Southern Forest Tree Improvement Committee

Advancing Knowledge of Southern Tree Genetics for Healthier Forests

July 29, 2005

Mr. Xxxx Xxxxx
Xxxxxx State Forester
Xxxxx Forestry Commission
P.O. Box XXX
Xxxxxxxx XX XXXXX

Dear Mr. Xxxxx:

We are writing on behalf of the Southern Forest Tree Improvement Committee (SFTIC) regarding what we believe to be a disturbing trend in decreasing public support of forest tree improvement. SFTIC is the de facto professional organization of tree improvement specialist throughout the south. SFTIC organized and directed tree improvement efforts and has sponsored many studies including the first quantification of geographic variation in the southern pines. The Southern Forest Tree Improvement Conference organized by SFTIC has met biannually for 56 years to exchange information and to discuss future needs. More than 150 professionals from state and federal agencies, industry, and academia representing both researchers and tree improvement practitioners attended our most recent meeting held in Raleigh, NC.

Our concerns about current trends in support of public tree improvement programs have arisen because a number of states have recently considered closing or de-emphasizing their tree improvement programs in conjunction with a reduction in their nursery operations. Efforts to domesticate forest trees in the south by selecting for adaptability, disease resistance, wood quality, and growth rate have been ongoing for over 50 years. While this may seem like a relatively long time, it is extremely short compared to the period of domestication for most crops. The fact that crop breeding is still ongoing after hundreds of generations illustrates the fact that genetic improvement is a process, not an end. Despite the short time frame for which forest trees have been bred and selected, tremendous gains have been made and the potential for future progress is evident. Current seed orchards produce all of the seed needed to meet the South's pine regeneration demands. Conservatively, these seedlings will produce 54 million tons of additional wood annually above and beyond what could have been grown with unimproved seedlings. To highlight only one important area, genetic improvement of fusiform rust resistance is the primary silvicultural tool used to combat this destructive disease, which is only exacerbated with other cultural inputs.

Through the combination of better silviculture and better genetics, we are in a position to double volume gains in the next few decades. Accomplishing this goal of continuous improvement will depend largely on whether we can successfully maintain the underlying tree

breeding infrastructure that has served us so well in the past. The contribution of the state tree improvement programs to this effort would be hard to overemphasize:

1. Tree improvement is a collaborative effort where the whole is truly greater than the sum of the parts. Because the rate of genetic improvement depends on the total number of individuals that can be bred and field-tested, the states' efforts have had a direct impact on the level of genetic gain obtained by all programs within the region. The importance of this contribution is likely to increase rather than decrease, as there are fewer forest industries to shoulder the workload. Currently, state organizations represent 1/3 of the membership of the different tree improvement Cooperatives in the South. Furthermore, the fragmentation of ownership due to timberland purchase by investors will likely result in a new demand for genetically improved trees. This class of owner may turn to state organizations to fill this need.
2. Ownership of plant material is distributed among members. The states have always played an important role by maintaining a significant share of the breeding population and establishing a considerable portion of the progeny tests. If the state programs are closed, it is unlikely that the industry programs will be expanded sufficiently to offset the losses.
3. The state programs have the NIPF landowner as their primary focus. If ALL landowners do not have access to the best genetic material possible, the economic losses from reduced forest productivity will have large, long-term negative impacts on the economies of the states. Most companies use the best genotypes on their own land because they recognize the tremendous economic advantage of planting these most productive families. Small landowners deserve access to the best genetic material, and the state tree improvement and nursery programs are the primary source for this material for all landowners.
4. Given that this NIPF ownership category controls approximately 70 percent of commercial forestland, this is an important sector of the forest economy. In agriculture, the USDA and university research stations function as the public catalyst for crop improvement; managing germplasm conservation programs, coordinating research, supplying plant material to private seed companies, and facilitating technology transfer to individual farmers. There is no equivalent in forestry. Instead, the state forestry agencies represent the public interest.
5. There are regional aspects to tree improvement programs that require local management. Individual programs need to be mutually supportive, with appropriate plant material and data shared among organizations. The states have been key players in the regional tree improvement programs from the very beginning. By concentrating on the basics of germplasm preservation and improvement of local material, they have supported the regional efforts and have freed industry to run more targeted programs. No industrial concern has the regional focus of most states.
6. State programs have provided continuity in the rapidly changing business environment of the last few decades. Over the short history of tree improvement in the south, in excess of 40 independent tree improvement programs have been merged or discontinued.
7. States agencies maintain the only substantive tree improvement programs for minor species, which have important economic, wildlife, and conservation uses. In many cases

there are no industry equivalents for these programs. Industry genetics programs focus about 80% of their effort to loblolly pine and15-20% to slash pine. At most, industry may have modest efforts for hardwoods such as sweetgum and cottonwood, longleaf pine and even less for shortleaf pine. Without the state tree improvement programs, most selection and breeding efforts for these species as well as others with less industrial value will come to an end.

The state forestry agencies have been valued partners in the regional tree improvement programs from their inception over 50 years ago. Tree improvement is poised to make tremendous gains by taking advantage of the rapid progress in the biological sciences. For this promise to be fulfilled, however, it is absolutely essential that our tree-breeding infrastructure be preserved. The states have an essential role to play in this effort.

We respectfully request that in evaluating your individual programs that you carefully consider their contribution to the regional tree improvement effort and their impact on future timber supplies. The economic return from these activities accrues primarily to the NIPF landowner and is recovered indirectly by the state in increased economic activity and improved tax revenues. We feel certain that you will conclude that tree improvement programs are high value assets.

Sincerely,

Scott Merkle
Current Chair, SFTIC
Professor, Warnell School of Forest Resources
University of Georgia

Early McCall
Outgoing Chair, SFTIC
Genetic Resources Manager
Rayonier

Barbara Crane
Incoming Chair, SFTIC
Regional Geneticist
USDA Forest Service