

Trees in our uplands

Our uplands are largely devoid of forest cover yet the environmental, climatic conditions are suitable for trees to exist to an altitude of around 600m above sea level. The mosaic of habitats which we experience as mountaineers is heavily influenced by human activity both past and present. This article looks at a range of tree species, native to our uplands, and illustrates their key identification features along with some interesting folklore.

I like to divide my articles into different sections to make them more manageable. On deciding the format for this one I thought of two terms that are often used to categorise trees - deciduous and coniferous. Despite their seemingly clear distinction the difference is wrongly misleading as they are not opposites. Trees are either evergreen or shed their leaves in the autumn (deciduous) and they are either cone-bearing (coniferous) or are flowering plants (angiosperms). These distinctions should, I hope, be clearer and remove any confusion. This article is divided into four sections to illustrate these broad categories. I am aware that the field of ecology is full of technical terms so I write my articles as free from jargon as possible only adding terms if relevant or to highlight a point.

Coniferous trees

In Britain we have three native coniferous trees, those being Scots pine, Juniper and Yew. Worldwide there are 629 coniferous trees which include pines, spruces, larches, redwoods and cedars to name some common ones. Conifers are cone-bearing trees and belong to a group of seed plants called gymnosperms (Greek *gymnos* 'naked' & *sperma* 'seed') of which there are around 1,000 worldwide. They all have needle-like or scale-like leaves. They evolved a very long time ago in the Carboniferous era some 320 million years ago. Britain's only native coniferous forest is the Caledonian pine forest. This once vast habitat covered extensive regions of the Scottish Highlands. Today these pinewoods have been massively reduced with the greatest remnants to be found in the valleys of the rivers Spey and Dee and in the Abernethy forest.

Scots pine - *Pinus sylvestris*

An elegant and iconic tree with a lifespan of around 250 years although some individuals are known to be over 600 years old. It takes 2 to 3 summers for the cones to fully ripen and you'll often see the young green cones along with mature brown cones on the tree. The deeply fissured bark becomes orangy high up the tree which distinguishes it from other conifers. Its needle-like leaves are in twisted pairs. There isn't much folklore associated with Scots pine but they were often planted along drovers roads to help navigation in poor weather. The resin from the trunk is a source of antiseptic oil and the pine shoots have been used to flavour vinegars and cooking oils.



Juniper - *Juniperus communis*

The life form juniper takes is incredibly varied as too is its habitat. In the south-east of Britain it grows on limestone hills and chalk downland but in Scotland it is found amongst heathers in the cold and rain on acidic soils! It can be seen growing in either a low and prostrate form or as a conical tree of upto 10m. Its leaves are needle-like and pointed. Male and female flowers are on separate trees so the green berry-like cones (which turn blue over 18 months) will only be on the female tree. An oil extracted from juniper has an ancient reputation as an abortifacient and there's an old saying about giving birth 'under the savin tree' as a euphemism for a miscarriage. The berries are used to flavour gin and in the Italian alps it's used to flavour locally caught game dishes.



Flowering plants

Flowering plants are also known as angiosperms. They make up the largest and most diverse group of land plants with over 300,000 known species. We term trees in this group as being broadleaf. Like gymnosperms they are seed-bearing plants but a significant difference is that their seed is enclosed in a fruit (Greek *angeion* 'casing' & *sperma* 'seed'). They diverged from gymnosperms with the first true flowering plants appearing in fossil records around 120 million years ago and then began their swift rise to dominance over the conifers.

Rowan - *Sorbus aucuparia*



It is also known as Mountain ash for its leaves resembling those of Ash trees. They are divided into 5–8 pairs of serrated leaflets, with one terminal leaflet. Each flower contains both male and female reproductive parts and form dense, fragrant clusters in early summer. These develop into red berries in the autumn. Mature trees can grow to 15m and live for up to 200 years. They can be seen as lone individuals, highly visible on mountain crags or within woodlands at lower elevations. It was once widely planted by houses as a protection against witches. Each berry has a pentagram, an ancient symbol of magic associated with the White Goddess and a mark of a sacred tree. The red berries are edible & can be made into jellies and jams.

