

# **Isle of Wight Biodiversity Action Plan Lowland Calcareous Grassland Habitat Action Plan**

2008

## **1 Introduction**

This Habitat Action Plan has been prepared through consultation with a range of organisations and specialists within the Isle of Wight BAP partnership. It was first produced in 2002 and reviewed in 2008.

Lowland calcareous grassland has been selected as an action plan habitat for the Isle of Wight to ensure that national objectives for this priority habitat identified under the UK Biodiversity Action Plan are translated into effective action on the Island, taking into account local issues. The identification of lowland calcareous grassland as a priority habitat is based on the following factors:

1. Nationally 95% of chalk downland has been lost in the last 50 years and on the Isle of Wight 63% has been lost over the last 150 years - these trends highlight an urgent need to conserve those areas which remain, and to enhance or restore other areas of suitable habitat.
2. The enormous loss of habitat on the Island has been accompanied by fragmentation of the remaining sites particularly those in the east and central parts of the Island's central chalk ridge.
3. Evidence from Natural England condition assessments on SSSIs and GIS Countryside and Environmental Stewardship Schemes suggests that 85% by area of the resource is in favourable or unfavourable/recovering condition. The previous best guess estimate of 57% (First edition of plan, 2002) was prior to a determined effort to get landowners into agri-environment schemes, particularly on SSSIs.
4. The Isle of Wight calcareous grasslands are one of the most important semi-natural habitats in the county and support 10 priority BAP species, 10 other species of national conservation concern, and 52 additional species of local concern. The actions for a number of these species are covered by this Habitat Action Plan whilst others may be covered by individual species action plans.

The **England targets** (2008) for this habitat are:

- maintain the current extent of 38,687 ha by 2010
- achieve favourable or recovering condition of 32,036 ha (82%) by 2015
- restore 726 ha of degraded or neglected habitat by 2015
- re-establish 8,426 ha by 2015

The **South-east England targets** (2008) for this habitat include:

- maintain the current extent of 7,456ha (19% of the national resource) by 2010
- restore 693ha of degraded or neglected habitat by 2015
- re-establish 1,592ha by 2015

The **Isle of Wight targets** (2008) for this habitat are:

- maintain the current extent of 658ha by 2015
- achieve favourable or recovering condition of 559ha (85%) by 2015
- re-establish 200ha by 2015

## **2 Current Status**

### **Physical Features of the Island's Lowland Calcareous Grassland**

#### **Description of Habitat**

Chalk hills are a characteristic feature of the Isle of Wight landscape. Chalk forms the backbone of the Island extending from the famous chalk stacks of the Needles in the west to the chalk cliffs at Culver in the east. This ridge is by no means uniform along its length but widens out in the centre of the Island to form a plateau with associated combes and dry valleys around its edges. The highest range of chalk hills occurs at the southern tip of the Island - the eroded stump of a great mono-clinal chalk ridge that once spanned the Island from east to west. The strata in these southern chalk hills are almost horizontal and have eroded to form dramatic steep slopes, particularly on their southern side with more sheltered flowery chalk grassland meadows to the north.

Most of the Island's chalk downs are capped with deposits of clay with flints or angular flint gravels and have acid soils that are in sharp contrast to the nearby calcareous chalk soils. These naturally support gorse scrub, acid grassland and heathland vegetation, which are described in the Acid Grassland and Heathland Habitat Action Plan.

Chalk grasslands occur in a variety of situations ranging from steep south facing slopes exposed to extremes of heat and maritime winds in the west of the Island, sheltered combes and dry valleys in the centre of the Island and humid north facing slopes such as those around Ashe and next to Bloodstone Copse in the east. The character and associated fauna of the grasslands varies in many subtle ways depending upon this range of exposure, slope, depth of soil and management history.

The majority of calcareous grassland on the Island occurs over the outcrops of chalk and is more commonly termed chalk grassland. In addition, there are smaller areas associated with outcrops of Bembridge limestone. Calcareous grassland on Bembridge Limestone is best developed around the former limestone quarries such as those at Prospect Quarry near Wellow. On the coast there are also many exposures of Bembridge marls on the maritime cliffs, which support calcareous grassland but these examples of the habitat are best considered under the Maritime Cliffs Habitat Action Plan. Inland of the coast there are also some calcareous grasslands associated with the Bembridge marls, such as those at Brickfields and Elmsworth Farm bordering Newtown Harbour.

