

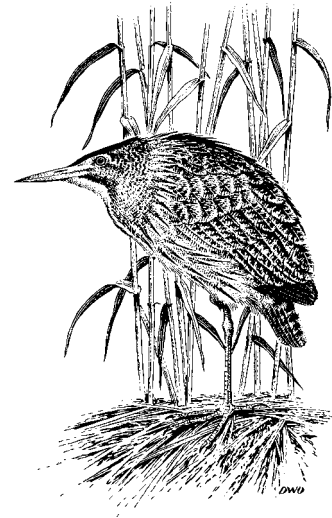
## APPENDIX 3: BIODIVERSITY HABITAT ACTION PLANS

### Greater Manchester Habitat Action Plans

---

# Reedbeds & Bittern

*25% of the North West  
freshwater reedbeds are found  
in Greater Manchester*



## Ecology

Nationally the largest reedbeds are found in river floodplains and low lying coastal areas such as estuaries, but can occur wherever water levels seasonally fluctuate and/or are no more than a metre in depth, such as lake margins, ditches and slow flowing rivers. In Greater Manchester the largest reedbeds are associated with waterbodies created by mining subsidence known locally as Flashes.

Without management or regular flooding, dead reed builds up reducing the depth of water. This enables colonisation and succession, first by species such as greater willowherb, followed by willow scrub and finally woodland.

Factors including size, age, water quality and geographical distribution will lead to differences in the plant, animal and

invertebrate communities found in reedbeds. For example, Bittern (*Botaurus stellaris*) require a matrix of reedbed in excess of 20ha to breed. Wintering Bitterns will often use smaller sites but move on in spring.

Characteristic birds of reedbeds in Greater Manchester include:

Reed Bunting	<i>Emberiza schoeniclus</i>
Water Rail	<i>Rallus aquaticus</i>
Reed Warbler	<i>Acrocephalus scirpaceus</i>
Bittern	<i>Botaurus stellaris</i>

Marsh Harrier (*Circus aeruginosus*) and Bearded Reedling (*Panurus biarmicus*) may also occur.

There are 700 invertebrate species in the UK associated with reedbed. Some 40 of these

are entirely dependent upon them, several of which occur in Greater Manchester.

Common reed is the dominant plant species associated with the priority habitat when it is in good condition. Other species found include Reedmace, Lesser Reedmace, Yellow Iris, Sweet Flag, Branched Bur-reed and Duckweed. In drier areas stands undergoing the first stages of succession species, such as bittersweet, rushes, stinging nettle and marsh cinquefoil start to become increasingly common. Small areas of Carr woodland, usually of Willow and Alder, may also start to develop.

**Bittern**

The Bittern is confined almost entirely to wetlands dominated by reeds, where it feeds on fish, amphibians and other small water animals. The bird re-colonised the UK after extinction last century but has declined steadily as a breeding species in the last 30 years. The decline is due to direct habitat loss and habitat degradation through lack of appropriate management and eutrophication. In recent years there has been an increase in the number of Bitterns over-wintering in the UK and within the north west of England.

Reedbeds & Bittern

**Notable species**

Common Reed	<i>Phragmites australis</i>
Common Reedmace	<i>Typha latifolia</i>
Lesser Reedmace	<i>Typha angustifolia</i>
Yellow Iris	<i>Iris pseudacorus</i>
Branched Bur-reed	<i>Sparganium erectum</i>
Bittersweet	<i>Solanum dulcamara</i>
Marsh Cinquefoil	<i>Potentilla palustris</i>
Bittern	<i>Botaurus stellaris</i>
Marsh Harrier	<i>Circus aeruginosus</i>
Grey Heron	<i>Ardea cinerea</i>
Water Rail	<i>Rallus aquaticus</i>
Reed Bunting	<i>Emberiza schoeniclus</i>
Reed Warbler	<i>Acrocephalus scirpaceus</i>
Bearded Reedling	<i>Panurus biarmicus</i>
Water Vole	<i>Arvicola terrestris</i>
Water Shrew	<i>Neomys fodiens</i>
Common Frog	<i>Rana temporaria</i>
Common Toad	<i>Bufo bufo</i>
Silky Wainscot	<i>Chilodes maritimus</i>
Green Brindled Crescent	<i>Allophyes oxyacanthae</i>
Bulrush Wainscot	<i>Nonagria typhae</i>
Brown-veined Wainscot	<i>Archanara dissoluta</i>
Obscure Wainscot	<i>Mythimna obsoleta</i>
Small Wainscot	<i>Chortodes pygmina</i>
Large Wainscot	<i>Rhizedra lutosa</i>
Small Rufous	<i>Coenobia rufa</i>

**Priority Habitat Description**

Reedbeds are wetlands dominated by stands of Common Reed (*Phragmites australis*) where the water table is at, or above ground

level for most of the year. They include areas of open water and ditches, and may be associated with small areas of wet grassland and carr woodland (wet, swampy woods dominated by Alder and Willow).

## Current status and distribution

### National

In the UK there are approximately 900 reedbed sites, with a total of 5000 ha. Of these 900 sites only 50 are larger than 20ha (UKBAP).

The Bittern is a declining breeding species. It is confined almost entirely to lowland marshes in Norfolk, Suffolk and Lancashire. The UK population in 2001 increased for the fourth year in a row to thirty males at a total of eighteen sites. This compares to a peak of seventy pairs in the late 1960's when it bred in eight counties. Numbers are boosted in winter by continental immigrants.

### Greater Manchester

Although uncommon in the county, approximately 25% of recorded freshwater reedbed habitat in North West England lies in Greater Manchester, usually in man-made wetlands on former industrial sites.

Reedbed however covers < 1% of Greater Manchester and many are small and fragmented. The most extensive reedbeds

occur in the series of subsidence "flashes" in the Wigan area. The most significant of these are within Wigan Flashes Local Nature Reserve, part of which is designated as a SSSI. The site contains approximately 70 ha of reedbeds. Most reedbeds are designated as SBI's and managed as Local Nature Reserves.

### IMPORTANT REEDBED SITES IN GREATER MANCHESTER

Wigan Flashes	LNR	Wigan
Pennington Flash		Leigh

Bitterns do not currently breed in Greater Manchester. Winter visitors are, however, regularly recorded in the Wigan Flashes. Numbers are uncertain due to the secretive nature of the bird. But they are considered to be a rare but increasing non-breeding visitor.

### Legal

Reedbeds have no legal protection, except where it occurs in designated sites. However some species associated with this habitat are covered by a degree of legal protection including, Marsh Harrier and Bearded Reedling (Schedule 1, Wildlife and Countryside Act, 1981) and Water Vole (Schedule 5, Wildlife and Countryside Act, 1981). The Bittern is listed on Annex 1 of the EC Birds Directive and Appendix III of the Bern Convention. It is also protected in the

UK under Schedule 1 of the Wildlife and Countryside Act (1981) as amended.

## Factors affecting the habitat and species

- ◆ Lack of management, which accelerates seral succession that leads to overall deterioration of the quality of the reedbed.
- ◆ Excessive water abstraction causing lowering of water levels within existing reedbeds.
- ◆ Eutrophication caused by fertiliser run-off increases levels of nitrates and phosphates in the water. Whilst reeds can grow well in eutrophic water it can have significant impact on other wildlife, including the ability of the Bittern to feed.
- ◆ Disturbance caused by recreational users of water bodies and dog walkers.
- ◆ Water pollution caused by pesticides and heavy metals.
- ◆ Small and fragmented reedbeds increase the vulnerability of animal species to local extinctions, although they can provide stepping-stones to other larger blocks.

## Reedbeds & Bittern

- ◆ Recent declines of Bittern have been caused by a reduction in the availability of reedbeds and other swamps and marshes. Much of this land has been lost to drainage, but the abandonment of traditional management and uses of reed areas has also caused degradation of suitable sites. Water pollution has also adversely affected fish populations in some reedbeds.

## Current actions

- ◆ Formal designation of sites as SSSI and SBI's.
- ◆ Recent schemes in Wigan have been implemented to bring reedbeds into more positive management regimes. These schemes have allowed a total of 50 ha of reedbed to be brought into active management. Approximately 24ha of this is newly created reedbed (WLCT).
- ◆ Increasing use of Sustainable Urban Drainage Systems (SUDS) where reedbeds are an integral element of design.
- ◆ Ongoing reedbed planting, extension and management schemes at Amberswood, Bickershaw and Wigan Flashes.

## Objectives and targets

Objective	Target	Quantity	Target Date
Maintain current extent	Designate all reedbeds that meet the Greater Manchester SBI selection guidelines and create appropriate management strategies for maximum conservation of species.	210ha	2015
Achieve favourable condition	75% of all reedbeds managed for conservation in favourable condition. Reedbed habitat that is above 20 ha should be managed with consideration for Bittern.	210 ha	2015
Create and expand habitat	Identify opportunities to create new reedbeds and expand existing stands, considering bittern in appropriate areas.	32 ha	2015
Determine the current distribution of Bittern in Greater Manchester	Collate existing records and establish baseline data through further surveys to produce a current distribution map.	-	2010

## Proposed actions

1. Ensure that all relevant reedbeds and key Bittern sites are designated and have a current management plan that is being implemented. NE, GMEU, WT's, LA's, EA. 2010
2. All SSSI reedbeds to be in favourable condition and managed in accordance with

Natural England recommendations. NE, EA WT's, LA's. 2015

3. Identify possible areas to expand or create new habitat, and find relevant funding streams and submit bids. WT's, EA, NE, GMBP, LA's. 2010

4. Assist landowners and managers in managing reedbeds sympathetically and promote long-term positive management for Bittern. This could involve carrying out reedbed management training days. **NE, WWT, WT's, EA, LA's. 2009**
5. Establishment of a breeding Bittern population in Greater Manchester. Manage large reedbeds in accordance with best practice. **WT's, EA, RSPB. 2012**
6. Increase reedbed area through the construction of Sustainable Urban Drainage Systems (SUDS). Monitor all relevant planning applications and suggest SUDS where appropriate. **EA, LA's, GMEU. Ongoing**

**Lead partners**

<b>EA</b>	Environment Agency
<b>GMEU</b>	Greater Manchester Ecology Unit
<b>GMBP</b>	Greater Manchester Biodiversity Project
<b>LA's</b>	Local Authorities
<b>NE</b>	Natural England
<b>RSPB</b>	Royal Society for the Protection of Birds
<b>WLCT</b>	Wigan Leisure and Culture Trust
<b>WT's</b>	Wildlife Trusts
<b>WWT</b>	Wildfowl and Wetlands Trust

**Reedbeds & Bittern**

**Best practice guidelines**

Unless reedbeds are managed they will eventually dry out and become colonised by other plant species, leaf litter will accumulate over time, and it will develop into scrub and woodland. The natural processes can be accelerated by drainage and water abstraction, as well as, isolation from watercourses. To slow down or reverse this process a number of management practices can be used such as, rotational reed cutting, controlled burning of the 'litter', or by water level management.

Diversity in reedbed structure often depends on water within the system and it is therefore very important to consider the hydrology before deciding on management strategies. Best practice is to vary water levels, with water around 30 cm deep over the bulk of the reedbed. This allows fish to access the water body and encourages invertebrates, such as Water Hoglouse that helps control the build up of material and prevents drying out. Different depths and flooding regimes are needed for different species and therefore this needs to be considered in the management plan.

**Management for Bittern**

- ◆ A range of reed/fen communities (dependent on site conditions) is

desirable. This can be achieved through rotational cutting.

- ◆ Development of reedbed fringe communities provides suitable feeding for Bittern, increasing the amount of reed/water interface with suitable ditches and pools.



© Steve Young

- ◆ Prevention of seral scrub succession.
- ◆ Monitoring water quality for invertebrate community and flora and fauna.
- ◆ Ensure ice-free areas in severe winters.
- ◆ Control of disturbance by humans, dogs and potential predatory species e.g. mink.

**Further information on best practice management for reedbeds and bittern can be found here:**

[Reedbed Management for Bitterns](#) – RSPB

### Links to relevant BAP's

Grasslands  
Water Voles  
Great Crested Newt  
Ponds and Lodges  
Canals

### References

Hawke, C. J. José, P.V. (1996) Reedbed Management For Commercial and Wildlife Interests. RSPB.

Burgess, N. Ward, D. Hobbs, R. & Bellamy, D (2005) Reedbeds, fens, acid bogs IN *Managing Habitats for Conservation*. Edited by Sutherland, W.J. & Hill, D. A.

### Acknowledgements

Thanks to Steve Young for the use of his photograph.

Author

**Mark Champion**

Wigan Flashes Projects Manager

[mark.championx@btinternet.com](mailto:mark.championx@btinternet.com)

# Ponds & Lodges

*A pond is a natural or man-made water body, 1m<sup>2</sup> to 2ha in area, that holds water for at least 4 months of the year*



## Ecology

Ponds occur in a variety of situations including abandoned industrial sites, marl pits, brickworks and flooded mineral workings, as a result of mining subsidence and quarrying, as well as in more natural locations in woodlands and on farms. Ponds in parks and gardens are also an important biodiversity resource particularly in urban and suburban areas.

When ponds are created they can be quickly colonised by plants and animals. The speed at which this happens, the number and type of species is strongly influenced by three key factors: how clean the water is, how varied the shape or design is, and how close it is to other freshwater habitats, to provide colonising material. There is often no need to introduce plants or animals. However, planting of native vegetation can discourage

vandalism, and benefit species conservation by decreasing the chance of non-native species dominating.

Ponds go through the aging process, known as natural succession; they may become shallower and covered by vegetation, or shaded by mature trees. This process could take hundreds or thousands of years. All types and ages of ponds are potentially good wildlife habitats. Ponds that go through natural succession do not usually turn into dry land – they turn into temporary or seasonal ponds. Temporary ponds are an important and highly threatened habitat.

Lodges are man-made waterbodies, with most examples originating from the industrial revolution. These were created to hold water for industrial processes - notably in Greater Manchester for the textile industry. Lodges

differ in size but are generally associated with streams and rivers. In terms of biodiversity interest, there is little difference between lodges and ponds. Generally lodges are larger with more extensive areas of open water, with some areas of marginal vegetation within them with species such as common reed, great reedmace and reed canary grass.

A range of species are associated with ponds and lodges, including wetland plants, aquatic invertebrates, amphibians, mammals and birds. Bats roost in some of the culverts associated with lodges in addition to using ponds and lodges as important feeding areas. Some species are specific to ponds, or a type of pond, such as temporary or seasonal, and are easily lost if the pond is changed.

Ponds can also help to prevent flooding by storing surface water during periods of heavy rainfall. The water can then slowly soak into the ground or aquifers instead of rushing down streams or rivers and causing flooding. They can also help to clean up water from agricultural land. Water running off fields can be sent through a series of ponds, which remove the sediments and fertiliser, before it enters a stream or river.

## Ponds & Lodges

### Notable species include:

Common frog	<i>Rana temporaria</i>
Common toad	<i>Bufo bufo</i>
Smooth newt	<i>Triturus vulgaris</i>
Palmate newt	<i>Triturus helveticus</i>
Great crested newt	<i>Triturus cristatus</i>
Water vole	<i>Arvicola terrestris</i>
Bats	
Grass snake	<i>Natrix natrix</i>
Reed Bunting	<i>Emberiza schoeniclus</i>
Emperor dragonfly	<i>Anax imperator</i>
Broad-bodied chaser	<i>Libellula depressa</i>
Great diving beetle	<i>Dytiscus marginalis</i>
Diving beetles	<i>Ilybius guttiger</i>
	<i>Dytiscus circumflexus</i>
	<i>Rhantus suturalis</i>
Water beetle	<i>Agabus unguicularis</i>
Scavenger beetles	<i>Cercyon ustulatus</i>
	<i>Cercyon</i>
	<i>convexiusculus</i>
	<i>Cercyon tristis</i>
	<i>Helochares punctatus</i>
Marsh beetle	<i>Cyphon pubescens</i>
Shining ram's-horn	<i>Segmentina nitida</i>
Mud snail	<i>Lymnaea glabra</i>
Lesser marshwort	<i>Apium inundatum</i>
Ivy-leaved water crowfoot	<i>Ranunculus fluitans</i>
Galingale	<i>Cyperus longus</i>
Whorled water milfoil	<i>Myriophyllum verticillatum</i>
Great dock	<i>Rumex hydrolapathum</i>

In urban areas, new ponds can be part of Sustainable Urban Drainage Systems (SUDS) through the creation of detention basins, retention ponds or new wetlands. It

can be designed into new developments or retrofitted into existing sites. SUDS can capture water from roads, car parks and other surfaces, helping to reduce flood risk and prevent pollution of other water bodies.



(GMEU)

### Priority habitat description

Ponds for the purpose of the UK BAP priority habitat classification are defined as permanent and seasonal standing water bodies from 1m<sup>2</sup> up to 2 ha in extent, which meet one or more of the following criteria:

- ◆ Ponds that meet criteria under Annex 1 of the Habitats Directive.
- ◆ Ponds with important species such as Red Data Book species, BAP species, species on Schedule 5 and 8 of the Wildlife and Countryside Act, Habitats Directive Annex II species, a Nationally Scarce wetland plant species, or three

Nationally Scarce aquatic invertebrate species.

- ◆ Ponds with exceptional species assemblages or large populations of key species such as amphibians and dragonflies, or exceptionally rich sites for plants or invertebrates (supporting 30 or more wetland plant species or 50 or more aquatic macroinvertebrate species).
- ◆ Ponds of high ecological quality, as defined by Pond Conservation's Predictive System for Multimetrics (PSYM).
- ◆ Other ponds important because of their age, rarity of type or landscape context.

In Greater Manchester all ponds and lodges are considered of value and this action plan therefore covers all such features not just those covered by the UK BAP definition.

### Current status and distribution

#### National

There are an estimated 487,000 ponds in Great Britain (not including curtilage i.e. gardens etc) ([Countryside Survey 2007](#)). At the start of the 20<sup>th</sup> century, there were approximately 1.25 million ponds. This

means we have lost over three quarters of a million ponds in the last 100 years. Not only are there fewer ponds, but also the remaining ponds are more likely to be larger, deeper, and degraded by pollution, invasive species or inappropriate management. The Countryside Survey (2007) revealed an increase from 60% to 72%, of ecologically poor or very poor quality pond sites in England and Wales since 1996.

**Greater Manchester**

There is currently no data on the number of ponds in Greater Manchester. Ponds are found in all parts of Greater Manchester, and are thought to be relatively numerous for an urban area. There are particularly high densities of ponds on the western side of Greater Manchester, especially around Wigan and in Bury, Salford and Bolton, where the pond network is known as the Wigan Pondway. Important pondscapes are also found in Trafford, Manchester, Stockport and on the Oldham/Tameside border.

Lodges are a common feature associated with the mill towns of Lancashire and Greater Manchester. They are important to the biodiversity of the region as they make a significant contribution to nature conservation, particularly in areas where natural water bodies are less extensive. Lodges occur in all ten districts of Greater Manchester. Recently a rare plant - Floating

**Ponds & Lodges**

water plantain (*Luronium natans*) was found in a Rochdale lodge.

Although there is a national plan focussing on Priority Ponds, it is important to remember that all ponds are valuable. Ponds are important for local wildlife, and are a vital part of an ecological network, allowing certain plants and animals to move around the landscape, to colonise new sites, and buffering sites against the loss of species. This network is particularly important for ensuring pond wildlife can survive climate change. Since pond numbers have dropped so low, the network is fragile, and in some areas it is broken; some ponds are isolated and the wildlife that lives in them is at risk of disappearing completely from the local area.

**Sites Important for Ponds and Lodges in Greater Manchester:**

Brookheys Covert	SSSI	Trafford
Compstall	SSSI	Stockport
Dunham Park	SSSI	Trafford
Cotteril Clough	SBI	Manchester
Cowlishaw Farm	SBI	Oldham
Heald Green	SBI	Stockport
Holden Clough	SBI	Tameside
Barracks Lodge	SBI	Bury
Doffcocker Lodge	LNR	Bolton
Culvert & Lodge at Standish	SBI	Wigan
Kirklees Brook	SBI	Bury
Manchester Airport	SBI	Manchester
Moses Gate	SBI	Bolton

### Legal

Ponds are not directly protected by legislation (except for a small number of special pond types listed on Annex 1 of the Habitats Directive and not found in Greater Manchester). However, ponds that support protected species, such as great crested newts or water voles, do receive protection under species legislation (e.g. [Wildlife and Countryside Act 1981](#), [Conservation \(Natural Habitats &c\) Regulations 1994](#)).

Ponds receive some protection through the planning process. 'Planning Policy Statement 9: Biodiversity and Geological Conservation' (PPS9) and the associated guidance require local authorities to conserve important natural habitats (including ponds) with policies that enhance and add to natural habitats, and aim to maintain networks by avoiding or repairing the fragmentation and isolation of natural habitats through policies in plans.

Regulation 37 of the Conservation (Natural Habitats, &c) Regulations 1994 ensures that planning policy considers certain landscape features that perform a stepping-stone function "(such as ponds or small woods)" which "are essential for the migration, dispersal and genetic exchange of wild species". Local Nature Reserves and Sites of Biological Importance, cover a proportion

of Greater Manchester's ponds, providing some protection.

### Factors affecting the habitat

Nationally, pond loss can be attributed to filling in, land drainage, and lowering of the water table. Infilling by natural succession on its own does not necessarily result in the loss of the pond; it results in a temporary pond, which is also an important habitat. Ponds may be filled in for a variety of reasons, including development, increasing land area for agricultural production, and health and safety concerns.

Pond degradation can be caused by pollution, inappropriate management, introduction of inappropriate native species, neglect (where management is required to maintain certain conditions for key species), deepening of temporary ponds, linking ponds to watercourses and loss or degradation of surrounding habitats. In, or near to, densely populated areas, duck feeding, introduction of fish, and introduction of invasive non-native plants are a significant threat. The sale of invasive non-native plants is commonplace and is thought to be a significant factor in their spread. Surface drainage from roads and other hard surfaces can also result in pollution, as well as, causing uncontrolled rise in water levels.

Although large numbers of ponds are created each year, the new ponds are not a like-for-like replacement of the high quality ponds that are lost. Some new ponds may be of limited value due to poor design and planning together with sometimes a lack of management in the first few years. They may also be created for other purposes e.g. angling.

## Current actions

The [UK Draft Habitat Action Plan](#) for ponds of high ecological quality is led by [Pond Conservation](#) and the Environment Agency. To help deliver Target 4 (creation of high quality potential ponds), Pond Conservation is running the [Million Ponds Project](#) to provide encouragement, training and support to create 600,000 new ponds of high quality potential in the next 50 years. A Pond Creation Toolkit for wildlife friendly pond creation has already been produced and is available at [www.pondconservation.org.uk](http://www.pondconservation.org.uk).

Pond Conservation has set up the [Important Areas for Ponds initiative](#) (IAP) to identify networks of priority ponds – the most important ponds for biodiversity. Important Areas for Ponds are geographical areas which support significant numbers of high quality ponds. Within each Important Area, ponds are classified as either of national or European importance, according to the

## Ponds & Lodges

species or groups of species that they support. IAP reports have been carried out in Wales and South East England and will be extended to the rest of the UK, including Greater Manchester. This should help to protect ponds by focussing conservation effort.



