

The Christmas Tree Industry in Western North Carolina

Jill Sidebottom

Jill Sidebottom is the Area Forestry Extension Specialist with North Carolina State University for Mountain Conifer Integrated Pest Management, 455 Research Drive, Mills River, NC 28732-9244; Tel: 828.684.3562; E-mail: jill_sidebottom@ncsu.edu.

Sidebottom, J. 2009. The Christmas tree industry in western North Carolina. In: Dumroese, R.K.; Riley, L.E., tech. coords. 2009. National Proceedings: Forest and Conservation Nursery Associations—2008. Proc. RMRS-P-58. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station: 71–73. Online: http://www.fs.fed.us/rm/pubs/rmrs_p058.html.

Abstract: Christmas tree production has grown in the last 50 years to one of the major farming enterprises in western North Carolina. The history, importance, and challenges to the Christmas tree industry are reviewed.

Keywords: Christmas trees, Fraser fir, western North Carolina

The North Carolina Christmas tree industry produces primarily Fraser fir (*Abies fraseri*) that is native to the highest elevations in North Carolina, eastern Tennessee, and western Virginia. Fraser fir is named for the Scottish plantsman, John Fraser (1750 to 1811). Fraser fir was probably first observed by Andre Michaux, who traveled through western North Carolina in the late 1790s. He appears to have mistaken it for balsam fir (*Abies balsamea*) (Fulcher 1998). John Fraser probably first observed Fraser fir in 1808. For a short time, Fraser and Michaux traveled together. But the two men parted company, and Fraser went to the higher elevations around Roan Mountain where he collected the tree. Frasers were growing in English gardens by 1811 (Fulcher 1998).

Despite a lack of accurate documentation, it is thought that, prior to European settlers, the spruce-fir forests occupied as much as 810,000 ha (2 million ac) of high elevation sites (McGraw 1980). These forests now exist in less than 40,500 ha (100,000 ac) in the Great Smoky Mountains, the Balsam Mountains, Roan Mountain, Mount Mitchell, and Mount Rogers.

One reason the Fraser fir Christmas industry excelled in North Carolina is because of the characteristics of the tree itself. Fraser fir possesses all the factors that make an outstanding Christmas tree that can be displayed for many weeks, including excellent needle retention, strong boughs for hanging ornaments, and a wonderful fragrance (NCCTA 2008).

Prior to World War II, most people in North Carolina used redcedar (*Juniperus virginiana*) or white pine (*Pinus strobus*) collected from the woods for Christmas trees (Beutell 2007). Trees were put up on Christmas Eve and taken down right after Christmas. After the war, as more people moved to urban areas, there was a market to purchase Christmas trees. Balsam fir trees were sold in Charlotte, Raleigh, Winston-Salem, and other larger cities. These trees were grown in the wild in Canada and Maine (Beutell 2007). As early as 1939, Fred and John Wagoners, identical twins who became founders of the industry in western North Carolina, were selling redcedar trees for US\$ 2 apiece in the Greensboro area, after having paid their neighbors US\$ 0.75 to collect them from fence rows (Wagoner 2007).

In western North Carolina, most farms during this time were small, producing cabbage, green beans, and tobacco, as well as small herds of beef cattle (Cartner 2007). During the war years, most farms could sell what they produced profitably. Following the war, however, prices dropped. According to Sam Cartner, a prominent Christmas tree grower who was the County Extension Agent in Avery County at the time, farmers would take their beans to market to sell, and end up dumping them on the side of the road rather than accept the low prices being offered to them (Cartner 2007).

Christmas trees would end up replacing these crops, but it would not be an easy transition for farmers used to producing annual crops with an annual income (Cartner 2007). Frasers were already being grown as nursery plants to be dug even as early as the 1920s, as well as for greenery to make wreaths (Dellinger 2007). Interest in Fraser fir as a Christmas tree was also increasing. In 1950, the first commercial cutting of Fraser fir was made on Roan Mountain (Toecane Ranger District, Pisgah National Forest) (Williams 1958). Fraser fir makes a substantially better Christmas tree than balsam fir, which was already being marketed in the area. But growing Fraser firs for Christmas trees would require several things: a source of seedlings; better understanding of production; shearing to shape trees; and growers willing to make the 7- to 10-year investment required to grow trees.

