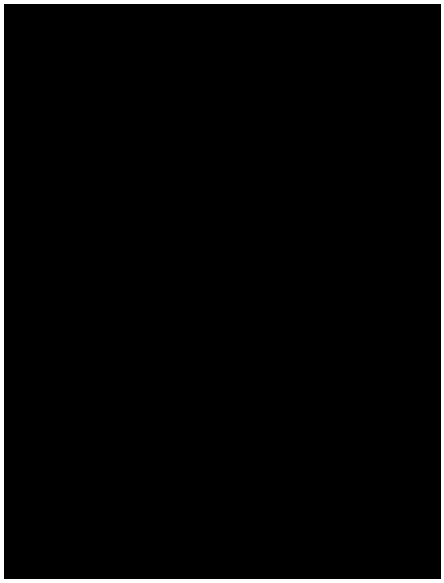
Habitat Action Plan
Acid Grassland



Harebells © Nigel Reeve

"By the middle of spring there may be on the [Clapham] Common little heaps of sandy material surrounding a miniature crater which leads to a deep hole, like the pipe of a toy volcano…shortly a red-tailed bee approaches, goes down the shaft, performs its business, and departs." (Walter Johnson, 1930)

1. Aims

- To ensure the protection, creation and restoration of acid grassland in order to increase the quality and extent of acid grassland in Greater London.
- To improve on existing knowledge of its ecological value in the regional context.
- To promote a greater appreciation of the habitat and its wildlife, and secure the involvement of Londoners in its conservation.

2. Introduction

As its name suggests, acid grassland develops over acidic soils. These soils are usually derived from free-draining sands and gravels that are low in nutrients. The habitat generally consists of various fine-leaved grasses and associated wildflowers, such as common bent, red and sheep's fescues, wavy hair-grass, sheep's sorrel, tormentil, cat's-ear and heath bedstraw. This plan also addresses a less widespread type of acid

grassland that consists mainly of purple moor-grass and is found where drainage is more impeded.

The soil conditions described above also support dwarf-shrub heathland. Much of today's acid grassland represents a degraded habitat which has lost its characteristic low-growing shrubs, such as heather, to various erosive forces. However acid grassland is an essential part of the habitat mosaic found on heathlands, and it is important to note that the present lack of heather is symptomatic of an imbalance caused by particular circumstances, rather than the undesirable replacement of one habitat by another.

Although acid grassland is a fairly meaningless concept for most people, there is no reason why the finer qualities of the habitat should not gain wider appreciation. Unlike chalk grassland, acid grasslands are not generally celebrated for their wealth of colourful wildflowers, although some of the characteristic species that do occur here are no less charismatic. These include harebell, common stork's-bill, buck's-horn plantain, heath milkwort and bird's-foot. Nationally scarce plants found in London's acid grassland include autumn squill, clustered clover and fine-leaved sandwort.

The acid grasslands of Greater London, south Essex and north-west Kent appear to be the natural home of a distinctive group of insects and spiders. A combination of factors appears to be responsible for this, including the loose and often bare soil, availability of nectar-rich wildflowers, plus the region's geographic location in the driest corner of the British Isles yet still close to the sea. Prominent within the group are many hole-nesting bees, wasps and ants, such as the rare mining bee *Andrena florea.* The UK distribution of many species is apparently very restricted and this unique assemblage has been collectively termed the 'Thames Terrace invertebrate fauna'.

More familiar insects frequenting acid swards are the small heath and small copper butterflies, while the hummocks of meadow ants are another common feature. The fungi found here may also be interesting. Associated birdlife includes the meadow pipit, skylark and, attracted by the rich insect pickings, the green woodpecker.

3. Current Status

Acidic soils are fairly common in the Thames basin, particularly over the widespread Terrace Gravels laid down by the historic shifting course of the great river. Although there is plenty of potential for acid grassland to develop in Greater London, it is an uncommon habitat. This is a result of extensive development, conversion into farmland or amenity grassland, and quarrying for aggregates with later restoration to something quite different, such as open water.

