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## Clintwood Elkhorn Mining Company Wins Award

By Mike Bower

OSM Appalachian Region Director Tom Shope presented the ARRI 2011 Regional Excellence in Reforestation award to Clintwood Elkhorn Mining Company during a luncheon at the ARRI Conference in Big Stone Gap, Virginia. The award, presented on May 23, 2012, honored Clintwood Elkhorn Mining Company for its outstanding work in reforestation on the Bearwallow surface mine.

The Bearwallow mine, located in Buchanan County, Virginia, encompasses 1055 acres. Over 350,000 commercially valuable hardwoods and shrub seedlings have been planted on the site in the last five years.

In addition, Clintwood Elkhorn Mining Company was the first operator in Virginia to submit a mine plan that fully utilized the Forestry Reclamation Approach. ARRI's goals were met on the Bearwallow mine through Clintwood Elkhorn Mining Company's dedication in planting commercially valuable hardwoods, loose grading to increase survival and growth of planted trees, topsoil salvaging, and professional tree planting.

In his remarks, Mr. Shope praised Clintwood Elkhorn Mining Company's reclamation efforts and congratulated the two runner ups to the regional award, Premier Elkhorn Mining Company in Kentucky and *(Clintwood Elkhorn Mining Company continued on page 3)*



(Photo by Linda Keene) OSM's Appalachian Region Director, Tom Shope (right) presents the 2011 ARRI Excellence in Reforestation Regional Award to Chris Stanley, Manager, representing the Clintwood Elkhorn Mining Company. (From Left) Butch Lambert, DMME Deputy Director; Joe Pizarchik, OSM Director; Scott Blackburn, Manager, Clintwood Elkhorn Mining Company, look on.

# Branching Out: The 2012 ARRI Conference

By Richard Davis

The Appalachian Regional Reforestation Initiative (ARRI) has realized remarkable success in promoting the reforestation of mined lands. The successes have largely been focused on the vast acreages of land that have been mined and reclaimed over the past decade. ARRI now also has a focus on the proper reforestation of thousands of acres of legacy mines throughout Appalachia.

The Virginia Department of Mines, Minerals and Energy (DMME) hosted the 2012 ARRI conference in Big Stone Gap, Virginia. With a theme of *Branching Out*, DMME's plan was to highlight successes of ARRI on legacy mine sites. Using a broad definition, a legacy mine is a pre-SMCRA abandoned mine or a more recent mine that is no longer permitted and was not reclaimed to standards of the Forestry Reclamation Approach (FRA).

The two day ARRI conference began with a field day visiting legacy mine sites in Wise and Lee County, Virginia.

The day started with a site visit to an abandoned mine land reclamation project in Wise County, Virginia. To accomplish the Cranes Nest Gob Pile Removal Project, a DMME contractor implemented the AML enhancement rule to completely remove a 9-acre coal waste or gob pile.

The enhancement rule allows contractors to recover coal that is strictly incidental to the reclamation, and use proceeds from the coal sale to offset the cost of reclamation. At the Cranes Nest site, DMME implemented FRA practices to establish native hardwoods on the site following gob pile removal. A specialty contractor and community volunteers planted native hardwoods over the site, with riparian species planted along the restored stream channel. By implementing the AML enhancement rule, DMME only spent \$3,200 to accomplish the complete removal of a 9-acre pile and natural restoration of a 900 foot stream segment that had been buried by coal waste.

For the field tour, there were plans for a stop at Mountain Rose Vineyards, developed on reclaimed surface mine land. Unfortunately, some logistical problems prevented this tour stop. However, the point is that vineyards, like forests on mined land, do best when elements of the FRA are followed in the mining and reclamation. The vineyard produces a number of wines with unique flavors from the minerals in the newly forming mine soils. If you are ever in southwest Virginia, a visit to the Mountain Rose Vineyards is well worth the detour. The vineyard website is [www.mountainrosevineyard.com](http://www.mountainrosevineyard.com).

