

**Table 2 Priority areas of research/information requirements**

Subject	Priority
● Determination of acceptable practice in relation to the use of farmyard manure on hay meadows.	1
● Impact of intensive horse grazing on meadows.	1
● The relationship between hydrology and the species composition of wet grassland.	1
● Agricultural productivity studies of semi-natural grassland (eg livestock performance, hay yields).	1
● Techniques of, and research into, effective grassland restoration and creation (eg investigation of techniques for the reduction of phosphate in soils and nutrient status of soils beneath semi-natural grasslands etc).	2
● Appraisal of the potential long-term impacts of fixing rigid hay cutting dates on meadows on the populations of perennial grassland species.	3
● Review the autecology and habitat management requirements of priority plant species associated with lowland grassland.	2

The above are all aimed at refining sustainable management practices and facilitating the restoration and creation of grassland.

1 = high: immediate need

2 = intermediate - required over next 2-3 years

3 = long-term need

**Table 3 Some priority targets for grassland conservation for the year 2000**

	Theme (Table 1)
● Ensure all site management units within lowland grassland SSSIs are receiving management which will deliver site nature conservation objectives and are thus 'in favourable conservation status' (Annex 3)	1
● Seek to ensure that substantial <sup>4</sup> loss or damage to semi-natural grassland of high nature conservation value within statutorily protected sites only occurs in circumstances where there is an overriding national economic or social requirement for alternative land uses.	1
● Seek to ensure that all types of grasslands of high nature conservation value are covered by appropriate Environmental Land Management Schemes.	2.3
● Seek to ensure the creation of a minimum of 6000 ha of new grassland to enhance biodiversity.	2.3
● Complete the SSSI designation of grassland sites identified by the review by Natural Area (see Table 1).	1
● Establish a European grassland forum or network.	3.1, 4
● Complete designation of all candidate grassland SPA/Ramsar sites.	1
● Initiate or prompt action on the research projects specified in Table 2.	3.1
● Fill major gaps in knowledge of the acid and wet neutral grassland resource.	3.2
● Complete and/or review statements of intent with key organisations owning and managing tracts of lowland grassland of conservation significance.	2.4
● Seek to ensure that a minimum of five pilot schemes to ensure the practicality of grassland management (eg flying flocks, farmer networks etc) are established in appropriate Natural Areas.	2.4

<sup>4</sup> >1% of grassland site area or >1% of total resource of a grassland type, whichever is smaller.

## 5. Summary and Conclusions

English Nature believes that the conservation and enhancement of England's lowland grasslands in a sustainable manner is a priority for continuing concerted action. This action plan offers a framework and strategic direction for conservation of the grassland resource for the remainder of the decade.

## 6. Key References

- BROWN, A.F. & GRICE, P.V. 1993. Birds in England: context and priorities. Peterborough: English Nature Research Reports.
- CROFTS, A. & JEFFERSON, R.G. 1994. *The Lowland Grassland Management Handbook*. Peterborough: English Nature/The Wildlife Trusts.
- DEPARTMENT OF THE ENVIRONMENT. 1994. Biodiversity. *The UK Action Plan*. London: HMSO.
- ENGLISH NATURE. 1993a. English Nature's strategy for the 1990s. Peterborough: English Nature.
- ENGLISH NATURE. 1993b. *National Nature Reserves. The future*. An internal policy statement. Peterborough: English Nature.
- ENGLISH NATURE. 1993c. Strategy for the 1990s. Natural Areas: a consultation paper. Peterborough: English Nature.
- ENGLISH NATURE, 1994. *Corporate Plan 1995-1998*. Peterborough: English Nature.
- ENGLISH NATURE. 1995. *Corporate Plan 1996-1999*. Peterborough: English Nature.
- HOUSDEN, S., THOMAS, G., BIBBY, C. & PORTER, R. 1991. Towards a nature conservation strategy for bird habitats in Britain. *RSPB Conservation Review*, 5: 9-16.
- JEFFERSON, R.G. & ROBERTSON, H.J. 1996. Lowland grassland: wildlife value and conservation status. Peterborough: *English Nature Research Reports*, No. 169.
- MOFFAT, A.M. ed. 1995. Priorities for habitat conservation in England. Peterborough: *English Nature Research Reports*, No. 97.
- PALMER, M. 1994. *A strategic framework for the conservation of the native flora of Great Britain and Northern Ireland*. Peterborough: Joint Nature Conservation Committee/Department of the Environment for Northern Ireland.
- RATCLIFFE, D.A. ed. 1977. *A Nature Conservation Review*. Cambridge: Cambridge University Press.
- SKETCH, C. 1995. National SSSI sample survey of Lowland grasslands: pilot project. Peterborough: *English Nature Research Reports*, No. 130.
- THE UK STEERING GROUP. 1995. *Biodiversity; the UK Steering Group Report*. Volumes 1 and 2. London: HMSO.

