**Rusty Bog Moss**

*Sphagnum fuscum*



Rusty Bog-moss (also known as Rusty peat moss) is a species of hummock-forming *Sphagnum* moss. It is found throughout Scotland on both lowland raised bogs and blanket bogs, but is associated in particular with undisturbed blanket bog. *Sphagnum* mosses are essential components of peat bogs, dominating the vegetation as few other plants can tolerate the wet and nutrient-poor conditions. They can be considered keystone species on which other peatland wildlife rely.

Description

Rusty bog moss forms compact, ginger-brown hummocks, typically up to 50 cm tall and 75 cm across at the base, although they can be much larger. The highly characteristic colour is often best developed in the interior of the hummocks. The hummocks have a smooth profile (other species have a more bumpy surface like cauliflower florets), which can help distinguish it from similar species[[1]](#footnote-1). All or partly green forms occur occasionally.

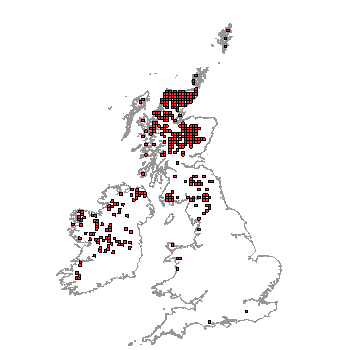
Individual *Sphagnum* plants consist of a main stem, which in Rusty bog moss is slender and threadlike and less robust than most other peat mosses. From this stem are tightly arranged clusters of branches, usually consisting of two spreading branches and two hanging branches. The top of the plant, or capitulum, has compact clusters of young branches. Along the stem are scattered leaves called stem leaves, which in Rusty bog moss are long and broadly rounded at the tip. The leaves consist of two kinds of cells; small, green, living cells (chlorophyllose cells), and large, clear, structural, dead cells (hyaline cells). The latter have a large water-holding capacity.

Distribution

Rusty Bog has a scattered distribution across Canada and North America and parts of Europe[[2]](#footnote-2). It occurs most frequently in Scandinavia. The moss grows on bogs in Scotland, but it is never common. It is very rare in England and Wales.

In the UK, Rusty bog moss is most common on blanket bogs in the North and West of Scotland. Blanket bogs often cover large areas and form where high rainfall causes nutrients to wash out of the soil leaving it wet and infertile. Over several thousand years, layers of dead *Sphagnum* build up to form a skin of peat across much of the landscape.

In the lowlands of Scotland Rusty bog-moss is occasionally found on raised bogs. Here, layers of peat have slowly built up over thousands of years to form a dome shape which is higher than the surrounding land.



Distribution *of S. fuscum* in Britain & Ireland. (From NBN Gateway Accessed 11/11/13)

Ecology

Mosses do not produce flowers or seeds. They grow from spores which are produced in fruiting bodies called capsules. The life cycle is comprised of two distinct generations, the gametophyte and the sporophyte. At the gametophyte stage, the plant has leaves, synthesizes chlorophyll, and is able to reproduce sexually. The sporophyte generation consists mainly of the capsule (or fruiting body) that encloses the spores and is attached to a thin stalk of the gametophyte. When the spores are ripe pressure builds up inside the capsule until its lid is blown off, sending the spores shooting out into the air. Sometimes this does not happen and the lid just drops off or the capsule disintegrates. Sphagnum is also capable of vegetative reproduction, with new plants regenerating from shed plant fragments.

*Sphagnum* mosses have neither roots nor a true vascular system. Individual plants grow exclusively at the top whilst further down, the lower parts of the plant is dead and starting to decay. Only the top few centimetres of the plant lie above the water table. Further down, stem and leaves retain vast amounts of water, both within cells and by capillary action in the small spaces between leaves and stems. This water-trapping capacity effectively raises the water table and is one of the prerequisites of bog formation.

Threats

In the 1980s large areas of blanket bog in Caithness and Sutherland were lost because they were turned into forest plantations. Today, the main threats to upland bogs come from agricultural drainage, pollution, burning, over grazing by deer and sheep and peat extraction particularly for horticulture. The construction of moorland roads and tracks for land management, and the construction of wind farms can also damage or destroy areas of blanket bog habitat.

Climate change, which may result in wetter winters and drier summers could lead to a slowing down of peat formation and may threaten the survival of some *Sphagnum* species.

Management

Sustainable management is vital not only for the intrinsic value of these habitats and the species they support, but also for their role as carbon stores. Because of the variation in geographic characteristics of individual bogs and their surrounding land, specific management decisions are best made on a site by site basis[[3]](#footnote-3). Operations to restore peatlands can include drain blocking, reducing grazing pressure and removing trees to help restore appropriate hydrology.