The second tour stop was a reforestation demonstration site accomplished by the Virginia Department of Forestry (DOF). At the University of Virginia's College at Wise, Virginia DOF has implemented FRA practices on a pre-SMCRA legacy site. A DOF contractor

ripped several acres and applied an herbicide. DOF contracted to plant native hardwoods, and this was supplemented by a volunteer planting in March, 2012 using native hardwoods and American chestnuts.

During this stop, OSM Director Joe Pizarchik, Virginia state forester Carl Garrison, VA Tech professor Jim Burger, and U VA Wise representative Rusty Necessary accomplished the planting of an advanced backcross American chestnut seedling. The American Chestnut Foundation supplied the seedling and donated hundreds of chestnut seed for the March volunteer planting.

The tour visited some of ARRI's roots after lunch. At the Powell River Project, Drs. Jim Burger, Carl Zipper, and Brian Strahm of Virginia Tech explained their reforestation research to the participants. The research areas demonstrated FRA practices of non-competitive ground cover



Cranes Nest Gob Pile Removal Project, September 2010. GOBCO, LLC of Abingdon, Virginia completely removed a 9-acre coal waste pile and restored a natural stream channel that had been buried by waste coal. This abandoned mine land project won a national reclamation award from the federal Office of Surface Mining Reclamation and Enforcement.

*(Branching Out... continued on page 3)*

## Branching Out continued from page 2...

and minimal compaction on backfilled slopes.

Persistent rain during the afternoon prevented the tour from visiting the final stop. This was to be an AML no-cost agreement site where an active surface mine used excess spoil to backfill abandoned mine benches and eliminate highwalls. For such projects, the mining company funds all reclamation of the AML project, with the exception of planting trees. On this project, the company and DMME followed FRA practices including using selected spoil material as a topsoil substitute, minimal compaction, and non-competitive ground cover. Although the participants were unable to view the results, native trees have established to a point to which it is becoming difficult to distinguish the reclaimed AML site from the adjacent forest. This was also the site of DMME's first Arbor Day event on mined land.

Technical presentations highlighted day two of the conference at Mountain Empire Community College. Presentations included reforestation of riparian zones, economics of reforestation and carbon storage, non-competitive ground cover, legacy reforestation, and American chestnut reintroductions. An effort is underway to copy the presentation to the ARRI website. Following the ARRI tradition, OSM Regional Director Tom Shope presented the Regional Reforestation Award during the lunch. Clintwood Elkhorn Mining Company won the regional award for its reforestation efforts on permit 1101795.

ARRI science team member Dr. Jeff Skousen announced that the 2013 tour will be in Virginia and will highlight reforestation efforts in the northern half of the mountain state.

DMME gratefully acknowledges the support of the Office of Surface Mining and the Virginia Department of Forestry for participating in the 2012 ARRI conference. Also, many thanks are due to the technical presenters, the ARRI core team, and the ARRI science team for their support. Even though the geographic area of mining in Virginia is relatively small, FRA reforestation efforts on active and legacy mine sites are

benefitting the environment and quickly becoming the state's routine practice. Virginia's mining industry and our environment are indebted to ARRI.



(From Left) Rusty Necessary, U VA Wise; Dr. Jim Burger, VA Tech; Joe Pizarchik, OSM; and Carl Garrison, VA Dept. of Forestry planting an advanced backcross American chestnut seedling on a legacy mine at the University of Virginia's College at Wise.



Reclaimed no-cost AML project along the contour through the center: A native forest is rapidly establishing to a point where it is difficult to distinguish the AML project from the adjacent forest.

## Clintwood Elkhorn Mining Company continued from page 1...

Triple H Coal Company LLC in Tennessee.