(Pond Conservation)

There is currently a great deal of pond creation and management activity within Greater Manchester (in parks, gardens, farmland, conservation projects, and associated with development). There is also a large amount of information and advice freely available about ponds in books and via the Internet, although not all of it is accurate. The best sources are The Pond Book and organisations like Pond Conservation and the Wildlife Trusts that advise and campaign on pond issues, e.g. invasive species.

DEFRA has proposed to add many invasive non-native plants species to Schedule 9 of the Wildlife and Countryside Act, banning the

sale of these plants, and making it illegal to release them into the wild.

In Greater Manchester, there have been a range of surveys carried out (by the Pond Life Project and local authorities) to provide information on pond wildlife in the area, and some local authorities have put their information on GIS systems to make it more accessible. In some areas, policies have been incorporated into local planning documents to ensure ponds are considered throughout the planning process.

Ponds have also been created at Ince near Wigan for use in mine water treatment. This is another useful aspect of ponds.

### Objectives and targets

Objective	Target	Quantity	Target Date
Establish the number of priority Ponds in Greater Manchester	Collect together data of known ponds and identify Priority Ponds.	-	2011
Maintain the number of Priority Ponds.	Maintain net number of Priority Ponds in Greater Manchester – no net loss of ponds through development, lack of management etc.	Unknown	2015
Establish Flagship Pond Sites	Identify and establish Flagship Pond sites and protect for conservation and educational value.	10	2015
Achieving condition and restoration	Improve sites that are in poor condition and where possible restore a subset of the best sites into favourable condition/ to potential Priority Pond status.	50 Sites	2015
Pond Creation	Create new ponds of high quality potential.	30 Ponds	2015

## Proposed actions

- ◆ Gather information about the existing pond resource in Greater Manchester, including number and quality of ponds, and identification of Important Areas for Ponds, to enable targeted conservation action and monitoring of changes to the pond resource. **PC, GMBP, GMEU, LA's, WT's. 2011.**
- ◆ Ensure that existing legislation and local policy is fully implemented to protect ponds, and that appropriate policies are included in development plans, such as the Local Development Framework (LDF'S), to maintain and enhance the pond resource. **GMEU, NE, EA, LA's, WT's. Ongoing**
- ◆ Provide information to planners, developers and ecological consultants on best practice pond conservation. **PC, NE, EA, GMEU, GMBP. Ongoing**
- ◆ Put in place ways (designation, management plans etc) of maintaining the condition of the best ponds. **PC, NE, EA. 2011**
- ◆ Encourage the use of **Sustainable Urban Drainage Systems** in new developments to protect wetlands from sources of poor quality water, and to create more habitats. **EA, UU, LA's. Ongoing**
- ◆ Engage with developers to encourage protection of existing ponds and high quality habitat creation in new development sites. Where ponds are lost there should be a 2 for 1 replacement scheme adopted. **EA, NE, LA's, GMEU. Ongoing**
- ◆ Create 5 new ponds per year with the potential to be high quality (unpolluted water supply, good design, good location). **PC, LA's, WT's, GMBP. 2015**
- ◆ Work with anglers and fisheries managers to encourage sensitive management of ponds and discourage inappropriate fish introductions. **PC, EA, NE, WT's, LA's. Ongoing**
- ◆ Engage with retailers, garden pond owners and fish enthusiasts to halt the release of non-native plants into ponds, and implement control measures on sites where there is a risk of such plants spreading to other sites. **PC, LA's, EA, WT's. Ongoing**
- ◆ Work on sites with water quality issues, non-native species, inappropriate management etc to

improve the sites, leading to population increases of key species or increases in species diversity. PC, EA. LA's. WT's, NE. 2015

- ◆ Raise awareness of the value of ponds and where people can get accurate information and advice about ponds. PC, GMBP, WT's, LA's. Ongoing

Lead Partners	
EA	Environment Agency
GMBP	Greater Manchester Biodiversity Project
GMEU	Greater Manchester Ecology Unit
LA's	Local Authorities
NE	Natural England
PC	Pond Conservation
UU	United Utilities
WT's	Wildlife Trusts

## Best practice guidelines

Some good examples of pond & lodge management, creation and enhancement across Greater Manchester include:

- ◆ Pond creation at Three Sisters in Ashton in Makerfield.
- ◆ New retention ponds at Kingsway, Rochdale.

- ◆ Creation of a pond on the roof of the Unicorn Grocery in Chorlton.

In addition Bury MBC commissioned a survey of all the ponds in the borough thereby establishing a baseline of information.

**Further advice about ponds can be found here:**

- ◆ [Pond Creation Toolkit](#)  
A number of fact sheets providing information about best practice are available to download from the Pond Conservation website.
- ◆ [Pond creation on aggregate sites](#)  
Advice for planners and developers, including pond creation for water voles.
- ◆ [Herpetological Conservation Trust](#)  
Advice on pond creation and management for amphibians and reptiles.
- ◆ [National Pond Monitoring Network](#)  
Guidance and forms for standard pond survey methods.

## Impact of invasive species

- ◆ Great Britain Non-native Species website. [www.nonnativespecies.org](http://www.nonnativespecies.org)

- ◆ [Centre for Ecology & Hydrology](#)  
Information sheets on the best methods of control for various invasive plants (Environment Agency).

## Links to relevant BAP's

Black Redstart  
Great Crested Newt  
Reedbeds & Bittern  
Water Vole

## References

Carey, P.D.; Wallis, S.; Chamberlain, P.M.; Cooper, A.; Emmett, B.A.; Maskell, L.C.; McCann, T.; Murphy, J.; Norton, L.R.; Reynolds, B.; Scott, W.A.; Simpson, I.C.; Smart, S.M.; Ulyett, J.M.. 2008 [Countryside Survey: UK Results from 2007](#). NERC/Centre for Ecology & Hydrology, 105pp. (CEH Project Number: C03259).

See Pond Conservation website <http://www.pondconservation.org.uk/> for information on the UK pond HAP, Important Areas for Ponds and the Million Ponds Project, plus advice and information on ponds in general.

Williams *et al* (1999) *The Pond Book: a guide to the management and creation of ponds*. Pond Conservation, Oxford

## Ponds & Lodges

## Acknowledgements

Photographs supplied by Pond Conservation and Greater Manchester Ecology Unit.

## Author

**Becca Cleaver**

Million Ponds Project Northern Officer

[beccacleaver@pondconservation.org.uk](mailto:beccacleaver@pondconservation.org.uk)

# N a t i v e Woodlands

*Ancient woodlands are of great importance as they are likely to contain the widest variety of plants and invertebrates*



## Background to this plan

This plan has resulted from a review of two separate Habitat Action Plans included in the current Biodiversity Action Plan for Greater Manchester, published in 2003. These Action Plans were for:

- ◆ Lowland Broadleaved Woodland
- ◆ Upland Oak Woodland

This new Habitat Action Plan has incorporated both habitat types into one plan because, after review, it was considered that the threats and actions needed to conserve these woodland types were similar across Greater Manchester. The Plan also now includes wet woodland, which was not previously covered in the Greater Manchester Biodiversity Action Plan, as this is identified as one of the UK's biodiversity habitats.

## Ecology / Priority Habitat Description

### Lowland Broadleaved

Lowland mixed broadleaved woodland occurs on free draining soils, which corresponds to the following NVC vegetation types:

- ◆ W8 Ash-maple - dogs mercury
- ◆ W10 Oak-bracken-bramble woodland

Many of the woodlands within Greater Manchester do not fit easily into the NVC, as they have been modified through intervention, management and disturbance throughout the centuries. However, the majority of lowland broadleaved woodlands within the county tend to have more resemblance to W10.

The plants within the shrub and ground layer vary according to soil type but typical shrub species can include hawthorn, holly, elder, hazel and rowan amongst its species. Bramble, bracken, creeping soft grass and bluebell tend to dominate the ground flora, along with other species such as honeysuckle, ferns, lesser celandine, wood anemone and red campion.

Woodlands classed as lowland broadleaved may also be: ancient semi-natural woodlands, semi-natural secondary woodlands or plantation woodlands, dependant upon their respective age or origin. However to be classified as a priority habitat they need to exhibit a predominately semi-natural ground flora ([The GM SBI Selection Guidelines](#) Table 1 lists suitable species).

Lowland acid oak woodland, which occurs on free draining sandy soils, is also included within this action plan. The canopy is again dominated by oak and birch with holly and rowan scattered amongst the shrub layer. The ground flora is dominated by wavy hair grass with other notable species including heather, bilberry, bracken, foxgloves and woodrushes.

Lowland woodlands may also qualify as a priority habitat in Greater Manchester if they

## Native Woodlands

include good populations of species such as purple hairstreak, butterfly, bats or birds such as, wood warbler, spotted flycatcher and willow tit. ([The GM SBI Guidelines](#) provide guidance on important bird assemblages and species).

### Upland Oak

Two types of upland oak woodland are recognised by the National Vegetation Classification (NVC), however only one community type is found in Greater Manchester:

- ◆ W11 Sessile oak-downy birch-wood sorrel woodland

The main understorey species within this type of upland wood are holly, rowan and hazel. However, as many woodlands have a long history of management, disturbance and modification, the canopy and shrub layer frequently do not correspond well with this NVC classification and there may be some trend towards other NVC woodland communities on the NVC spectrum.

Typical ground flora species in upland oak woodland include:

Wavy hair grass	<i>Deschampsia flexuosa</i>
Wood sorrel	<i>Oxalis acetosella</i>
Heather	<i>Calluna vulgaris</i>
Bilberry	<i>Vaccinium myrtillus</i>
Bracken	<i>Pteridium aquilinum</i>

## Native Woodlands

Broad buckler fern	<i>Dryopteris dilatata</i>
Great woodrush	<i>Luzula sylvatica</i>
Hard Fern	<i>Blechnum spicant</i>

The ground layer may however vary locally due to the presence and intensity of grazing. Heavily grazed woodland will tend to show little natural regeneration and have a more restricted ground flora. Where occasional or seasonal grazing has occurred it can benefit the development of a diverse woodland habitat, with a mixture of species and ages in the tree canopy.



Gristlehurst Wood, Heywood (1)

Where the soil type is more alkaline, for example, along streambeds, plants such as ransoms, tufted hairgrass and dog's mercury may also be present. Ash and elm (wych

elm) may also be locally abundant in these areas.

Upland oak woodlands may again be ancient secondary woodlands, which have naturally colonised open ground or plantation woodlands for amenity, recreation, landscaping, or long-term biodiversity improvements. The priority habitat is best identified by the presence of a semi-natural ground layer.

Breeding birds of conservation interest:

Redstart	<i>Phoenicurus phoenicurus</i>
Wood warbler	<i>Phylloscopus sibilatrix</i>
Pied flycatcher	<i>Ficedula hypoleuca</i>

Other species of conservation concern associated with upland oak are bats.

### Wet Woodland

Wet woodland occurs on poorly drained, or seasonally wet soils, usually with alder, birch and willows as the predominant tree species.

The habitat is found on floodplains (rare in Greater Manchester), margins of open water, as successional habitat mosslands, along the streams and flushes within Clough woodland, and in peaty hollows. This wide range of soil types and hydrological states gives a wide range of NVC woodland

communities, which are often difficult to attribute to any one wet woodland stand.

In addition, the boundaries with drier types of woodland may be sharp or gradual and may (but not always) change with time through succession, are dependant on the hydrological conditions and the management of the wood and its surrounding land. Wet woods frequently occur in mosaic with other woodland key habitat types (e.g. with lowland broadleaved or upland oak woods) and with open key habitats such as mosslands. Management of individual sites needs to consider both sets of requirements.



Healey Dell, Rochdale (1)

Wet woodland is also important for invertebrates particularly on long established sites. Some of these invertebrates are biodiversity action plan species in their own right, for example the beetles *Melanopion minimun* and *Rhynchaenus testaceus*.

## Native Woodlands

Small seepages may support craneflies such as, *Lipsothrix errans* and the endemic *Lipsothrix nervosa*. Dead wood within the sites can be frequent, and its association with water provides specialised habitats not found in dry woodland types - the fly *Lipsothrix nigristigma* for example, is associated with logjams in streams.

### Current status and distribution

Within Greater Manchester there is approximately 781ha of ancient woodland (native woodland present since at least 1600AD), as identified by the Provisional Ancient Woodland Inventory (2007). However, the inventory only identified woodlands over 2ha in area. Much of the existing resource is smaller and fragmented, and would not have been identified by the survey. Some of the larger areas of woodland within the conurbation also incorporate some remaining ancient woodland, within a larger more recent block. There are currently no estimates for secondary woodland and plantation woodland that qualify as priority habitat.

### Lowland Broadleaved

#### National

Lowland mixed deciduous woodland is a UKBAP priority habitat, which is similar though not identical to the GM lowland

broadleaved types. Generally, the UK has low woodland cover, which makes the remaining resource scarce. This is a result of the clearance of land for agriculture and development, which has left many fragmented pockets of woodland. Although estimates are not wholly reliable, it is believed that there are approx 250,000ha of lowland broadleaved woodland in the UK. Of note, however, is the estimate that the remaining area of ancient semi-natural woodland within this category has declined by 30-40% through clearance, over grazing and replanting with non- native species. This represents the most ecologically biodiverse woodland within this category and its loss will therefore have the greatest impact on this ecosystem.



Hawthorn Blossom (1)

### Greater Manchester

Lowland broadleaved woodland is classified as a scarce habitat within Greater

Manchester and is thought to cover approximately 2.5% of the land area of Greater Manchester.

All the districts of Greater Manchester contain lowland broadleaved woodland, although some districts such as Stockport and Tameside have a greater extent of the resource than other more sparsely wooded areas. The resource throughout Greater Manchester is characterised by relatively small woodlands often isolated from each other, although there are notable networks of woodlands along river corridors in Stockport and Bury.

Examples of good Broadleaved woodland:	
Gower Hey	<i>Tameside</i>
Elnup Wood in Shevington	<i>Wigan</i>
Etherow Country Park	<i>Stockport</i>
Marple & Torkington Woods	<i>Stockport</i>
Cotteril Clough	<i>Manchester</i>

### Upland oak

#### National

Upland oak woodland is a nationally important habitat, which in Europe is restricted to the British Isles. The habitat is listed in Annex 1 of the EC Habitats and Species Directive and it is a priority habitat in the UK Biodiversity Action Plan. There are believed to be between 70,000 and

100,000ha of upland oak woodland in the UK, although there are no precise figures. The majority of this habitat and the largest woodland blocks are concentrated in Argyll, Lochaber, Cumbria, Gwynedd, Devon and Cornwall.

Although there are other habitats of a similar type in Europe, the British Isles are recognised as distinctive because of their extent and the unique communities, which they support.



Ringley Woods, SBI, Bolton (2)

### Greater Manchester

Within Greater Manchester the total coverage of upland oak wood is unknown, and has experienced a long decline as woodlands have been clear felled, or have fallen into poor condition through over grazing and as a result of recreational pressures. The remaining areas of upland oak woodland are also fragmented, existing

## Native Woodlands

in small isolated blocks on the edge of urban areas often surrounded by plantation or secondary woodland.

The upland oak woodland within Greater Manchester is therefore generally characterised by being in unfavourable, but stable condition. A number of woodlands are being brought into management, which should assist in a move towards favourable status.

The following districts contain upland oak woodland:

- Bolton
- Bury
- Oldham
- Rochdale
- Stockport
- Tameside

### Examples of good upland oak woodland:

Leavers Wood	SBI	<i>Oldham</i>
Tack Lee	SBI	<i>Heywood</i>
Gristlehurst Wood	SBI	<i>Heywood</i>
Saplin Wood	SBI	<i>Bury</i>

### Wet woodland

#### National

There is no precise data on the total extent of wet woodland in the UK, but in the late 1980s the, then Nature Conservancy Council, estimated the total extent of wet woodland within ancient semi-natural

woodland to be about 25,000 - 30,000 ha. It is further estimated that there may be an additional 25,000 to 30,000 of wet woodland of more recent origin. Thus a crude estimate of the total wet woodland area in the UK may be as high as 50,000 - 70,000 ha.

Notable concentrations of wet woodland occur on fens in East Anglia, Shropshire and Cheshire, whilst hillside and plateau alder woods are more restricted to Wales, Cumbria and Western Scotland. Fragments of ancient floodplain forest are rare, and the best examples are in the New Forest and Northern Scotland. Bog woodlands of pine are confined to Scotland, but fragments of birch bog woodland occur more widely in scattered stands across the UK. Wet woodlands develop naturally on wetland sites as a part of the process of natural succession.

### Greater Manchester

Although the area of wet woodland within Greater Manchester is not known, the habitat occurs in all of the districts of Greater Manchester. Wet birch woodland occurs in Wigan, Salford and Trafford.

#### Notable examples of wet woodland include:

Fletcher Moss	SBI	Manchester
Lawns Wood	SBI	Wigan
Naden Brook	SBI	Rochdale
Birchmoss Covert	SBI	Trafford

## Factors affecting the habitat

### Lowland broadleaved & upland oak

A number of factors have resulted in the loss of both lowland broadleaved and upland oak woodland in the UK. This has been the result of a number of issues including:

- ◆ Overgrazing by livestock and deer
- ◆ Clearance for development
- ◆ Clearance for agriculture
- ◆ New woodlands continue to be planted using non-locally native species and often with no longer-term management.
- ◆ Constraints on the spread of woodland onto adjacent ground from agriculture, industrial or residential development, leading to greater uniformity of structure across the site.
- ◆ Invasion of non-native species including sycamore, Japanese Knotweed, Himalayan Balsam, and Rhododendron.
- ◆ Cessation of traditional management practices and neglect of woodlands.

- ◆ A legacy of inappropriate practices such as felling to replant with conifers and formalisation as public parks.
- ◆ Recreational activities including motorcycling, scrambling and dog walking.
- ◆ Vandalism and anti-social behaviour, such as fires and fly tipping.
- ◆ Climate change, potentially resulting in changes in the vegetation communities.

#### Wet woodland

This type of woodland is affected by similar factors that impact on other lowland and upland woodlands, though access related issues tend to be less of a problem simply because the woods are often very wet and inaccessible. Issues specific to this type of woodland include:

- ◆ Clearance and conversion to other land-uses either directly or through adjacent development or agriculture affecting its drainage.
- ◆ Lowering of water tables through drainage or water abstraction,

## Native Woodlands

- resulting in change to drier woodland types.
- ◆ Inappropriate grazing levels and poaching of the soil by sheep, cattle and deer leading to a change in the woodland structure, ground flora impoverishment and inhibiting regeneration.
- ◆ Flood prevention measures, river control and canalisation, leading to loss of dynamic disturbance-succession systems and invertebrate communities, as well as possible reductions in the extent of individual sites.



Naden Brook (2)

- ◆ Poor water quality arising from eutrophication, agricultural run-off, industrial effluents or rubbish

dumping leading to changes in the composition of the ground flora and invertebrate communities.

- ◆ The river catchments in Greater Manchester acts as conduits for non-native species such as Himalayan balsam (*Impatiens glandulifera*), Japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*). They alter vegetation composition and lower conservation value. The management of these invasive species presents a challenge within many different environments.

### Current actions

Within Greater Manchester, the area of native woodland is thought to be relatively stable, with any losses being small scale. However, much of the remaining woodland is not being actively managed.

- ◆ Many of the existing woodlands within Greater Manchester are selected as Sites of Biological Importance and it is proposed under the newly revised SBI Selection Guidelines (July 2008) that any remaining sites, which support ancient semi-natural woodland are

designated as SBI's across the conurbation.

- ◆ The Greater Manchester Ecology Unit is consulted on any planning proposals, which affect designated SBI sites and are able to propose measures to ensure that areas of woodland are maintained where appropriate.
- ◆ [PPS9 Biodiversity and Geological Conservation](#) identifies that planning decisions should prevent harm to biodiversity and that planning decisions should maintain, enhance, restore or add to biodiversity. In addition, The Natural Environment and Rural Communities Act (2006) also requires all public bodies including local authorities to have regard in exercising their functions to conserving biodiversity.
- ◆ Many local planning authorities have policies relating to nature conservation, biodiversity, green space, trees and woodland. All of these provide a degree of protection for woodland. Unitary Development Plan's are currently in the process of being replaced by Local Development Frameworks. These new plans are expected to contain

similar policies regarding nature conservation and biodiversity.

- ◆ Forestry Commission grant scheme.  
The Forestry Commission through the Woodland Grant Scheme England, has funding available for both woodland creation and woodland management, either through the woodland improvement grant which is a one off grant which can be used to bring woodland into management for biodiversity, or the woodland management grant which is an annual payment for the ongoing management of woodlands.
- ◆ Plantation on Ancient Woodland Sites (PAWS) is also a priority for Forestry Commission funding. This endeavours to increase their ecological value by selective felling of the plantation woodland, and subsequently replanting with native species, or if appropriate facilitating natural regeneration. Restoration work has been undertaken at Encroft Wood in Stockport.
- ◆ Increased interest in and development of wood fuel burners may have a positive effect of bringing more woodland into

management as low grade logs and timber may become a saleable resource. Market and supply chain development is in the early stages, but a number of the Greater Manchester local authorities are actively investigating this possibility.

- ◆ A number of Greater Manchester districts have received accreditation from the UK Woodland Assurance Standard for the sustainable management of their woodlands.
- ◆ Planting of approximately 50 ha of native upland oak woodland is planned through United Utilities' Strategic Catchments Access Management Plan (SCaMP) fund. Precise figures are still to be confirmed through Forestry Commission and UU, but there will be approximately 30ha at Castleshaw Reservoir in Oldham, 11ha at Watergrove, Rochdale and 9ha at Greenbooth / Naden, Rochdale.

## Objectives and targets

Objective	Target	Quantity	Target Date
Maintain current extent	Maintain the extent of the existing Greater Manchester lowland broadleaved, upland oak and wet woodlands.	3500 ha	2015
Achieve favourable condition	Using appropriate management for each woodland type, restore the diversity of structure and species within the habitat to favourable condition.	2500 ha	2015
Expand woodland habitat	Identify suitable areas to expand the three woodland habitats, through natural regeneration or woodland planting.	480 ha	2015

## Proposed actions

- ◆ Disseminate information concerning the ecology of the three woodland types and best practice for habitat management. RRF, PEF, GMEU, GMBP, LA's. Ongoing
- ◆ Engage with woodland owners to assist with management planning and grant funding applications, and assist them to work towards FSC woodland certification or other schemes where appropriate. RRF, PEF. Ongoing
- ◆ Where appropriate, secure benefits through the planning system including habitat restoration, habitat management, new planting and expansion of extant sites. On appropriate sites secure a buffer zone around any new development to assist in retaining quality woodland habitat. GMEU, LA's. Ongoing
- ◆ Produce an accurate portfolio of woodland sites across the conurbation and determine the condition of these sites. RRF, PEF, GMEU, LA's, LWT. 2010

- ◆ Monitor condition of woodland to determine trends and ensure that management regimes are appropriate. RRF, PEF, UU, GMEU, LA's. Ongoing
- ◆ Identify opportunities to expand the three woodland types and either plant new trees or manage the woodland to allow natural regeneration to occur. Utilise available grants from the Forestry Commission and schemes such as SCaMP to create new woodland. RRF, PEF, UU, LA's. Ongoing

### Lead partners

BTCV	British Trust for Conservation volunteers
GMBP	Greater Manchester Biodiversity Project
GMEU	Greater Manchester Ecology Unit
LA's	Local Authorities
LWT	Lancashire, Greater Manchester & North Merseyside Wildlife Trust
PEF	Pennine Edge Forest
RRF	Red Rose Forest
UU	United Utilities

### Best practice guidelines

There are two principle methods of creating new woodland:

## Native Woodlands

- 1) Natural regeneration
- 2) Woodland planting

### 1) Natural regeneration

#### *Lowland broadleaved & upland oak*

Natural regeneration is generally used where existing semi-natural woodland is being extended onto land of low ecological value. This can be used to enable the woodland to spread naturally. It has a number of advantages over planting in that the new woodland will contain, in the long term a mix of plant and tree species similar to the original woodland, which will be appropriate to the location and soil type. It will also reduce issues relating to local provenance, or the introduction of non-locally native or inappropriate species.