Lowland dry acid grassland is listed as a priority habitat for conservation in the UK Biodiversity Action Plan. London's estimated 1300 hectares contribute about 4% to the national resource. Because of the widespread distribution of acidic soils only six boroughs are without any acid grassland. Although there are several extensive areas, for example in Richmond Park, on Wimbledon Common and Putney Heath in Merton and Wandsworth, and at Wanstead Flats in Redbridge, a significant proportion occurs as widely scattered, overlooked fragments on the margins of more ubiquitous habitats such as amenity grassland, scrub, road and rail verges and on some longer-established wasteland sites. Thames Terrace invertebrates are often discovered on the latter,

indicating the similarity between soil conditions of former industrial sites and the region's original grasslands.

Much of London's remaining acid grassland has suffered in quality, due to a variety of factors. Ideally, it would be maintained by grazing animals and occur alongside stands of heather and gorse, small areas of bare ground and lichen cover, patches of scrub and peat-filled bogs. There would also be variation in structure within the grassland community reflecting its stage of succession. However, over-intensity of use or management neglect and consequent invasion by coarse grasses, bracken and developing woodland, are all too commonly associated with the habitat in London.

4. Specific Factors Affecting the Habitat

4.1 Lack of a clear identity

Because of acid grassland's somewhat lowly image and confusing identity as a habitat type, it is often undervalued, even by ecologists. This makes it particularly vulnerable to mismanagement, and beyond protected sites, frequently seen as expendable by developers and their advisers. Its status as a once widespread habitat comprising much of London's rough grazing land, of particular importance to a suite of specialised invertebrates of national significance, is only beginning to be appreciated.

4.2 Amenity use

As the majority of London's remaining acid grassland is found in public open spaces and in golf courses, there are often heavy pressures on site managers to accommodate conflicting recreational demands. Acid grassland therefore continues to be lost through inappropriate management (such as irrigation, reseeding and tree planting) to provide more formal recreation areas, and the reconfiguration of greens, fairways and so on. A lack of resources leads directly to passive neglect of the habitat, allowing bracken to take hold, and scrub and woodland to develop.

The acute level of recreational use in urban areas is itself a problem and commonly causes localised erosion and eutrophication by dog excreta. Fires are another hazard in public sites, which can provoke managers into keeping their grasslands mown too short to benefit wildlife.

4.3 Management constraints

The optimal management of acid grassland in London is constrained by several factors. Low-intensity grazing is currently considered to be the best method of achieving a varied range of conditions. Although deer herds have long been crucial to the maintenance of Richmond and Bushy Parks' grasslands, and rabbit grazing is also locally important, the fragmented nature of the habitat often prevents grazing by stock. The average site is simply not large enough to support viable flock or herd sizes. Stock availability and disturbance by the public and their dogs are also prohibitive.

Mowing therefore tends to be the most widely applied method of maintaining the open nature of the habitat, although this is far from ideal as it can destroy the features important for supporting diverse invertebrate communities.

The more general effects of atmospheric pollution on this habitat are causing increasing concern. Vehicle and air traffic emissions contribute to changes within the plant communities, but are beyond the control of most site managers.

4.4 Climate change

Current predications are that the climate in London and the South East of Britain will change towards hotter drier summers, with warmer wetter winters and more frequent extreme events such as storms and flash-flooding. Storms pose relatively little risk to open grassland, and indeed the loss of trees would generally benefit the habitat. On the other hand, prolonged dry spells increase the risk of loss or serious damage through grass fires and may reduce the productivity of the vegetation.

It is impossible accurately to predict the ecological effects of a rise in average temperatures and shifts in seasonal weather patterns. A number of species such as the Roesel's bush cricket (*Metrioptera roeselii*) and the wasp spider (*Argiope bruennichi*) have rapidly spread north and increased greatly in the London area during the last decade, apparently as a response to climate change. Although some species may be seen to benefit, the broader effects of community shifts in the flora and fauna of acid grassland remain unknown. The timing of the seasons is critical to the breeding success of most species. Erratic and more extreme weather conditions can threaten many kinds of plants and animals, including butterflies and migratory insectivorous birds. Winter flooding of grassland may impact on small mammals.

A main aim of this Action Plan is to increase the quality and extent of Acid Grassland in Greater London. Managing for biodiversity and to maximise the natural ecological functions of the habitat will increase its resilience to the impacts of climate change. Larger, less fragmented parcels of habitat are typically more species-rich, ecologically robust and less vulnerable to localised disasters such as fires and floods. The funding of surveys to monitor the effects of climate change and the results of positive management is now of even greater importance.

