



# ARRI Newsletter

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**Left to right: Thomas Shope (Appalachian Region Director, OSM), Jonathan Jarvis (Director, NPS), Joseph Pizarchik (Director, OSM), Keith Newlin (Superintendent Western PA, NPS), Sally Jewell (Secretary of Interior), Scott Eggerud (Forester, OSM), King Laughlin (Vice President, NPF), Jeff Reinbold (Superintendent Flight 93 Memorial, NPS) and Neil Mulholland (CEO and President, NPF).**

ARRI was awarded the 2013 Department of Interior's Partners in Conservation (PIC) Award for its Flight 93 Reforestation Project. Flight 93 crashed on September 11, 2001 killing all 40 passengers and crew members. The plane hit ground on a 1,000 acre reclaimed surface mine site near Shanksville, PA. The National Park Service (NPS) is building a memorial at the crash site. In 2011 the NPS asked OSM for technical assistance on the reforestation of the previously mined and reclaimed land surrounding the memorial. The NPS wants to naturalize the surrounding area and provide a wind break for the memorial on this high elevation site. Phase I consisted of 20 acres prepared for planting in 2011 and planted in the spring of 2012. Phase II consisted of 23 acres and was prepared in 2012 and planted in the spring of 2013. Phase III,

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**Sally Jewell  
Secretary of the  
Interior**

## ARRI Wins Department of Interior's Partners in Conservation Award for Flight 93 Reforestation Project

consisting of 30 acres, was prepared in 2013 and will be planted in April of 2014. Site preparation consists of deep ripping with large bulldozers. This mitigates the compaction caused during the reclamation of the mining activities. Trees are planted on an 8 foot by 8 foot spacing, in the rips. Thus far over 30,000 seedlings have been planted. Another 20,000 seedlings will be planted this spring. Tree species mimic the white pine-red oak-red maple cover type that would naturally occur at this site. Over 20 native species of tree seedlings have been used so far, all common to this cover type. To date over 1,200 volunteers have planted all of these trees. Most of the seedlings have been donated by Pennsylvania Bureau of Forestry. Green Forests Work also provided seedlings through a donation by Arborgen. The American Chestnut Foundation provided Restoration 1.0 Chestnuts and the U.S. Forest Service provided blight resistant American elms, both associates to this cover type. Funding for this project comes from the NPS and the National Park Foundation. This project will continue into the future with about 200-300 acres of reclaimed mine land still in need of reforestation. Many ARRI partners have been involved with this restoration project. This is the second time ARRI has won the PIC Award in just the last three years. Accepting the award was Keith Newlin of the National Park Service and Scott Eggerud of the Office of Surface Mining Reclamation and Enforcement.

### *Message from the Secretary*

*Partnerships are at the core of Interior's values and mission. I am thrilled to recognize the accomplishments of more than 260 diverse organizations that are collaborating in new and exciting ways to address today's complex conservation and stewardship challenges.*

*The organizations receiving awards today span the country and are from all sectors – Federal, state, local, and tribal governments, private for-profit and nonprofit institutions, and other non-governmental organizations. Their achievements exemplify innovation and excellence.*

*Today, we celebrate their accomplishments and ask them to join us in forging a strong agenda to strengthen our economy and ensure that we pass along our Nation's rich conservation legacy to the next generation.*

*Please join me in congratulating our Partners in Conservation Award winners. They inspire us to dream big and act for the larger good, and we are humbled by their work.*

*Sally Jewell  
Secretary of the Interior*





## Virginia DMME/DMLR Arbor Day 2013

To the right and below are photographs of some of the Arbor Day Activity.



Virginia's ninth annual Arbor Day event was held at the Poplar Gap Park in Buchanan County, Virginia. The event was held on April 26, 2013. Sponsors of the event included: Alpha Natural Resources, Apex Energy, Clintwood Elkhorn Mining Company, Consol Energy, and SunCoke (Jewell Smokeless) and the Virginia Mining Association.

Sixth grade students from Hurley Elementary, Council Elementary, Twin Valley Elementary and Riverview Elementary participated in the event. Approximately 240 students and teachers from these schools attended. There were about seventy other volunteers who assisted with the logistics. Volunteers included folks from the Office of Surface Mining, Division of Mined Land Reclamation, the Virginia Division of Forestry, consultants and the mining industry. Food was provided to all participants.

Our theme this year was "Beautifying the Road to the Future". Approximately 1200 tree seedlings were planted along the future Coalfields Expressway corridor, which was located on Paramount Coal Company Virginia, LLC, Permit Number 1101903. Tree seedlings included: red bud, dogwood and a variety of oaks.

The event was blessed with good weather and appeared to be a huge success for all who participated.