There are a number of conditions, which are necessary to ensure that natural colonisation can take place:

- ◆ The area for the woodland extension must be secured to ensure that grazing, or similar activity, will not severely limit the effectiveness of natural colonisation as seeds or the resulting new plants are a food source.
- ◆ A supply of appropriate seeds must be present and many seeds

(particularly large tree seeds) do not travel large distances, and will only colonise new areas if immediately adjacent to the newly proposed area. Seed collection may assist this process.

- ◆ Non-native / alien species will colonise an area and may need to be selectively removed.
- ◆ Successful colonisation is also determined by the method of dispersal and the frequency of seeding. Hence species such as birch, which produce large quantities of small seed annually, are rapid colonisers, whereas acorns are produced in large quantities in mast year and rely on small mammals and birds for dispersal. Therefore, seed dispersal may need to be facilitated.
- ◆ With any wind blown seed species, colonisation will be denser in the direction of the prevailing wind.
- ◆ Ground conditions and previous land use will affect the colonisation of a new area. Dense grass swards are potentially more difficult for tree seeds to penetrate and may reduce the rate of colonisation. Conversely, bare

earth will be colonised by a large variety of seeds, which may include wind blown species from a number of different sources.

General principles indicate that natural colonisation is more successful on sites which:

- ◆ Have poor soils
- ◆ Have suitable sites for germination
- ◆ Appropriate weed control may be needed
- ◆ Bracken is controlled where necessary
- ◆ Areas are protected from browsing
- ◆ Area is immediately adjacent to seed source trees
- ◆ Colonisation can be undertaken on a long time scale.

### *Wet woodland*

As wet woodland is a complex mosaic of both tree species and invertebrates, natural regeneration is the most advisable form of habitat creation. This not only increases the potential for appropriate trees of local provenance to grow, but also ensures that the trees and plants, which grow naturally on the site are suitable for the precise site conditions. This method is most likely to be successful and to be colonised by invertebrates and flora where existing

woodland is being extended, or very close to existing woodland.

For natural regeneration of wet woodland to occur, the ground conditions also need to be suitable, such as a high water table, or in a river valley etc. Given the small and fragmented nature of many existing wet woodland sites, natural regeneration may rarely be a practical option.

It is important that invasive species such as Japanese knotweed or Himalayan balsam are removed from the site prior to the site being given over to wet woodland. Treatment may have to take place over a number of seasons to eradicate the plants, and minimise any potential re-growth.

Both alder and birch are commonly found in wet woodlands. Birch is a prolific producer of wind born seeds. Alder produces a good seed crop every two to three years.

## 2) Woodland Planting

### *Lowland broadleaved & upland oak*

On many sites, and for large-scale woodland creation, woodland planting may be the more desirable option. It has the advantage of enabling large-scale proposals to be implemented quickly, and for the desired trees and shrubs to be grown. The disadvantage of this approach is that the tree

or shrub species, which are planted, are more susceptible during the establishment period to drought and weed competition because the roots have been disturbed by the planting process: there is a greater risk that the trees will not be genetically appropriate and it will be more costly in the short term.

- ◆ Any planted tree species need to be appropriate to the site and to be of local provenance.
- ◆ Planting phased over a number of years can help ensure that the woodland contains species with a mix of ages to mimic natural woodland.
- ◆ In some locations it may also be possible and appropriate to introduce additional nature conservation value to the site through planting of wildflower plugs or bulbs and the sowing of seeds. Great care needs to be taken with this approach to ensure that stock is of local provenance and is appropriate for the site.
- ◆ In the early years, it is important to ensure that any grass sward, or weeds, are carefully managed to reduce or eliminate competition and

ensure that newly planted tree stock has the maximum chance of survival.

Suitable species for lowland broadleaved woodland planting in Greater Manchester include:

Ash	<i>Fraxinus excelsior</i>
Birch; silver and downy	<i>Betula spp</i>
Holly	<i>Ilex aquifolium</i>
Rowan	<i>Sorbus aucuparia</i>
Common Oak	<i>Quercus robur</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Crab apple	<i>Malus sylvestris</i>
Wych elm	<i>Ulmus glabra</i>
Goat willow	<i>Salix caprea</i>

Suitable species for upland oak planting include:

Birch; silver and downy  
Holly  
Rowan  
Common & sessile oak  
Hawthorn  
Hazel

### *Wet Woodland*

Where wet woodland is being created, planting must be undertaken by hand and not using machinery, as wet woodland soils are very fragile and prone to mechanical

damage by large heavy machinery. Exact species for planting should be informed by the nearest available wet woodland/s to give an indication of the species and mixtures which may be suitable and of local provenance.

When wet woodlands are planted, they are impoverished compared to naturally regenerating or long established wet woodlands, as species are slow to colonise, particularly over long distances. However, establishing new wet woodland by planting can still represent an environmental gain, particularly where it is being established in an area of little biodiversity interest, or forming a natural buffer between intensive agriculture, streams or other watercourses, where the water table is high.

In establishing wet woodland it is important to ensure that there are no plans or proposals, which will affect the drainage of the woodland, as it is essential that the high water level be maintained in the long-term for the stability of the woodland. As part of the site preparation, it may be necessary to consider rewetting the woodland, through blocking small slow-flowing drains or ditches. However, if the drainage cannot be guaranteed, it may be inappropriate to establish wet woodland.

## Native Woodlands

Several willow, species are common within wet woodland and are more commonly grown from cuttings. With the exception of goat willow, the setts will easily take if planted into suitable ground. It is important that willow from local stock is used to maintain local hybrids and genotypes and not introduce alien species into the gene pool.

Suitable species in Greater Manchester dependent on locality and habitat include:

Goat Willow	<i>Salix caprea</i>
Grey Willow	<i>Salix cinerea</i>
Common Osier	<i>Salix viminalis</i>
Eared Willow	<i>Salix aurita</i>
Crack Willow	<i>Salix fragilis</i>
Alder	<i>Alnus glutinosa</i>
Silver or Downy Birch	<i>Betula spp</i>
Guelder Rose	<i>Viburnum opulus</i>
Bird Cherry	<i>Prunus padus</i>
Alder Buckthorn	<i>Frangula alnus</i>

### Management of woodland

Within Greater Manchester a lack of management (neglect) is a significant long-term threat to the resource of all types of woodland. Management of woodlands has declined as a result of a reduction in the skills base, lack of market for timber products and the costs of managing the woodlands.

Recreational pressures, development pressures and inappropriate use often exacerbate this.

Many upland oak woodlands are subject to grazing either intentionally from upland sheep, or from expanding wild deer populations. It can have a detrimental effect upon the long-term structure of the woodland, by preventing natural regeneration and damaging fragile soil and root structures. It may also act to reduce the ground flora through direct grazing or poaching of soils.

Within a natural ecosystem, it is probable that wet woodlands (particularly on fen and mossland sites) would be a temporary succession habitat, which would evolve over time into drier woodland types. Conversely, naturally changing watercourses and drainage patterns would ensure that new wet woodlands were established, ensuring a constant stock of the habitat. Given current constraints, there are few locations where this natural system can now work effectively. Therefore, management aims to maintain the wet woodland in situ. Maintaining the water table and preventing the woodland from drying out is crucial to their continued existence.

The key principles of management should be:

- ◆ Maintain semi-natural woodland types.

Management should be based on growing species both native to the site and appropriate to the local conditions of soils and hydrology, which occur on site.

- ◆ Maintain or restore diversity of structure.

A full range of age classes is preferable to single aged woodland. Wet woodland is frequently single aged as it often established following a change in management, land use or drainage.

- ◆ Maintain diversity of species and habitat, or increase them where appropriate.

A mixture of age classes and structure enhances habitat diversity. Open areas are also important such as, glades or rides within the woodland. Wet woodland is naturally a habitat of limited tree diversity, although there is some opportunity for diversification between both tree and shrub species.

- ◆ Maintain a mature habitat.

Dead wood is an important element in woodland. Where appropriate dead or

decaying standing and fallen timber should be retained.

- ◆ Minimise rates of change.

Intervention should be gradual and not drastic as wildlife takes time to adjust. Phase work over a number of seasons in different compartments of the wood.

- ◆ Use low-key restocking and management techniques.

Avoid the use of large machinery etc. that may damage soils, and intervene at a minimum to maintain a diverse and healthy woodland. Wet woodland, management should be undertaken by hand, as large scale mechanical interventions will damage the fragile soils and in consequence the habitat.

Management prescriptions for any area of wet woodland are determined by both the size and extent of the area within the wider woodland mosaic. Hence, a small area of wet woodland within larger dry woodland may be treated as a sub-compartment of the larger woodland block.

### Impact of invasive species

Woodlands are subject to the invasion of a number of non-native species including Sycamore, Japanese Knotweed, Himalayan Balsam, and Rhododendron. These can alter

the vegetation composition and lower conservation value by restricting the growth of native species.

Further information about the control of invasive species can be found:

[www.nonnativespecies.org](http://www.nonnativespecies.org) Non-Native Species Secretariat

[Himalayan Balsam Advice](#) – Centre for Ecology and Hydrology

[Japanese Knotweed Advice](#) - Centre for Ecology and Hydrology

[Managing and controlling invasive Rhododendron](#) – Forestry Commission

[Invasive species information and control measures](#) – Environment Agency

## Links to relevant BAP's

Bats  
Native Black poplar  
Willow tit

## References

Forestry Commission (1994) The management of Semi-natural Woodlands 3. Lowland Mixed Broadleaved Woods

## Native Woodlands

Forestry Commission (2003) The Management of Semi-natural Woodlands 5. Upland Oakwoods

Forestry Commission (1999) Using Natural Colonisation to Create or Expand New woodlands

Forestry Commission (1999) Creating New native Woodlands: Turning Ideas into Reality

[Cumbria Upland Oak Woodland Biodiversity Action Plan](#)

UK Biodiversity Action Plans

## Acknowledgements

Thanks to Rochdale Metropolitan Borough Council (1) and Greater Manchester Ecology Unit (2) for the use of their photographs

## Author

**Emily Barker**  
Rochdale Borough Council  
[emily.barker@rochdale.gov.uk](mailto:emily.barker@rochdale.gov.uk)

# Lowland MOSSLANDS

Lowland raised bog in the UK has fallen by 94% from 95,000 ha to 6,000 ha, and is now internationally threatened

## Ecology

Greater Manchester's lowland mosslands, (also known as lowland raised bog), began to form c10, 000 years ago. It dates back to the last ice age when peat began to be laid down on marine, estuarine or fluvial deposits adjacent to estuaries, on river floodplains, or on the site of shallow glacial lakes. These wet, waterlogged areas were originally colonised by reeds and rushes. Due to the waterlogged anaerobic conditions, dead plant material could not be fully broken down and began to build up on the bottom of water bodies and this led to the formation of fen peat. Bog mosses (*Sphagnum* mosses) began to colonise. At this point, the *sphagnum* content of the underlying peat increased and the peat changed from fen to bog peat. As the peat accumulated, the surface of the bog was elevated above the surrounding land, forming a dome, hence the



term - raised bog. Being elevated above the surrounding groundwater, raised bogs are fed purely from rainfall and this helps to maintain nutrient poor conditions within the bog system. The *Sphagnum* mosses also increase the acidity of the water. As a result, the characteristic vegetation found on mosslands is adapted to nutrient-poor, acidic conditions and plant species are therefore highly specialised in their requirements and many of these species can be found nowhere else.

Mosslands can also support characteristic assemblages of uncommon invertebrates, including the large heath butterfly, once known as the Manchester Argus, but now extinct in the County. Mossland habitat is capable of supporting a range of important bird species, such as curlew. Recent survey

evidence has shown that the ditches in mossland habitats provide important breeding areas for Water Vole.

Peat cutting or drainage has modified the majority of Britain's raised bog and much has been converted to agriculture. There are no intact raised mosslands left within Greater Manchester, with the majority of them having been drained and fertilised to create farmland and some being worked for peat.



Typical regenerated cut over mossland

## Priority habitat description

The mossland within Greater Manchester has been significantly altered and all the remnant sites are cutover examples of the habitat. The Manchester mosslands either support secondary semi-natural vegetation or are currently bare peat sites as a result of current extraction. Due to the rate of loss of the habitat and its increased rarity, all

## Lowland Mosslands

uncultivated examples that have the potential to be restored (whether they are vegetated or not) are to be considered as important and a key part of the regions critical environmental capital.

The aim of restoration is to meet the condition of favourable habitat. The best examples of lowland raised bog habitat can be defined using the following criteria:

- ◆ Characteristic bog-moss species, notably *Sphagnum papillosum* and *Sphagnum magellanicum*, are abundant and cover at least 25% of the surface.
- ◆ Sites where the hydrology of the mossland is maintained at an appropriate level for the growth of mossland vegetation.
- ◆ Any site which supports one or more of the following species – even where the habitat quality appears poor:

Round leaved Sundew	<i>Drosera rotundifolia</i> L.
Cross-leaved heath	<i>Erica tetralix</i>
Bog myrtle	<i>Myrica Gale</i>
Bog asphodel	<i>Narthecium ossifragum</i>
Bog Rosemary	<i>Andromeda polifolia</i>
Cranberry	<i>Vaccinium oxycoccus</i>

- ◆ Bog pools occur on the open bog surface

The NVC communities in Table 1 are characteristic of the habitat type and the presence of one or more of these communities should be taken as an indicator that the priority habitat type might be present. Species listed in tables 2 and 3 are characteristic of the habitat type but not exclusive to it.

**Table 1: NVC Communities associated with lowland raised bog in Greater Manchester**

## BOGS WITH HIGH WATER TABLE

- M17 Scirpus cespitosus - Eriophorum vaginatum blanket mire
- M18 Erica tetralix - Sphagnum papillosum raised mire

## BOG POOL COMMUNITIES

- M1 Sphagnum auriculatum bog pool community
- M2 Sphagnum cuspidatum/recurvum bog pool community
- M3 Eriophorum angustifolium bog pool community

## COMMUNITIES ON MODIFIED BOGS

- M15 Scirpus cespitosus - Erica tetralix wet heath
- M19 Calluna vulgaris - Eriophorum vaginatum blanket mire
- M20 Eriophorum vaginatum blanket and raised mire
- M16 Erica tetralix - Sphagnum compactum wet heath
- M25 Molinia caerulea-Potentilla erecta mire
- W4 Betula pubescens - Molinia caerulea woodland
- H9 Calluna vulgaris - Deschampsia flexuosa heath
- H12 Calluna vulgaris - Vaccinium myrtillus heath

**Table 2: Vascular plants and bryophytes associated with lowland raised bog in Greater Manchester**

**Active raised bog has at least 25% sphagnum cover. Typical species include:**

- |                          |                                 |
|--------------------------|---------------------------------|
| Bog moss                 | <i>Sphagnum papillosum</i>      |
|                          | <i>Sphagnum magellanicum</i>    |
| Common cotton-grass      | <i>Eriophorum angustifolium</i> |
| Hair's-tail cotton-grass | <i>Eriophorum vaginatum</i>     |

Cross-leaved heath	<i>Erica tetralix</i>
Common butterwort	<i>Pinguicula vulgaris</i>
Cranberry	<i>Vaccinium oxycoccus</i>
Bog rosemary	<i>Andromeda polifolia</i>
Bog myrtle	<i>Myrica gale</i>
Bladderworts	<i>Utricularia spp.</i>
Round-leaved sundew	<i>Drosera rotundifolia</i>
Bog asphodel	<i>Narthecium ossifragum</i>
Bog bean	<i>Menyanthes trifoliata</i>

**Bogs that are drying out, or those where the surface has been cut over, support large areas of:**

Purple moor-grass	<i>Molinia caerulea</i>
Heather	<i>Calluna vulgaris</i>
Bilberry	<i>Vaccinium myrtillus</i>
Crowberry	<i>Empetrum nigrum</i>
Downy birch	<i>Betula pubescens</i>

**Table 3: Animal species associated with lowland raised bog in Greater Manchester**

#### Birds

Curlew	<i>Numenius arquata</i>
Snipe	<i>Galinago galinago</i>

#### Invertebrates

Common hawker dragonfly	<i>Aeshna juncea</i>
Ruddy darter dragonfly	<i>Sympetrum sanguineum</i>
Black darter dragonfly	<i>Sympetrum danae</i>

## Lowland Mosslands

### Current status and distribution

Lowland raised bog is on Annex 1 of the EC Habitats and Species Directive and is listed in the UK BAP as a priority habitat. Mossland habitat is now internationally threatened. Mosslands once covered large areas of our region, but as elsewhere across Europe there has been a dramatic loss in the area of this habitat. Since c.1850, the area of lowland raised bog in the UK has fallen by 94% from 95,000 ha to 6,000 ha.

In England over the same period, there has been a massive 98.6% reduction of our mossland heritage, with only 500ha now remaining. The North West of England once supported a large proportion of England's lowland raised bog resource, yet even here there has been substantial losses with 99% of the mossland habitat within Lancashire, Greater Manchester and North Merseyside having been destroyed. The remaining fragments are in all cases damaged, and there are less than 100ha of wet mossland left.

Within Greater Manchester, the areas of Chat Moss, Carrington Moss, Ashton Moss and Clifton Moss originally supported huge expanses of mossland habitat. Many of these areas have been lost to agricultural improvement, peat extraction or development.

A recent survey of mossland habitat has recorded only 14 sites within Greater Manchester supporting deep peat deposits many of the sites being only a few hectares in size. Many of the larger remnants are currently under excavation with only a few being protected by statutory designations. Astley and Bedford Moss are protected, as part of the larger Manchester Mosslands Special Area of Conservation (SAC) and Red Moss in Bolton and Highfield Moss are Sites of Special Scientific Interest (SSSI).



Distribution of mosslands in Greater Manchester

In view of the rarity of intact habitat, degraded examples considered capable of restoration within 30 years are of high conservation priority. COUNCIL DIRECTIVE 92/43/EEC of 21 May 1992 (European Habitats Directive), considers that raised bog still capable of restoration are of European Importance. Both active and degraded

examples are therefore considered to be priority habitats for conservation.

Mosslands are also considered to be important from both a historical and archaeological point of view. British mossland habitat began to form c10,000 years ago. Due to the preservative quality of peat, mosslands have an immense value as an archaeological and palaeoecological archive of the past ten millennia.

***“Intact mossland habitat has a beneficial effect on global warming by locking up carbon within the peat” (Worrall 2008)***

Recent research has shown intact mossland habitat to have a beneficial effect on global warming by locking up carbon within the peat. The UK’s peatland store more carbon than the forests of the UK, France and Germany, equivalent to 35 years of total UK output of CO<sub>2</sub> (Worrall 2008). Functioning mossland habitat has an additional benefit of being able to sequester carbon, this is an on-going process, which keeps the carbon locked-up and ‘sinks’ more carbon each year (Worrall 2008). Mosslands also have a beneficial affect on water quality if managed appropriately, and reducing flood risk as they soak up water during heavy periods of rainfall

and gradually releases it over a period of time.

## Factors affecting the habitat

The primary factors affecting lowland raised bogs in Greater Manchester are:

- ◆ **Development, including peat, sand and gravel extraction.**

Three large peat extraction sites are currently in operation within Greater Manchester. These are at Chat Moss, Little Woolden Moss and Astley Moss East. Planning conditions imposed on the extraction site at Twelve Yards Road, required that 2 metres of peat will be retained on site and that peat extraction would cease in 2010. After use includes conservation.

A new proposal to extend the peat extraction for another 25 years and to take the peat down to 1 meter is currently being submitted. Parts of Astley Moss East will be lost to peat, sand and gravel extraction. The remainder of the site is to be re-wetted and restored to mossland habitat. The Little Woolden Moss application is to convert the land to agricultural use, with a loss of the whole peatland habitat.

## Lowland Mosslands

The peat surface left by milling does not allow any bog species to survive on areas exploited for peat extraction.

- ◆ **Surface water drainage and groundwater abstraction causing lower water levels**

The presence of land drains on adjacent farmland serves to maintain artificially low water tables next to the mossland sites. Water abstraction within the Chat Moss area may also affect and further reduce water levels. Both factors can have an adverse effect on the hydrological gradient between mossland habitat and adjacent lands. This reduces the ability of mossland habitat to maintain sufficient water levels, increases drying out and leads to an incremental loss of habitat through oxidation of the peat and natural succession to heathland and scrub woodland.



Attempts to counteract this and raise water levels on the mossland sites can be met with opposition from landowners and farmers on adjacent land because of

perceived potential effects on the drainage of their own land.

In the past, the loss of mossland habitat has largely been caused by drainage and the conversion to agriculture. Many of the agricultural lands surrounding the current fragmented mossland habitat still retain peat deposits. However, the process of farming the land and the use of heavy machinery has led to compaction and oxidation of the peat soils. Once the peat becomes oxidised it is vulnerable to wind blow and erosion.

◆ **Afforestation, scrub encroachment and lack of management**

Many of the remaining mossland fragments are not in conservation management. The resource is often in private ownership and a lack of a suitable management regime results in the site drying out and the loss of characteristic bog species.

Locally, there is little pressure for afforestation on mossland habitat at present. Scrub encroachment due to a lack of appropriate management is however commonplace. The presence of large areas of scrub, exacerbate the drying out process and allows the development of wet woodland. If this

process is allowed to continue, the peat becomes dry and oxidises, becoming unsuitable for restoration purposes.

◆ **Water quality – water pollution, air pollution, pesticide and nutrient enrichment**

Bog vegetation requires nutrient poor and acidic conditions to flourish. Within the mosslands of Greater Manchester, the past exploitation of peatlands for extraction and agriculture has resulted in the disappearance of the peat domes and the construction of numerous deep drainage ditches and shallower in field drains. This not only allows water to escape the bog system but also allows nutrient rich waters to enter the habitat from adjacent land. Pollution, pesticides and fertiliser run off from both agricultural and industrial land reduces the viability of mosslands to be restored.

Air pollution may also have an adverse effect, although its effects are similar to reduced water levels and may therefore be underestimated. Mosslands are fed by rainfall, and high levels of sulphur, ammonia and nitrogen are still being recorded. Bisulphites have an inhibitory effect on some *Sphagnum* Mosses and high levels of nitrogen encourage the

spread of competitors such as purple moor grass. (JNCC)

- ◆ Habitat isolation as a result of fragmentation of existing areas.