However, these are small in extent, and are best considered as components of the larger complex of neutral grasslands of which they form a part - these are considered within the Lowland Meadows Habitat Action Plan.

There has been limited survey of the range and diversity of chalk grassland vegetation within the Isle of Wight. The most comprehensive survey was that undertaken in 1987 by the Nature Conservancy Council. This has never been published, although results of the survey have been obtained from Natural England. The survey recorded chalk grassland from a total of 46 sites extending to 906 hectares of the Island. A total of 440 hectares of calcareous grassland was surveyed from these sites with additional areas of scrub, heath, neutral and acid grassland also occurring. 12 of the sites visited were already SSSI and comprised 71% (701 ha) of the area surveyed.

The calcareous grassland was recorded using the National Vegetation Classification (NVC). A range of calcareous grassland types from a total of 80 samples was identified. The most frequently recorded community was the sheep's fescue – meadow oat-grass community (CG2). This is typically very species-rich short springy grassland, dominated by fine-leaved grasses and low growing herbs such as salad burnet, thyme, rock rose, bird's foot trefoil and small scabious. The nationally scarce early gentian is particularly associated with this grassland type, as are mats of horseshoe vetch, the larval food plant of the adonis and chalkhill blue butterflies. This grassland type tends to develop on shallow soils on steeper slopes and is widespread along the south face of the Island's chalk downs.

On the steepest and most exposed slopes are also scattered examples of sheep's fescue – carline thistle grassland (CG1). Nationally this is an uncommon calcareous grassland type limited to scattered sites on parched chalk and harder limestones around the southern and western coasts of England and Wales. It forms an extremely short and open turf, with patches of exposed rock and bare soil. Characteristic species include mouse-eared hawkweed, kidney vetch and the moss *Weissia* species.

By contrast in a few places on the deeper and more moisture retentive soils, examples of upright brome grassland occur (CG3). This is a relatively tall grassland type, which develops in generally less heavily grazed grasslands. It tends to be less species-rich than the other grassland types mentioned, although it still supports a wide range of chalk grassland species including thyme, rock rose, stemless thistle and field scabious.

Finally, in a few places examples of hairy oat-grass grassland (CG6) were also recorded by the survey. This grassland is dominated by red fescue with smaller amounts of hairy and meadow oat-grasses. It occurs most frequently on the deeper more moisture retentive soils where grazing pressure is low or has been absent for a period of time. Associated species are similar to the upright brome grassland and include salad burnet, ribwort plantain, thyme and lady's bedstraw. Pyramidal orchids and cowslips can also be locally abundant in this grassland type.

The range of calcareous grassland types on the Island is similar to those found in Hampshire. However, the proportion of species rich CG2 grassland is far greater and that of CG3 and CG6 is correspondingly much reduced. The examples of the nationally uncommon CG1 grassland found on the Island are absent from Hampshire.

## Current Extent

The Isle of Wight chalk and limestone outcrops cover an area of 4180 and 37 ha respectively. This has never supported continuous calcareous grassland as woodland, scrub and arable land have always formed an important part of the landscape. In addition, much of the chalk outcrop is capped with acid deposits that will not support calcareous grassland. The extent of calcareous grassland on the Island has been continuously changing since the first clearances of the primeval forest in the Mesolithic and early Bronze Age. These fluctuations in extent have been largely related to changes in the agricultural economy, with periods of high demand for cereals alternating with those for sheep and other livestock. Calcareous grassland was probably at its greatest extent in the 18<sup>th</sup> and 19<sup>th</sup> centuries when sheep and wool production dominated the agricultural economy, and shepherded sheep flocks would have roamed the chalk uplands of the Island.

An estimate of the area of chalk grassland on the Island in the mid 19th century has been made by Clive Chatters (Chatters, 1984). Using historic maps he estimated that the Isle of Wight contains some 2,314 hectares (5,718 acres) of chalk grassland in the 1850s. Taking into account the area of acid grassland and heath that occurred over the gravel capping the downs, the area of chalk grassland was probably nearer 1,780 ha at that time. The current area of calcareous grassland, including that over Bembridge Limestone, is estimated as 658 hectares plus 5 ha of limestone grassland. This suggests a loss of some 1,127 ha, a decline of 63% over the last 150 years. This catastrophic decline in the extent of calcareous grassland on the Island is of a much greater magnitude than any since the Roman occupation.

