

Session 5

INTEREST GROUP RECOMMENDATIONS TO ENHANCE REFORESTATION

Chairperson:
Sarah Donnelly
Office of Surface Mining
Washington, D.C.

Eastern States Recommendations

Mike Sponsler, Indiana Division of Reclamation, Jasonville, Indiana

Enhancement of Reforestation at Western Surface Coal Mines

Ronald Daniels, Utah Division of Oil, Gas, & Mining, Salt Lake City, Utah

Coal Industry Recommendations

David Finkenbinder, National Coal Association, Washington, D.C.

Field Inspector Recommendations

Vic Davis, Office of Surface Mining, Knoxville, Tennessee

Interest Group Recommendations to Enhance Reforestation: Academic Research

Dr. James Burger, Virginia Technical Institute and State University, Blacksburg, Virginia

Wildlife Recommendations

Steve Beam, Kentucky Department of Fish and Wildlife, Somerset, Kentucky

Ohio Division of Forestry

Jim Stafford, Ohio Division of Forestry, Zanesville, Ohio

Land Owner Recommendations

Timothy Probert, Pocahontas Land Co., Bluefield, West Virginia

Kentucky Wildlife Society

Robert M. Morton, Corydon, Kentucky

EASTERN STATES RECOMMENDATIONS

Mike Sponsler¹
Indiana Division of Reclamation
Jasonville, Indiana

Background

I would like to back up and look at what we are trying to accomplish under SMCRA. Section 515 (b) (2) requires that we must “ Restore the land effected to a condition capable of supporting the uses which it was capable of supporting prior to any mining.” This means that land capability must be restored after mining. If you do that, then land use is irrelevant. If you have restored the land to the capability it had prior to mining, then you have the option to do what ever you want with it now or in the future. We do not know what the needs will be 100 years from now. If we restore the pre-mining capability as required by SMCRA, then everything else will take care of itself.

Implement the Existing Rules

Most of the problems that we have with reforestation are already solvable with the regulatory requirements that are on the books now. If compaction is a problem, then there is the authority and obligation in the rules to minimize compaction. If soils are the problem, then there is the authority and obligation in the rules to put back a suitable soil material. If ground cover is the problem, then there are certain ground covers that the regulatory authority has the authority to not allow. For example, the state of Illinois does not allow the planting of tall fescue in forested areas. Indiana is similar in this way. If there are ground covers that are not compatible with trees then don't approve permits that propose such revegetation plans. Implement the rules that we have.

Concerning land uses, we are required to restore the same balance of land uses we had prior to mining. If forestry was a substantial part of the premining land use, then we should come very close to reestablishing the same proportions of land use after mining. In Indiana, our policy is that you need to reestablish about 80 percent of the premining land uses that had trees. In Indiana, if you need to reestablish wildlife habitat then we consider forests good wildlife habitat.

Concerning soils, if you have not restored the soils, then you do not have good reclamation. Soil and water are the two most fundamental resources that we have in reclamation. There are some that suggest that in order to expand the forest resource we must destroy the soil resource. That is absurd. The forest resource depends upon the soil resource.

We are all responsible for why trees are not planted and why we are not getting adequate quality on forest land uses. As regulators we have control over implementation and interpretation of the rules. We need to implement them in a way that insures that quality forests are replaced. Industry needs to take a look at its operations and develop systems that will minimize compaction. The technology is there.

Research on prime farmland has resulted in ways to minimize compaction. The forestry people and the prime farmland people need to get together and share information. The technology to minimize compaction is available. If it means buying some end dump trucks then buy them. No one seems to mind the fact that it costs the industry a certain amount of money to reclaim the prime farmland but when it comes down the cost of planting trees, then we seem to have a big problem with expense. That is just a part of doing business since the implementation of SMCRA. People in academia and forestry need to realize that growing trees on ungraded spoil peaks has been illegal since the passage of SMCRA over 20 years ago. We need to move on with the regulations that we have rather than continually trying to turn back the clock.

