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Appalachian Fuels, LLC wins Regional Award

By Ben Owens and Linda Keene
Photo by Linda Keene

Appalachian Fuels, LLC won the Appalachian Regional Reforestation Initiative's (ARRI) 2007 Excellence in Reforestation Regional Award on August 6, 2008.

On behalf of ARRI, Brent Wahlquist, Director of the Office of Surface Mining Reclamation and Enforcement, (OSM) presented the award to Don Cooke, Engineer, and Dave Maynard, General Manager, both from Appalachian Fuels, LLC, during the 2008 ARRI Mined Land Reforestation Conference held at Chief Logan State Park, Logan, WV.

This award recognizes those individuals, operators and organizations that truly exemplify excellence in forestry reclamation on surface coal mine sites.

Appalachian Fuels, LLC, was recognized for its Bent Mountain mine site near Meta, Kentucky. It has become a premiere research site and a public showcase for forestry reclamation techniques.

Appalachian Fuels, LLC has a long-standing partnership with the Kentucky Department for Natural Resources (DNR) and the University of Kentucky to advance and promote the science of forestry reclamation that results in the success of high-value Appalachian hardwoods.

Appalachian Fuels, LLC actually revised the permit plans on their Bent Mountain facility to incorporate DNR's Reclamation Advisory Memorandum # 124 reforestation techniques which promotes the establishment of forest land.

Through a cooperative effort between

Appalachian Fuels, LLC and University of Kentucky, a number of large scale research projects have been established on the Bent Mountain site by research scientists. The University of Kentucky has planted approximately 110,000 high value trees on more than 150 acres of research cells on this site. Many of these research projects will continue into the far future.

Appalachian Fuel, LLC's commitment to reforestation goes well beyond the use of the land. They have used their personnel, resources and funds to prepare research cells prior to research planting.

The impact of the combined efforts of Appalachian Fuels, LLC, the DNR and the University of Kentucky reach beyond Eastern Kentucky. This mine site has played host to over 3,000 people from across the nation with an interest in the Forestry Reclamation Approach.

(Regional Award continued on page 2)



(From left) Don Cooke and Dave Maynard, both from Appalachian Fuels, LLC, accept the 2007 Excellence in Reforestation Regional Award from Brent Wahlquist, Director, OSM.

Regional Award continued from page 1...

Cooke said, "This award means everything. Our land owners want to know their land is being reclaimed properly. This award is our proof." He added, "It also motivates our people and lets the state agencies know we will go the extra mile."

Nominees were submitted by each State and judged based on the following: (1) Tree-planting efforts, the proper use of the Forestry Reclamation Approach, specific problems and the resulting solutions, and unusual circumstances that were encountered; (2) How well any resulting techniques, technologies or accomplishments benefited other mining and reclamation operations; (3) The long-term benefits to the landowner and local or regional community.

This year's recipient was chosen by the ARRI Core Team from a field of four extremely strong nominees, each having won the Appalachian Regional Reforestation Initiative's Excellence in Reforestation State Awards in their respective states. These included: Ohio - Cravat Coal

Company, Jockey Hollow East Mine, permit D-2235; West Virginia - The Fola Coal Company, LLC, surface mines Number 4 and 6 in Clay County -- permits S-2005-02 and S-2011-99 and; Tennessee - Gatliff Coal Company, Tackett Creek Area No. 14, permit 2995.

The recipients of 2007 Excellence in Reforestation State Awards are: Maryland - Vindex Energy Corporation; Maryland - The Douglas Coal Company; Virginia - GOBCO, LLC, awarded for Clinchco Gob Pile AML Enhancement Project; Virginia - Red River Coal Company, Inc.; West Virginia - Elk Run Coal Company, Incorporated, awarded for East of Stollings Surface Mine, permit S-5057-92; West Virginia - The Fola Coal Company, LLC, permits S-2005-02 and S-2011-99; Kentucky - ICG Hazard, LLC; Kentucky - Appalachian Fuels, LLC; Ohio - Oxford Mining Company, Inc., permit D-2122; and Ohio -Cravat Coal Company, permit D-2235.