Current Work

**The Wildlife Trusts** are working to prevent further loss blanket bogs by looking after areas of blanket bog as nature reserves. Traditional management techniques, such as grazing and burning, are used to maintain them and restoration work is undertaken on areas that have deteriorated. Further protection is provided through the Living Landscape scheme, which ensures that both the bogs and the land surrounding them are managed together for the benefit of local communities and wildlife.

**The IUCN UK Peatland Programme**[[4]](#footnote-4) exists to promote peatland restoration in the UK through partnerships between science, policy and practice. The work of the Peatland Programme is overseen by a coalition of environmental bodies including the John Muir Trust, Scottish Wildlife Trust, Yorkshire Wildlife Trust, RSPB, North Pennines AONB Partnership, Moors for the Future and the University of East London.

**The RSPB** looks after Forsinard Reserve in Caithness[[5]](#footnote-5), which at 400,000ha is probably the largest area of Atlantic Blanket bog in the world and a showcase peatland of international importance.  A partnership of statutory bodies, NGOs and private individuals have agreed a strategy to help restore damaged habitat, secure sustainable development and promote the benefits of a healthy peatland ecosystem.  With the benefit of EU Life funding, large areas of drains have been blocked and plantation trees removed.

Wider context

Blanket bog is one of the most extensive semi-natural habitats in Scotland, covering some 1.8 million hectares, 23 % of our land area5. It is one of the rarest wildlife habitats in the world and Scotland holds a significant proportion of the European and world resource[[6]](#footnote-6). Blanket bog is included in the EU Habitats Directive as a priority habitat. Peat bogs contain huge amounts of carbon locked up in peat and, as such, healthy peatlands can play an important role in countering the cause of climate change. In addition, they provide a number of other important benefits[[7]](#footnote-7):

* **Water supply** - much of our drinking water comes from peatland areas and is a key ingredient that adds to the flavour of malt whisky.
* **Flood management** - intact peat bogs stores water and help to maintain steady flow rates on salmon rivers as well as reducing flood risks downstream.
* **Sheep grazing** - many peatland areas produce store lambs which are sold on for fattening in the lowlands.
* **Recreation** - whether its red deer stalking, angling or walking these remote moorlands provide an experience for visitors that is uniquely Scottish.

Quick facts

* Rusty bog moss is also known as Rusty peat moss and Common brown sphagnum
* Sphagnum moss acts rather like a sponge and can soak up more than eight times its own weight in water.
* Due to its water holding capacity, Sphagnum moss has been used for many years for nappies and menstrual pads
* The word Bog is derived from the Irish word **Bogach – meaning soft**
* When sphagnum moss is dry it is not only absorbent but also mildly antiseptic. During the First and Second World Wars it was collected in many parts of the Highlands and sent south to be turned into wound dressings
* There are 34 different *Sphagnum* species in Scotland[[8]](#footnote-8), each with its own particular niche, some preferring the bog pools, others the hummocks and lawns in between. They are very difficult to tell apart.

1. [www.bbsfieldguide.org.uk/sites/default/files/pdfs/mosses/Sphagnum\_fuscum.pdf](http://www.bbsfieldguide.org.uk/sites/default/files/pdfs/mosses/Sphagnum_fuscum.pdf) accessed 08/10/13 [↑](#footnote-ref-1)
2. <http://data.gbif.org/species/2669215/> Accessed 08/10/13 [↑](#footnote-ref-2)
3. Cummins, R., Donnelly, D., Nolan, A., Towers, W., Chapman, S., Grieve, I. and Birnie, R.V. (2011). Peat erosion and the management of peatland habitats. *Scottish Natural Heritage Commissioned Report No. 410* [↑](#footnote-ref-3)
4. [www.iucn-uk-peatlandprogramme.org/](http://www.iucn-uk-peatlandprogramme.org/) Accessed 08/10/13 [↑](#footnote-ref-4)
5. [www.rspb.org.uk/reserves/guide/f/forsinard/](http://www.rspb.org.uk/reserves/guide/f/forsinard/) Accessed 08/10/13 [↑](#footnote-ref-5)
6. [www.snh.gov.uk/about-scotlands-nature/habitats-and-ecosystems/mountains-heaths-and-bogs/peat-bogs/](http://www.snh.gov.uk/about-scotlands-nature/habitats-and-ecosystems/mountains-heaths-and-bogs/peat-bogs/) Accessed 08/10/13 [↑](#footnote-ref-6)
7. [www.snh.gov.uk/about-scotlands-nature/habitats-and-ecosystems/mountains-heaths-and-bogs/peat-bogs/](http://www.snh.gov.uk/about-scotlands-nature/habitats-and-ecosystems/mountains-heaths-and-bogs/peat-bogs/) Accessed 08/10/13 [↑](#footnote-ref-7)
8. [www.snh.org.uk/publications/on-line/naturallyscottish/mossesliverworts/mires.asp](http://www.snh.org.uk/publications/on-line/naturallyscottish/mossesliverworts/mires.asp) Accessed 08/10/13 [↑](#footnote-ref-8)