

# Panel Discussion: Conservation of the Longleaf Pine Ecosystem

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## **Julie Moore:**

I want to define what I mean by conservation. I want for this panel to talk about, not conservation in the narrowest sense, but conservation in the broadest sense. Conservation meaning preservation, restoration, and reestablishment of longleaf pine.

Our panelists come from a variety of backgrounds and institutions and will address the broader view of longleaf conservation. With the realization that of the remaining longleaf pine resource, 73 percent—or 85, as we heard this morning—is in private ownership, this panel was put together to address this dilemma. We're not getting our message out to all the people that are owning and managing longleaf pine.

We've talked a lot through the last few years about the importance of the longleaf pine ecosystem, all of its different functions and subtleties. What we really must do now is work with the private landowner. I work with the North Carolina Natural Heritage Program. For many years we've

worked with federal and state agencies that own longleaf pine habitats. We're not making as good progress with the private sector. In my capacity with the Heritage Program, I work a lot with landowners, and I've found these challenges are really quite different than those in dealing with people who manage public land or conservation-oriented land.

I'd like to paraphrase something that Dale Wade said yesterday afternoon in regard to burning, it also applies to dealing with the private landowner. "You shouldn't underestimate the intelligence of the public, and you shouldn't overestimate their knowledge."

This is particularly true in regard to management of longleaf pine on public land AND private land. Just because someone is intelligent doesn't mean they really know what the current techniques and methods are for managing their land in appropriate fashions. This is particularly true in the case of the private landowner.

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Three points I'd like to make before our panelists start:

1. Unless the owners of public and private lands know they have a significant resource on their property, we can't expect them to make intelligent choices. We have to get our information about the resource to the people who own and manage those resources.
2. One of the problems I have is that I don't have enough materials to present the idea of longleaf management in sustaining that forest in the simplest fashion. I need the tools to do this with, especially for the landowner who has no technical background. We have a lot of publications that come out of fairly technical institutions, but we need tools that de-mystify and take the jargon out of what we say.
3. We really need to reduce the polarization that is evident here today between the forestry community and the conservation community. If for no other reason, it's so we don't confuse that private sector who controls over 70 percent of the remaining longleaf pine. We have to work out and document strategies and techniques so that ecosystem-based longleaf management is profitable and not a personal sacrifice to the private landowner.

We're going to start today with Steve Gatewood. Steve is a state protection ecologist with The Nature Conservancy. I've known him for a long time, when he was working with the Florida Natural Areas Inventory. He's now with The Nature Conservancy in Florida. He comes from a forestry and wildlife background, and he says that for about the last ten years, longleaf has been heavy on his agenda.

### **Steve Gatewood:**

Thanks, Julie. I expect to be pretty brief. I wanted to throw out a few questions and discuss what those questions mean and how we can deal with them.

One of the first questions, of course, is what's left of the longleaf pine ecosystem? You've seen a lot of distribution maps of what it looked like. I recall only one map that showed some of the areas left in the Southeast where longleaf pine is a major component. And we saw a series of regres-

sions of how the longleaf pine community has been eliminated. But we don't really know exactly what IS left... where it is, what kind it is, and what we're dealing with. A lot of the research papers have said sandhills and savannas. But there's been very little discussion of flatwoods. Probably because a lot of the flatwoods have been converted, we have sandhills left because they're not agricultural. But flatwoods are a known community type that we don't really know a lot about.

And then, in terms of what's left, who owns it? What are the ownership patterns? Well, we understand that in the public domain, there are all kinds of different management, and we understand that in the private sector there are all kinds of different management and ownership patterns. Two important distinctions in the private sector are commercial timberland, or the industrial forest, and then just plain private ownership: small tracts here and there. And I think we're coming to find that a lot of our highest quality tracts are not held by the industrial timber owners but by small private owners that maybe hunt quail, like they do around Tallahassee, some of which are very large. But throughout the Southeast, we're going to find a lot of smaller ownerships.

