Davis Wins 2006 Forest Conservationist of the Year

By Becky Hatmaker

Victor Davis received the “2006 Forest Conservationist of the Year” award from the Tennessee Wildlife Federation (TWF) during the Annual Conservation Achievement Awards Ceremony and Legislative Reception on March 21, 2007, in Nashville.

The Forest Conservationist of the Year honors an individual for outstanding achievement in forest and woodlands development management or use including reforestation, preservation of wilderness areas, wildlife habitat development, fire protection, wise cutting practices and multiple-use forest lands. Selection was made by a statewide committee of natural resource conservation experts.

Sixteen awards were given to individuals or groups who have shown exemplary leadership in conserving the resources of the State of Tennessee.

Secretary Kempthorne Recognizes ARRI at 64th Honors Convocation

Secretary of the Interior Dirk Kempthorne presented awards to three of the Appalachian Regional Reforestation Initiative (ARRI) Team leaders, Dr. James Burger, Scott Eggerud and Linda Keene, and other citizens at the department’s 64th Honors Convocation in May.

“Whether with a single heroic deed or a lifetime of dedicated work, you have served America with integrity and excellence,” the Secretary told the award recipients.

The convocation paid tribute to employees and private citizens for their outstanding service in the following categories: Cooperative Conservation, Distinguished Service, Citizen’s Award for Bravery, and the Valor Award.

The ARRI Team, nominated by Office of Surface Mining, was one of fourteen groups and individuals that received the Cooperative Conservation Award which recognizes collaborative achievements among a diverse range of entities that may include federal, state, local, and tribal governments; private for profit and non-profit institutions; other non-governmental entities and individuals.
Virginia Students Plants Trees on AML Site for Arbor Day

By Richard Davis

Over 170 high school students from Wise and Dickenson Counties celebrated Arbor Day on April 13, 2007, by planting trees on mined land adjacent to the Powell River Project (PRP) Research and Education Center in Wise County, Virginia.

The tree planting took place on an abandoned mine land project that is being reclaimed through a partnership between the Virginia Department of Mines, Minerals and Energy (DMME) and Red River Coal Company. The students planted over 1500 trees, including oaks, ash, white pine, and blight resistant American chestnuts.

State and federal officials also introduced students to the latest research on establishing valuable and productive forests on mined lands. High schools participating in the project included Powell Valley, Appalachia, J.J. Kelly, Pound, Coeburn, St. Paul, and Clintwood.

“We had over twenty groups of students planting trees in the morning and after lunch,” stated DMME Director George “Bo” Willis. “This was our third Arbor Day celebration and we had great support from the industry and schools from throughout Wise and Dickenson Counties. The students did excellent work in planting the trees in accordance with the research from Virginia Tech.”

The Arbor Day celebration is an event of the Appalachian Regional Reforestation Initiative (ARRI), a partnership to promote reforestation on permitted coal mines and abandoned coal mine sites.

Sponsors of the event included the DMME, the federal Office of Surface Mining, the Virginia Department of Forestry, and Virginia Tech’s Powell River Project.

Director Willis added, “In addition to being an enjoyable outdoor experience for the students, Arbor Day activities also emphasize Virginia Standards of Learning (SOLs). Virginia Tech faculty and DMME personnel give presentations that directly relate to secondary school SOLs for biology and earth science. We hope that Arbor Day activities will encourage the students to consider a career in natural resources management.”

During the event, DMME recognized Paramount Coal Co. Virginia, LLC and Red River Coal Company for their achievements with reforestation. Paramount won the 2006 ARRI Excellence in Reforestation award for excellence in reforestation of an active mine. This company has implemented the forestry reclamation approach to establish a diverse young forest on its Black Bear #4 Surface Mine.

Red River Coal won the 2006 ARRI Excellence in Reforestation award for abandoned mine land (AML) reclamation through its implementation of the forestry reclamation approach on an AML project in Wise County, Virginia.

Also during the Arbor Day celebration, DMME recognized Roger Shortt of Cumberland Resources, LLC for individual excellence in reclamation.

“Over eighty percent of Virginia’s coal mine land is reclaimed to a post-mining land use of forest,” Director Willis stated. “To ensure that current and future generations realize the environmental and economic benefits of reforestation, it is important that agencies promote the ARRI to the industry and those who will follow us.”

