

# Bowled over by bryophytes and want to know more ?

To find more about mosses, liverworts and hornworts in your area, contact your local council rangers, the British Bryological Society ([www.britishbryologicalsociety.org.uk](http://www.britishbryologicalsociety.org.uk)), or Plantlife Scotland.

Northern Haircap *Polytrichum saxanigulare*

The Scottish Moss Collection Code gives up to date information on collecting bryophytes and can be viewed on the Forest Harvest Website: [www.forestharvest.org.uk/guidelines/mosscode.htm](http://www.forestharvest.org.uk/guidelines/mosscode.htm)

Endive *Pellia rotundifolia*  
©David Geaney

Join Plantlife today to help us protect our beautiful Scottish bryophytes



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## Sphagnum moss The great water holder

The water holding capacity of *Sphagnum* is up to twenty times its dry weight and humans have made use of this in many ways. It has been used to treat boils and dress wounds in Britain for centuries. It holds water well and is cool, soothing and mildly antiseptic.

*Sphagnum* moss is still used commercially in the gardening industry, for example to line hanging baskets or in Christmas wreaths. Harvesting *Sphagnum* moss on a commercial scale causes severe damage to Scotland's fragile peatlands, as the moss forms the basis of this endangered habitat. The good news is there is no need to buy *Sphagnum* moss or peat products. There are many excellent alternatives – try using coir mats, compressed waste paper, woollen liners, hay, foam or moss raked from your lawn instead. By refusing to buy *Sphagnum* or peat products, we show our disapproval of the destruction of our important peat bog habitats.



Cleft Bog-moss  
*Sphagnum riparium*



Dwarf Bladder-moss  
*Physcomitrium sphaericum*

## Little and Large

Mosses are not all small. The Common Haircap (*Polytrichum commune*) can have shoots up to 80 centimetres tall and the aquatic Greater Water-moss (*Fontinalis antipyretica*) can be over a metre long. These giants contrast with tiny short lived species like the earth and bladder mosses that are only a few millimetres high. Dwarf bladder-moss (*Physcomitrium sphaericum*) usually grows to only two or three millimetres tall.

## Ice-man

'Ötzi', the 5,000-year-old body of a hunter found in an Austrian glacier had large quantities of moss stuffed inside his clothing, for insulation but also as a packing material for his food. He will also probably have used moss for bedding.

## BuoYancy

Bronze and Iron Age boat builders used moss as a filler (known as caulking). This continued in Scotland until the 19th Century.

## Insulation

Moss was used by ancient and Roman people to pack the walls of stone houses, particularly near the chimney, to keep the wind out and to prevent heat from setting fire to the wooden frame. Often the Greater Water-moss was used, which explains its Latin name *Fontinalis antipyretica*.

Our fragile and endangered Scottish peat bogs are home to many species of bryophytes, particularly *Sphagnum* mosses

## Humble but tough

Bryophytes look modest, but can be extremely tough. Some mosses can survive extreme drought for up to twenty years and then recover. They can adapt their structure to seasonally changing conditions of water, light and temperature. They have even been known to continue growing at minus nine degrees centigrade.

©Laurie Campbell



# The wild and wonderful world of Scottish Mosses liverworts and hornworts

Fountain Apple-moss

Cloud Earwort

Bird's Foot Wing-moss

Scottish Beard-moss



Climate change

Peat extraction and drainage of peat bogs

Road improvements

Inappropriate planting of forests

Invasive species especially *Rhododendron ponticum*

Construction of hydro-electric schemes and wind farms on inappropriate sites

Loss of wayside and hedgerow trees

Infrastructure for tourist developments in wild places



# BRYOPHYTES is the collective name given to MOSSES, LIVERWORTS and HORNWORTS

Background Image:  
Great Scented Liverwort  
*Conocephalum conicum*  
© Laurie Campbell

## Scotland's amazing green carpet

Bryophytes are everywhere in Scotland. Our cool, damp climate and unpolluted air is paradise for these plants.

They add colour to the most mundane of places as well as to extreme habitats like our mountain tops.

Bryophytes are more frequent and diverse in Scotland than any other part of the UK and most parts of Europe.

There are just under one thousand species of moss and liverwort in Scotland, including some only found in Scotland, such as Scottish Beard-moss (*Bryoerythrophyllum caledonicum*) and Scottish Thread-moss (*Pohlia scotica*).



Bryophytes carpet the whole of Scotland. Look out for the amazing green pillows of this characteristic coastal moss, Seaside Grimmiid (*Schistidium maritimum*), on seashore boulders.



The wet heaths of the British Isles are the only place in the world where you will find Skye Bog-moss (*Sphagnum skyense*).

## What are bryophytes ?

Bryophytes are an extremely old group of plants, dating back some 450 million years. All land plants have probably developed from the original bryophytes.

