Reforestation Trends in the Eastern United States

Clark W. Lantz[1]

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Abstract—Private, non-industrial forest land in the eastern US must compensate for the vast amount of federal land currently under environmental restrictions in the West. As the demand for wood continues to increase nationwide, the eastern US will be in a favorable position to supply much of this wood. Unfortunately, reforestation is falling behind in the South. An average of only one half of the acres harvested is being replanted Southwide.

Suggestions are included for closing the reforestation "gap," for improving seedling quality, and for coping with change within the forestry community.

THE DEMAND FOR WOOD

With the current environmental restrictions on timber harvesting in the western US, our wood-using industries must find other sources of wood. Many companies have turned to overseas sources of wood. Fortunately, the eastern US has a great deal of hardwood timber in the North and large volumes of softwood timber in the South (USDA Forest Service 1990).

Forest industry, particularly in the South, is in a favorable position to satisfy much of this demand more and more of the timber must be taken, however from private, non-industrial land. The pressure will be on the private, non-industrial forest landowner (PNIF) to supply more and more timber—both softwoods and hardwoods. Environmental restrictions in the East, while not as dramatic as these in the West, appear to affect much of the public timber supply. These restrictions will likely focus timber production on fewer acres where wood can be grown at maximum production rates (USDA Forest Service 1993).

REFORESTATION RATES

If a reliable, long-term timber supply is to be assured in the South, reforestation rates must be improved. Currently only 50% of the acres harvested in the South are replanted. This percentage of harvested acres replanted ranges from a low of 22 in one state to a high of 93 in another state (see table 1).

Although natural regeneration will keep many acres in production, often these acres will not reach full potential. In some cases it will take several years to reach full stocking. Natural seeding from residual or adjacent seed trees may result in low quality trees compared to genetically improved seedlings that could be planted and would grow 10-15% more wood per acre per year than naturally regenerated stands.

In some areas, where there is no natural seed source present, the

[1] USDA Forest Service, Southern Region, Atlanta, GA.

area will often revert to a "brush field." Low quality hardwoods, greenbriar, honeysuckle and/or kudzu will take over, requiring substantial site preparation work to establish trees. This results in delayed production as well as additional cost.

Table 1. Reforestation in the South.

Season	Acres Harvested	Acres Planted	Percent Planted
1988-89	3,675	2,290	62
1989-90	3,660	1,912	52
1990-91	2,667	1,709	64
1991-92	3,038	1,721	56
1992-93	3,392	1,691	50
1993-94	*4,066	1,696	42

(M Acres) Source: Southern Group of State Foresters
—compiled by Georgia Forestry Commission.

*Estimated

CLOSING THE REFORESTATION "GAP"

Closing the reforestation "gap" (the difference between acres harvested and acres planted) will require a well-coordinated program in 2 areas:

- Education of PNIF landowners.
- "Fine-tuning" the reforestation system.

Education of PNIF landowners is largely a continuing education challenge to state service foresters, extension foresters, county agents and industrial "LAP" foresters. Information can be transferred via workshops, shortcourses, field days, demonstration plantings and publications. One of the most effective methods is a demonstration area where local people can see the results of good reforestation work accomplished by one of their neighbors.

"Fine-tuning" the reforestation system involves emphasis on teamwork and coordination within the organization. The system is only as effective as its "weakest link." Neither the tree improvement section nor the nursery section, nor the management section are independent units. All must work together as a team for the most effective results. A plantation monitoring system is one way to require involvement from all of these units. When plantation survival and growth are assessed on a periodic basis, participation is mandatory from nursery managers as well as management foresters. This requires teamwork from the entire organization.

Our reforestation accomplishments in the South have come about through the spirit of teamwork developed through the federal and state reforestation programs, the landowner assistance programs developed by forest industries, and the nursery and tree improvement cooperatives. Technical assistance provided by the state forestry agencies to PNIF landowners is a critical link in the reforestation system. Often the county forester is the only professional source of information on species, seed source and reforestation techniques available. Likewise, the seedlings storage and delivery system is unique to the state forestry agencies and it is essential for maximum seedling survival and growth. No other organization has the capability to provide this service.

IMPROVING SEEDLING QUALITY

Higher quality seedlings will survive and grow better than nursery-run seedlings. Remember-it costs no more to plant a high-quality, genetically improved seedling than a grade 2, unimproved seedling. The difference will be higher survival, faster growth, and a more valuable tree at the end of the rotation.

Higher quality seedlings do not happen by accident. We have learned several important lessons in the last few years:

- Start with high-quality, genetically improved seeds. Make sure the seed source is well-adapted to the planting site.

- Be sure that the nursery soil has sufficient organic matter content. Most of our coarse-textured nursery soils should have at least 1 1/2% organic content - 2% is even better. Fine-textured soils need higher organic levels. When we lose methyl bromide as a fumigant, higher organic contents will help to provide a buffer against soil pathogens.

- Sow the seeds with a precision sower at low (15-22/square foot-loblolly) density.

- Install life history plots to monitor the seedling crop. Dig seedlings and examine the roots at regular intervals. Build a data base of seedling morphology at specific times during the growing season. Use this as a "yardstick" to compare seedling development through the year.

- Use undercutting, wrenching and lateral root pruning to reduce shoot growth and shape a more compact, fibrous root system.

- Use lots of T-L-C in the lifting of the seedlings.

- Ship only the large caliper, high quality seedlings with well developed first order lateral roots.

- Be sure that the seedlings are well cared for during shipping, storage and planting.

- Inspect the planting operation to be sure that the vendor is planting the seedlings correctly.

HOW CAN A "TIMBER BEAST" SURVIVE IN THE TIME OF ECOSYSTEM MANAGEMENT?

- Have patience. Reorganization and downsizing have happened before—they will happen again-life goes on!

- Speak up. When "new concepts" contradict past experience and reliable data we need to set the record straight. History and experience are just as important as new ideas.

- Be a mentor. Get to know a young person. Share your thoughts with them. Invite them to discuss their thoughts with you. Both of you will benefit.

- Keep your sense of humor. Some things are not all that serious - or important. Some things are not worth giving 100% of your time and energy.

- Take time for yourself. Go for a walk. Read a good book. Learn a new language. Go fishing!

- Be optimistic about the future. Every tree that we plant takes in carbon dioxide, ties up carbon, produces oxygen - in addition to producing future wood products, reducing erosion, providing wildlife habitat, and just generally improving our quality of life.

REFERENCES

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