Each site exemplified the five-principals of the Forestry Reclamation Approach that ARRI promotes. These steps are:

To create a suitable rooting medium for good tree growth that is no less than four feet deep and comprised of topsoil, weathered sandstone and/or the best available material.

The second step is to loosely grade the topsoil or topsoil substitute established in step one to create a non-compacted growth medium.

The third step is to use ground covers that are compatible with growing trees.

Next, plant two types of trees, early succession species for wildlife and soil stability and commercially valuable crop trees.

Finally, use proper tree planning techniques.

ARRI's past Excellence in Reforestation Awards have been earned by researchers, landowners and operators. The awards recognize excellence for the reclamation of both active mine sites and abandoned mine lands.

Annual Tour and Dinner Held at VA's Powell River Project

Story and Photo by Tim Brehm

Brent Wahlquist, Director of the Office of Surface Mining Reclamation and Enforcement (OSM), was the guest speaker at the annual Leadership Dinner held at the Powell River Project Research and Education Center (PRP) in Wise County, VA, on September 3, 2008.

The dinner was held after the coal mine reforestation tour led by Virginia Tech forester Dr. James Burger and PRP Director Dr. Carl Zipper. They showcased the reforestation practices advanced by the Appalachian Regional Reforestation Initiative (ARRI).

The tour involved approximately 60 participants and included Forestry Reclamation Approach sites and research plots on the adjacent Red River Coal Company mine sites. Burger has been involved in reforestation research of mined lands on the Powell River Project since 1980.

Approximately 150 people attended the Leadership
(Tour and Dinner continued on page 6)



Dr. James Burger (in red ball cap) addresses the group.

American Chestnut Tree Returns to New York City in Time for the Holidays

Reprinted from December 11, 2008 press release by: Office of Surface Mining; National Park Service and The American Chestnut Foundation

On Thursday, December 11, the Appalachian Regional Reforestation Initiative (ARRI) announced plans to pledge 38 million trees over three years as part of the United Nations Environment Program's (UNEP) Seven Billion Tree Campaign. ARRI, in conjunction with the Department of the Interior's Office of Surface Mining (OSM), planted five American chestnut trees the first of these 38 million trees—on Governors Island.

“The overwhelming success of UNEP's Seven Billion Tree Campaign has been dependent upon the

ies, to entire countries—sometimes individually, but more often through innovative partnerships”, said Juanita Castano, Director of UNEP's New York Office. “The joint OSM and ARRI initiative to restore the American chestnut is an example of such a public-private collaboration. UNEP is very pleased that they have chosen to link their national endeavor with UNEP's international campaign and contribute towards the goal of a healthier planet.”

The American chestnut tree once graced eastern forests from Maine to Georgia and its beauty and strength were legendary, but that was before the blight. The blight was first discovered in New York

(Chestnut Tree Returns continued on page 4)



Photo by Louis D. Bedor III (From left:) Patrick Angel, OSM; Tom Cook, Massey Coal Services; Greg Conrad, Interstate Mining Compact Commission; Linda Neal, Governors Island, NPS; Brent Wahlquist, OSM; Christine Alfsen Norodom, United Nations - UNESCO; James Ward, WR Hydrosolutions; Marshal Case, The American Chestnut Foundation; Nancy Smith, OSM; Karen Bennett, National Mining Association; Paul Karczmarczck, Ruffed Grouse Society; John Sferazo, American Greenlands Restorations; Tom Shope, OSM; Victor Badaker, United Nations.

Chestnut Tree Returns to NYC continued from page 3...

City outside the Bronx Zoo in 1904 and destroyed nearly four billion trees over the span of 50 years.

“Four hundred years ago Native Americans and Dutch settlers referred to this island as ‘Nut’ island because of the large number of nut trees. There were so many that the Dutch set up a sawmill here, which produced timber for the first cabins in Manhattan,” said Linda Neal, superintendent of Governors Island National Monument. “The trees planted here today will reflect a connection to the island's rich history while also symbolizing its future as an oasis for respite and renewal. So it is fitting that this park was chosen as the New York City venue for this tree planting campaign.”