The last fragments of mossland habitat are becoming increasingly isolated and smaller. The remnant mosslands exist as stand alone islands, which characteristically stand higher than the surrounding land due to compaction of the peat deposits. The isolation of the mossland from the surrounding landscape leads to a deterioration in habitat quality. The increased hydrological gradient reduces the ability of the mossland habitat to retain sufficient water levels.



Twelve Yards Road (GMEU)

The characteristic species, which depend on mosslands, have themselves also become isolated and there are fewer

habitats available. This increases the chance of local extinctions and the eventual loss of species from the region.

Historically, a range of different habitat types radiating out from the central core mossland area would have provided complimentary habitat. Such habitats would have included lag fen, marsh, open water, reedbeds and wet woodland. These associated habitats would have helped to maintain the wetness of the mossland and would have provided a protective buffer from adjacent land uses. These buffer habitats have in most cases now been lost, either to development or are intensively drained agricultural lands.

- ◆ A lack of appropriate characteristic species

The cutover nature of Manchester's mossland habitat has resulted in a reduction in the number of species available for colonisation of restored sites. A number of species such as the hummock forming *Sphagna* are necessary to obtain a sustainable and growing mossland habitat. The hummock formers such as *S. papillosum*, *S. capillifolium* and *S. magellanicum* tend to be in short supply within the region as a whole. Due to the mosses ability to retain water, mosslands supporting a greater

coverage of *Sphagna* are better able to maintain optimal water levels.

### ◆ Global warming

The trend for hotter drier summers and the prediction for unpredictable weather patterns is cause for some concern. Bog vegetation grows best under a certain set of parameters. The ground should not be too dry nor should it be too wet. Optimal water levels for the growth of bog vegetation are at or just above ground level. Current options for re-wetting sites are to capture rainfall and maintain the levels at the desired height. This is dependant on summer rains replenishing the system. If these do not occur then the sites may well become too dry. Conversely the trend for heavy down pours of rain may also adversely affect the habitat as water levels may become too high very quickly.

### ◆ Poor public perception

Despite mossland being a vital part of our region's heritage, they are hugely undervalued and suffer from poor public perception. Historically, there has been a lack of understanding, appreciation and interest in mossland habitat. Mosslands seem always to have been regarded as wasteland, areas either to be avoided or exploited. This has resulted in it being difficult to raise public opinion to

safeguard and protect our mossland resource. Funding opportunities have also been restricted, as community interest is low.

### ◆ Recreational pressures

There is little current recreation pressure on the mosslands of Greater Manchester. Much of the habitat is in private ownership and access to sites is limited. This may change if mosslands can be promoted as areas of valuable open green space. Mossland habitat and the species it supports are vulnerable to disturbance and will require protective measures.

## Current actions

### Policy

1. The importance of mossland habitat has been recognized within Bolton's, Salford's and Wigan's Unitary Development Plans, with specific policies protecting the mossland resource. The replacement of UDP's by the Local Development Framework is currently taking place across Local Planning Authorities. As part of this process, Salford has produced a Supplementary Planning Document for Biodiversity, specifically UK Priority Habitats, within which the importance of the mossland resource is highlighted. Both Bolton and Wigan have produced

mossland habitat action plans within their own local BAP's. The BAP process is supported with all 3 UDP's.

2. All planning applications that may have an adverse effect on mossland habitat and hydrology are now assessed fully. The approval to grant peat, sand and gravel extraction at Astley Moss East, although resulting in a loss of 1/3 of the site, has been used to bring into conservation management a large part of the site plus additional mossland habitat within the adjacent Botany Bay Wood.

3. Salford City Council and Wigan MBC have declared a number of air quality management areas, within which the air quality is measured and monitored.

4. Efforts to phase out the use of peat products by local authorities has had limited success. Of the 10 local authorities, only Salford and Manchester were able to say that they were peat free. The remainder implied that peat was still being used within local authority parks and that there was a resistance by Parks Departments to use peat free alternatives. Of the 10 local authorities within Greater Manchester only 4 (Manchester, Salford, Rochdale and Wigan) signed the Peatlands Protection Charter.

## Lowland Mosslands

### Site Safeguard

1. The recent revision of the Site of Biological Importance – selection guidelines has allowed the opportunity to strengthen the protection of remnant mossland habitat by including areas of lowland mossland on peat over 0.5m deep, which supports semi-natural vegetation on unmodified mossland soils as potential SBI's. Astley and Bedford Mosses is part of the Manchester Mossland Special Area of Conservation (SAC) receiving both British and European protection. Mossland habitat is listed in Annex 1 of the EC Habitats and Species Directive. COUNCIL DIRECTIVE 92/43/EEC of 21 May 1992 (European Habitats Directive), considers that raised bog still capable of supporting bog vegetation within 30 years should be considered as of European Importance.

2. A Mossland Group consisting of the Environment Agency, Natural England, the Lancashire Wildlife Trust, and the BAP Managers of Greater Manchester, Lancashire and Merseyside meet monthly to discuss and prioritise action on mossland sites. A report undertaken by one of the members of the group details the remaining 31-mossland sites within Greater Manchester, Lancashire and North Merseyside. The report describes the condition of the individual sites and the potential for restoration. The report identifies 14 sites within Greater Manchester that

support acid peat habitat and priority sites have been identified. As part of the Hydrological Plan for Astley and Bedford Moss, parcels of land surrounding the mossland sites that are considered as important for the restoration of the mossland habitat have been identified.

3. The Lancashire Wildlife Trust has been successful in funding 2 mossland officers, covering Lancashire, Greater Manchester and North Merseyside. It is envisaged that through landowner liaison, a landscape scale approach to mossland conservation can be delivered.

4. Work to provide suitable Nightjar habitat on Chat Moss has been limited. The restoration works undertaken by the Wildlife Trust on the 12ha mossland habitat at 12 Yards Road, may well contribute to the provision of some suitable habitat. However, large-scale habitat creation works will only be possible when the whole of the peat extraction site at 12 Yards Road ceases and the land comes available for appropriate management.

5. The Lancashire Wildlife Trust has included the acquisition of both mossland habitat and land adjacent to peatland areas as one of its main priorities and is included within its business plan. 4.3ha of land adjacent to the Astley Moss Reserve has already been

purchased and further land is currently being identified.

6. The Environment Agency licences water abstraction and have developed Catchment Abstraction Management Strategies (CAMS) to help balance the needs of water-users, the environment, and aid the sustainable management of water resources on a catchment scale. Licences for abstractions are issued when the rate of abstraction is above 20m<sup>3</sup>/day.

Under the licensing arrangements for abstraction, only impacts on designated sites are currently assessed. The Environment Agency also implement the Catchment Flood Management Plan (CFMP). This is a strategic planning tool through which the Agency seeks to work with other key decision-makers within a river catchment to identify and agree policies for sustainable flood risk management.

### Land Management

1. Section 106 Agreements are attached to permissions to extract peat (Croxten's site) and peat, sand and gravels (Astley Moss East). The Astley Moss East agreement has guaranteed restoration works to be undertaken on 2/3 of the site. 16 ha of mossland adjacent to Botany Bay Wood will also be restored. Conditions attached to the Croxten's site are to provide recreational

opportunities including nature conservation, however, a proposal to extend the peat extraction for another 25 years and to take the peat down to 1 meter is currently being submitted.

Further negotiation will be required with landowners to ensure the maximum biodiversity gain. Currently the whole of the Little Woolden Moss is to be turned over to agriculture, with the loss of over 100ha of potential mossland/lagg fen habitat. The current assessment of the site is that there is between 0.5 to 1 meters of peat depth remaining.

2. A Management plan for the Lancashire Wildlife Trust Reserve at Astley Moss has been completed and the reserve has been entered into Environmental Stewardship. The Bedford Moss site is currently under the Reserves Enhancement Scheme, operated by Natural England. A further 10 ha at Astley Moss and 12 ha at 12 Yards Road (Croxten's site) are currently being restored, with a program of scrub removal, bunding and ditch blocking. The works undertaken on the Astley Moss reserve, have allowed Natural England to re-classify one of the compartments from Unfavourable Declining to Unfavourable Recovering.

Restoration works on Ince Moss, Wigan, have also been undertaken. Land lowering works adjacent to the moss, revealed 0.33 ha of underlying peat habitat. The new peat area has been bunded so that it is now isolated from outside hydrology and rewetted. The land lowering work at Ince Moss has also enhanced 4ha of reedbed, a complimentary habitat to mosslands.

3. Overall 28 ha of scrub/woodland have been cleared from the mossland sites, increasing the chances of successful restoration.

4. The Chat Moss Action Group has been formed, composed of stakeholders and environmental organisations. A vision document was commissioned by Red Rose Forest. The Vision document aims to secure a long-term vision for the mossland area and address the current fragmentation and decline of the landscape as a whole. The vision identifies operational zones so that a cohesive structure between the different land uses can be formed. Within the Vision, biodiversity and hydrological zones have been identified around the mossland sites to protect the hydrological integrity of the mossland habitat and provide complementary wetland habitat, enhancing the biodiversity of the area.

Salford City Council has commissioned a study within part of the Chat Moss area. The study aims to identify the necessary hydrological zone required to protect the interest of the mossland habitats.



Twelve Yards Road (GMEU)

5. A further mossland group, comprising, Natural England, the Environment Agency, the Lancashire Wildlife Trust and the 3 Biodiversity Managers from Manchester, Lancashire and Merseyside meets to discuss mossland management, acquisitions and the strategic long-term management of the mossland landscape across the 3 regions.

6. At Red Moss, the actions in the 2001 restoration plan have been completed. Of the 33ha within the restoration plan, approximately 80% of the land has now been

re-wetted sufficiently for the growth of bog vegetation. Round-leaved Sundew has been recorded on the site for the first time since 1925. *Sphagnum magellanicum* recorded in June 2007, was the first record for the vice county of South Lancashire.

### Advisory

1. Red Moss has been used as an example of Best Practice. Within this mossland BAP review is a section on best practice guidance.

2. As part of the Wildlife Trust's mossland project, mossland talks have been undertaken in the schools within Wigan and surrounding Astley Moss, allowing a wider audience to be reached. The talks have promoted the importance of mossland habitat and their current vulnerability. This type of engagement has given the opportunity to promote the use of non-peat based products, thereby reducing the development pressures on the remaining mossland resource.

3. The funding and establishment of a mossland officer is central to the provision of advice to mossland owners and adjacent landowners. The Lancashire Wildlife Trust has been successful in funding 2 mossland officers for the next 2 years (March 2009-Apr 2011). It is envisaged that through landowner liaison, a landscape scale approach to mossland conservation can be delivered.

**Research and Monitoring**

1. A report was commissioned by the Environment Agency (Paul Thomas), detailing the State and extent of surviving acid mossland habitats within Lancashire, Greater Manchester and North Merseyside. The report describes and maps the condition of the individual sites and the potential for restoration. Restoration works on mossland habitats are inputted into BARS annually. As part of the Mossland Project, the Lancashire Wildlife Trust have been inputting into the

BARS Countdown 2010 on biannual bases for the past 2 years.

2. Current research is building up new evidence on the role mosslands have in locking up carbon and thereby having a positive effect on climate change.

**Communication and Publicity**

Press releases and radio appearances have helped to publicise the importance of and threat to our mossland resource.

**Objectives and targets**

Objective	Target	Quantity	Target Date	Units
Maintaining extent	Maintain the extent of the existing Greater Manchester lowland raised mire resource.	167	2015	Ha
Maintaining extent	Ensure no further loss of peat deposits.	435	2015	Ha
Achieving Condition	Rehabilitate degraded bog habitat still capable of natural regeneration (in targeted areas) to bring most of the primary and secondary resource into or approaching favourable condition through appropriate management.	167	2020	Ha
Restore	Restore Lowland Raised Bog immediately on chosen areas of archaic peat to ensure a sustainable hydrological regime for adjacent extant habitat	100	2020	Ha

## Proposed actions

### 1. Develop landscape approach to mossland conservation.

The Lancashire Wildlife Trust has now been able to fund 2 mossland officers for a 2-year period. The officers will lead the way forward in developing a landscape scale approach to mossland conservation. WT's, NE, GMBP, LA's. 2015

### 2. Ensure no future loss of our peatland resource through development and/or peat extraction.

- ◆ No further peat extraction licences should be approved beyond the lifespan of the current extraction periods.
- ◆ Review the designation of all deep peat sites, including bare peat habitats and designate as Sites of Biological Importance (SBI)
- ◆ Liaise with landowners of peat extraction sites and negotiate restoration of all peat extraction sites to mossland habitat. LA's, NE, EA, GMEU, WT's. 2011

### 3. Ensure that Water Abstraction adjacent to peatland sites have no adverse impact on the hydrology or the restoration of the habitat.

- ◆ Plot all abstractions adjacent to peatland sites and investigate hydrological impacts.

- ◆ Ensure that licences are granted to abstractions that do not impact on any area of important peatland habitat. Currently, only abstractions above 20m<sup>3</sup>/day that may impact on designated mossland sites are currently licensed. Ensuring at the planning stage that developments needs for abstraction licenses are fully assessed could strengthen the protection of the water table. EA, SCC, WMBC, GMEU, LWT. Ongoing

### 4. Afforestation/scrub encroachments and the absence of targeted management for existing mossland habitat.

- ◆ Target mossland sites and either bring the sites into the ownership of environmental organisations or aid landowners to bring the sites into appropriate management.
- ◆ Management on mossland sites brought into conservation management will be aimed at controlling invading scrub/tree species, reducing water loss and controlling the water levels bringing the water table up to optimal levels for the growth of mossland vegetation. EA, NE, WT's, LA's, RRF, LBM. Ongoing

**5. Habitat isolation as a result of fragmentation of existing areas, oxidation and compaction of peat deposits under agricultural management**

Work closely with landowners adjacent to peatland areas to deliver a landscape scale mossland conservation vision. The development of mossland corridors will enable fragmented sites to be linked and reduce isolation. The development of complimentary wetland habitat adjacent to mossland sites will increase the sustainability of the core mossland habitat by aiding the retention of appropriate water levels. Working with landowners will ensure that operations undertaken on adjacent land will not damage the hydrological integrity of the mossland habitat. LA's, EA, NE, WT's, LBM, GMBP. 2015

**6. Research the desirability of translocation of characteristic species into newly developed mossland sites**

Many of the sphagnum species should be able to establish themselves naturally within the mossland areas. This should be monitored and the abundance of mosses assessed regularly. If then required donor sites should be sourced with the view to translocation of certain species if deemed necessary. WT's, LBM. Ongoing

**7. Provide evidence and publicise Mosslands as an important Carbon Sink/ enhance public perception and opening up new avenues of funding for mossland conservation**

The vital part peat deposits have in providing a carbon sink will be highlighted. The World's northern peatlands are its most important terrestrial carbon store; it is estimated that 20-30% of the global terrestrial carbon is held in 3% of its land area, i.e. in northern peatlands. Mosslands also have the ability to sequester carbon, if they are managed correctly. Wet mossland habitat that supports a good coverage of *Sphagnum* moss is therefore of significant environmental and economic importance. It is therefore vitally important to build up this new evidence base of the role mosslands have in locking up carbon thereby having a positive effect on climate change. The research will also enable new and initiative ways of funding the protection of the mossland resource. WT's, NE, LA's, EA, GMBP. Ongoing

**8. Provide habitat within the mosslands suitable for breeding nightjar**

- ◆ Identify areas on the mossland where the raising of water levels would not be possible and encourage the development of drier habitats such as heathland to encourage the colonisation by Nightjar.

- ◆ Within the mossland restoration areas, some sites will support higher drier habitat, which should also be managed for nightjar.
- ◆ The former peat workings at Astley Moss East, Little Woolden Moss and Chat Moss should be targeted to restoring heathland habitat on the drier areas, which should then be brought into appropriate long-term management. **WT's, LA's, GMBP, LBM. 2015**

By working closely with landowners adjacent to peatland areas, a landscape scale mossland conservation vision can be delivered. The establishment of good quality heathland habitat, merging into wet heath and mire will greatly increase the amount of suitable habitat available for breeding Nightjar.

## LEAD PARTNERS

EA	Environment Agency
GMBP	Greater Manchester Biodiversity Project
GMEU	Greater Manchester Ecology Unit
LA's	Local Authorities
LBM	Local Biodiversity Manager
NE	Natural England
RRF	Red Rose Forest
SCC	Salford City Council
WMBC	Wigan MBC
WT's	Wildlife Trusts

## Best practice guidelines

Pristine mossland will require little or no management, but as there are no examples of pristine mossland habitat in the Northwest, it is vital that appropriate management is undertaken on the remaining mossland resource. The damage to our mossland resource has been caused mostly through peat extraction and/or conversion to agriculture. This has resulted in the loss of vegetation cover, a loss of the peat dome and a massive reduction in water levels due to the installation of ditches and drains. Re-vegetation can occur, although many of the characteristic species may have been lost. The viability of the seeds of many of the bog species is greatly reduced after only a few years and is therefore difficult to re-establish. The management to restore mossland habitat needs to reverse the past damage. This usually involves raising the water table to a level suitable for the growth of bog species.

The main objective of mossland management is to achieve:

- ◆ A range of mossland communities
- ◆ Optimal water levels for mossland vegetation, especially sphagnum mosses, which will be suitable for a range of other associated species.
- ◆ Prevention of serial scrub succession.

- ◆ Development of mossland corridors.
- ◆ Develop a range of small pools for aquatic plant species and Odonata etc.
- ◆ Management of non-native weed species as required.
- ◆ Control of disturbance and damage by human influence

It is critical to the successful restoration of mosslands to achieve the correct water levels. This is primarily achieved by the blocking of the drainage ditches.



Bund heightening to isolate peat compartments

Ditches can be blocked using a number of different materials, including peat plugs, plastic piling dams or marine ply dams. Usually a belt and braces approach is desirable and ply and plastic dams should be backed filled with peat to ensure a waterproof barrier. Advice should be sought from the Environment Agency, as consent may be required for any in channel structures.

## Lowland Mosslands

The peat used to construct the dams should not be dry or too wet in consistency. If it were too dry, it would not provide a hydrological barrier. Too wet and it would be difficult to work with. Large vegetated turfs should also be avoided as these do not fit tightly together and provide access for water movement. Dams should be constructed so that water levels can rise to the best height to ensure the growth of bog vegetation, usually bringing the water levels to or just above the ground level.

In practice this is a matter of judgement, as mosslands are not an entirely flat environment. Some areas may become too wet, whilst others remain too dry. The position and number of dams will have to reflect this change in land levels. Collation of land level data will aid this process, providing information on the fall and rise of land throughout the site. Collation of waterflows will also be required to provide an accurate steer on the positioning of dams.

Bunding (raising land levels over a linear distance) works help to isolate the mossland from outside ground water influence and raise water levels. Again the land level and water flow data can be used to predict the best positioning of the bunds. The bunds have added advantage in that through the installation of pipes and right-angled bends, the level of water within the banded areas

can be controlled. Water levels can therefore be manipulated and raised gradually as the colonisation process proceeds. The bund creation works also allows the creation of shallow scrape areas where bog vegetation can establish.



Plastic piling dams and peat plugs help raise the water table. Right-angled pipes can then be used to fine-tune the desired height.

When working peat to build bunds, the depth of the peat should first be assessed. Digging up too much peat may punch a hole in the peat mass and allow water to escape downwards. It is vital that enough ombrotrophic peat is present for successful restoration works. Surface vegetation should be skimmed off and the underlying peat used to create the bunds. Only the first 1-meter of peat should be removed. The skimmed surface vegetation should then be replaced after the peat has been removed. Mosslands have been shown to support populations of Water Vole and it may therefore be

necessary to undertake vole surveys and mitigation works to ensure the protection of this species, if recorded.

Dipwells and staging boards can be installed to monitor water levels and how they respond to the restoration works. Fixed-point quadrates can be placed within the restoration area to assess the response of bog vegetation.

### Impact of Invasive species

Particularly invasive species on mosslands are Downy Birch and Bracken. These can be managed through re-wetting of the mosslands, as well as, scrub clearance and herbicide spraying. Larger scrub and trees are removed from the mosslands, or used to block ditches, sometimes requiring specialised machinery to chip and remove.

Further information about control of invasive species can be found at:

[Bracken control and management](#) – Natural England

[Bracken management in the uplands](#) – RSPB

[Bracken control, vegetation restoration and land management](#) – Natural England

## Links to relevant BAP's

Native Woodlands

Reedbeds & Bittern

Water voles

## References

Dr. Fred Worrall (2008) *The potential for carbon storage at Chat Moss* Pers. comm.

Thomas, Paul. *Mosslands of the Northwest: State and Extent of Surviving Mossland Habitats*. *Environment Agency*

## Acknowledgements

Thanks to all those who provided feedback on the action plan and for the use of photographs supplied by Martyn Walker and the Greater Manchester Ecology Unit (GMEU).

## Author

### **Martyn Walker**

Conservation Officer for Greater Manchester  
mwalker@lancswt.org.uk

# Hedgerows

*Estimates for the hedgerow extent in Greater Manchester is 3293 km, representing 0.6% of the total for England*



## Ecology

Hedgerows are an intrinsic part of the farmed landscape and provide shelter and food for many species of farmland birds, insects and mammals and also provide important corridors for wildlife movement across the landscape. The particular mix of shrub and tree species in a hedgerow, which reflects both the age of the hedgerow and local management customs, contributes to local landscape character distinctiveness.

## Priority Habitat Description

Some hedgerows are protected under The Hedgerow Regulations 1997, some are Priority Habitats under the UK Biodiversity Action Plan and others are considered to be species rich. As a result of this there are several terms to describe different hedgerows and the different terminology

used can be confusing. To try to alleviate this problem the following definitions are provided:

### Important Hedgerows

Under the Hedgerow Regulations 1997 (<http://www.opsi.gov.uk/si/si1997/19971160.htm>) hedgerows are protected if they are classed as 'Important'. The legislation has several criteria for determining whether or not a hedgerow is Important. This includes the age of the hedge - if a hedgerow is over 30 years old it is classified as important.

Important hedgerows can also be classified in terms of their historical or archaeological merits, and also because of their wildlife value. This is related to the number of 'woody' species found in a hedge and other assemblages of mammals, plants, birds and invertebrate it supports. For example, a

hedgerow with 7 woody species would be classed as important, as would a hedgerow with 5 woody species and other features, such as, a ditch running along it, standard trees, gaps of less than 10% of the hedge length and a parallel hedge within 15m. Hedgerows supporting species, which are protected under the Wildlife and Countryside Act 1981 are also classed as Important. For more detailed information on the criteria the legislation should be consulted.

#### Priority Habitat and Favourable Condition

Under the UK Biodiversity Action Plan for Hedgerows

(<http://www.ukbap.org.uk/library/UKBAPPriorityHabitatDescriptionsfinalAllhabitats20081022.pdf>), it describes this habitat as any boundary line of trees and shrubs over 20m long and less than 5m wide, where gaps are less than 20m wide. All hedgerows consisting predominantly (at least 80%) of woody species native to the UK, for example, hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*), hazel (*Corylus avellana*) and dog rose (*Rosa canina agg*), are included within the priority habitat.

