

Identification of Moorland Habitats

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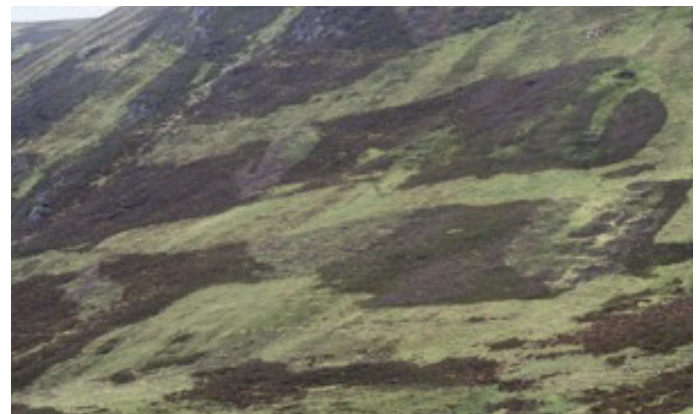
Summary

- **Moorland is a term used for a range of habitats, found generally in Upland and hill areas which is dominated by low growing vegetation.**
- **In order to manage moorland effectively, you should first understand its individual parts.**
- **The habitats which make up a moorland include grasslands (dominated by grasses), heaths (dominated by heather) mires and flushes (dominated by mosses)**
- **Descriptions of Acidic or Marshy Grassland, Wet and Dry Heath, Raised and Blanket bogs and Mires and flushes are included within this technical note**



The habitats which make up a moorland include grasslands, heaths and mires depending on the dominant vegetation of grass, heather or mosses. However these are just broad habitat definitions, they can be further split into more detailed habitats types. The more understanding we have of these detailed habitats on the moorland and how these relate to one another the more informed will be our decisions when it comes to moorland management.

The ratio of grasslands to other habitats often determines the amount of stock that can be sustainably grazed on the moorland. In general the more grassland within the habitat the more stock can be grazed on the moorland. Grasslands are often not a stable community and can expand or contract depending on the amount burning and grazing both historic and current. If a heath is heavily burnt and/or grazed continuously over a period of time grasses will become more dominant and the heather will recede. Heaths and Mires however will provide biodiversity gain and Peatlands will provide more carbon storage compared to grasslands.



Grassland and Heathland managed mosaic

Introduction

Moorland is a habitat, or range of habitats, found generally in Upland areas and dominated by low growing vegetation. The term is often used for a wide range of uncultivated habitats and rough grazings. Moorlands are actually made up of a number of distinct habitats depending on their geology, geomorphology, soils, drainage, rainfall and management.

If we need to make changes to a moorland or understand the changes that are taking place due to management we must be able to identify its individual parts. Understanding moorland habitats helps us to understand its capacity for grazing, its ability to regenerate after fire, its biodiversity value and its ability to act as a carbon store.

Habitats found on a Moorland

These include Grassland, Heathlands, Mires/Bogs and Flushes and are identified by the plants that grow there. These broad habitats can also be split into different types again identified by their vegetation.

Grassland Identification

Grasslands are dominated by grass species with little or no trees and woody species. These can be mixed with a range of other herbs (species rich grasslands) or rushes and sedges (wet grasslands)

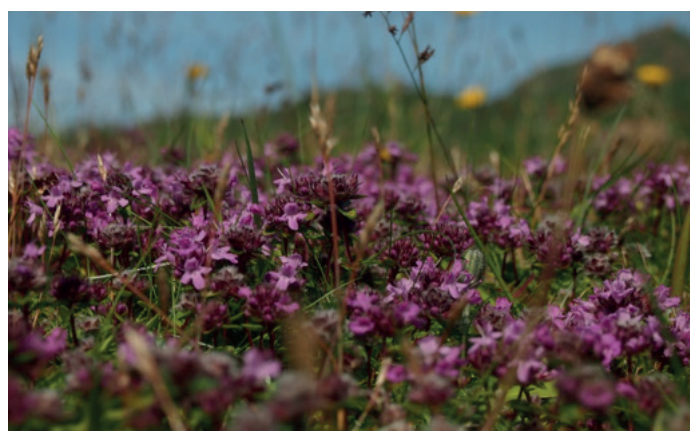
Grasslands can be split into types depending on the underlying soil conditions which determines a number of things including the PH of the soil. The most common grasslands found on the moorlands are as follows