Brent Wahlquist, Director of OSM said, “The idea of pledging support to the UNEP’s Seven Billion Tree Campaign materialized when 12.7 million trees were planted in 2007 on mined land in the Appalachian coal fields under ARRI. People’s perception of what good mine reclamation looks like (forest reclamation instead of grassland reclamation) is changing thanks to ARRI and we are confident that our goal of 38 million trees planted on mine land over three years will be achieved. The trees that are being planted under ARRI are high-value, native hardwoods, which includes the American chestnut thanks to TACF. The partnership between UNEP, TACF, and ARRI serves as an organizational model for other groups across the world whose goals are to restore disturbed landscapes with reforestation.”

“Governors Island is a wonderful place for us to be represented,” said Marshal Case, President and CEO of The American Chestnut Foundation (TACF). “So much of what ARRI is doing revolves around creating a healthier planet and improving overall forest health. This planting fits right in with our goals and we’re proud to be in such illustrious company and Governors Island is a fitting destination for the return of the

American chestnut to New York City.”

This commitment by OSM and ARRI is the largest yet for the UNEP Campaign and this planting will symbolize the UNEP’s efforts to regenerate the world’s forests.

The Office of Surface Mining is actively promoting reforestation where existing forests were removed by mining and, when practical, is encouraging forest establishment after reclamation wherever coal is mined. One of the primary objectives of the agency is to ensure that coal mines are restored to beneficial post mining land uses, such as healthy, productive forestland. For more information, please visit <http://arri.osmre.gov>.

Governors Island National Monument is a National Park Service (NPS) site that was established to preserve the island’s historically significant military fortifications, Castle Williams and Fort Jay. Governors Island is a 172-acre island, of which the NPS administers the 22-acre national monument. The remaining 150 acres are administered by the Governors Island Preservation and Education Corporation (GIPEC). The island is open to the public from late spring to early fall, providing opportunities to experience the visual and performing arts as well as to learn about the island’s role in national and international events and its place as part of the rich history of New York Harbor. For more information, please visit www.govisland.com.

The American Chestnut Foundation is a non-profit 501-c-3 organization with more than 6,000 members nationwide and 15 chapters representing 17 states and a provisional chapter in West Virginia. It is headquartered in Bennington, VT and has research facilities in Meadowview, VA as well as a regional office in Asheville, NC. For more information, please visit www.acf.org

Ohio Hosts Tour

Story and Photos by Mike Hiscar

On October 22, 2008, Ohio Department of Natural Resources Division of Mineral Resources Management (ODNR-DMRM) and the Office of Surface Mining Reclamation and Enforcement

(OSM) held an Appalachian Regional Reforestation Tour (ARRI) of the Jockey Hollow Reforested Sites in Harrison County, Ohio. The tour was held in conjunction of the OSM Mid-Continent Region (MCR) to expanded reforestation efforts in the Mid-Continent

(Ohio Hosts Tour continued on page 7)



End dumping using FRA.

Forestry Reclamation Approach Highlights Conference

By Linda Keene and Scott Eggerud
Photos by Linda Keene

Growing productive trees on reclaimed mine sites was the theme for the 2008 Appalachian Regional Reforestation Initiative conference.

The three day conference was held August 5-7 at Chief Logan State Park in Logan, West Virginia. More than 175 people gathered to learn about and discuss the five steps of the Forestry Reclamation Approach (FRA) below:

The first step is to create a suitable rooting medium for good tree growth that is no less than four feet deep and comprised of topsoil, weathered sandstone and/or the best available material.

The second step is to loosely grade the topsoil or topsoil substitute established in step one to create a non-compacted growth medium.

The third step is to use ground covers that are compatible with growing trees.

Next, plant two types of trees, early succession species for wildlife and soil stability and commercially valuable crop trees.

Finally, use proper tree planning techniques.

