

# Douglas fir

(*Pseudotsuga menziesii* (Mirb.) Franco)

## Distribution & Provenance

Douglas fir is the most common forest tree of north west America where it grows in association with Sitka spruce and western red cedar. Its natural range is along the Pacific coast from British Columbia to California and inland as far east as Colorado and New Mexico. Pockets of Douglas fir are also found in Mexico. The species was first introduced to Europe by David Douglas in 1827. Research and experience have shown that Coastal Washington and Oregon provenances of Douglas fir are best suited for growth in Ireland while mountain and inland provenances do not do well here. Despite its name, Douglas fir is not a true fir.



Natural distribution of Douglas fir

## Silviculture & Management in Ireland

Douglas fir grows best on deep, well drained, non calcareous and moderately fertile soils. It does not grow well on exposed sites, where drainage is poor or at elevations over 230 metres. Douglas fir is planted at an initial stocking of 2,500 stems per hectare at a spacing of 2.0 metres x 2.0 metres. Special care should be taken at establishment to ensure that plants are straight and well heeled which will help to avoid incidence of 'basal sweep', to which Douglas fir can be susceptible. Douglas fir is normally a quick growing species in early years. It is tolerant of some shade and it is suitable for replanting sites where some over-storey remains during the early growth of the new crop. First thinning should be carried out early in order to enhance the stability of the remaining crop. There is a tendency for Douglas fir crops to produce a number of very coarsely branched and vigorous dominant trees known as 'wolves' and these should be removed at first thinning. Douglas fir crops and timber benefit greatly from high pruning and again, this should be carried out selectively at an early stage, in conjunction with first thinning. Subsequent thinnings are purely selective and normal rotation lengths for Douglas fir are between 50 and 60 years, depending on productivity. As Douglas fir matures, its bark changes from a 'fir like' grey colour with horizontal sap pockets to a reddish brown coloured, vertically fissured, corky texture.

Douglas fir is a frost tender species and can often suffer from late spring frost damage. However, the biggest threat to Douglas fir crops is browsing and stripping damage from deer who find the shoots and leaders particularly tender and palatable. Deer fencing around Douglas fir plantations is almost always necessary in areas such as Wicklow where there are large deer populations.



Free standing Douglas fir



Douglas fir needles and cone

## Non Timber Benefits

Douglas fir is a moderately shade tolerant species and this, allied to its ability to grow to very large sizes, makes it an ideal species to use when practicing continuous cover silvicultural systems. The species has the ability to grow to an enormous size and when left to do so becomes a truly majestic spectacle. Douglas fir woods give off a distinctive fragrance which is instantly recognisable when the timber is cut or branches pruned. When crushed in the hand, Douglas fir needles give a strong citrus fragrance.

## Position in Irish Forestry

Douglas fir was first introduced to Ireland in 1850 and was initially planted on old woodland sites. While excellent state plantations of Douglas fir were harvested in County Wicklow, along the Suir valley and at Ravensdale in Co. Louth, attempts were made later to establish Douglas fir on more upland sites but greater exposure and drainage problems led to poor crops and as a result, the species lost favour in Irish forestry for a number of years. However, Douglas fir has again become a popular choice amongst foresters on more suitable lowland and sheltered sites. Irish nurseries produce and sell approximately 800,000 Douglas fir transplants each year. Coillte, the Irish Forestry Board, currently manage an area of over 8,750 hectares of Douglas fir.



Douglas fir in woodland context

## Uses & Markets

Douglas fir produces a distinctive timber with a reddish brown heartwood and well defined growth rings. Douglas fir timber is often traded as "Oregon pine". Its durable nature makes it a popular outdoor timber and it is used for garden furniture, boat building and in log cabins & sheds. It has good strength and finishing qualities and is used as a structural timber in both domestic and public buildings. In Ireland, it is a preferred species for transmission poles, especially for high tension electricity lines due to the long lengths available.

## Further Information

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

The tallest Douglas fir recorded in Ireland is located in Powerscourt, Enniskerry, Co. Wicklow and measures 57.6 metres in height. This is the tallest recorded tree, across all species, in Ireland.



Douglas fir is popular for use in log houses