## Annex 1a. Lowland grassland types listed on Annex 1 of the Habitats and Species Directive

1.	Semi-natural dry grasslands and scrubland facies on calcareous substrates ( <i>Festuco-Brometalia</i> ) (chalk and limestone/calcareous grassland).
2.	Lowland hay meadows ( <i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i> ) (Neutral grassland-alluvial meadow).
3.	Mountain hay meadows (British types with <i>Geranium sylvaticum</i> ).
4.	Calaminarian grasslands (heavy metal grassland).
5.	<i>Molinia</i> meadows on chalk and clay ( <i>Eu-Molinia</i> ) (fen meadows/wet acid grassland) (NVC communities M24 and M26).

**Annex 1b. Prioritization of bird habitats in England**  
(habitats covered by the action plan are stippled)

Bird habitat	Priority Rating
Montane	Low
Upland heaths	Medium
Upland mires	Medium
Uplands grasslands	Low
Broad leaved woods/scrub	Medium
Lowland heath	High
Dry grassland	Medium
Swamps/fen/carr	High
Lowland wet grassland	High
Marine	Low
Inshore waters	Low
Sea cliffs and rocks	Low
Intertidal flats	High
Saltmarsh	High
Shingle and sand	Medium
Coastal lagoons	Medium
Oligo/mesotrophic waters	Low
Eutrophic waters	Medium
Rivers and streams	Low
Plantations	Low
Extraction pits and reservoirs	Low
Arable	Medium
Improved pastures and leys	Medium
Built up areas	Low

Priority ranking was scored according to the following criteria: Area of habitat, past losses, predicted losses and number of priority bird species.

Source: Brown, A.F. & Grice, P.V. 1993. Birds in England: context and priorities Peterborough : English Nature Research Reports No. 62.

## Annex 1c. Grassland types supporting priority species or important species assemblages

(see Annex 2 for National Vegetation Classification equivalents)

1.	Internationally important assemblages of lower plants (from Palmer 1994) <ul style="list-style-type: none"> <li>● Bryophyte and lichen communities of chalk grassland and chalk cliffs.</li> <li>● Lowland lichen-rich (grass) heath.</li> </ul>
2.	Priority species assemblages listed on Annex 1 of the EC Habitats and Species Directive <ul style="list-style-type: none"> <li>● Dry calcareous grasslands (<i>Festuco-Brometalia</i>) important for orchids.</li> </ul>
3.	Lowland grassland plant species listed on Annex II & IV of the Habitats & Species Directive as requiring protection <ul style="list-style-type: none"> <li>● Carboniferous limestone grassland (Lady's slipper <i>Cypripedium calceolus</i>)</li> <li>● Chalk and limestone grassland (Early gentian <i>Gentianella anglica</i>)</li> <li>● Wet grassland (creeping marshwort <i>Apium repens</i>)</li> </ul>
4.	Lowland grassland invertebrate species listed on Annex II of the EC Habitats and Species Directive. <ul style="list-style-type: none"> <li>● Calcareous grassland, fen meadows (Marsh fritillary <i>Euphydryas aurinia</i>)</li> </ul>

## Annex 1d. Priority for action for English habitats

(A = highest priority, E = lowest). Habitats covered by the action plan are stippled.

Habitat	Habitat priority
Brackish lagoons	A
Chalk cliffs	
Dystrophic standing waters	
Lowland neutral meadow and pasture	
Mesotrophic running waters	
Mesotrophic standing waters	
Shingle structures	
Ancient parkland and wood pasture	B
Eutrophic standing waters	
Lowland dry heath	
Lowland wet grassland (total)	
Lowland wet grassland (unimproved)	
Lowland wet heath	
Maritime heath	
Raised mire	
Soligenous base poor fen (lowland)	
Topogenous base rich fen	
Upland blanket mire	
Upland calcareous grasslands	
Upland dwarf shrub	
Beech/yew woods	C
Dune wetlands	
Eastern oakwoods	
Eutrophic running waters	
Fen meadow	
Intertidal sand and mudflats	
Limestone pavements	
Lowland calcareous grassland	
Lowland dry acid grassland	
Mixed deciduous	
Montane	
Oligotrophic standing waters	
Saltmarsh	
Soligenous base rich fen (lowland)	
Topogenous base poor fen	
Unprotected soft cliffs	
Western oakwoods	
Coastal dunes	D
Hard cliffs	
Hedges	
Maritime grasslands	
Oligotrophic running waters	
Wet woodland	
Arable	E
Coniferous plantations	
Gravel pits	
Improved/semi-proved grassland	
Other woods	
Reservoirs	
Running waters (degraded)	
Standing waters (degraded)	
Upland acidic grassland	

Priority ranking was scored according to the following criteria: International importance, percentage of GB total, area in England, loss since 1940, threat, naturalness, degree of fragmentation and patch size.

