

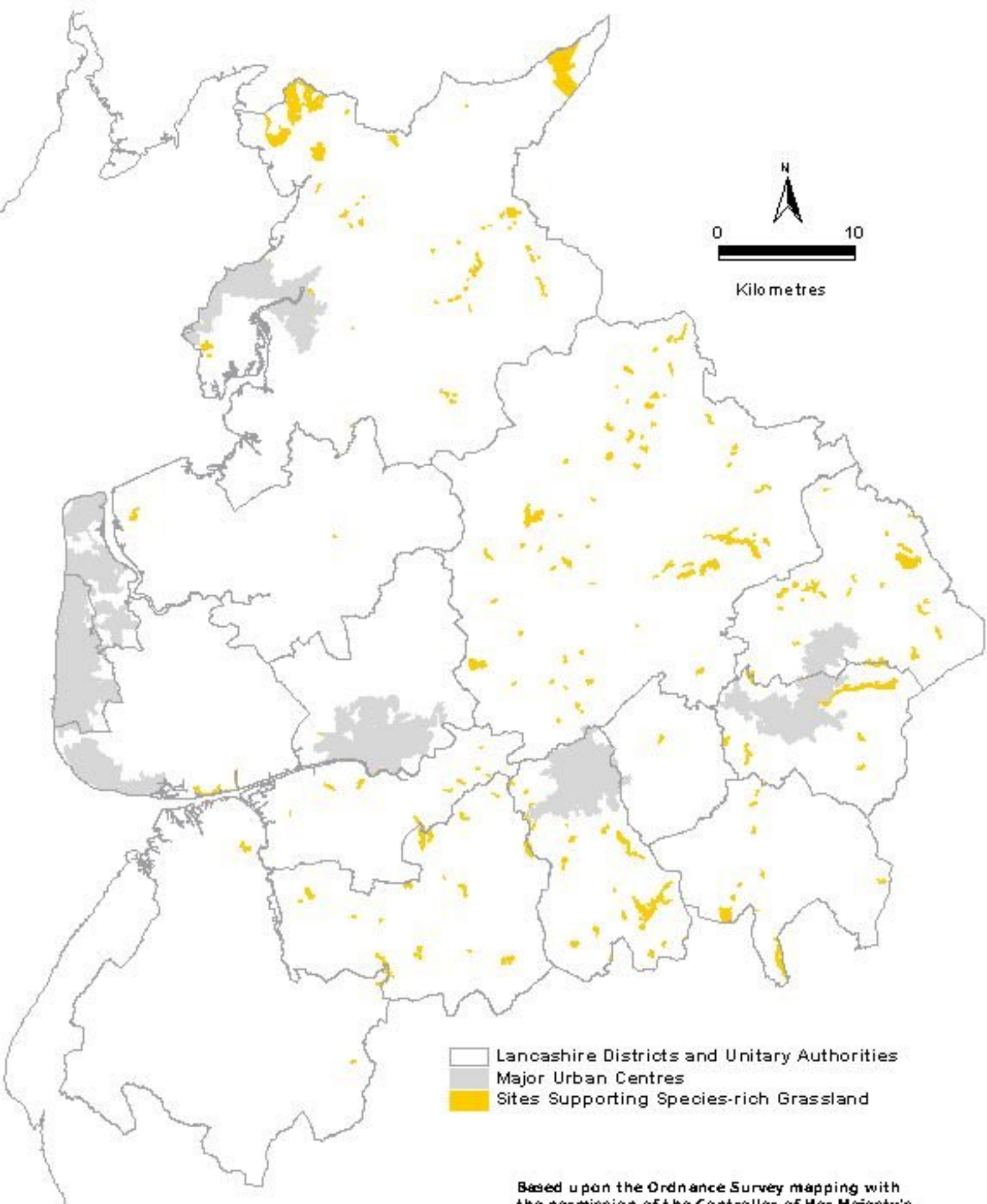
Species-rich Neutral Grassland



An example of species-rich neutral grassland

Copyright: The Wildlife Trust for Lancashire, Manchester & North Merseyside

Remaining Species-rich Grassland in Lancashire



Based upon the Ordnance Survey mapping with the permission of the Controller of Her Majesty's Stationery Office © Crown Copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.