Symposium held in Pikeville, Kentucky

A symposium entitled “Reclaiming the Future: Reforestation in Appalachia” was held in Pikeville, Kentucky on May 8, 2007. A panel of presenters spoke about a new initiative to turn certain mined areas into forest land. The presenters were: Lynn Parrish, Paul Rothman, Director, Kentucky Division of Mine Reclamation and Enforcement, Dr. Don Graves, University of Kentucky (UK), Dr. Richard Warner, UK, Dr. Carman Agouridis, UK, Dr. Richard Sweigard, UK, Patrick Angel, Office of Surface Mining Reclamation and Enforcement, and Rusty Justice.

Graves through UK’s College of Agriculture has produced a video and teachers guide also titled “Reclaiming the Future: Reforestation in Appalachia.”
Davis continued from page 1...

Appalachian Regional Reforestation Initiative (ARRI).

“It is very gratifying to see establishment of productive forestland on reclaimed mine sites become a reality,” said Davis. “During the initial years of enforcing the Surface Mining Control and Reclamation Act special emphasis was placed on stabilizing mine sites by using high soil compaction rates and planting aggressive ground covers. This practice resulted in dense grasslands that were not conducive to productive forestland. Fortunately, forestry researchers identified specific reclamation practices that needed to be changed, and developed the Forestry Reclamation Approach. We began the Appalachian Regional Reforestation Initiative in January of 2004 and have not looked back,” he said.

Davis’ selection was based on his tireless efforts promoting reforestation of reclaimed mine lands utilizing the FRA.

Davis is a member of the ARRI Core Team and serves as a liaison to the ARRI Academic Team.

Davis is continually promoting ARRI and the use of FRA to coal mining companies, various private, state, and federal stakeholders in any venue he can find. As an example, he obtained the signature of the Tennessee Wildlife Resources Agency on the ARRI Statement of Mutual Intent before the TWF Achievement Awards Ceremony.

Davis is the Senior Reclamation Review Specialist for the Office of Surface Mining Reclamation and Enforcement (OSM), Knoxville Field Office and has worked for OSM for 28 years. He is a 1974 graduate of the University of Tennessee, College of Agriculture, where he majored in Forest Management.

Dr. Burger Presents Papers at International Conference in South Korea

By Molly Sager

Dr. James Burger, Professor, Department of Forestry, Virginia Tech and Appalachian Regional Reforestation Initiative (ARRI) Academic Co-Team leader, presented papers for himself and Victor Davis, ARRI team member, at an international reforestation conference in Seoul, Korea.

The Forest Landscape Restoration Conference, hosted by International Union of Forest Research Organizations, united scientists and foresters from around the world. The Conference was held in May 2007 at the Convention and Exhibition Center in downtown Seoul, Korea.

It consisted of participant presentations and technical sessions and one and three day field trips. The one-day tour around Seoul offered interesting examples of forest restoration as well as insight into Korean culture; the three-day excursion covered various restoration activities, including a plantation of exotic tree species, forests rehabilitated for erosion control, post-fire restoration, and a ridge forest recovered artificially.

The objective of the conference was to provide a stronger scientific basis for forest landscape restoration by enabling participants to share current knowledge, document forest restoration practices, and reflect on future directions in consideration of the conference themes.

Themes included: landscape history; landscape ecology; governance, land tenure, and equity; ecosystem services; future landscapes; managed landscapes; case studies of landscape restoration; and innovative approaches to science delivery.

Burger’s abstract paper contained contributions by Dr. Carl Zipper; Dr. J. M. McGrath and B. Amichev. It was entitled Carbon Accumulation Potentials of Post-SMCRA Coal-Mined Lands.

Davis’ abstract paper was entitled ARRI: Restoring Forests on Mined Land in the United States.

Forest Landscape Restoration is a planned process that aims to regain ecological integrity and enhance human well-being in degraded or deforested forest landscapes by fostering appropriate forms of restoration at strategically chosen locations. Simply put, forest landscape restoration brings people together to identify, negotiate and put in place land use practices that optimize the contribution of forests and trees to environmental, social and economic benefits across the landscape.
Groups Partner for Arbor Day Celebration in Ohio

By Jeff Emmons and Mike Hiscar

An Arbor Day celebration was held at the Jockey Hollow Reforestation and Mine Land Reclamation Project on March 1, 2007. The Office of Surface Mining Reclamation and Enforcement (OSM) in conjunction with The American Chestnut Foundation (TACF), the Ohio Department of Natural Resources (ODNR), the Harrison County Soil and Water District, the National Wild Turkey Federation, and The Ruffed Grouse Society celebrated the reclamation of a mine site using the Forestry Reclamation Approach for mine land reclamation using trees.