The Importance of Measurement to Ensure Success

We need to change the target. We will get what we measure. We will achieve success in those areas that we require to be measured. It is true that we have been measuring stems per acre, but we have not been measuring productivity or growth because the operators have not been required to with the result that it has not been achieved. If we want tree growth, then we will have to start measuring it. This could be done either by direct measurements of tree growth or with some kind of soil test to establish the site index.

¹Mike Sponsler, Division Director, Indiana Department of Natural Resources, Division of Reclamation, Jasonville, Indiana. Mr. Sponsler holds a B.S. degree in biology from the Illinois Benedictine College and a M.S. degree in zoology (wildlife ecology) from Southern Illinois University, Carbondale. He is the leader of the Indiana DOR, a program that regulates the tenth largest coal producing state in the nation. Permitting activities process over 8,000 acres yearly as well as review over 1,000 permit applications. The Abandoned Mined Land Program receives \$3 to 4 million annually and has performed over \$70 million in mine reclamation remediation over the life of the program on over 200 sites. Previously he was assistant division supervisor from 1987 to 1990 and a land reclamation specialist from 1979 to 1987 for the Illinois Department of Mines and Minerals, Land Reclamation Division. He also has served as chairman of the Interagency Stream Restoration Committee.

ENHANCEMENT OF REFORESTATION AT WESTERN SURFACE COAL MINES

Ronald W. Daniels¹
Utah Division of Oil, Gas, and Mining
Salt Lake City, Utah

Introduction

The topic of reforestation of mine sites has been needed for a long time. In my survey of interest groups in several western states, the first thing I found was that one needs to consider “Whether we want to enhance reforestation efforts in the western states?” We have slow growing trees, long harvest rotation ages, poor site conditions, and water problems. The main considerations are that we need to look at the: (1) management objectives for the land needing treatment; (2) legal constraints—whether one can meet the standards; and (3) ecosystem needs and possibilities, for example, in Utah do you want to establish woody plants over 12" tall on the windswept salt desert shrub ecosystem. Situations like this present some formidable challenges.

Survey of Western Interest Groups

The interest groups that I spoke with are varied. In many cases, there are not enough coal mines where trees grow. So it became necessary for me to inventory other groups with similar challenges and regulatory constraints. My inquiries on the subject included: (1) companies mining other minerals, i.e., base metals, phosphate, iron; (2) other mineral mining and oil and gas trade associations; (3) consulting foresters; (4) petroleum companies; (5) land developers; (6) our own agency staff; and (7) ecological consultants. My results are mixed and somewhat surprising. “Why bother” was the common answer of a certain audience. In 1977, when President Carter signed SMCRA in the rose garden, a group of us gathered to talk about and critique the then-proposed interim program regulations under SMCRA. There was not a lot of time spent talking about trees. It has since taken over 20 years to have the specific conference on reforestation related to surface coal mining that we are having today.

Underground coal mines, as a rule, need to stabilize the site first with a nurse crop for one to two years. They need a diverse mixture of grasses, shrubs, and forbs to address the two to four year period for stabilization of the soils. Irrigation may be needed for initial start-up. Typically, these underground mines in the West cover a small acre-age and provide excellent wildlife habitat in a sea of trees. They would recommend that we provide the regulatory latitude for reforestation but not require it. When using reforestation as the reclamation technique, use it as an augmented planting once stabilization is achieved.

Surface coal mines recommend that we stabilize the site first, work on species diversity, and use trees as a part of the long-range plan that implements certain portions of the management objectives, such as in: (1) riparian zones; (2) aesthetically constructed islands for habitat; (3) snow collection; (4) windbreaks; or (5) other areas where trees are required for the land use. They would recommend that we allow land use options that include trees.

Oil and gas development was in a very similar situation to underground coal mines. They have a relatively small acreage, usually five to ten acres for a short period of time.

