

# Chalk Grassland

*"It is interesting to contemplate a tangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately constructed forms, so different from each other, and dependent upon each other in so complex a manner, have all been produced by laws acting around us."* (Charles Darwin, 1859. This is the last paragraph from On the Origin of Species, believed to refer to the chalk grassland at Downe Bank in the Borough of Bromley)

## 1. Aims

- To co-ordinate the protection, management and restoration of London's chalk grassland.
- To ensure that the need for habitat restoration and management of London's chalk grassland is widely understood and accepted.
- To enable the public to enjoy chalk grassland.

## 2. Introduction

Chalk grassland develops on shallow lime-rich soils that are nutrient-poor and free-draining. These occur in London mainly on parts of the North Downs in the south, and Chilterns in the west. They support a wide array of wildflowers, butterflies, grasshoppers and other invertebrates, many of which are restricted to chalk soils. For the purposes of the plan, the habitat also includes young chalk scrub that has developed through a lack of management. Mature scrub and young chalk woodlands are not included.

Grass species like red fescue, sheep's fescue and quaking grass are common, along with plants such as wild thyme, marjoram and common bird's-foot trefoil. In addition, chalk grasslands support a range of orchids, many of which are nationally uncommon or scarce. The habitat is crucially important for butterflies, including those that are nationally or regionally scarce, such as grizzled skipper, dingy skipper, chalkhill blue, dark green fritillary, marbled white and, most notably, the small blue.

## 3. Current Status

Traditionally chalk grasslands were kept open largely by grazing, primarily by sheep, although rabbits were also responsible for maintaining a short sward. Grazing declined after the 19<sup>th</sup> century and by 1945 few areas in London were grazed. In the

1950s myxomatosis devastated the rabbit population, which further reduced grazing pressure and led to the spread of scrub and eventually woodland.

London's suburban development during the inter-war period led to expansion of residential areas onto the chalk. The establishment of the Metropolitan Green Belt in 1949 prevented further significant loss through development. Many tracts became secured by public authorities and retained as public open spaces. However, much of the rest was of declining value as pasture, and landowners have since converted much of the remaining chalk grassland to arable land or intensive horse pasture. Recently, the identification of chalk grasslands as important resources for biodiversity has led to establishment of chalk grassland nature reserves in an effort to restore and conserve them. Scrub-clearance remains a key issue for managers.

There are about 390 hectares of chalk grassland in London, just over 3% of the total hectareage of chalk grassland found in south-east England. This is distributed across a number of sites within five boroughs: Croydon (184 ha), Bromley (162 ha), Sutton (48 ha), Hillingdon (6 ha), and Lewisham (<1 ha). Most of these sites lie on the northern parts of the North Downs, especially along the slopes of a number of dry valleys in Bromley and Croydon.

## **4. Specific Factors Affecting the Habitat**

### **4.1 Scrub encroachment**

Abandonment of chalk grassland management since the 1950s has led to the widespread invasion of scrub and woodland species that, once established, can be difficult and expensive to remove. Hawthorn, blackthorn, dogwood, bramble, ash and some exotic species may colonise chalk grassland to the detriment of other species that depend on the open nature of the habitat.

### **4.2 Lack of grazing**

The lack of livestock grazing on chalk grassland in London has been the principal factor leading to loss of grassland to scrub and woodland. Changes in market conditions have severely affected farming profits, leading to the continued decline in serious agricultural commitment in the relatively under-productive North Downs region.

### **4.3 Fragmentation**

The loss of chalk grassland through habitat fragmentation has resulted from arable conversion, agricultural improvement, scrub encroachment, housing development, quarrying and use of the grassland for recreation. As a result of these pressures, what remains of the habitat tends to exist in isolation as small areas of grassland within the outer suburban matrix of London. This makes populations of species associated with chalk grassland less viable and positive management, for example through the reintroduction of grazing, more difficult.