The site was mined by the Cravat Coal Company on Permit number D-2235. The property is currently owned by the State of Ohio and managed by the Division of Wildlife (DOW).

Over 33,000 hardwoods trees were planted on the 50-acre site, including 200 15/16ths pure American chestnuts; 3,300 black chokeberry; 3,300 silky dogwood; 2,000 hazelnut; 1,500 American plum; 2,000 American crabapple; 7,000 white oak; 7,000 shumard oak; and 6,900 red oak. The chestnuts were planted by Ohio University staff and students.

Fifth and Sixth grade students from Lakeland Harrison County Elementary School also planted 100 sycamore and 100 buckeye trees. The students’ tree planting was part of educational training that the Harrison County Soil and Water District, the ODNR, and OSM held in the classroom the week before.

Foster Wade, Department of Interior, Deputy Assistant Secretary Land and Minerals Management; Sean Logan, Director of the ODNR; Michael Puskarich, President of Cravat Coal Company; Sara Fenn Fitzsimmons of TACF; and Rob Keck, Chief Executive Officer of the National Wild Turkey Federation all spoke to the crowd of approximately 250 people. The moderator of the event was Dave Graham, Chief of the DOW.

DOI Releases DVD “Together We Can - The Importance of Partnerships”

The secretary of the U.S. Department of Interior (DOI), Dirk Kempthorne, has approved the release of a DOI DVD entitled “Together We Can – The Importance of Partnerships.” The DVD explains why active partnerships are necessary to conduct business efficiently at Interior.

The DVD supports the Secretary’s 4C’s, practicing Conservation through Cooperation, Communication and Consultation.

The Appalachian Regional Reforestation Initiative (ARRI) was one of four finalists selected from a pool of 45 department wide applicants to be featured in the video.

The ARRI segment was video taped in February 2006 on the campus of the University of Kentucky (UK) and in the coal fields of eastern Kentucky.

The participants representing the ARRI partnerships in the video includes UK researchers, coal company representatives, the Kentucky regulatory authority, landowners, tree planters, mine consultations, reclamation inspectors, equipment operators and representatives from the American Chestnut Foundation.

The video is available for purchase by calling (301) 881-0270.
Tennessee High School Students Plant Trees for Arbor Day

By Becky Hatmaker
Photos by Linda Keene

The Knoxville Field Office and the Appalachian Regional Reforestation Initiative (ARRI) hosted their third annual Arbor Day celebration March 19, 2007.

Forestry students from Campbell County High School (CCHS) and their teacher, Bill Grieve, helped personnel from several State and Federal agencies plant 400 red oak, and white oak tree seedlings and American chestnuts.

Jamis Khoshaba, a sophomore at CCHS, said, “Events like this helps me better understand my surroundings.”

The Thompson Creek Project (TCP) is located in Campbell County, Tennessee. It is owned by the State of Tennessee and managed by the Tennessee Wildlife Resources Agency (TWRA).

TCP is an abandoned mine land that was reclaimed in partnership by the TWRA, the Office of Surface Mining Reclamation and Enforcement’s Clean Streams Initiative, the Natural Resources Conservation Service, the Tennessee Valley Authority, and the Tennessee Department of Environment and Conservation (TDEC). TDEC had two sections at the event, their Land Reclamation Section and the Section of Surface Mining.

Demonstrations and lectures were presented to Campbell County students throughout the course of the event.

Steve Roark, of the Tennessee Division of Forestry (TDF), spoke about tree planting and demonstrated how to plant a tree using a dibble bar.

Victor Davis (OSM) briefed students about ARRI and career opportunities with OSM. Jonathan Bray, a senior at CCHS said, “I hope to gain some knowledge to help me in my logging business.”

Stan Stooksbury (TWRA) discussed the Thompson Creek Project and the benefits of developing partnerships. Dave Turner of Tennessee’s acid mine drainage treatment, and treatment results.

After lunch the students visited a native stand of Big Bluestem grass where Mr. Stooksbury talked about the importance of preserving and re-establishing native warm season grass species. The celebration concluded at a site near TWRA’s office where genetically improved American chestnut seeds, donated by the American Chestnut Foundation, were planted.

