

APPALACHIAN
REGIONAL
REFORESTATION
INITIATIVE

ARRI News



VOLUME 11, ISSUE 3

JULY 2010

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Appalachian Regional Reforestation Initiative Branches Out with Combined Conference

By Michael Bower

The Appalachian Regional Reforestation Initiative (ARRI) held its 4th Annual Mined Land Reforestation conference June 7-10 in Pittsburgh, Pennsylvania. This year's conference was held in conjunction with the annual conferences of the American Society of Mining and Reclamation and the Western Pennsylvania Coalition for Abandoned Mine Land Reclamation. Over 300 people attended the conference. The introductory plenary speaker for the conference was OSM Director Joe Pizarchik who spoke about OSM's upcoming proposed stream protection rules.

One of the co-leaders of ARRI's Science Team, Dr. Jim Burger of Virginia Tech, also gave a plenary speech. Dr. Burger drew upon his 30 years of experience in the science of reforesting mined lands to describe mined land reforestation efforts and the importance of reforestation to the environment and economy of the country.

Following the morning plenary session, ARRI sponsored a Forestry Reclamation Approach (FRA) workshop. In the three hour workshop, experts in mined land reforestation described the FRA and provided demonstrations and materials to help attendees implement the FRA in their areas. The Director of the Office of Surface Mining and Reclamation's Appalachian Region, Thomas Shope, wrapped up the workshop in an address stressing the agency's support of the FRA in

reclaiming mine sites. Attendance at the workshop was standing room only.

On Tuesday, ARRI presented a variety of speakers supporting the overall theme of the conference, "Applying the Forestry Reclamation Approach in Modern Mining Operations." The early sessions spoke to the importance of the FRA through the perspective of industry and academia. A presentation was also made on the progress ARRI made in its first five years in promoting the use of the FRA.

Next on the agenda were presentations by coal industry winners of ARRI's prestigious Excellence in Reforestation Award. In their talks, the industry representatives spoke of the techniques they used in reclaiming their mine sites to win the award and the challenges they overcame in the field to establish forests on mined land. These talks were valuable in
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(Photo by Jeff Trump) OSM Director Pizarchik delivers plenary address.

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informing operators of the value of reforestation and in proving that the FRA can be implemented on large scale operations.

During lunch on Tuesday, Appalachian Region Director Thomas Shope recognized the 2009 State winners of ARRI's Excellence in Reforestation Award. The award is given by the States in the Appalachian Region to those individuals, companies or organizations that best exemplify the use of the FRA in reclaiming active and abandoned mine lands. At the conclusion of the presentation, Director Shope presented the Regional Excellence in Reforestation Award to Lexington Coal Company, LLC for its work in reclaiming the Big Brush 2 Mine in Tennessee. The Regional award is selected from State award winning nominees and exemplifies the most innovative and best use of the FRA in reclaiming mine sites. Accepting the award for Lexington Coal were Dan Geiger, CEO and Curt Weittenhiller, Sr. Vice President of Operations.

The afternoon was devoted to innovations in using the FRA. In this session, presentations were made on implementing the FRA on steep slopes, the effect of using the FRA on the hydrology of mine sites, applying the FRA on wildlife game lands in Pennsylvania and at the Jockey Hollow site in Ohio, planting American chestnut on mine sites reclaimed using the FRA, and the role of Volunteers in Service to America in watershed restoration using the FRA.

Wednesday was devoted to technical presentations regarding varied reforestation and wildlife topics. Copies of presentations from Tuesday and Wednesday can be found on the ARRI website at <http://arri.osmre.gov/>.

The ARRI Core and Science Teams met on Wednesday afternoon to discuss OSM's upcoming proposed stream protection rules and the role that the FRA will play in those rules.

On Thursday, ARRI sponsored a field trip to the Jockey Hollow mine site near Cadiz, Ohio. The trip started with an introduction and welcome at the public library in Cadiz which featured a tour of the library's coal museum. After leaving the library, the group viewed an active mining operation conducted by Oxford Mining Company, LLC. While this active mining operation exhibited conventional reclamation showing high compaction and dense ground cover vegetation, a demonstration plot was prepared to show how to place growth media using the loose compaction techniques of the FRA. In the afternoon, the group toured the Jockey Hollow site that was reclaimed using the FRA. A variety of hardwoods were planted on the site including native and backcrossed American chestnuts.