Lancashire County Council 100023 320 2007

Habitat Description

This plan encompasses two UK BAP 'priority habitats' ⁽¹⁾. These are:

- lowland meadows;
- upland hay meadows.

Both grassland types occur on neutral soils with low-intensity farming practices. Species-rich examples of both lowland and upland meadow habitats can be found also on roadside and trackside verges, in churchyards, on reservoir embankments and on railway cuttings.

Lowland meadows on farms are not restricted to grasslands cut for hay but also include unimproved neutral pastures where livestock grazing is the main land use. These 'lowland' pastures can extend well into the upland fringes and may be found in close proximity to or replace 'upland hay meadows'.

'Species-rich grasslands' include not only those meadows and pastures with a diversity of flowering herbs, grasses and sedges but also those rich in fungi. Species-rich grasslands contain a remarkable diversity of plant-life and can support important numbers of breeding wading birds (e.g. curlew, redshank and snipe). They are of immense nature conservation importance, enhance landscapes and are of high amenity/intrinsic value. Many of the species associated with this habitat type are in serious decline at a national level.

Species-rich neutral grassland underwent a remarkable decline in the 20th Century, almost entirely due to changing agricultural practices. Long-established meadows and pastures were converted either to arable production or to silage fields and intensive grazing. It is estimated that by 1984 in lowland England and Wales such grasslands had declined by 97% over the previous 50 years. Lancashire did not escape changes on this scale.

National status

There are approximately 11,000 ha of herb-rich neutral grassland surviving in England, of which less than 1,000 ha are upland hay meadow.

Losses continue at up to 10% per year in some parts of England.

Regional status

Unimproved neutral lowland pasture is extremely uncommon in the north west of England. According to the North West Biodiversity Audit it is restricted to the Lancashire plains and valleys, to the fringes of the Forest of Bowland and the southern Pennines and to a few isolated areas in Cumbria and Cheshire.

Upland hay meadows are proposed by English Nature as Regional Biodiversity Indicators for the North West⁹. The North West Audit⁶ identifies nationally important hay meadow localities as being the northern Pennines, the Cumbrian and Lancashire fringes of the Yorkshire Dales and the Orton/Tebay area of Cumbria. The Forest of Bowland is recognised also to be of international importance for hay meadow habitats by virtue of three sites in Bowland being now included within the North Pennine Dales Meadows cSAC. A regionally important locality for hay meadows is the southern Pennines.

Species-rich neutral grassland is a rare and vulnerable habitat. In most instances, good examples in any locality comprise at most two or three fields together.

Local status

Up-to-date, accurate figures for the extent of species-rich neutral grassland in Lancashire are not readily available. The total area of SSSI notified for this habitat type in the county is 66 ha, of which approximately 50 ha is located in upland and upland fringe locations. The Lancashire

Phase I Habitat Survey 1988-1992 recorded 383 ha of herb-rich neutral grassland ⁽⁵⁾. This represents just 0.1% of the county by area. Recent estimates by English Nature, however, put the figure at about 860 ha.

Although there appears to be little historical data available, it is reasonable to assume that this habitat type has suffered immense losses in Lancashire given that trends in modern agriculture in the county have mirrored those elsewhere in Britain.

Important Sites ⁽⁴⁾

The North West Biodiversity Audit ⁽⁶⁾ records the presence of upland hay meadows in the boroughs of Blackburn, Burnley, Lancaster, Pendle and Ribble Valley. Lowland pasture is recorded in all districts except for Blackpool and Preston.

In upland and upland fringe areas, species-rich grassland sites are scattered through the West Pennine Moors, eastern Lancashire and in the Forest of Bowland. The latter area is particularly important for upland hay meadows. A cluster of upland/upland fringe meadows and pastures survives in the parishes of Slaidburn and Over Wyresdale. Three Bowland sites are included within the North Pennine Dales Meadows cSAC.

Fifteen SSSIs are notified for their neutral grassland habitat in Lancashire. Examples include: Bell Sykes Meadows; Clear Beck Meadow; Lower Red Lees Pasture; Myttons Meadows; Standridge Farm Pasture; Tarnbrook Meadows; and Wrightington Bar Pasture.

