

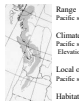
Pacific Silver Fir, Abies amabilis



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**Range**  
Pacific silver fir has a range in SE Alaska, coastal British Columbia, and along the western slopes in the Cascade Range in Washington and Oregon. (2)

**Climate, elevation**

Pacific silver fir grows in maritime climate with annual temperatures generally between 10° F and 61° F. Precipitation can vary between 600 mm on the west coast of Vancouver Island to an extreme low of 90 mm on the eastern side of Vancouver Island. In the Cascade Range the average annual precipitation is more than 1500 mm. (2)

Elevation varies from 1000 m in the southern part of its range to 100 m in the central part of its range and sea level in its northern range. (7)

**Local occurrence (where, how common)**

Pacific silver fir occurs most often on areas with high precipitation and moist soils like the mid-slope of the western cascades. It can remain in the understorey for centuries. (6)

**Habitat preferences**

Pacific silver fir is dependent on adequate soil moisture during the growing season. It is most abundant on sites where summer drought is minimal, such as areas of heavy rainfall, seepage, or prolonged overcast. (2)

**Plant strategy type** successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)

Pacific silver fir is an obligate climax species. It is one of the most shade-tolerant trees in the Northwest. Small trees are often abundant in the forest understorey. On many sites Pacific silver fir can eventually outgrow and become taller than western hemlock or Doug-fir after 100 years. (2)

**Associated species**

Pacific silver fir is associated with Western hemlock (*Thuja heterophylla*) throughout most of its range. West of the Cascade Range it is associated with Noble fir (*Abies procera*), Douglas-fir, Western red-cedar (*Thuja pluvialis*), and grand fir (*Abies grandis*). And it is associated with Mountain hemlock (*Thuja merriamii*), Alaska-cedar (*Chamaecyparis nootkatensis*), and subalpine fir (*Abies lasiocarpa*) at subalpine elevations. (2)

May be collected as: (seed, layered, divisions, etc.)

Seed (4)

**Collection restrictions or guidelines**

The timing of cone collection (mid to late August) is important because cones disintegrate as they mature. Felling and topping are not successful collection methods. The cones are susceptible to molding and heat build-up if stacked when wet. (4) Good seed crops generally only occur every 3 years. (2)

**Seed germination (needs dormancy breaking?)**

Sow 4 weeks @ 39°F, move to 70°F for germination. (3)

**Seed life (can be stored, short shelf-life, long shelf-life)**

Up to 5 years. (6)

**Recommended seed storage conditions**

Store in drums, cans, or plastic bags near 0° F. Leave containers unsealed to minimize moisture buildup and prevent mold growth. (8)

**Propagation recommendations (plant seeds, vegetative parts, cuttings, etc.)**

Plant seeds. Cool, moist habitats are best for germination, but full sunlight produces maximum subsequent growth. (2)

**Soil or medium requirements (moisture necessary?)**

Germination can occur on a variety of media on lime bumpy and in moist depressions in the subalpine zone; on edges of melting snowpack in subalpine meadows; and in litter, rotten wood, moss, organic soils, mineral soils, and fresh volcanic tephra. Survival is better on mineral substrates than on organic substrates. (2)

**Installation form (form, potential for successful outcomes, cost)**

Stock is usually implanted in 2-3 year old seedlings or 3-4 year old transplants. (6)

**Recommended planting density**

Seeds should be sown in spring at a density of 62.5 to 125 per acre (25-50 per ha) and approximately 0.25 inch (0.64 cm) deep, depending on the site. (4)

**Care requirements after installed (water weekly, water once etc.)**

Modules of seedling or stem are sometimes used to protect seedlings during the first winter. (6)

**Normal rate of growth or spread; lifespan**

Pacific silver fir takes about 9 years to reach breast height on average sites. Planted seedlings may only grow 1 to 6 inches per year for the first few years after planting with most of the plant's energy being devoted to root development. After reaching breast height, it may grow up to 35 inches per year. (2) It can eventually grow to heights of 100 to 230 feet and diameters of 36 to 44 inches depending on the site. Pacific silver fir can live up to 400-500 years on good sites, and 200-350 years on more adverse sites. (4)

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Data compiled by (student name and date)

Thane Vail, April 20, 2005