

LANCASHIRE BAP SPECIES ACTION PLAN

GREATER BUTTERFLY ORCHID (*Platanthera chlorantha*)



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Summary

Greater Butterfly-orchid is one of a group of neutral to calcareous hay-meadow/woodland edge perennial species that are critically endangered in Lancashire (see related Action Plans p. 5). It survives, in very small quantity, at two nearby sites in north Lancashire.

Survival depends upon its habitat being managed in traditional ways mimicking woodland glades in the 'wild wood' that were created and maintained by large herbivores, long extinct in the British Isles. This species appears to be particularly sensitive to nutrient status and light.

Action Plan Aim-

To reverse the decline of Greater Butterfly-orchid in Lancashire

Species Description

Greater Butterfly-orchid grows up to 60 cm tall with two broadly strap-shaped leaves and a spike of attractive white to greenish-white flowers that open in June.

Main Habitats

This species occurs in a variety of habitats, especially rough pasture, hay-meadows, and on the edges of scrub and woodland, usually on relatively well-drained neutral or calcareous soils.

National Status

Greater Butterfly-orchid is locally frequent in suitable habitats throughout Britain, except the Northern Isles. It belongs to the European Temperate element of the British flora and is found in Europe, Caucasus and Siberia. The 'New Atlas' (Preston *et al.*, 2002) shows that long-term decline of this species in Britain has occurred but no further decline since 1987 is reported (Braithwaite, Ellis and Preston, 2006). Nationally it is considered 'near threatened' or close to having a high risk of extinction (Cheffings and Farrell, 2005). However, where conservation measures have been put in place spectacular recovery in the size of populations has been reported.

This species receives only general protection under the Wildlife and Countryside Act 1981.

Regional Status

The status of Greater Butterfly-orchid changes from the north to the south of the region. In Cumbria the orchid is well-distributed although generally scarce and declining, whilst in Lancashire south of the R. Ribble it may always have been rare (certainly rarer than Lesser Butterfly-orchid *Platanthera bifolia*), and has been extinct here for nearly 70 years. It persists, rarely, in the hills of north-east Cheshire where, rather more than a century ago, it was widespread.

Local Status

Wheldon and Wilson (1907) describe it as 'frequent among the hills' especially in Wyresdale, but they did not record it west of the A6 south of Lancaster. In most of South Lancashire it always seems to have been rare and it was last seen in Barley in 1934 (Savidge *et al.*, 1963). Its history in the Lancashire section of VC 64 is not known. Lees (1888) did not record it but Peel (1913) indicates that there were three localities (no details) suggesting that even 100 years ago it was rare in this part of Lancashire.

Since 1960, only four populations remained or have been found, with very few plants in each. Records include meadows by the R. Hindburn, Tatham in 1972; two sites in Hindburndale in 1974 and 1984; from Yealand Redmayne in 1968 and from an old hedge bank at Aighton, Bailey and Chaigley in 1966. It is believed that the species was lost from the last two sites in the early 1970s. All these records were from banks or fragments of meadows.

Today it is known, in very small quantity, only at two places on either side of the R. Hindburn in the north Bowland fells, where it was seen in 2000 and at one of these sites in 2007. This species is critically endangered in Lancashire.

Current factors affecting the Species

The exacting habitat requirements of Greater Butterfly-orchid are not fully understood. However, many factors are thought to adversely affect the species. These are primarily the result of agricultural improvements to pastures, meadows and scrub, and the general nutrient enrichment of these habitats. Changes in grazing regimes, including the reduction or ending of grazing by farm stock, changes in woodland management, and the loss of ancient deciduous woodland are also likely to have contributed to the decline of this species.

In Lancashire the main period of decline for this species was between 1910 and 1950. This was a period of general agricultural improvement but particularly damaging activities included application of basic slag (rich in phosphates), drainage and re-seeding and ploughing of old grassland, especially after 1939. Such activities have continued to the present day, their effects reinforced by further nutrient enrichment through both direct and atmospheric deposition.

The two populations that remain are in fields on either side of the R. Hindburn and survival depends upon appropriate management taking place. This is not happening for one colony where scrub is developing by a lack of grazing and nutrient enrichment (atmospheric but probably enhanced by drift from the more intensively

managed adjacent hay-meadow). There is a danger that both sites are or will be abandoned.

Elsewhere in the country there are a few examples of conservation management techniques that have been successful in restoring populations. These are based on a return to traditional techniques for managing hay-meadows and woodlands where nutrient levels, especially phosphorous and nitrogen, have remained low. It is likely that obtaining the correct balance between the nutrient status of the soil and the cutting regime (haymaking and grazing) is crucial.

