlands, work is being carried out to make the moorland edges more diverse, with patches of trees, bilberry and heather, attractive to ring ouzels and other wildlife. Woodland management, planting wildflowers and creating wildlife ponds means that there is more wildlife for visitors to see around the main Dovestone trail too.

Moors for the Future work on Saddleworth Moor between 2012 and 2017 brought a severely degraded moorland landscape back to life by blocking gullies and re-vegetating bare peat to benefit wildlife and reduce flood risk in urban areas. Over 2,000 dams were installed, 8,500 bags of heather brash were spread to stabilise the peat and help establish growing conditions for moorland plants, lime spreading helped improve growing conditions for plug plants of heather, bilberry and cross leaved heath for plant diversity and 250,000 plugs of sphagnum were planted.

Manchester Pennine Fringe



This transitional area from lowland to upland wraps around Manchester from Bolton in the north-west to the edge of Hazel Grove in the east, and includes the industrial towns of Bury, Bolton, Rochdale, Oldham, Dukinfield and Glossop. Its deeply incised, steep river valleys characterise the transition from moorland to urban area. It is situated between the open moorlands of the Dark Peak and

Southern Pennines to the east and north.

The habitats across this area are dominated by grassland of varying quality, with some small hedgerows and walls. Locally restricted hay meadow plant species include great burnet and

ragged robin. The drier soils sometimes support oak and birch woods while the wetter, lower parts have woodland dominated by ash and alder. Concentrated pockets of woodland are confined to narrow steep-sided stream valleys which cut into the smoothly undulating, upland, pastoral landscape.

The adjacent moorlands of the South Pennines and Peak District are of particular importance for breeding bird populations, including merlin, golden plover, curlew and twite. Brown hare and mountain hare are found in this area benefitting from its mixed landscape of open fields, hedgerows, uncut grass and small woodland.

Habitats and species

- **Woodland** – is concentrated in narrow, steep-sided valleys that cut into smooth shoulders of pastoral land, but it also extends along whole river valleys. Woodland over 2 hectares covers 10% of the total area, with around 1% of the total area being ancient woodland. This makes up 35% of woodland in the entire Greater Manchester area.
- **Rivers and canals** – are an important feature of this area, providing transport routes and important sites for biodiversity. Rochdale Canal is designated as a Special Area for Conservation as it supports floating water-plantain.
- Past industrial activities have left a variety of sites, such as **quarries, mill lodges, reservoirs, canals and spoil heaps**, which are now valued for their biodiversity and geodiversity.
- Almost half of this area is classed as urban with high population densities across a belt of industrial towns, with busy transport networks and motorways, with several **parks and gardens** in the area including Heaton Park, Smithills Hall and gardens, Alexandra Park, Queen's Park and Stamford Park.
- The dominant land use is **grass and un-cropped land**. The lower, steeply undulating foothills to the fringes are of variable quality grassland, with some small hedges and walls to irregular fields enclosed by the 19th-century wooded valleys, and scrub on steeper slopes.

Key sites for nature

Compstall Nature Reserve SSSI is part of Etherow Country Park which is owned by Stockport Metropolitan Borough Council. It contains a number of habitat types including open water, tall fen, reed swamp, carr and mixed deciduous woodland, and is an important example of clough woodland. The diversity of habitats supports tufted duck and mallard on the river and in adjacent ponds, whilst teal, goldeneye and pochard are frequent winter visitors. Dipper, grey wagtail and kingfisher have been frequently recorded for the site along with water rail, a particularly uncommon species. Within the woodland breeding populations of are green woodpecker, greater spotted woodpecker, woodcock, tawny owl and sparrow-hawk. The site condition is *Unfavourable, Recovering*, and incursions of Himalayan balsam are being controlled using short periods of cattle grazing while scrub has been removed.