For other mineral mining in the West, their recommendations were similar to those for surface coal mining: (1) stabilize the site first; (2) work on species diversity; and (3) use trees as a part of the long range plan that implements certain portions of the management objectives. In addition, they recommended that community involvement and appreciation in the projects are essential.

Conclusions

Where are we in enhancing reforestation on mine sites in the West? I am sure that we are not in the business of creating commercial forests through revegetation. Trees are not the exclusive solution to revegetation after drastic disturbance. There are some possibilities, however, where we can use trees: (1) for land management tools; (2) to play a role in habitat for wildlife; (3) for protection and shelter for some land uses; (4) for aesthetics and carbon dioxide sequestration; (5) in some commercial applications such as fiber production and christmas tree production; (6) for water collection and stream protection and cooling; (7) for creating recreational opportunities; and (8) for riparian ecosystem restoration.

Is there a need for more regulation? Where you sit is where you stand. My answer would be that we can enhance reforestation through the creation of opportunities for the use of trees as a part of a balanced revegetation plan for land uses compatible with past, present, and possible future land uses.

¹ Ron Daniels is currently the Coordinator of Minerals Research at the Division of Oil, Gas, and Mining within the Utah Department of Natural Resources. In his 24-year tenure with the division he has worked as an inspector, field coordinator, and deputy and associate director. He helped to develop the Utah Coal Regulatory Primacy Program under the Surface Mining Control and Reclamation Act in the late 1970s and early 1980s after organizing the division's efforts under the first Utah Mined Land Reclamation law in 1975. Prior to working in mined land reclamation, Ron worked for four years in the Utah Division of State Lands and Forestry as a service forester and forest land use planner. He holds an Associate Degree in forest technology from The Pennsylvania State University, a B.S. in forest management from Utah State University, and a Masters Degree in public administration from The University of Utah.

COAL INDUSTRY RECOMMENDATIONS

David Finkenbinder¹
National Coal Association
Washington, D.C.

Issues

First, we have the three “Cs”: competition, compaction, and cost. Dealing with the landowners and communicating with them concerning options for land uses are important issues. Erosion control, competition, and final grading to minimize compaction is an issue. We need to allow in the requirements for vegetation cover a greater percentage of litter and annual species. One of the greatest concerns to operators is final bond release.

How do we address these issues? My first response to the issue was to get out my pen and begin making recommendations for rule changes. I now feel that we have the technology, and the ability to get trees established is available in virtually all situations where tree planting is appropriate.

Priorities

Flexibility is an important part of the process and this needs to continue in discussions on this subject in the future. Now, I think that the first priority is training and education. This would include training for the regulatory authorities both state and federal, the field inspectors, industry staff, and landowners. We need to begin a dialog that would include the public in an educational process concerning choices for land use options. We do not need to be putting out trees and then have them chained in the West and mowed in the East following bond release. If we are going to plant trees, then let’s make sure that people want them.

Secondly, there needs to be agreement on what the regulations require. If one inspector has a mind-set that a 9 inch gully is bad on our tree planting site, then we are back to the beginning of the process. If we are going to develop new attitudes toward tree planting, then we may need to write a new policy so that everyone agrees on what is required. The industry needs consistency and certainty in terms of what is required of them.

Only after we have implemented these educational, training, and policy interpretation options and have given them a chance to work should we explore the possibility of regulatory change. If rules are to be changed then that change needs to go through a very thorough and open communication process so that people can be assured that any new rules will have the desired results.

The very last thing we want to consider is any change to SMCRA.

¹David Finkenbinder, Director of Environmental Policy, National Mining Association, Washington, D.C. Since 1994, Finkenbinder has been with the National Mining Association. Previously he was senior council for regulatory affairs and director of governmental affairs for AMAX Coal from 1980 to 1992. He has served as a hearings commissioner for the Indiana Department of Natural Resources and Indiana State Attorney General. He has represented the Indiana Coal Association and Indiana Coal Council and served on the Board of Trustees for the Eastern Mine Law Foundation. He holds a B.S. and Juris Doctor from the University of Kansas.