However within the Action Plan there are targets to gain or retain favourable condition of hedgerows. Favourable condition is measured by assessing 5 key attributes which are: the dimension of the hedge, the

## Hedgerows

continuity, the height of the canopy base, the width of undisturbed ground cover at the base of the hedge and the presence or absence of introduced species.

#### Species Rich Hedgerows

Hedgerows are defined as species rich when the structural species making up a 30m segment include at least 5 (4 in Northern England) native woody species (Hedgerow Survey Handbook, DEFRA, 2007 <http://www.defra.gov.uk/farm/environment/landscape/documents/hedgerow-survey-handbook.pdf>). Climbing plants such as honeysuckle and brambles do not count towards this total, and currently there are no national criteria for incorporating the basal ground flora within this definition.

The Greater Manchester Hedgerows Action Plan has adopted the UK priority habitat description differing only in that they should consist of at least 80% cover of locally native species.

Key species include:

Tree Sparrow	<i>Passer montanus</i>
Grey Partridge	<i>Perdix perdix</i>
Barn Owl	<i>Tyto alba</i>
Song Thrush	<i>Turdus philomelos</i>
Yellow Hammer	<i>Emberiza citrinella</i>
Linnet	<i>Carduelis cannabina</i>
Great Crested Newt	<i>Triturus cristatus</i>
Brown Hare	<i>Lepus europaeus</i>
Bats	
Small mammals	

## Current status and distribution

### National

The 2007 UKBAP review has changed the name and expanded the scope of the priority habitat definition. The Ancient and/or species rich hedgerows BAP has been renamed *Hedgerows* and now covers all hedgerows that have 80% or more cover of any native trees or shrubs.

The Countryside Survey 2007 estimates that the extent of hedgerows in England is 402,000 km. It is estimated that 84% of agricultural hedgerows now qualify as a UK priority habitat.

Uptake statistics from the first 2 years of Environmental Stewardship across England show there are over 25,000 agreements, which include options for management of Hedgerows covering length of almost 200,000 km (figures based on options lists provided in Annex 1)

### Local

The latest estimate for hedgerow extent in Greater Manchester is **3,293 km** this represents approximately 0.6% of the England total and 6.4% of the estimated extent for the North West region.

In Greater Manchester few hedgerows qualified as UK priority habitats under the ancient/species rich definition, two are known

in Stockport and some in Trafford. However, even species-poor hedgerows provide important feeding, breeding and resting sites for a variety of birds, mammals and invertebrates.

Uptake statistics from the first 2 years of Environmental Stewardship in Greater Manchester show there are approximately 70 agreements, which include options for management of Hedgerows covering length of almost 247 km

### Policy and legislation

Hedgerows are protected by the *Hedgerows Regulations 1997*. Under the regulations, it is against the law to remove or destroy certain hedgerows without permission from the local planning authority. However, very few hedgerows in Greater Manchester are protected under this.

EC Habitats and Species Directive require member states to encourage the management of hedges in their land use planning and development policies.

Under the Food and Environment Protection Act 1985 it is illegal to spray pesticides into hedge bases, unless there is a specific label recommendation, and illegal to use certain pesticides within 6m of watercourses and/or uncropped habitats.

The Wildlife and Countryside Act 1981 (as amended) affords protection to some plant and animal species including birds. It is an offence to damage or destroy wild birds, their nests or egg. This is particularly relevant to field boundaries with regards to timing of cultivation, cutting or other management.

Under the Standards of Good Farming Practice land managers must not remove or destroy any hedges and must not trim hedgerows between 01 March and 31 July.

### Factors affecting the habitat

- ◆ Reduction in length of hedgerow through removal of field boundaries to create larger fields more suited to mechanised and intensive agriculture, and replacement of hedges by fences.
  - ◆ Poor hedgerow management either through neglect or excessively frequent or badly timed cutting. Hedgerows can sometimes be colonised by unsuitable species, which can lead to difficulties in management, resulting in the hedgerow becoming neglected.
  - ◆ Loss of hedgerow trees through senescence and felling, without encouraging replacements.
- ◆ Ploughing/cultivation right up to the base of the field boundary.
  - ◆ Increased use and incorrect timing of the application of fertilisers, and the resulting run-off.
  - ◆ Spraying out hedge bases with herbicides and the increase use of herbicides and pesticides in general.
  - ◆ High stocking rates, which damage hedgerows.
  - ◆ Lack of understanding amongst general public and some land managers of appropriate management and concern over keeping field boundaries appearing 'tidy'.

## Hedgerows

### Current actions

#### National

Under the Single Payment Scheme land managers are asked to demonstrate that they are maintaining their land in good agricultural and environmental condition. This is achieved through Cross Compliance, which provides a series of standards for environmental management on farms. There are two main elements, **Statutory Management Requirements (SMRs)** and **Good agricultural and environmental condition (GAEC)** standards.

Environmental Stewardship Higher Level Stewardship (HLS), Entry Level and Organic Entry Level Stewardship (ELS/OELS) include hedgerow management options.

In 2002 the UKBAP steering group published [The Hedgerow Survey Handbook](#), a standard procedure for local surveys in the UK, a second edition was published in 2007.

The [Farming and Wildlife Advisory Group](#) offer advice regarding hedgerow maintenance. Advice for maintaining hedgerows for bird species is available on the [Farm Hedges](#) and their Management section of the RSPB website.

## Local

Within Greater Manchester £25,000 was awarded from SITA for hedgerow surveys and management within Oldham. As part of this project 48 hedgerows were surveyed in

2006, 20 of which were considered species rich under the UK BAP criteria for the North, and 10 qualified as important under the 1997 Hedgerow Regulations. Approximately 400 metres were managed by under planting or coppicing as appropriate.

An extensive survey of Bolton's hedgerows was carried out in 2001, which highlighted important hedgerows, future priorities and management. The report can be viewed here - [Bolton Hedgerow Survey 2001](#)

## Objectives and targets

Objective	Target	Quantity	Target Date
Maintain extent	Maintain current extent of hedgerows. This relates to all hedgerows consisting predominately of at least one native species.	2766 km	2015
	Maintain individual, isolated hedgerow trees. Identify isolated hedgerow trees and use appropriate management to protect them.	9637 trees	2015

Achieve favourable condition	Ensure that new hedgerow planting achieves the national average species richness. Increase the quality of the existing resource in terms of woody species-richness, where appropriate.	3.75 native woody species per 30m	2015
	Improve hedgerows that are in poor condition and bring them into favourable condition by restoring the structure and species diversity.	1,647 km	2015
	Establish the proportion of land managers that trim their hedgerows annually and aim to reduce this number. Reduce the number of hedgerows that are cut frequently.	Reduce by 40%, that are cut annually	2015
	Halt further decline in the condition of herbaceous hedgerow flora, and improve their condition. Maintain condition of the basal flora of hedgerows at or above the national average.	9.89 species	2015
Expansion	Increase the number of young trees by encouraging planting of specific hedgerow trees or identify saplings that can be left to grow into trees.	9900 trees	2015
	Increase the length of hedgerows.	20km	2015

## Proposed actions

### Site Safeguard

- ◆ Seek to protect existing hedgerows through the Hedgerow Regulations and Cross Compliance (Medium Priority) LA's, NE. 2015
- ◆ Consider designating important field boundary features as non-statutory

wildlife sites (SBI). (Medium Priority) GMEU, LA's. 2015

### Land Management

- ◆ Encourage increased take-up of Environmental Stewardship options for management of hedgerows. (High Priority) NE, FWAG, GCT. Ongoing

- ◆ Promote and encourage the planting and management of hedgerows where appropriate in ecological and landscape terms. (High Priority) **NE, LA's. Ongoing**

## Advice

- ◆ Promote favourable management of hedgerows by providing advice to landowners (High Priority) **NE, FWAG, GCT, EA, RSPB. Ongoing**

## Future Research and Monitoring

- ◆ Survey and map existing hedgerows and maintain information on GIS database. (High Priority) **LA's, 2015**
- ◆ Develop coordinated system for reporting on delivery through Environmental Stewardship (High Priority) **NE, LBM. 2015**
- ◆ Develop coordinated feedback from Local Planning Authorities enforcing the Hedgerow Regulations. (Medium Priority) **GMEU, LA's, LBM. 2010**

## Communications and Publicity

- ◆ Raise awareness amongst landowners and the public of the importance of field boundaries for wildlife. (Medium Priority) **NE, EA, LA's. 2010**

## Resource Implications

The value under Environmental Stewardship of all options relevant to this plan is provided in Annex 1.

### LEAD PARTNERS

<b>EA</b>	Environment Agency
<b>FWAG</b>	Farming and Wildlife Advisory Group
<b>GCT</b>	Game Conservancy Trust
<b>GMEU</b>	Greater Manchester Ecology Unit
<b>LA's</b>	Local Authorities
<b>LBM</b>	Local Biodiversity Manager
<b>NE</b>	Natural England

## Best practice guidelines

Further information about hedgerow management can be found on the links below.

- ◆ [The Farming and Wildlife Advisory Group](#)
- ◆ [Farm Hedges and Management \(RSPB\)](#)
- ◆ [Natural England Guidance: Hedgerow Trees: answers to 18 common questions](#)
- ◆ [Natural England Guidance: Hedge Cutting: answers to 18 common questions](#)

- ◆ Natural England Guidance: Hedgerow planting: answers to 18 common questions
- ◆ Hedgelink – provides information about hedgerows, management and wildlife.
- ◆ BTCV Hedging Handbook

**Emma Wilson**

Nature Development Officer, Stockport

emma.wilson@stockport.gov.uk

## Links to relevant BAP's

Farmland Birds

Great Crested Newt

Hares

## References

Countryside Survey 2007

Hedgerow Survey Handbook 2<sup>nd</sup> Edition 2007

FWAG Technical Information Sheets:  
Hedgerow Management 2005

## Authors

**Rebecca Jackson-Pitt**

Biodiversity Adviser, Natural England

Rebecca.Jackson-

Pitt@naturalengland.org.uk

**Annex 1 – Environmental Stewardship Options relevant to Hedgerows in Greater Manchester** (Extracted from Entry Level Stewardship Handbook, Organic Entry Level Stewardship Handbook and Higher Level Stewardship Handbook, Defra 2005)

Under ELS and OELS the landowner has to achieve a total of 30 points per ha for land entered into the agreement for which payment is made of £30 per ha per year. Thus one point equates to £1 per year. HLS payments are shown in pounds.

### Entry Level and Organic Entry Level Stewardship Options

Code		Option	Units	Points	
ELS	OELS			ELS	OELS
EB1	OB1	Hedgerow management (on both sides of hedge)	100m	22	22
EB2	OB2	Hedgerow management (on one side of hedge)	100m	11	11
EB3	OB3	Enhanced hedgerow management	100m	42	42
EB8	OB8	Combined hedge and ditch management (incorporating OB1/EB1 hedge management)	100m	38	38
EB9	OB9	Combined hedge and ditch management (incorporating OB2/EB2 hedge management)	100m	26	26
EB10	OB10	Combined hedge and ditch management (incorporating OB3/EB3 hedge management)	100m	56	56

### Higher Level Stewardship Options

Code	Option	Units	Payment
HB12	Maintenance of hedgerows of very high environmental value	100m	£27
HR	Hedgerow restoration including laying, coppicing and gapping up	m	£5
PH	Hedgerow planting – new hedges	m	£5

# Grasslands

*Grasslands are the most extensive semi-natural habitat type remaining in Greater Manchester.*

## Background

This plan for the conservation of important grassland habitats in Greater Manchester has resulted from a review of three separate Habitat Action Plans included in the current Biodiversity Action Plan for Greater Manchester, published in 2003. These Action Plans were for:

- ◆ Unimproved neutral grassland
- ◆ Acid grassland
- ◆ Marshy grassland

This new Habitat Action Plan has incorporated all these habitat types into one plan because, after review, it was considered that the threats and actions needed to conserve these grassland types were similar across Greater Manchester.



A fourth grassland category, **grassland of high ecological value on previously developed land**, has now been included in the plan because of the increased recognition of the value of this habitat type for biodiversity and because this grassland type is regarded as highly threatened.

## Priority Habitat Descriptions

*Species rich (unimproved) neutral grassland*

Neutral grasslands are found on moist mineral soils with a pH of between 5 and 6.5. They do not normally occur on soils, which combine extremes of acidity or alkalinity with extremes of wetness or dryness.

The majority of the neutral grassland found in the UK is now species-poor “improved” grassland that has been modified by extensive use of fertilisers, reseeding and drainage. Therefore the most species-rich grasslands of the highest conservation value are often referred to as ‘unimproved’ grasslands.

Unimproved neutral grassland is often found in enclosed lowland landscapes managed either as pastures, which are grazed for all or part of the year, or meadows which are usually grazed for part of the year but are “shut up” (stock excluded) in late spring to allow the grass to grow prior to the mowing of a hay crop in early or mid summer.

In the UK National biodiversity action plan the habitat type is called ‘lowland meadow’ or ‘upland hay meadow’. However, in Greater Manchester many areas of species-rich neutral grassland are found outside of agricultural landscapes, arising either because the grassland is a fragment of original grassland (pre-agricultural improvement) remaining after built development removed the surrounding land from agricultural use, or because improved top-soil layers have been removed or inverted to expose nutrient poor sub-soils which have then colonised naturally.

In Greater Manchester, the most extensive areas of non-agricultural species-rich neutral grassland are found along road verges. Recreational sites and churchyards are also common locations for this habitat type in Greater Manchester. The term ‘meadow’ is therefore regarded as misleading and is not used in this Plan, although it is recognised that the best sites are still to be found within the farmed landscape.

In Greater Manchester the majority of species-rich neutral grasslands will equate to NVC community MG5. However, the relative lack of high quality neutral grasslands in Greater Manchester means those sites that are ‘recovering’ from improvement or that receive low levels of agricultural input may qualify as the GM priority habitat type.

Some plant species that could be used as ‘indicator species’ for the habitat type are:

Dyers greenweed	<i>Genista tinctoria</i>
Adder’s-tongue fern	<i>Ophioglossum</i>
Meadow saxifrage	<i>Saxifraga granulata</i>
Hay Rattle	<i>Rhinanthus minor</i>
Devil’s-bit	<i>Succisa pratensis</i>
Betony	<i>Stachys officinalis</i>
Great Burnet	<i>Sanguisorba officinalis</i>
Greater burnet-	<i>Pimpinella major</i>
Saxifrage	
Birds Foot Trefoil	<i>Lotus corniculatus</i>
Cuckoo Flower	<i>Cardamine pratensis</i>
Oval Sedge	<i>Carex ovalis</i>

But the presence of single plant specimens, or low numbers of plants of a single species, should not necessarily be taken to define the grassland as the priority habitat type.

Species rich grasslands may also support particular fauna, such as certain ground nesting birds (e.g. skylark, grey partridge), invertebrates (common blue butterfly, large and small skipper) and mammals (field voles, brown hares).

### Acid grassland

Acid grasslands usually occur on nutrient poor soils over acidic rocks such as sandstone, acid igneous rocks and superficial deposits, for instance sand and gravel. Acid grassland is found in both upland and lowland areas.

The GM habitat type covers both lowland dry acid grassland, a UKBAP priority habitat, which is largely restricted to land below 300m, and upland acid grassland. The broad habitat type can be defined using the NVC and include the communities:

- U1 *Festuca ovina-Agrostis capillaries-Rumex acetosella* grassland
- U2 *Deschampsia flexuosa* grassland
- U4 *Fesuca ovina – Agrostis capillaries – gallium saxatile* grassland

Lowland (dry) acid grassland occurs on free draining soils and typically comprises plant communities characterised by wavy hair-grass, fescues and bent grasses, sheep's sorrel, devil's-bit scabious, heath bedstraw and tormentil. Lowland dry acid grassland commonly forms mosaics with other semi-natural habitats including lowland heathland (another UK Priority Habitat) increasing its biodiversity value through these associations.



Holcombe Moor, Bury

Large expanses of acid grassland, uniform in character, also occur in the uplands. These sites often support a limited range of plant species, a result of past management practices. Upland acid grasslands can arise following the loss of heathland or blanket bog communities through over-grazing or drainage. Although many types of upland acid grassland habitat can be inherently species-poor in terms of their flora, they can make a substantial contribution to the nature conservation interest of moorland,

supporting upland birds such as curlew, golden plover, twite, ring ouzel and skylark.

Typical plant species of upland acid grassland include:

Purple moor-grass	<i>Molinia caerulea</i>
Sheep's fescue	<i>Festuca ovina</i>
Wavy hair-grass	<i>Deschampsia flexuosa</i>
Common bent	<i>Agrostis capillaris</i>
Mat grass	<i>Nardus stricta</i>
Tormentil	<i>Potentilla erecta</i>
Heath bedstraw	<i>Galium saxatile</i>

### **Marshy grassland**

Marshy grassland occurs on more or less level areas rather than on the banks of watercourses. It is generally found on permanently damp soils or land with impeded drainage.

In Greater Manchester marshy grasslands are often found outside of agricultural landscapes in areas that have fallen out of agricultural use or in areas where the ground has been greatly disturbed, for example on very compacted soils or on areas of restored or reinstated land (e.g. old tip and colliery sites). Marshy grasslands are sometimes used for light grazing, particularly in the uplands but in Greater Manchester more often than not they are unused and unmanaged.

## Grasslands

For the purposes of this plan this habitat type covers upland and lowland marsh/marshy grassland including:

- ◆ Certain purple-moor grasslands, including the UKBAP priority habitat type 'purple moor grass and rush pastures'
- ◆ Grasslands with high proportions/diversity of rush, and sedge species
- ◆ Wet meadows and pastures supporting communities of species such as meadowsweet, marsh marigold or valerian species where herbs rather than grasses predominate.

Many areas of marshy grassland are relatively species poor and may not be said to properly constitute the priority habitat type. These species-poor examples are often dominated by stands of a few dominant species such as reed canary grass or soft rush. Marshy grassland can also sometimes be characterised by significant orchid communities, including marsh orchids.

Notable fauna includes valuable invertebrate communities such as, hoverflies, crane flies and soldier flies. Because they sometimes support large invertebrate communities marshy grassland can be valuable feeding habitats for bats.

## *Grasslands of high ecological value on areas of previously developed land*

This habitat category is included as a priority habitat for conservation because it is a habitat that is known to support important populations of invertebrates (including beetles, bees and spiders), often in unique assemblages.

Most grasslands of high ecological value on previously developed land are **primary successions**, and as such are unusual in the British landscape. They usually occur on urban Brownfield sites, which can be found across Greater Manchester, and are severely threatened by the pressure to redevelop such sites for built developments.

The broad habitat type includes some very early successional stage plant communities ('pioneer' communities) on skeletal substrates, but most will comprise open grasslands with many varied flowering plants and herbs, areas of bare ground and often a little scrub, which can persist for decades with limited management on substrates whose edaphic conditions severely limit plant growth and lead to arrested successions.

Examples are substrates with extreme pH, whether alkaline (e.g. lime) or acid (e.g. colliery spoils), substrates deficient in nitrogen (e.g. Pulverised Fuel Ash) or in available phosphate (e.g. calcareous quarry

spoil), or water-deficient (e.g. dry gravel and sand pits).

Grasslands fitting this priority type cannot be properly defined using botanical criteria alone. For formal selection as the priority habitat type, surveys of invertebrates will likely be required.



Colliery Spoil

## Current status and distribution

### *Species rich (unimproved) neutral grassland*

It is estimated that there is some 250 ha of species-rich unimproved neutral grassland remaining in Greater Manchester (not all of this will meet the definition of the priority habitat type). The majority of the species-rich examples lie within designated Sites of Biological Importance in Trafford, Oldham, Stockport, Tameside, Bury and Manchester.

Unimproved upland hay meadows and lowland meadows are listed on Annex I of the EC Habitats and Species Directive and are both UK Priority habitats.

#### *Acid grassland*

Given current data sources it is not readily possible to distinguish between upland and lowland acid grassland distributions. Overall there are known to be 4,600ha of acid grassland in Greater Manchester. This mostly comprises upland acid grassland in Oldham and Rochdale. Lowland acid grassland is increasingly rare and examples of this habitat type more than 0.2ha in extent should be regarded as important.

#### *Marshy grassland*

There are estimated to be 266 ha of marshy grassland in greater Manchester, but most of this figure represents marshy grassland in upland areas of Rochdale. In other lowland areas the resource is very fragmented and occurs generally in small fragments (less than 0.5ha). Currently there is no legal protection for this habitat type, except where it occurs within designated sites.

#### *Grasslands of high ecological value on areas of previously developed land*

There is direct comparison with the UK Priority Habitat 'Open Mosaic Habitats on Previously Developed Land'. Current extent

## Grasslands

within Greater Manchester is unknown at present.



Nob End, Bolton

### Factors affecting the habitat

It is important to recognise the threats to grasslands if actions for conservation are to be properly informed and targeted. In Greater Manchester the main causes of decline and species impoverishment of grasslands are considered to be:

- ◆ **Pressure from built development.** This pressure can be direct in terms of habitat that is built over, and indirect from:
  - Intensification of management of grassland adjacent or close to new development
  - Abandonment of grassland formerly in agricultural management

- Changes to hydrology caused by changes in drainage regimes
  - Fragmentation of remaining grassland
  - Disturbance and vandalism, created by urban fringe pressures
- ◆ Grassland 'improvement' caused by intensification of agricultural management, or changes in agricultural practice.
  - ◆ Changes to agricultural management, particularly the abandonment of small-scale livestock farming leading to either no management (particularly true of upland grassland in Greater Manchester) or changes in land use, particularly replacement of managed grazing with unmanaged horse grazing or abandonment of grazing altogether.
  - ◆ Invasive species are a major problem, particularly Himalayan Balsam on marshy grassland.
  - ◆ Poorly considered tree planting and landscaping schemes.
  - ◆ Unmanaged grasslands are often seen as 'untidy' habitats in urban and suburban areas and there is a tendency to 'tidy' them by introducing more intensive management (generally mowing or planting single-species stands such as daffodils).
  - ◆ National Planning Policy encouraging the re-use of previously developed land and avoidance of building on 'greenfield' sites. Whilst this policy can sometimes lead to losses of important grassland that has established on previously developed land other grassland types, and particularly species-rich neutral grassland, can be protected from inappropriate development by the operation of this policy.
  - ◆ Advances in research into how best to restore or recreate species-rich grasslands.
  - ◆ Development  
There is a great deal of built development on-going and planned for Greater Manchester. Although this presents some threats to valuable grassland habitats it also presents opportunities for leveraging funds into grassland conservation and for creating new species-rich grasslands.
  - ◆ Water abstraction can affect wet grasslands causing sites to dry out.

## Current actions

1. Selection of the most ecologically valuable areas of grassland as Sites of Biological Importance (SBI's) in Greater Manchester.

This is the most effective method of protecting grassland sites from the threat arising from built development. All ten-district authorities of Greater Manchester have policies in action plans protecting SBI's. Although many areas of species-rich grassland have been selected as SBI's, the criteria for selecting SBI's in Greater Manchester have recently been comprehensively updated to ensure that the best examples of species-rich grassland can be selected as SBI's.