Then you come to the next question. Who cares? Who really cares about what's left out there? Well, obviously, the 200, 300 people in this room care. And rather than break this group into conservationists, ecologists, and foresters, I'd break it out into three other categories: first, academics and research people, the people that get up here and provide graphs and tables and statistical analyses and that are in there finding out exactly what's going on with the longleaf pine ecosystem. Second, the agency people; they're out there managing it. They're taking those public lands and dealing with them, dealing with red-cockaded woodpeckers on a daily basis, dealing with longleaf pine conversion or longleaf pine restoration. And then there are the private land managers. These three types of people need to begin to work together and integrate their information and pass it along; pass information on detailed groundcover community structure to private land managers that can get that concept over to a private citizen who says, "Why? Why should I do that?"

And then of course the people who aren't here that we need to educate more than anyone else are the public and society in general. Why do we want to conserve longleaf pine ecosystems? Is it from the deep ecology feeling of just because it's there? Or is it because there are some tangible, biological

values that we have to make sure they understand and appreciate so that when they go to the polls and the various other places to make decisions, they can make the right decisions, that help us do our job?

Third, how do we manage it? How do we take the different ideas, concepts, principles, and put those into on-the-ground management? Jim Stevenson has done an excellent job of that in Florida. For years, he has been championing the concept of ecological burning on a seasonal basis for various reasons. But we've got to recognize that we need practical on-the-ground information for different reasons. People own land for different purposes. The Nature Conservancy would prefer to see land preserved. We want it left intact, to manage ecosystems for long-term perpetuity, to preserve biological diversity.

Then there are the multiple-use types of management. Public lands are typically managed for multiple use, but they can be designated for parks, which is natural area management; they can be designated as forest for production of timber and all kinds of other multiple uses. But we've got to recognize, too, that there's that other extreme: pure economic timber production. We've got to deal with that type of forest management, we've got to integrate better principles so that we don't get sandpine monocultures where you have two or three stems of blackberry per acre as your understory, but still make the forest economically productive.

Florida forestry is dominated by pulpwood production. There is solid timber, but things tend to be moving very quickly into pulpwood. And pulpwood production is one of the most serious impacts on all these types of ecosystems that we want to protect, especially on the ground cover. So we need to take this research, all these practical ideas that we throw around amongst a group of 300 (when the state population of Florida is 12 million), and turn them into practical, on-the-ground techniques that Julie, as a technical person, can take out and hand over to a layperson that really doesn't understand why and what.

Most commercial, industrial timber owners look at the short term. They're interested in products. Smaller private landowners have more of a land ethic. They're looking at a longterm picture. Recently while working on one project, trying to protect an 80-year-old stand of longleaf, 700 acres with a beautiful ground cover, we got a letter from the owner who thought we didn't offer enough

money. But in that letter she said, "I've been to Joyce Kilmer Forest. I've seen what old-growth is, what it means." It was an ethical feeling that she had. The private landowner has all kinds of different reasons for wanting to do what they've been doing. You've got to recognize the fact that if you're interested in their property, they've been doing something right in the past, because it's still there.

And finally, what are we going to do about it? We've had all kinds of meetings like this. That's all well and good, but we have to continue to exchange information and ideas. We have to move forward into a plan of taking the longleaf pine ecosystem in its diversity from Texas to North Carolina, figuring out what we have, what we need to preserve, what can we restore, what proportion of the longleaf pine ecosystem needs to be preserved, what proportion is acceptable under commercial timber and production.

I want to close with a task that we in The Nature Conservancy are going to undertake in that line. We're trying to do a longleaf pine ecosystem conservation initiative: we're going to try and work from a regional basis in terms of what's going on there. We have some good maps of what's left, what the quality of it is, and where we want to focus our efforts for preservation. In Florida, we've been very aggressive in land acquisition. We spend upwards of 350 million dollars a year buying land for conservation, water resources, and limited recreation opportunities. And in January of 1992, the Conservancy will put together, along with the Natural Areas Inventory, and Tall Timbers, and all the other entities that want to get involved, a longleaf pine package. What are the best sites that aren't in public ownership that we should buy? Along with that we're going to identify those private sites that don't need to be bought, but we need to implement some kind of conservation initiative with them, less-than-fee techniques, conservation easements, and what have you. Then we're going to take the next step and work on that regional program. After this meeting is done, a lot of the heritage scientists are going to get together for two more days of meetings. And we're going to talk about what we know in each state about high quality sites and what we can do with those.