FIELD INSPECTOR RECOMMENDATIONS

Vic Davis¹
Office of Surface Mining
Knoxville, Tennessee

Introduction

I have yet to meet a person that does not like trees. It is gratifying to see that, after 20 years, we are now finally getting around to emphasizing tree planting. This discussion is unique in that there really does not seem to be much disagreement concerning the need to plant more trees more productively. At least in the East, many of the coal mine inspectors are foresters by training so we shouldn't need to convince them about planting more trees.

The Tennessee Federal Program

As far as where we need to go from here, in the federal program in Tennessee, we have established a team to examine the issues and write some policies relative to reforestation enhancement. We hope to have a final product for public review within the next 30 days. One issue that we are dealing with is the issue of steep slope mining. Most of our mining in Tennessee is contour mining on very steep slopes (2:1 and greater in slope) with very large highwalls. Our concern, with the desire to minimize compaction in order to improve tree growth in these areas, is "How will lower rates of compaction affect the slope stability or backfill settlement in these steep slope situations?" We have had many problems in the past where backfill settlement reexposed the highwall. The highwall then needs to be regraded. We will tear up a lot of tree seedlings in the process of regrading, and then potentially have to restart the revegetation liability period. We also are concerned about the potential for surface slumping and slides in the backfill.

Once we can develop a reforestation policy for Tennessee, then the hard work will begin. The complete package must include education of the people on the front line, like the inspectors, permittees, landowners, and equipment operators. We can not expect that by making changes in policy or permitting the information will be conveyed and understood by the equipment operators who must carry out these changes. This education must emphasize why we are making the changes as much as the nature of the changes themselves.

The Need for Education

I can not overemphasize the need for education. It should start at the state level and may have some application at the regional level. We need to bring this education down to the smallest unit possible.

Revision of the Federal Regulations

I do believe that most of the reforestation technologies being advocated here can be implemented without changing the federal regulations. The federal regulations do not establish specific success standards, tree stocking, or ground cover standards. The regulations allow for each state to consult with appropriate state forestry and wildlife agencies in order to establish state specific reforestation standards. They also provide that these standards can be established on a program-wide or permit-specific basis. In Tennessee, we are looking at the possibility of evaluating each permit in terms of its unique reforestation requirements. The regulations do not require any specific levels of compaction, nor do they prohibit the use of less competitive ground covers. In fact, the regulations actually discourages the use of introduced species, which in most cases are the highly aggressive species that cause problems with planting trees. The regulations, in fact, encourage the use of native species which are more compatible with planting trees.

From my perspective as an inspector and working in bond release for the last 15 years, I have become acutely aware of the problems you run into when you try to go out to a site and evaluate revegetation success. Within OSM we have been debating the issues for some time. Whether we should be using statistical analysis or some other form of evaluation. I have heard several references to creating more productive forests. I have had some comments from industry people that we not create any new productivity success standards that would make it even more difficult to obtain bond release on forest land uses. This would create even more economic pressure to discourage industry attempts to reestablish the forest land use. I do think we need to seriously consider the impact of creating a new forestry production success standard.

Revision of State Regulations

Through the workings of the reforestation forum steering committee, we did become aware that some of the state regulations do have established revegetation standards and requirements for stocking rates or depth and size of gullies that are creating problems with reforestation. The individual states may need to look at their regulations and see if they might want to consider some state regulatory changes.

AML Recommendations

In closing, I think the greatest impact that OSM could make would be in the AML program. There could be a tremendous impact to the number of trees planted on surface mined lands if (1) there is any way that OSM could make additional funds available through state program grants when they would agree to apply it to tree planting projects; and (2) we could make the lower priority 3 and 4 sites eligible for tree planting funding.

