

Harvesting and Marketing Noble Fir Boughs

from Christmas Tree Plantations

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In the Pacific Northwest, noble fir trees are the primary source of boughs used in Christmas wreaths and other seasonal or floral decorations. Approximately 25 million pounds of boughs are harvested annually, with the bulk taken from natural high-elevation stands.

Christmas tree plantations provide a minor but increasing share of boughs. As a plantation owner or manager, selling Christmas trees probably is your first objective. However, when Christmas trees grow too large to sell or haven't been sheared in several years, you may consider harvesting and selling their boughs as a secondary source of revenue.

Establishing and maintaining a plantation

Selecting seedlings

If you are starting a new plantation or adding trees to an existing plantation, select high-quality seedlings to ensure long-term, high-quality bough production. There are a number of quality traits under some degree of genetic influence (color, density, needle form, and growth). Ask other growers or advisors for seed source recommendations.

A new stand of seedlings should have a planned road system to allow for harvest and cultural care.

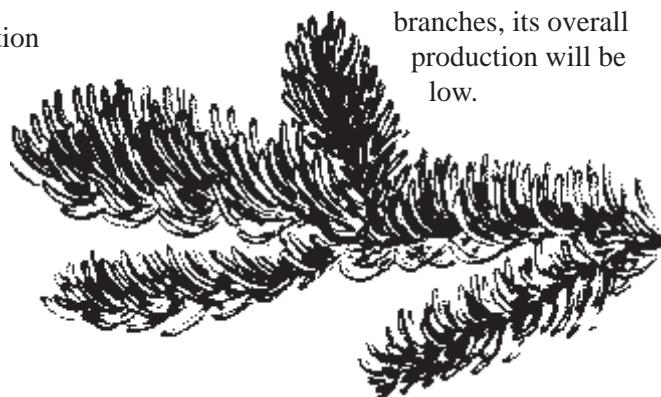
Controlling weeds

To ensure rapid growth and a sound lower-limb structure, it's important to control weeds. A low-growing grass (e.g., hard fescue) perhaps mixed with white clover may provide some control of invading weeds and reduce erosion.

Shearing

Buyers generally prefer foliage that looks natural and uncut. In trees to be cut for their boughs, branch symmetry is more important than tree symmetry. You therefore should avoid shearing the branches. Branches that have been sheared will need a minimum of 1 year to regrow. While a sheared tree may

have some usable
branches, its overall
production will be
low.



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Controlling density

A typical Christmas tree plantation, with trees spaced at 5 x 5 feet, usually is overgrown by year 9 if no trees are removed. When branches of neighboring trees interlock or shade crop branches more than 3 hours per day, branch and bough quality declines. The trees also become more susceptible to foliage rust, molds, and needle cast diseases. In large part, diseases increase due to reduced air circulation and increased shade and humidity.

For quality foliage, you need to thin branches or trees. Here are some rules of thumb for thinning:

- Remove all low-quality branches to encourage quicker production of the remaining high-quality branches.
- Generally, the quality of crop material increases as the amount of light increases.
- Thin branches or trees with future growth needs in mind.
- For mature stands, thin to allow up to 10 or 15 feet of space between trees.

Improving color

Buyers prefer dark green to blue-green foliage. Foliage color is a function of many factors including tree age, nutrition, branch position, genetics, and sunlight exposure. You can influence color by carefully selecting the seedlings and by adjusting the nutrition level. Please note that dark, blue-gray foliage may appear only on the upper branches of older trees.

Foliage with acceptable color has nitrogen levels above approximately 1.4 percent (see FG 73, *Douglas-fir Christmas Trees in Oregon and Washington Fertilizer Guide*, for information on foliage sampling). If nitrogen levels are lower and color is poor, consider applying approximately 200 pounds of nitrogen fertilizer per acre in March or April.

Rejuvenating a plantation

To rejuvenate an old stand of noble fir, you can try a technique called "stump culturing."

