

Deciduous Woodland



The deciduous woodlands in the Park are termed semi-natural broad-leaved woodlands. They are called 'semi-natural' because they are native woodlands which have been harvested and replanted by man. In County Wicklow, the dominant tree in the deciduous woodlands is Sessile Oak. Sessile Oak prefers acidic, nutrient poor soils, which occur mainly on mica schist/slate bedrock. The main area of deciduous woodland in the Park is around the Glendalough/Derrybawn area (approx. 106 ha).

History of Glendalough Woods

Around 7000 years ago Glendalough and the surrounding areas would have been completely wooded with Sessile Oak. Pine trees would have been found on the drier, poorer soils of the uplands.

From the 13th to 17th century, oakwood was used for making charcoal, which in turn was used for smelting iron. The Glendalough woods are dotted with charcoal making platforms dated to this time. They are difficult to spot now, the platforms have over time become overgrown.

During the 18th century, the trees in Glendalough were coppiced. Coppicing involves felling trees and harvesting the shoots that grow from the cut stumps every 15 to 30 years. This is a sustainable method of woodland management, however, in Glendalough, coppicing was carried out every 5 to 10 years which weakened and eventually killed the tree stumps. By mid 18th century, much of Glendalough and the surrounding valleys were almost treeless. In the period 1800 to 1880, oak trees

were planted in the Glendalough area. Therefore, a lot of the trees in Glendalough are between 150 to 200 years old. Nowadays, not only is this woodland an important habitat for our native wildlife, it is one of the few examples of the extensive oakwoods that once covered most of Wicklow.

Flora of the Woods

Within deciduous woodland, there is intense competition for light, space and moisture between plants and animals. The results of this can be seen in the great diversity of the plant life within the woodland and the way in which the plant community has developed a stratified structure, best suited to get the maximum light. In the woodland, there are four basic layers of vegetation, each of which has its own animal layer dependent upon it, any imbalance in one layer will affect the other three.

The first layer, known as the canopy layer is made up of the oak trees. The oak is Ireland's largest and longest living tree, growing to a height of 60 to 130 ft. The crowns of the canopy trees connect and form a continuous layer of foliage. Plants within the woodland have adapted in different ways to the level of light coming in through the canopy. Up to 284 insect species alone, are known to be dependent on oaks for at least a part of their life cycle.



The next layer is known as the understorey or shrub layer. In Glendalough, Holly and "Hazel are the most prolific understorey trees. Holly is evergreen; its prickly leaves are a defence mechanism against grazing. It is also a single sex tree and the female tree produces the red berries which are a traditional Christmas decoration. The Hazel tree provides hazelnuts which are an important food source for mice and squirrels. Hazel trees were also coppiced in Glendalough resulting in the multi-stemmed trees that can be seen today.

The shrub layer includes Ivy, Honeysuckle and Bramble. Ivy and Honeysuckle are climbers, taking advantage of the taller trees by climbing around and up them in order to get more light. Ivy being evergreen maximises photosynthesis. After frost its berries become palatable to animals, providing a valuable food source within the woodland when there is little else around. Honeysuckle, true to its name, produces a strong sweet smelling flower, which is very popular with insects. Smaller shrubs such as Heather and Bilberry are also found in the woodland around Glendalough.

The next layer is the herb layer. Here many opportunistic plants flower early in the year, to take advantage of the greater amount of light entering the forest floor before the trees grow their leaves. The ground flora in the Park's woodlands is species poor, this is mainly due to overgrazing by deer and goats. Wildflowers include Wood Sorrel, Lesser Celandine, Wood Anemone, Bluebell, Common Dog Violet, Herb Robert, Greater Stitchwort and Great Wood-Rush. There are a large variety of ferns such as Hard Fern and Harts Tongue Fern. The Polypody Fern can be seen growing on the branches of the oak tree. Unlike other ferns, Polypody is tolerant of drought and intolerant to moist conditions. Bracken, another fern, is becoming very common everywhere within the Park. It is an inedible fern and casts a heavy shade inhibiting the growth of other species, therefore reducing the diversity of the woodland.

Within the ground layer, in the darker, moist areas you will find a variety of mosses. Lichens are found on the ground and on the trees. There are numerous varieties in the oak woodland. Lichens are sure indicators of the pollution level in the air and the majority of lichens can only exist in clean air. Bearded Lichens are particularly sensitive and they can be seen in abundance around the Glendalough oakwoods. Late summer and early autumn brings out a variety of fungi, a popular food source for many mammals and insects.

Around Glendalough are also areas of birchwood. The birchwood has Silver Birch and Downy Birch hybrids. The most notable birchwood is situated on the alluvial fan between the Upper and Lower lakes beside the carpark. Birch are colonising trees; their wind borne seeds colonise open disturbed ground easily, thus improving the soil for other trees such as the oak. Birch trees can also be seen along the edge of oakwoods.

Besides the oak and birch woodlands, other trees on the woodland edge are Hawthorn and Blackthorn. Close to the Upper Lake, and on the river edges, there are Alder and Willow and even a Wild Cherry.

At the western end of Glendalough valley, the cliff and scree slopes are a sheltered haven for trees such as Aspen, Yew, Rowan and Birch.



Conservation issues

The primary concern for our oakwoods is overgrazing by animals. The woods are not regenerating naturally due to the pressure of grazing. Areas of the forest have no shrub layer and no young trees are growing to replace the mature trees. You will perhaps notice fenced off exclosures within the woodlands. Exclosures are designed to keep animals out rather than in. They were set up several years ago as an experiment to determine the impact of grazing on the woodlands. If you compare the vegetation inside and outside the exclosures, the difference is striking. The vegetation within is much more diverse and dense with lots of young trees.

Sheep grazing has been controlled through the establishment of fenced off areas and the cooperation of local farmers. Overgrazing by deer and feral goats are of greater concern. There is no natural predator left in Ireland to control their numbers. In order to protect our deciduous forests, the Park has implemented a deer and goat culling programme to keep the grazing numbers at a sustainable level.

The second biggest threat to the survival of the woodlands is the invasion of non-native tree species such as Sitka Spruce and Douglas Fir, as well as other garden shrubs such as Rhododendron and Cherry Laurel. In the past non-native conifers were underplanted into deciduous woodland. On top of that, the seeds of non-native conifers are windblown from commercial plantations into deciduous woodlands. These trees have to be removed to prevent their further spread. In Wicklow most of the rhododendron has now been cleared. There was a time, when nearly all of Wicklow was forested with deciduous trees. Now, we only have small pockets left, therefore the responsibility rests with all of us to help protect the remainder of these precious ecosystems.