### **Julie Moore:**

Our next panelist will be Lindsay Boring. Lindsay now is the director of the Joseph Jones Ecological Research Center in Ichauway. He comes from the University of Georgia and his background there was as assistant professor of forest ecology.

## Lindsay Boring:

While I was at the University of Georgia, my major responsibilities were as an educator and a researcher, and that's primarily how I'd like to address my next ten minutes or so of comments.

I don't think we can understress the importance of non-industrial private land. There's a whole tool box of skills out here to meet the needs of these landowners, but we have to do a thorough job as researchers and educators to be sure that we not only educate the landowner as to what they have, but also pursue some of the management questions, and provide that information to them.

Much of this longleaf land in the immediate Region is in very wealthy plantation ownership. We're going to see some massive changes over the next 20 years in this realm. We're probably going to be looking at increasing landscape fragmentation in this area, and landowners that may not be as altruistic in the way they wish to manage their land.

I think what is really at the heart of what we're dealing with today is a longleaf pine ecosystem that is very well suited to mixing both commodity management and non-commodity management on some of the same tracts. When we deal with this big ownership of non-industrial private land, these are people that have to have some economic output for much of that land.

We need to be gearing our thinking to combine the amenities, the biodiversity, the preservation of that wiregrass, that groundcover, with commodities and management for species such as quail. We need to be a little visionary in our thinking and more creative.

The next meeting of this community probably will be dealing with silvicultural prescriptions that are not site conversions, that are not intensive, but rather use uneven-aged management, shelterwood, or selection regeneration practices. There are environmentally sound silvicultural practices that are less intensive and will meet a lot of our biodiversity goals. I think there are a lot of new wrinkles and variations on these techniques. Someone mentioned one of these earlier: the overwood retention of Douglas fir in the Pacific Northwest. I think Jerry Franklin calls it greenwood retention, although we use a different terminology for greenwood here in the Southeast.

The key to this, is cooperation and multi-dis-

ciplinary research approaches. When we look at the broad spectrum of conservationists from the forest resource managers to the conservation biologists, we have to look at ourselves as a holistic community. We have to look outward at the real problems that are out there, such as urban development, fire suppression and the growth problems that are coming to the Southeastern United States over the next two decades. I can't overstate the importance of not seeing the extremes in this room as adversarial, but all as part of the same community.

Specific research needs can be grouped into two areas. The first deals with maintaining existing stands; the other deals with some restoration problems. The first is linking ecology with economics and management. We refer to these, especially with the Forest Service programs, as new perspectives or new forestry which brings up a lot of arguments in the forestry community because there are foresters that have been practicing good conservation forestry for decades. We say, "Hey, this isn't NEW perspectives; these are the really old perspectives of forest management." It's important, especially for biologists, to realize that there have been excellent conservationists in the forestry community for several decades. The problem is that we tend to look at very intensive silvicultural practices and site conversions and say, "That's forestry." That is a very narrow niche within the forestry community.

We need much better understanding at many levels of ecology to be able to do a better job. Some really excellent work has been presented here during the last two or three days in population and community ecology. At the same time, if we look at the ecophysiology of key species and endangered and threatened species, there's an enormous need to know their successional status and how they respond to differing resource levels. I think the empirical approach is very important, but it's important to couple that with experimental work such as different light regimes and nutrient levels.

As someone stated earlier, we shouldn't be looking just at the stand level; we need to be looking at the ecosystem. Even broader than that, we need to be expanding our horizons to think on the landscape level. How do wetlands systems fit with the longleaf pine uplands? From an ecosystem perspective, we need to not only look at the key populations, but also ask what are those populations doing in the ecosystems, what's their functional significance. Some of these are very easy to guess such as the nature of wiregrass in accelerating and perpetuating fire. The species the wildlife

biologist sees as food resources for quail or for deer have a very functional significance, too. We need to move forward with new information with respect to nutrient cycling and the loss and transport of nutrients and the interaction with atmosphere.

I have split out what I consider to be an ecosystem process with this last topic because of its importance. I see the forest atmosphere interactions as landscape and ecosystem processes. At the same time it is important that we have a better understanding of regional air pollution such as, the contribution of *Inowax* sulphur compounds that prescribed fire may flux back into the atmosphere; what kind of transport processes are involved; how do these fit or do not fit in to global change phenomena. We have rapidly growing urban areas. We are going to increasingly have the finger pointed at us as regional polluters with SO<sub>2</sub> and *Inowax*.