The trees exhibited superior survival and growth rates.

There was considerable interest in all of the ARRI sessions and the field trip as evidenced by the number of attendees and the questions they asked. ARRI appreciated the opportunity to partner with the other organizations in planning and sponsoring the conference.



(Photo by Jeff Trump)(From left) Dan Geiger and Curt Weittenhiller are presented the ARRI Regional Award by Tom Shope.



(Photo by Mike Bower) ARRI field trip attendees examine American chestnut tree growth at Jockey Hollow.

Kentucky and Virginia Host First Interstate Arbor Day

Story by Jon Lawson
Photos by Galvin Bledsoe

High atop Black Mountain a row of stakes marked the state line, which served as the backdrop for the 2010 Kentucky-Virginia Interstate Arbor Day on Cumberland River Coal Company's Trace Fork surface mine.

Two schools united on April 30th to share in the reclamation of their common bond between Letcher County, Kentucky and Wise County, Virginia. These communities are rich in mining heritage and the natural wonder of the region's forests. Over 100 teachers and students from Appalachia Elementary in Southwest Virginia and Kentucky's Arlie Boggs Elementary worked side-by-side to plant over 1,200 hardwood seedlings and at the end of the day, created a forest without borders.

In the opening remarks the students were challenged by forestry officials, mining regulators from each state and industry officials to plant trees with aspirations of returning with their children or grandchildren to show them their own personal story of reclamation success.

In addition to tree planting, an ecosystem based approach to reclamation was showcased with the wetland creation educational station. This allowed students to see how fisheries and wildlife are also part of today's mining industries reclamation plan.

Cumberland River Coal Company, an Arch Coal Inc. subsidiary, ripped ground at the site in the months leading up to the event. This lessened soil compaction as suggested in ARRI's Forestry Reclamation Approach.

In October, during the planning stages of the event, a low-competition ground cover was applied to the site to stabilize the soil until the trees were planted.

Foresters ordered a species mixture that included white oaks, red oaks, sugar maples, elderberry, and black walnut.

Finally, when the students arrived to plant trees they were accompanied by a group leader that demonstrated proper tree planting techniques to help ensure seedling survival.

Each group of students was also given American chestnut seedlings provided by The American Chestnut Foundation to plant on-site.

The students were amazed to hear the history behind Appalachia's fallen giant and the future of the species using genetics and backcrossing to provide a viable tree once more. They found it especially interesting when they discovered how in generations past, the tree was used for so many purposes from furniture to buildings and the subsequent blight's effect on the region's forest. The students were also very hopeful that the 15/16ths hybrids would one day provide the blight resistance to return the chestnut to its former glory.

Tom Biebighauser from the U. S. Forestry Service's Daniel Boone National Forest District explained the importance of wetlands to the area's wildlife. His stations allowed the students to get their boots muddy by creating interesting structures like frog houses and salamander shade structures. Students gained an entirely new perspective on swamps and mud puddles with this hands on experience.

Biebighauser discussed the vital link of vernal pools to the entire ecosystem. He explained how it created water-holding depressions that serve as amphibian nurseries and watering holes for game animals. The wetland learning station was a success. It showed the students how reclamation is more than just erosion prevention.

The exceptional spring weather made the views from Black Mountain even more spectacular. When you looked to the east, the dogwoods bloomed in Virginia
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(Far left) Tom Biebighauser of the U. S. Forest Service and Letcher County, KY elementary students plant native wetland species at a vernal pool. The toad houses were constructed by elementary students to enhance the wetlands habitat.

Kentucky and Virginia host First Interstate Arbor Day continued from page 3...

lighting up with the noon sun. Turning to the west presented a panoramic view of the rolling hills of Kentucky. In all, the students were treated with unmatched scenery to enjoy their lunch after a morning of planting trees and learning about mined land reclamation.

Flags from Virginia Tech and the University of Kentucky donned the tent where lunch was served. Many of the techniques used in reforestation were developed or researched at these Universities.

Mining regulators and personnel in the forestry departments from Virginia and Kentucky's state program and federal officials from each state worked together over the past year to organize the event.

The collaboration that began in the early days of the Appalachian Regional Reforestation Initiative continued throughout this event as students from each school crossed into the neighboring state to plant trees and do their part to plant the seedlings that will become tomorrow's forests.



Planting native hardwood seedlings at the 2010 Interstate Arbor Day. Cumberland River Coal Company had ripped the area and seeded with non-competitive ground cover species.