Nob End SSSI is also a Nature Reserve, at Little Lever, not far from Bolton town centre. It is a steep sided tip at the confluence of the Rivers Irwell and Croal and was formed from an industrial process manufacturing sodium carbonate. It forms an unusual habitat where plants typically found in limestone areas thrive. These include a nationally rare species rich variant of the tall fescue-coltfoot plant, and the grasslands feature mainly herbs rather

than grasses – including rare carline thistle, blue fleabane and purging flax to name but a few. Several species of orchids occur in high numbers. In the wetter areas of marshy grassland and willow carr burnet moths and common blue butterflies thrive. The site condition is *Unfavourable, Recovering*, with management in place to tackle Himalayan balsam and rosebay willow herb.

The West Pennine Moors SSSI including Gale Clough and Shooterslee Wood SSSI are shared with the South Pennine area (see above for details of both SSSIs).

Local Wildlife Sites/Sites of Biological Importance include:

- Smithills Country Park
- Doffcocker Lodge
- Chesham Woods
- Burrs Country Park
- Ashworth Valley
- Hopwood Woods Local Nature Reserve
- Tandle Hill Country Park
- Werneth Low Country Park
- Chadwich Country Estate Local Nature Reserve.

How nature helps

The woodlands, rivers and canals and grasslands of this Pennine Fringe area that wraps around the dense urban centre of our city-region provide significant benefits by:

- Bringing green infrastructure into the urban areas, through woodlands and greenways
- Providing transport links alongside the canals
- Providing a cooling effect through green and blue spaces, improving resilience to climate impacts
- Reducing the effects of pollution through tree and hedge cover
- Through parks and nature reserves, providing people with access to natural green spaces for leisure and recreation to promote both physical and mental health
- Reducing flood risk and assisting water management.

Pressures on habitats and species

This transitional area between the dense urban setting and the countryside faces pressures from development, transport links and recreation. Housing and road development cause urbanisation of the area, and old mills are converted to retail or housing. Agricultural uses for the land between the towns are mainly permanent pasture, with much of this land used for horses.

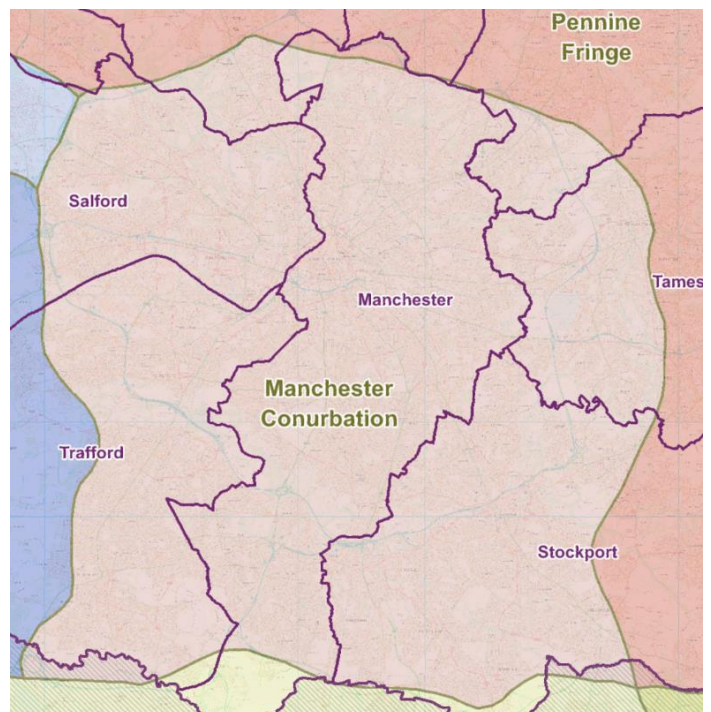
Helping nature to recover

Northern Roots is a pioneering project creating the UK's largest urban farm and eco-park on 160 acres of stunning green space in the heart of Oldham. The aim is to develop Northern

Roots in a way that creates jobs, skills and business opportunities for local people, while preserving and enhancing the biodiversity and environmental value of the site. The Northern Roots site encompasses flat grass land, heath, boggy wetlands and dense wooded slopes. The boggy area in the centre of the site has been harnessed to create a series of ponds and reedbeds, which in future may include a swimming or fishing lake, helping to manage the vast volume of water that flows through the site while creating new habitats for nature. The woodlands have been brought under active management and several more hectares of trees planted. An area has been dedicated to growing saplings, for planting on here and across the region. At the heart of Northern Roots is the ambition to develop the project in such a way that the biodiversity and ecological value of the site is improved. That a wider range of habitats, supporting more and more diverse populations of insects, plants, fungi, birds and mammals are created. The site should become a valuable corridor and haven for wildlife in the vulnerable urban fringe.