For research priorities relative to restoration of longleaf, we need to deal with linkages and with economics in management. At the same time, identify the key species that need to be artificially reintroduced into the system. Can we accelerate the whole process of restoration by taking a broader landscape approach, looking at linkages of different remaining landscape units, accelerating, vectoring of propagules and so forth? We also need to see how we can scale up plot and seedling studies to the operational levels of the real world.

We have had a lot of failings in our programs by projecting the idea that we are managing for maximizing productivity and for intensification of management. There are many good forestry and wildlife programs out there. We need to put much more emphasis upon uneven-age management systems, we need to teach biology and management of nongame species, and deal much more with environmental protection. That's not to say that we need to exclude the economics policy and operational management aspects that are in these programs; they're very important. We just need to have a broader emphasis. And we need to convince young people with natural resource degrees that they can get back to the old Aldo Leopold ethic of land stewardship as opposed to maximizing economic profits.

### **Julie Moore:**

Roger Dennington's personal ambition is to reverse the trend in longleaf decline. He's been working with the Forest Service for a long time, and currently works with the state and private for-

estry branch of the U.S. Forest Service. For 20 years he has been working very hard to see good information dispersed on longleaf pine management.

### **Roger Dennington:**

Probably if there is one single thing that all of us in this room could agree upon in a natural resource context, it would be our desire to see the increase of longleaf pine acreage. Cecil Frost, on Thursday, gave us four reasons why this acreage has been declining. Two of those causes are no longer really in place and no longer have any significant effect, namely hogs and naval stores, although they may be minor factors in some locales. The other two, fire control and industrialization, are here to stay. And they should be.

I'd like to suggest that there may be a fifth reason why longleaf pine has declined, and I'm speaking as a forester, to foresters. That point is that we lacked forest management technology at a very critical time in our country's history. That absence of technology has been somewhat filled in recent years. I think the use of that technology may very well be the answer to some of the questions and the dilemmas that we find ourselves in right now.

I want to remind you, that probably the greatest conservation story in our nation's history is the restoration of the forest that was depleted. All of the pieces weren't put back together, but it has made a remarkable recovery, with the help of nature and with a lot of the technology that we're going to talk about.

The forestry profession in this nation is young. At the turn of the century, when most of the lumbering and timbering was going on in the South, there was only a handful of foresters, and most of them had very little impact at all, one way or the other, on what was going on in the southern forests. At that stage of our history, we simply did not know much about the biology, and the ecology, of the ecosystems.

In this critical period, there was a void in our knowledge. We simply did not understand how to regenerate these southern forests that had been removed and eliminated by the lumbering and logging processes. We initiated research in the 1920's. Very quickly we learned that loblolly pine and slash pine could be easily regenerated. And that became the model for southern pine reforestation. We had a strong desire to regenerate and to recreate the longleaf forests. And we used the wrong model. Technology for longleaf had yet to be de-

veloped. Time after time we attempted to regenerate longleaf but we had failure. Finally, we tended to give up and go back to those species that we felt we could successfully and consistently regenerate.

Now, as the longleaf pine acreage began to decline, so did our interest in trying to allocate a proper portion of our research dollars and our management attention to it. In the mid 1900's, we closed the only longleaf pine research unit that was devoting all of its attention to longleaf pine management. Interestingly enough, it was about that time that we began to put the longleaf pine reforestation technology together. But the trend was continuing downward, as far as acreage was concerned.

In 1986 a small group of U.S. Forest Service and some industry and state and even university people got together. This small group got together to discuss the possibilities of developing a strategy, a technology transfer plan, to disseminate the technology that had just matured, somewhat, a few years earlier. We didn't feel like it would be reasonable to extend our efforts to decades, so we bit off about five years worth of work we thought we could handle, and we took off after it. We identified appropriate technology messages and audiences that should receive it, and decided how we would get and deliver that information to them.

One of the myths that has been passed on from generation to generation is that longleaf pine has to have a grass stage. Well, it does, under some circumstances, but it doesn't have to. If the right things are done, that grass stage can either be substantially reduced or eliminated.

