ENGLISH NATURE

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Sustainable grazing in the English uplands

working today
for nature tomorrow

English Nature is the Government agency that champions the conservation of wildlife and geology throughout England.

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Front cover photograph
Grazing by livestock has shaped the upland landscape. Stocking levels should be set by the carrying capacity of the vegetation.
Primrose Peacock/Holt Studios

Awarded for excellence

Environmentally sustainable grazing in the uplands - what is it?

Vegetation in the uplands has adapted to harsh conditions of wind, rain and low temperatures. In addition, the soil is often either thin with little nutrients, or waterlogged and peaty. Slow growth rates, and a shorter growing season than that in the lowlands, are factors that make survival for upland plants a challenge.

Removing sheep before harsh weather conditions are predicted reduces the need to supplementary feed, which often results in localised overgrazing and poaching.
Wayne Hutchinson/Holt Studios

Grazing can be used to introduce structure to what would otherwise be a uniform habitat.
Peter Wakely/English Nature 12,800

Three types of extensive upland vegetation are most valued for their wildlife.

- Heathland that contains a mosaic of dwarf shrubs, for example, heather *Calluna vulgaris* and bilberry *Vaccinium myrtillus*.
- Species-rich calcareous grassland with plants such as eyebrights *Euphrasia* spp. and northern bedstraw *Galium boreale*.
- Blanket bog that supports a variety of dwarf shrubs, cottongrass *Eriophorum* spp. and in particular, *Sphagnum* bog-mosses.

Environmentally sustainable grazing does not suppress or cause the loss of valued moorland vegetation. It can be achieved by appropriate stocking levels, increasing shepherding, and/or introducing summer-only grazing.

Stock rearing, particularly sheep (although in some areas cattle), now dominates much of the uplands and many areas have suffered from the effects of high stocking levels and overgrazing.

To allow flowering plants to thrive, it is important to take account of the timing as well as the level of grazing.
Peter Wakely/English Nature 12,797

Native hardy breeds require less intensive husbandry as they can naturally cope with the changing conditions found in the uplands.
Nigel Cattlin/Holt Studios

Traditional practice - what is it?

Before the Common Agricultural Policy, the size of a herd or flock was limited in part by the manpower available to manage it and the available forage vegetation. Sheep, in particular, were shepherded around the hills. This made it unlikely that any particular area was damaged through overgrazing or poaching. With the onset of winter, all cattle and most sheep were brought down off the hill until the following spring. Animals that were left out over the winter would receive additional feed (hay), if available, only during periods of bad weather.

If sheep are overwintered on the fell they must be shepherded to prevent damage occurring to vegetation.
Wayne Hutchinson/Holt Studios

Modern practice - what is it?

The introduction of agricultural subsidies, based on headage payments, resulted in many more animals grazing the uplands throughout the year. For example, from 1951 to 1981, the total number of sheep in Less Favoured Areas of England and Wales increased by 88%. At the same time, there has been a social change with fewer people farming the land and, in particular, shepherding. The shortage in manpower has increased people's reliance on the use of All-Terrain Vehicles, resulting in the creation of new access tracks. Changes in technology, in particular the development of different methods of feed and delivery, have also increased the ability to over-winter stock on the hill.

Many farmers no longer keep traditional breeds of sheep or cattle, often because they do not make suitable profits or they take too long to mature. Most livestock breeds used now are usually not hardy and need additional feeding and housing.

The outbreak of Foot and Mouth Disease (FMD) in 2001, and subsequent countrywide cull of livestock, resulted in many farm businesses reviewing their structure. Some farmers have reduced sheep numbers through the Sheep Wildlife Enhancement Scheme or Environmentally Sensitive Areas schemes, but many others are seeking to return their stock numbers to pre-FMD levels.

It often takes a fenceline to show the impact of unsustainable grazing that may have taken place over several years or more.
Jim Foster/English Nature

How modern practice affects moorland vegetation

The increases in numbers of livestock grazing the English uplands, particularly over the last 50 years, have significantly changed the vegetation that is found there. Grazing animals preferentially select plants and grasses. When stock numbers were increased on any one area, little account would have been taken of the existing vegetation and the likely impact of this increased grazing and trampling pressure. This meant that, in many areas that once contained a mosaic of dwarf-shrubs, such as heather and bilberry, the shrubs have been replaced by grassland - also known as 'white moor' or 'white ground'. This has less ecological interest and often consists of species such as mat-grass *Nardus stricta* and heath rush *Juncus squarrosus*, which make poor quality grazing for livestock. The lack of shepherding and the increased number of animals being over-wintered on the hills compounds the changes to vegetation caused by stocking too many animals. Increasing the number of animals on the land during winter is particularly damaging, as the grazing occurs at a time when the vegetation is largely dormant and unable to recover.

An analysis of the causes of damage to Sites of Special Scientific Interest in England has identified that overgrazing is the biggest cause of damage. Many of the worst affected sites are Common Land, where the establishment of sustainable management depends upon agreement by all the Commoners. English Nature is seeking reform of the relevant legislation, so that appropriate management can be carried out more effectively.

Increasingly, it has become apparent that overstocking has implications for soil erosion and rates of run-off, leading to problems of water quality and flooding downstream. As we learn more about this relationship it is likely that action will need to be taken at a water-catchment scale.