Many state and federal agencies helped get the industry started. The North Carolina Division of Forestry started growing Fraser fir seedlings at the Holmes State Nursery (Hendersonville) in 1955 and the Catawba Nursery, later to be known as the Ralph Edwards Nursery (Morganton), in 1957 (Williams 1958). In the mid 1950s, John Gilliam, a regional extension

forester working for North Carolina State University (then known as State College) was asked to investigate growing Christmas trees as a profitable forestry practice for the mountains (Gilliam 2007). He made several trips to Pennsylvania, a state that already had substantial Christmas tree production brought in by German immigrants, to learn how to grow, shear, harvest, and market Christmas trees.

The first organizational meeting of what would become the North Carolina Christmas Tree Association (NCCTA) was on 8 May 1959, in Newland. Originally called the North Carolina Christmas Tree Growers Cooperative Association, this organization began in Avery County with the help of Mr. Cartner and Herman Dellinger, an agriculture high school teacher at Crossnore High School (Crossnore) (Dellinger 2007). The articles of incorporation were signed in August of that year by all Avery County growers, including Herman Dellinger, Conrad Weather, Andy Vaughn, Sammy Mortimer, and Bill Aldridge. Other important people who helped the industry grow include Fred Whitfield, Ross Douglass, and John Gray, all from NCSU; Charles Speers with the USDA Forest Service; Chuck Gardener, Ken Perry, and Waightstill Avery, all County Extension Agents; Joe Clayton, service forester in Ashe County; F.H. Claridge and B.H. Corpening with the Division of Forestry; and Jim McLauring, District Conservationist (Gilliam 2007).

In 1971, Fraser fir made national attention when Avery County grower, Kermit Johnson, took a tree to the White House. This honor is given to the winner of the national Christmas tree contest. This honor has been given to North Carolina growers more than any other state, and the tradition has continued in 2005 with Earl Deal, in 2007 with Joe Freeman, and in 2008 with Rusty Estes (NCCTA 2008).

The Christmas tree industry in North Carolina is valued at US\$ 134 million, with 5 to 6 million trees harvested annually (Glenn 2008). North Carolina is second in the nation in production behind the Pacific Northwest, but is first in revenue generated. North Carolina growers supply about 15% of the nation's trees, with more than 1,500 growers on more than 12,150 ha (30,000 ac) (Glenn 2008). The majority of production is in 10 mountain counties, with the top five producers, in order, being Ashe, Avery, Alleghany, Watauga, and Mitchell counties. Ashe County is the fifth largest Christmas tree producing county in the United States based on land use (3,890 ha [9,611 ac]), fourth largest based on number of trees, and second largest based on number of Christmas tree farms (COA 2002).

Trees are sold in foot increments and are graded as premiums, #1s, #2s, or culls. Average wholesale value of trees over all sizes and grades is US\$ 20 to 23, and retail values are sold for US\$ 23 to 33/m (US\$ 7 to 10/ft) (Glenn 2008).

In a recent survey, farm size of Christmas tree growers in western North Carolina ranged anywhere from 0.08 to 650 ha (0.2 to 1,600 ac), but 47% of growers produce 4 ha (10 ac) or less of trees. Only 29% of growers reported doing so full-time. About half of all growers produce some other crop, including nurseries, cattle, pumpkins, potatoes, or others. Most growers have been growing trees a long time, with 22% of growers having grown trees for more than 30 years (Sidebottom 2008).

Although production in western North Carolina is primarily wholesale, choose-and-cut farms are important to the industry. North Carolina has more than 400 choose-and-cut farms, selling more than 250,000 trees with a retail value of more than US\$ 5 million (Glenn 2008). Value-added products, such as wreaths, roping, and centerpieces, are also important. In western North Carolina, wreath-making has been an important cottage industry since the 1930s. North Carolina has some of the largest greenery producers in the country (Glenn 2008).

The value of the Christmas tree industry is more than just the wholesale value of the trees themselves. It is estimated that every dollar earned by growers cycles as much as 2.5 times in local communities as the wages are spent and profits reinvested in buildings, equipment, and vehicles. Christmas trees have provided an economic incentive to landowners to keep their land from being developed (NCCTA 2008).