The technology transfer plan had a pretty ambitious goal. We decided that we would try to reverse the acreage trend, and hopefully by the turn of this century realize a net gain in longleaf pine acreage. I think we're beginning to see that happen, not necessarily due to the efforts of this small group of people, but because of that and other factors we can discuss later.

We're in the process now of wrapping up this plan. We are evaluating what we have done. We will be writing a final report on how we have seen the accomplishments and the results, probably within the next few months.

The plan took the approach that longleaf pine should and could be managed for the production of wood products. Why did we do that? There

were two reasons: one, most of us in that group were oriented toward management for wood product production. And too, as we looked at the audience, we realized that it was information on wood products that was going to be needed to get their attention.

We live in a country where people are willing to invest their money —stocks and bonds, other investments. I'm here to tell you that forestry is one of many investments where folks who own capital can place it. We're competing with many investment options. When we try to tell landowners that they need to be managing for longleaf pine, there are any number of reasons why we believe that is good. One of the quickest ways we felt this would be successful is to talk to them in terms of the economics and personal benefits. If you've never tried to sell forest management to a private landowner, you are missing a real experience. As with any investment, anyone who has capital is going to ask two basic questions. The landowner is going to ask those questions, too, unless they're independently wealthy and really don't care whether their forest lands produce any revenues for them or not. First of all, they're going to ask, "How much does it cost?" And second, "What benefits can I expect to get from it?"

Now I want to go to the solution. The time is ripe to initiate a new, broader, more comprehensive, regional technology transfer initiative. To build partnerships between the individuals and the organizations that are represented in this room. That's not an easy task, because we tend to focus on our differences, talk about them, argue about them, protect our turf, and all of the while missing the common ground that we share.

But we do have common ground. We need to first start talking with each other and sharing and transferring our technology and our information among ourselves and between ourselves. Then perhaps we can start transferring the technology to many of the landowners who really are going to make the difference and make the decision to grow longleaf pine.

### **Julie Moore:**

Jim Stevenson is an emissary for growing season burning, and here in Florida people know how he has reversed a lot of ideas on fire ecology. He is now environmental administrator for the Office of Land Use Planning and Biological Services for the state of Florida, but for many years he was chief park naturalist in Florida and has affected many, many acres of land here in this state.

## Jim Stevenson:

I'm going to focus my comments on the management of public lands. You know, there were other land managers before we came along, managing these forest lands and grasslands. They were the Native Americans. I just attended a conference last week down in Orlando for the Society of Ecological Restoration, and there were a couple of Native Americans there from the West who talked about their management techniques. One Indian was from California and another was from Arizona.

According to one, among the California Indians, the women managed for the plants using fire, and the men managed for the game. Another interesting point that I thought was kind of amusing, they said, and I think those of you that burn will appreciate this: Weather was not good or bad to an Indian; it was just weather. And, finally, I don't know if any of you have ever eaten a palmetto berry. It can be one of life's unique experiences. I don't know if the Indians tried to manage for them or not. But I'm told that a Seminole could go for 3 days on nothing but palmetto berries; he could go 4 days on nothing at all.

Our ability to influence what occurs on private lands may be mixed. However, there are hundreds of thousands of acres of public lands here in Florida that the public should be able to influence since it's their land. Having observed and been a party to land management here in Florida for many years, I have a few thoughts on this. In general, I think the lay public thinks agencies do a good job of managing these lands. But I suspect there are a few specialists, some of whom are in this room, who may feel that's not always the case. I think there's a common perspective among many land managers of public agencies that the lands belong to the agency, and some of those managers feel that it's their land. Of course, this is not an accurate perspective; the land belongs to the public, and we're merely the hired help that takes care of the land for them.

In order to overcome some of this perception, we need to do a few things. Do agencies really know what they did or did not do on the lands they manage? I think often they don't, at least at the higher levels. The work never gets from the manager in the field to the upper echelon in the agency. For that reason I think we need to have an annual report coming out of these units, whether it's a park or a forest or a refuge, that explains what was or was not done that previous

year. Of course, we all hate reports, and the effective manager will say, "Well, I don't want to do that. That's going to be a waste of my time." The ineffective manager doesn't like reports because they will require him to be accountable.