Manchester Conurbation

Manchester Conurbation, covers most of the cities of Manchester and Salford the east of Trafford and western areas of Stockport, Tameside and the south west of Oldham. Dense urban and industrial development, and towns, along with commuter suburbs and housing, are interspersed with a network of green infrastructure such as parks and gardens (see Ecological Networks, below). With 82% of the area being classed as urban there are limited areas of natural land and habitats. Several river valleys thread through the urban fabric, flowing down from the moors of the Pennines in the north and east, and the Peak District in the south-east, to head out towards the Mersey Valley in the west.



Semi-natural broadleaved woodland can be found in small pockets, some of which are ancient woodland sites, such as Bailey's Wood, Mere Clough and Prestwich Clough in the north, and Bramhall and Carr Woods in the south. Many of the river valleys have large areas of woodland along their slopes. The tolerance of black poplars to industrial pollution has meant that this species was widely planted as an urban tree in Manchester, however since around 2000 a virulent disease diagnosed as poplar scab has affected the Manchester poplar, and badly diseased trees have been felled. Several conspicuous species have colonised the urban areas with the fox, badger, peregrine falcon, black redstart and marsh orchid among the best-known examples. The mosaic of built environment and open space is also important for urban specialist species such as house sparrow and house martin.

Habitats and species

- **River valleys and canals** – important corridors of semi-natural habitats and natural green space line the conurbation's river valleys and canals.
- **Open grassland, woodland and wetland** link urban centres with open countryside and provide semi-natural habitats for several species
- **Woodland** is usually found in corridors along the slopes of the river valleys and on formerly brownfield land
- There are small pockets of **farmland, bounded by fences or hedges**. However, an increasing number of farms are now given over to urban farming uses such as equestrian facilities. Most holdings are grass and uncropped land
- **Public parks** and recreation facilities provide valuable open spaces for people within this urban environment but also offer a refuge for the urban wildlife
- Field boundaries, where they occur, include both fences and **hedges** in river valleys and on the peripheries of the urban areas.

Key Sites for Nature

Canals are where Manchester Conurbation's three SSSIs feature. However, as stated in Section 3 above, the condition of these waterbodies has been in decline.

The Rochdale Canal is a Site of Special Area of Conservation and SSSI for its important habitats for submerged aquatic plants and waterside vegetation, including extensive colonies of the nationally scarce species floating water plantain. It also supports diverse collections of aquatic flora, especially pondweeds. It is home to over 100 invertebrates, including two rare species of water beetle and pea mussel. The Rochdale Canal is *Unfavourable, Recovering* due to the natural recovery process of plant recolonisation being slow in some areas.

Huddersfield Narrow Canal SSSI – this SSSI extends through the Dark Peak (see above for details).

Hollinwood Branch Canal SSSI in Tameside is also a Local Nature Reserve. It is noted for being a mesotrophic standing water system (meaning that it has a moderate amount of nutrients, so has areas of open water) with diverse open-water plant species including rare examples as well as canal-side fen habitats of bullrushes and reed sweet-grass.

Unfortunately, at the last assessment in 2012, the canal condition was *Unfavourable, Declining* because the canal side plants were intruding into the important clear water areas affecting water quality and species diversity.