One site is managed as a nature reserve. This is Freeman's or Charnock Richard Pasture (a SSSI managed by the Wildlife Trust).

Over 100 Biological Heritage Sites (BHSs) contain species-rich examples of grassland within the county (BHS Guidelines GR1 and GR3). Most of these are neutral grassland types. Although SSSIs generally contain the best quality examples, the greatest area of these habitat types occur in the county's BHS series.

Current factors affecting the Habitat

A high proportion of species-rich neutral grasslands (especially hay meadows) occur on generally flat topography over deep soils. Consequently, they are readily 'improved' in agricultural terms into productive fields offering increased output and greater farm income. The nature conservation value of these fields is lost during this process. Species-rich neutral grasslands are considered, therefore, to be particularly vulnerable to loss through agricultural intensification.

Losses in the lowlands of Lancashire have occurred largely through intensification of dairy farming and livestock rearing practices. In the upland fringes, losses have been due mainly to mixed farming being replaced by sheep. The loss is less apparent than for other semi-natural habitats such as mossland or moorland as landscapes remain predominantly pastoral despite the reduction in biodiversity. Surviving species-rich neutral grassland sites in Lancashire have become generally small, isolated and scattered. Lowland species-rich neutral grasslands in Lancashire appear to have suffered the greatest historical losses becoming particularly rare.

The application of artificial fertilisers and slurry raises soil nutrients to artificial levels, favouring the growth of a few vigorous grass species that out-compete and smother the flowering herbs. Sedges, orchids and some fungi are poisoned by artificial fertilisers.

Unlike hay, silage is cut two or three times per year. Consequently, flowering herbs are unable to flower and set seed, so that eventually they are lost from the grasslands. The value of these habitats for ground-nesting birds (e.g. curlew, skylark) is also diminished since earlier, more frequent cuts increase the loss of broods. Silage production is usually associated with high levels of fertiliser application.

Continuously high levels of grazing can also prevent flowering herbs from setting seed.

Land drainage destroys wet or flushed areas such that the flowering herbs of wet meadows and pastures are lost along with sites for feeding and nesting by redshank, curlew and lapwing.

In both upland and lowland situations, species-rich grasslands have been ploughed up to be re-seeded with rye-grass mixtures. In the lowlands, some remnant species-rich grasslands have also been ploughed to grow arable crops. In either case, the important grassland habitat is catastrophically lost in a single event.

Although not currently known to occur in Lancashire, the harvesting of wildflower seed from herb-rich grasslands offers landowners an opportunity to attain a higher income without the need for agricultural intensification. It could also provide a native and local seed source for re-creation of the habitat. However, sustainable methods of seed harvesting must be employed if the donor site is not to be damaged.

Current Action / Mechanisms

The land-use planning system allows a level of protection from damaging development for SSSIs and BHSs. In addition, SSSIs are subject to a system that regulates land management (under the Wildlife & Countryside Act 1981 as amended). English Nature (EN) promotes the conservation of species-rich neutral grassland through Natural Area profiles ^(7, 8) and other mechanisms.

Payment for appropriate land management on species-rich neutral grassland may be obtained from MAFF's Countryside Stewardship Scheme and EN's Wildlife Enhancement Scheme (SSSIs only).

The BHS Project prioritises conservation advice to owners and managers of BHS grassland. The project promotes the up-take of agri-environment schemes by the owners of such sites where the landowner deems this appropriate and desirable. EN provides similar advice to SSSI land managers. The Farming & Wildlife Advisory Group (FWAG) offers advice to farmers on land irrespective of designations.

A comprehensive monitoring scheme for this habitat does not exist in Lancashire. EN (and other) surveys provide data on a few sites. Only SSSIs are subject to regular monitoring and condition assessment.

EN has produced leaflets to promote conservation of all key habitats within the Forest of Bowland and the Lancashire Plains & Valleys Natural Areas. The key habitats include hay meadows and pastures.