## Legislation and Site Designation

There are 13 Sites of Special Scientific Interest (SSSI) containing calcareous grassland and scrub on the Isle of Wight. These extend to a total of 870 ha and have 453 ha of calcareous grassland representing about 70% of the remaining calcareous grassland resource. The majority of this is in public ownership.

Four SSSI containing calcareous grassland have included within the Isle of Wight Downs Special Area of Conservation (SAC) and forms part of a European network of sites of importance for biodiversity to be called Natura 2000. The SAC has been selected for its populations of early gentian *Gentianella anglica* and representation of calcareous grassland habitat termed 'semi-natural dry grassland and scrubland facies on calcareous substrates (*Festuco-Brometalia*)'. The Isle of Wight has possibly the largest UK population of early gentian (Wilson, 1999) and is considered to be one of the best areas of calcareous grassland in the UK.

The 1987 survey of chalk grassland on the Isle of Wight identified a total of 5 additional sites that were considered of sufficient quality to merit notification as new SSSI or extensions to existing sites. Only one of these sites has since been notified.

Approximately 31 Sites of Importance to Nature Conservation (SINC), which contain chalk grassland habitat, have also been identified in the county. These extend to a further 450 ha, of which 186 ha are calcareous grassland.

Several areas of calcareous grassland are managed by the Isle of Wight Council. These include Shide Chalk Pit, Rew Down, Nansen Hill and Brading Down. Shide Chalk Pit and Nansen Hill are Local Nature Reserves.

There are no National Nature Reserves containing calcareous grassland on the Isle of Wight, although several areas have been identified as being of NNR quality and are listed in the Nature Conservation Review (NCR) (Ratcliffe, 1977).

Almost all of the calcareous grassland on the Isle of Wight is within the Isle of Wight Area of Outstanding Natural Beauty (AONB), designated under the National Parks and Access to the Countryside Act, 1949.

### Current Site Protection

The chalk grassland selected for inclusion in the SAC occurs in two distinct areas. In the west of the Island are three extensive SSSI, namely Headon Warren and West High Down, Compton Down and Mottistone Down that extend from the Needles eastwards along the chalk ridge. They contain examples of chalk grassland on southerly and north facing slopes together with large areas of heathland and chalk heath. Part of Ventnor Downs SSSI in the south of the Island has also been selected for inclusion in the SAC (although significant areas of high quality calcareous grassland habitat within this SSSI have been excluded).

In addition to these four internationally important SSSI, other SSSI of particular significance include the high quality calcareous grassland turf found within Calbourne Down SSSI where up to 40 species of plant have been recorded in a single metre square of turf. In the east of the Island, fine examples of chalk grassland are also found on Arreton Down and Bembridge Down where additional colonies of early gentian also occur together with populations of adonis blue, small blue and chalkhill blue butterflies.

SINCs containing generally smaller areas of high quality chalk grassland include the ramparts of Carisbrooke Castle, the grassland within Mount Joy cemetery near Newport and the steep north and east facing slopes of Ashe Down. Areas of calcareous grassland SSSI and SINC on the Isle of Wight are shown in table 1.

### Key sites for Lowland Calcareous Grassland on the Isle of Wight include:

SSSI Site	Area ha <sup>1</sup>
Arreton Down	29.77
Bembridge Down	56.25
Calbourne Down	15.4
Compton Down	196.25
Eagle Head and Bloodstone Copse	10.33
Garstons Down	20.3
Headon Warren and West High Down	276.25
Mottistone Down	31.44
Rew Down	23.5
Rowridge Valley	38.9
Ventnor Downs	162.6
Shide Quarry	4.8
Prospect Quarry	4.3
SINC name	Area ha <sup>1</sup>
Brading Down West	4.42
High Hat Reservoir	5.94
Shalcombe Down	1.34
Freshwater Bay Cliffs	3.32

Calbourne Pumping Station	7.71
Carisbrooke Castle	16.28
Chillerton Down	28.1
Brighstone Down	21.42
Fore Down	17.36
Brading Down	32.99
Gallibury Fields	2.75
Ashey Chalkpit	2.26
Idlecombe Farm Down	8.37
Idlecombe Down	73.39
Bembridge Down	46.65
Knighton Down	14.32
Limerstone Down	21.19
Little Down	18.68
Mersley Chalk Pit	8.81
Arreton Down North	17.25
Mersley Down North	7.2
Mount Joy	3.73
Newbarn Down, Gatcombe	21.55
Northcourt Down	11.25
Pay Down	1.27
Pitts Farm Down	4.44
Ashey Down	10.03
Kern Down Chalkpit	4.42
St Catherine's Hill	5.94
St Martin's Down	1.34
Watcombe Down	3.32

<sup>1</sup> = Area of SSSI or SINCC including subsidiary habitats

### 3 Current factors influencing the habitat

The most important factors affecting the conservation of calcareous grassland relate to continued sustainable management through appropriate grazing systems and associated scrub management. These are reviewed in the Isle of Wight Grazing and Biodiversity Topic Action Plan and are summarised below.