In response to the day’s activities, Grieve stated, “Anytime students have the opportunity to experience and participate in events such as ARRI and meet and work with people in different environmental careers, it broadens their views of the jobs available and what they do. It also lets them see our environment as it is, and what we can do to improve it.”
Maryland Mine Site Ripped to Plant Forest for Arbor Day

The Arbor Day tradition of planting trees began in 1872 when J. Sterling Morton introduced a proclamation to the Nebraska State Board of Agriculture to designate April 10th as Arbor Day. Arbor Day is celebrated on different dates in each state. Maryland celebrates Arbor Day on the first Wednesday of April.

"Arbor Day which has already transplanted itself to every state in the American Union and has even been adopted in foreign lands... is not like other holidays. Each of those reposes on the past, while Arbor Day proposes for the future." ~ J. Sterling Morton

This year the Maryland Department of the Environment, Bureau of Mines celebrated Arbor Day by co-hosting a tree planting event with the Georges Creek Watershed Association. The event was held April 11, 2007 near Frostburg, Maryland to promote reforestation of coal mined land. The tree planting site was surface-mined in the late 1980’s and subsequently reclaimed to pasture. Traditional mine reclamation methods involved heavy grading, smoothing and compacting the final surface and then established a thick stand of grass to stabilize the soil. This type of reclamation is excellent if the post-mining land-use is pasture or some other agricultural use. But if the land is to be returned to forest, the heavy soil compaction and thick grass limits the natural succession of trees onto the site and negatively impacts the survival of planted tree seedling.

The Clise Coal Company donated a bulldozer to prepare the site for tree-planting. The bulldozer scalped the sod from the soil in the tree planting rows to eliminate competition for sunlight, water and nutrients between the grass and the newly planted tree seedling, thus improving the survival rate and growth rate of the tree. The bulldozer also “ripped” the soil to eliminating compaction, further enhancing tree survival and growth. Allegany Coal and Land is providing access to the land and working with the Department of the Environment and the Georges Creek Watershed group to promote reforestation. Approximately 100 volunteers from the local high schools, youth camps, watershed associations and government agencies planted nearly 5000 trees on 10 acres.

The goal of the Arbor Day event was to promote reforestation of mined land using commercially valuable hardwood tree species. This event will also further enhance the tree planting efforts of the Maryland Bureau of Mines and the local coal mining industry. Since 1960, through a cost share program with the Bureau of Mines, Maryland coal mine operators have planted nearly 7.5 million trees and shrubs on 10,500 acres of reclaimed surface coal mines, this represents nearly one half of all surface coal mined lands. In addition to the coal industry tree planting, the Maryland Bureau of Mines plants an average of 35 acres each year on abandoned mines sites.

International Coal Group Signs ARRI Statement of Mutual Intent

By Gail Smith and Photo by Linda Keene

Representatives from International Coal Group Inc and subsidiary companies signed the ARRI Statement of Mutual Intent (SMI) at a ceremony in Hazard, Kentucky on May 30, 2007. Individuals signing were Bennett Hatfield, Scott Perkins, Sr., Christopher Slone, Roger Mason, William Gregory Feltner, and Verlin Robinson.

Additionally, Lloyd Cress, Deputy Secretary of the Kentucky Environmental and Public Protection Cabinet, signed the SMI.

Also in attendance at the event was Susan Bush, the Commissioner of the Kentucky Department for Natural Resources, Paul Rothman, Director, Kentucky Division of Mine Reclamation (DRME), Sonny Vance, Kevin Hembree and Randall Watts all managers from DRME and Bill Kovacic, Office of Surface Mining’s Lexington Field Office Director, among others.

ICG Hazard joined over 200 other industry organizations, government agencies, environmental groups, academic institutions, and private individuals in supporting the goals of ARRI to work together to promote the restoration of high-value hardwoods on coal mine lands in Appalachia.

Bennett K. Hatfield, President and Chief Executive Officer of IGG, Inc., signs the Statement of Mutual Intent.
Kentucky Students Celebrate Arbor Day by Planting American Chestnut Trees on Reclaimed Mine Site

By Linda Keene and Debbie McQuady

Students from Inez and Warfield Middle Schools, in Martin County, Kentucky, planted trees on reclaimed mine land that is being reforested to benefit the environment and the economy.

