

## A DISTRICT REFORESTATION PROGRAM

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Briefly, I'd like to tell you about our reforestation program for the Tappahannock District of the Virginia Division of Forestry. The mission of the Virginia Division of Forestry is to enlarge the Forest Resources to meet the needs of the Commonwealth of Virginia. We are doing our share toward this mission by protecting and developing 1,516,000 acres of woodland in 14 northeastern Virginia Counties. Most of this area lies in the Chesapeake Bay Coastal Plain and is part of the natural loblolly pine range. About 69% of our district is forested. Thirteen percent of this is owned by forest industry and 6% by government. Non-industrial private landowners own the remaining 81% and this is the land most involved in our reforestation program.

Our district includes 15 professional foresters, 4 forestry technicians, 14 forest wardens, 1 mechanic and 2 clerks.

These full-time employees are located at our district office and in 9 county offices.

We maintain the usual forestry equipment; trucks, tractors, etc., and we contract for aircraft as needed.

Over the past 20 years we have annually sold 4 to 6½ million seedlings for planting in our district. We place a high priority on seedling sales. With major emphasis on selling a complete reforestation program. This begins with planting site preparation and ends with a seedling stocking study made after the first growing season.

Most site preparation includes one of the following:

1. Broadcast burning of logging debris.
2. Broadcast burning of logging debris plus fuel created by air spraying with 2,4-D and 2,4,5-T or Tordon 101 and 2,4,5-T.
3. Drum chopping and burning.
4. Air spraying alone.
5. Disking.
6. Clearing and piling with bulldozers.

About half of the area planted is aeriually sprayed with 2,4,5-T to release the pines from hardwood competition. This is usually 2 or 3 years after planting and is the end of the reforestation project.

Cost and environmental concerns are most important in determining the method of site preparation to be used. Most site preparation work is done on tracts following a recent cutover. A Division of Forestry representative contacts the owner of every tract that is cutover in our district. We explain the provisions of the Virginia Seed Tree Law which requires the leaving of seed trees or success reforestation. The Virginia Reforestation of Timberlands Act provides cost sharing, as do the Federal ACP and FIP programs and assistance available for various reforestation from forest industry.

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We explain to the landowner that we will assist throughout the reforestation project and that all that is required is the payment of the bills as various services are rendered by contractors. We also furnish landowners an estimate of the costs and incentive payments.

We estimate that about 90% of all forest tracts cut are being planted. One year every tract that was cut in one of our counties was planted.

We feel that these recently harvested tracts offer the best opportunities for reforestation. A forester who can't sell our program with the various incentives and services available must indeed be a poor salesman.

Planning for the 1977 planting season began in January 1976 when each County Forester provides the District Forester his best estimate of the number of seedlings to be planted in his county the following year. The district estimate is then summarized and sent to the Chief of Reforestation who arranges for these seedlings to be grown at our Augusta or New Kent nurseries.

From the time the nurseryman takes the seed from storage until the seedlings are shipped, our District is responsible for selling them or admit that we miscalculated and request the Reforestation Branch to try to find a home for them elsewhere.

A few years ago this system wasn't working too well. We consistently over-produced seedlings. A study quickly located the problem. The County Forester made his best estimate of his needs and then added a cushion to be sure he had enough seedlings. The District staff in turn would add additional seedlings for a safety factor, and the Reforestation branch also added a few thousand seedlings as a cushion. I even suspect our nurseryman sowed enough to meet the need, plus a cushion should they run short. This resulted in production greater than demand. Now the only safety factor is added at the State level. The system works very well.

With our seedlings growing at New Kent and Augusta, we spend the summers and falls on our site preparation activities with a few weeks off in the fall to purchase pine cones (over 1700 bushels in 1976). In November, our annual planting planning conference is held with District personnel, the Chief of Reforestation and the Nursery Superintendents.

