



## LOWLAND CALCAREOUS GRASSLAND

### 1. INTRODUCTION

Lowland calcareous grasslands are developed on shallow lime-rich soils generally overlying limestone rocks, including chalk. These grasslands are now largely found on distinct topographic features such as escarpments or dry valley slopes and sometimes on ancient earthworks in landscapes strongly influenced by the underlying limestone geology. More rarely, large remnant examples occur on flatter topography such as in Breckland and on Salisbury Plain. 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. Calcareous grassland in Warwickshire is mainly found in the south and east of the county in association with disused and active quarries or cuttings associated with railway lines or canals.



Salad Burnet © Natural England

Unimproved and semi-improved limestone grasslands include a range of plant communities in which lime-tolerant (calcicolous) plants are characteristic. Typical species include common centuary, yellow-wort, kidney vetch and dwarf thistle. The particular community which is characteristic of the Cotswolds is the *Upright Brome - Tor Grass community* (CG5). There are also small pockets of CG5 and *Sheep's-Fescue - Meadow Oat Grass community* (CG2) grassland on the older Triassic-Jurassic limestones which occur on the lower land immediately north of the Cotswolds. These community types, and establishing calcareous grasslands, are found in many of the quarries and cuttings associated with these areas. More ancient examples are now very rare but include Oxhouse Farm, Lighthorne Heath, Grove Hill, Frankton fields and Wilmcote Rough.

Nationally, unimproved and semi-improved limestone grasslands support a very rich flora and many nationally rare and scarce species such as early gentian and pasque flower, although no such nationally scarce species occur in Warwickshire's calcareous grassland. Calcareous grassland is also extremely important for invertebrates, with perhaps in excess of 500 hundred strongly calcicolous Warwickshire species. The Cotswolds hold nationally important populations of species such as heath snail, which occurs on a number of sites in the south of the county. Several declining butterflies are dependent on limestone grasslands e.g. the small blue and grizzled skipper; also dozens of Nationally Threatened, Nationally Scarce or Regionally Scarce flies, bees, wasps, moths, beetles and bugs. Scrub and secondary woodland is frequently associated with unimproved limestone grassland. Although scrub encroachment can be a significant problem, where managed appropriately, scrub can provide important habitats for a variety of species – and some insect species show a strong preference for calcareous scrub as opposed to scrub in general. Scrub-edge conditions are required by species such as lesser whitethroat, fly orchid and many species of moths (e.g. chalk carpet). Scrub also provides shelter for many warmth-loving invertebrates associated with limestone grassland.

2.	OUR OBJECTIVES & TARGETS	Target
A.	To maintain the current extent of all lowland calcareous grassland above 0.5ha	2004-2015
B.	To improve the condition of all lowland calcareous grassland above 0.25ha, that is currently in unfavourable condition to favourable or improving	by 2006
C.	To increase the extent of the habitat by creating an additional 10ha of lowland calcareous grassland, including one site of at least 5ha.	by 2015
D.	To promote good management practice, to share knowledge and to forge working partnerships with all key landowners	2004-2015
E.	To enhance public appreciation of lowland calcareous grassland	2004-2015
F.	To update the Habitat Biodiversity Audit with all known lowland calcareous grassland sites	by 2004

#### ASSOCIATED HABITAT PLANS

- Lowland Neutral Grassland
- Quarries & Gravel Pits
- Roadside Verges
- Scrub & Carr

#### ASSOCIATED SPECIES PLANS

- Small Blue
- Chalk Carpet
- Dotted Bee-fly
- Rare Bumblebees

### 3. NATIONAL BAP OBJECTIVES AND TARGETS

- *Arrest the depletion of lowland calcareous grassland throughout the UK.*
- *Within SSSIs, initiate rehabilitation management for all significant stands of lowland calcareous grassland in unfavourable condition by 2005.*
- *Achieve favourable status for all significant stands of lowland calcareous grassland within SSSIs by 2010.*
- *For stands outside SSSIs, secure favourable condition for over 30% of the resource by 2005.*

## Warwickshire, Coventry and Solihull Local Biodiversity Action Plan

- *For stands outside SSSIs, secure favourable condition over as near to 100% as is practicable by 2015.*
- *Attempt to re-establish 1000ha of lowland calcareous grassland of wildlife value at carefully targeted sites by 2010.*

(Above are Revised targets as of 2003, which differ from those originally published on the UK Biodiversity Website)

#### 4. CURRENT STATUS

Calcareous grassland in the sub-region is largely confined to the south and east of Warwickshire within the Cotswolds and Feldon areas (and with limited areas in the south of the Arden). The majority has a relatively recent origin, falling within old or partially worked quarries, where disturbance has ceased some time ago. Further more important examples occur in cuttings. A little exists within agricultural settings (often on steeper ground that has been left out of improvement schemes) and along some road verges and railway or canal cuttings. Scrub invasion is a common problem at many sites, with rabbits often playing a crucial role in maintaining open grassland.