The conference began with participants loading buses for a trip to view tree plantings on mined sites in various locations in southern West Virginia. The first two stops were on Cobra Coal's S-5038-89 (Pounding Mill Surface Mine). The first stop was at an 11 year old tree planting using the FRA. The second stop showcased a 90 acre ripped area and an adjacent golf course built on a reclaimed mine site. The golf course was constructed close to a proposed interchange on the King Coal Highway (future interstate 73/74). Much of the grade work on this interstate is being incorporated into the reclamation plans on nearby surface mines, saving taxpayers millions of dollars in grade work.

Road Fork Development Company, Inc.'s S-5017-98, (Rock House Branch Surface Mine) was the next stop on the tour. Massey Energy Coal Company employees provided lunch under a tent while the rain poured from the sky.

The tour group viewed a one year old tree planting using FRA in a ripped area and a recently graded area using the FRA, one pass method of grading. This stop also highlighted the careful construction of an FRA compliant mine soil, blending pre-mining native topsoil with nutrient rich sandstones.

The next stop was at White Flame Energy, Inc.'s S-5077-92 (White Flame Surface Mine #4). The group viewed 10 year old tree plantings at the toe of valley fill and the top deck of the same valley fill. The trees grew so quickly on this site that the toe of valley fill was difficult to see. The group also viewed a nine year old tree planting using FRA on a dry ridge site.

"The first day we tried to show the evolution of the mined land reforestation process in WV. We saw a 13 year old site with FRA, a 10 year old site with FRA and an active site where mine soil was being constructed and placed," said Scott Eggerud, West Virginia Department of Environmental Protection (WV DEP).

Refreshments at this stop were provided by the WV Division of Society of American Foresters.

Day two of the conference was held at Chief Logan Lodge.

Dr. Jeff Skousen, West Virginia University, (WVU) Morgantown, WV, gave the welcome and opening remarks. He introduced the two morning moderators, Bob Beanblossom, Society of American Foresters, Charleston, WV and Keith O'dell, ICG-Eastern, Cowen, WV.

WV DEP Cabinet Secretary, Randy Huffman started the program by talking about the status of West Virginia reforestation efforts. He said,

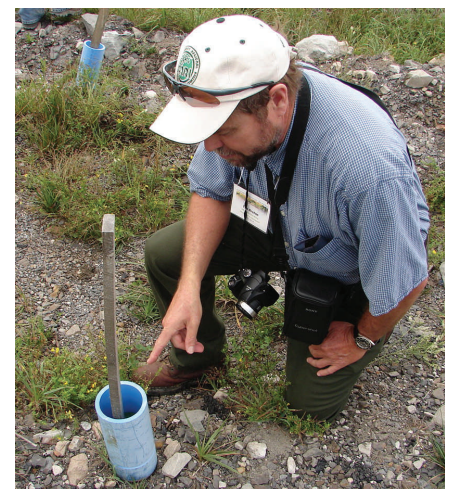
state wants to make use of mined land as a productive area for the better of people and industry, but we can't use it all for highways and industry, so we will use it for reforestation."

"Eighty-five percent of permits are going to forestry type permits," said Tom Clarke, WV DEP Mining Director.

(Conference continued on page 6)



(From left:) Scott Eggerud, WV DEP, Becky Hatmaker, OSM and Mike Bower, OSM, enjoyed the field trip.



Tim Brehm, OSM, looks at an American chestnut that was planted in a protective sleeve.

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Dr. Brent Wahlquist, Director of the US Office of Surface Mining Reclamation and Enforcement, spoke about “OSM update on reforestation.”

“Overview of ARRI-FRA advisory update” was the talk given by Dr. Carl Zipper from Virginia Tech.

The next three speakers, Skousen, Eggerud, and Mike Isabell, Consol Energy, spoke about “FRA Step 1- Suitable Rooting Medium.”

Fred Hebard, The American Chestnut Foundation, ended the morning session with a discussion of “American Chestnut Plantings.”

The afternoon moderator was Thomas Cook of Massey Energy, Charleston, WV.