### **4.4 Amenity use**

The growth of leisure activities on London's chalk grassland has grown demonstrably since the start of the 20<sup>th</sup> century and can have a detrimental effect. In recent years off-road motorcycling, scrambling and 4-wheel drive motoring have all become

significant local problems, causing erosion, vegetation damage and disturbance to the tranquility of such sites.

#### **4.5 Other factors**

There may be local impacts caused by surface run-off from adjacent roads (including salt), nutrient enrichment from vehicle emissions and even air, noise and light pollution. Street lighting adjacent to chalk grasslands will interfere with the behaviour of glow-worms and can hence have an impact on local population sizes. Occupation of sites by travellers, fly-tipping and illegal grazing can also have detrimental effects. Removal of chalk grassland species (including butterflies, reptiles and orchids) by collectors has been a problem in the past, and probably still continues at a very low level, as does the deliberate introduction of such species onto sites. These issues have not been sufficiently researched.

### **5. Current Action**

#### **5.1 Legal status**

There are four Sites of Special Scientific Interest (SSSI) within London that consist primarily of chalk grassland. Only five sites, (Roundshaw Downs, Devonshire Avenue Nature Area and Cuddington Meadows in Sutton, and Hutchinson's Bank and Foxley Wood in Croydon) are declared as Local Nature Reserves (LNRs).

In London, some 20 sites containing chalk grassland have been designated as Sites of Metropolitan Importance for nature conservation and a further 30 sites are of Borough Importance.

London's chalk grassland supports a range of protected species. Of particular importance are greater yellow-rattle and small blue butterfly. Greater yellow-rattle is a nationally rare plant, which has the bulk of its UK population on London chalk grassland. The small blue butterfly is found on three sites in Sutton, two in Croydon and two in Bromley. However, both this species, and its larger relative, the chalkhill blue, are protected only from trade. Other protected species associated with London's chalk grassland include common lizard, slow-worm, adder and badger.

Much of the chalk grassland in Bromley is within a proposed World Heritage Site 'Darwin at Down'. This proposal to UNESCO recognises the key inspirational role chalk grassland played in forming Charles Darwin's theory on evolution by natural selection.

#### **5.2 Mechanisms Targeting the Habitat**

*These current actions are ongoing. They need to be supported and continued in addition to the new action listed under Section 7.*

##### **5.2.1 Decline of traditional management**

In the past, species-rich chalk grassland was maintained as an incidental result of traditional agricultural practices. In recent decades, these practices have either disappeared completely in London, or been significantly altered through the impact of modern technology. The management mechanisms that are currently in place are either modifications of standard agricultural practices, or are replications of traditional practices such as hay cutting, often led by local authorities.

### **5.2.2 Local Projects**

There are a number of Local Authority projects including the Downlands Countryside Management Project, the Bromley Countryside Management Service, the High Elms Nature Centre, Sutton Nature Conservation Volunteers, Croydon Parks, Croydon BTCV and the Corporation of London.

These projects are active on a number of London chalk grassland sites, providing volunteer labour and expert advice. Importantly, some projects also assist in the management of sites through the provision of mobile livestock groups and by negotiating with local graziers. The presence of livestock on sites ensures the maintenance of the flora and fauna associated with open chalk grassland habitat by arresting natural succession towards scrub and woodland communities.

In addition the Kent and London Wildlife Trusts are actively managing their chalk grasslands.

### **5.2.3 Chalking Up London's Downs**

Chalking Up London's Downs is a partnership between the projects mentioned above together with English Nature. Phase one saw the delivery of a £72,000 initiative funded through the Heritage Lottery Fund between 2001-2004. Machinery and tools were purchased and training given to enable local people to be involved in managing chalk grasslands. Extensive surveys for butterflies, other invertebrates, wildflowers and grasses were undertaken. A leaflet showing the best sites to visit and why these sites are so valuable was produced. A questionnaire was given to visitors of chalk grasslands to gauge how people value them. Another leaflet demonstrated how vital these open spaces are to human health. There were leaflets for children to colour in and quizzes for them to answer. Together with mobile displays, the aim has been to raise awareness of London's chalk grassland. Phase two will build on this successful partnership and will seek to forge links with possible Heritage Lottery Fund (HLF) bids in Surrey and/or Kent.