Current Action / Mechanisms

- *Policy*
There are no specific conservation measures in place.
- *Site Safeguard*
Both extant sites are within Biological Heritage Sites.
- *Land Management*
No positive management is taking place at either site but traditional management of one site occurs, at least from time to time.
- *Advisory*
Landowners of both sites know of the species' presence.
- *Research and Monitoring*
The Rare Vascular Plant Working Group are currently undertaking this work.
- *Public Relations*
No publicity has yet been attempted.

Species Targets

Target	Area	Measure	Timescale
<i>To increase the size of existing populations by at least X10</i>	Lancaster District	No. of flowering shoots counted	2015
<i>To establish two new viable populations within its historical range</i>	Lancaster and Wyre Districts	No. of successful introductions	2020

Proposed Actions

Action (priority: H,M,L)	Area	Milestone/ Measure	Partners	Timescale
Research and monitoring				
Systematic monitoring of existing populations (H)	Lancaster District	Establish monitoring programme	LWT, BSBI, PlantLife, local group	Annual
Locate and review examples of successful conservation measures (H)	Outside Lancashire	Completion of review	LWT, BSBI, PlantLife	2008
Site safeguard and management				
Bring existing sites into positive management (H)	Lancaster District	No. of sites in positive management	LCC, LWT, NE, Owners	Ongoing
Species protection and management				
Identify potentially suitable sites for introductions (M)	Lancaster, Ribble Valley and Wyre Districts	No. of potential sites identified	LCC, LWT, LRF, FWAG, PlantLife	2007
Introduce species to agreed sites using local seeds or material (M)	Lancaster, Wyre and Ribble Valley Districts	No. of introductions made	Owners, LCC, LWT, LRF	2010
Advisory				
Ensure site owners, farmers, local authorities and other agencies are aware of sites and management needs (H)	Lancashire	Relevant Individuals and agencies contacted	LCC, LWT, DEFRA, FWAG, NE, EA, Lancaster City Council	Ongoing
Publicity				
Publicise the importance and the threat to this species in Lancashire (H)	Lancashire	Press and media appearances	LWT	Ongoing

Related Action Plans

Habitat Action Plans

- Broadleaved and Mixed Woodland
- Species-rich Neutral Grassland
- Calcareous Grassland

- Limestone Pavement.

Species Action Plans

There are a number of closely related habitats, all of which may potentially occur at the same site. They may contain a number of Lancashire's endangered and nationally declining species. The decline of some, e.g Greater Butterfly-orchid, is considerable whilst for others the boundary between declining (to the south) and stable (to the north) populations is marked by the Forest of Bowland. They belong to a number of floristic elements so that northern, southern, oceanic and European elements of the British flora are represented.

Platanthera chlorantha belongs to a group of Lancashire species that favour neutral to calcareous grasslands and woodland edge habitats (Broad Habitats 1 broad leaved, mixed and yew woodland, BH 6 neutral grassland and BH 7 calcareous grassland). Sometimes the neutral grasslands become flushed or waterlogged with fen, marsh or swamp (BH 4) communities developing. However whilst a number of communities are involved perhaps the most significant are MG 3 *Anthoxanthum odoratum* – *Geranium sylvaticum* grassland (confined to northern England) and MG 5 *Cynosurus cristatus* – *Centaurea nigra* grassland (Hill, Preston and Roy, 2004).

Neutral and calcareous grassland and woodland edge habitats declined sharply in Lancashire during the 20th century reflecting a national trend. These grasslands are often referred to as 'northern hay meadows' (MG 3) or simply 'old meadows' (MG 5). They are maintained by 'traditional' farming techniques. These regimes are similar for both grassland communities and comprise winter grazing followed by removal of stock in the spring when the fields are given a light dressing of farm yard manure. The grass is cut for hay in summer and stock again allowed to graze the fields in the autumn. The timings vary reflecting the harsher climate and shorter growing season of the northern hay meadow. Very few meadows remain being highly sensitive to modern farming methods.

The following table provides a summary of the status of some of the rarer neutral grassland species for which similar individual SAPs could be written (The National Conservations Status is taken from Cheffings and Farrell, 2005).