Nationally, the cover of calcareous grassland has suffered a sharp decline over the last 50 years. Such grasslands are highly susceptible to changes in, or cessation of, management. It is estimated that before 1935, unimproved limestone grassland covered over 40% of the Cotswolds, this has sharply declined to around 1.5% today. This loss has been driven predominantly by changes in agricultural policy, leading to conversion of grasslands to arable crops, artificial improvement and reseeded (improved leys).

Figures from the Habitat Biodiversity Audit suggest a figure of 27.6ha for unimproved and 35.3 for improved calcareous grassland, giving a total estimate for Warwickshire, Coventry and Solihull of 62.9ha. Five Warwickshire SSSIs have calcareous grassland but this is mostly only a small proportion of each site, the remainder being scrub and woodland.

Natural England estimates the calcareous grassland to be only about 28ha of the SSSIs' 118ha.. It is also developing gradually on the spoil heaps in the old limestone quarries that extend from Rugby in the north to Cross Hands Quarry at the southern tip of Warwickshire. Important examples outside of SSSIs include Lighthorne Heath and the nearby Gaydon test site, Grove Hill, the Bishops Hill - Bishops Bowl complex and Southam Quarry.

New lowland calcareous grassland creation schemes may be possible based on present or proposed new nature reserves, or as part of quarry restoration schemes.

Recent entomological surveys have shown that the two most important sites for calcicolous insects are the Bishops Bowl – Bishops Hill complex and Southam quarry, not currently SSSIs but appear to support considerable national significance (the latter is the richest bumblebee site in the Midlands today).

Site	Calcareous grassland area (ha)	Total site area (ha)	Associated habitat	Site status
Copmill Hill	2.9	11.5	Scrub	SSSI
Harbury Railway Cutting	2.2	33.4	Scrub and woodland	SSSI
Oxhouse Farm	8.1	17.4	Scrub	SSSI
Stockton Railway Cutting & Quarry	7.4	24.1	Scrub and bare ground	SSSI
Ufton Fields	7.3	32.5	Scrub and woodland	SSSI
<b>TOTAL</b>	<b>27.9</b>	<b>118.9</b>		

**Table 1. Natural England estimates of calcareous grassland on SSSIs in Warwickshire**

#### 4.1 Legal and Policy Status

Only about 44% of the known area is on Sites of Special Scientific Interest (SSSI). The largest area of lowland calcareous grassland on an SSSI (c. 8ha) is at Oxhouse Farm, with other similar areas at Stockton Railway Cutting and (Nelsons) Quarry and at Ufton Fields.

Work within the LBAP area is currently underway to classify other lowland calcareous grasslands as Sites of Importance for Nature Conservation (SINCs), which will afford them policy protection within the planning system.

#### 4.2 Current Factors Affecting The Habitat

In the past lowland calcareous grassland was lost across England primarily to agriculture, and to a lesser extent development. The main factors affecting the habitat in our area at present are:

- **Encroachment of scrub** and the 'simplification' of vegetation structure due to a lack of conservation management such as light grazing, controlled burning and cutting – large expanses of uniform species-rich calcareous grassland has intrinsic value- many insects need large expanses for viable populations.
- **Fragmentation and isolation** as the sites in Warwickshire are scattered across the south and east of the county, often some distance from one-another and often only of a small size. Many calcicolous insects require clusters of larger sites for viable populations and are now restricted to the Southam and Harbury areas, where this still occurs.
- **Changes in farming** and the reduced availability of suitable livestock leading to a lack of grazing and coarser vegetation (though rabbits can alleviate this).
- **Lack of active management or inappropriate management** particularly of the road, rail and canal cuttings, has allowed scrub to take over and in places, develop into woodland. Tree planting schemes have also damaged existing sites, as have some quarrying activities.
- **Quarry infill** of some old limestone workings is occurring at some sites e.g Cross Hands and being considered at some others. This may threaten the evolving grassland of the spoil heaps. However, there are opportunities for sympathetic restoration to increase the area of calcareous grassland in some cases (especially at Southam where the quarries are largely un-vegetated at present).

- **New quarrying** eg. expansion of Southam Quarry and the creation of the new quarry at Lodge Farm, Rugby, which provides opportunities for large gains of habitat.
- **Threats from development** - eg. at the Bishop's Bowl - Bishop's Hill complex

## 5. CURRENT LOCAL ACTION

- Lowland calcareous grasslands have been identified as a priority habitat for sustainable management in the Midland Clay Pastures Natural Area.
- A number of sites are under positive nature conservation management e.g. Stockton, Ufton Fields, Harbury and Grove Hill
- The principal action is currently the scrub control programmes supported by Natural England on the various SSSIs.
- The Natural England Grazing Animals Project (GAP) is to be extended into the Midlands, including Warwickshire, to support grazing for conservation. This brings together graziers in search of keep and landowners needing sites grazed.
- The Countryside Stewardship Scheme is available for the management of calcareous grassland and within the area covered by the action plan there are up to 10 agreements with such management.
- There are DEFRA Countryside Stewardship Agreements in place for the management and restoration of calcareous grassland at Grove Hill, Ardens Grafton, Bearley (North of Stratford), Ilmington (NW of Shipston-on-Stour).
- In the past some road verges have been identified to the County Council highways division for special treatment. The Southern Division, essentially Stratford District Area, has a management plan which is being implemented for selected road verges in some parts of the eastern half of the district.
- Statutory conservation agencies, Warwickshire Museum, WWT and RSPB provide advice on appropriate management, rehabilitation, extension and creation of lowland calcareous grasslands.
- Detailed invertebrate survey work on many calcareous has taken place over recent years, particularly for groups such as flies, beetles, wasps & bees and butterflies. This has highlighted some potential SSSIs and will assist with SINC designation.