In the Department of Natural Resources, we developed a program five years ago that we call resource management audits. This is where a team of our biologists goes out to a state park and does an analysis of the condition of the resources, and how effective the management of those resources is. Then they make recommendations on how to improve the management. We feel this is a very effective program. It's essentially a report card that goes to our executive director, pointing out just what the condition of that particular park is at that point in time so that he can see how effective those managers are. I would certainly recommend this program to other land-management agencies.

I believe there's a problem with the manner in which some agencies allocate their staff and funds for management. For example, in Florida it is required by law that a person must have 520 hours of training before he or she can become a law-enforcement officer. Well, that's three months of training. A certain state land management agency requires an additional 8 hours a month for training for law enforcement officers. So there's an initial 520 hours, plus 8 hours a month to train each law enforcement officer. Now, this person's going to be wearing a gun and having the power of arrest, so I'm certainly not faulting that person being well trained. But let's compare this for a moment with the level of training that goes into preparing a person to be a fire boss. That same agency only requires an 8-hour certified burner course. Well, one untrained or poorly trained prescribed burner could cause considerable more loss of property and life than that law enforcement officer. So I think things are a little bit out of kilter there. I believe we need to provide a great deal more training for those of us that get out there and actually light those fires.

I'm told that for every one dollar spent on prescribed burning, there's \$2.17 spent on fire suppression. Prescribed fires cost less than fire suppression; they provide greater protection; and there's less damage from fire plows. I believe fire suppression agencies should re-tool and begin using prescribed fires as their principal wild-fire suppression tool. In other words, let's use fire as a friend instead of treating it as an enemy. You've all heard of sacred cows. Well, there's this old bear that's been wandering around the woods talking

bad about fire for the past 49 years, and some people say that that old bear ought to be retired because his message is out of date. Well, I think what we need to do is re-educate that old bear. I think it's time the U.S. Forest Service and the various state forestry agencies and the advertising council get together and update that old bear's message.

We need to improve the understanding of the legislators and the agency heads when it comes to management of public lands. We need to arrange field trips to get these legislators and agency heads out to these public lands so that they can see just what is being done on them. They need to see the good, the bad, and the ugly.

How about volunteer assistance to agencies? A few years ago I went up to another Southeastern state and I gave a talk at the annual state park managers meeting, when they had all the managers together at one time, to try to inspire them to get involved in resource management of their lands. Well, after my talk, the director came up and spoke right after me, and he said, "Well, they're doing some good things with resource management down there in Florida, but we just can't do it here because we don't have the funds for research. And without the research, we just don't have the guidance that we need to do resource management." From there, he went on to talk about the golf course that they were about to put in longleaf pine habitat that was in great gopher tortoise country. Some agency folks need educating from the public because they aren't going to change all by themselves.

Finally, something that's been occurring quite a bit in recent years here in Florida is interagency cooperation. Never before have I seen anything like what's going on right now as far as agencies working together on committees and working groups to try to solve problems that are mutual. The day is past when an agency can kind of wing it on their own with major land management issues. Some examples of what we're doing here: We have an interagency prescribed fire training course that a group of agencies put together, and we all participate as instructors in that course.

We have a North Florida Prescribed Fire Council that we put together a little over two years ago that's composed of all the land managers in north Florida that use fire. We felt this was the common denominator that could pull all of these people together. On our steering committee, we've got Tall Timbers, we have The Nature Conservancy, the U.S. Forest Service, the Division of Forestry, and the

hunting plantations; the paper companies are represented, the military is represented, and so on. We have one million eight hundred thousand acres represented within this North Florida Prescribed Fire Council. I would highly recommend something like that for the states where you do prescribed burning.

### **Julie Moore:**

Our last panelist, and one who's new on the agenda in the longleaf world, is Mickey Webb. He's president of Webb Forestry Consultants, who manage more than 60,000 acres for private landowners in southern Louisiana and Mississippi. Over the past three years, he has reforested nearly 15,000 acres back to longleaf, and will do almost that much acreage in the next year. He's also editor of the *Journal of Consulting Forestry*, "The Consultant."

### **Mickey Webb:**

The other day I was talking to a fellow who made an interesting comment to me. He's an ecologist, and he said one of the reasons there's so much pressure on the public lands to manage in certain ways and for multiple goals is because we've given up—we, the ecologists and folks really interested in natural habitat and its maintenance—have given up on any hope for the private land ownership, whether be it the timber industry or the private non-industrial land ownership doing so.