Elton Goyt SBI, Bury

2. Provision of grassland management advice to landowners and managers.

Even grassland sites that have been given a degree of protection through the SBI system will need to be properly managed if they are

to retain their biodiversity value. Although there is now a wealth of information available concerning best practice management and creation of grasslands for biodiversity, Greater Manchester has no mechanism in place for disseminating this information to land managers.

3. Provision of policy incentives for grassland owners, managers and developers to conserve, improve and recreate species-rich grassland.

Certain districts of Greater Manchester already give credit to developers aiming to create sustainable developments. For example, Manchester City Council favours developments that achieve high ratings for sustainability. Maintaining, restoring and creating biodiverse habitats contributes to the sustainability of a development, and diverse grasslands can be created as part of built developments relatively easily.

4. Provide financial incentives for grassland owners, managers and developers to conserve, improve and recreate species-rich grassland.

Financial incentives are available for landowners and managers through the Environmental Stewardship schemes operated by Natural England. However, urban areas are sometimes given less attention than rural areas by Environmental

Stewardship Officers, despite there being many valuable habitats in urban areas.

**and by knowledge of precedent for habitat improvement projects in Greater Manchester.**

5. Encourage landscape designers and developers to develop new areas of species-rich grassland.

Work undertaken by the wildflower charity Landlife has been invaluable in creating demonstration wildflower grasslands in urban areas similar to areas of greater Manchester.

## Objectives and targets

**All target dates are 2015. Targets have been arrived at by analysis of habitat survey data held by the Greater Manchester Ecology Unit**

Habitat type	Target type	GM target (ha)
Species rich neutral grassland	Maintain current extent of priority habitat	250
	Maintain current extent of priority habitat in favourable condition	250
	Restore semi-improved neutral grassland to meet priority habitat type definition	20
	Create new species-rich grassland	10
Acid grassland	Maintain current extent of priority habitat	310
	Maintain current extent of priority habitat in favourable condition	310
	Restore degraded acid grassland to meet priority habitat type definition	25

Marshy grassland	Maintain current extent of priority habitat	266
	Maintain current extent of priority habitat in favourable condition	266
	Restore degraded marshy grassland	35
	Create new areas of marshy grassland	20
Grasslands of high ecological value on previously developed land	Maintain current extent of priority habitat	Awaits audit
	Maintain current extent of priority habitat	Awaits audit
	Restore degraded grassland of high ecological value on previously developed land	3
	Create new areas of high ecological value on previously developed land	4

## Proposed actions

- Using the updated definitions in this plan and the new SBI selection guidelines, carry out new field surveys to identify the most ecologically valuable grasslands sites and select them as SBI's. GMEU, 2010
- Collate existing information and prepare new information concerning best practice management, restoration and creation of species-rich grassland for inclusion in this plan. Appoint a Project Officer to work with landowners, land managers and developers to disseminate best practice advice and guidance for grassland management. It would be useful to identify sites where best practice management of grasslands for biodiversity is being implemented to offer as demonstration areas. GMEU, GMBP, WT's, NE, DEFRA, UU. 2010
- Update guidance to developers on incorporating biodiverse grasslands into new developments and update nature conservation policies in land-use management plans to give protection to species-rich grasslands. GMEU, GMBP, LA's, FWAG, NE, UU. 2011

- ◆ Have Higher Level Environmental Stewardship Officers target agreements on species-rich grassland conservation measures in Greater Manchester. **NE, FWAG, GMBP, LA's. 2015**
- ◆ For wet/marshy grassland promote strategic, integrated flood defence planning in catchments and ensure that biodiversity targets are incorporated into flood defence planning. **EA. Ongoing**

## Lead Partners

<b>DEFRA</b>	Department for Environment Food & Rural Affairs
<b>EA</b>	Environment Agency
<b>FWAG</b>	Farming and Wildlife Advisory Group
<b>GMEU</b>	Greater Manchester Ecology Unit
<b>GMBP</b>	Greater Manchester Biodiversity Project
<b>LA's</b>	Local Authorities
<b>NE</b>	Natural England
<b>UU</b>	United utilities
<b>WT's</b>	Wildlife Trusts

## Best practice guidelines

How to manage and restore important grasslands – some pointers and case studies.

### *Species rich unimproved neutral and acid grassland*

- ◆ For existing good areas, continue the current or recent management regime (its working). For some sites on very poor soils or with rabbit grazing this may mean doing nothing except control scrub.
- ◆ For degraded areas on unimproved or semi-improved soils, try introducing a mowing regime. Mowing once in early spring and again once or twice in late summer should be sufficient. Arisings will need to be removed.
- ◆ Change an existing grazing regime or introduce an appropriate grazing regime

If species rich grassland is to be introduced on degraded or nutrient-improved areas more drastic management options may need to be considered, including inversion ploughing, top soil stripping and re-seeding.

For advice on techniques Landlife, the national wildflower charity based at Court Hey Park on Merseyside, have prepared a number of best practice publications on species-rich grassland creation. At their base at Court Hey Park there are a number of demonstration plots. Landlife can be contacted at [www.landlife.org.uk](http://www.landlife.org.uk).

## SPECIES CONSIDERED APPROPRIATE FOR INCLUDING IN NEUTRAL GRASSLAND SOWING IN GREATER MANCHESTER

### HERBS

Yarrow	<i>Achillea millefolium</i>
Common knapweed	<i>Centaurea nigra</i>
Common cat's-ear	<i>Hypochoeris radicata</i>
Meadow vetchling	<i>Lathyrus pratensis</i>
Autumnal hawkbit	<i>Leontodon autumnalis</i>
Rough hawkbit	<i>Leontodon hispidus</i>
Ox-eye daisy	<i>Leucanthemum vulgare</i>
Common bird's-foot trefoil	<i>Lotus corniculatus</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Selfheal	<i>Prunella vulgaris</i>
Meadow buttercup	<i>Ranunculus acris</i>
Common sorrel	<i>Rumex acetosa</i>

### GRASSES

Common bent	<i>Agrostis capillaris</i>
Creeping bent	<i>Agrostis stolonifera</i>
Sweet vernal grass	<i>Anthoxanthum odoratum</i>
Crested dog's-tail	<i>Cynosurus cristatus</i>
Red fescue	<i>Festuca rubra</i>
Smooth meadow grass	<i>Poa pratensis</i>
Rough meadow grass	<i>Poa trivialis</i>

- ◆ Herb species should only make up 20% of the seed mix; the remaining 80% should be appropriate grass species.

- ◆ Native species should always be used, from UK sources and ideally from the North West.
- ◆ Agricultural varieties and cultivars of legumes should be avoided.
- ◆ Sow on low fertility soil or sub-soil.

### *Marshy grassland*

The keys to wet grassland conservation are **keeping the area wet** and **preventing succession to scrub**. Because these management techniques can sometimes be difficult to sustain in the long term the options for creating new areas of wet grassland should be considered, particularly in relation to Sustainable Urban Drainage Schemes (SUDS).

**Further information about wet grasslands can be found here:**

'European Wet grassland – Guidelines for Management and Restoration (RSPB 1999)

### Wet Grassland Information – RSPB

#### *Species rich grassland on post-industrial sites*

Since these sites are very difficult to recreate (they have normally arisen through neglect or serendipity and can often be on unique,

difficult to recreate substrate types) conservation of these areas will likely depend on protection and management of existing important areas. Management will probably rely on control of scrub encroachment. Because these sites can often support good invertebrate biodiversity advice on management for invertebrates can be obtained from [Buglife](#).

### C A S E S T U D Y

#### *Nob End SSSI/ Local Nature Reserve*

Nob End in Bolton is a SSSI and was designated a Local Nature Reserve (LNR) in 2000. Bolton Countryside Service manages the Nature Reserve. The site is situated in the southeast of Bolton within an urban fringe area along the River Irwell, covering an area of 8.8 hectares. Nob End is a unique site for wildlife, as its substrate comprises regenerated industrial waste with extremely high pH alkali deposits from the Leblanc process, which has created a unique environment rich in flora, such as Bloomrape and many types of Orchid, Twayblade, Blue fleabane and Carline thistle. The current management aims are to maintain and enhance the important grassland habitats including, scrub clearance and the removal of invasive species. The site is also important to the local people for informal recreation.

### Links to relevant BAP's

Bats  
Brown Hare  
Farmland Birds  
Great Crested Newt  
Lowland Mosslands  
Ponds & Lodges  
Twite  
Uplands

### References

**European Wet Grasslands**; guidelines for management and restoration RSPB 1999

**Wildflowers Work**; a guide to creating and managing wildflower landscapes Landlife (National Wildflower Charity)

**Habitat Creation and Repair** Penny Anderson and Oliver Gilbert Oxford University Press 1998

**All of a Buzz in the Thames Gateway**; a Buglife project on the assessment of the invertebrate value of brownfield sites [www.buglife.org.uk](http://www.buglife.org.uk)

## Acknowledgements

Photographs were kindly supplied by Greater Manchester Ecology Unit.

## Principal Author

**Derek Richardson**

Principal Ecologist, Greater Manchester Ecology Unit

[Derek.Richardson@tameside.gov.uk](mailto:Derek.Richardson@tameside.gov.uk)

---

---

## HABITAT ACTION PLANS

---

---

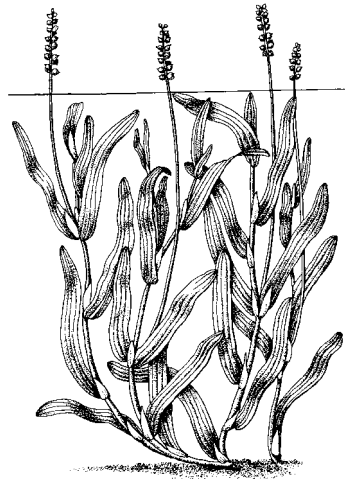
### CANALS

#### DEFINITION

Canals are inland waterways constructed to meet the transport needs of the Industrial Revolution in the 18<sup>th</sup> and 19<sup>th</sup> centuries. At the time when canals were built, they were of a similar importance and influence to our modern day motorways. Today, many aspects of canals such as water filled channels, cuttings, embankments and bridges have an important role to play in the conservation of both biodiversity and landscapes. Many canals differ from natural watercourses because of their range of habitats, as well as their controlled levels and slow flows, although not all canals are now in use for boat traffic. The canal corridor forms a linear mosaic of habitats including woodland and scrub off-sides, hedgerows, flower rich towpath verges and diverse emergent 'reed' fringes. The corridor helps link habitats fragmented by urbanisation and uniquely forms a wetland corridor between river catchments.

#### NOTABLE SPECIES

Floating water plantain  
Grasswack pondweed  
Frogbit  
Whorled water milfoil  
Fringed water lily  
American pondweed  
Flat stalked pondweed  
Hair-like pondweed  
Long stalked pondweed  
Black spleenwort  
Rusty back fern  
Water soldier  
Greater duckweed  
Kingfisher  
Bats  
Water vole  
Freshwater sponge  
White clawed crayfish



#### CURRENT STATUS AND IMPORTANCE

##### International

The Rochdale Canal has been designated as a candidate Special Area of Conservation (cSAC) due to the occurrence of internationally significant populations of floating water plantain *Luronium natans*.

##### National

There are approximately 4000 miles of canals in the UK.

In UK Biodiversity Action Plan terms, canals are included within the broad habitat of Standing Open Waters and Canals; within this category they are recognised as an individual habitat type.

---

---

## CANALS

---

---

There are presently three canals of national importance in Greater Manchester; Hollinwood Branch Canal SSSI, Huddersfield Narrow Canal SSSI and Rochdale Canal SSSI. All three are part of a national network of designated areas.

Continued overleaf

## HABITAT ACTION PLANS

### Identification of Species Interest of Greater Manchester's Canals

	Rochdale	Huddersfield Narrow	Hollinwood Branch	Peak Forest	Ashton	Manchester Bolton & Bury	Leeds Liverpool	Bridgewater	Fairbottom Branch
	cSAC, SSSI, SBI(A)	SSSI, SBI(A)	SSSI, SBI(A)	SBI(A)	SBI(A)	SBI(A)	SBI(C)	SBI(B & C)	SBI(B)
Floating Water plantain	•	•	•	•	•			•	•
Grassrack pondweed	•	•		•	•				
<i>Tortula freibergii</i> (a moss)								•	
Frogbit			•			•			
Fringed water lily	•								
Alternate-leaved Water milfoil	•								
American pondweed	•								
Flat stalked pondweed		•							
Hair-like pondweed		•	•		•			•	
Long stalked pondweed		•	•						
Red pondweed	•		•?					•	
Slender pondweed ( <i>P. berchtoldii</i> )	•		•		•				
Rigid hornwort			•						•
Water soldier	•		•			•			
Water violet	•	•			•				
Kingfisher		•			•?		•		
Bats	•	•	•		•	•	•	•	•
Water vole	•								
White clawed crayfish	•	•							
Freshwater sponge	•	•				•			

---

---

## CANALS

---

---

### **Greater Manchester Resource and Distribution**

Thanks to its industrial heritage, Greater Manchester has a rich resource of canals. There are ten canals in total. These range from actively used canals such as the Leeds/Liverpool and the Ashton Canal to currently disused examples such as the Huddersfield Narrow Canal (now restored and navigable) and the Rochdale Canal. There are proposals to reopen the majority of canals for navigation and active restoration is in progress.

### **Legal**

The following sites receive a degree of protection as SSSIs:

Hollinwood Branch Canal SSSI  
Huddersfield Narrow Canal SSSI.  
Rochdale Canal SSSI

The Rochdale Canal is also a candidate SAC as designated under the Conservation (Natural Habitats, etc.) Regulations 1994.

The native White-clawed Crayfish *Austropotmobius pallipes* is protected under The Conservation (Natural Habitats &c.) Regulations 1994 and The Wildlife & Countryside Act 1981 (as amended).

Nationally the water vole is given a degree of protection in British law under the Wildlife and Countryside Act of 1981. The protection relates to intentional activities that damage or destroy water vole habitat, or obstruct access to any place that the species uses for shelter or protection. The legislation also covers intentional disturbance of water voles whilst they are using their habitats.

Floating water plantain is listed on Annexes II & IV of the EC Habitat Directive and Appendix I of the Bern Convention. In Britain it is protected under Schedule 4 of the Conservation (Natural Habitats, etc.) Regulations 1994 and Schedule 8 of the Wildlife and Countryside Act 1981 (as amended).

The EC Water Framework Directive (2000) encompasses canals and other still waters. This aims to prevent further deterioration of waterbodies and protect such ecosystems. The Environment Agency plans to commence implementing the Directive from 2003 onwards. The initial deadline for meeting the Environmental Objectives is the end of 2016.

### **CURRENT FACTORS AFFECTING THE HABITAT**

#### **International**

The presence of internationally important species such as floating water plantain and the potential designation of Rochdale Canal as a SAC.

## HABITAT ACTION PLANS

### National

Positive factors	Negative factors
Restoration and reconnection of the canal system throughout England, Wales and Scotland.	Large scale developments such as marinas.
Development of conservation guidelines by British Waterways and the Environment Agency.	Development of plant succession where lack of disturbance is a factor; this has led to the loss of open water and associated species in some localities.
Presence of nationally important protected species such as bats.	Growth and management of native invasive species such as Greater reedmace.
Commitments made by bodies such as British Waterways and the Environment Agency with regard to conservation of BAP species that may utilise canals e.g. freshwater crayfish and water vole.	Boating use leading to damage to aquatic and emergent vegetation through wash. Impacts upon other aquatic life and water quality through fuel oil and effluent from boats.
	Fluctuation of water levels from maintenance activities and boat usage (improper use of locks leading to the dewatering of pounds).
	Pollution from adjacent agricultural and industrial sources.
	Angling usage, leading to introduction of fish species, artificially high densities of fish and clearance of bankside vegetation. Local eutrophication is also a problem.
	Management of towpath habitats such as mowing of vegetation.
	Developments adjacent to Canal sites where precautions to protect the site are not taken

### Greater Manchester

In addition to the above factors affecting canals, those listed below are particularly relevant to the Greater Manchester area. The negative factors are those that are thought to contribute to the decline of biodiversity interest associated with canals. The positive factors are those measures that may already be assisting in biodiversity conservation:

## CANALS

<b>Positive factors</b>	<b>Negative factors</b>
<p>All British Waterways' work is subject to an Environmental Code of Practice Appraisal designed to highlight the broad range of environmental issues associated with British Waterways' work. Examples of how this has helped maintain conservation interest of the canal corridor include the assessment of bank protection schemes resulting in the use of soft engineering solutions with coir rolls and native UK provenance planting instead of sheet piles. This was undertaken on the Huddersfield Narrow Canal near Division Bridge and throughout restoration work on the Rochdale Canal.</p>	<p>Most of the factors in the national list are relevant for Greater Manchester, in particular:</p> <p>The work and proposals to reopen a number of the canals to navigation pose a major threat to their wildlife interest unless the work is undertaken sympathetically. A number of colonies of freshwater sponge have already been lost due to such work. The aquatic vegetation in the heavily used Leeds Liverpool Canal is much less diverse than that in the canals currently largely unused although parts of the Rochdale Canal exhibits a less diverse flora where it is dominated by floating water plantain.</p>
<p>Impacts as a result of the activities of local canal societies, e.g. Manchester, Bolton and Bury Canal Society: small-scale management of vegetation, increased awareness through interpretation (guided walks, boat trips, publishing of guides).</p>	<p>Natural vegetation succession can result in a loss of scarce plant populations.</p>
<p>All restoration works considered to have “likely significant effect” on the Rochdale Canal are subject to Appropriate Assessments and English Nature assent as required under EU and UK legislation. British Waterways, English Nature and GMEU worked in partnership to deliver this work on the Rochdale Canal restoration.</p>	<p>Canal dredging creates problems of spoil disposal that can impact on adjacent waterside habitats. Dredging can also result in the loss of aquatic vegetation and invertebrates.</p>
<p>In addition to British Waterways’ Environmental Code of Practice Appraisal process, all development work affecting floating water plantain requires a DEFRA licence. British Waterways has developed standard impact avoidance measures and translocation methods and has a licence from DEFRA that ensures that issues concerning floating water plantain and other species are addressed during operational activities.</p>	<p>Recreational pressures such as fishing can cause damage to marginal vegetation.</p>
<p>Any other activities (monitoring, research, etc) affecting the species is subject to a license from English Nature.</p>	<p>Invasion by non-native species such as <i>Crassula helmsii</i> and Himalayan balsam can swamp aquatic plants or result in the decrease of diversity of marginal vegetation.</p>
	<p>Development of the M60 motorway; this has affected the Hollinwood Branch Canal SSSI in particular.</p>

---

---

## HABITAT ACTION PLANS

---

---

### LONG TERM TRENDS AND POTENTIAL THREATS

Water shortages on the Huddersfield Narrow Canal have been identified in a recent report by Dr Chris Newbold to be one of the largest issues to address to maintain and enhance current biodiversity. British Waterways is undertaking repairs to the feeder from Diggle Reservoir to enable increased flow from this traditionally used feeder.

### CURRENT ACTION

#### International

- Designation of SACs as part of the Natura 2000 series of sites. The Rochdale Canal is a candidate SAC because of the presence of internationally significant populations of floating water plantain. The SSSI/cSAC is in favourable condition.
- All work considered to result in “likely significant effect” on the Rochdale Canal is subject to Appropriate Assessment.
- The Environment Agency as competent authority are currently in the process of reviewing every licence, authorisation, consent and activity permitted by them and will be appropriately assessing any activities determined to have the potential to adversely affect the Rochdale Canal.

#### National

- English Nature is in the process of developing detailed conservation objectives and assessment guidelines for all SSSIs. These guidelines will enable more accurate monitoring of the condition of SSSIs, including habitats such as canals.
- British Waterways has a corporate commitment to Biodiversity Action Planning. This is reflected in its role as lead Partner in the writing of the UK BAP for both floating water plantain and Grasswrack Pondweed.
- British Waterways’ document “*A Framework for waterway wildlife strategies*” highlights the key habitats and species of biodiversity interest within the waterway network. This document together with the accompanying “*Biodiversity Manual*” sets out British Waterway’s national biodiversity framework. Following on from this initiative waterway management teams will develop biodiversity action plans and incorporate biodiversity considerations into the management of canals and associated habitats.

#### Greater Manchester

##### Research Relevant to British Waterways policy.

The Rochdale canal monitoring of key aquatic species programme is up and running and involves an annual survey of each kilometre of the Rochdale canal or each lock pound where less than 1 km. Water quality data is being collected at eleven sites along the canal in order to establish and monitor the requirements of key aquatic species in relation to water quality.

## CANALS

### British Waterways Locally

- All British Waterways' work is subject to an Environmental Code of Practice Appraisal designed to highlight the broad range of environmental issues associated with British Waterways' work. Where major engineering works are planned each scheme has an assessment made of the ecological impacts. Methods of avoiding or minimising and ameliorating adverse impacts are identified and specified in the contract documentation.
- A waterway BAP is being prepared in Greater Manchester to highlight the special interest features along the canal and provide management regimes to ensure that the conservation interest is maintained and furthered. This is already underway on the Huddersfield Narrow Canal with grass cutting regimes agreed with English Nature that aim to maintain the diversity of the towpath bank and boundary verges.
- An Ecologist is employed by British Waterways who considers impacts on restoration of the canal in Greater Manchester.
- The possibilities of restoring the Manchester, Bolton & Bury Canal are currently being investigated.
- British Waterways has agreed grass cutting regimes with English Nature for the SSSI section of the Huddersfield Narrow Canal. This involves regular cutting at one mower width either side of the trodden surface with a clear cut from the boundary to the wash wall in late summer. This allows a clear safe path with verges for wild flowers with an annual clear cut preventing encroachment of scrub. This method is being adopted elsewhere on the SPR Waterway.

### **OBJECTIVES**

#### **National**

There is presently no national BAP for canals, however, British Waterways has published and launched "*British Waterways and Biodiversity: A framework for waterway wildlife strategies*" covering the varied habitats and species associated with waterway corridors, as well as British Waterways' wider estate including tunnel spoil heaps, reservoirs and reservoir feeders.

#### **Greater Manchester**

In Greater Manchester local aspirations have been translated into the following broad objectives:

<b>Objective</b>	<b>Targets</b>
<b>Maintain current canal habitat and prevent further losses and fragmentation</b>	No further loss of canal habitat.  Introduce appropriate management regimes and prepare management plans for all canal sites by 2010.
<b>Achieve favourable condition for canals</b>	Favourable condition to be achieved at 25% of total resource by 2010 (sites to be identified by survey).
<b>Increase the extent of canal habitats, without reducing the area of other valuable habitats and species</b>	Identify the potential for increase in extent by end of 2005 (potential sites to be determined by survey).

## HABITAT ACTION PLANS

### Indicators of habitat quality

In general, this habitat will be in favourable condition when:

- Key areas of canal habitat are maintained
- There is continued presence of canal habitats at all known sites
- The habitats are composed of desirable canal communities
- The contribution made by canals to wildlife corridors in Greater Manchester and the wider landscape is maintained
- Undesirable species are reduced to an acceptable level
- Human activities are managed to a sustainable level.