Current Action

5.1 Legal status

Much of the acid grassland identified in the London Biodiversity Audit occurs within Sites of Importance for Nature Conservation (SINC), although there will undoubtedly remain important areas which have yet to be discovered.

Some sites containing acid grassland receive statutory protection as Sites of Special Scientific Interest (SSSI) or Local Nature Reserves (LNR). SSSI with acid grassland include Wimbledon Common (Merton and Wandsworth), Keston and Hayes Commons (Bromley) and Epping Forest (Waltham Forest and Redbridge). Richmond Park is both an SSSI and a National Nature Reserve. LNR include Stanmore Common (Harrow), Barnes Common (Richmond) and Hounslow Heath (Hounslow). Richmond Park, Wimbledon Common and

Epping Forest are all candidate Special Areas of Conservation (cSAC), to be designated under European legislation for their invertebrate and habitat interest.

Specially protected species associated with the habitat in London include adder, common lizard and slow-worm. The protected Deptford pink is a nationally rare plant that may still occur in gravelly grassland beside the Thames in south-west London. Many of the associated rare invertebrates are listed in the British Red Data Book (RDB), for example the mining bee *Andrena florea,* the bee wolf *Philanthus triangulum* and the digger wasps *Diodontus insidiosus* and *Cerceris quinquefasciata.*

5.1 Strategic Targets for Priority Habitats in London.

The Planning Policy Statement on Biodiversity and Geological Conservation (PPS9) in August 2005 introduced new policies to be taken into account by the Mayor of London in the London Plan, and by London Boroughs in the preparation of local development documents. In line with this requirement, the London Biodiversity Partnership has adopted broad targets for the restoration and re-creation of BAP priority habitats

The 2004 habitat audit estimated the extent of Acid Grassland in London to be 1,264 hectares. The broad strategic target is 1,300 hectares with an increase of 20 hectares by 2015. There is a requirement for London Boroughs to identify any areas or sites for the restoration or creation of Acid Grassland and to support this restoration or creation through appropriate policies.

5.3 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.

5.3.1 Management and restoration

Most protected sites have management plans and some have benefited from grant aid schemes, which offer finance towards fencing and scrub clearance projects. Mowing or, ideally, selective strimming, is the most convenient method for maintaining scrub-free grassland, although it is crucial for cutting regimes to be carefully worked out otherwise much damage can be done, especially to a site's invertebrate interest. The regular creation of areas of bare ground is an ideal extra. Minor controlled fires have also been effective in halting succession on many sites.

Where appropriate, heathland creation within an acid grassland site can increase species and structural diversity. This has been attempted on Hounslow Heath and Hampstead Heath (Camden).

6. Flagship Species

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

Harebell	*Campanula rotundifolia*	This, the “bluebell” of Scotland adds welcome colour to dry grassland swards late into the summer.
Sheep's sorrel	*Rumex Acetosella*	A humble member of the dock family, its blood-red leaves particularly characterise acid grassland and have been eaten as a wild salad plant in the past.
Heath bedstraw	*Galium saxatile*	A sprawling plant, often found on the tops of anthills. In flower it has a foam-like appearance, and along with other bedstraw species was traditionally used to stuff pillows and mattresses. A chemical property may have repelled bed bugs and other parasites.
Waxcap fungi	*Hygrocybe* species	So-named for their rather greasy-looking caps, waxcaps are found in unimproved grassland. Typically these small fungi are attractive shades of red, yellow, green or even purple. The pink waxcap *Hygrocybe calyptriformis* is a UK BAP Priority species and occurs at several places in London.
Small copper butterfly	*Lycaena phleas*	The metallic orange of this tiny butterfly's forewing provides its common name. A common larval foodplant is sheep’s sorrel.
Red-banded sand wasp	*Ammophila sabulosa*	This striking insect has a narrow, elongated waist and frequents sandy grassland sites, mainly in eastern boroughs. Wasps require warm, loose soil in order to breed but adults also need to forage on nearby nectar-rich wildflowers. Having dug her nest, the female wasp hunts caterpillars which are often much larger than herself. These are dragged back to the nest paralysed but still alive, and left for her larvae to feed on when they hatch out a few days later.
Green woodpecker	*Picus viridis*	Also known as the “yaffle” after its characteristic call. This striking bird lives amongst parkland trees and in woodland but it is frequently seen on the ground in acid grassland where it comes to feed on ants – a favourite food.