There's an awful lot of opportunity that we miss. I feel that the private non-industrial landowner has a tremendous opportunity for longleaf restoration. They also own about 30 million acres that has a potential to go back into natural longleaf, or go back into longleaf through restoration. A lot of that acreage ought to, including fields.

I've built a business convincing the private non-industrial landowner that managing land is worthwhile. Obviously, economics is a critical part of this. There's still 100,000 acres a year being cut over in Mississippi and not being reforested.

If we're going to reach them, we've got to understand the private non-industrial landowner. On the average, he or she is 59 to 60 years old, nearing retirement or retired. Not big landowners, most of them own 40 to 80 acres. Most of them are factory workers, farmers, small business people, widows.

Their goals, though, first are aesthetics and recreation. Second is a heritage to pass down, and pass it down better than they received it. Third is timber production, which surprised a lot of people.

There's another thing you have to keep in mind about timber production. Even though that's not the main goal, private landowners, especially small acreage folks, know that timber is there for a rainy day. If you're going to really sell the private non-industrial landowner on managing timberland at all, especially longleaf, you've got to put yourself into their shoes.

What's neat about it is that private landowners do care about the natural resource. We foresters have been trying to restore longleaf. We like to care for gopher tortoises. If we have red-cockaded woodpeckers, we like to keep those in mind. Landowners care about these kind of things too. But they also want to know, "Am I going to be able to put my kids through college on it?"

The first time I saw longleaf replanted successfully, was 1983 on a Forest Service site, where they spent \$250 an acre shearing, raking and disking. You could plant corn, no kidding, for that investment. The problem was the ecological degradation of that approach, and also the cost. You're looking at \$400 an acre to reforest it like that. And we have to take these factors into consideration.

I have four recommendations on how to reach the private non-industrial landowner. One, you need to educate the field forester, not just the ones just coming out of school. I'm talking about the ones that graduated over the last 40 years, like me.

Second, and this is something that we've found very effective: county forestry associations. We've started eighteen in Mississippi. We're going to have sixty within three years. Our goals are to educate, to encourage good forest resources management, to develop the forest community, and to develop a political voice. In our 18 county forest associations, we have about an average of 140 members. Now, we do that in 60 counties, we're going to have an influence on how our agricultural research money is used and be able to get more into the forest.

There are two keys to the success of county forest associations. One is that private individuals listen to other private individuals. They don't listen to me. They take me with a grain of salt. They take you all with a grain of salt. You all have a vested interest. When his neighbor spends \$4,000 refor-

esting longleaf, the guy next door says, "Well, this guy's committed. He's put his own money into it. Maybe I ought to listen to him and see why he did it."

The second thing is that many hands make light work. We had a forest field day, and 180 people came out for it. It was nice cause we had Tom Mann come up from Jackson from the Natural Heritage Program talk about gopher tortoise management and another fellow come and talk about longleaf management. All the groundwork was done by private landowners, and it allowed the professionals to come in and do what they do best, and that's share information instead of having to organize everything.

Two final points: One, you must control estate taxes. We cannot manage land on longterm rotations with the estate tax situation like it is.

Second, you need to protect private property rights. A lot of landowners are frightened that they'll be told one day they cannot cut their trees.

### **Julie Moore:**

I'd like to leave each of you with a challenge to make a deliberate effort, a very serious effort to see longleaf perpetuated in your own region through effectively communicating on a regular basis with the private sector.

If you are a public land manager, you can do that by setting good examples, providing areas where people can see good longleaf management, and advertising those efforts that you make. You also need to be willing to communicate your techniques and how you're accomplishing these ends in a way that lay people can understand. If you're in research, whether it's fire, timber management, or endangered species, we need to consider producing more articles, documents and guides for the general public. We have to make our information available and more user friendly.

There's a lot to be done in the longleaf arena. It is a challenge that we can't expect other individuals or agencies to take up. We have to be on the forefront ourselves; we have to be advocates; and we must be advocates for longleaf pine beyond our immediate training. I hope that when we meet again to talk about these issues that we'll have more people and agencies who are involved in active management and more landowners who are interested in growing and perpetuating longleaf pine and the longleaf pine forest.