The technique calls for removing all but one whorl of limbs 2 to 4 feet from the ground. Cut the trunk back just above the selected whorl. New tops will grow from these whorl branches. After the

second season of growth, cut away all but the best top.

Stump culturing works best on healthy trees in well-drained soils. Trees or sites susceptible to root rot should not be stump cultured.

Alternatively, the entire tree can be cut out and replaced with a seedling.

Bough yield and harvest

Bough yield is variable. In one grower study, the average grade 2, 6- to 7-foot noble fir produced 28 pounds of boughs when the whole tree was harvested.

Table 1 shows production levels of Fraser fir. While production levels may differ for noble fir, Table 1 does provide a rough guide illustrating how bough production increases with tree size and density.

Harvesting

Before cutting boughs, contact buyers and ask about their bough specifications and preferences. Once you know what the buyers want, you can cut the boughs using hand- or air-powered clippers or loppers.

If you plan to continue bough production on the same trees, be careful where you cut. Noble fir branches regrow only from living buds and can be harvested again in 2 to 4 years. If you cut behind

Table 1.—Fresh weight (pounds) of Fraser fir usable greenery.¹

Height (feet)	Medium density	Heavy density
4–5	5.6	9.9
5–6	9.1	15
6–7	14	20
7–8	20	27
8–9	27	35
9–10	35	44
10–11	45	53

¹ Fresh weight of branches suitable for wreaths or roping. Trees not sheared in year of harvest. Weights derived from regression models using 135 tree samples. (Adapted from L.E. Hinesley and L.K. Snelling, Yield of Decoration Greenery from Fraser Fir Christmas Trees, *HortScience*, March 1991.)

the last bud or live foliage on a branch, branches will never regrow.

After cutting, count or weigh the branches according to the buyers' preferences.

Storing cut boughs

Soil quality and exposure to frost affect how long boughs retain freshness after they're harvested. Boughs don't keep well if harvested from trees growing where they're protected from early frost. They last longer if harvested from trees exposed to early frost.

Boughs can retain their freshness for more than 9 weeks when they're stored at the correct temperature and humidity. After cutting, refrigerate boughs at 37°F as soon as possible. This is especially important if the boughs were taken from a low-elevation plantation.

High and constant humidity also is critical and should be near 100 percent. You can use sprinklers, misters, or dip tanks to keep the boughs wet.

Marketing boughs

You can market boughs to a diverse group of buyers including wholesale florists, nurseries, seasonal bough shops, and other Christmas tree growers running a bough business. Some Extension offices have buyer lists.

As mentioned earlier, it's a good idea to contact buyers before cutting any branches because each buyer has unique specifications and preferences. For example, some will purchase "backs," which are boughs from main branch tips in the upper sunlight crowns of mature trees. These may be used as door or mantle swags. Other buyers prefer boughs for wreaths. These boughs can be shorter than backs, and their color and needle characteristics are not as critical.

Summary

Bough production is a source of potential income for noble fir plantation owners. Keep these rules in mind to ensure a quality, marketable product:

- Thin branches and trees to increase the proportion of usable bough material.
- Fertilize to improve color.
- Avoid shearing.
- Contact buyers to determine their product requirements *before* cutting.
- Store cut boughs at 37°F and 100 percent humidity.

For more information

Douglas-fir Christmas Trees in Oregon and Washington Fertilizer Guide, FG 73 (Oregon State University, Corvallis, 1995). No charge.

Additional Special Forest Products publications from the OSU Extension Service

Harvesting and Marketing Edible Wild Mushrooms, EC 1496, by Greg Filip (1998). \$1.00

Harvesting and Marketing Edible Wild Plants, EC 1494, by Steve Clements (1998). \$1.00

Harvesting and Marketing Medicinal Wild Plants, EC 1495, by Steve Clements (1998). \$1.00

Harvesting and Marketing Scotch Broom, EC 1467, by James Freed (1998). \$1.00

To order copies of these publications or additional copies of EC 1500, *Harvesting and Marketing Noble Fir Boughs*, send \$1.00 per copy to:

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