Indicators of Habitat Quality

For conservation purposes neutral grassland is developing towards favourable condition when:

- **More than one or two grass species dominate the sward;**
- **There is an abundance of flowering herbs amongst fine-leaved grasses;**
- **A number of the indicative species listed in Tables 2a-c are present (or, in the case of the animals, make use of the site);**
- **There is a lack of agricultural improvement (particularly the absence of use of artificial fertilisers).**

Table 1: NVC Communities associated with unimproved and semi-improved neutral grassland in Lancashire²

Code	Community	Code	
MG1	Arrhenatherum elatius grassland	MG5*	Cynosurus cristatus - Centaurea nigra grassland
MG3*	Anthoxanthum odoratum - Geranium sylvaticum grassland	MG8*	Cynosurus cristatus - Caltha palustris grassland
MG4*	Alopecurus pratensis - Sanguisorba officinalis grassland	U4c*	Festuca ovina - Agrostis capillaris - Galium saxatile grassland, Lathyrus montanus - Stachys betonica sub-community

Table 2a: Animals associated with unimproved and semi-improved neutral grassland in Lancashire ⁽⁶⁾

Common name	Scientific name	Status
Birds		
Skylark	Alauda arvensis	UK & L SAP
Lapwing	Vanellus vanellus	L SAP
Twite	Carduelis flavirostris	L SAP
Yellow wagtail	Motacilla flava	
Curlew	Numenius arquata	
Snipe	Gallinago gallinago	
Redshank	Tringa totanus	
Golden plover	Pluvialis apricaria	
Dunlin	Calidris alpina	
Mammals		
Brown hare	Lepus europaeus	UK & L SAP
Invertebrates		
Large skipper	Ochlodes venata	
Common blue	Polyommatus icarus	
Small copper	Lycaena phlaeas	

Meadow brown	Maniola jurtina	
--------------	-----------------	--

Table 2b: Fungi associated with unimproved and semi-improved neutral grassland in Lancashire ⁽⁶⁾

Common name	Scientific name	Status
Ballerina waxcap	Hygrocybe calyptriformis	UK SAP, Fu1

Table 2c: Grasses and sedges associated with unimproved and semi-improved neutral grassland in Lancashire ⁽⁶⁾

Common name	Scientific name	Status
Common bent	Agrostis capillaris	
Red fescue	Festuca rubra	
Sheep's fescue	Festuca ovina	
Crested dogstail	Cynosurus cristatus	
Sweet vernal grass	Anthoxanthum odoratum	
Cocksfoot	Dactylis glomerata	
Quaking grass	Briza media	
Heath grass	Danthonia decumbens	
Yellow oat-grass	Trisetum flavescens	
Spring sedge	Carex caryophyllea	
Glaucous sedge	Carex flacca	
Carnation sedge	Carex panicea	

Table 2d: Vascular plants other than grasses associated with unimproved and semi-improved neutral grassland in Lancashire ⁽⁶⁾

Common name	Scientific name	Status
Field wood-rush	Luzula campestris	
Common knapweed	Centaurea nigra	
Common bird's-foot trefoil	Lotus corniculatus	

Greater bird's-foot trefoil	<i>Lotus pedunculatus</i>	
Betony	<i>Stachys betonica</i>	
Dyer's greenweed	<i>Genista tinctoria</i>	
Devil's-bit scabious	<i>Succisa pratensis</i>	
Meadow vetchling	<i>Lathyrus pratensis</i>	
Common cat's-ear	<i>Hypochoeris radicata</i>	
Common spotted-orchid	<i>Dactylorhiza fuchsii</i>	
Heath spotted-orchid	<i>Dactylorhiza maculata</i>	
Great burnet	<i>Sanguisorba officinalis</i>	
Pignut	<i>Conopodium majus</i>	
Yellow rattle	<i>Rhinanthus minor</i>	
Autumn hawkbit	<i>Leontodon autumnalis</i>	
Burnet saxifrage	<i>Pimpinella saxifraga</i>	
Marsh marigold	<i>Caltha palustris</i>	
Meadowsweet	<i>Filipendula ulmaria</i>	
Ragged robin	<i>Lychnis flos-cuculi</i>	
Cuckooflower (or mayflower)	<i>Cardamine pratensis</i>	
Lady's-mantles	<i>Alchemilla</i> spp.	
A lady's-mantle	<i>Alchemilla acutiloba</i>	NR, Ff1
An eyebright	<i>Euphrasia rostkoviana</i> ssp. <i>rostkoviana</i>	NS, Ff2
Bird's-eye primrose	<i>Primula farinosa</i>	NS, Ff2
Greater butterfly orchid	<i>Platanthera chlorantha</i>	Ff3
Pepper saxifrage	<i>Silaum silaus</i>	Ff3
Wood crane's-bill	<i>Geranium sylvaticum</i>	Ff4a
An eyebright	<i>Euphrasia arctica</i> ssp. <i>borealis</i>	Ff4a
Melancholy thistle	<i>Cirsium heterophyllum</i>	Ff4b
Grass-of-Parnassus	<i>Parnassia palustris</i>	Ff4a
Saw-wort	<i>Serratula tinctoria</i>	Ff4b