Forty-five middle school students joined in the Arbor Day celebration in Martin County, Kentucky by planting American chestnut and pin oak trees. Two students from Warfield Middle School shared some of the many important lessons learned during the day. Trevor Robinson said, "It is important to have trees because they help the environment. I learned how to plant a tree." Tyler Blackburn said, "I learned chestnut trees were endangered and how they are trying to repopulate it; and I had fun spending time with my friends."

The reforestation program is a cooperative effort among the coal industry, the University of Kentucky and other universities, various federal and state agencies, land owners and local citizens. Lexington Coal Company, LLC is reclaiming this site according to specifications that improve the growth of trees.

Previous reclamation guidelines left soil so compacted that water would run off the site. By not compacting the top layer of soil, about four feet, water reaches the trees’ roots and dramatically improves their survival and growth rates.

This type of reclamation is called the Forestry Reclamation Approach (FRA). Many benefits have already been identified from using FRA:

- The survival rate for trees improves because the loose soil allows rain to soak into ground around the tree roots;
- Growth occurs at about twice the rate of trees in natural forests;
- The loose soil and tree plantings help reduce flooding and run-off in the area;
- Reforestation captures and stores carbon dioxide, which reduces greenhouse gases;
- Because more water is retained, the habitat for wildlife improves;
- Forests will yield harvestable timber, which will aid the local economy; and
- It is a vital part of the reintroduction of the chestnut tree – highly sought after in making furniture but near extinction after blight struck Kentucky in the 1930s. The new species of American chestnut thrives on former mine sites because the soil lacks other competing materials and the high, dry location is also good for the trees.

Michael French, Vice President of the Kentucky Chapter of the American Chestnut Foundation, said, "Surface mines will allow us numerous sites to establish founding populations that can disperse into existing forests within its natural range in Appalachia."

Another way Lexington Coal Company, LLC is taking a lead role in reforestation efforts is through their participation in the Appalachian Regional Reforestation Initiative. Kentucky is one of seven states to join the initiative, which is a coalition of industry, citizens and government. The goal is to restore forests on coal-mined lands in the Eastern United States. Dan Geiger, President and Chief Executive Officer of Lexington Coal Company, said "Lexington Coal supports the Appalachia Regional Reforestation Initiative in our reclamation efforts. We seek to promote the planting of trees on our sites, and we are proud of the fact that some of the academic research that lead to the FRA techniques was done here at 17 West."

Other participants in the Arbor Day event included Susan C. Bush, Commissioner for the Kentucky Department for Natural Resources, as well as officials from Kentucky Division of Mine Reclamation, the U.S. Office of Surface Mining Reclamation and Enforcement, the Kentucky Division of Forestry, and the American Chestnut Foundation.

(Second from right) Tim Brown, Kentucky Division of Forestry and (From left) Tyler Blackburn, James Stacy, Richard Nichols all from Warfield Middle School, plant trees at the Arbor Day event.
Ohio’s Sterling Mining Corporation Wins Award

By Jeff Emmons and Mike Hiscar

Each year the Appalachian Regional Reforestation Initiative core team will honor reclamation operations from each state in the Appalachian Region for exemplary reforestation practices in conducting reclamation.

Sterling Mining Corporation’s Permit D-949 is Ohio’s recipient of the 2006 Excellence in Reforestation Award. Tom Butch is the DMRM inspector on this site and has worked closely with the company and also nominated Sterling Mining for this award. Permit D-949 was an underground mining permit that was issued in July of 1991 with room and pillar mining being conducted on this permit until the fall of 2003.

When reclamation began, standard reclamation practices were employed with the spoil being compacted into place with repetitive passes with a dozer creating a smooth compacted surface on which a veneer of topsoil was to be placed.

The company became aware of the reforestation initiative and met with ARRI team representatives to discuss reforestation options prior to topsoil placement and a decision was made to include tree species in the revegetation plan. Sterling Mining then revised the permit to allow for the planting of trees and tree compatible ground cover.

In order to increase the survival and productivity of trees on the reclaimed site, Sterling Mining used a dozer to rip the spoil material to a three-foot depth in a grid pattern with 8 foot spacing between rips.

The area was then re-soiled and protected from erosion in the fall of 2005 followed in the spring of 2006 with the seeding of a tree compatible ground cover that included black locust seed planted at a rate of 0.5 lbs./acre. Eastern white pine, green ash, red oak, sweet gum and swamp white oak were then planted on the area on 8 X 8 spacing.