Local Wildlife Sites/Sites of Biological Importance

Importantly for a build-up urban area, Manchester Conurbation also has local parks, nature reserves and other sites for local wildlife including:

- Heaton Park
- Clifton Country Park
- Highfield Country Park
- Blackley Forest Local Nature Reserve
- Boggart Hole Clough Local Nature Reserve

- Clayton Vale Local Nature Reserve
- Chorlton Water Park and several other nature reserves and water parks on the River Mersey
- Salford Quays
- Worsley Woods.

How nature helps

Woods and trees, rivers and canals and park and grasslands in Manchester's conurbation provide vital services to our cities and towns through:

- Bringing green infrastructure into the urban areas, through woodlands and greenways
- Providing transport links alongside the canals
- Providing a cooling effect through green and blue spaces, improving resilience to climate impacts
- Reducing the effects of pollution through tree and hedge cover
- Through parks and nature reserves, providing people with access to natural green spaces for leisure and recreation to promote both physical and mental health
- Reducing surface water and sewer flood risk and assisting water management
- Making the urban area more attractive.

Pressures on habitats and species

Development pressure is high in this busy urban centre, alongside the need to provide infrastructure and associated services. While parks and nature reserves are highly valued, biodiversity can be found in brownfield sites that have 'greened up', which in turn, are under development pressure. Incidental green space, parks and canal-sides can see high levels of use for recreation and leisure. Lighting in urban areas can affect wildlife, as can litter, pollution and disturbance. Street trees and garden green space can be under pressure from poor management or paving over. (For more detail on these pressures in the urban setting, see Ecological [Networks](#) below).

Greater Manchester's Ecological Networks

As well as looking at these broad areas, there are ecological networks that cut across Greater Manchester's administrative boundaries and its different landscapes. The city-region is criss-crossed by a network of historic canals and rivers. There are also pockets of trees and woodlands, grasslands and wetlands. Gardens and parks are located throughout Greater Manchester, and extensive areas of peat are found to the north and east in the uplands and in the lowland moorlands of the west. These habitat networks support biodiversity and provide natural corridors and stepping stones for wildlife.

Urban areas

Across many of these National Character Areas, Greater Manchester's urban areas provide a network of natural assets, important for nature but particularly for the wider benefits they provide to people and the economy. The main urban area in the city-region centres on the built-up area of Manchester, Salford and Stockport but also includes the urban areas in Bolton, Bury, Oldham, Rochdale, Tameside, Trafford and Wigan.

Half of the areas classified as urban in Greater Manchester is made up of green spaces, waterbodies and other natural features. These can be described as “urban green infrastructure”, which helps us understand the range of benefits these natural assets provide. This is particularly important in urban areas and their fringes, where most people live. Within these areas, natural assets include:

- Parks and green spaces – providing valuable open spaces for people (for access and recreation) and a refuge for urban wildlife. These include ‘incidental’ green space found on roundabouts, verges, small areas of grass or even wasteland. Cemeteries and allotments can also form a valuable part of the urban habitat mosaics and wildlife corridors.
- Private gardens – half of urban green space is made up of private gardens², although research suggests that an increasing proportion of this (around 50% currently³) may be hard/impermeable surfaces (e.g. paving or driveways). Private gardens therefore offer a significant opportunity to support biodiversity and adaptation to climate change (flooding and overheating). Suburban gardens growing flowers and vegetables could be habitats for around 8,000 insect species⁴.
- River valleys and canals – provide important corridors of open grassland, woodland and wetland for several species as well as recreation opportunities.
- Farmland – small pockets of farmland, particularly given over to uses such as equestrian facilities, are largely grassed and uncropped.
- Nature-based solutions – include street trees, green walls, green roofs and Sustainable Drainage Systems, which help urban areas adapt to climate change. They can also provide habitats for birds and insects in the built environment.

Trees and Woodlands

Trees and woodlands are important habitats to support biodiversity. But nationally, although woodland cover is gradually increasing, woodland wildlife is decreasing. The UK’s woodland cover has more than doubled in the last 100 years, however much of this increase comprises non-native trees. Existing native woodlands are isolated and in poor ecological condition⁵. Ancient woodland is one of our oldest land uses and holds the most diverse ecosystems which are almost impossible to replace if destroyed.

