

Norway spruce

(*Picea abies* (L.) Karst.)

Distribution & Provenance

Norway spruce is a European species with a wide natural range from the Pyrenees, Alps and Balkans northwards through Germany to Scandinavia and eastwards to west Russia. It is not native to either Ireland or Britain but is thought to have been first introduced to these islands in the 1500's. As such, it is considered one of the first exotic species to have been introduced as a timber crop. Currently, Czech, Polish and Danish seed orchard provenances are favoured by Irish foresters.



Natural distribution of Norway spruce

Silviculture & Management in Ireland

Norway spruce is a relatively adaptable species but does best on moderately fertile, moist mineral soils and the more fertile, shallow peats. It does not do well on dry sites, sites of high pH or sites subject to exposure. It is established in Ireland at 2,500 stems per hectare (2 metre x 2 metre spacing). Norway spruce is generally slow to establish and therefore weeding is usually required. Although not as fast growing as Sitka spruce, Norway spruce remains a popular species in Ireland, particularly on sites prone to late spring and early autumn frosts, which commonly occur in the midlands. Norway spruce is more resistant to such frosts than Sitka spruce. Depending on productivity, it receives a first line and selection thinning sometime between age 15 and 20. A first lift of high pruning of 500 final crop stems per hectare is generally carried out directly following first thinning. This is followed by a second lift about five years later. Second and subsequent thinnings generally follow on a five or six year cycle and are purely selective, concentrating growth on the best stems in the stand. Norway spruce is normally grown over a rotation of between 45 and 60 years.

At establishment, Norway spruce is susceptible to damage from browsing domestic stock and needs to be adequately fenced. On dry sites and when shelter is removed, Norway spruce can suffer from crown die-back and wind snap. Other threats to commercial production of Norway spruce are the butt rot fungus (*Heterobasidion annosum*) and honey fungus (*Armillariella mellea*).



Free standing Norway spruce

Non Timber Benefits

Norway spruce is the traditional Christmas tree although in recent years its popularity has dwindled in favour of non shedding trees such as Noble fir (*Abies nobilis*). In continental Europe, Norway spruce grows in a natural mix with beech and European silver fir while in Scandinavia it has a natural association with birch and Scots pine.

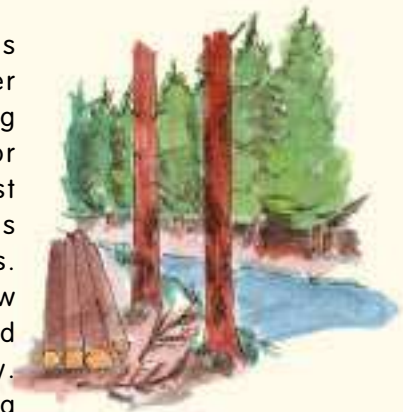


Norway spruce needles and cone

It therefore has an important place as a natural coniferous associate with broadleaved species. Norway spruce stands are a favoured habitat for the red squirrel. In the past, its resin was used as a source of turpentine and pitch, and its fresh shoots for making spruce beer.

Position in Irish Forestry

Norway spruce is one of the most popular coniferous species used in Irish forestry today. It has a long history as a timber tree in Ireland, the first plantations of Norway spruce having been established at the beginning of the eighteenth century or earlier. Following the establishment of the State Forest Service, it was extensively planted in commercial plantations up until the 1950's but fell out of favour during the 1960's. The planting of Norway spruce as a diverse conifer is now actively encouraged. Irish forest nurseries produce and sell over 5 million Norway spruce transplants annually. Coillte, the Irish Forestry Board, currently manage an area of over 19,600 hectares of Norway spruce, making it our third most common conifer after Sitka spruce and lodgepole pine.



Norway spruce in woodland setting

Uses & Markets

Norway spruce is well known in the timber trade and is used extensively in the building industry as structural timber and for flooring and joinery. The timber is relatively "white" and is therefore particularly favoured for boxes and packaging for foodstuffs. Norway spruce timber is easily worked and is said to give a better finish than Sitka spruce, although both timbers are classified in the timber trade as "white deal". Lower grade material is used in pallet manufacture and in Medium Density Fibreboard (MDF) and Oriented Strand Board (OSB).

The tallest Norway spruce recorded in Ireland is located at Fortgranite, Kiltegan, Co. Wicklow and measures 36.5 metres in height.

Further Information

Further information on growing Norway spruce can be obtained from your local Forest Service Inspector or any Professional Forester.



Norway spruce is used as a fencing material