Kentucky Presents ICG East Kentucky, LLC with Award

Excerpt from Issue 3 Spring 2010 Natural Resource Review 6

During the Kentucky, Virginia Arbor Day event the 2009 Kentucky ARRI Award was presented to International Coal Group (ICG) East Kentucky, LLC, for their Peelpoplar facility located near Ransom in Pike County.

ICG has become a strong advocate of the FRA approach in

their reclamation efforts. In 2008, they began collaborative work with the University of Kentucky in a research project to determine the implications for use of this reclamation approach on long, steep slopes.

According to Arnett, —The reforestation of Kentucky is of primary importance and a long-term goal of DNR. I am pleased with the on-going efforts of ICG, the University of Kentucky and the department in achieving progress with this goal.



Deputy Commissioner Larry Arnett announces as (From left) Alan Ashley and Roger Mason, (Far right) Don Gibson of ICG East Kentucky, LLC, accept the 2009 ARRI Award from Deputy Secretary Hank List.

Nine Mile Spur, LLC earns 2009 ARRI Award

Story and photos by Richard Davis

Nine Mile Spur, LLC, the contractor on Stonega Gob Pile accomplished complete removal, to natural ground, of a 12 acre gob pile in order to win VA's Title IV ARRI award presented by Jack Davis, Director, VA Division of Mined Land Reclamation.

DMME contracted to plant trees on this AML enhancement site during early 2010.



(Left photo) (From left) Jack Davis presents the ARRI award to Phil Mullins and Tom Baumgarth of Nine Mile Spur, LLC.



(Right top photo) Stonega before (Bottom Photo) Stonega after

Conference Tours the Jockey Hollow Reforestation Site

Story by Mike Hiscar

Oxford Mining Company, LLC, the winner of the Appalachian Regional Reforestation Initiative (ARRI) 2008 Excellence in Reforestation award hosted a group of scientist, State and Federal regulators from the American Society of Mining and Reclamation, Pennsylvania Coalition for Abandoned Mine Reclamation and ARRI members who were attending their annual conference in Pittsburgh, PA, on June 10, 2010.

The Jockey Hollow site was reclaimed using the Forestry Reclamation Approach (FRA). The FRA reclamation method complies with State and Federal Regulations, and is intended to ensure that trees planted will not only survive but thrive.

The State of Ohio owns the property and the Ohio Department of Natural Resources, Division of Wildlife, manages it as part of the Jockey Hollow Wildlife Area.

The area was surfaced mined in

the in the early 1950's and 1960's. The former mining company surfaced mined the #9 coal seam and proceeded to take one contour cut along the #8 coal seam; leaving water filled pits, and exposed highwalls and replaced little or no topsoil.

The Jockey Hollow area was planted in two phases. The first was the southern portion planted in the spring of 2008. This area contains a mixture of hardwoods that include 3,000 American chestnuts. The three types of chestnuts are 15/16ths and 7/8ths backcrossed varieties and pure American chestnut.

The American chestnut plantings were completed in conjunction with Dr. Brain McCarthy, Ohio University, and the Ohio Chapter of the American Chestnut Foundation.

The northern half of the mine area was planted in the spring of 2009. Another 2,000 American chestnuts were planted making this site the largest planting of chestnut trees on mined lands in the eastern coal fields.



(Photo above by Google) Jockey Hollow before reclamation.

(Photo below) Jockey Hollow after reclamation using FRA.



Progress Coal Wins WV ARRI Award

Story and photo by Brad Edwards

The 2009 ARRI Excellence in Reforestation Award was presented to the Progress Coal Company for their reforestation efforts utilizing the Forestry Reclamation Approach on the Twilight MTR Surface Mine complex, located in Boone County, West Virginia.

The post mining land use is commercial woodland. The operator has planted nearly 200,000 trees on over 300 acres since 2004, with an 85% survival rate.

Species planted included mixed commercial hardwoods such as white oak, red oak, black cherry, green ash, sugar maple, and sycamore; and early succession species for wildlife and soil stability: black locust, redbud, gray dogwood, and pitch/lob pine.

A small planting of 160 apple and 40 pear trees was put in the ground in 2009.

The growth medium is predominantly gray sandstone mixed with shale and native topsoil. Loose grading is practiced and non-competitive ground cover is evident.



