

Silver and downy birch (*Betula pendula* and *Betula pubescens*)



General Info

Birches are the most common native trees in Scotland. Both species of birch are widespread in Scotland, with silver birch occurring principally on well-drained, drier soils and downy birch preferring wetter locations. This means there is a greater number of silver birch in the east and downy birch in the west. Birches occur within other forest types, such as pine and oak woods or as birchwoods, in which they are the predominant trees. Within the grounds of TreeZone you will only find examples of silver birch.



Vital statistics

Silver birch reach heights of up to 30 metres, downy birch seldom exceed 21 metres. They are short-lived, with typical lifespan of 60 to 90 years, (in tree terms!) although some individuals can live up to 150 years.

Box of Knowledge

In medieval times it was believed that silver birch had medicinal properties. In the Highlands of Scotland, silver birch sap was tapped in the spring and then drunk as a treatment for bladder and kidney problems.

Ecosystem

One of the important functions birch trees fulfil in the woodland ecosystem is that of improving soils. They are deep-rooted, and their roots draw up nutrients into their branches and leaves, which the trees use for their growth. Some of these nutrients are returned to the surface of the soil each year when the leaves fall in the autumn, thereby becoming available for other organisms in the forest community.

The roots of birch trees have relationships with various species of fungi. In these symbiotic relationships between trees and fungi, both partners in the association benefit from their interactions.



The light, open canopy with spaced, small leaves give light shade on the woodland floor. This allows varied ground flora especially mosses, grasses and flowering plants to grow. This means plenty of food for a wide range of insects, birds and many other animals. Birch trees also provide the shade for typical understorey plants of the Caledonian Forest, such as blaeberry and cowberries, which flourish on the forest floor beneath them.

Birches also support a large community of insects and other invertebrates, with 334 species known to feed on them - more than most other trees native to Scotland, except for oaks and willows. These include caterpillars of the Pebble Hook-tip moth and the Kentish Glory.

Flowers, seeds, bark and leaves



In young trees the bark is reddish-brown, but this changes to white as they mature. The white bark is most prominent on silver birch, where it is interspersed with conspicuous black patches. By contrast, the bark of downy birch is more greyish-white, with horizontal grooves on it. On old silver birches the bark can become corklike and deeply fissured, with parts covered by large colonies of the yellow foliose lichen (*Candelaria concolor*).

The two species can be distinguished by their leaves, with those of downy birch being rounder in shape than silver birch, and having a single row of teeth on the leaf margin, in contrast to the double row of teeth on silver birch leaves. They can also be identified by their twigs, which in silver birch have small white warts, whereas those on downy birch are covered in small hairs or 'down'. Silver birch has drooping branches, whilst those of the downy birch tend to be more upright. However, intermediate forms of the two species do exist with various combinations of these characteristics.



Birches have both male and female flowers, the flowers appear in the spring at the same time as the new leaves. Pollination is by wind, and the female flowers ripen in autumn or late summer, to form hanging catkins. The catkins contain hundreds of tiny seeds, each with 2 transparent wings, which help in their dispersal by the wind. A large tree can produce up to 1 million seeds in a year, but only a few of these will germinate and grow into mature trees. The majority of seedling trees become established within 100 metres of their parent, but some seeds can travel long distances in the wind.





References

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