Source: MOFFAT, A.M. ed. 1994. Priorities for habitat conservation in England: Peterborough: *English Nature Research Reports*, No. 97.

## Annex 2. Types of lowland grassland covered by Action Plan

1. Semi-natural grasslands <sup>5</sup>	
Neutral grasslands	National Vegetation Classification equivalent(s)
<p>Coarse grassland Tall herb grassland Mountain/northern Dales hay meadow Flood/alluvial meadow Clay/loam pasture, Old meadow/pasture Water meadow, flood pasture Inundation grassland Inundation grassland, washland, alluvial meadow</p> <p><b>Calcareous grasslands (dry grasslands)</b></p> <p>Limestone grassland Chalk/limestone grassland</p> <p>(Magnesian) limestone grassland Carboniferous limestone grassland (lowland examples) Calaminarian grassland (heavy metal grassland)</p> <p><b>Acid grasslands</b></p> <p>Grass-heath Grass-heath Grass-heath Acid grassland</p> <p><b>Fen meadows ('mires')</b></p> <p>Rich fen meadow Rush pasture, wet acid grassland Wet acid grassland Wet acid grassland Mixed-fen Tall herb fen</p>	<p>MG1 MG2 MG3 MG4 MG5 MG8 MG11 MG13</p> <p>CG1 CG2, CG3, CG4, CG5, CG6, CG7</p> <p>CG8 CG9 OV37</p> <p>U1 U2 U3 U4</p> <p>M22 M23 M24 M25 M26 M27</p>
2. Reverted or semi-improved grassland	
Semi-improved (neutral) grassland Rye grass pastures/leys Marshy grassland Rush pasture	MG6 MG7 MG9 MG10
3. Other types	
Lowland wet grassland/grazing marsh/washland	Can include NVC grassland types MG4, MG6, MG7, MG8, MG9, MG10, MG11, MG12, MG13, Fen meadows: M22, M23, M24 mire types and some swamp communities
Culm grasslands/Rhos pastures	Includes MG5, M16 (wet heath) M23, M24, M25 and M27

<sup>5</sup> Scrub often occurs on lowland grassland. Where it is of high nature conservation value, it should be considered as an integral part of the grassland habitat.

### **Annex 3. Definition of 'Environmentally sustainable agriculture'**

'Environmentally sustainable agriculture' seeks to maintain and enhance the natural qualities and characteristics of the farmed environment and its capacity to fulfil its full range of functions, including the maintenance of biodiversity.

In detail, environmentally sustainable agriculture entails conformity to:

**a. Biodiversity objectives**

- the conservation and positive management of semi-natural habitats and species on farmland regarded as comprising Critical Natural Capital;
- the conservation and expansion of re-creatable and new habitats of wildlife value in appropriate locations together with the conservation and enhancement of characteristic farmland species which jointly comprise the stock of Grassland Natural Assets.

**b. Landscape objectives**

- the conservation and enhancement of the full range and diversity of traditional farmland landscapes (including landscape re-creation) in support of, and where compatible with, biodiversity objectives defined above.

**c. Natural resource objectives**

- the maintenance/improvement of the quality of environmental media (soil, water and atmosphere) through appropriate crop/livestock practices in support of sustainable food production and biodiversity objectives and social objectives;

**d. Social objectives**

- the retention and extension of the wide range of skills within local rural communities which are needed for environmental and sustainable food production.

**e. Economic objectives**

- The retention of viable rural communities and land use businesses in support of biodiversity objectives and sustainable food production.



## Annex 4. Definition of a favourable conservation status

The conservation status of a natural habitat will be taken as 'favourable' when:

- its natural range and areas it covers within that range are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable as defined:

**Conservation status of a species** means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within a specified geographical areas.

The conservation status will be taken as 'favourable' when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

**Source:** The Council of the European Communities 1992. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitat and of wild fauna and flora. Article 1.