

GOVERNMENT'S ROLE IN TREE IMPROVEMENT APPLICATION AND DEVELOPMENT

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Before we become too involved in this subject, let's be certain we all have an understanding of the position from which I speak. That this is not now the case is probably true, since I can remember well my own confusion about governmental agencies before becoming a Federal employee.

By the word "government," as used in the title of my talk, we'll refer to the U. S. Forest Service, an agency in the Department of Agriculture.

The Forest Service is composed of three major divisions in addition to its Management, Programs, and Legislation and Administrative Services. The three I'll refer to here are the National Forest System, Research, and State and Private Forestry.

As the name implies, the National Forest System manages and administers the National Forests and National Grasslands. Tree improvement activities for the National Forests are carried out by personnel in their Timber Management Divisions.

Research carries out this type of activity for forestry throughout the United States and in Alaska, Hawaii, Puerto Rico, and the Virgin Islands. The work is done at 80 research and project centers.

State and Private Forestry, working through the State Forester's organization in each state, administers and finances numerous Federal -State cooperative projects. In addition, we provide technical assistance as needed to implement and carry out certain of these cooperative programs.

Several divisions make up the State and Private Organization. They include Cooperative Forest Fire Control, Forest Pest Control, Flood Prevention and River Basin Programs, and the Cooperative Forest Management Division. Let's look at one of these Divisions in more detail.

The Cooperative Forest Management Division, of which I am a member, is divided into four branches. They are the Cooperative Forest Management, the Rural Development, the Forest Products Utilization, and the Forestation and Tree

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Improvement Branches. I am associated with this latter, the FATI branch. We handle forestation, nursery management and tree improvement work, as well as "Tree Planters' Notes," the O.E.C.D. Scheme, Great Plains Tree Planting, and Natural Beauty.

You'll note that earlier I mentioned that tree improvement work for the National Forest System is carried out by their own Timber Management Divisions-- cannot, and do not, intend to speak for or about any of their work, or the philosophy that attends it. We do recognize their fine work, however, and have encouraged cooperation efforts between National Forest System tree improvement work and both State and Private tree improvement programs.

Well, so much for that background. Now, how do we in State and Private Forestry get into the tree planting and tree improvement business? The Agricultural Act of 1956 (PL-540, Section 401) authorized the Secretary of Agriculture to encourage, promote, and assure fully adequate future resources of readily available commercial timber by providing assistance to the States in undertaking needed programs of tree planting. Responsibility for administration and implementation of the Program was assigned to the Forest Service, which in turn delegated authority and responsibility for conduct of the Program to the appropriate State Forester's organization within each of the States. The Program is on a 50-50 cost sharing basis; however, over the years, the States' share, in most cases, has grown and far exceeds the Federal allotment.

Initially, most State plans submitted under the Act were for tree planting. In recent years, greater emphasis has been placed on the utilization of Title IV funds to foster the initiation and expansion of State tree improvement programs.

At the present time, 38 States have approved, and activated, Title IV Programs. Of these, 28 States have tree improvement work as a part of, or, as the entire Program. Thirteen State programs have a full-time tree improvement forester working on their Title IV Program. Eight U. S. Forest Service Specialists provide technical and administrative services to the State Title IV Programs.

Eight hundred and twenty-three thousand dollars (\$823,000) are allotted to the States under the Title IV Program. Of this amount, over \$315,000, or about 38%, is currently used for tree improvement work. Matching State monies brought the total spent on this work to over \$850,000 during Fiscal Year 1969.

Approved State tree improvement programs are designed to assist in the establishment of seed orchards made up of improved genetic quality parental lines. These orchards will be used to provide seed, and subsequent tree planting stock, to insure tomorrow's commercial forest timber resource.

Well, briefly, that is the State and Private Forestry role and responsibility for cooperatively operated State tree improvement programs.

"Government is apparently in a different position and the values by which it justified tree improvement are not those of economic gains. At least, this is my impression." LET ME REPEAT THIS.

This was a statement of your Program Chairman in his letter to me asking that I speak at this conference. Well, Tom was both right and wrong. He was right when he wrote that this was his impression, but he was wrong in forming that impression. Government IS as concerned about the cost/benefit ratio derived from

expenditures on tree improvement, as is any individual or other organization. Once again, let me remind you that I speak for the State and Private Forestry programs. When John Q Public, Mr. Big Business (be he pulp, paper, posts, or piling) and Uncle Sam each stands holding a dollar bill in his hand surveying expenditure potentials, the mental gyrations and financial fidgeting each must go through varies considerably. How they came to possess this invertible dollar, how many more are available, what sort of return is expected--and how soon, what amenities other than direct financial returns can be considered and accepted as investment benefits? These are some of the considerations each must weigh carefully before making his financial commitment.

A fact of financial life which they must all consider is the longtime nature of any forestry investment. Fortunately, work in other fields of animal and crop improvement has provided returns on research and development investments far beyond even the most optimistic predictions. That similar gains will attend tree improvement investments has assured and fortified each of our investors as they have committed funds to this work.

It is indeed reassuring to learn of the volume gains expected from improved quality tree planting stock. These gains are predicted now to exceed by 20- 25% and more the volume production previously realized from unimproved tree planting stock. Not too many years ago, as you will remember, even a 5% increase prediction was enough to initiate tree improvement programs.

