



## 20.1 Introduction

The Chalkhill Blue butterfly *Lysandra coridon* lives in discrete, isolated colonies, which may contain tens of thousands of individuals or only tens. Adults, particularly males can fly for over a kilometre, but females are usually more sedentary limiting colonisation of new sites. The species has only one generation a year in Britain. The adults emerge in mid-late July and will be on the wing until the end of August or start of September.

Eggs are laid singly, low down on large vigorous clumps of Horseshoe Vetch *Hippocrepis comosa*, which is the only larval foodplant. The larvae hatch the following spring, feeding at night. Pupation occurs after about two months on the ground. Older larvae and the pupae make secretions which attract ants, including the Yellow Meadow Ant *Lasius flavus*, a species which requires bare ground. The ants give them protection at this vulnerable stage of the life cycle and may take the pupae below ground.

As the name of this butterfly implies, it is the typical species of the southern English chalklands and in Britain breeds solely on unimproved chalk grasslands. The species prefers a short, sparse vegetation, with patches of bare disturbed chalk soils, where the larval foodplant, Horseshoe Vetch, thrives.

## 20.2 Current status

The Chalkhill Blue is found throughout Europe as far north as Britain and south to central Spain, France and Italy. In Britain it used to occur as far north as Lincolnshire, but today is found on the chalk and limestone hills from the Cotswolds and Chilterns southwards, with northern outlyers around Cambridge. Its stronghold is Dorset, Wiltshire and the Isle of Wight, but it is still locally common in the Chilterns and on the South and North Downs.

At the beginning of the century, the Chalkhill Blue was common in the three main chalk areas (around Tring, west of Hitchin and Therfield Heath) in Hertfordshire. Major sites at this time included Aldbury Nowers, Lilley Hoo (and Telegraph Hill) and by far the largest colony at Therfield Heath, where there were thousands. This colony was nationally famous, particularly for the colour variations found amongst the population. However, it is thought that shortly after the First World War, over-collecting at Therfield significantly reduced the numbers, though the population was still several hundred strong.

Colonies elsewhere continued to be lost throughout the century so that by the 1980s the only breeding colony was a much-reduced one at Therfield Heath. This population has since increased dramatically in size, with peak numbers now well over 100. Other small colonies are also now known from the Bedfordshire border at Telegraph Hill and Hexton Chalk Pit nature reserves. The species no longer breeds at Aldbury Nowers, but a colony is established on the adjacent Pitstone Hill in Bucks.

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## 20.3 Current factors causing loss or decline

### 20.3.1 Loss of habitat

The 90%-plus loss of species-rich chalk grasslands throughout this century was the major reason for the decline of this species. Conversion of chalk grassland to arable resulted in direct loss of suitable habitat conditions and the foodplant of this species. Direct loss to other land uses is no longer the major threat it was.

### **20.3.2 Decline in habitat quality**

Where chalk grasslands have remained unploughed, the habitat has often deteriorated as a result of changing management. The sheep grazing which maintained the ideal short, sparse turf for this species declined as a major land use from the First World War onwards. Rabbit grazing maintained suitable conditions for a while. However, the dramatic decrease in the rabbit population during the 1950s, resulted in an increasingly rank sward on many chalk grasslands and the loss of suitable habitat conditions for the foodplant, the caterpillar and the ant species with which it is associated. While the remaining colonies are not currently threatened by lack of grazing, it remains a potential threat. Lack of suitable habitat conditions on other remaining chalk grasslands is also a hindrance to the future expansion of this species.

### **20.3.3 Fragmentation and isolation of remaining habitat**

Many small colonies would have been lost as a result of being isolated. The sedentary behaviour of the females limits the potential for re-colonisation of the remaining fragmented and isolated chalk grasslands.

## **20.4 Current action**

The Chalkhill Blue is included in the UK Biodiversity Action Plan Steering Group report, as a species of conservation concern because of its national decline in the last 25 years. It has been identified as a species which needs monitoring, but is not a priority for species for production of a national species action plan.