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## 2013 Kentucky Arbor Day Event

**J. W. Resources/Xinergy Corporation Arbor Day Celebration 2013** - On April 26, 2013 more than 15 students and their teachers from Right Fork Elementary School in Bell County planted over 550 high value hardwood seedlings on J. W. Resources' Xinergy permit at the Stony Fork Surface Coal Mine Complex in Bell County.



**Right Fork Elementary Students at the Xinergy Surface Mine Complex Arbor Day 2013.**

Additionally, the students participated in a special planting of 30 Hybrid (back-crossed) American chestnut seedlings developed by The American Chestnut Foundation that will help to re-establish this premier species throughout the Appalachian Region. The high value hardwood seedlings were supplied by TreeCyclers and the Kentucky Division of Forestry.

The event was held on Xinergy's 469 acre surface area/contour "Kentucky No. 5 Mine". The site is a "RAM 124"/Forestry Reclamation Approach (FRA) permitted site and the students planted the 580 seedlings on a 1 acre track that was topped with an alternate topsoil material that had been ripped.

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**Students plant tree seedlings on a surface mine to promote reforestation.**





## Kentucky Arbor Day Event Continued from Page 4

Prior to the field event, Mr. Michael French of the American Chestnut Foundation and Dr. Tammy Horn of Eastern Kentucky University and Coal Country Bee Works conducted a mini-workshop at the students' school. The students were treated to informative lessons from the duo. Mr. French spoke to the students about the American chestnut and the on-going work to re-establish the tree in the Appalachian Forest, and Ms. Horn followed that lesson, teaching the students the important role bees play as "pollinators", explaining how bees pollinate the crops that produce the foods that we eat and how good forests contribute to those success

The event was in true ARRI form, incorporating the following ARRI partners:

J. W. Resources/ Xinerdy Corp  
 The Appalachian Regional Reforestation Initiative (ARRI)  
 Kentucky Department for Natural Resources  
 Kentucky Division of Forestry  
 Kentucky Division of Mine Reclamation and Enforcement  
 Office of Surface Mining (Lexington Field Office and London Area Office)  
 The American Chestnut Foundation  
 The University of Kentucky  
 TreeCyclers  
 Coal Country Bee Works



**One acre track which had been ripped and is ready to be planted.**



**Participating ARRI partners at the Xinerdy Arbor Day event.**

**Jim Holliday from OSM guides the student planting.**



**Dr. Tammy Horn demonstrates how bee hives work.**







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**Planted American chestnuts in loosely compacted growth medium.**

## Tennessee Arbor Day Event

Tennessee's Arbor Day tree-planting event was held on April 26, 2013 at a surface mine operated by Triple-H Coal Company in Campbell County, Tennessee. The event was organized by ARRI core team members from OSM's Knoxville Field Office, the Coal Creek Watershed Foundation, and Triple-H Coal Company.



**Middle school students with a full bag of mixed oak species.**

Triple-H Coal Company was the recipient of Tennessee's 2011 ARRI – Excellence in Reforestation State Award for their utilization of all five steps of the Forestry Reclamation Approach. Approximately 73% of their 59 acre surface mine will be returned to a forested habitat. The remaining land will be planted in grasses to facilitate the elk restoration and management program in the Royal Blue Wildlife Management Area. Prior to the event, Triple-H prepared approximately 1.5 acres for tree planting according to methods outlined in the Forestry Reclamation Approach.

Members from the Coal Creek Watershed Foundation recruited 78 students from local middle schools (Lake City and Wynn-Habersham Middle Schools) to plant trees and learn about mining and reforestation. An additional 23 adults volunteered for the event, representing the Coal Creek Watershed Foundation, Geo/Environmental Associates, the Tennessee Mining Association, Triple-H Coal Company, the Office of Surface Mining, and additional school chaperones.

Approximately 820 tree seedlings were planted during the event, including 320 American chestnuts which were grown by students in their classroom, and 500 mixed oak species supplied by Triple-H Coal Company.

ARRI core team members used the event to educate the students about reforestation and the importance of being good environmental stewards. After the event, employees of Triple-H Coal Company and the site inspector from OSM spoke to students about the multiple uses of coal and how new mining practices can improve a previously-mined area.



## 2013 ARRI Conference in Flatwoods West Virginia

The 2013 ARRI Excellence in Reforestation Conference was held on August 6 and 7, 2013, in Flatwoods West Virginia. The conference was hosted by the West Virginia University, the West Virginia Division of Environmental Protection (WVDEP) and the Office of Surface Mining.

The first day was devoted to a field trip to observe implementation of the Forestry Reclamation Approach (FRA) at several mine sites. During the second day, presentations were given by experts in reforestation that highlighted reforestation efforts in the Appalachian Region and recent findings and practices on improving reforestation success.