#### Further loss of habitat

Much of the remaining calcareous grassland on the Isle of Wight is now within SSSI or other protection and as the agricultural economy has declined in recent years the threat to the remaining areas of the habitat from agricultural intensification has subsided. However, the threat from lack of management is a problem on some sites, especially small areas of calcareous grassland that are fragmented and isolated.

In addition, there has been a decline in beef cattle and decline of economically viable grazing with cattle generally; this could make it difficult to maintain appropriate grazing regimes on calcareous grasslands in the future.

Although loss of habitat through agricultural intensification may not be as significant a threat to calcareous grassland, the threat from various development pressures remains. This can include construction or maintenance of roads and tracks; recreational development, for instance for golf course creation or extension; and damage through other forms of recreational activity such as motorcycling and mountain biking. Management of these threats and pressures remains a significant factor in conserving the remaining calcareous grassland resource.

## **Financial incentives**

Sufficient financial incentives are needed to encourage farmers and land managers to maintain and restore areas of calcareous grassland on the Isle of Wight. The Environmental Stewardship Schemes have provided valuable support for the restoration and creation of some calcareous grassland but the levels of payment available through this scheme may not be sufficient and may decline further in line with the general decline in agricultural incomes.

Environmental Stewardship payments are open for all landowners. In addition, Natural England may enter into management agreements with SSSI owners if the site is deemed to be in unfavourable condition.

In the wider countryside outside of these protected sites, there is a need to reverse the trend of habitat decline seen over the past 150 years. Whereas this should be encouraged throughout the Island, there are areas where the potential gains are likely to be greatest and where efforts and financial incentives should be targeted.

Alternative methods of providing a financial incentive also need to be considered and evaluated. This might include niche and brand marketing schemes.

The availability of a local slaughtering facility is likely to be critical to the success of local produce production and sale.

## **Availability of suitable stock and stock management expertise**

Effective grazing of agriculturally unimproved calcareous grassland often requires specific breeds of cattle or sheep to maintain their nature conservation and biodiversity value. Certain farming systems are also likely to be more beneficial to biodiversity than others. For example, extensive beef rearing systems are likely to be preferable to modern dairy production.

Grazing and grassland management on low productivity habitats and the restoration of these habitats using livestock as a management tool is a specialist area of expertise. Whereas many farmers may have very valuable skills it may be that there is a specific need for training and provision of information to assist in developing these skills in this specialist area.

## **Public access**

Much of the calcareous grassland on the Island has public access along foot paths and bridleways or more generally as open access. This can create a number of problems to livestock managers for example, gates being left open and from dog worrying of livestock. The public can also be seriously concerned by the prospect of walking in places where livestock are present. This can make it difficult to restore grazing to habitats if livestock have been absent for a number of years. These difficulties can be largely overcome with better public information and wardening but this requires considerable time and resources.

## **Weed growth and habitat stabilisation**

The restoration of calcareous grassland often passes through a phase in which soil fertility and disturbance is sufficient to create ideal conditions for the growth of 'weed' species

with ragwort, creeping thistle and dock causing the most significant problems. As the grassland becomes re-established the weed species naturally decline, however, it is not generally acceptable to allow these high weed infestations to persist for the period it takes for the new equilibrium to establish, which might take five years or so. In the meantime, it is necessary to control these weed species with well-targeted herbicide use or by other means. This can be expensive and time consuming and often relies upon the use of specialised equipment such as ragwort pullers or weed wipers.

### **Habitat fragmentation and loss of ecological continuity**

Many species, for example many of the chalk grassland butterflies require a minimum area of habitat in which to maintain sustainable populations and have poor powers of dispersal.

The natural restoration of a botanically species rich calcareous grassland sward is also dependent upon a nearby source of seed and plant propagules. The current state of habitat fragmentation may mean that intervention will be required to restore species diversity to such sites through the re-introduction of seed and other plant propagules from appropriate donor sites. These are likely to be the remaining SSSI and SINIC that retain semi-natural vegetation, which makes their conservation even more critical for the future. Some of the Island's cemeteries on chalk also retain species rich grassland from which wild flower seed could be harvested for restoration of calcareous grassland.