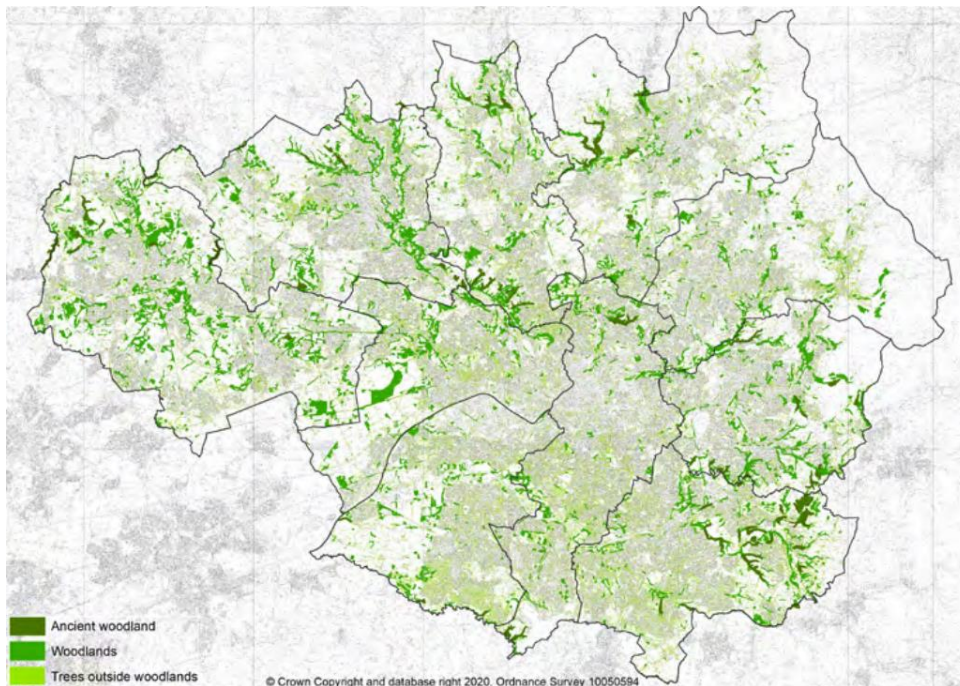
² <http://ontheplatform.org.uk/article/measuring-greater-manchester-s-green-and-blue-spaces-creating-urban-green-infrastructure>

³ <https://www.mmu.ac.uk/environmental-science-research/urban-environments-research-group/research-themes/projects/my-back-yard.php>

⁴ http://www.wlgf.org/wildlife/garden_wildlife_intro

⁵ <https://www.woodlandtrust.org.uk/state-of-uk-woods-and-trees/>

Map: Ancient Woodland, Woodlands and Trees outside woodlands in Greater Manchester



Source: City of Trees, *All Our Trees* report.⁶

The combined tree canopy across Greater Manchester covers 15.7% of the city-region's land surface, with approximately 11.3 million trees. This is around average for urban tree cover in

England⁷. Whilst these include 192 species, the three most common tree species are hawthorn, sycamore and English oak. The city-region has a relatively diverse and young forest canopy with a need to increase the number of larger leafier species, such as sycamore.

A third of Greater Manchester's wooded area is in the Manchester Pennine Fringe, while the centre of Manchester and the Lancashire Coal Measures to the east each have over 20% of the woodland. However, the city-region's most populated areas have the lowest tree cover. There is much lower tree cover in the uplands of the South Pennines and Dark Peak where it is generally restricted to the wooded cloughs. As the map shows, the woodland areas are fragmented, which is a challenge for nature recovery, because new woodland should be located within 500m of established sites so woodland species can move between them. Scattered trees outside woodlands can help provide linkages in the woodland habitat network for species movement.

Some of Greater Manchester's most important woodlands are detailed in the National Character Area character descriptions above. The jewels in the crown include clough woodlands which are SSSIs, namely Gale Clough and Shooterslee Wood, Brookheys Covert and Compstall Nature Reserve.