(From left) Charleston Field Office Director Roger Calhoun and WVDEP Inspector David Dean, present Progress Coal Engineer, Aaron Hamm, with the WV ARRI award.

Pennsylvania Celebrates Arbor Day with Two Tree Planting Celebrations

Story and photo by Dave Hamilton

The Schuylkill Headwaters Association, in collaboration with the Schuylkill County Conservation District, the Office of Surface Mining Reclamation and Enforcement (OSM), the Pennsylvania Bureau of Forestry, and the Pennsylvania Department of Environmental Protection, sponsored two Arbor Day tree planting celebrations at two coal mining sites in Schuylkill County Pennsylvania on April 30 and May 1, 2010.

The planting areas were prepared by the coal mine owners using the Forestry Reclamation Approach.

These two sites were selected because of the willingness of the land owner (Schuylkill County), and the mine owners to use a portion of the permits to demonstrate this superior method for returning mined lands to self sustaining forest lands. The two sites are Mountaintop Coal Company and K&K Coal Company permits.

About 1,500 trees were planted on the 1.5 acre site mined by Mountaintop Coal Company and 4,500 trees were planted on 4.5 acres at the K&K Coal Company mine site.

The Mountaintop Coal Company mine site had been previously reclaimed and was ripped by a

dozer using a three foot steel bar. The trees were planted in the overturned soils.

The area at the K&K Coal Company site was ungraded spoil material. It was back cast from a dragline. At both sites, the intent was to create a loose, non compacted planting zone, to allow proper root development and moisture infiltration which enhances tree survival and growth.

About 75 volunteer tree planters representing North Schuylkill and Blue Mountain High Schools, the Penn State Schuylkill Biology Club and several interested individuals assisted OSM and the Pennsylvania Bureau of Forestry in planting trees.



Mountaintop Mine displays ripped ground at left.

A.L.L. Construction Receives ARRI Award in Maryland

Story and photo by Pete Hartman

Students from Mountain Ridge High School, the Allegany Career Center, and the State of Maryland youth camp helped to plant many native hardwood seedlings on April 7, 2010, at the Maryland Arbor Day celebration at a reclaimed mine site. The event was held in conjunction with the annual presentation of the Appalachian Regional Reforestation Award.

Also involved were representatives of the Maryland Department of Environment, Bureau of Mines, The Maryland Land Reclamation Committee, The Georges Creek Watershed Association, OSM-Vista and representatives from the Office of Surface Mining Reclamation and Enforcement (OSM).

The group planted trees at a four-acre surface coal mine site that was reclaimed and planted with

grasses, legumes, and some locust during the early 1980's. The site was severely compacted during backfilling operations as a result of heavy equipment running over the site. The locust trees that did grow are now dying out and very few other hardwoods have invaded the site due to the thick grasses and compacted nature of the site.

With the assistance of A.L.L. Construction, the backfilled area was ripped in one direction with a ripper bar attached to a D-8 dozer. Trees were planted in the furrows created by the ripping. Included in the planting were 50 native, Chinese, and 15/16 cross Chestnut trees provided by The American Chestnut Foundation. The chestnuts were protected by staking tree tubes around them. Tree planting and tube installation techniques

were provided by Scott Eggerud of OSM.



(From Left Standing) Paul Dixon of A.L.L. Construction accepts the 2010 ARRI Reforestation Award from Mark Carney of the Maryland Bureau of Mines.

Environmentalist and Church Group plants Trees

Story and photos by Linda Keene
 Oakbrook Church members from Reston, VA loaded a van and traveled 12 hours to plant trees on a previously mined site outside West Liberty, KY. They were joined by numerous volunteers from the Sierra Club of Kentucky. Federal and State agencies spearheaded the event and altogether there were more than 65 people that planted trees in the cold and drizzling rain on March 13 and 14, 2010. The group planted 6,000 seedlings that were a mix of hardwoods and some pine and chestnuts. The chestnuts were three varieties, pure American, back cross and Chinese. Each two person group of planters was given the opportunity to plant a chestnut. While they planted they were told the story of the American chestnut and the blight that begun

in 1905 in New York and devastated the Appalachian forests of the east.

Al Lilliendahl, from the Oakbrook church said that their group had participated in another ARRI tree planting event in West Virginia last year. He said, "They try to keep an eye out for things concerned about mining and how it affects the environment."

Mary Miller, from the Sierra Club, was asked why her group was involved in the event she said "We were looking for a positive project where we could make a difference."

