

HABITAT ACTION PLAN FOR LOWLAND CALCAREOUS GRASSLAND

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HABITAT DEFINITION

Lowland calcareous grasslands develop on shallow lime-rich soils generally overlying limestone rocks, including chalk, and are largely restricted to the warmer and drier climates of the southern and eastern areas of the United Kingdom. They are typically managed as components of pastoral or mixed farming systems, supporting sheep, cattle or sometimes horses; a few examples are cut for hay.

In Nottinghamshire, calcareous grasslands are found mainly on the shallow lime-rich soils of the Magnesian Limestone ridge which occurs in a narrow band in the west of the County. Equivalent calcareous grasslands also occur outside the Magnesian Limestone area where lime-rich industrial wastes (such as gypsum) or imported natural limestone have been deposited in places such as railway embankments.

Calcareous grasslands in Nottinghamshire include the National Vegetation Classification communities typically CG5, with CG2, CG3 and CG4 also present. These grasslands are often characterised by the occurrence (and often dominance) of upright brome *Bromus erectus* and tor grass *Brachypodium pinnatum*. They are often species-rich and support a range of typical species including sheep's fescue *Festuca ovina*, salad burnet *Sanguisorba minor*, quaking grass *Briza media*, greater knapweed *Centaurea scabiosa*, bird's foot trefoil *Lotus corniculatus* and creeping cinquefoil *Potentilla reptans*. Rarer species include stemless thistle *Cirsium acule*, fragrant orchid *Gymnadenia conopsea*, pyramidal orchid *Anacamptis pyramidalis*, common rockrose *Helianthemum nummularium* and small scabious *Scabiosa columbaria*.

Scrub is frequently present, and at appropriate levels provides an important habitat, providing scrub edge conditions and shelter for invertebrates and thereby increasing the diversity of species found. Calcareous grasslands provide suitable habitat for a wide variety of animals including small mammals, reptiles, moths and butterflies such as the six-belted clearwing *Bembecia scopigera*, grass rivulet *Perizoma albulata albulata* and grizzled skipper *Pyrgus malvae*. These grasslands also provide feeding or breeding habitat for a number of scarce or declining birds.

CURRENT STATUS

Between 1930 and 1984, unimproved lowland grassland of all types in England and Wales decreased by an estimated 97% as a result of agricultural intensification. Losses continued during the 1980s and 90s, and were recorded at 2-10% per annum in some counties. The East Midlands has had a particularly high rate of loss, and although the current extent is not accurately known, it is estimated that Nottinghamshire's unimproved grassland has declined by 97-99% since 1930.

The extent of lowland calcareous grassland in United Kingdom has mirrored this general loss, with a sharp decline over the last 50 years as a high proportion of lowland calcareous grasslands have been 'improved' by the use of fertilisers and/or reseeding with rye grass. Whilst there are no comprehensive figures to quantify this loss, a sample of chalk sites in England surveyed in 1966 and 1980 showed a 20% decline during that period, and an assessment of chalk grassland in Dorset found that over 50% had been lost between the mid-1950s and the early 1990s.

Current estimates put the amount of lowland calcareous grassland remaining in the United Kingdom at around 33,000 to 41,000 ha. The bulk of the resource is found on chalk (25,000 to 32,000 ha), with major concentrations in Wiltshire, Dorset and the South Downs. In Nottinghamshire, a small number of traditional lowland calcareous grasslands survive as enclosed pastures and in places such as escarpments and slopes where conversion to intensive agriculture is difficult. They are also found on roadside verges and in railway cuttings and former quarries. The total extent of the resource in the county is approximately 160 hectares, with the distribution shown in Annex 1.

Calcareous grassland is an internationally rare and threatened habitat, and some types are identified as a priority under European law.

THREATS

The main factors currently affecting Nottinghamshire's lowland calcareous grassland are:

- Clearance of grassland for industrial and urban development, including infrastructure development.
- Increasing habitat fragmentation. Many calcareous grassland sites are small, making them vulnerable to loss and damage.
- Agricultural intensification by the use of fertilisers, herbicides, and conversion to high productivity grass species or arable crops.
- The lack of available livestock, leading to the invasion and spread of coarse grasses and herbs, trees and shrubs.
- Quarrying for limestone and subsequent land fill operations.
- Air pollution, in particular soil enrichment due to nitrogen deposition.