Ancient woodland found in the Manchester Conurbation, central area of the city region includes Semi-natural broadleaved woodland can be found in small pockets, some of which are ancient woodland sites, such as Bailey's Wood, Mere Clough and Prestwich Clough in the north, and Bramhall and Carr Woods in the south.

⁶ <https://www.cityoftrees.org.uk/allourtrees>

⁷ <https://www.woodlandtrust.org.uk/blog/2018/03/tree-canopy-cover-results/>

Table 2. Percentage woodland cover by NCA area.

National Character Area	Lancashire Coal Measures	Mersey Valley	South Pennines	Dark Peak	Manchester Pennine Fringe	Manchester Conurbation
Percentage of GM's wooded cover	23%	8%	8%	4%	35%	21%
Percentage of this NCA which is wooded	10%	9%	5%	6%	10%	6%

Source: Table of Habitats by NCA (Appendix 4)

How Trees and Woodlands help

Trees and woodland not only provide valuable habitats, but they provide wider environmental and social benefits as well:

- Trees play a vital role in carbon storage and in improving resilience to climate change by slowing the flow of water into streams and rivers, helping to reduce the risk of surface water flooding and reducing the urban heat island effect
- In the right place, they can help manage air quality
- They create better places for walking and cycling
- They create a barrier to noise
- They improve the look and feel of an area, which can give a boost to the local economy.

Pressures on Trees and Woodlands

Woods and trees are subject to a range of threats from direct loss to the impacts of climate change, imported diseases, invasive plants, animal grazing and air pollutants:

- **Mismanagement and loss of urban trees:** careless construction or conflict with disadvantages of trees, such as shade, can lead to the damage or destruction of urban trees.
- **Lack of woodland management:** most woodlands in Greater Manchester do not have an up-to-date management plan or schedule of operations⁸. Woodlands need management to improve their condition and help prepare them for an increasingly unsettled environment and climate. This includes good forestry practices, legal compliance, safety and protecting designated sites for biodiversity. Moreover, woodlands need a diversity of species and ages of trees too, for resilience and to provide a rich habitat for wildlife.
- **Old age or poor health of trees:** The Greater Manchester i-Tree survey results⁹ tell us that around 30% of Greater Manchester's trees are in poor or moderate condition,

⁸ <https://www.cityoftrees.org.uk/allourtrees>

⁹ <https://www.cityoftrees.org.uk/project/i-tree-eco>

either because of disease, damage or old age. Trees in poor condition are unlikely to thrive and so we can expect that we will lose these trees by 2050.

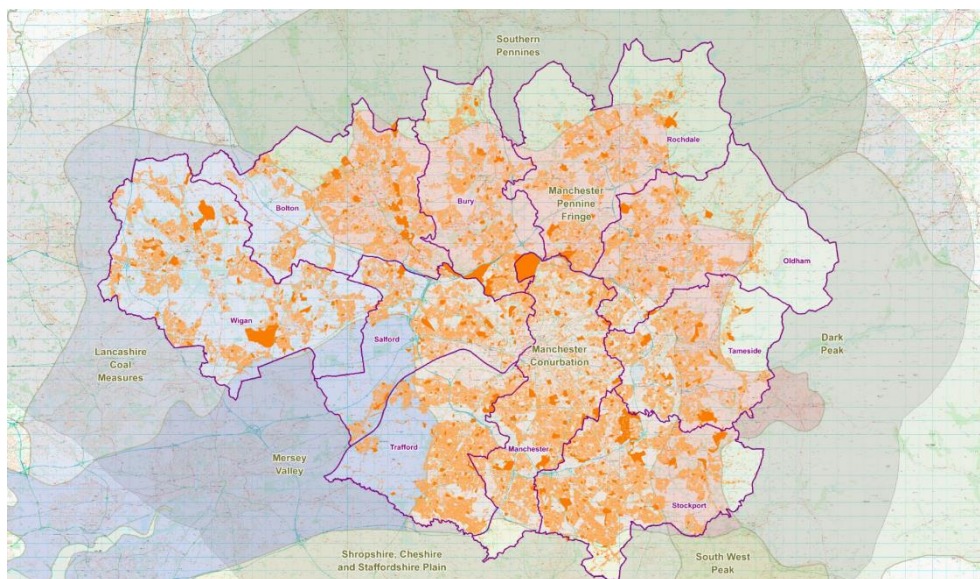
- **Development:** the need to provide land for homes and employment sites means that trees can be lost through development.
- **Climate change:** is causing extremes of temperature, wind, and rainfall, which could have major impacts on trees. Droughts particularly affect young trees which have not yet established strong root systems. Climate change also allows pests and diseases to expand their natural ranges, putting more trees at risk, for example ash and horse chestnut are particularly at risk.

