(Coast Range near Corvallis, OR) Presented 1999

Intensive Plantation Management of Douglas-fir

Mike Newton, OSU

This 190-acre property was purchased in 1961 by Mike and Jane Newton for $27/ac in terrible condition. It had recently (1959) been commercially clearcut and relieved of all standing live conifers over 8" dbh, most of which were about 20 years old. There were scattered residual whips less than 8", most of which had tassel tops, scars, and other signs of trauma. Brush was rampant, with Himalaya blackberry, salmonberry, vine maple, red alder and cherry being the worst problems.

Despite its problems with brush and lack of stocking on 75% of it, the soil is extremely deep silty clay loam derived from a very rich parent material, the Tyee Sand/siltstone. The climate is characterized by mild summers perfect for tree growing, plenty of sunshine, 90" rain, and enough soil water storage capacity so that the winter-maximum rainfall doesn't subject these sites to significant water stress. These sites lack nothing for Doug-fir, brush or anything else green and competitive!

We started seriously in 1963-4 to reforest. We began by aerial spraying the EASIEST brush patches with 2,4-D and 2,4,5-T, and planted roughly 10,000 seedlings, of which half were 2-0 bare-root stock and half were wild trees pulled from roadbanks, a mixture of Doug-fir and western hemlock. Most of the hemlock died, but the wild fir did far better than the nursery stock because they were larger, and size meant everything in the fast-growing weeds.

Between 1964-71 we planted close to 90,000 large wild seedlings, about 90% of which were Doug-fir 24-50" tall. Several applications of herbicides later, we were still getting animal damage, dead brush was falling on trees, and survival was spotty. Glyphosate was registered in 1976, and we were among the first commercial users. In brief, this product revolutionized our efforts, survival picked up, and we now have about 90+ percent of the place covered with conifers.

Site quality here ranges from Site index (King) 150-170 at 50 years breast height age. Stands we will see are 58 years old, and are remnants of the high-graded stands logged in '59. Despite a history of clearing, grazing, abandonment during WWII, and high-grading, these stands have dominant heights close to 175', volumes of 40-50 Mbf Scribner, and current growth rates of roughly 2000 bf/ac/yr. Tree size ranges from 20-36" dbh, with at least 10 tpa over 30", a size range well within the range considered acceptable spotted owl habitat. Despite rapid growth, wood density and fiber length on these trees is about average for the Coast Range, and these timbers are perfect for large structural or residential requirements. Stand structure is characterized by deep crowns analogous to those of much older stands, but the rapid height growth even now soon puts old crown in the shade to the extent that there are very few branches over 2" diameter except on the most open-grown trees. Thus, most of the timber meets grade requirements for #2 sawlogs, our highest priced sawmill logs at present. We have thinned twice or more in all areas where there were a surplus of trees, and stand density is hovering at 50-60 trees/ac.

These stands have shown immense profitability and long-term productivity despite their rough history. On the negative side, our biggest problem is not biological but administrative. The increasing encroachment of rules directed toward wildlife, fish, highway scenic easements, inheritance taxes and many other operational constraints are all stimuli to cut now, because one might not be able to cash in later. This tree farm is part of 500 acres of derelict land we bought over a 18-year period and rehabilitated. It has grown about six million feet of timber since then, and is currently adding 6-700Mbf/yr. There is no possibility of giving that much value to our three heirs as fast as it accumulates, and the IRS is standing there ready to abscond with 52% of all value above $1.2 million. If we should live to age 85, (I hope this is reasonable), our heirs would have to liquidate over 70% of the growing stock to pay the taxes on land and timber. They will not be able to cut near streams, nor wherever we are within 200 feet of a scenic highway (Hy 20). What you have is a government program that almost totally dictates forest practices which are in the poorest interests of society as well as ourselves.

Building a trust system is the only way we have determined how to continue to manage as a family tree farm. In so doing, we have sold all growing stock we do not intend to harvest during our lifetimes to a trust. Between our lifetime exemptions and annual gifting to the trust so that it could pay us on our sale contract, we have succeeded in transferring the crop trees now under 50 years old out of our estate.

In sum, it is possible to grow immense quantities of timber and excellent habitat for owls, elk deer and fish on this land. Students interested in management need to know that the most important principles involved include:

Plant large, vigorous seedlings
Provide competition-free conditions for at least two years for best growth
Thin to maintain relatively low basal area until at least age 30
Establish a trust as soon as heirs are old enough to count or be prepared to give the value either to charity or to the IRS