Globeflower	Trollius europaeus	Ff4b
Ferns:		
Moonwort	Botrychium lunaria	Ff4a
Adderstongue	Ophioglossum vulgatum	

Objectives, targets and proposed actions for species-rich neutral grassland in Lancashire

Broad Objective:	A. Halt the loss of existing species-rich neutral grassland (current area estimated at c.860 ha)			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Confirm current extent of habitat & location of sites and keep under review.	1. Establish a definitive database of all sites over 0.5 ha with species-rich grassland to include estimates of total area of resource on each site (High)	LCC, WT EN	S	RM
	2. Annually review BHS series and add/delete sites on database as appropriate (High)	LCC, WT, EN	O	RM
	3. Continue SSSI monitoring and amend database as appropriate. (High)	EN	O	RM

	4. By 2005 re-survey all BHS grassland sites to identify the scale of any losses within the county since 1984. (High)	BHS P/ship, WT, EN, LCC	L	RM
	5. By 2005 liaise with all grassland BHS landowners and land managers to promote the importance of species-rich grassland. (High)	BHSP, FWAG, MAFF, EN	O	A, LM
	6. Lobby for reform of CAP and for more competitive rates on agri-environment schemes. (High)	WT, RSPB, EN, NFU, CLA, FWAG	O	PR
3. Prevent loss of species-rich grassland through inappropriate development.	1. Ensure that all relevant planning authorities are aware of important sites and have development policies that take account of these (Medium)	LCC, LAs, EN, BHS Partners	O	SS

Broad Objective:	B. Achieve favourable conservation status on all neutral grassland SSSIs by 2010 and all BHS-qualifying sites by 2015.			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Ensure that management of grassland SSSIs is contributing towards achieving favourable status on all sites by 2010.	1. Assess the condition of all grassland SSSIs by 2002. (High)	EN	M	RM
	2. Promote the uptake of Countryside Stewardship by SSSI landowners / managers (High)	EN, Land-owners, managers	O	A,PR
	3. Seek management agreements through WES on all remaining SSSIs in unfavourable condition to establish positive management by 2005. (High)	EN, MAFF	L	LM

2. Achieve sympathetic management of at least 30% of species-rich grassland BHSs by 2005 and 100% by 2015.	1. Continue to offer management advice to BHS owners and managers in order to promote grazing, land-drainage and hay-cutting practices that benefit nature conservation. (High)	BHSP, FWAG, MAFF, EN, HA	O	A, LM
	2. Continue to offer management advice to BHS owners and managers in order to promote land management practices that benefit nature conservation. (High)	BHSP, FWAG, MAFF, EN	O	A, LM
	3. Promote the uptake of Countryside Stewardship by landowners / managers (Medium)	BHSP, FWAG, MAFF, LCC	O	A, PR
	4. Lobby for reform of CAP and for more competitive rates on agri-environment schemes. (Medium)	WT, RSPB, EN, NFU, CLA	O	PR
	5. Use planning obligations through the statutory planning process to require appropriate management of sites associated with development proposals. (Medium)	LCC, LAs, WT,	O	A, LM