Shope also recognized the 2011 State Excellence in Reforestation Award winners including Premier Elkhorn Mining Company (KY), Friends of the Little Beaver Creek Land Foundation \ Columbiana County Parks District (OH), Triple H Coal LLC (TN), Clintwood Elkhorn Mining Company - Cedar Branch Mine (VA), Clintwood Elkhorn Mining Company - Bearwallow Mine (VA), Paynter Branch Mining Inc. (WV), and Eastern Arrow Corporation (WV). In recognizing the award winners, Shope stated, "Your efforts to support ARRI and incorporate the Forestry Reclamation Approach in your reclamation operations are greatly appreciated and will help reforest Appalachia."

# Eastern Arrow Corporation, Inc. Receives Award in West Virginia

By Brad Edwards

The 2011 ARRI Excellence in Reforestation Award (Title IV) was presented to Eastern Arrow Corporation, Inc. by the West Virginia Department of Environmental Protection for their reforestation efforts utilizing the Forestry Reclamation Approach on the Pendleton Creek Strip AML Project, located in Tucker County. The award was presented to the company president, Ann Wardwell.

The scope of this project was to eliminate abandoned high walls, dewater four impoundments, construct mine seals (dry), re-construct two stream channels using natural stream design, and establish forest and riparian vegetation. Pre-law stripping had caused two tributaries to Pendleton creek to be impounded, causing surface water to flow into abandoned mine openings and discharge in the town of Thomas, WV. This discharge, after passing through the underground mine voids, was high in aluminum.

Dangerous highwalls have been eliminated; impoundments have been removed; mine seals are in place; stream channels have been re-established with meanders, riffles, and pools; and riparian and forest cuttings and seedlings have been planted. The mine discharge at Thomas has been significantly reduced.

This project required special environmental consideration because the run-off from this site flows into the Canann Valley National Wildlife Refuge wetlands. Additional drainage controls and culverts were implemented during construction.

The planting plan incorporated the five steps of the Forestry Reclamation Approach: proper growth medium, non-compacted grading, native and non-competitive ground cover, tree species selection, and planting technique.

The contractor has done a very good job of establishing both the forest and riparian vegetation. Tree species include red spruce, white pine, red oak, white oak, tulip poplar, red maple, alder, American chestnut, aspen, black cherry, serviceberry, mountain ash, and mountain holly.



(From Left) Kevin Quick, WVDEP, presents Ann Wardwell, President of Eastern Arrow Corporation, Inc. with the 2011 ARRI Excellence in Reforestation Award (Title IV) as Jim Baczuk from WVDEP/AML looks on.



This stream channel was reconstructed with riparian plantings.



Left photo shows an American chestnut seedling.

Right photo shows Pendleton Creek Strip AML Project located in Tucker County, West Virginia.



## Vindex Energy Corporation Wins Award

By Mark Carney

The Maryland Bureau of Mines presented the 2011 ARRI Excellence in Reforestation Award to Vindex Energy Corporation.

Vindex Energy Corporation, which is an operating subsidiary of Arch Coal, is reclaiming the 650 acre mining site using the Forestry Reclamation Approach (FRA) at its Carlos mine in Allegany County, near Frostburg.

"We're proud to be a proven leader in mine reclamation," said Mike Moore, general manager of Vindex Energy Corporation. "Vindex pioneered the Forestry Reclamation Approach in 2007, becoming the first mining company to utilize the reclamation practice in Maryland and setting the standard for reforestation on mined lands throughout the state."

Vindex Energy Corporation uses FRA at all of its surface mines in Maryland. The company, working with different mining inspectors, has developed unique FRA reclamation techniques at each site. Each technique has resulted in increased hardwood survival and a diverse growth of volunteer species.



(From left) Ed Larrimore, Maryland Mining Program presents the 2011 ARRI award to Rusty Bush, Ryan Sweetwood and Nick Riggins from Vindex Energy Corporation



FRA reclamation at Vindex Energy Corporation's Carlos Mine.