## **4 Current Initiatives**

### **Site designation**

The 1987 Nature Conservancy Council survey of chalk grassland identified five sites that appeared to be of SSSI quality. One of these, Calbourne Down, has subsequently been notified. However, there is clearly a need to ensure the remaining four sites are fully considered for additional notification. Notification of these five sites as SSSI would bring 85% of the Island's chalk grassland into protective management.

The changes in the selection features for the Isle of Wight Downs SAC following the 'moderation' exercise have resulted in extensive areas of calcareous grassland (and associated lowland heathland) habitat being excluded from the SAC that are either within the same or adjacent SSSI to those selected for inclusion. This creates a number of anomalies that need to be resolved.

### **Purchase of additional reserves or properties**

Given the poor state of the agricultural economy it is possible that further areas of calcareous grassland or more importantly, areas with the potential for restoration as calcareous grassland, will become available for purchase by nature conservation organisations. Further action to bring this land into management of nature conservation organisations needs to be planned and coordinated.

### **Habitat management**

Lowland Calcareous Grassland is a target habitat for the CSS, administered by DEFRA through Natural England. This scheme provides payments for maintaining and enhancing

calcareous grassland habitat and arable reversion to calcareous grassland, although there is only a limited pool of funding which has to be prioritised.

An estimate of the condition of calcareous grassland SSSI and SINC on the Island has been undertaken by Natural England and the Isle of Wight Council. The details of this assessment are reviewed in the Grassland and Grazed Habitats Topic Report (February 2002). In summary, the results of this assessment suggest that some 45% of sites are in favourable condition and 53% are in unfavourable condition with 2% in unknown condition. The situation is believed to have improved since then with a determined effort being made to get landowners into agri-environment schemes, particularly on SSSIs. Additional action is required to achieve favourable conservation condition on all calcareous grassland sites. Natural England have produced Site Management Statements for each SSSI landowner which define the nature conservation objectives and appropriate conservation management for each tenure unit and identify SSSI owner/occupier requirements to achieve management changes such as funding requirements and any Natural England action which is needed.

English Nature (now Natural England) together with Wight Wildlife (now H&IWWT) and SEEDA funded two projects aimed at identifying the potential for promoting agricultural systems that would result in the maintenance and restoration of calcareous grassland and other grazed habitats on the Island. In the 2002 HAP (first edition), a priority for a Grazing Officer was highlighted. This was superseded by the Living Landscapes Project where funding was obtained to work with and advise farmers and landowners. Since the original HAP, a niche market in locally sourced meat has developed and the Grazing Officer action has been dropped and a new action of supporting animal husbandry has been introduced.

The National Trust owns and manages the most extensive and important areas of chalk grassland on the Isle of Wight. They have management plans for all of their properties, which include grazing and scrub management prescriptions. Other management initiatives currently under way include: Restoration of grazing to Tennyson Down, reversion of arable land to chalk grassland at Easton Field, Freshwater, goat grazing on Ventnor Downs to control scrub, and a management plan for Freshwater Bay Golf Club to restore chalk grassland.

Hampshire and Isle of Wight Wildlife Trust (H&IWWT) own and manage Arreton Down, the largest and most diverse area of chalk grassland on the eastern chalk ridge. This is managed as a nature reserve and is let to a local farmer to graze. H&IWWT also own a small area of chalk grassland associated with Eaglehead and Bloodstone Copses where grazing with Hebridean sheep has been introduced.

The Isle of Wight Council owns a number of important chalk grassland sites on the Island including Rew Down Local Nature Reserve (LNR) and Shide Chalk Pit LNR. Nansen Hill (part of Ventnor Downs SSSI) and Brading Down are also owned and managed by the Council to conserve their chalk grassland.

The revised AONB management plan will provide a vehicle with which to promote many of the objectives of this Habitat Action Plan.

## **Survey, research and monitoring**

Natural England have carried out an assessment of the condition of all SSSI on the Isle of Wight with a target of ensuring that 85% are in favourable or recovering condition by 2010.

The National Trust monitor chalk grassland butterfly populations on a number of their properties. They have also commissioned a number of invertebrate surveys of their properties in recent years.

A survey of early gentian populations on the Isle of Wight was undertaken for Wight Wildlife in 1995 with funding from English Nature (now Natural England).