¹ Victor M. Davis has a B.S. in forestry from the University of Tennessee. He has served for 20 years with the Office of Surface Mining in Kentucky, Virginia, and Tennessee. As a reclamation specialist, he performed mine inspection during initial and permanent programs; as a natural resource specialist, he worked with the AML State Program development grants; and as a reclamation review specialist, he served as bond release team leader for Tennessee federal programs.

INTEREST GROUP RECOMMENDATIONS TO ENHANCE REFORESTATION: ACADEMIC RESEARCH

James A. Burger¹
Virginia Polytechnic Institute and State University
Blacksburg, Virginia

Introduction

The following are recommendations to enhance reforestation; these recommendations are based on long-term research and observations of operational reclamation since the implementation of the SMCRA. The problems and constraints are defined and described by Burger in Session 2 of the proceedings entitled *Academic Research Perspective on Experiences, Trends, Constraints, and Needs Related to Reforestation of Mined Land*. The research base and operational experience underpinning these recommendations are presented by Burger and Torbert in Session 3 of the proceedings entitled *Status of Reforestation Technology: The Appalachian Region*. The recommendations are listed, followed by a problem statement or constraints to reforestation and the actions needed to overcome the constraints. Following each action statement is a suggestion for education, research, rule enforcement, or a rule change.

Recommendation 1: Fully Account for All Forest Values

Problem: The value of forests for products and services is underestimated. A full accounting must be made.

Action 1: OSMRE should not allow forest land conversion to lower-value land uses, e.g., wildlife habitat, abandoned hayland/pasture. (Need: rule enforcement)

Action 2: Landowners should be informed of the potential value of forests for wood products, and the many other services forests provide. (Need: education)

Action 3: Forest banking methods should be tried to ensure that forests are restored to provide community-wide services, e.g., wildlife habitat, watershed control, water quality, biodiversity, carbon capture. (Need: research)

Recommendation 2: Revise Success Standards for Forestland; Base them Partly on Forest Productivity Potential.

Problem: The success standard for forestry in CFR30 is seriously flawed because it is based on stocking and ground cover only. As a result, forest land is being degraded.

Action 1: Forest productivity must be recognized like crop and forage productivity. (Need: education)

Action 2: CFR30 should include a forest productivity standard based on mine soil quality or site index. (Need: research)

Recommendation 3: Use Topsoils and Topsoil Substitutes Specific for Trees and Forestry.

Problem: Mine soil quality for trees is poorly understood by most people. Deep, uncompacted, sandy loam, slight to moderately acid soils, or substitutes are needed for tree survival and long-term productivity. Many reforestation failures are due to improper mine soils.

Action 1: Recognize differences in soil quality for trees vs. grasses. (Need: education)

Action 2: Current regulations requiring “substitutes suitable for vegetation” should be enforced. (Need: rule enforcement)

Recommendation 4: Minimize Grading to Reduce Mine Soil Compaction.

Problem: Mine soil compaction is a serious impediment to reforestation.

- Action 1: Change the embedded notion within the mining community that all reclaimed land must be smooth, free of rocks, compacted, heavily fertilized, and covered with lush grasses and legumes before trees are planted. (Need: education)
- Action 2: Grade to ensure stability, but leave surfaces rough and compacted. (Need: rule enforcement)
- Action 3: Require recovery of native soil, organic debris, and native seed pools. (Need: rule enforcement)
- Action 4: Show, compared to other land uses, that money saved on grading, seed, and fertilizer is more than the cost of planting trees. (Need: education)

Recommendation 5: Use Tree-Compatible Ground Covers.

Problem: There is a perception that dense, lush, aggressive grass and legumes are always best. Aggressive ground covers kill tree seedlings.

- Action 1: Remind operators that trees will be the permanent vegetation. Manage for trees, not grass. (Need: education and rule enforcement)
- Action 2: Use short, slow-growing, acid-tolerant ground cover species, and adjust fertilizer rates accordingly: low N, high P, and intermediate K levels are needed. This cover mix should be required and enforced. (Need: education and rule enforcement)

Recommendation 6: Create Bond-Release Incentives to Use Trees.

