



Silvicultural and Harvesting Trends

In the last twenty years, softwood inventory in the southeastern U.S. has increased by two hundred billion board feet. Present harvest rates for softwood sawtimber exceed the growth rate by five (5) percent and it is projected that harvest rates (or at least demand) will rise by eighty (80) percent over the next fifty (50) years.¹ The majority of current average timber growth levels in the southeast is only one-half that of fully stocked natural stands and well below production from plantations maintained with modern silvicultural techniques and genetically improved trees. The forest products companies and other enlightened forest landowners have recognized these facts and have changed their forest management techniques which in turn will create increased demand for forestry equipment.

New management practices will include fertilization, plantations with close spacing, and early thinning followed by several commercial thinnings. Maximum fiber yield per acre is becoming a major consideration due to the high costs of land and the desire to maximize yield. In every state except Mississippi there has been a major conversion from shortwood to tree length harvesting. In some cases, the limbs and tops are mechanically crushed and transported with the commercial portions of the stem into the mill's woodyards for processing as fuel. Over eighty (80) percent of the harvesting is by mechanical shear rather than by chainsaw, except in Mississippi. This is due to the decreasing availability of labor, the extremely high cost of Workmen's Compensation to maintain harvesting crews, and the better efficiency of mechanical harvesting methods. Technology advances have now allowed the utilization of smaller diameter logs for conversion to lumber and plywood. Therefore, harvesting equipment is required to operate in forests that are closely spaced with little maneuvering room, and to process small diameter trees at faster rates to achieve higher output levels. This trend will force modification of existing equipment design to produce miniature skidders and harvesters with multi-purpose attachments that are highly maneuverable and which will not damage the remaining trees during successive thinning operations.

Each forest products company has a unique harvesting philosophy based on the intended end-use of the timber resources so it is difficult to identify overall trends in crop rotation. Corporations such as Union Camp, Georgia Kraft, and Alabama Kraft which are paper oriented, tend to use a philosophy of maximum fiber yield per acre which results in one (1) commercial thinning at age fifteen (15), and clearcutting at age thirty (30). Multi-product corporations such as Georgia Pacific and International Paper manage their timber lands to produce plywood and sawtimber quality trees. Their typical rotation is pre-commercial thinning at age ten (10), and commercial thinnings at ages twenty (20) and thirty (30) and clearcutting at age seventy-five (75). The operations of pre-commercial thinning and extension of the ultimate stand age at final harvest from sixty (60) to seventy-five (75) years are identified recent trends. Firms such as bank trusts and other private ownership tend to operate more like the multi-product forest industry firms.

¹ "Timber Demand: The Future is Now", Forest Products Research Society.
P. 80-29.