Bryophytes sometimes reproduce sexually, producing stems with capsules on top that release millions of spores. They can also regenerate from stems and leaves that break off and start to grow. Some have evolved specialised deciduous parts called bulbils or gemmae, all of which can grow to form a clone of the parent plant and make new plants.

Bryophytes are versatile plants. They not only grow in damp woodlands, but can also colonise rock surfaces, tree trunks, mine spoil, concrete, roof tiles, tarmac and reservoir mud. They help to stabilise slopes, like sand dunes and screes. They provide habitat and humidity for a remarkable diversity of insects and spiders.

FRONT COVER PHOTOS: Bird's Foot Wing-moss *Pterogonium gracile*, Cloud Earwort *Scapania nimbosa*, Scottish Beard-moss *Bryoerythrophyllum caledonicum*, Background image *Dichodontium flavescens* ©All Gordon Rothero Fountain Apple-moss *Philonotis fontana* ©David Genney



Take time to stop and ponder the small things. The delicate beauty of liverworts like this Great Scented Liverwort (*Conocephalum conicum*) is easily overlooked. It grows on wet sites, sometimes coating the banks of streams © Laurie Campbell



Scotland is the only place in the world where you will find the rare Scottish Beard-moss (*Bryoerythrophyllum caledonicum*).

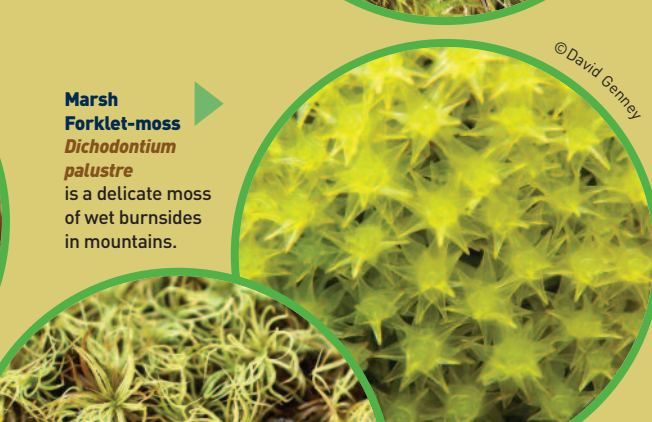
## Bryophytes you might see in Scotland mosses



**Common Haircap** *Polytrichum commune* is one of our largest mosses.



**Greater Water-moss** *Fontinalis antipyretica* The waving fronds are a common sight in rivers and lochs.



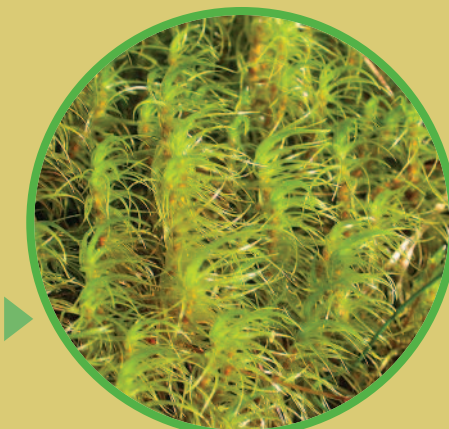
**Marsh Forklet-moss** *Dichodontium palustre* is a delicate moss of wet burn-sides in mountains.



**Frizzled Crisp-moss** *Tortella tortuosa* is a common species of lime-rich rocks.



**Round-fruited Collar Moss** *Splachnum sphaericum* A moss common on sheep dung in mire areas.



**Greater Fork-moss** *Dicranum majus* is a large and common woodland species.

## Liverworts



**Notched Rustwort** *Marsipella emarginata* is delicate liverwort, common in wet or damp acid places, often by streams or rivers.

## ....and some very rare bryophytes you might not see



**Blytt's Rock Moss** *Andreaea blyttii* is a very rare species growing on flat rocks in areas where the snow lies very late.



**Endive Pellia** *Pellia endiviifolia* is a liverwort that grows in calcareous (lime-rich) places. It grows by watercourses, by springs, and in flushes, on shaded tracks and woodland rides, in fens and dune slacks, on moist floors of chalk quarries and on dripping rock outcrops.

## hornwort

### Carolina Hornwort

*Phaeoceros carolinianus* is a hornwort that grows in damp stubble fields, on fallow land, ditch sides and woodland tracks. The green stalks or 'horns' are the female organ of the liverwort and each contains an egg cell.



**Curled Notchwort** *Anastrophyllum saxicola* is a rare liverwort of dry scree slopes in the Cairngorm area.



**Green Shield-moss** *Buxbaumia viridis* grows only on dead wood in woodlands in the East Highlands.