More specific objectives and targets will eventually be set on a site-by-site or case-by-case basis.

### PROPOSED ACTIONS

Action	Lead Body	Timetable for Action
<b>1. Policy</b>		
Ensure the importance of canals is recognised and site protection policies are included in appropriate plans and strategies e.g. UDPs, Community Strategies, nature conservation strategies, supplementary planning guidance.	EN/GMEU/ LAs/BW	2006
Produce/update Supplementary Planning Guidance notes for canals	BW/EN/GMEU /LAs	Ongoing
Ensure all planning applications are adequately assessed in relation to their impact on canals: that loss or damage is avoided and that opportunities are taken for enhancement.	LAs/GMEU/ BW/EN	Ongoing
Ensure that UDPs take full account of the UK Biodiversity Action Plan, A Biodiversity Audit for North West England and the Greater Manchester Biodiversity Action Plan.	LAs/EN/ GMEU	2006
<b>2. Site Safeguard</b>		
Ensure regular review of canal SSSIs	EN/BW	Ongoing
Ensure regular review of canal SBIs	GMEU	Ongoing
Give full consideration to designation of canals within LNR series	GMEU/LAs/ EN	2007
Ensure that all the best examples of canals are protected by recognised designations	EN/GMEU/ LAs/WTs	2007
Contribute to the implementation of relevant species action plans for rare and declining species associated with canals.	All BAP partners	Ongoing

## CANALS

<b>Action</b>	<b>Lead Body</b>	<b>Timetable for Action</b>
<b>3. Land Management</b>		
Promote and encourage positive management of canals with landowners, occupiers and voluntary conservation bodies through the development of long-term conservation management plans.	<b>All BAP Partners</b>	<b>Ongoing</b>
Contribute to the development and implementation of relevant action plans for rare and declining species associated with canals.	<b>All BAP Partners</b>	<b>Ongoing</b>
Undertake management to control undesirable species e.g. to bring species to within acceptable limits	<b>BW/LAs</b>	<b>Ongoing</b>
Complete or update existing conservation management plans to promote long-term positive management of canals with land owners/occupiers and voluntary conservation bodies.	<b>All BAP Partners</b>	<b>Ongoing</b> (25% of key sites to have management agreements by 2010)
<b>4. Advisory</b>		
Develop and promote best practice for canal management. Ensure guidelines widely available and accessible to interested parties.	<b>BW/EN/GM Biodiversity Project</b>	<b>2006</b>
Develop and promote training on the conservation and management of canals. Training to be targeted at those involved in canal management.	<b>BW/EN</b>	<b>Ongoing</b>
Establish demonstration sites to show good practice in canal conservation and management.	<b>BW/EN Identified by Biodiversity Project</b>	<b>2008</b>
Provide advice to those involved in canal management on appropriate management regimes for canal habitats.	<b>All BAP partners</b>	<b>Ongoing</b>
<b>5. Future Research and Monitoring</b>		
1. Identify gaps in knowledge of this habitat.	<b>Relevant GMBAP Working Group</b>	<b>2004</b>
2. If necessary undertake survey of canals in the county using standardised and repeatable methodology.	<b>All BAP Partners</b>	<b>Start 2004</b>
Establish and maintain a register of information gathered about canals within Greater Manchester.	<b>GMEU/ Bolton Museum/ Oldham Museum</b>	<b>2004</b>
Define standard and repeatable methods of establishing the condition of canals and consider the effectiveness of conservation management. Use knowledge to supplement register, management plans, etc.	<b>EN/Relevant GMBAP Working Group</b>	<b>2005</b>

## HABITAT ACTION PLANS

<b>Action</b>	<b>Lead Body</b>	<b>Timetable for Action</b>
Contribute to increasing information on UK canals by submitting information from GM canal register to National Biodiversity Network web based catalogue of survey information. Such information should also be widely available locally.	<b>Biodiversity Project Officer</b>	<b>When established</b>
Encourage the dissemination and use of ongoing research results, and commission further research where necessary, to improve understanding of the ecology of canals. Key research topics will include the presence and distribution of key species, vegetation responses to different management approaches and the ecology and management requirements of invertebrate communities and species.	<b>BW/EN/ Relevant GMBAP Working Group</b>	<b>Ongoing</b>
Develop and implement appropriate surveillance and monitoring programmes to assess progress towards achieving action plan targets.	<b>Biodiversity Steering Group</b>	<b>2004</b>
Submit details of relevant conservation achievements to the national biodiversity reporting system, BARS, to meet requested deadlines.	<b>Biodiversity Project Officer</b>	<b>2003 onwards</b>
Develop links with universities and encourage research on canals and associated flora and fauna	<b>Relevant GMBAP Working Group/ Academic Institutions</b>	<b>2003 onwards</b>
<b>6. Communication and Publicity</b>		
Produce information aimed at capturing the interest and co-operation of local residents in conserving canals.	<b>All BAP partners</b>	<b>Ongoing</b>
Make information available through a range of media e.g. Internet, booklets, GM BAP, and at a number of locations	<b>All BAP partners</b>	<b>Ongoing</b>
Encourage public involvement in conservation initiatives and promote access to demonstration sites.	<b>All BAP partners</b>	<b>Ongoing</b>
Publicise existing sites demonstrating good practice in the management and conservation of canals ensuring information is widely available to landowners/managers.	<b>All BAP partners</b>	<b>Ongoing</b>

---

---

## CANALS

---

---

### Abbreviations:

BW	British Waterways
EA	Environment Agency
EN	English Nature
GMEU	Greater Manchester Ecology Unit
LA	Local Authorities
LNR	Local Nature Reserve
SBI	Sites of Biological Importance
SSSI	Site of Special Scientific Interest
WTs	Wildlife Trusts

### RESOURCE IMPLICATIONS

#### UK BAP

Unknown

#### Greater Manchester BAP

There will be considerable costs involved in undertaking survey and monitoring to provide up-to-date information on canals. However, some work is already underway which will contribute to the knowledge of canals in Greater Manchester.

- Ongoing costs incurred through restoration (e.g. ecological works involved in the Huddersfield Narrow Canal Restoration) are thought to have cost approximately £100,000.
- Costs resulting from additional ecological commitments. Eg: British Waterways allocates three weeks of bank staff time to ecological works for each canal.

Other costs are likely to be incurred through:

- Establishment and maintenance of canal register.
- Promotion of positive management.
- Establishment of monitoring programmes.
- Publicity and awareness raising.
- Staff and volunteer time.

#### Possible Sources of Funding

Wildlife Enhancement Scheme for SSSIs  
The Waterways Trust small grants scheme

---

---

## HABITAT ACTION PLANS

---

---

### LINKS WITH OTHER ACTION PLANS

#### UK BAP

- There is a UK BAP for water vole, floating water plantain, grasswack pondweed, white-clawed crayfish various bat species including Pipistrelle bat.
- British Waterways has launched a corporate BAP.

#### Greater Manchester BAP

Floating water plantain, Water vole, Bats

Proposed for 2<sup>nd</sup> Tranche: Grasswack pondweed

#### Other BAPS

Bolton BAP:	Canals, Water Vole
British Waterways Local Waterway BAPs:	Huddersfield Narrow East, Rochdale Canal East, Floating-water plantain, grasswack pondweed, Water vole, White-clawed crayfish
North Merseyside BAP:	Canals, Water Vole
Oldham BAP:	Water Vole

### CONFLICTS WITH OTHER ACTION PLANS

Actions proposed under the canal action plan could have potentially adverse affects on the following habitats action plans in Greater Manchester:

- Swamp/tall herb fen (in remaindered/dewatered canals)
- Wet woodland (in remaindered/dewatered canals)

### CONTACTS FOR CANALS BAP GROUP

Organisation	Contact	Tel. number
GMEU	Teresa Hughes	0161 342 2928
Stockport Urban and Countryside Service	Roger English	0161 474 4552
English Nature	Rebecca Jackson	01942 820342
Bolton Institute of Higher Education	Pat Waring	01204 903150
Oldham Pond Warden Co-ordinator	Alan Price	01457 810828
British Waterways	Jason Leach	0161 819 5847
Environment Agency	Mark Wiseman	01925 840000

### PROPOSED REVIEW OF PLAN

The Biodiversity Action Plan for canals will be reviewed in 2008, and thereafter every five years.

---

---

## CANALS

---

---

### REFERENCES

- British Waterways (undated) “*A Framework for waterway wildlife strategies*”
- GMEU (2000) “*Greater Manchester Biodiversity Action Plan: Volume 1 - Biodiversity Audit.*”  
Greater Manchester Ecology Unit
- Waring, P. (2001) “*Bolton BAP - Canals Habitat Action Plan*”. Bolton MBC
- South Pennine Ring website. Available: [www.southpenninering.co.uk](http://www.southpenninering.co.uk)

---

---

## HABITAT ACTION PLANS

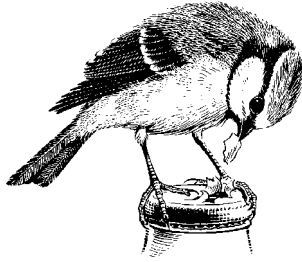
---

---

### URBAN

#### MANAGED GREENSPACE

##### DEFINITION



This category includes amenity grassland (i.e. intensively managed and regularly mown grassland), private gardens, allotments, town parks of many types, planted shrubberies, playing fields, golf courses, grounds of buildings, churchyards and cemeteries. These areas are all managed to some degree for their particular purpose, however, they can still be important reservoirs for wildlife in urban settings. In addition, they provide green breaks in development and contribute to the health and well-being of local people. Their proximity to schools and housing make them an ideal resource for learning about the natural world.

In addition to the grassland that dominates these sites, remnants of a diverse range of semi-natural habitats including woods, scrub or ponds are often found within their boundaries or next to them. These may have been in existence for many years - providing well-established continuity of biodiversity. They can also act as sanctuaries for biodiversity as outside of the managed areas they often receive relatively little human interference.

##### NOTABLE SPECIES

Song thrush  
Bullfinch  
Goldfinch  
Greenfinch  
Treetreeper  
Nuthatch  
House martin  
House sparrow  
Swift  
Common frog  
Common toad  
Smooth newt  
Great crested newt  
Hedgehog  
Fox  
Badger  
Pipistrelle  
Holly blue



### CURRENT STATUS AND IMPORTANCE

#### International

Managed greenspace is found in most of the world's towns and cities and as in the UK, offers an important refuge for many plants and animals, enhancing the lives of those who live there. The extent of managed greenspace in the world today is therefore important to global biodiversity.

#### National

The Biodiversity Audit for North West England notes this habitat can be found in any urban area in the UK, including north west England. Regionally important examples are present in Greater Manchester.

BAP Priority habitats and species are often found within the boundaries of managed greenspace sites including lowland dry acid grassland, lowland mixed broadleaved woodland, lowland heathland, great crested newts and water voles.

Several national initiatives and their incorporation into legislation are attaching greater importance to improving human quality of life in urban situations through providing quality urban greenspaces and incorporating considerations for biodiversity.

#### Greater Manchester Resource and Distribution

Amenity grassland and grassland that has been 'improved' by the addition of fertilisers, do not make as significant a contribution to biodiversity as less managed grassland. The intensity of management often precludes the growth of many plant species and is dominated by cultivars of perennial rye-grass and common broadleaved species such as white clover, daisy, broadleaved plantain or dandelion. Nevertheless, these grasslands can still have high biomass of soil fauna (e.g. earthworms and leatherjackets), and may be used as roosting sites for birds such as gulls or lapwings and may be part of the feeding territory of badgers and amphibians. The greatest value of amenity grassland, therefore, lies both in its existing value to limited but often high populations of a range of species, and in its potential to make a greater contribution to biodiversity through altering management regimes.

Gardens and allotments can support a diverse range of wildlife, depending on their management, structure and planted species. Gardens can support a host of common bird species (including blackbird, robin, blue tit, great tit, song thrush, house martin, tawny owl) and many people already make an effort to provide food or breeding sites for birds. Common butterflies such as the red admiral and peacock thrive in gardens, and moths also take advantage of the nectar supplies on offer. Garden ponds can also support amphibians including the great crested newt, provided they are not stocked with fish. Mammals such as hedgehogs, foxes and badgers often utilise urban greenspaces, especially gardens, as part of their feeding territories.

---

---

## HABITAT ACTION PLANS

---

---

There are approximately 11,000ha of amenity grassland in Greater Manchester, nearly 8.5% of the County. This includes many town parks, playing fields and golf courses. The actual area of gardens, allotments and other forms of managed greenspace is unknown but constitutes a significant area of the County. Managed greenspaces occur in all ten districts of Greater Manchester. The City of Manchester has nearly 20% of the total area of amenity grassland.

### Legal

- Protection is afforded to landscape features described by Regulation 37 of The Conservation (Natural Habitats, &c) Regulations 1994 that “*are essential for the migration, dispersal and genetic exchange of wild species*” “*by virtue of their linear and continuous structure*” or *their function as stepping stones*. Managed greenspace can play an integral and important role in maintaining ecological networks amongst developed areas through their role in safeguarding open space and through safeguarding remnants of semi-natural habitat which act as stepping-stones.
- Some protection is given to urban habitats where these are notified as Sites of Special Scientific Interest (SSSI) or declared as Local Nature Reserves (LNR). However, for the majority of urban wildlife areas the protection comes from outside the conservation legislation, notably planning policies in Unitary Development Plans (UDP). Few areas of managed greenspace are likely to be designated as Sites of Biological Importance (SBI). However, there are examples where semi-natural habitats have been encapsulated within managed greenspace and their contribution to biodiversity has been recognised by their identification as SBIs.
- Some allotments, ‘statutory allotments’, are protected by various Acts and the permission of the Secretary of State is required before their disposal.
- Some sites may be common land, subject to specific legislation.
- Some species are given special protection under Wildlife and Countryside Act 1981 (as amended) and other legislation. The Act also prohibits the introduction of certain alien or invasive species including ragwort, Japanese knotweed and giant hogweed.
- Individual tree specimens may be subject to Tree Preservation Orders, though TPOs can also imposed on groups of trees. Trees in conservation areas are also protected.
- The Hedgerow Regulations 1997 afford protection to hedgerows that qualify as “Important” under the criteria listed within this legislation.

---

---

## **URBAN – MANAGED GREENSPACE**

---

---

### **CURRENT FACTORS AFFECTING THE HABITAT**

#### **International**

Increasing urbanisation may lead to increasing abundance of these habitats, increased population pressures on existing sites or increased demand for greater provision of public greenspace.

#### **National**

- Simplification of park management and reclamation or redevelopment of disused land to a uniform landuse.
- Development encroachment onto parks, playing fields, old cemeteries, long abandoned sites and large established suburban gardens.
- Infill housing causing a loss of open space and fragmentation of ecological corridors.
- Uninformed management of greenspaces such as clearing of shrubs, filling in ponds (due to safety concerns) and levelling land with hillocks and hollows making them less attractive to wildlife.
- Ignorance of the value of the greenspace resource to biodiversity
- Use of inappropriate materials (peat, ‘unsustainable’ timber, waterworn limestone)
- Inbalance of hard/soft landscaping
- Size – tendency towards new housing allocating smaller areas to gardens.
- Inappropriate choice of boundary design, creating barriers
- Impact of domestic pets on native biodiversity

#### **Greater Manchester**

In addition to the above factors affecting managed greenspace, those listed below are particularly relevant to the Greater Manchester area.

Vast areas of amenity grassland in the county could offer opportunities to increase their value for wildlife. Reductions in mowing can allow plants to flower and set seed. The most significant factors affecting managed greenspace are listed below. The negative factors listed below are those that are thought to contribute to the decline in quality of managed greenspace. Factors thought to contribute to the enhancement of biodiversity of managed greenspaces are listed under the “positive” heading.

## HABITAT ACTION PLANS

<b>Positive factors</b>	<b>Negative factors</b>
National recognition that managed greenspace can be and should be managed to enhance the quality of such spaces, and that quality greenspaces and biodiversity are linked to improving human quality of life and well-being.	Payment arrangements of local authority maintenance workers where they are paid on the basis of the area of grassland they cut. This encourages an indiscriminate approach to grass cutting with little margin for incorporating varied mowing practices.
Golf course management has advocated the reduction in the use of chemicals in recent years as it is often unnecessary and can incur significant costs for relatively little benefit to the course.	General perception that urban greenspaces should be “tidied” or “gardened” promoting over intensive management and mowing regimes.
Remnant semi-natural habitats being actively managed as part of site management.	Loss of urban greenspace to development.
Recognition that parks, gardens and allotments are often the most accessible areas where the majority of the public gain contact with wildlife.	Nutrient enrichment of grasslands and other habitats through leaving grass cuttings (arisings) where they are cut or disposing of them in semi-natural habitats nearby.
Many people provide supplementary food for birds and mammals that can be of vital importance in harsh winters	Use of fertilisers and pesticides, particularly in areas where this is not necessary, ie neighbouring semi-natural habitats.
	Lack of awareness of the value of a variety of semi-natural habitats within managed greenspace areas and how to incorporate their management for biodiversity into current parks and greens management practices. This can reduce costs, improve the aesthetics of urban greenspace and provide greater opportunities for a wider range of biodiversity to exist in urban areas.
	Tree planting considered over the value of other habitats such as unimproved or semi-improved grasslands.
	Neglect of management leading to sites not being valued by the community.

### LONG TERM TRENDS AND POTENTIAL THREATS

- Climate change – impact of invasive non-native species, longer mowing periods causing disturbance
- Growing interest in increasing biodiversity in grounds maintenance and in wildlife gardening

---

---

## URBAN – MANAGED GREENSPACE

---

---

### CURRENT ACTIONS

#### International

Unknown.

#### National

- Planning Policy Guidance 17: *‘Planning for Open Space, Sport and Recreation’* requires local authorities to take account of access to open spaces and areas for recreation within the planning framework. In addition to formal recreational areas, *“areas of open space that particularly benefit wildlife and biodiversity”* are also included. This demonstrates the value of urban greenspace but also the importance of such areas to benefit biodiversity.
- Planning Policy Guidance 9: Nature Conservation requires local authorities to *“conserve non-statutory sites together with countryside features which provide wildlife corridors, links or stepping stones, from one habitat to another”*. Urban greenspace provides a large proportion of land which can be useful in maintaining such connections.
- DTLR publication *“Greenspaces, Better Places”* encourages the consideration of developing diverse greenspaces and networks and enhancing existing greenspace to benefit the biodiversity, community and promote urban renewal.
- Policy emphasis on linking human well-being and quality of life to biodiversity particularly in urban situations. (Local Government Act 2000, Community Strategies).
- Attempts at incorporating of Accessible Natural Greenspace Standards (ANGSt) into national policy and advice.
- A number of schemes can be used to enhance the wildlife interest of urban areas. Community Action for Wildlife provides assistance to local community groups in England wish to manage urban areas for their wildlife potential.
- Current interest in planning for sustainable cities and for low cost management of existing open spaces could help to maintain or improve local biodiversity.
- Urban habitats also have considerable potential for local people to take part in enjoyable activities, which benefit nature conservation and enable them to take action for the local environment.
- These areas also form an important education resource informing people of wildlife interests, natural processes and conservation management. The framework provided by Local Agenda 21 and Community Strategies is appropriate and important.

---

---

## HABITAT ACTION PLANS

---

---

### **Greater Manchester**

- Managed greenspace makes up a large proportion of ecological networks designated as “green corridors” or “wildlife corridors” within the planning framework in accordance with PPG9.
- Some Local Authorities are actively promoting management of managed greenspace to benefit biodiversity incorporating management of a range of habitats and staff training.
- The Local Authorities’ Countryside Services regularly encourage communities and schools to become involved in a range of activities and events highlighting the value of local urban greenspace.
- Many sites are managed in conjunction with local site action groups or ‘Friends of.’ groups consisting of members of the local community interested in enhancing their managed greenspace.

### **OBJECTIVES**

#### **National**

The Broad Habitat statement “Urban” contains the following objective:

Maintain the existing diversity and extent of wildlife in all urban areas, expanding the range and distribution of rare and common species and enabling this resource to be utilised as an educational tool.

In addition, objectives for consideration of managed greenspace in urban situations are included in the following:

- English Nature’s recommendations that an urban resident should have: access by foot to a natural greenspace of at least 2 ha within 280 m; at least one 20 ha site within 2 km; at least one 100 ha site within 5 km; and at least one 500 ha site within 10 km. English Nature’s definition of Natural Greenspace is that it must be naturally colonised. Also this leads to 8%+ of land area being put over to natural greenspace
- National Playing Fields Association 2.4 hectares per thousand population
- Accessible Natural Greenspace Standards (ANGSt).

## URBAN – MANAGED GREENSPACE

### Greater Manchester

In Greater Manchester, national targets and local aspirations have been translated into the following broad objectives:

Objective	Targets
<b>Maintain current amount of managed greenspace and prevent further losses and fragmentation.</b>	No further loss of managed greenspace.  Establish up-to-date baseline through survey.
<b>Promote appropriate management practices to enhance or increase managed greenspace's contribution to biodiversity.</b>	Introduce appropriate management regimes for 50% of managed urban greenspace of over 5 ha by 2006, integrating biodiversity management fully into other uses and functions of the site.  For areas under 5 ha produce site type specific strategy documents to identify appropriate management practices for the integration of biodiversity into other uses and functions by 2006.  Integrate appropriate survey and monitoring programmes into all management plans and strategy documents by 2006.
<b>Increase the amount of managed greenspace being managed to enhance or increase biodiversity, without reducing the area of other valuable habitats and species.</b>	Identify the potential for increase in extent by end of 2006 (potential sites to be determined by survey).