Within Hertfordshire, the three remaining populations are all on chalk grasslands being managed as nature reserves, where management objectives cater for this species. Aldbury Nowers, is also being managed as a nature reserve and the management plan recognises the possibility of the species colonising from neighbouring Pitstone Hill. There is no current action aimed at improving the status of this species on other sites.

The ecology of this species is well understood and practical management requirements are known. Appropriate management is moderate to heavy grazing by sheep. However, creation of suitable conditions on possible recolonisation sites is difficult, because of the demanding requirements of the foodplant, Horseshoe Vetch, and the complex interaction between the vegetation, caterpillars and ant species.

## 20.5 Chalkhill Blue action plan objectives

To maintain the existing breeding colonies of Chalkhill Blue at Therfield Heath, Telegraph Hill and Hexton Chalk Pit.

To increase the size of existing colonies. Increase the Therfield Heath colony to a minimum of 500 individuals.

To restore the Chalkhill Blue as a breeding species to all three major chalk grassland areas in Hertfordshire, within 10 years.

In 50 years time to have restored the species to at least half a dozen self-sustaining colonies or groups of colonies, with three of greater than 250 individuals.

Nowers, Tring Park, Tingley Down and Coombe Bottom, Kelshall.

**Action:** HMWT, WT, CMS, owners.

**CB4.** Seek opportunities to increase the area of chalk grassland around key sites (Therfield Heath, Telegraph Hill and Aldbury Nowers) to encourage the re-colonisation and spread of this species (see Chapter 8, Chalk Grassland).

**Action:** HMWT, CMS, owners.

### 20.6.3 *Species management and protection*

**CB5.** Investigate the need for re-introductions, by 2002. If proven, prepare a plan for strategic re-introductions of Chalkhill Blue, based on accepted scientific criteria, into networks of suitable existing and restored habitat.

**Action:** BC, HMWT.

## 20.6 Proposed actions

### 20.6.1 *Policy and legislation*

**CB1.** Ensure all existing, and any new chalk grassland sites, with Chalkhill Blue are recognised in relevant Local Plans at the next review.

**Action:** LA's.

### 20.6.2 *Site safeguard and management*

**CB2.** Ensure management of all existing sites incorporates management for this species with other conservation priorities and interests, by 1998.

**Therfield Heath** – Continue current management regime (grazing and cutting) on main Chalkhill Blue breeding areas.

**Telegraph Hill** – Restore grazing to site by 2000. Seek opportunities for expanding area of chalk grassland.

**Hexton Chalk Pit** – Continue current management regime (grazing and selective scrub control).

**Aldbury Nowers** – Manage site to increase area and improve quality of chalk grassland.

**Action:** Therfield Conservators, HMWT.

**CB3.** Encourage restoration of suitable breeding habitat on sites within former range, where there is the potential for re-establishing viable networks of populations, by 2002. Suitable sites include Aldbury

### 20.6.4 *Advisory*

**CB6.** Ensure all landowners and managers of potential re-colonisation and re-introduction sites are offered advice on habitat management, by 2005.

**Action:** HMWT, CMS, BC, FWAG.

**CB7.** If colonies establish on new sites, ensure landowners and managers are offered advice on habitat management, within one year.

**Action:** HMWT, CMS, BC.

### 20.6.5 *Research and monitoring*

**CB8.** Monitor existing populations annually, either as part of a transect walk or through counts of peak numbers.

**Action:** BC, HMWT, Therfield Conservators.

**CB9.** Search former known sites and sites adjacent to existing colonies for Chalkhill Blue, annually.

**Action:** BC.

**CB10.** Encourage research projects to understand the relationship between the caterpillars and ants and the growth requirements of the caterpillar foodplant, Horseshoe Vetch.

**Action:** BC.

**CB11.** Identify potentially suitable unoccupied habitats, including former known sites within 10 km of existing populations, by 2002.

**Action:** **BC**, HBRC, HMWT.

**CB12.** From the above information, identify Key Sites, within former range, by 2002, for concentrating habitat management and restoration advice and effort, in preparation for natural colonisation or planned (re-)introductions.

**Action:** **BC**, HBRC, HMWT.

#### **20.6.6 *Communication and publicity***

**CB14.** Encourage butterfly recording and monitoring through the Millennium Atlas project.

**Action:** **BC**.