### **Action for species**

There are currently no specific actions planned for chalk grassland associated species, as at this stage it is believed that their requirements may be met through habitat action.

## **Associated Plans within the Isle of Wight BAP**

Generic Habitat Action Plan

## 5 Targets and Actions

### Biodiversity targets for Lowland Calcareous Grassland on the Isle of Wight

- A** Maintain and restore existing area of lowland calcareous grassland habitat for its wildlife and earth science interest with no net loss, subject to natural change
  - B** Enhance and restore degraded or neglected areas of lowland calcareous grassland into habitat and/or exposures of high wildlife and earth science value
  - C** Establish buffer zone habitats between intensively-managed agricultural land and lowland calcareous grassland habitats
  - D** Improve the knowledge of lowland calcareous grassland resource by survey, research and monitoring
  - E** Increase public awareness and appreciation of lowland calcareous grassland resulting in a more positive management of this habitat
- *Currently, our datasets will not allow us to accurately measure separate maintenance and restoration targets and therefore our targets have been combined for this HAP.*
  - *Actions D and E are covered by the Generic Action Plan*

	Biodiversity Actions for Lowland Calcareous Grassland on the Isle of Wight	Lead	Reporting	2008	2009	2010	2015	2020
<b>A1/B1</b>	Maintain and restore the existing extent of 658 ha of lowland calcareous grassland by 2015	NE	IWC				◆	
<b>A2</b>	Ensure appropriate management to achieve favourable or recovering condition of 85% of lowland calcareous grassland by 2015	NE	IWC				◆	
<b>A3</b>	Achieve a slaughter house/incinerator to support the Isle of Wight livestock industry by 2010	NFU/ CLA/ IWC	IWC			◆		
<b>C1</b>	Increase the extent of lowland calcareous grassland on the Isle of Wight by re-establishing 200 ha of permanent grassland on chalk	NE	IWC				◆	

◆ Complete by                      ⇨ Ongoing                      → start by

### KEY TO ORGANISATIONS

AONB	Isle of Wight Area of Outstanding Natural Beauty Unit	IWC (Planning)	Isle of Wight Council Planning Services
H&IWWT	Hampshire & Isle of Wight Wildlife Trust	IWNHAS	Isle of Wight Natural History and Archaeological Society
IWC (Coastal)	Isle of Wight Council Centre for the Coastal Environment	NE	Natural England
IWC	Isle of Wight Council Parks and Countryside Section	NT	National Trust
CLA	Country, land & Business Association	NFU	National Farmer's Union

## References

1. Blackwood, J.W. and Tubbs, C.R., 1970. *A Quantitative Survey of Chalk Grassland in England*. Biological Conservation, Volume 3, No.1
2. Brown, A.E. Burn, A.J. Hopkins, J.J. & Way, S.F., 1997. The Habitats Directive: selection of Special Areas of Conservation in the UK. Peterborough: *JNCC Report No. 270*.
3. English Nature, 1998. *Isle of Wight Natural Area Profile*
4. English Nature, 1998. *UK BAP Targets By Natural Area - 10 Terrestrial Habitats*
5. Department of the Environment, 1998, *UK Biodiversity Group Tranch 2 Action Plans. Volume II – terrestrial and freshwater habitats*. Peterborough: English Nature on behalf of the UK Biodiversity Group
6. Isle of Wight Biodiversity Partnership. 2002. *Grassland and Grazed Habitats Topic Report*. Isle of Wight Council.
7. Joint Nature Conservation Committee, 1999, *The implementation of Common Standards for Monitoring and Conservation Objectives*. Peterborough.
8. Hillier, S. H., Walton, D.W.H., and Wells, D. A. 1987. *Calcareous Grasslands - Ecology and Management Proceedings of a Joint British Ecological Society / Nature Conservancy Council Symposium*
9. *Wilson P J 1999 The distribution and status of Gentianella anglica (Pugsley) E Warb Plantlife report no 119*

# Species associated with Lowland Calcareous Grassland

## Species associated with Lowland calcareous grassland

Latin name	English name	BAP code	Other Habitat	Local Abundance	Local Population Trend
------------	--------------	----------	---------------	-----------------	------------------------

### Ants, Bees & Wasps

<i>Bombus humilis</i>	Brown-Banded Carder Bee	1	<b>Lowland meadows</b>	Rare	Unknown
<i>Lasioglossum angusticeps</i>	A mining bee	1	<b>Maritime cliffs &amp; slopes</b>	Scarce	Unknown
<i>Andrena marginata</i>	A mining bee	3		Rare	Unknown