### **5.2.4 Countryside Stewardship Scheme**

The Countryside Stewardship Scheme (CSS), administered by the Farming and Rural Conservation Agency, currently targets chalk grassland. A number of London sites have been entered into the scheme by public and private landowners. Individual agreements are for 10 years and provide both capital and revenue costs to benefit biodiversity, as well as access and general environmental improvement. Scrub clearance, the creation of new bridleways, stock fencing, grazing and reversion of arable land to grassland may all be funded under CSS, as may the creation of new habitat for the small blue butterfly (a target species). From May 2004, the Countryside Stewardship Scheme will change to incorporate a new 2 tier level of agri-environmental support that will consolidate and strengthen action for chalk grasslands.

## 6. Flagship Species

These special plants and animals are characteristic of chalk grassland in London.

<b>Pyramidal orchid</b>	<i>Anacamptis pyramidalis</i>	This attractive, pure pink orchid is one of the delights of chalk grassland in mid summer and grows in reasonably large colonies on some sites.
<b>Marjoram</b>	<i>Origanum vulgare</i>	Widespread on chalk soils, this aromatic herb was recommended by Culpepper as a cure for a great number of ills.
<b>Quaking grass</b>	<i>Briza media</i>	'Tottering grass' is a delicate and distinctive plant most commonly found on chalk grassland.
<b>Marbled white</b>	<i>Melanargia galathea</i>	One of the most easily identified and attractive butterflies, often seen in large numbers in high summer.
<b>Yellow meadow-ant</b>	<i>Lasius flavus</i>	Forming distinctive domed ant-hills, this ant is an indicator of well-established traditional chalk grassland.
<b>Small Blue</b>	<i>Cupido minimus</i>	Nationally a species of conservation concern with a medium priority status, this butterfly is currently experiencing annual decline in the south-east. Small blue breeds in a range of dry, sheltered grasslands where Kidney Vetch grows and flowering plants are plentiful, preferring habitats with a mosaic of short and tall vegetation, some bare chalk scrapes and patches of light scrub.

## 7. Objectives, Actions and Targets

Most of these actions are specific to this habitat. However, there are other, broader actions that apply generically to a number of habitats and species. These are located in a separate 'Generic Action' section which should be read in conjunction with this document. There are generic actions for Site Management, Habitat Protection, Species Protection, Ecological Monitoring, Biological Records, Communications and Funding.

Please note that the partners identified in the tables are those that have been involved in the process of forming the plan. It is not an exclusive list and new partners are both welcomed and needed. The leads identified are responsible for co-ordinating the actions – but are not necessarily implementers.

### Objective 1 To identify and map the existing and potential chalk grassland resource within London

**Target: Maintain an up-to-date record of the extent and status of London's chalk grassland**

Action	Target Date	Lead	Other Partners
1.1 Complete audit of all chalk grassland sites on a Geographical Information System (GIS)	Achieved 2001	LWT	GLA, LA
1.2 Maintain an up-to-date record of all London's Chalk grassland through reassessment of habitat coverage. Add new data to GIS map	2006	GIGL	Working Group

**Objective 2 Ensure that all existing chalk grassland is maintained and enhanced by appropriate management**

**Target: Appropriate management in place on all existing chalk grassland sites by 2007**

<b>Action</b>	<b>Target Date</b>	<b>Lead</b>	<b>Other Partners</b>
2.1 Establish a Chalk Grassland Working Group to help oversee the implementation of the plan and monitor chalk grassland in London	Achieved 2001	LWT	GLA, EN, LA, CoL, DCMP, Site Managers, Others
2.2 Establish appropriate mechanisms to ensure good practice in management is shared	Achieved 2002	Working Group	
2.3 Ensure Chalk Grassland Working Group meets regularly to oversee implementation of the plan and monitor chalk grassland in London	Ongoing	LB Bromley	GLA, EN, LA, CoL, DCMP, Site Managers, Others
2.4 Investigate submission of a bid to build on the CULD project	2005	LBB	GLA, EN, LA, CoL, DCMP, Site Managers, Others
2.5 Utilise the equipment and training resources established through CULD for the benefit of project partners and community groups	2006	LB Bromley	Working Group
2.6 Develop downland area grazing scheme	2005	DCMP	Bromley
2.7 Ensure each of the key sites actively managed under the working group has an up-to-date management plan (less than five years old)	2007	Working Group	LA, land managers, LWT