Problem: Bond-release requirements discourage reforestation.

- Action 1: Base stocking and planting arrangements on sound silviculture. (Need: research and education)
- Action 2: Reduce cover standard to tolerable minimums. (Need: rule enforcement)
- Action 3: Allow augmented tree planting as a husbandry practice to account for drought, animal damage, etc. (Need: rule enforcement)

¹ Dr. James A. Burger, Professor of Forestry and Soil Science, Department of Forestry at Virginia Polytechnic Institute and State University, Blacksburg, Virginia. Teaches and does research on forest soils, silviculture, and reclamation topics. Involved in reclamation research for the past 20 years in the central appalachian coalfields, concentrating on reforestation and forest land uses of reclaimed mined land. Has researched topics that include mine soil physics and chemistry, overburden placement and site preparation, organic amendments for mine soils, nitrogen and carbon sequestration, and cycling, tree-compatible ground covers, nitrogen-fixing trees, effects of grading on mine soil compaction, and reforestation and management of native hardwoods on reclaimed mined land. Dr. Burger is a past-president of the American Society for Surface Mining and Reclamation, and currently chairs the Forestry and Wildlife Technical Division. He has written numerous technical and applied publications on the subject of reforestation, restoration ecology, and reclamation.

WILDLIFE RECOMMENDATIONS

Steve Beam¹
Kentucky Department of Fish and Wildlife
Somerset, Kentucky

Recommendations

For the Kentucky Department of Fish and Wildlife, I have several recommendations that should be considered:

- Make people aware that forest land postmining land use is just as much wildlife habitat as a fish and wildlife postmining land use. The planting of trees on reclaimed lands creates the type of early successional habitat that is useful for wildlife. The issue is just how quickly these areas will mature into another type of habitat. If you plant more trees, you go to a mature forest at a faster rate. The Kentucky regulations require that a minimum of 30 percent of the permit area be planted to wildlife habitat. That is not necessarily the optimum.
- When land is not going to be reclaimed to a specific land use, it should have its ability to undergo forest succession restored. In Kentucky, most of the sites that have been reclaimed for special industrial purposes are still sitting there with no sign of ever being used for the purpose that it was designated for at bond release. Large acreages of pasture are being created that have no access for water for the livestock that would use the pasture. Perhaps we should take a closer look at how this land is actually going to be used. If the landowner is not going to manage the land after bond release then it needs to be undergoing natural forest succession.

Specific tree planting recommendations would include:

- The need to select the proper growth medium.
- The need to minimize soil compaction.
- The need to establish tree compatible ground cover. (We have been establishing native warm season grasses and were encouraged to hear Stuart Miller's findings that they did not inhibit tree growth.)
- The need to plant high quality trees and shrubs. (We need to be planting the species that will not be able to easily and naturally invade the site such as the oaks and hickories because you will get the poplars, maples, and elms anyway.)
- The need to restore the soil productivity. (Encouragement of nitrogen fixers by interplanting redbud or black locust at about one ounce per acre.)
- From the fish and wildlife habitat perspective, most of our emphasis has been on edge. However, we need to mimic a natural forest by planting into trees and shrubs around the edges, planting them in clumps, and planting native grasses and forbs useful for wildlife.
- We should be counting native species useful to wildlife toward success for bond release. Sites that have grown up in blackberry briars, goldenrod, and joe-pye weed are as useful for wildlife habitat as any clean stand of orchard grass and clover.
- We need to include wildlife enhancements on all postmining land uses. The most important aspect of this is water. The forest habitat is much more useful to wildlife if there is some water impoundments present. The most valuable water would be shallow water depressions graded into the area. Leave areas that will not drain well. Retain the sediment structures. We would like to have the impoundments graded so that they have a variety of depths. Under existing Kentucky regulations, there are some problems with regrading impoundments that we would like to revisit. As long as these structures are safe, do not provide any hazard, and are stable, we would like them retained in the postmining landscape. We would like to see travel corridors through pasture areas to water areas. Concerning predators, we recommend perch poles for raptors that will help keep down the damage from rodents.
- We need to partner with industry to establish some demonstration areas of decreased compaction and high quality tree plantings on working mine sites so that we can show people what works.
- And, we need to plan reclamation for the long-term and not just measure success by whether or not we have 80

percent ground cover and a certain number of stems per acre.