## ARRI Jump Starts Reforestation

By Mike Hiscar

Companies have been planting trees on reclaimed surface mines for over 34 years with little growth success. That's when the Surface Mining Control and Reclamation Act (SCMRA) became law in 1977. From 1977 until 2004 trees were being planted in heavily compacted and heavily vegetated soil with little results.

Planting trees using the Forestry Reclamation Approach (FRA) on reclaimed mined lands has jumped started the tree survival and growing process by 50 years. Ohio's Jockey Hollow site was reclaimed in 2008 using the dumped pile method of FRA reclamation for tree planting where nearly 5,000 American chestnuts were planted on the site.

Four years later, 6/20/2012, the Jockey Hollow is a showcase of successful tree planting. Within the canopy are very successful oaks, sycamores, maples, cottonwoods, and locusts. Some autumn olives have also "volunteered" but will be out competed by the trees that have been established. This Division of Wildlife Property will provide recreational opportunities for hunters and bird watchers for the next 50 years.



Ohio's Jockey Hollow site was reclaimed using FRA in 2008.



The Jockey Hollow on 5/30/2011.



The Jockey Hollow site four years later, 6/20/2012.

# Tennessee Hosts Arbor Day Event

By Christopher Miller

The 2012 Tennessee Arbor Day tree-planting event was held on May 4, 2012. The event was organized by Coal Creek Watershed Foundation, Inc. (CCWF) and the Office of Surface Mining Reclamation and Enforcement (OSM), and held at a Dalco Coal Company deep mine in Morgan County, TN.

Prior to the event, approximately 1.5 acres of compacted backfill were ripped by Duane's trucking and excavating using the Forest Reclamation Approach method.

Fifteen adult volunteers representing the Tennessee General Assembly, Tennessee Mining Association, Geo/Environmental Associates, Inc., Clinch River Trout Unlimited, the CCWF, and OSM participated in the event, along with 100 students from Lake City and Norwood Middle Schools. In total approximately 115 people attended the event.

The students had each grown their own American chestnut seedlings at school during the winter in preparation for the event, and were eager to plant them.

Along with the 100 chestnuts, 600 seedlings of northern red oak, yellow-poplar, green ash, flowering dogwood, and white pine were planted at the event. Students and adults were educated on how to properly plant bare-root seedlings by OSM, and learned the history of the American chestnut and the Coal Creek War from CCWF members.



Students enjoyed their day and some planted American chestnut seedlings.



(Far right) Earl Bandy, Field Office Director, OSM, Knoxville, TN, took a break with some students.



Duane's Trucking and Excavating ripped the site.



(Second from right) Dick Geiger from Clinch River Trout Unlimited helped students' plant seedlings.

## Green Forests Work: The Evolution of FRA on Post-Bond Released Mined Lands

By Nathan Hall

The history of Appalachian surface mining and the effort to responsibly address post-mining landscapes is long and varied, and an important new chapter is now in the process of being written. Decades of university research related to the most effective methods for returning the native hardwood forests to surface mined lands in Appalachia culminated in the form of ARRI in 2004. The process of melding the federal OSMRE, state

regulatory agencies, research scientists, industry partners, and environmental and community groups into an effective vehicle for change was a landmark achievement, as the practice of surface mining has been notoriously divisive since its inception. ARRI has had a direct and positive measurable impact on the environment of Appalachia, most notably through the creation of the Forestry Reclamation Approach (FRA) which helped to enhance "forestry" as a post-

mining land use that has been widely implemented since its creation.

While ARRI was having significant success in addressing the active mining industry and promoting the FRA for reclamation, the nearly 1 million acres of previously mined lands that had been reclaimed as "hay and pasture" and subsequently left as unmanaged scrublands still remained to be addressed.

*(Green Forests Work: continued on page 7)*

## West Virginia Presents Paynter Branch Mining, Inc. with Award

By Brad Edwards

The West Virginia 2011 ARRI Excellence in Reforestation Award (Title V) was presented to Paynter Branch Mining, Inc. for their reforestation efforts utilizing the forestry reclamation approach on the 1160 acre Paynter Branch Surface Mine Complex, located in Wyoming County.

