Don't Let Early Impressions Diminish Long-Run Profit Potentials!

by

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As concerns for improving the efficiency of investments in timber management increase, more attention should be focussed on methods for improving stand values. Biological concerns about tree quality at wider spacings are real (Carter *et al.* 1986) but ought not be over-rated. Widely spaced stands may look poor in youth, so managers need effective analyses to confirm their faith that improvements will occur over time. Those who have low expectations for quality of widely spaced trees had their worst fears confirmed by the photograph of trees at 4.5 m spacing in the article by Carter *et al.* (1986). That showed many large branches in comparison with fewer and smaller branches and artificially pruned boles at 1.8 and 3.6 m spacings. More representative views of trees at 4.6 m spacing given here as Figures 1-3 may provide some reassurance. However, comparison of Figures 3 and 4 leaves little doubt that wide spacing increases branching. Figure 1 shows one of the widely spaced 49-tree plots measured by Carter *et al.* (1986). They did not study 0.9 and 2.7 m spacings and 0.2 ha plots shown in Figures 2-4. Figure 2 depicts average lower-bole quality for Douglas-fir, 27 years from seed. The two largest trees in 0.2 ha plots are shown in Figures 3 and 4. The

Figure 2. Representative trees in 0.2 ha plot, 27 years from seed, 4.6 m spacing.

Figure 1. View in 4.6 m 49-tree plot toward 0.9 m initial spacing of Douglas-fir.

tree at 4.6 m spacing (Figure 3) has twice the dbh of that at 0.9 m spacing, which represents the best survivor of a very poor investment in stand establishment.

Effects of initial spacing to age 25 have been described fully for these trials (Reukema and Smith 1987) updated to 30 years (e.g. Smith 1986a) and projected to 100 years (Smith 1987a). Therefore, it is possible to draw some important managerial conclusions about Douglas-fir and other species now. The dramatic cost advantages of using wider spacings in plantations have been described recently (Edwards 1987). Wider spacings also can increase volumes and values grown for a given investment in establishment and tending (Smith 1986b). Although combination of wide spacing with pruning will make the best use of scarce labour and capital and take advantage of abundant land (Smith 1987b) there can be impressive gains even without pruning (Smith 1987a). Advantages of effects of piece size on values increase slowly for wider spacings as stands age but are well established 40 years from seed. Then Douglas-fir stands grown at 4.6 m should have similar yields but be 41% more valuable than those at 2.7 m and 115% more valuable than those at 0.9 m and cost much less to establish.

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Figure 3. Largest tree in 0.2 ha plot, 4.6 m spacing.

Figure 4. Largest tree in 0.2 ha plot, 0.9 m spacing.

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