The efforts and expense that of Sterling Mining has put into forestry reclamation on this site show their commitment to the reforestation initiative and to improved reclamation practices for the future of Ohio’s forests.

State Wildlife Agencies Get a Boost from Ruffed Grouse Society

In partnership with the Richard King Mellon Foundation of Pittsburgh, PA, the Ruffed Grouse Society awarded $32,000 in grants to the two states.

The Society became part of an $88,400 matching grants initiative in West Virginia with a $15,000 grant that will go toward approximately 200 acres of habitat improvements on 8 wildlife management areas and state forests. The focus of the project will be increasing the amount of young forest habitat critically important for grouse, woodcock and numerous other game and non-game species. "West Virginia has been working hard to enhance grouse and woodcock habitat on public lands throughout the state. Thanks to the dedication of the R.K. Mellon Foundation, we were able to support these important efforts when the money was needed", noted Mark Banker, Regional Biologist for the Society.

In Ohio, reclaimed surface mine lands offer a blank canvas for creating quality wildlife habitat from the ground up.

The Appalachian Regional Reforestation Initiative is an important new program of the US Department of the Interior's Office of Surface Mining that encourages coal companies to reclaim surface mines back into a forested condition rather than grasslands with high soil compaction that take decades to grow trees. These extensive grasslands have no benefit to ruffed grouse, American woodcock, or other forested wildlife and the resulting fragmentation act as barriers to grouse brood dispersal.

Research conducted in eastern Kentucky and southwestern Virginia has demonstrated that the forestry reclamation approach which involves the placement of loosely graded fill overlapped mined sites has resulted in excellent tree growth and over 90% survival of individual trees. This is a viable approach to re-establishing early-successional forest communities and eliminating fragmentation of forested landscapes.

The Society made a $17,000 grant in support of the latest reforestation efforts at Jockey Hollow Wildlife Area in Harrison County, where recently mined lands were replanted with trees this spring under the guidance of the Ohio Division of Wildlife. Cravat Coal Company prepared the site for planting and also rehabilitated a hunting trail disturbed during mining activities. "Grouse hunting on and around reclaimed surface mines can be dynamite. The long-term goal is to improve hunting while doing the best possible job of reclaiming the land immediately", explained Banker. Both of the grants were awarded in late 2006 with work to be well underway or completed in 2007.

Established in 1961, the Ruffed Grouse Society is the one international wildlife conservation organization dedicated to promoting conditions suitable for ruffed grouse, American woodcock and related wildlife to sustain our sport hunting tradition and outdoor heritage.

Further information on the RGS, its mission, management projects and membership can be found on the web at www.ruffedgrousesociety.org or by calling (814) 867-7946.
West Virginia Students Celebrate Arbor Day and Learn About Reclamation

By Brad Edwards

Sixth-grade students from Glade Middle School in Cowen, WV celebrated Arbor Day on April 27, 2007, by planting 400 red oak trees on land being reclaimed by the International Coal Group (ICG) at their Birch River operation.

The 65 students and their teachers were given presentations about the mining operation, the importance of coal, and how ICG has modified their reclamation plans to be compliant with the Forestry Reclamation Approach.

The entire mining complex covers more than 5,000 acres. The students then toured the active mining operation, and were impressed by the size of the equipment, prior to planting the seedlings on an area of loosely graded mine soil.
The Appalachian Regional Reforestation Initiative was started in 2004 with the goal of encouraging the planting of high-value hardwood trees on reclaimed coal mine sites using the Forestry Reclamation Approach. The initiative is a coalition of the States of the Appalachian, the Office of Surface Mining and their partners in industry, environmental organizations, academia, local, State and Federal government agencies and local citizens who have come together to support this valuable initiative.

For more information on ARRI see our website at: http://arri.osmre.gov/

GOALS OF ARRI

- Plant more high-value hardwood trees on reclaimed coal mined lands in Appalachia.
- Increase the survival rates and growth rates of planted trees.
- Expedite the establishment of forest habitat through natural succession

ARRI Core Team Leaders:
Paul Rothman, Kentucky DNR
Scott Eggerud, West Virginia DEP
Linda Keene, OSM AVS Office
Mike Bower, OSM Appalachian Region

Academic Team Leaders:
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