¹Steve Beam, Wildlife Biologist, Kentucky Department of Fish and Wildlife Resources, Somerset, Kentucky. Beam has worked in the environmental section and on environmental concerns related to mining. He was a member of the Kentucky Department of Fish and Wildlife Working Group that drafted the Kentucky Reforestation Initiative.

OHIO DIVISION OF FORESTRY

Jim Stafford¹
Ohio Division of Forestry
Zanesville, Ohio

Recommendations

I would like to reenforce the recommendations that I made in my earlier presentation.

- We need to reclaim our premining forested areas back to a forest land use after mining.
- Grasses and trees do not mix.
- We need to do something during soil replacement to reduce the compaction.
- Select sources of planting stock that are adapted to the site where you are planting.

I was delighted to hear many of the other speakers reenforcing these same recommendations. The problem comes when you go to your tree nursery supplier and he doesn't have any of the trees that you wanted to plant. Let me propose what I have seen done in the Alabama. Of the 30 million southern yellow pines produced at the J.R. Miller Nursery where I worked, between 42 and 47 percent of these trees were under contract to a paper company. What the paper companies had done was to grow a tree seed nursery of the best adapted trees on their lands and then bring the seed to the nursery for them to grow the planting stock. If you do find a species that you want to grow on your site, you should make local collections of seed and then contract with a nursery to grow them for planting stock. I have never heard of a nurseryman turning down such a request.

The bottom line for the operators is cost. This is the challenge that faces us as a group. This is going to be an educational process for regulators, operators, legislators, landowners, and field practitioners. We will all have to adjust our thinking in order to make progress in this area. This conference should be the beginning of that process.

¹James P. Stafford, Forester, Ohio Department of Natural Resources, Zanesville, Ohio, Forester since 1981. Stafford graduated in 1976 from Ohio State University with B.S. in forest resources management. He worked for Champion International at a plywood mill in Cordova, Alabama until 1978. He supervised the Alabama State Nursery in Autaugaville, Alabama until 1981. He supervised Green Springs Nursery until 1984. He supervised the Tree Improvement Program until 1994. Currently, he is an Ohio Service Forester assisting landowners in Muskingum, Coshocton, Guernsey, and Belmont counties since 1981. He also is a member of the Ohio Chapter of the Society of American Foresters, the Ohio Mine Land Partnership and the Ohio Nurseryman's Association.

LANDOWNER RECOMMENDATIONS

Timothy Probert¹
Pocahontas Land Co.
Bluefield, West Virginia

Recommendations

As landowners we need to get more involved and communicate to others the good things that we are doing. We have heard of all the efforts that many in the mining industry are doing to plant trees, but does anyone outside of this room know about it. Al Gore needs to know that if there is a problem with global warming we in the mining community are planting trees and doing something about it. We need to move the educational process outside of the mining community to the public. Educational efforts must be initiated that can reach school children and the teachers that teach our children about the good things we are doing.

Another thing we need to do is to promote technology transfer to the field levels where people can use this information. We need to stress the information that has been presented at this forum to field inspectors. Our dozer operators have been building highways for the last 30 years, and they need to know why they do not need to compact this ground like they learned to do when they built highways because now they are building the forests of the future. Going back to some of the stands that we have planted, we have some stands that should be ready for thinning. When these stands are about 30 years old and I am not yet retired, I would like to be harvesting some of this saw timber and proving the economic forecast that I made in 1984.

We need to develop an award system that will encourage operators to plant trees and reward operators that have done a good job.