Broad Objective:	C. Re-establish or restore 10.5 ha of new species-rich lowland meadow and 7.5 ha of species-rich upland meadow by 2010**. (Total UK target for neutral grassland is 550 ha)			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Initiate re-establishment/ restoration schemes.	1. Identify potential sites and select candidates for habitat schemes (High)	EN, LCC, WT, HA	S/M	LM
	2. Draw up a plan and implement. (High)	EN, LCC, WT, FWAG, MAFF, HA	M	LM

** - Concentrating on sites/localities which (a) have been lost from the Grassland Inventory for Lancashire (post-1980 survey data); or (b) would extend or link existing sites. Habitat re-creation should be achieved through establishing restoration management, possibly supplemented in some cases by re-introduction of native/local seed. Sites re-seeded with commercial 'wildflower' mixes will not be recognised as restoration projects for the purposes of this HAP.

The targets for restoration should be apportioned between the various Natural Areas in Lancashire in the following way:

NATURAL AREA	HABITAT TYPE	AREA (ha)
Lancashire Plain & Valleys	Lowland meadow	4
Forest of Bowland	Lowland meadow	2
	Upland meadow	5
South Pennines	Lowland meadow	2.5
	Upland meadow	2.5
Morecambe Bay Limestones	Lowland meadow	2
TOTAL		18

Objectives, targets and proposed actions for species-rich neutral grassland in Lancashire

Broad Objective:	D. Promote the importance of the habitat and its conservation to the general public			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Promote the species-rich grassland as a 'flagship' habitat to highlight the decline in certain key habitat types.	1. Work with community-based groups to raise awareness of grassland conservation issues amongst the general public and landowners. (Medium)	WT, EN,	O	PR
	2. Encourage public participation in monitoring certain sites. (Medium)	WT, EN	O	PR, RM

	3. Include information about species-rich grassland in press releases, newsletters and leaflets. (Low)	EN, WT	O	PR, RM
--	--	--------	---	--------

Other Action Plans:

- Calcareous Grassland
- Lapwing SAP
- Skylark SAP
- Twite SAP
- Brown hare SAP

References & additional reading:

1. UK BAP Steering Group (1998) UK Biodiversity Group Tranche 2 Action Plans: Volume II - terrestrial & freshwater habitats. Pp 39 - 49; Lowland meadows and Upland hay meadows. English Nature, Peterborough.
2. Rodwell, J.S. (ed) (1992) British Plant Communities: Volume 3 - Grasslands & montane communities. Cambridge University Press.
3. Morries, G., Jepson, P. & Bruce, N. (1998) Biological Heritage Sites: Guidelines for site Selection. Lancashire County Council/Lancashire Wildlife Trust/English Nature.
4. English Nature (1994) Grassland Inventory: Lancashire. English Nature.
5. P G Kelly & T R Harwood (1993) Wildlife Habitats in Lancashire: report of the Phase 1 Habitat Survey of Lancashire 1988 - 1992. Lancashire County Council/English Nature.
6. Regional Biodiversity Steering Group for North West England (1999) A Biodiversity Audit of North West England.
7. English Nature (1998) Forest of Bowland - Natural Area Profile. English Nature, Peterborough.
8. English Nature (1998) Lancashire Plain and Valleys - Natural Area Profile. English Nature, Peterborough.
9. English Nature (1999) Sustainable Development & Regional Biodiversity. Indicators for the North West. English Nature, Peterborough.
10. Cooch, S. & Rodwell, J. (1996) Preliminary Study of Key Issues in Relation to Northern Hay meadows. WWF UK.
11. Taylor, I. (1986) A botanical survey of mesotrophic grassland in Lancashire. Nature Conservancy Council (NW), Wigan.
12. Stewart, A. (1993) Neutral grassland in Lancashire. English Nature, Wigan.
13. Dayton, N. (1997) Lancashire neutral grassland survey. English Nature, Wigan.
14. Jerram, R. (1999) Lancashire and Greater Manchester neutral grassland survey. English Nature, Wigan.
15. English Nature (2000) Forest of Bowland Natural Area leaflet. English Nature, Wigan.

16. English Nature (2001) Lancashire Plains & Valleys Natural Area leaflet. English Nature, Wigan.

Date: April 2001