### Beetles

<i>Harpalus cordatus</i>	A ground beetle	1	<b>Maritime cliffs &amp; slopes</b>	Rare	Unknown
<i>Harpalus parallelus</i>	A ground beetle	1	<b>Maritime cliffs &amp; slopes</b>	Rare	Unknown
<i>Meloe proscarabaeus</i>	Black Oil-beetle	1	<b>Maritime cliffs &amp; slopes</b>	Localised	Unknown

### Butterflies

<i>Cupido minimus</i>	Small Blue	1	<b>Maritime cliffs &amp; slopes</b>	Scarce	Decreasing
<i>Eynnis tages</i>	Dingy Skipper	1	<b>Lowland mixed deciduous woodland</b>	Localised	Decreasing
<i>Hamearis lucina</i>	Duke of Burgundy	1		Rare	Decreasing
<i>Hipparchia semele</i>	Grayling	1	<b>Lowland heathland</b>	Scarce	Decreasing
<i>Melitaea cinxia</i>	Glanville Fritillary	1	<b>Maritime cliffs &amp; slopes</b>	Localised	Stable
<i>Pyrgus malvae</i>	Grizzled Skipper	1	<b>Lowland mixed deciduous woodland</b>	Localised	Decreasing
<i>Argynnis aglaia</i>	Dark Green Fritillary	3	<b>Lowland heathland</b>	Occasional	Stable
<i>Lysandra coridon</i>	Chalkhill Blue	3		Localised	Stable

### Crickets & Grasshoppers

<i>Ectobius pallidus</i>	Tawny Cockroach	3	<b>Maritime cliffs &amp; slopes</b>	Occasional	Unknown
<i>Platycleis albopunctata</i>	Grey Bush-cricket	3	<b>Maritime cliffs &amp; slopes</b>	Occasional	Stable
<i>Stenobothrus lineatus</i>	Stripe-winged Grasshopper	3		Scarce	Unknown

### Flies

<i>Asilus crabroniformis</i>	A robber fly	1	Fen, marsh and swamp	Rare	Unknown
<i>Terellia vectensis</i>	A picture-winged fly	3	<b>Lowland heathland</b>	Rare	Unknown
<i>Urophora spoliata</i>	A picture-winged fly	3		Rare	Unknown

### Moths

<i>Hemistola chrysoprasaria</i>	Small Emerald	1		Localised	Unknown
<i>Scotopteryx bipunctaria cretata</i>	Chalk Carpet	1		Localised	Decreasing
<i>Agrotis cinerea</i>	Light Feathered Rustic	3		Localised	Stable
<i>Aporophyla australis pascuea</i>	Feathered Brindle	3		Localised	Stable
<i>Bembecia scopigera</i>	Six-belted Clearwing	3	<b>Maritime cliffs &amp; slopes</b>	Localised	Unknown
<i>Catarhoe rubidata</i>	Ruddy Carpet	3	<b>Hedgerows</b>	Localised	Unknown
<i>Dolicharthria punctalis</i>	Long-legged China-mark	3	<b>Coastal vegetated shingle</b>	Scarce	Unknown
<i>Mecyna flavalis flaviculis</i>	Auriferous Pearl	3		Rare	Unknown
<i>Microstega hyalinis</i>	Translucent Straw Belle	3	<b>Lowland mixed deciduous woodland</b>	Rare	Unknown
<i>Nephoterix angustella</i>	Narrow-winged Knot-horn	3	<b>Hedgerows</b>	Rare	Unknown
<i>Phibalapteryx virgata</i>	Oblique Striped	3		Rare	Decreasing
<i>Setina irrorella</i>	Dew Moth	3	<b>Maritime cliffs &amp; slopes</b>	Localised	Stable

### Spider Group

<i>Aceria schmardai</i>	An eriophid mite	3		Rare	Unknown
-------------------------	------------------	---	--	------	---------

**True bugs**

<i>Canthophorus impressus</i>	A shield bug	3		Rare	Unknown
<i>Heterogaster artemisiae</i>	A ground bug	3		Rare	Unknown
<i>Peritrechus gracilicornis</i>	A Lygaeid bug	3	<b>Lowland meadows</b>	Rare	Unknown

**Fungi and Lichens**

<i>Fulgensia fulgens</i>	"Scrambled-egg lichen"	1	<b>Maritime cliffs &amp; slopes</b>	Scarce	Stable
<i>Puccinia thesii</i>	Bastard Toadflax Rust	1		Rare	Unknown