Acid grassland – found on acid soils they must always have less than 25% cover of ericoids (heathers) and other woody vegetation. The following species are indicators of acidic conditions, wavy-hair grass (*Deschampsia flexuosa*), mat grass (*Nardus stricta*), heath rush (*Juncus squarrosus*) heath bedstraw (*Galium saxatile*) and sheeps sorrel (*Rumex acetosella*). Acid grassland also contains many herbs such as Devils bit Scabious and wild thyme as shown in the illustrations.

Acid grassland often grades into heathland or forms a matrix with the heathland.



Devils bit Scabious in flower on an upland acid grassland



Wild Thyme found in Upland grasslands

Marshy grassland – this is a large classification covering many types of wet grassland. In the wet moorland situation the most extensive community is often dominated by Purple moor grass (*Molinia caerulea*), sometimes with a high proportion of rushes and sedges. This is an abundant habitat in the West of Scotland in particular.

Marshy grassland must have less than 25% cover of heathers and other woody species or it is classified as a heathland. It does not normally have a high percentage of Sphagnum moss and it often supports very few other species.

Marshy grassland as a category will also include rush dominated grasslands although this type of habitat is less common in the upland situation.



West Coast Molinia dominated grassland

Heathland Identification

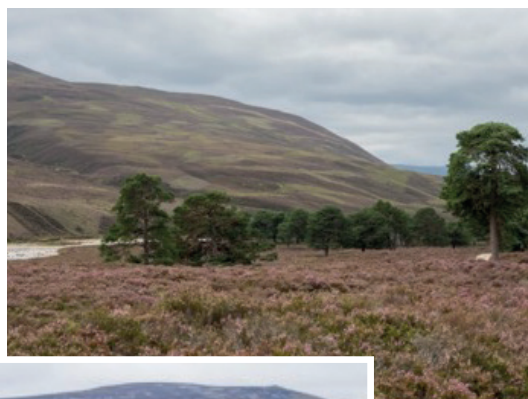
Includes vegetation dominated by ericoids (Heathers) on shallow peat. Generally occurring on acid soils, heathland is distinguished from mire by being on peat less than 0.5m thick. There are two main communities.

Dry dwarf shrub heath (DDSH) – Vegetation with greater than 25% cover of ericoids (heathers) in relatively dry situations, commonly found on the better drained soils such as tops of knolls or steeply sloping ground or extensively in areas of lower rainfall. Dry heath typically overlies freely draining mineral soil with no more than a thin layer of peat on the surface. Dry heath tends to be the dominant moorland type in most eastern and southern areas of Scotland.

Common DDSH species include heather (*Calluna vulgaris*), Bell heather (*Erica cinerea*), and Blaeberry (*Vaccinium myrtillus*) along with fine grasses, Cowberry, Crowberry and Bearberry may also be present.

Purple moor grass (*Molinia caerulea*) is not found in any significant quantity on a dry heath.

Dry Heath



Dry Heath with smaller areas of acidic grassland

Wet dwarf shrub heath (WDSH) – Vegetation with more than 25% cover of ericoids (Heathers), however it differs from DDSH in that Purple moor grass (*Molinia caerulea*) is often abundant. This habitat is often extensive particularly in areas with a high rainfall and can cover large tracts of ground in the West of Scotland. WDSH occurs on shallow peat (less than 50cm deep). Typical species are Cross-leaved heath (*Erica tetralix*), Purple moor grass (*Molinia Caerulea*), Bog asphodel (*Narthecium ossifragum*), Heather (*Calluna vulgaris*), and Deer grass (*Trichophorum cespitosum*) while Bog myrtle (*Myrica gale*) may also be present in some very wet situations.