Eggerud said, “In the classroom setting on the second day we had a chance to compare the sites we saw the first day. The amazing part to me was how similar the soils were when comparing the chemical and physical characteristics.”

“FRA Step 2 – Grading and Compaction” was the topic for Dr. James Burger, Virginia Tech, Blacksburg, VA and Brad Edwards, Office of Surface Mining Reclamation and Enforcement, Morgantown, WV.

Dr. Jennifer Franklin, University of Tennessee, Knoxville, TN, and Lance Schultz, Hydrotech, Charleston, WV both spoke on “FRA Step 3 – Compatible Groundcovers.”

The afternoon speakers and their topics were: “FRA Steps 4 and 5 – Tree Species, Planting and Future Economic Benefits,” Tim Probert, from Marshall Miller & Associates, Bluefield, WV. “FRA Step 4 – Wildlife Benefits,” Christie Johnson-Hughes, United States Fish and Wildlife Service, Elkins, WV, Measuring FRA Success in Appalachia,” Dr. Patrick Angel, OSM, and lastly George Carico, WV Brownfields Center Marshall University, Huntington, WV, “Brownfields: A Funding Source for Reforestation.”

The awards dinner followed that evening at the lodge.

On the third day the conference participants visited Elk Run Coal Company S-5057-92 (East of Stollings Surface Mine). This Massey operation incorporated many of the techniques we had discussed, such as loose grading, end-dumping, ripping, reduced ground covers, native tree plantings, and even Arbor Day plantings of American chestnut seed,” said Eggerud. Massey Coal Company provided box lunches to the group for the ride home.



(From left) Rick Williams, Williams Forestry, (partially hidden) Petra Wood, WVU, Lawrence Beckerle, Quail Unlimited, Scott Eggerud, WV DEP, and Jeff Skousen, WVU, discuss issues on the field trip.

Tour and Dinner continued from page 2....

Dinner and included representatives of the coal industry, state, federal agencies, universities, public representatives, and landowners.

Wahlquist discussed his early development of ARRI some six years ago and how successful it has become and

how bright its future is.

Through his tenure with OSM and leadership, ARRI has gone global in scope receiving international recognition. Wahlquist emphasized ARRI’s cooperation with the American Chestnut Foundation this year for plans to reintroduce back-cross American chestnuts via mine lands in Appalachia.

Ohio Hosts Tour continued from page 4...

States. This effort is in large part due to the success of the Appalachian Regional Reforestation Initiative (ARRI). The main goal of ARRI has been the promotion of reforestation through a science-based approach to reclamation called the Forestry Reclamation Approach (FRA) that has been adopted by a broad coalition of State, Federal, industry, and university leaders in the eastern US. On June 26, 2008, the MCR held a meeting in Terre Haute, Indiana, to discuss the FRA and assess the suitability of applying the FRA to reforestation of reclaimed mine lands in the Mid-Continent States. Several meeting participants expressed a desire to visit a mine site where the FRA is being employed and the soil conditions are similar to that found in the mid-west. Attendees were Federal, State and Industry representatives

from Washington State, Ohio, Illinois, Indiana, Mississippi, Colorado, Alabama, Tennessee and Pennsylvania, also attending the tour were Dr. James Burger, Virginia Tech, Dr. Philip Pope, Purdue University and Dr. Brian McCarthy, Ohio University and the President of the Ohio Chapter of The American Chestnut Foundation (TACF). OSM Director, Brent Walquist, was also present on the tour. During the tour the participants viewed typical Ohio mine land reclamation that was returned to pastureland, and the operator's efforts to re-establish trees surrounding a reconstructed wetland. The attendees also toured the Jockey Hollow East and West sites where the Forestry Reclamation Approach was first used in Ohio's reforestation efforts.



Jockey Hollow –East; participants viewed reclamation and trees planted in the spring of 2007. The young trees were showing signs of good growth as well as volunteer species of cottonwood, black locust, sweet gum and red maple.



Jockey Hollow - West, the attendees reviewed Ohio's efforts to change the FRA to better meet the reforestation methods. Oxford dumped the FRA material closer together to create less erosion and better planting material.