**Liverworts**

<i>Porella obtusata</i>	'Broad Scalewort'	3	<b>Maritime cliffs &amp; slopes</b>	Rare	Unknown
<i>Ptilidium pulcherrimum</i>	'Tree Fringewort'	3	<b>Lowland mixed deciduous woodland</b>	Rare	Unknown

**Mosses**

<i>Acaulon triquetrum</i>	Triangular pygmy moss	1	<b>Maritime cliffs &amp; slopes</b>	Rare	Unknown
<i>Bryum torquescens</i>	'Twisting Thread-moss'	3	Boundary and linear features	Rare	Decreasing
<i>Eurhynchium schleicheri</i>	'Twist-tip Feather-moss'	3	Boundary and linear features	Rare	Unknown
<i>Scorpiurium circinatum</i>	Curving feather-moss	3	<b>Maritime cliffs &amp; slopes</b>	Localised	Stable
<i>Seligeria calcarea</i>	'Chalk Rock-bristle'	3		Scarce	Unknown

**Flowering Plants**

<i>Clinopodium acinos</i>	Basil Thyme	1		Rare	Decreasing
<i>Dactylorhiza viridis</i>	Frog Orchid	1		Rare	Decreasing
<i>Euphrasia pseudokemerii</i>	Chalk Eyebright	1		Scarce	Stable
<i>Gentianella anglica</i>	Early Gentian	1		Occasional	Stable
<i>Juniperus communis</i>	Juniper	1		Rare	Stable
<i>Neotinea ustulata</i>	Burnt Orchid	1		Believed extinct	
<i>Allium oleraceum</i>	Field Garlic	3		Rare	Stable
<i>Anacamptis morio</i>	Green-winged Orchid	3	<b>Lowland meadows</b>	Localised	Stable
<i>Anacamptis pyramidalis</i>	Pyramidal Orchid	3	<b>Lowland dry acid grassland</b>	Localised	Increasing
<i>Arabis hirsuta</i>	Hairy Rockcress	3		Rare	Stable
<i>Astragalus glycyphyllos</i>	Wild Liquorice	3	<b>Maritime cliffs &amp; slopes</b>	Rare	Decreasing
<i>Brassica oleracea</i>	Wild Cabbage	3	<b>Maritime cliffs &amp; slopes</b>	Rare	Stable
<i>Carex humilis</i>	Dwarf Sedge	3		Rare	Unknown
<i>Cerastium pumilum</i>	Dwarf Mouse-ear	3		Occasional	Stable
<i>Cuscuta epithymum</i>	Dodder	3	<b>Lowland heathland</b>	Rare	Unknown
<i>Erigeron acer</i>	Blue Fleabane	3	<b>Lowland dry acid grassland</b>	Rare	Decreasing
<i>Euphorbia portlandica</i>	Portland Spurge	3	<b>Maritime cliffs &amp; slopes</b>	Rare	Increasing
<i>Euphrasia tetraquetra</i>	An Eyebright	3		Scarce	Unknown
<i>Filipendula vulgaris</i>	Dropwort	3		Rare	Stable
<i>Gymnadenia conopsea ssp. conopsea</i>	Fragrant Orchid	3		Rare	Decreasing
<i>Matthiola incana</i>	Hoary Stock	3	<b>Maritime cliffs &amp; slopes</b>	Occasional	Stable
<i>Melampyrum arvense</i>	Field Cow-wheat	3	<b>Maritime cliffs &amp; slopes</b>	Rare	Stable
<i>Onobrychis vicifolia</i>	Sainfoin	3		Rare	Unknown
<i>Orobanche purpurea</i>	Yarrow Broomrape	3	<b>Lowland dry acid grassland</b>	Scarce	Unknown
<i>Spiranthes spiralis</i>	Autumn Lady's-tresses	3	Built-up area and gardens	Localised	Stable
<i>Thesium humifusum</i>	Bastard Toadflax	3		Occasional	Stable
<i>Valerianella eriocarpa</i>	Hairy-fruited Cornsalad	3	<b>Maritime cliffs &amp; slopes</b>	Rare	Stable
<i>Vicia parviflora</i>	Slender Tare	3	<b>Maritime cliffs &amp; slopes</b>	Rare	Stable

1 = National BAP Priority Species

3 = Local BAP Priority Species

**Habitats** = National BAP Priority Habitats