Impacts of Christmas trees to western North Carolina are more than economic. For each tree grown, there is 2.3 m² (25 ft²) of green space for wildlife. As an "early successional forest," a Christmas tree farm provides habitat for grouse and quail when ground covers are managed properly. Macroinvertebrate surveys in streams below tree farms have demonstrated little negative impacts of tree production on water quality (Sidebottom 2003). In a recent survey of pesticide use, Christmas tree growers have also greatly reduced the use of pesticides in recent years. Using Integrated Pest Management techniques, growers have reduced insecticide and herbicide use by 40% based on active ingredient per acre. In 2006, growers used only an average of 3.9 kg ai/ha (3.5 lb ai/ac) of herbicides and insecticides, averaged over all ages of trees. Fungicides are not used to produce Christmas trees in western North Carolina (Sidebottom 2008).

Although Christmas tree production continues to be strong in western North Carolina, the industry faces many challenges. Phytophthora root rot continues to reduce areas where Fraser fir can be grown. Land prices continue to increase, making development more attractive to growers. And although production costs continue to rise due to increase costs of fuel, fertilizer, and labor, the price of trees is starting to decline because of a nationwide oversupply of trees (Glenn 2008). This is caused by the increased useage of artificial Christmas trees. In 2000, there were an estimated 129 million households in the United States. According to figures generated by the National Christmas Tree Association, 27% of households bought a real tree in 2007, using approximately 35 million trees. However, 58% of households displayed an artificial tree, and 15% of households didn't have a Christmas tree at all (CTCS 2008).

Summary

In 2009, the NCCTA will celebrate its fiftieth anniversary. Christmas tree growers in western North Carolina have built a nationally renowned industry using their native fir. Although faced with challenges for future growth, the industry continues to provide mountain families with a reliable income supported by the efforts of state and federal agencies.

References

- Beutell TC. 2007. Personal communication. Tuckasegee (NC): Wolf Creek Tree Farm, Christmas tree grower.
- Cartner S. 2007. Personal communication. Asheville (NC): Former Avery County Cooperative Extension Director and Christmas tree grower, Cartner Christmas Tree Farm.
- [COA] Census of Agriculture. 2002. Table 35. Woodland Crops: 2002 and 1997. URL: http://www.nass.usda.gov/census/census02/volume1/nc/st37_2_035_035.pdf (accessed July 2008).
- [CTCS] Christmas Tree Checkoff Study. 2008. URL: <http://www.checkoffstudy.com/> (accessed July 2008).
- Dellinger H. 2007. Personal communication. Crossnore (NC): Christmas tree grower.
- Fulcher B. 1998. Muir, Michaux, and Gray on the Roan. The Tennessee Conservationist. URL: http://cleanairtn.org/environment/tn_consv/archive/roan.htm (accessed July 2008).
- Glenn B. 2008. Personal communication. Raleigh (NC): North Carolina Department of Agriculture and Consumer Services, Area Marketing Specialist.
- Gilliam J. 2007. Personal communication. Raleigh (NC): North Carolina State University, Former Forestry Extension Specialist, and Christmas tree grower.
- McGraw JR. 1980. Past and present importance of the red spruce-Fraser fir forest resource of the southern Appalachians. *Limbs & Needles* 8(3):13-16.
- [NCCTA] North Carolina Christmas Tree Association. URL: <http://www.NCChristmastrees.com/> (accessed July 2008).
- Sidebottom JR. 2003. Evaluation of the Christmas tree industry in western North Carolina on surface water quality. URL: http://www.ces.ncsu.edu/Christmastrees/environment/water_summary.html (accessed July 2008).
- Sidebottom JR. 2008. Crop profile for Christmas trees in North Carolina (mountains). URL: <http://www.ipmcenters.org/CropProfiles/docs/NCchritmastrees.pdf> (accessed July 2008).
- Wagoner F. 2007. Personal communication. Laurel Springs (NC): Christmas tree grower.
- Williams WK. 1958. Fraser fir as a Christmas tree. Washington (DC): USDA Forest Service in cooperation with the Extension Service. 9 p.