ARRI begins Planning for a Mined Land Reforestation Workshop about FRA

By Dr. Patrick Angel

Planning for a national NTTP workshop on Mined Land Reforestation has commenced with a meeting in Roanoke, Virginia during the week of December 15, 2008. Eight ARRI Core and Science Team members met to create the outline and start training modules for a 3½ day workshop that will introduce participants to the concepts and

implementation of the Forestry Reclamation Approach (FRA).

Participants will receive instruction on selecting the best available tree growth medium, reducing compaction, tree compatible ground covers, tree selection and planting techniques.

The course will target inspectors, permit reviewers, mine operators (including consultants and

permit writers), land owners, Title IV people, program managers, etc.

Locations for the class will be Hazard, Prestonsburg, Pikeville (Kentucky); Norton, Big Stone Gap (Virginia); Morgantown, Roanoke, Logan (West Virginia); Cadiz, Pittsburgh (Ohio and Pennsylvania); Knoxville

(Workshop continued on page 8)

Researchers Developing Methods to Prevent Landslides

Story and Photo by D. J. Pressley, 2008 OSM summer student intern

“Slip, sliding away...” those are words to a popular 1970s rock song. At the same time that is the biggest fear and concern of foresters, inspectors, and reclamation practitioners (not to mention citizens who live downhill) when highwalls are back-filled and the result is extremely steep reclaimed slopes. It is also the concern of Dr. Richard Sweigard of the University of Kentucky especially when planting trees are part of the reclamation plan. Sweigard was awarded a grant from the Office of Surface Mining to determine the best methods to reclaim highwalls in such a way that the spoil is keep loose enough for trees to grow, but not so loose that landslide occur.

Years of experience have demonstrated that excessive compaction of reclaimed surface-mined land is bad news for young tree seedlings trying to grow and survive. The five-step Forestry Reclamation Approach (FRA) emphasizes the need for creating a suitable rooting medium that is at least four feet deep and free of compaction. However, much of the research that led to the development of FRA and most of the applications have been on flat to gently rolling reclaimed surfaces. It is a major concern that the application of FRA on steep-sloped surface mines with highwall elimination may be impractical or may lead to landslides or slumping, in some cases.

Sweigard, and Ph.D. student Kevin Hunt, are investigating those concerns by way of a two-part field investigation. The first part is a regional inventory of the current practices that are in use in the Appalachia Region where steep-slope mine operations intend to use the FRA and plant trees after mining.

The second part is to design and implement a field study in eastern Kentucky to demonstrate the two most common highwall elimination methods.

In addition, the second part of the research will evaluate ways to make the mining more efficient, save money, prevent landslides, and grow trees! Sweigard said, “[This phase of the operation will result in] a fairly clear statement on the best practice to reclaim steep slopes where forestry is the intended post-mining land use.” The goal is to use the data to address the concerns of reclamation practitioners and all those concerned about the dual problem of stability and growing trees on steep slopes. The results of the research will be written up in an upcoming Forestry Reclamation Advisory.

Similar FRA research on steep slopes is being conducted by Drs. Jennifer Franklin and Eric Drumm at the University of Tennessee. The three way partnership between OSM, the University of Kentucky and the University of Tennessee, will result in wider acceptance and application of FRA throughout the region and, ultimately, more reforested mine sites.



FRA on Fola Coal site in West Virginia.

Workshop continued from page 7...

(Tennessee); and Cumberland (Maryland). Other locations will be considered depending on the location of FRA sites.

At this time, the instructors will be one Science Team member, and two members of the Core Team (one state and one federal). The instructors will be familiar with the regions of the class loca-

tion. The classes will be scheduled between May 15 and October 15 and will include a one-day field trip to an FRA compliant mine site.

The Mined Land Reforestation Workshop plan will be presented to the NTPP Steering Committee which approves all new courses and workshops to be offered via

NTPP.

Each state has a representative on the committee which presents the views and recommendations in behalf of their respective states as pertaining to training. It is hoped that the workshop will be approved and the first class will be presented in 2010.

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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