The award was presented to Russell Tiller, Surface Mine Foreman, during Paynter Branch's Earth Day event.

The post mining land uses are forestland and wildlife habitat.

The operator has planted more than 406,000 trees including mixed commercial hardwoods such as white oak, red oak, black cherry, green ash, sugar maple, tulip poplar, and sycamore. Over 1,000 American chestnut seedlings were planted intermixed with the other seedlings in areas determined to have the best soil material, least compaction, and favorable ground cover.

Wildlife cover and food source tree species include redbud, gray dogwood, elderberry, persimmon, hazelnut, and pitch-lob pine.

A 200 tree apple orchard was also planted.

The growth medium is predominantly brown and gray sandstone mixed with native topsoil. Loose grading was practiced and flat areas, which were susceptible to over compaction by equipment traffic, were ripped with dozers to loosen soil prior to tree planting. Non-competitive ground cover is evident.



(From left) Russell Tiller, mine foreman accepts the award from Kevin Quick, WVDEP. Jerry Daniel, mine foreman, and Aaron Walker, environmental engineer, look on at the Paynter Branch Earth Day event.



This photo depicts the successful tree growth at Paynter Branch Surface Mine Complex, Wyoming County, WV.

## Green Forests Work: The Evolution of FRA continued from page 6...

Through this practice, many areas were created that are now dominated by sericea lespedeza, tall fescue, autumn olive, and other aggressive non-native species. These areas require their own unique FRA in order to support long term tree survival. The high costs associated with "deep ripping" with a large bulldozer to mitigate soil compaction, herbicide application to control the exotic vegetation, and professional tree planting crews presented a challenge for ARRI. As a collaborative initiative between OSMRE and the state regulatory agencies, ARRI cannot receive charitable financial donations, nor does it have the authority to require the coal industry to address lands that have received legal bond release.

Despite these restrictions, ARRI was able to organize in-kind contributions in the form of free equipment and

operator time from coal companies for deep ripping, free tree seedlings from nurseries, and free labor from volunteer groups who were willing to plant thousands of trees per mine site. This provided the framework for the successful reforestation of lands that seemed as though they would never be able to support a true forest again, but it soon became clear that relying on in-kind donations alone would severely limit the ability to have a significant impact on the approximately one million acres of mined lands that are caught in a state of severe arrested natural succession. It was thus decided to form a separate non-profit organization that could apply for independent sources of funding and which would exist solely to reforest post-bond release and abandoned surface mined lands throughout Appalachia.

Green Forests Work is that non-

profit, and I am its first employee. I was born and raised in the heart of the coalfields in Floyd County, Kentucky, and spent many weekends as a youth hunting with my father in the brushy border areas on the edges of strip mines in Martin, Pike, and Floyd Counties. I later worked as an underground miner in Knott County before deciding to attend Berea College in central Kentucky. I completed a self-designed BS in Sustainable Agricultural & Industrial Management, and was then awarded the Watson Fellowship to visit other mining regions around the world for a year. I returned with a strong desire to make a positive contribution to my home region, *(Green Forests Work: continued on page 9)*

# TECO/Premier Elkhorn Coal Company Wins ARRI Award also Hosts Kentucky Arbor Day Celebration

Photos and Story by Linda Keene

Over 100 excited elementary and middle school students and teachers from Dorton Elementary School and Virgie Middle School enjoyed the Kentucky Arbor Day celebration hosted by TECO/Premier Elkhorn Coal Company on April 17, 2012.

Bob Zik, Vice President of TECO Coal Company was the master of ceremony for the event.

Clay Johnson, a sixth grade student at Virgie Middle School sang the National Anthem.