At this meeting we make last minute adjustments in County allotments. We discuss contractor availability, costs, and areas to be planted by each contractor. We discuss seedling quality, packing, and shipping procedures with the Reforestation Branch. We ask the nursery for a seedling pick-up schedule showing the dates and number of trees to be picked up during the planting season. We normally start planting about December 1 and try to schedule our last load about March 15. We try to complete our planting by April 15, but usually are still planting a few areas until May 1. During the peak of the planting season, we keep about one million seedlings in our district cold storage building. Our storage building has a capacity of about two million and is kept between 34-40°F. with a relative humidity of about 90%. We try to limit seedling storage to two weeks. Seedlings



lifted after dormancy is broken are planted as soon as possible, and dormant seedlings are held for late planting. Dormant seedlings may be stored for as much as two months.

A forest technician on the District staff is in charge of scheduling the pick-up of seedlings at the Nursery and the operation of our cold storage building. The County Foresters and Forest Wardens are responsible for picking up the seedlings from the District Office and delivering to the contractor. Most seedlings are delivered to the contractor early on the day they are to be planted. This requires extra effort and mileage but we think it is justified - especially during hot spring weather.

Seedlings are placed in palletized shipping boxes in the packing room at the nursery cold storage building before our district truck arrives. We store the boxes in our cold storage building until the county people pick them up. The palletized crates and the fork lift have reduced much of the hard work of seedling handling.

Although the Division of Forestry does plant some seedlings with State-owned tractors and Wildland Planters, all seedlings in our district are hand-planted. About 7% of these seedlings are planted by the landowner or with the landowner's labor. The other 93% are planted by 20 contract crews that range in size from 3 to 100 men and women. The crews are paid by the seedlings planted. Most planters average about 2,000 seedlings per day in our sandy coastal plain soils. Production declines sharply in Piedmont soils or on areas with poor site preparation. We recommend planting rates to fit the tract, averaging about 800 seedlings per acre. The 1977 costs ranged from \$22 to \$28 per thousand seedlings planted with an average of about \$25.

Some of the people in these crews are very conscientious. Most will do a poor planting job unless carefully supervised. The quality of our planting is generally excellent. This is accomplished only by spending a great deal of time on the planting job with the crew. As planting season coincides with fire season in Virginia, our men are subject to conflicting demands on their time and consequently work long hours during this period.

Nearly all of our seedlings are loblolly pine. We also encourage the planting of patches of wildlife species on all large tracts. We sell a large number of environmental packages (50 seedlings of various species).

Our District Reforestation Technician treats seedlings for Pales weevil upon request by the County Forester. Treatment is a top dip with 4% Imidan. We charge 50 cents per thousand seedlings treated. We treat seedlings that will be planted on tracts where pine was cut after June 1st the pervious summer.

A district secretary handles all seedling applications, deposits revenues from seedling sales, records deliveries as they are made and maintains balance sheets for all seedlings picked up from the nurseries.

We operate as a business with the nursery acting as producer and wholesaler and the district serving as a retail sales organization.

Reforestation programs in the other 8 Virginia Division of Forestry districts vary according to the physiographic province, but are very similar to ours.

1971 Study

Year	Plantings	Survival	Height
1971	1000	85%	1.5
1972	1000	80%	1.5
1973	1000	80%	1.5
1974	1000	80%	1.5
1975	1000	80%	1.5
1976	1000	80%	1.5
1977	1000	80%	1.5
1978	1000	80%	1.5
1979	1000	80%	1.5
1980	1000	80%	1.5

The following table shows the average height of the seedlings at the time of planting and the average height of the seedlings at the time of the study. The average height of the seedlings at the time of planting was 1.5 feet and the average height of the seedlings at the time of the study was 1.5 feet.

Planting and Survival Data

Year	Plantings	Survival	Height
1971	1000	85%	1.5
1972	1000	80%	1.5
1973	1000	80%	1.5
1974	1000	80%	1.5
1975	1000	80%	1.5
1976	1000	80%	1.5
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