How grazing affects the wildlife of moorlands

There are a range of birds, invertebrates, mammals and reptiles found in the English uplands. They all require variation in the structure and composition of the vegetation in order to complete their lifecycles successfully. This variation occurs as a result of different species of plant and grass having a range of growth forms and patterns. The intensity of grazing pressure also influences the natural variation in height and size of the plants. High stocking levels can replace the mosaic of plants that provide structure and shelter with a uniform covering of grasses that are often close-cropped. It is worth noting that sheep and cattle have different grazing patterns. Sheep tend to produce a close-cropped sward, whilst cattle produce a sward that is far more variable with close-cropped areas mixed with tufts of taller vegetation. Grassland grazed by cattle can be particularly important for nesting wading birds which make use of this variation in cover.

Cattle can produce a sward that allows birds, plants and invertebrates to thrive.
Wayne Hutchinson/Holt Studios

Sustainable grazing levels can result in attractive landscapes as well as intimate mosaics of habitat.
Peter Wakely/English Nature 22,712

Some habitats, like limestone pavement, benefit from grazing by particular livestock, such as cattle.
Peter Wakely/English Nature 19,692

Changes in the Common Agricultural Policy

The July 2003 reforms of the Common Agricultural Policy will potentially affect upland livestock farmers. Whilst overgrazing has been the major cause of environmental damage in the uplands, there may be a requirement for minimum grazing levels to prevent undergrazing or abandonment of semi-natural habitats. There will also probably be refinements to the rules on overgrazing. From 2005, all livestock headage payments will be rolled into a single farm payment. Receiving this payment will not be linked to the number of livestock held, but will require the maintenance of good agricultural and environmental conditions.

What does English Nature want to see?

English Nature recognises that livestock farming has a key role in the management of many upland habitats. However, if environmental damage is to be avoided the livestock system practised must be environmentally sustainable. As all grazing animals are to some extent selective in the plants they eat, environmentally sustainable regimes (and stocking rates) can only be set after an assessment of the type and condition of the vegetation present. For example, year-round grazing without causing environmental damage is possible on drier habitats in the uplands, but only at very low stocking rates.

Below are examples of environmentally sustainable stocking levels that will maintain undamaged moorland habitats. Further information and guidance on livestock units, stocking levels and timings is contained in the *Upland management handbook* (English Nature 2001). When assessing grazing levels it is important to take account of existing grazing by deer, rabbits, or in some cases, feral goats.

It is important to understand that the restoration or maintenance of habitats of nature conservation importance is not entirely about stocking rates. The land manager needs to shepherd the animals and take account of the nature conservation objectives of the site. For example, most upland habitats occur as a mosaic and any given area could contain several important habitats which have varying degrees of tolerance to grazing. The stocking rate and level of shepherding will be dictated by the desired outcome. Taking a more specific example, where blanket bog and dry heath occur as a mosaic, the stocking rates may be set with preventing damage to the blanket bog in mind. In general, this level of stocking is also likely to bring benefits for the dry heath as well. There also needs to be some flexibility, through a continued assessment of the impact of the grazing levels and amending them accordingly.

Certain stock feeding techniques may also be required as part of a restoration or maintenance programme. Further guidance on this can be found in *Stock feeding on moorlands in England*, published by English Nature.

Suggested stocking levels for bringing heath and blanket bog into favourable condition

Stocking rate	Upland dry heath	Upland wet heath & blanket bog
Year-round stocking rate not to exceed:	0.075-0.1 LSU per ha	0.015 LSU per ha*
Winter stocking rate to be reduced by 25% with all hoggs, cattle and horses removed	Preferably all stock to be removed in winter	Preferably all stock to be removed in winter

LSU = Livestock units * Some recovery can be achieved with up to 0.075 LSU per ha in summer and/or complete off-wintering.

Suggested stocking levels to maintain undamaged moorland habitats

Stocking rates	Upland dry heath	Upland wet heath & blanket bog	Upland calcareous grassland
Year-round stocking rates not to exceed:	0.075-0.225 LSU per ha	0.037-0.075 LSU per ha	0.15 LSU per ha during period 1 May and 31 August, grazing not to exceed 8 continuous weeks
Winter stocking rate to be reduced by 25% with all hoggs, cattle and horses removed	Not to exceed 0.15 LSU per ha	Preferably all stock to be removed in winter	Between 1 September and 30 April, grazing levels not to exceed 0.3 LSU per ha

LSU = Livestock units Source: *Upland management handbook* (English Nature 2001).

With the exception of some minerals, the vegetation should be able to provide all the nutritional needs of the grazing livestock.
Wayne Hutchinson/Holt Studios

Finding out more about grazing management

The *Upland management handbook* brings together the expertise of many of the country's leading wildlife, farming and land management specialists. It is a blueprint for translating policies into practical land management that will benefit our upland wildlife. The handbook, which runs to over 750 pages, can assist those people who advise farmers and other land managers in upland areas about the best management for wildlife and other natural features. It is applicable to all land in the uplands, and should be particularly helpful in the implementation of agri-environment schemes.

The handbook costs £25 and is available from English Nature, PO Box 1995, Wetherby, West Yorkshire, LS23 7XX.
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Alternatively, the handbook can be downloaded from the English Nature website at www.english-nature.org.uk

Backshall, J., Manley, J., & Rebane, M. 2001. *The upland management handbook*. Peterborough: English Nature.

English Nature. 2002. *Stock feeding on moorlands in England: environmentally sustainable grazing in the uplands*. Peterborough: English Nature.