TECO/Premier Elkhorn Coal Company hosted a poster contest for the students. The poster theme was “Kids, Trees and Bees!” The first place winner was Kristy Thacker, a sixth grade student from Virgie Middle School. The runners up were: Samantha Pruitt and Sherry Howell from Dorton Elementary and MaKenzie Hopkins and Ashayla Little from Virgie Middle School. Thacker received a \$50 gift certificate and the runners up each received \$25 gift certificates from TECO/Premier Elkhorn Coal Company.

Dignitaries and guest speakers included: Michael French, American Chestnut Foundation (ACF); Dr. Tammy Horn, author and renown bee expert; Aaron Kinsman, Treecycler; Steve Hohmann, Commissioner, Department for Natural Resources, Environmental and Public Protection Cabinet, Joe Blackburn, Director, OSM, Lexington Field Office; Donna McClure, Field Representative for US Senator Mitch McConnell; and Leah MacSwords, Director, Kentucky Division of Forestry.

Premier Elkhorn Coal Company won the Kentucky 2011 ARRI Excellence in Reforestation Award for their work at permit #867-0390. They were also nominated for the 2011 ARRI Excellence in Reforestation Regional Award.

Paul Rothman, Environmental Scientist, Department for Natural Resources, gave the students an informative tree planting demonstration.

The students and teachers were involved in planting approximately 800 native Appalachian hardwood seedlings on the surface coal mine near Virgie, southwest of Pikeville, Kentucky. Treecycler provided the tree northern red oak, chestnut oak, redbud, gray dogwood and hickory seedlings for the planting. ACF provided the back-crossed, blight resistant, American chestnut.

The students also had the opportunity to visit honey bee mating nucs and talk with Horn, the bee lady. They discovered the basics that provide forest-based habitat for honey bees and other pollinators.

TECO/Premier Elkhorn Coal Company provided a delicious lunch that included deserts made with local bee honey.



(From left) Receiving the award for Premier Elkhorn are Bob Zik, Don Hall, Stacy Billiter, Greg Hayes, Jeff Cornett and DNR Commissioner Steve Hohmann.



Bob Zik presents Kristy Thacker, the first place poster contest winner with her prizes.



Dr. Tammy Horn informs the students about bee nucs.



and GFW is the ideal means by which to make that contribution.

Since being hired in late February, I have helped to run volunteer tree planting events, coordinated with professional tree planting crews on job sites, represented GFW at dozens of conferences and meetings, promoted reforestation of mined lands within colleges and school systems, engaged landowners about starting new reforestation projects, established contacts with local contractors, and most recently have been pursuing funding for direct project costs. While we have received financial support for staffing from the Appalachian Regional Commission (ARC), we currently have no funding for deep ripping, herbicide application, tree seedlings, and planting labor. We will soon be hiring an Administrative Director who will be much more focused on fundraising, as well as overall organizational management and capacity building.

This is an exciting and challenging time to be involved with this work. The opportunities for improving the environment and economy of Appalachia are vast, but key roadblocks such as absentee land ownership and limited financial resources must be addressed in order to have a significant positive impact on this region that has given so much to the development of the nation as a whole. As hundreds of miners are being laid off and coal companies are rapidly shifting operations to other mining areas, there is no better time to lay a solid foundation for the future of Appalachia.

## Additional Photos from Kentucky's 2012 Arbor Day Celebration



(Left photo) DNR Commissioner Steve Hohmann and OSM Lexington Field Office Director, Joe Blackburn plant a seedling. (Right photo) Students take turns planting.



(Left photo) Michael French, ACF, talks to Pete Barber, Kentucky Division of Forestry about the seedlings. (Right photo) Dr. Tammy Horn, bee expert and Perry Amos, field manager, prepare for the event.



(Left photo) Liz Cox, OSM, helps a student don her bee suit. (Right photo) Paul Rothman, DNR, talks with Aaron Kinsman, from Treecycler.



# 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 Region, 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**

**Mike Bower, OSM  
Appalachian Region  
Science Team Leaders:  
Dr. Carl Zipper, Virginia  
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