Hawthorn - *Crataegus monogyna*

This is also known as the May tree as it's blossoms herald the onset of summer as they appear around May Day. As such it has been a prime symbol of fertility and betrothal in ancient May Day celebrations. Mature trees can reach 15m and can live as long as 700 years. They can grow with a single stem or as a shrubby bush, both forms are densely thorny. Its leaves are deeply lobed and edible when young. In the autumn the fragrant flowers develop into small red, edible haws and can be made into delicious ketchups, jellies and added to flavour brandy or whisky!



Deciduous

This term describes the shedding of mature leaves which we know to be the annual, autumnal fall but it also happens in areas which experience tropical seasons. The shortening days reduces the function of the leaves to absorb sunlight and convert this to sugars. The compounds involved with this process are broken down and reabsorbed from the leaves giving rise to some spectacular colourful displays as compounds are resorbed at different rates. Many trees and shrubs are deciduous but there are also several conifers which perform this annual ritual such as larch and dawn redwood.

Silver birch - *Betula pendula*



This is a striking tree with delicate, drooping branches. Its leaves are diamond shaped with toothed edges and they'll be turning yellow soon as autumn approaches. The twigs have warts and are hairless, distinguishing it from a similar species Downy birch. They will happily hybridise if grown together so identification can be difficult. The papery bark is white and smooth and will peel when young becoming darker, rugged and fissured when mature. In Celtic mythology birch symbolised renewal and purification. Finnish people use leafy branches of birch to gently hit themselves when in a sauna for a therapeutic effect! In spring the rising sap is used to make wines and ales. The bark was also twisted to make effective candles.

Least willow - *Salix herbacea*

A tiny, creeping shrub with just the leaves appearing above the ground. It is one of the smallest, woody plants in the world and a true arctic-alpine species found at the highest summits in Britain. It is a very long-lived plant, possibly living for hundreds of years. The stems and roots creep underground keeping the plant close to the ground, away from the drying winds on the exposed montane grassland and scree. Its low form also helps with long periods of snow cover. In summer the upright fertilised flowers give rise to fluffy white seeds, a classic feature of willows, which are wind transported to a new, suitable habitat. Its shiny, green leaves are almost circular with rounded edges and prominent veins.



Evergreen

As the name suggests these trees keep their leaves throughout the year and are always green. Conifers are usually evergreen as are flowering plants from frost-free climates (e.g. eucalypts). Conifers are better adapted at tolerating severe cold than broadleaf trees which generally shed their leaves as a cold response. There are many evergreen plants that we find in our uplands but none truly adhere to the name 'tree'. We have evergreen clubmosses and other mosses, some grasses and rushes which keep their green leaves all year round. There are also the heather species, perennial woody shrubs which keep their leaves through the winter but none are considered to be trees.

Holly - *Ilex aquifolium*

Whilst your first thought Holly isn't an upland tree it can be found growing at 2,600m in the southern alps and at around 600m in the Lake District. They are often seen around old dwellings in the mountains as they were believed to protect from lightning strikes. They were also planted as a fertility symbol and a charm against witches. Holly is an unmistakable tree with its dark green, glossy and often spiny leaves. Its flowers white with 4 petals turning into red berries in late summer. The male and female flowers form on separate trees. Mature trees can grow up to 15m and live for 300 years. Its wood is white and durable with a fine-grain making it excellent for furniture and engraving. It burns well too and was used to forge swords and axe heads.



BIO:

Jim Langley is a specialist in alpine flowers and co-author of 'The Alps – A Natural Companion'. He holds the International Mountain Leader qualification and a Master's degree in conservation and land management. He runs *Nature's Work* www.natureswork.co.uk an educational consultancy providing environmental CPD workshops for the outdoor industry and also bespoke outdoor learning programmes.