### PROPOSED ACTIONS

Action	Lead Body	Timetable for Action
<b>1. Policy</b>		
Ensure importance of managed greenspace is recognised and site protection policies are included in appropriate plans and strategies. Eg: UDPs, Community Strategies, nature conservation strategies, supplementary planning guidance, Red Rose Forest Strategy, Pennine Edge Forest, Forestry Commission strategies.	<b>EN/GMEU/ LA's/RRF/ PEF</b>	<b>Ongoing</b>

## HABITAT ACTION PLANS

Action	Lead Body	Timetable for Action
Ensure all planning applications are adequately assessed in relation to their impact on managed greenspace: that loss or damage is avoided and that opportunities are taken for enhancement and habitat creation.	LA's/GMEU/ WT's	Ongoing
Local Authorities to make a commitment to produce and implement management plans for areas over 5 ha in their control, strategy documents for areas under 5 ha, and greenspace strategies incorporating biodiversity considerations.  50% of managed urban greenspace of over 5 ha to have management plans by 2005.  Sites under 5 ha to have site type specific strategy documents by 2005.	LAs	2005
All local authorities to have greenspace strategies (similar to Countryside Agency Green Scape Strategies) including cross boundary agreements and policies to ensure the protection of managed greenspace.	LAs	2006
<b>2. Site Safeguard</b>		
Identify key sites using agreed definition for urban managed greenspace.	Relevant GMBAP Working Group/LA's/W T's	2004
Identify and secure areas for potential expansion of urban managed greenspace (to reduce isolation and fragmentation of sites)	All BAP partners	2006
Contribute to the implementation of relevant species action plans for rare and declining species associated with managed greenspace (eg: song thrush).	All BAP Partners	Ongoing
Develop a strategic approach to the management of urban managed greenspace to maintain and enhance its value to biodiversity particularly its role in a green network across administrative boundaries.	LAs	2005

## URBAN – MANAGED GREENSPACE

Action	Lead Body	Timetable for Action
<b>3. Land Management</b>		
Promote and encourage positive management of managed greenspace with landowners, occupiers, managers and voluntary conservation bodies through the development of long-term conservation management plans or agreements.	<b>All BAP Partners</b>	<b>2005</b>
Complete or update existing conservation management plans to promote long-term positive management of managed greenspace with landowners/occupiers/ managers and voluntary conservation bodies.	<b>All BAP Partners</b>	<b>Ongoing</b> (50% of managed urban greenspace of over 5 ha to have management plans by 2005).  (Sites under 5 ha to have site type specific strategy documents by 2005).
Identify issues such as pesticide reduction, pollution reduction, planting of native species, low intensity management practices, increasing habitat diversity through management and creation.	<b>EN/LAs/</b>	<b>Ongoing</b>
<b>4. Advisory</b>		
Develop and promote best practice for urban greenspace management, particularly integrating conservation management into routine practices including the production of guidance notes on management. Ensure guidelines widely available and accessible to interested parties.	<b>EN/LAs/WTs GM Biodiversity Project</b>	<b>2006</b>
Establish demonstration sites to show good conservation and management practice for managed greenspace.	<b>LAs/WTs Identified by GM Biodiversity Project</b>	<b>2008</b>

## HABITAT ACTION PLANS

<b>Action</b>	<b>Lead Body</b>	<b>Timetable for Action</b>
Provide advice to owners/occupiers of managed greenspace on appropriate management regimes and biodiversity friendly management practices of managed greenspace.	EN/GMEU/ LAs/WTs	Ongoing
<b>5. Future Research and Monitoring</b>		
1. Identify gaps in knowledge of this range of habitats.	<b>Relevant GMBAP Working Group</b>	<b>2004</b>
2. If necessary undertake survey of managed greenspace in the county using standardised and repeatable methodology for each habitat type, ie: gardens and allotments, amenity grassland-parks, golf courses, cemeteries.	<b>All BAP Partners</b>	<b>Start 2004</b>
Establish and maintain a register of managed greenspace sites within Greater Manchester including details of condition and presence of important species.	<b>GMEU/ Bolton Museum/ Oldham Museum</b>	<b>2004</b>
Define standard and repeatable methods of establishing the condition of managed greenspace and consider the effectiveness of conservation management. Use knowledge to supplement register, management plans, etc.	<b>Relevant GMBAP Working Group</b>	<b>2005</b>
Contribute to increasing information on UK managed greenspace by submitting information from GM register to National Biodiversity Network web based catalogue of survey information. Such information should also be widely available locally.	<b>Biodiversity Project Officer</b>	<b>When established</b>
Submit details of relevant conservation achievements to the national biodiversity reporting system, BARS, to meet requested deadlines.	<b>Biodiversity Project Officer</b>	<b>2003 onwards</b>
Develop and implement appropriate surveillance and monitoring programmes to assess progress towards action plan targets.	<b>Biodiversity Steering Group</b>	<b>2004</b>
Produce distribution map of different types of managed greenspace across Greater Manchester.	<b>All BAP partners</b>	<b>2004</b>

## URBAN – MANAGED GREENSPACE

Action	Lead Body	Timetable for Action
Develop links with universities and encourage research on urban managed greenspace and associated flora and fauna.	<b>Academic Institutions/ Relevant GMBAP Working Group</b>	<b>2003 onwards</b>
Integrate appropriate survey and monitoring programmes into all management plans and strategy documents.	<b>LAs/WTs</b>	<b>2005</b>
Promote the principle of “survey first, manage second”.	<b>GMEU/LAs/WTs</b>	<b>Ongoing</b>
<b>6. Communication and Publicity</b>		
Seek opportunities to raise the profile of the importance of managed greenspace to biodiversity in the media and improve public awareness of its wildlife and conservation value.	<b>All BAP partners</b>	<b>Ongoing</b>
Encourage public involvement in conservation initiatives and promote access to demonstration sites.	<b>All BAP partners</b>	<b>Ongoing</b>
Publicise existing sites demonstrating good practice in the management of managed greenspace for biodiversity ensuring information widely available to landowners/managers.	<b>All BAP partners</b>	<b>Ongoing</b>

### Abbreviations

EN	English Nature
FC	Forestry Commission
GMEU	Greater Manchester Ecology Unit
LAs	Local Authorities
LNR	Local Nature Reserve
PEF	Pennine Edge Forest
RRF	Red Rose Forest
SBI	Site of Biological Importance
SSSI	Site of Special Scientific Interest
WTs	Wildlife Trusts

### RESOURCE IMPLICATIONS

#### UK BAP

Unknown

---

---

## HABITAT ACTION PLANS

---

---

### **Greater Manchester BAP**

There will be considerable costs involved in undertaking survey and monitoring to provide up-to-date information on the distribution of managed greenspace, although some surveys may be undertaken by volunteers. In addition, the following activities will also incur costs:

- Establishment and maintenance of a central register
- Promotion of positive management
- Establishment of monitoring programme
- Publicity and awareness raising
- Staff and volunteer time

### **Possible Sources of Funding**

Core budget fund/maintenance budgets from local authorities

### **LINKS WITH OTHER ACTION PLANS**

#### **UK BAP**

Managed greenspaces are included in the Broad Habitat Statement “Urban” in the UK Steering Group Report.

#### **Greater Manchester BAP**

Great Crested Newts, Bats, Song Thrush, Grassland

Proposed for 2<sup>nd</sup> tranche of GMBAP: Boundary features, Problem species

#### **Other BAPs**

Bolton BAP: Semi-improved grassland, Unimproved neutral grassland, Lowland dry acid grassland, Hedgerows, Bats, Great Crested Newt, Bluebell

North Merseyside BAP: Urban trees, Urban grasslands, Urban birds, Great crested newts, bats, song thrush, bluebell

Lancashire BAP: Urban Habitats

Oldham BAP: Great crested newts

---

---

## URBAN – MANAGED GREENSPACE

---

---

### CONFLICTS WITH OTHER ACTION PLANS

The expansion and management of urban managed greenspace could have a potentially adverse affect on the following habitats and species action plans in Greater Manchester.

- Woodland
- Grassland

### CONTACTS FOR URBAN BAP GROUP:

Organisation	Contact	Tel Number
GMEU	Anne GreatRex	0161 342 3597
Wigan Council	Roz Park	01942 404232
Stockport MBC	Roger English	0161 4744552
English Nature	Rebecca Jackson	01942 820342
Manchester Metropolitan University	Phil Wheater	0161 247 1589
United Utilities	Brian Tollitt	01925 235841
The Bolton Wildlife Project	Kim Patterson	01204 361847
Manchester University	Prof. John Handley	0161 275 6891
The Countryside Agency	Daniel Moores	
Groundwork Tameside	Robert Williams /Ben Williams	0161 303 1336

### PROPOSED REVIEW OF PLAN

The Biodiversity Action Plan for Urban Managed Greenspace will be reviewed in 2008, and thereafter every five years.

### REFERENCES

- Barker, G. “*Green Networks*”
- DETR “*Urban White Paper*”
- DTLR (2002) “*Green Spaces, Better Places*”
- Gilbert, O “*Ecology of Urban Habitats*”
- DTLR (2002) “*Improving Urban Parks, Play Areas and Greenspaces*”
- HDRA “*Organic Grounds Maintenance*”
- Rogers “*Towards an Urban Renaissance*”
- Wheater, CP “*Urban Habitats*”

---

---

## HABITAT ACTION PLANS

---

---

- Boniface, T. unpublished. (2002) *“The potential contribution of golf courses to the conservation of biodiversity in Bolton”*

## Wigan Habitat Action Plans

---

# Mossland

Mosslands, where extensive, support a distinctive flora. In Wigan this includes *Sphagnum papillosum* and cranberry. Due to the preserving qualities of peat, mosslands have an immense value as an archive of the past. It takes thousands of years to form a fully functioning mossland community.



## Current status

Mossland, also known as lowland raised bog, is a UK Priority Habitat and is internationally threatened. Mosslands once covered large areas of our region, but as elsewhere across Europe there has been a dramatic loss of this habitat. Raised bog still capable of restoration is of European Importance under the European Habitats Directive.

Since 1850, the area of mossland in the UK has fallen from 95,000 hectares to 6,000 hectares. Regionally, 99% of mossland habitat within Lancashire, including Wigan has been destroyed. What remains is fragmented, and mostly damaged by unsympathetic management. Wigan has less than 100 hectares of mossland spread over five sites. These remaining sites are still under threat. Characteristic and important mossland species are still being lost due to a variety of factors.

## Characteristic wildlife

Wigan's mosslands are notable for the characteristic plants that have adapted to this low fertility, high moisture, acidic habitat. These include sphagnum moss species, cotton grasses, cross-leaved heath and cranberry. Drying out of the mossland has led to some areas becoming dominated by purple moor grass.

High quality wet mosslands contain a range of other species which include sundews, bog asphodel bog rosemary, bog myrtle and further species of sphagnum, including many of the hummock forming species, which are all found in the northwest but not currently in Wigan

## Key Species

The following rare or threatened species are associated with mosslands in Wigan. Species were selected on the basis that they are UK BAP Priority Species (P), Species of Conservation Concern (C) or notable species recorded in Wigan.

Water vole	<i>Arvicola terrestris</i>	P
Nightjar	<i>Caprimulgus europeaus</i>	P
Barn owl	<i>Tyto alba</i>	P
Long-eared owl	<i>Asio otus</i>	P
Skylark	<i>Alauda arvensis</i>	P
Tree pipit	<i>Anthus trivialis</i>	C
Snipe	<i>Gallinago gallinago</i>	C
Curlew	<i>Numenius arquata</i>	C
Common lizard	<i>Lacerta vivipara</i>	
Black darter	<i>Sympetrum danae</i>	
Large heath butterfly	<i>Coenonympha tullai</i>	P

## Current Issues

- Development pressures including peat extraction.
- Surface and groundwater abstraction causing lowering of water levels.
- Water quality – pollution, pesticide and nutrient enrichment.
- Habitat isolation as a result of fragmentation.
- Absence of management for existing mossland habitat.
- Recreational pressures.
- Agricultural expansion and intensification.
- Scrub encroachment.

## Best Management Practice

Pristine mossland needs little management. The majority of mossland in the North West needs to reverse past damage which usually involves raising the water table.

The key objectives of mossland management are to achieve:

- A diverse range of mossland communities
- Optimal conditions for mossland vegetation, especially sphagnum mosses.
- Prevention of scrub succession.
- Development of monitoring systems for associated flora and fauna.
- a range of small pools for aquatic species diversity
- Management of non-native weed species.
- Control of disturbance and damage by human activity.

## Current Action

Recent schemes in Wigan have allowed a total of 50 ha of mossland to be brought into active management.

A working group will oversee the development and implementation of the Mossland BAP. This partnership includes: Natural England, Greater Manchester Ecology Unit,

Lancashire Wildlife Trust, RSPB, Wigan Council and Wigan Leisure and Culture Trust

## **Related Action Plans**

### UKBAPs:

Reedbed  
Wet woodland

### GMBAPs:

Wet woodlands  
Ponds  
Lowland heath  
Acid grassland  
Marshy grassland  
Water vole

### Wigan BAPs:

Wet Woodland  
Water Vole

## Objectives, actions and targets

Strategic Objective: Protect, develop and monitor mosslands in Wigan		
Operational objective	Action Required	Timescale
1. Determine the current distribution and quality of mossland in Wigan	<ul style="list-style-type: none"> <li>Collect and collate records of mossland and produce distribution map to establish accurate baseline</li> </ul>	2008
	<ul style="list-style-type: none"> <li>Assess all mossland using standardised and repeatable methodology</li> </ul>	2008
	<ul style="list-style-type: none"> <li>Establish a database accessible by all relevant partners</li> </ul>	Ongoing
2. Protect existing mossland	<ul style="list-style-type: none"> <li>Recognise and protect mossland through policies in plans and strategies e.g. UDP, LDF, SPD, Mossland strategy, Biodiversity Strategy Nature Conservation Strategy</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Assess all relevant planning applications for their impact on mossland</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Encourage sustainable water abstraction policies</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Safeguard all mossland sites through designation as SAC, SSSI, LNR, SBI.</li> </ul>	2008
	<ul style="list-style-type: none"> <li>Produce management plans for all SSSI and SBI Mossland</li> </ul>	2009
	<ul style="list-style-type: none"> <li>Land acquisition policy to include purchase of existing mossland and buffer zones suitable for improvement.</li> </ul>	Ongoing
3. Investigate opportunities for restoration of mossland	<ul style="list-style-type: none"> <li>Identify areas for potential restoration of quality mossland habitat, and associated wetlands</li> </ul>	2009
	<ul style="list-style-type: none"> <li>Encourage landowners/managers to participate in appropriate management and habitat creation schemes.</li> </ul>	Ongoing
4. Monitor mossland resource	<ul style="list-style-type: none"> <li>Develop monitoring procedure</li> </ul>	2008
	<ul style="list-style-type: none"> <li>Monitor mossland quality and quantity</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Monitor water quality</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Develop links with universities and encourage research on mossland and associated habitats</li> </ul>	Ongoing

<b>Management Objective: Create and maintain mosslands in Wigan</b>		
Operational objective	Action Required	Timescale
1. <b>Protect existing mossland</b>	<ul style="list-style-type: none"> <li>Implement management plans for SSSI and SBI mosslands</li> </ul>	2009
	<ul style="list-style-type: none"> <li>Protect mossland from disturbance through management</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Protect adjacent land from developments which may affect mossland habitat</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Control invasive species to maintain high quality mossland</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Comply with the peatlands charter</li> </ul>	Ongoing
2. <b>Develop mossland on extraction sites</b>	<ul style="list-style-type: none"> <li>Investigate opportunities for mossland restoration initiatives</li> </ul>	2009
	<ul style="list-style-type: none"> <li>Investigate opportunities to increase area of mossland where depth of peat allows</li> </ul>	2008
3. <b>Manage existing Mossland</b>	<ul style="list-style-type: none"> <li>Investigate opportunities for mossland management/maintenance</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Identify funding for development and management/maintenance of mossland</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Develop good practice examples in current mossland management</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Investigate translocation of species to improve mossland diversity.</li> </ul>	2009
4. <b>Promote conservation value of Mossland</b>	<ul style="list-style-type: none"> <li>Raise the profile of mossland and improve community awareness of its wildlife value</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Encourage community involvement in conservation of and access to mossland sites</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Promote examples of good practice in mossland management</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Flood alleviation</li> </ul>	Ongoing

# Reedbed

Reedbeds, where extensive, support a distinctive fauna. In Wigan this includes bittern, reed warbler, water rail and several species of moth including the silky wainscot and obscure wainscot.

This BAP should be considered together with the Bittern BAP as the two are intrinsically linked.



## Current status

Reedbeds are wetlands dominated by stands of common reed (*Phragmites australis*). They include areas of open water and ditches and are associated with wet grassland and carr woodland (wet, swampy woods dominated by alder and willow). Nationally there are approximately 5000ha of freshwater reedbed, made up of around 900 sites. Only 50 of these sites are greater than 20 ha.

Reedbed habitat in Wigan has always been relatively scarce and fragmented. However, within north west England approximately 25% of the freshwater reedbed habitat recorded occurs in Wigan. Only Leighton Moss in Lancashire has a larger area of reedbed. Parts of the Wigan Flashes are designated as a Site of Special Scientific Interest and presently contain approximately 50 ha of reedbeds. Most of the significant reedbeds in Wigan are designated as Sites of Biological Importance and most are managed as nature reserves.

## Characteristic wildlife

Reedbeds, unless managed, are short lived in nature – reeds colonise open water, over time leaf litter builds up and the reedbed dries up and is colonised by alder and willow. Reedbeds are maintained by reed cutting, by controlled burning of the 'litter' and by maintaining high water levels. Other tall fen communities are important alongside the reedbeds and especially include reedmace (*Typha* sp.) fen.

The diversity in reedbed structure often depends on water within the system. Water levels are best if they vary, but should be around 30 cm deep over the bulk of the reedbed as this allows fish access to the waterbody. This also encourages invertebrates such as Pond louse (*Asellus aquaticus*) which helps to control the build up of material and prevent the reedbed drying out.

A variety of factors including size, age, water quality and geographical distribution will lead to differences in the plant, animal and invertebrate communities found in

reedbed. In Britain, species such as bittern require a matrix of reedbed in excess of 20 hectares in which to breed. Wintering bitterns will often use smaller sites but move on in spring.

In Wigan characteristic birds of reedbeds include reed bunting, water rail, reed warbler, bittern and occasional marsh harriers and bearded tits also occur.

In the UK there are 700 invertebrate species associated with reedbed, of which 40 are entirely dependent upon reedbed. Of these 40 species several are found in Wigan, silky wainscot moth, The crescent, bulrush wainscot, brown-veined wainscot, obscure wainscot, large wainscot, small wainscot and small rufous.

Amphibians use well-vegetated water bodies within the reedbed. Ample food and good cover mean that common frogs and toads can occur at high densities, they generally require small areas of open water such as pools and ditches. The eggs of frogs and toads are a food source for many animals. Smooth, palmate and great-crested newts can also be found in reedbeds but they tend to be associated with well-vegetated ditches.

Water voles and water shrews can also be found in the ditches that run through and round the body of the reedbed.

Although common reed is the main species associated with reedbeds, there are always other plants to be found. Reedmace, Lesser reedmace, yellow iris and sweet flag, bur-reed and rushes are often found where reed is less dominant. In drier stands bittersweet and marsh cinquefoil occur and, where succession has progressed, scrub species such as willow and alder become frequent.

### Key Species

The following rare or threatened species are associated with reedbeds in Wigan. Species were selected on the basis that they are UK BAP Priority Species (P) or Species of Conservation Concern (C).

Water vole	<i>Arvicola terrestris</i>	P
Bittern	<i>Botaurus stellaris</i>	P
Reed bunting	<i>Emberiza schoeniclus</i>	P
Reed warbler	<i>Acrocephalus scirpaceus</i>	C
Water shrew	<i>Neomys fodiens</i>	C
Water rail	<i>Rallus aquaticus</i>	C
Silky wainscot moth	<i>Chilodes maritimus</i>	

### Current Issues

- Surface and groundwater abstraction causing lowering of water levels within existing reedbeds.
- Water quality – water pollution, pesticide and heavy metal pollution.
- Population isolation as a result of fragmentation of existing areas.
- Development pressures.
- Absence of targeted management for existing reedbed habitat.
- Recreational pressures.

## **Best Management Practice**

Without management reedbeds will naturally dry out and turn to woodland in the medium to long term. Operations such as reed cutting, scrub control and water level management will slow down or reverse this process.

The main objective of reedbed management is to achieve:

- A range of reed/fen communities (dependent on site conditions) is desirable – achieved through rotational cutting.
- Development of reedbed fringe communities, which are suitable for a range of associated species, increasing the amount of reed/water interface with suitable ditches and pools.
- Prevention of seral scrub succession.
- Development of water quality monitoring for invertebrate communities and flora and fauna.
- Development of pocket reedbeds.
- Management of non-native weed species as required.
- Control of disturbance and damage by human influence.

## **Current Action**

Recent schemes in Wigan have been implemented to bring reedbeds into more positive management regimes. These schemes have allowed a total of 50 ha of reedbed to be brought into active management. Approximately 24ha of this is newly created reedbed.

A working group will oversee the development and implementation of the BAP. This partnership is formed by: English Nature, Greater Manchester Ecology Unit, Lancashire Wildlife Trust, RSPB, Wigan Council and Wigan Leisure and Culture Trust

## **Related Action Plans**

### UKBAPs:

Reedbed  
Bittern

### GMBAPs:

Bittern

### Wigan BAPs:

Bittern  
Wet Woodland  
Water Vole

## Objectives, actions and targets

Strategic Objective: Protect, develop and monitor reedbeds in Wigan		
Operational objective	Action Required	Timescale
1. Determine the current distribution and quality of reedbed in Wigan	<ul style="list-style-type: none"> <li>Collect and collate records of reedbed and produce distribution map to establish accurate baseline</li> </ul>	2006
	<ul style="list-style-type: none"> <li>Assess all reedbed using standardised and repeatable methodology</li> </ul>	2006
	<ul style="list-style-type: none"> <li>Establish a database accessible by all relevant partners</li> </ul>	2006
2. Protect existing reedbed	<ul style="list-style-type: none"> <li>Recognise and protect reedbed through policies in plans and strategies e.g. UDP, SPG, Nature Conservation Strategy</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Assess all relevant planning applications for their impact on reedbed</li> </ul>	Continuous process
	<ul style="list-style-type: none"> <li>Encourage appropriate water abstraction policies</li> </ul>	Continuous process
	<ul style="list-style-type: none"> <li>Safeguard all reedbed sites through designation as SBI, LNR, SSSI or SPA</li> </ul>	2007
	<ul style="list-style-type: none"> <li>Designate Hey Brook as a SSSI</li> </ul>	2008
	<ul style="list-style-type: none"> <li>Produce management plans for all SSSI and SBI reedbeds</li> </ul>	2007
3. Investigate opportunities for creation of new reedbed	<ul style="list-style-type: none"> <li>Identify areas for potential expansion of reedbed habitat</li> </ul>	2007
	<ul style="list-style-type: none"> <li>Encourage landowners/managers to participate in appropriate schemes to fund management and habitat creation</li> </ul>	Ongoing
4. Monitor reedbed resource	<ul style="list-style-type: none"> <li>Develop monitoring procedure</li> </ul>	2006
	<ul style="list-style-type: none"> <li>Monitor reedbed quality and quantity</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Monitor water quality</li> </ul>	Ongoing
	<ul style="list-style-type: none"> <li>Develop links with universities and encourage research on reedbed and associated habitats</li> </ul>	Annual review

**Management Objective: Create and maintain reedbeds in Wigan**

Operational objective	Action Required	Timescale
1. Protect existing reedbed	<ul style="list-style-type: none"><li>• Implement management plans for SSSI and SBI reedbeds</li><li>• Protect reedbeds from disturbance through management</li><li>• Control invasive species to maintain high quality reedbeds</li></ul>	2008  Continuous process  Review annually
2. Develop new reedbed	<ul style="list-style-type: none"><li>• Investigate opportunities for reedbed creation initiatives</li></ul>	2008
3. Manage existing and newly created reedbed	<ul style="list-style-type: none"><li>• Investigate opportunities for reedbed management/maintenance</li><li>• Identify funding for development and management/maintenance of reedbed</li><li>• Develop good practice examples in current reedbed management</li></ul>	2008  Ongoing  Review annually
4. Promote conservation value of reedbeds	<ul style="list-style-type: none"><li>• Raise the profile of reedbed and improve community awareness of its wildlife value</li><li>• Encourage community involvement in conservation of and access to reedbed sites</li><li>• Promote examples of good practice in reedbed management</li></ul>	Review annually  Annual reedbed event  Ongoing