- Lack of incentives for private landowners to manage small grassland blocks to maintain their important characteristics, especially combining nature conservation with other management objectives.

CURRENT INITIATIVES - EXAMPLES

- A UK Habitat Action Plan for Lowland Calcareous Grassland is in place.
- The Creswell Magnesian Limestone Strategy Group is preparing a strategy to protect and re-create habitats throughout those parts of Nottinghamshire, Derbyshire, and south Yorkshire lying in the Magnesian Limestone area.
- Nottingham City Council manages important areas of calcareous grassland at Broxtowe Country Park and at Bulwell Hall Park.
- Nottinghamshire County Council manages important areas of calcareous grassland on the Linby Trails, Teversal Trails and at a number of Notified Road Verges.
- Nottinghamshire County Council and the Forestry Commission are encouraging the natural regeneration of calcareous grassland as part of the restoration of colliery spoil tips where they occur on the Magnesian Limestone.
- Mansfield District Council has a district wide Nature Conservation Strategy which promotes the conservation and management of calcareous grassland.
- Selected areas of calcareous grassland are managed through Higher Level Stewardship and Reserves Enhancement Schemes, or through Natural England management agreements.
- The Nottinghamshire Wildlife Trust manages approximately 12ha of calcareous grassland on their reserves (Annesley Woodhouse Quarry, Bentinck Banks, Watnall Cutting, Teversal Pastures, and Clarborough Tunnel etc.).
- Six Sites of Special Scientific Interest (SSSI) have been designated for which the primary interest is calcareous grassland. Other SSSIs also support some calcareous grassland.
- A number of calcareous grasslands are designated as Sites of Importance for Nature Conservation (SINCs).
- Natural England has compiled a provisional grassland inventory for Nottinghamshire.

TARGETS

The following targets were agreed by the HAP target review group on 16th February 2006.

Target Type	Target Text	Units	2005 Baseline	2010 Target	2015 Target
Maintain Extent	Maintain the extent of all existing lowland calcareous grassland.	Ha	200	200	325
Achieve Condition	Maintain and improve by management existing lowland calcareous grassland.	Ha	54 (27%, existing habitat in favourable condition)	140 (70% of total habitat resource)	200 (100% of 2005 baseline resource)
Restoration	Improve the condition of relict habitat so that it qualifies as lowland calcareous grassland.	Ha		125	50 (175ha in total since 2005 baseline)
Expansion	Encourage the re-establishment and increase the area of lowland calcareous grassland.	Ha			

(N.B. these figures will be updated as new targets are set during 2011)

Baseline data was based on a survey of grassland sites of SINC status by the Nottinghamshire Biological and Geological Record Centre (NBGRC), a survey of SSSI data by Natural England, and an estimate of unaccounted for sites.

It is possible that some lowland calcareous grassland may be found in Higher Level Stewardship sites which could be accounted for, however the majority of sites will be on public land. The breakdown of baseline data is as follows:

(in ha)	Favourable Condition	Unfavourable Condition	Resource Total
SSSI Sites	38	21	59
Non SSSI Sites	12	73	85
Unaccounted for sites	4	52	56
Total	54 (27%)	146 (73%)	200

Expansion and Restoration targets were combined and based on an assumption of planned restoration projects and objective targets. The group agreed that they should accept no loss of resource. Planned projects counted included Gotham, by British Gypsum and Kilvington, Sutton Landfill, Cuckney and Woodhouse sties. 2015 'maintain

extent' target is a cumulative figure based on achieving 2010 restoration/expansion targets.

PROPOSED ACTION

Policy and legislation

1. Ensure the incorporation of relevant international and national law, policies and guidance into all plans and policies relating to the protection, enhancement and management of lowland calcareous grassland habitat.

ACTION: Government Agencies, Local Authorities, NGO's.