Miller not only recruited members of her organization she additionally reached out for volunteers to church groups and others to help make this event a success.

(Right) The participants rode on the wagon to the site.



(From left) Gail Smith, OSM, Elizabeth Fees, OSM-Vista, Al Lilliendahl, volunteer and Jay Mitchell, KY DAML plant a chestnut tree in a tree shelter.

West Virginia honors Tim Probert with ARRI Award

West Virginia presented its Title IV ARRI State Award to Tim Probert. Probert has 26 years of experience in reforestation of surface mined lands in WV, KY and VA.

He has been involved in cooperative reforestation research and has co-authored research papers and articles related to reforestation of surface mine lands.

Through his employment with Pocahontas Land Corporation, Wagner Forest Management, Gaddy Engineering and Marshall Miller & Associates, Probert has worked on over 50 FRA compliant forestland planting plans covering over 20,000 of acres.



(From left) Tim Probert accepts his award from Keith Porterfield.

Maryland holds Reclamation Committee Meeting

Story and photo by Pete Hartman

Scott Eggerud gave a Power Point presentation about the ARRI program in the Appalachians at the Maryland Land Reclamation Committee meeting on May, 5, 2010. Eggerud also visited a mine site with committee members where the ARRI tree planting program was implemented.



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Natural Resource Review

Decades of mining left abandoned land next to Pine Mountain Settlement School in Harlan County too disturbed to grow trees. The old refuse site was originally developed by Dollar Branch Coal Corp, but due to violations of performance standards, the reclamation bond was forfeited by the Cabinet.

An agreed order provided for the reclamation to begin and use part of the earth cover from a nearby Abandoned Mine Lands (AML) project. Poorly vegetated coal refuse was polluting nearby greasy creek with its many acidic seeps and there was an abandoned preparation and washing plant on the 45 acre site. In 1999 reclamation of this AML site was completed but beneath the surface laid soil that could not grow trees or agricultural products.

After years of soil restoration, the ground is fertile once again and the Appalachian Regional Reforestation Initiative (ARRI) is working to plant trees on old mine sites such as this one.

On March 20, dozens of volunteers from colleges and organizations planted 17,000 trees on 25 acres of the site. Volunteers planted seedlings of pin oak trees, black locusts, hickory, and others. The students learned that local wildlife will greatly benefit from the improved habitat, as well as benefits of stabilizing soil erosion, providing carbon sequestration, and improving water resources. Funding for the seedlings used in the project was through AML's federal grant program.

There were several representatives from the Department for Natural Resources and the Department of Fish and Wildlife at the event. Commissioner Carl Campbell told the group, mostly comprised of students from nearby colleges, about the history of the property and praised them for their efforts in restoring the land to its natural habitat. "These young people are doing excellent work. It's worth every penny of what we're putting into it," he said.

"It is a win for the coal industry, win for the environment, and a win for the landowners," said Patrick Angel of the federal Office of Surface Mining, who also attended the event.

The goal of ARRI is to put back trees on hundreds of thousands of acres where they once stood, but which coal companies reclaimed as grassland after surface mining over the last three decades. Several more events are planned during the spring planting season. To read more, go to <http://arri.osmre.gov>.

ICG Eastern, LLC hosts Fourth Annual Arbor Day Event

By Brad Edwards
Photo Keith O'Dell, ICG

On Thursday April 22, 2010, ICG Eastern, LLC - Birch River Operation held their 4th annual Arbor Day event by hosting 60 sixth grade students from Glade Elementary School, 10 students from Webster County High School, and 20 West Virginia University students.

The event included presentations about mining, reclamation using the Forestry Reclamation Approach, and stream sampling for benthic macro invertebrates. The students participated in planting 400 mixed hardwood trees, including American chestnut seedlings, on loose graded mine soil.



Students of all ages planted trees at the ICG Eastern, LLC mine site.

Tennessee gives ARRI Award

Victor Davis presented Tennessee's Title IV ARRI State award to the Panther Branch Stream Restoration Project and the Tennessee Department of Environment and Conservation, Land Reclamation Section.

Panther Branch was severely impacted by acid mine drainage and toxic mine refuse from 100 year-old underground mine workings.

Tim Eagle from Department of Environment and Conservation, Land Reclamation Section accepts the ARRI Award from Victor Davis, OSM.



Appalachian Regional Reforestation Initiative



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**

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