



Purple Moor-grass and Rush

Pasture

Nationally, purple moor-grass and rush pasture has become extremely scarce due to land drainage and agricultural improvement. Cumbria is one of the last strongholds for this habitat, which is host to a range of nationally uncommon bird, plant and invertebrate species, including marsh fritillary, curlew and black grouse.

Current status

Purple moor-grass and rush pasture covers a range of species-rich vegetation dominated by purple moor-grass and/or tall rushes, predominantly on peaty gleys and shallow peats but also extending onto mineral soils. This is a scarce habitat which is largely restricted to the lowlands and upland fringes of south-west England, southern Wales, Cumbria, south-west Scotland and parts of Northern Ireland.

Purple moor-grass and rush pasture occurs in all Natural Areas in Cumbria. It is found adjacent to many of the lakes in the Lake District, such as Bassenthwaite and Elterwater and in the less intensively managed valleys such as Rusland valley. Lower valley sides support notable concentrations along flush lines, where this vegetation occurs in association with base-rich flushes, particularly over the Borrowdale volcanics of the central Lakes. The fringes of the Lake District and the Pennines support the other main concentration of this habitat in Cumbria. Notable examples occur on the west Cumbria coal field and to the north-east of Cockermouth. The rest of the resource is scattered

across the lowlands of the County as isolated fields or parts of fields. These include many of the rarest of the community types with notable examples to the north-west of Penrith.

The extent of the habitat in Cumbria is difficult to assess because it has not been specifically measured in the past. The Phase I habitat survey of Cumbria (Kelly and Perry 1990) maps over 12,000 ha of marshy grassland but this includes large areas of other species-poor habitats. It seems likely that the extent of the habitat may be less than 6,000 ha in Cumbria.

There are five National Nature Reserves supporting purple moor-grass and rush pasture in Cumbria. 23 Sites of Special Scientific Interest are notified for purple moor-grass and rush pasture communities in Cumbria. Some types of purple moor-grass and rush pasture are included within the *Molinia meadows on chalk and clay* habitat listed on Annex I of the EC Habitats Directive. In Cumbria 1 SSSI falls within a candidate Special Area of Conservation for this habitat.

Characteristic wildlife

Purple moor-grass and rush pasture grasslands are found in a variety of situations: on undulating plateaux and hillsides; in valley bottoms close to lakes and rivers, often forming the drier end of sequences from open water through swamps to dry land; adjacent to a variety of mire types, including valley mires and basin mires; in the damper parts of hay meadows; and, to a lesser extent, as hillside flushes. The vegetation often occurs in large and ecologically diverse community mosaics, although single community stands are not uncommon. Some constituent purple moor-grass and rush pasture stands are situated on the periphery of fens, within heathland sites or on low-lying coastal or inland floodplains.

Three broad types of the habitat have been identified in the county. Species-rich rush-dominated stands are generally dominated by a mixture of soft rush, jointed rush and sharp-flowered rush and can include a variety of herbs, including meadowsweet, marsh marigold, cuckoo flower, lady's smock, ragged robin, devil's-bit scabious, wild angelica, and common spotted orchid (Kelly and Perry 1990). Purple moor-grass - tormentil stands can be similarly flower-rich, with marsh thistle, wild angelica, greater bird's-foot-trefoil, devil's-bit scabious, meadowsweet, common valerian and lesser skullcap. The third type comprises the purple moor-grass - marsh hawk's-beard community, which is rich in small sedges and can include a number of the aforementioned tall herbs along with marsh valerian, saw-wort, great burnet and marsh hawk's-beard.

Purple moor-grass and rush pasture can be important for a variety of animals and invertebrates including butterflies such as the marsh fritillary and breeding birds such as redshank, snipe, lapwing, curlew and skylark.

Key species

The following rare or threatened species are associated with purple moor-grass and rush pastures in Cumbria. Species were selected on the basis that they are UK BAP Priority Species (marked P) or species of County importance in Cumbria. Where species of County importance are also UK BAP Species of Conservation Concern,

they are marked C.

water vole	<i>Arvicola terrestris</i>	P
skylark	<i>Alauda arvensis</i>	P
reed bunting	<i>Emberiza schoeniclus</i>	P
yellow wagtail	<i>Motacilla flava</i>	C
black grouse	<i>Tetrao tetrix</i>	P
redshank	<i>Tringa totanus</i>	C
barn owl	<i>Tyto alba</i>	C
lapwing	<i>Vanellus vanellus</i>	C
great crested newt	<i>Triturus cristatus</i>	P
marsh fritillary	<i>Eurodryas aurinia</i>	P
narrow-bordered hawk-moth	<i>Hemaris tityus</i>	P
sword grass moth	<i>Xylena exsoleta</i>	P
Lilljeborg's whorl snail	<i>Vertigo lilljeborgi</i>	C
pink meadowcap	<i>Hygrocybe calyptraeformis</i>	P
marsh clubmoss	<i>Lycopodiella inundata</i>	P