2. Through planning control or other land use consultation processes, allow no further loss of areas of lowland calcareous grassland habitat and seek opportunities to enhance existing areas and create new areas through approved development.

ACTION: Government Agencies, Local Authorities, NGO's.

3. Ensure agri-environment, forestry and other funding schemes include appropriate management regimes and design measures to suit maintenance of this habitat as well as local nature conservation needs.

ACTION: Government Agencies.

Site safeguard and management

4. Review the extent of SSSI coverage of grassland habitat and consider notifying further sites as necessary.

ACTION: Government Agencies.

5. Designate SINC's and declare Local Nature Reserves on appropriate areas of habitat or instigate other appropriate measures for their protection.

ACTION: Government Agencies, Local Authorities, NGO's.

6. Promote the uptake of positive management with owners of SSSIs, LNRs, SINC's and any other areas of lowland calcareous grassland habitat.

ACTION: Government Agencies, Local Authorities, NGO's.

7. Carry out appropriate habitat management on sites controlled by BAP partners.

ACTION: Government Agencies, Local Authorities, NGO's.

8. Ensure sites containing lowland calcareous grassland habitat have appropriate management plans that are working towards improving site management and condition

ACTION: Government Agencies, Local Authorities, NGO's.

9. Acquire land to ensure good habitat management or to create habitat.

ACTION: NGO's.

Advisory

10. Provide formal or informal training in management techniques for lowland calcareous grassland habitat to land managers, site wardens, volunteers, etc.

ACTION: Government Agencies, Local Authorities, NGO's.

11. Establish demonstration sites or projects to demonstrate/publicise good habitat management techniques.

ACTION: Government Agencies, Local Authorities, NGO's.

Future research and monitoring

12. Establish and maintain a monitoring programme (a site register) to determine progress towards county HAP targets.

ACTION: Government Agencies, Local Authorities, NGO's.

13. Ensure that areas of lowland calcareous grassland habitat are periodically resurveyed to establish extent and condition. Update resulting habitat inventory every 5 years and revise targets and HAPs if necessary.

ACTION: Government Agencies, Local Authorities, NGO's.

Communications and publicity

14. Improve public awareness and appreciation of lowland calcareous grassland habitat by providing appropriate interpretation, education and access (where appropriate).

ACTION: Government Agencies, Local Authorities, NGO's.

15. Improve awareness of the value of, and appropriate management techniques for lowland calcareous grassland habitat among site owners and occupiers.

ACTION: Government Agencies, Local Authorities, NGO's.

WHAT YOU CAN DO

- Create or restore a species-rich limestone grassland on your land. Advice on management is available from various sources.
- If you live in a limestone area, encourage those responsible for managing your local churchyard, park or roadside verges to set aside an area to be managed for wildflowers.
- Undertake surveys and research that will contribute to the targets of the Action Plan.

SPECIES LIST

The following are examples of Species of Conservation Concern (Appendix A) which are likely to benefit from this action plan:

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|-----------------------------|----------------------------------|
| ➤ Brown hare | <i>Lepus europaeus</i> |
| ➤ Common shrew | <i>Sorex araneus</i> |
| ➤ Stoat | <i>Mustela erminea</i> |
| ➤ Barn owl | <i>Tyto alba</i> |
| ➤ Skylark | <i>Alauda arvensis</i> |
| ➤ Marbled coronet moth | <i>Hadena confusa</i> |
| ➤ Six-belted clearwing moth | <i>Bembecia scopigera</i> |
| ➤ Galium carpet | <i>Epirrhoe galiata</i> |
| ➤ Grass rivulet | <i>Perizoma albulata</i> |
| ➤ Tawny shears | <i>Hadena perplexa perplexa</i> |
| ➤ Grizzled skipper | <i>Pyrgus malvae</i> |
| ➤ Autumn gentian | <i>Gentianella amarelle agg.</i> |
| ➤ Clustered bellflower | <i>Campanula glomerata</i> |

The SoCC is currently under review and when this process is complete it will influence all the Habitat Action Plan species lists.

ANNEX 1 – distribution of Lowland Calcareous Grassland in Nottinghamshire

[map to be inserted when available]