**Objective 3 Implement habitat creation and restoration on a number of identified sites.**

**Target: Identify potential chalk grassland sites in London for reversion and restoration by 2005 and implement habitat creation, restoration, or reversion on at least 2 sites annually until 2007**

<b>Action</b>	<b>Target Date</b>	<b>Lead</b>	<b>Other Partners</b>
3.1 Identify potential chalk grassland sites in London for reversion and restoration	2005	Working Group	London Boroughs, Landowners
3.2 Identify suitable sites for possible habitat creation across London	2005	Working Group	London Boroughs, Landowners

3.3 Implement habitat creation, restoration, or reversion on at least 2 sites annually until 2007	2007	Working Group	London Boroughs, Landowners
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**Objective 4 Promote the heritage and cultural value of London's chalk grassland and enable the public to enjoy it**

**Target: Maximise opportunities for community involvement and appreciation of chalk grassland**

Action	Target Date	Lead	Other Partners
4.1 Produce a questionnaire for public/user groups to find out how chalk grassland is valued	Achieved 2002	LBB	LA, LWT
4.2 Commission research into the cultural, 'sense of place' and ecological history aspects of London's chalk grassland	Achieved 2002	LWT	Working Group
4.3 Produce chalk grassland leaflet for 3 London boroughs to encourage access where this is not detrimental to biodiversity	Achieved 2003	LBB	LA, LWT
4.4 Produce cultural heritage slidepack and powerpoint presentation for use among partners	2006	CoL	Working Group
4.5 Investigate creating a link with the Gardens HAP to highlight the value of restored chalk grassland gardens	2006	LWT	Working Group
4.6 Investigate a further bid to widen the user group base using London's chalk grassland and promote active enjoyment of sites	2006	Working Group	
4.7 Distribute the 'walk the chalk' leaflet to health practitioners and local walking groups to promote the health and well-being benefits associated with the habitat.	2004	Working Group	
4.8 Investigate funding for an Events and Walking Coordinator to promote London's chalk grassland resource	2007	Working Group	

**Relevant Action Plans**

**London Plans**

Woodland; Private Gardens; Churchyards and Cemeteries; Parks, Amenity Grasslands and City Squares; Wasteland; Railway Linesides Audit; Farmland Audit.

**National Plans**

Lowland Calcareous Grassland; Calcareous Grassland Habitat Statement.

## **Key References**

Nature Conservancy Council (1986). The management of chalk grassland for butterflies *Focus on nature conservation no. 17*.

Chalking Up London's Downs (2003). Leaflets: Walk the Chalk and Enjoy London's Chalk Grassland.

Chalking Up London's Downs (2003). Questionnaire of people visiting London's Chalk Grassland.

## **Abbreviations**

CoL – Corporation of London

CULD - Chalking Up London's Down Project

DCMP - Downlands Countryside Management Project

GLA – Greater London Authority

HLF - Heritage Lottery Fund

LA - Local authorities

LBB - London Borough of Bromley

LWT - London Wildlife Trust

## **Contact**

The Lead for this habitat is London Borough of Bromley

**Alister Hayes**

**LB Bromley**

**Countryside Management Officer**

**Department Environmental Services**

**Bromley Council**

**Civic Centre**

**Stockwell Close**

**Bromley, BR1 3UH**

**Tel 020 8313 4665**

**Email [alister.hayes@bromley.gov.uk](mailto:alister.hayes@bromley.gov.uk)**