

Upland calcareous grassland

Introduction

Upland calcareous grasslands occur on lime-rich soils situated above the upper limit of agricultural enclosure. They typically occur as components of habitat mosaics which are generally managed as rough grazing land for domestic livestock. Upland calcareous grasslands are generally restricted to shallow soils derived from a variety of lime-rich bedrocks such as the widely distributed Carboniferous Limestone. It is estimated that there are 10,000 ha of upland calcareous grassland in England and 800 ha in Wales. Particularly important areas for the habitat include the North Pennines and Cumbria.

Upland calcareous grassland is an important habitat for a number of Priority species including the Wall mason bee (*Osmia parietina*) and the Whorl snails *Vertigo geyeri* and *V. genesii*.

Limestone Grassland & Scrub - Gundale Yorks © Roger Key

Threats

• Agricultural intensification

Fertiliser use, herbicide application, ploughing and re-seeding may still be damaging and destroying some grasslands

• Overgrazing

Heavy grazing by sheep, cattle and horses, especially during the summer, can cause soil erosion and may adversely affect species-richness and structural diversity, with a loss of tall herbs in particular.

• Scrub encroachment

This may happen in the case of very light or absent grazing and can result in a decline richness of grassland species

• Quarrying

Quarrying of limestone and other calcareous bedrocks is a local but significant factor resulting in the loss of calcareous grasslands. Conversely, the in-filling of abandoned limestone quarries where calcareous grasslands have become established is a threat at some localities

• Drainage

Drainage or pollution of associated groundwater seepage and spring habitats

Habitat Management

Maintain habitat diversity

Management should aim to achieve a good mosaic of subhabitats, with at least some areas offering dense plant

cover and others with less dense cover and/or bare patches. Any upland streams, damp areas or seepages should be treated as important components of this habitat type.

Allow only light grazing

Intensive grazing is likely to be deleterious to invertebrate species and too little grazing is preferable to too much. For example, the plant bug *Strongylocoris leucocephalus* is found on Lady's bedstraw in upland pastures and occurs on verges and areas where grazing is restricted to spring/ autumn-winter.

Cattle are, in general, preferable to sheep as their grazing habits produce a more diverse vegetational structure with varying sward heights and tussocks that provide shelter and over-wintering sites. The Nationally scarce Beautiful pill-woodlouse (*Armadillidium pulchellum*) is found in damp microsites in upland grassland such as under mats of vegetation and has also been collected from ants' nests in shorter turf.

The Wall mason bee (*Osmia parietina*), a Priority species, is associated with unimproved pasture with dry stone walls and sunny warm open situations sheltered by shrubs. These sites are best managed by traditional low-level sheep grazing which ensures good growth of Bird's foot trefoil (*Lotus corniculatus*).

Prevent scrub invasion

Care must be taken to ensure that vegetational succession does not threaten the grassland community. Rotational grazing may be an appropriate way of controlling scrub as long it is carefully monitored to prevent over-grazing or excessive trampling.

Where scrub has long been part of the habitat mosaic, then it should be treated as a valued habitat component which needs to be kept in check. Scrub provides shelter in exposed environments and has its own fauna, including the fauna of herbs under the canopy. Flowering shrubs such as willow, Sloe or Hawthorn provide important nectar and pollen sources for insects.

Maintain springs, seepages and water-courses

Although dry calcareous grassland has a relatively small number of specialist invertebrate species compared with lowland sites, a rich fauna can occur where seepages, springs and streams are present. The two Priority mollusc species *Vertigo geyeri* and *Vertigo genesii* are both found in upland calcareous flushes; their most important conservation priority is the maintenance of the hydrological conditions that supply the flush with lime-rich waters. Lowering of water tables or the interruption of water flow could have damaging effects. Livestock trampling can be particularly damaging to invertebrate habitat in wet areas.

The structure and management of the marginal and riparian vegetation of water-bodies and water-courses is important to ensure successful breeding of any invertebrate species present. Work liable to damage this vegetation should aim to leave a mixture of species and sward heights. It is suggested such work should be undertaken on one bank only and on short stretches such as 50 metres in each 200 metres in any one year.

BAP species associated with upland calcareous grassland:

Wall mason bee (*Osmia parietina*)

Whorl snail (*Vertigo geyeri*)

Round-mouthed whorl snail (*Vertigo genesii*)

For a more comprehensive list of species associated with this habitat, please see the download list.

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