Wet Dwarf shrub Heath

Mires and Bogs

Consists of sphagnum rich vegetation lying on peat generally more than 0.5m deep, with the water table at or just below the surface. These types of habitats are very sensitive to grazing and are easily damaged if the grazing or burning management is too intense. Eroded mires release the stored carbon into the atmosphere and in exposed situations are difficult to revegetate.



Upland Mire complex ©Dave Genney



Sphagnum dominated mire



Sphagnum palustre ©Stan Phillips

There are several types of mires

Blanket bog – comprises sphagnum rich vegetation on peat forming a blanket cover. It is one of the most extensive upland habitats in the UK. Peat depth is also very variable, with an average of 0.5–3m being fairly typical but depths in excess of 5m not unusual. Blanket bog is an area of peatland, forming where there is a climate of high rainfall and a low level of evapotranspiration, allowing peat to develop not only in wet hollows but over large expanses of undulating ground. The blanketing of the ground with a variable depth of peat gives the habitat type its name. The habitat often contains pools rich in sphagnum.



Bog pools

Common species found along with the sphagnum include heather (*Calluna vulgaris*), cross-leaved heath (*Erica tetralix*), bog cotton (*Eriophorum vaginatum* and *Eriophorum angustifolium*), deer grass (*Trichophorum cespitosum*), bog asphodel (*Narthecium ossifragum*), and sundews (*Drosera* sp). Purple moor grass will often be present but not in abundance.

Blanket bogs support a very wide range of terrestrial and aquatic vertebrates and invertebrates. Also in the context of climate change the role of blanket bogs as a carbon store is also now considered significant. Blanket Bog is a Priority UK Biodiversity habitat.



The bog cotton is a good indicator of deep peat.

Raised bog -

Lowland raised bogs are peatland ecosystems which develop primarily, but not exclusively, in lowland areas where the peat accumulates to form a dome with the deepest peat in the centre surrounded by a mire margin. Drainage tends to flow around the margin forming a stream known as a Lagg. The water supply for raised bogs comes exclusively from rainfall making them easily damaged by drainage.

These conditions give rise to a distinctive suite of vegetation types, which although low in overall diversity, support specialised plant assemblages dominated by a colourful range of mosses of the genus *Sphagnum*. Lowland raised bogs also support rarer plants such as the bog mosses as well as a number of higher plants which have become increasingly scarce in the lowlands. Lowland raised bogs also support a distinctive range of animals including a variety of breeding waders and wildfowl and invertebrates. Raised bog is a UK Priority Biodiversity habitat.



Moine Mhor raised bog, Argyll

Flushes

Flush – Flushes occur on gently sloping ground and are often linear or triangular in shape. These habitats are usually small scale and receive water and nutrients from surface and/or groundwater sources as well as rainfall. They are typically dominated by bryophytes (Mosses), usually sphagnum, and lack any other ground layer except for small sedges. The soil, which may be peaty or mineral, is waterlogged with the water table close to or above the surface for most of the year.

The habitat overall supports a rich flora of vascular plants with many rare species, it can support high numbers of invertebrates including craneflies, beetles and spiders. This makes them good feeding areas for upland birds, including waders, ring ouzels, wheatears and grouse chicks. In the montane zone, flush vegetation supports an exceptional array of rare mosses and liverworts, for this reason they are a UK Priority Biodiversity habitat. Flushes should not be burned but are often too wet to be affected they are easily damaged by high levels of grazing.



Upland Flush ©Dave Genney



Flush dominated by Mosses ©Stan Phillips

Summary

In summary if you are managing moorland or upland ground try to look in detail at the vegetation types that make up the hill to understand their strengths and weaknesses. By simply knowing the vegetation types and the way they are working together to provide grazing and other environmental services you will be able to make informed management decisions.

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