Helping nature to recover

Greater Manchester is a leader in community forestry; the Red Rose Forest (now City of Trees) and Pennine Edge Forests were established in 1990 to restore previously degraded sites. The planting carried out over the last 30 years has seen an increase in species including the greater spotted woodpecker and long tailed tits.

Parks and Gardens

Map: Parks and Gardens in Greater Manchester



Greater Manchester's parks and gardens cover half the urban area of the city-region. Many parks are publicly owned and managed by local authorities. They are vitally important for people's mental and physical

health, being spaces for connection with nature and recreation in particular.

Those fortunate to have gardens also benefit from the impact on their mental health, in particular. The majority of gardens are privately owned and unregulated by public authorities, although some trees are protected or regulated for safety reasons. Gardens with flowers, trees, hedges and ponds make up an important proportion of existing and potentially improved stepping stones and habitat mosaics for invertebrates – especially pollinators, birds and even mammals.

How Parks and Gardens help

Parks and gardens provide us with greenspaces that are vital places for recreation and our mental and physical health. However, access to good quality green space is unequal – a Groundwork report into equity in access to nature in urban areas¹⁰ found that:

- Only 5% of adults say that access to nature has never been important to them or their mental health
- 40% of people from ethnic minority backgrounds live in the most green-space deprived areas
- 29% of people living with a long-term illness or disability had not visited a natural space in the previous month

Pressures on Parks and Gardens

As for so many of our wild spaces, gardens are also under pressure from development and human activity. However, significant areas of gardens have been lost to extensions, patios and paving or plastic turf replacing plants and grass. Only half of the typical Manchester garden is green¹¹. People may remove hedges and replace these with easier-to-maintain fencing, which form barriers rather than natural corridors for wildlife such as hedgehogs and remove valuable habitats for birds and invertebrates.

Public parks have come under increasing pressure from the budget cuts local authorities have had to make to their services over the last 10 years due to austerity. This has reduced the amount of money local authorities have been able to invest in maintaining and enhancing public parks and green spaces. In addition, use of these has continued to rise, particularly over the course of the Covid-19 pandemic, resulting in increased pressure on them.

Helping nature recover

My Wild Garden is a Wildlife Trust campaign supported by GMCA that links to the Manchester City Council My Wild City project to create a city-wide nature reserve. The campaign encourages and supports people to use their gardens, workplaces and green space to create nature corridors throughout the Greater Manchester. Ranging from planting for insects to creating a wild patch or gardening for wildlife, resources help people to learn how to be a part of the nature recovery network. Over 1,500 people signed up to make their gardens nature friendly during 2020.

Mayfield is a 24-acre multi-purpose housing, offices and retail development in the centre of Manchester. Within this, a new 6.5-acre park, Mayfield Park, will be built. As well as providing grassy space for leisure and recreation, wilder areas will include floodable meadows and biodiverse ecological areas beside the river.

¹⁰ [NEWS: Report finds severe inequalities in access to parks and greenspaces in communities across the UK | Groundwork](#)

¹¹ <https://www.mmu.ac.uk/media/mmuacuk/content/documents/school-of-science-and-the-environment/urban-environments/1.-MBY-Intro-Gina-Cavan.pdf>