Best management practice

Purple moor-grass and rush pasture depends on management of the vegetation to arrest succession to other types of plant communities, such as woodland, or changes to wetter, or drier, grassland or mire types. The nature of the management will depend on the objectives for any one site, taking into account the requirements of particular plant or animal species that may be present. The most important factors in managing these habitats are to ensure that they are sufficiently wet to support the characteristic plants and animal species and that they are appropriately grazed. Grazing is generally essential to the maintenance of this habitat and the ideal grazing stock are cattle. Cattle are more tolerant of wet conditions than sheep; they are less selective in their grazing behaviour than sheep, particularly when tackling more rank vegetation types or controlling scrub; and they can be used for grazing during the summer flowering period, where necessary, as they do not graze flowers in preference to the non-flowering parts of plants, unlike sheep.

Current issues

The issues that are associated with purple moor-grass and rush pasture largely relate to the management requirements of the habitat although development and other activities can be of local significance:

- The application of herbicides and fertilisers reduces species richness and can lead quickly to the loss of the habitat. Land drainage can lead to the loss of the habitat through drying out of the soil and abandonment of maintenance of drains and ditches can in certain circumstances lead to changes to wetter conditions which are equally unsuitable. However, the latter situation may be more easily reversed with the reintroduction of suitable management than the former.
- Grazing by sheep as opposed to cattle can lead to a reduction in the overall diversity of the habitat and the loss of rare species. The decline in beef suckler herds in Cumbria is, therefore, of particular concern in relationship to this habitat
- Agricultural abandonment and the cessation of grazing, as a result of a reluctance to farm wet land, or changes in land management, such as tree planting, leads to rankness and scrub encroachment and a reduction and loss in the characteristic plants and animals of the habitat.
- Developments (e.g. windfarms) and mineral extraction (for example, opencast coal) can lead to the loss and fragmentation of this habitat.

Current action

- Agri-environment schemes such as the Lake District and the North Pennines Environmentally Sensitive Areas schemes and the Countryside Stewardship scheme provide financial incentives to manage purple moor-grass and rush pasture in a way that is sympathetic to its nature conservation interest.
- A small number of purple moor-grass and rush pastures are managed for nature conservation objectives by organisations including English Nature and Cumbria Wildlife Trust.
- Forestry Commission Woodland Grants Schemes provide for open areas which frequently comprise this habitat.
- The habitat is included in the selection criteria for County Wildlife Sites and there is a programme of survey and designation which is due to be completed by 2005.
- A number of organisations across the County provide farm conservation advice and/or carry out practical management for nature conservation which will benefit purple moor-grass and rush pasture. These include the Arnsdale/Silverdale Countryside Management Service, Farming and Wildlife Advisory Group,

East Cumbria Countryside Project, Solway Rural Initiative, West Cumbria Groundwork Trust and Cumbria Farm Link.

Context in relation to other plans:

UK Habitat Action Plans

There is a UK Biodiversity Action Plan for purple moor-grass and rush pastures in *Biodiversity: the UK Steering Group Report (1995)*. This plan is currently undergoing revision to bring it into line with other recently published grassland plans.

The current Plan sets the following national objectives and targets:

- Secure sympathetic management of at least 13,500ha of purple moor-grass and rush pasture by the year 2000, divided between the four countries as follows: Wales 4,000ha, England 5,000 ha, Northern Ireland 4000ha and Scotland 500 ha.
- Initiate experimental attempts to re-create 500 ha of purple moor-grass and rush pasture on land adjacent to, or nearby, existing sites, by the year 2005.

The aim is to secure favourable management for a minimum of 25% of this scarce habitat within the time frame. These UK targets have been translated into targets for each Natural Area in England. The targets for Cumbria set out below are based on the relevant Natural Area targets.

The UK Biodiversity Action Plan includes an action plan for marsh fritillary, a species which is restricted to purple moor-grass and rush pasture in Cumbria.

National Lead Agency

Countryside Council for Wales.

Local contacts

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Associated plans in the Cumbria BAP

The following Cumbria species and habitat action plans are of relevance to purple moor-grass and rush pasture:

Phase I

- water vole
- great crested newt
- marsh fritillary
- pearl-bordered fritillary
- high brown fritillary
- wet woodlands
- lowland raised bog
- basin mire

Phase II

- coastal and floodplain grazing marsh
- swamps and tall-herb fen
- springs and flushes
- valley mires
- northern hawk's-beard

References

- Kelly and Perry 1990, *Wildlife Habitat in Cumbria*. Nature Conservancy Council.
- Nature Conservancy Council (1990), *Handbook for Phase I Habitat Survey*. Peterborough.
- Rodwell, J.S. (1991), *British Plant Communities, Volume 2. Mires and Heaths*. Cambridge University Press.