Neutral hay meadow and woodland edge habitats. (Medium height grassland maintained by a cutting/grazing regime in the absence of artificial nutrient inputs but given a light dressing of farm yard manure; medium moisture requirements but with wetter patches, e.g. near streams or flushes (see SAP for <i>Primula farinosa</i>).		
Species	National Conservation Status	Conservation status in Lancashire
<i>Platanthera chlorantha</i> Greater Butterfly-orchid	Near threatened	From a once common species in the east and north of the county two adjacent sites with few plants remain. A similar decrease is noted nationally (Preston, Pearman and Dines, 2002). It is a member of the European Temperate element
<i>Platanthera bifolia</i> Lesser Butterfly-orchid	Vulnerable	Lesser Butterfly-orchid is found on a range of soils and occurs in grassland, scrub and woodland edge communities throughout the British Isles. However it has suffered severe losses in most parts of the country. Although it was never a common species in Lancashire the old floras give conflicting evidence on its

		abundance. At particular sites it may have been abundant and it was probably more widespread than Greater Butterfly-orchid. However 40 years ago it was known from only four sites in northern Lancashire but at one of these near Hawes Water over 40 spikes were seen. By the late 1990s one site remained and after year-by-year decline the last plant was seen in scrubby grassland at Yealand Redmayne. Lesser Butterfly-orchid belongs to the Eurasian Boreo-temperate element of the British flora.
<i>Euphrasia arctica</i> ssp. <i>borealis</i> An eyebright		Believed to have been common but there has been a marked decline in the last 30 years but change of its national status is not known. It is a member of the Oceanic Boreal-montane element.
<i>Euphrasia rostkoviana</i> An eyebright	Vulnerable	This was always limited to a few sites in Lancashire but at its last remaining site, where it grew with <i>Platanthera chlorantha</i> , it seems to have gone. However sympathetic management might encourage dormant seed to germinate. It has declined nationally (Preston, Pearman and Dines, 2002). It is a member of the European Boreo-temperate element.
<i>Trollius europaeus</i> Globeflower		This most attractive species was found widely in damp hay meadows and woodland edge habitats throughout upland Lancashire. It has declined greatly and in some of the remaining sites increased shading prevents flowering. It has declined nationally (Preston, Pearman and Dines, 2002; Braithwaite, Ellis and Preston, 2006). It is a member of the European Boreal-montane element.
<i>Serratula tinctoria</i> Saw-wort		This is perhaps more strictly a woodland edge and pasture plant than a meadow species. It was never common but has declined during the last 100 years reflecting the national situation (Preston, Pearman and Dines, 2002). It is a member of the European Temperate element.
<i>Cirsium heterophyllum</i> Melancholy Thistle		This was found widely in the upland areas in hay meadows and woodland edge habitats but has declined greatly. Most extant localities are in the upper Hodder valley where it favours roadside verges. It has declined nationally (Preston, Pearman and Dines, 2002). It is a member of the Eurosiberian Boreal-montane element.
<i>Orchis morio</i> Green-winged Orchid	Near threatened	This was found in meadows and pastures mostly on calcareous soils in the west of the county. It is now restricted to one calcareous pasture having been lost from all other sites. This decline reflects the national situation (Preston, Pearman and Dines, 2002). It is a member of the European Temperate element.
<i>Gymnadenia conopsea</i> Fragrant Orchid		This was found in a number of pastures and possibly meadows in the north and east of the county. It is now divided into three species: <i>G.</i>

		<p><i>conopsea</i>, which occurs in calcareous grassland at Silverdale and near Slaidburn, <i>G. borealis</i>, found near Slaidburn in 2007, and <i>G. densiflora</i> (Foley and Clarke, 2005). It is likely that all three species occurred in Lancashire. <i>G. borealis</i> occurs in less alkaline soils whilst <i>G. densiflora</i> favours damp places. The decline of <i>G. conopsea s.l.</i> in Lancashire is reflected nationally (Preston, Pearman and Dines, 2002). It is a member of the Eurasian Boreo-temperate element.</p>
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References

Braithwaite, M.E., Ellis, R.W. and Preston, C.D. (2006). *Change in the British flora 1987 – 2004*. Botanical Society of the British Isles. London.

Cheffings, C. and Farrell, L., eds (2005). The vascular plant Red Data List for Great Britain. *Species Status*, 7: 1 – 116. Joint Nature Conservation Committee. Peterborough.

Foley, M. and Clarke, S. (2005). *Orchids of the British Isles*. Griffin Press. Cheltenham.

Hill, M.O., Preston, C.D. and Roy, D.B. (2004). *PLANTATT. Attributes of British and Irish plants: status, size, life history, geography and habitats*. Centre for Ecology & Hydrology. Abbots Ripton.

Lees, F.A. (1888). *The Flora of West Yorkshire*. Lovell, Reeve & Co. London.

Peel, M.N. (1913). The orchids of the upper Hodder valley. *The Naturalist*, 1913: 20 – 32.

Preston, C.D., Pearman, D.A. and Dines, T.D., eds (2002). *New Atlas of the British & Irish Flora*. Oxford University Press. Oxford.

Savidge, J.P., Heywood, V.H. and Gordon, V. (1963). *Travis's Flora of South Lancashire*. Liverpool Botanical Society. Liverpool.

Wheldon, J.A. and Wilson, A. (1907). *The Flora of West Lancashire*. Henry Young & Sons. Liverpool.

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