Although tree improvement work by Federal, State, and private groups is in progress nationally, undoubtedly the greatest efforts and expenditures to date have been in the South. My attempts to gather cost figures for this investment by the private sector there were figureless. Because of this reluctance by the private sector to accurately document these costs for any of a number of reasons, I have taken a bureaucratic step into this "never-never" land, and pulled out cost-statistics useful for discussion purposes at least.

Let's make a few assumptions. Let's assume--

At least 30 companies have had going tree improvement programs no less than 10 years each. Some programs actually date back 15 years or more.

Let's assume--

That each has spent on an average at least \$10,000 per year for a 10-year period.

We then have a private industry total program cost in excess of \$3,000,000.

If one-third of these company programs have been active an additional five years, this adds another one-half million dollars--for a total of \$3,500,000.

Ah!--but you say, "I know our expenditures today are closer to \$20,000 or \$25,000 per year per company--and you haven't added in investment costs." You're right! And, so our figure now is five, six, eight million dollars. Yes, who really knows? But perhaps the question is irrelevant. It may not be a question at all--rather a statement such as: "These are investments we HAD to make to keep forestry moving forward at a pace commensurate with technological developments,

population growth, and increasing demands for forest products--and a constantly diminishing land base."

Not even by way of contrast, I will offer these reasonably well-documented "guesstimates" of what Federal-State tree improvement investments have been under the Title IV Program.

Since the Program started in 1956, expenditures through June 30, 1969, totaled about 29.8 million dollars--of which about 7.2 million dollars were Federal. Of this 7.2 million dollars, I estimate about 12 million dollars has gone into tree improvement work at the State level. Even though these were to be matching monies, you can see easily that total State expenditures were in excess of 3-State to 1-Federal dollar ratio.

As mentioned earlier, in many States, initial Federal-State cooperative financing was at the 50-50 level to get the Program going. As the Program grew, State financing increased at a much faster rate than did matching Federal funds. Nationally, we've had no increase in the funds available under Title IV since 1962.

Our only way to increase the amount of money available for tree improvement work under this authority has been to curtail cooperatively financed tree planting on State and private lands. This we have done.

At the present time, there is a growing interest in expanding our national tree planting work. Attending this expansion, we hope there will be increased funding available to initiate and expand State tree improvement programs.

This is a current vital need. Many State tree improvement programs have been developed to the stage where their seed orchards will soon be producing enough seed of improved genetic quality to meet planting stock needs. They have developed the technical competence to move ahead rapidly, and a number of States already are considering establishing second stage seed orchards. In most cases, State tree improvement program growth has resulted from the fine cooperative efforts provided by the University and/or Industrial and NFS tree improvement programs. For this we are grateful!

I suspect that as the State programs increase in both size and competence, the forest industry will come to rely in a larger way on these programs as sources for continually improved forest tree planting stock. I would expect that few forest industries will want to continue their expensive tree improvement work IF and WHEN adequate quantities of State-produced tree seed, and resulting tree planting stock of high genetic quality becomes readily available. Already, the germ plasm of Federal, State, and private tree selections have been brought together in State-owned seed orchards. As desirable parental lines are identified through progeny tests, and as new selections are found for use in second and subsequent generation orchards, I would expect the current strong Federal-State and private cooperative tree improvement efforts to prevail--thus insuring an even faster rate of progress for the new generation seed orchards.

It seems highly unlikely that a "McIntosh" or "Delicious" pine variety will emerge from any of the programs for which plant patent rights would be sought--thus limiting its use in tree improvement programs.

Another factor which we must recognize in evaluating Federal-State cooperative tree improvement programs is their regional nature. We base cost/benefit ratios on measured volume production; however, in many places in our nation, other benefits accrue from tree planting work which are not as easily measured as is the cord of wood, or the board-foot production. I speak here of such activities as watershed protection, flood prevention, wildlife habitat improvement, recreational area development, environmental enhancement, pollution abatement, etc. These are some of the other forest practices, and land uses, which benefit from, or are benefited by tree planting. I'm certain we can all agree that no tree improvement program ever would have been initiated to provide for these benefits alone. I am equally certain we can all agree that each of these listed benefits, and others as well, could and will result directly or indirectly from tree improvement program efforts. Thus, to base judgments for tree improvement cooperative funding solely on timber values derived, does not truly recognize all the value which may accrue in tomorrow's total environmental resource complex.

Tree improvement work here in the Northeastern Area means different things to different people. We in the Forest Service recognize 20 states in the Northeastern Area--from Maine to Missouri, and Minnesota to Maryland. Economic conditions vary considerably over this area, so I would not dare generalize on a tree improvement attitude or philosophy for the Area.

We know that additional funds can catalyze reactions in tree improvement work which will have immeasurable results in tomorrow's economy.

We recognize that there is a great growth potential here in the Northeastern Area which must be utilized to help provide for our future national wood resource needs. Many of the other benefits of properly managed and used forest lands will have relationships to regional tree improvement programs.

In conclusion, I will say that we do not intend that the year 2000 will see Megalopolis N. E. America saying of our tree improvement efforts, "Oh, what might have been!" Instead, we trust they'll be able to say, "We're mighty glad and proud of what they did and are doing!"