Objectives, targets and proposed actions for purple moor-grass and rush pasture in Cumbria

Broad Objective A	Ensure no further loss of purple moor-grass and rush pasture in Cumbria			
Operational Objective	Action Required	Suggested organisational involvement	Time-scale	Type
I Arrest the depletion of purple moor-grass and rush pasture throughout its distribution in Cumbria	1 Keep the extent of SSSI coverage under review and notify sites as necessary to fill gaps in the coverage.	EN	O	SS
	2 Designate as Special Areas of Conservation all purple moor-grass and rush pasture which meet selection criteria as soon as is practicable.	DETR, EN	M	SS
	3 Carry out a review of the need to manage further key sites as National Nature Reserves by 2002.	EN	O	SS
	4 Identify as Wildlife Sites the most important areas for wildlife in the County outside of statutory sites, including areas of purple moor-grass/rush pasture, by 2006.	CWT, LAs	L	SS

Broad Objective B	Ensure the favourable condition of all sites			
Operational Objective	Action Required	Suggested organisational involvement	Time-scale	Type
1 Within SSSIs, initiate rehabilitation management for all significant stands of purple moor-grass and rush pasture in unfavourable condition by 2004, with the aim of achieving favourable status wherever feasible by 2010	1 Assess the condition of all purple moor-grass and rush pasture within SSSIs using standard criteria by 2002.	EN	M	RM
	2 Where necessary, secure the uptake of positive management agreements with owners and occupiers of all purple moor-grass and rush pasture SSSIs by 2004.	EN, MAFF	M	SS
2 For all other purple moor-grass and rush pastures secure favourable condition over 30% of the resource by 2005 (divided between Natural Areas as shown below) and as near to 100% as is practicable by 2015. Prioritisation of areas should take into account the needs of the marsh fritillary action plan	1 Ensure purple moor-grass and rush pasture is considered in the setting up of new agri-environment agreements and in any revision of existing agreements to ensure that, where possible, the habitat is brought into favourable management to contribute to national BAP and local Natural Area targets for the habitat.	MAFF, EN	O	SS
	2 Ensure Woodland Grant Schemes and Forest Design Plans protect purple moor-grass and rush pasture, taking into account management requirements of the habitat.	FC, EN	O	SS
	3 Provide advice on management and grants to owners and occupiers of Wildlife Sites with purple moor-grass/rush pasture, by 2008.	CWT, FWAG	L	A
3 Monitor changes in the extent and condition of purple moor-grass and rush pasture in order to assess the effectiveness of conservation action	1 Collate available information on the extent and condition of purple moor-grass and rush pasture into a database by 2003 and consider need for further survey.	EN, LDNPA, MAFF, CWT	M	RM
	2 Devise a strategy for monitoring the extent and condition of the habitat by	EN, LDNPA, CWT	M	RM
4 Promote awareness and understanding and best management practice for purple moor-grass and rush pasture	1 Produce guidelines for the identification, condition assessment and management of purple moor-grass and rush pasture by 2002.	EN	M	RM
	2 Carry out two demonstration days on the identification, condition assessment and management of purple moor-grass and rush pasture by 2003.	EN, MAFF, FWAG, ECCP, NT, LDNPA	M	A

Natural Area Targets for Operational Objective 2:

Cumbria Fells and Dales:	1000ha
West Cumbria Coastal Plain:	30% of high priority areas (to be identified)
Solway Basin:	50ha
Eden Valley:	20ha
North Pennines:	50ha (including Northumberland)
Yorkshire Dales:	750ha (including North Yorkshire)

Broad Objective C Increase the extent of purple moor-grass and rush pasture

Operational Objective	Action Required	Suggested organisational involvement	Time-scale	Type
I Initiate experimental attempts to re-create at least 25ha of purple moor-grass and rush pasture by the year 2005, in places that will link or expand existing sites, in particular those that will benefit the marsh fritillary	I Identify suitable sites and draw up a strategy to meet the target by 2004.	EN, MAFF, LDNPA, CWT, RSPB, NT, ECCP, NWW, CCC	M	RM/SS

Natural Area Targets:

Cumbria Fells and Dales:	10 ha
Eden Valley:	10 ha
Yorkshire Dales:	5 ha (including North Yorkshire)

Key to Tables

Suggested organisational involvement: Key Deliverers in bold type; Partners in plain type.

CA = Countryside Agency; CWT = Cumbria Wildlife Trust; DETR = Department of Environment, Transport and the Regions; ECCP = East Cumbria Countryside Project; EN = English Nature; FC = Forestry Commission; FWAG = Farming and Wildlife Advisory Group; LAs = Local Authorities; LDNPA = Lake District National Park Authority; MAFF = Ministry of Agriculture, Fisheries and Food; NT = National Trust; NWW = North West Water Ltd.; RSPB = Royal Society for the Protection of Birds

Timescale: O=ongoing; S=short term (2000-2001); M=medium (2002-2005); L=long (2006-2010).

Type: Type of action; PL=Policy & Legislation; SS=Site Safeguard & Management; SP=Species Management and Protection (species plans only); A=Advisory; RM=Research & Monitoring; CP=Communications and Publicity.