## 6. PROPOSED LOCAL ACTIONS (some dates amended – Core Steering Group – Feb 2008)

ACTION	Lead	Partners	By	Meets objective
<b>Policy &amp; Legislation</b>				
<b>PL1.</b> Ensure that all relevant habitat policy is included in Local Planning Documents (see ODPM Planning Policy Statement PPS9).	LBAPSG	RBC SDC	2004- 2015	A
<b>PL2.</b> Ensure that any site meeting the relevant criteria is considered for designation as an SSSI.	NE	WWT WM	Review Southam & Harbury quarries by 2006	A, B
<b>PL3.</b> Review and select all qualifying lowland calcareous grassland sites >0.25ha as SINCs and enter onto database.	WSP	NE SDC RBC	2006	A, F
<b>Site / Species Safeguard &amp; Management</b>				
<b>SM1.</b> Actively promote the appropriate management of all lowland calcareous grassland sites over 0.25 ha.	WWT	NE WBRC LOs	2004- 2015	B
<b>SM2.</b> Continue lowland calcareous grassland restoration at the five SSSIs.	NE	LOs	2005	B
<b>SM3.</b> Identify sites for potential lowland calcareous grassland expansion and re-creation.	NE	WWT WM FWAG	2004	B, C
<b>SM4.</b> Establish lowland calcareous grassland re-creation/restoration on 3ha of calcareous ground/ quarry restoration by 2005 and further 12ha by 2010.	NE	WWT WCC WM Quarry Owners	2005 – 2010	C
<b>SM5.</b> To improve the management of all calcareous grassland above 0.25ha, that is currently in unfavourable condition to favourable improving.	NE	WWT BC LOs	2006	A, B, C
<b>SM6.</b> Introduce positive management of calcareous grassland at 6 new sites.	NE	WWT BC LOs	2006	A, B, C
<b>SM7.</b> Actively recommend measures to increase the extent of connectivity and maintain options to expand area of habitat.	LBAPSG	WCC LAs NE WWT	2008- 2015	C

<b>Advisory</b>				
<b>A1.</b> Inform landowners of their lowland calcareous grassland resource and provide management advice, sources of machinery etc.	FWAG	NE WWT AONB	2006	B, D
<b>A2.</b> Provide Best Practice Guidelines to appropriate landowners.	FWAG	WWT NE	2006	B, D
<b>Research &amp; Monitoring</b>				
<b>RM1.</b> Define area of current lowland calcareous grassland and update Habitat Biodiversity Audit.	HBA	NE WWT	2006	F
<b>RM2.</b> Re-assess current condition of all lowland calcareous grassland.	NE	WWT WM	2005	A, B
<b>Communication, Education &amp; Publicity</b>				
<b>CP1.</b> Increase public awareness of the importance of, and threats to, lowland calcareous grasslands.	WWT	NE BC FWAG AONB	2006	E
<b>CP2.</b> Organise and deliver lowland calcareous grassland management training days to lowland calcareous grassland owners in order to illustrate best management techniques. Produce associated information.	FWAG	WWT LOs AONB	2004	D

**Abbreviations:** AONB – Cotswold AONB, BC – Butterfly Conservation, NE – Natural England, FWAG – Farming & Wildlife Advisory Group, HBA – Habitat Biodiversity Audit, RBC – Rugby Borough Council, SDC – Stratford District Council, LO – Landowner, WBRC – Warwickshire biological Record Centre, WCC – Warwickshire County Council, WM – Warwickshire Museum, WSP – Wildlife Sites Project, WWT – Warwickshire Wildlife Trust.

## 7. REFERENCES (see LBAP Bibliography web page)

## 8. FURTHER INFORMATION (see separate Links web page for links to web sites)

UK Lowland Calcareous Grassland Action Plan no.12

UK Lowland Meadows Action Plan no.10:

Buglife (2004) Information on the habitat-management requirements of key invertebrates. CD-Rom £34.99 from Beverley Doyle by email at:

[beverley.doyle@buglife.org.uk](mailto:beverley.doyle@buglife.org.uk)

Natural England (2005) *The Importance of Livestock Grazing for Wildlife Conservation*. Leaflet from 01733 455100 or email:

[enquiries@naturalengland.org.uk](mailto:enquiries@naturalengland.org.uk). Also see [www.grazinganimalsproject.org.uk](http://www.grazinganimalsproject.org.uk)

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