Concerning planting on AML sites, I have talked to the state about why they are not planting trees on AML sites and their response has been that their concern is to stabilize the site, not to enhance the value of the site. Somehow we need to change how we do business in AML and find a way to get more trees planted on these AML sites.

We need to do this now! We need to have more landowners and coal operators take this information and begin planting trees on their property. In another 20 years, most of the mining in the East will be done and the opportunity will be lost.

I would like to see the day when a field inspector would tell an operator that his land is a little too compacted to be used as a forest land use and he needs to reduce the compaction. Then, instead of writing him a citation for noncompliance, he would do what he could to help the operator create a better site for forestry. I hope this day comes soon.

¹ Timothy Probert, Pocahontas Land Corporation, Bluefield, West Virginia. Probert is Senior Forester with Pocahontas Land Corporation, a subsidiary of Norfolk Southern Corp, and manages over 500,000 acres of forest land in West Virginia, Virginia, and Kentucky. Part of his responsibility is to coordinate reforestation activities on the company's reclaimed surface mine lands. Working with mine and environmental engineers from several of Pocahontas' coal lessees, he has overseen the planting of over 6,800 acres that were returned to forest land. He has been involved with three cooperative reforestation projects with Virginia Tech and has coauthored papers on some of that research.

KENTUCKY WILDLIFE SOCIETY

Robert M. Morton¹
Kentucky Chapter/The Wildlife Society
Corydon, Kentucky

Recommendations

I feel that the forum has been very productive and hope to see the product of our discussion on the landscape, not just in print, over the next 10 to 20 years. Not to go over what the other speakers have already addressed, I would like to reinforce the idea of cooperation with the reclamation people, the regulators, the landowners, and the operators. This is paramount to getting success on the ground.

We need to:

- Focus Reclamation on restoration not replacement.
- Do our reclamation so that productivity is restored and make a successful forest land use that is wildlife friendly.
- Consider what the actual postmining land use will be very early in the permitting process.
- Leave as much water on the landscape as possible. Shallow seasonally flooded depressions are actually very beneficial to a number of species of wildlife both resident and migratory. It is very important to leave water on the landscape for the benefit of wildlife. We should be making every effort to design the sediment ponds so that they can be retained in the postmining landscape. I don't know how many mine sites I have been at where as one of the last stages of reclamation all of the sediment ponds have been removed, removing all of the water on the landscape.
- See minimal grading to reduce compaction as the normal procedure rather than the finish grading that maximizes compaction that we see now. This is the only way that forests will stay on the landscape in the long-term.
- Put a forest on the landscape that will regenerate itself. It has to have adequate growth and productivity in its lifetime so that it will produce a seed crop and regenerate itself.
- In the short-term, we have to maintain water quality standards. Certainly one of the great achievements of SMCRA is the improved water quality produced from mine sites. Toxic water discharges from pre-SMCRA mine sites that devastated fisheries and invertebrate aquatic life is in most cases gone.
- The reforestation effort has got to involve education. This has to include the equipment operator as he is the person we have to reach in order to reduce compaction in the field.

Summary

In summary, we have to put habitats back on the landscape that are the best we can create. The speakers at this forum have demonstrated over the last two days that the technology for successful reforestation is available and we can put the landscape back in a way that is productive, friendly to wildlife, and friendly to water quality. We need to strive to put those habitats back that are self sustaining and regenerating. If we do this then we will have accomplished our goal.

¹ Robert M. Morton, President Kentucky Chapter of the Wildlife Society, Henderson, Kentucky. Morton holds a Bachelor's degree in wildlife management from Murray State University. For the last 20 years he has worked with the Kentucky Department of Fish and Wildlife. Currently, he is the biologist/area supervisor for the Sloughs Wildlife Management Area. He was the secretary/treasurer for the Audubon Area of Ducks Unlimited for five years. He has been president of the Kentucky Chapter of the Wildlife Society since 1996.