7. Targets and Actions

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.

Target 1: All major existing acid grassland sites to be in an improved condition and to have restored or created an additional 20 hectares of acid grassland by 2015

Action	Target Date	Lead	Other Partners
1.1 Establish network of acid grassland site managers and conservation bodies as an 'Acid Grassland Working Group'	Achieved 2002	TRP	Site Managers, LA, LWT, LNHS, GLA, NE, EFC
1.2. Ensure that the 'Acid Grassland Working Group' meets at least annually to develop and share knowledge and information.	Quarterly	TRP	Working Group
1.3. Produce best practice habitat management guidelines with appropriate management advice for invertebrate interest.	Achieved March 2005	TRP MCC	Working Group
1.4 Distribute guidelines to all acid grassland site managers	Achieved 2005	TRP	Working Group
1.6 Develop a simple and practical monitoring protocol for site managers to quantify and report the quality and extent of acid grassland on sites (repeated 4-yearly).	2007 then 2011, 2015.	Working Group	Site managers, GLA, LWT, LA, Golf Courses.
1.5 Work in association with the Heathland HAP working group to maintain an annual programme of training in management, monitoring, interpretation and communication for site managers.	Annually	Working Group	Site managers, GLA, LWT, Reptile SAP working Group, LA, Golf Courses.

Target 2: Produce a strategic conservation programme for invertebrate fauna found on acid grassland in London by 2009

Action	Target Date	Lead	Other Partners
2.1 Commission a review of existing data to be followed by a targeted survey of selected representative invertebrate taxa acid grassland in Greater London.	2008	Working Group	BL, EFC, GIGL, LNHS, LWT, BENHS
2.2 Produce a report evaluating the conservation status of the invertebrate fauna of acid grassland in Greater London and setting out a strategic plan for the conservation and enhancement of acid grassland sites with recommendations for action.	2009	Working Group	BL, EFC, GIGL, LNHS, LWT, BENHS

Target 3: To promote a greater appreciation of Acid Grassland and its wildlife, using a strong invertebrate theme by 2007

Action	Target Date	Lead	Other Partners
3.1 Produce an educational resource pack ○ on acid grassland aimed at a public audience, including a PowerPoint presentation, leaflets and a range of other resources.	Achieved May 2007	TRP	Working Group.
3.2. Disseminate resource pack to site managers and educators. Ask for feedback on use of pack. Create site for educational resources on LBP website.	2007	TRP LBP	Working Group.
3.3. Collate feedback on use of resource pack (e.g. number of talk, events etc.) and report.	2008	TRP LBP	Working Group.
3.4 Invite relevant Councillors to visit local sites, to appreciate site priorities & potential	Biennially	Working Group	LA

Relevant Action Plans

London Plans

Woodland; Heathland; Wasteland; Churchyards and Cemeteries; Parks, Amenity Grasslands & City Squares; Open Landscapes with Ancient/Old Trees Audit; Railway Linesides Audit; Ponds, Lakes & Reservoirs Audit.
Reptiles; Tower mustard; Humble bumble.

National Plans

Lowland Heathland; Lowland Dry Acid Grassland; Lowland Wood Pasture and Parkland; Built Environment and Gardens.

Skylark; Hornet robberfly *Asilus crabroniformis;* A carder bee *Bombus humilis;* Shrill carder bee *Bombus sylvarum;* A solitary wasp *Cerceris quinquefasciata;* Picture winged fly *Dorycera graminum;* Tower mustard *Arabis glabra;* Deptford pink *Dianthus armeria,* Pink waxcap *Hygrocybe calyptriformis.*

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Abbreviations

BENHS – British Entomological & Natural History Society
BC – Butterfly Conservation
BL – Buglife
CL – Corporation of London
NE – Natural England
EFC – Essex Field Club
GIGL – Greenspace Information for Greater London
GLA – Greater London Authority
LA – Local Authority
LBP – London Biodiversity Partnership
LNHS – London Natural History Society
LWT – London Wildlife Trust
MCC – Mitcham Common Conservators
RBGK – Royal Botanic Gardens Kew
TRP – The Royal Parks

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