G r a s s l a n d s

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.

Grasslands

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

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

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.

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.

Grasslands

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 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 levering 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.

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

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

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

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

HERBS

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

GRASSES

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

- 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.

CASE STUDY

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**

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