### 2013 ARRI Field Trip Summary (Text and photographs by Dr. Jeff Skousen)



On August 6, the ARRI participants loaded into four 15-passenger vans and drove from Flatwoods, WV, south to the Brooks Run operation in Nicholas County. Our first stop was at the "End of the World" site where attendees were able to view reforested sites that were about 5 to 6 years old.



We also saw brown sandstone and topsoil being dumped on the surface of reclaimed backfills and spread with one pass of a bulldozer.



Cade Mason of Brooks Run showed us a variety of hardwood trees which were between 10-15 feet in height.



After lunch, we visited the Arch-Birch River operation and met Keith O'Dell. We visited a WVU forestry demonstration planting composed of various treatments including brown and gray sandstone, and bark mulch and hydroseeding.

Attendees were also able to view the fast growth of chestnuts on another site at Birch River. We also saw a Selenium bioreactor.





**Photo on Right:**  
Attendees at the conference included (L to R) Clint Nickels, Waterloo Coal; Tom Flippo, Tunnel Hill Partners; Robert Madej, Egret Environmental; Brian Jarvinen, New Forest Services; Eric Barto, Murray Energy; Robert Arnold, Buckingham Coal; Jessica Carver, ODNR; Jerame Schwinh, Murray Energy; John Kehn, ODNR; Joe Szabo, ODNR; and Wayne Conrad, ODNR.

## 2013 ARRI Conference Sessions

On August 7, the ARRI Core and Science Teams met separately at first and then combined to conduct a joint meeting. Various topics were discussed including future suggestions for Forest Reclamation Advisories, ways to increase Core Team involvement in ARRI, and ways to interface more efficiently with the Science Team.

After the Core and Science Team meetings concluded, ten speakers from academia, State and Federal regulatory authorities, Green Forests Work, the NRCS, and the Forest Service gave presentations. The topics were diverse and covered all aspects of the FRA.

Prior to the lunch break, OSM's Appalachian Region's Director, Tom Shope presented the 2012 ARRI Excellence in Reforestation Regional Award to Fola Coal for its outstanding commitment to reforestation in West Virginia. Prior to giving out the award, Mr. Shope gave a presentation honoring the State winners of ARRI's Excellence in Reforestation awards.

Planning for next year's conference in Maryland is already underway.

## BUCKINGHAM COAL HOSTS FEDERAL RECLAMATION APPROACH (FRA) WORKSHOP



Core team members of the Appalachian Region Reforestation Initiative (ARRI), John Kehn of DMRM and Mike Hiscar of OSM, presented a tree-planting workshop on April 2, 2013, at the Offices of Buckingham Coal. The ARRI is a broad-based group working to encourage planting of productive trees on reclaimed mined lands and abandoned mine lands.

The workshop was presented to encourage the use of the FRA in establishing trees on mine sites, and to educate attendees on techniques of proper tree planting.

A special thanks goes out to Buckingham for helping to encourage the use of the FRA and for hosting this workshop.





## ARRI Regional Excellence in Reforestation Award



**Tom Shope presenting the Regional Excellence Award to Fola personnel. Left to right: Eric McGlothlin, Superintendent Fola Operations; Mike Brown, Mine Planning Engineer; Fola Operations, Davis Bays, Compliance Engineer, Fola Operations and Tom Shope, Appalachian Regional Director, Office of Surface Mining.**

On August 7, 2013, OSM's Appalachian Regional Director Tom Shope presented the ARRI Regional Excellence in Reforestation Award to West Virginia's state award winner, Fola Coal Company LLC for its reforestation work on its surface mining operations in Clay and Nicholas Counties. The Regional award is selected from ARRI Excellence in Reforestation State award winners throughout the Appalachian Region.

In early 1999 Fola began work on the first area destined for commercial forestry as a postmining land use in West Virginia. Fola's first attempt at using the Forestry Reclamation Approach (FRA) was on its 900 acre Surface Mine #6 permit which has become a showcase for both commercial forestry and forestry as a post-mining land use.



**Aerial view of Surface Mine #6, one of Fola's first reforestation sites.**



**Surface Mine #6 ground level view.**



## ARRI Regional Excellence in Reforestation Award

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Since that first use of the FRA Fola has planted over 2,300,000 trees as part of its reclamation of 4,000 acres of surface mined land back to forestland. Fola has planted a mixture of native hardwood species including northern red oak, white oak, sycamore, sugar maple, white ash, black cherry, black locust and redbud as well as various pines species on its reclaimed sites.



**Aerial view of Surface Mine 4A .**



**Surface Mine 4A showing good growth and species diversity.**

Fola has employed the five steps of the FRA in achieving successful reforestation postmining land use. The company has stockpiled native topsoil and blended it with the best available material to create a growth medium conducive to tree growth. The growth material was end dumped on the permit and loosely graded to prevent compaction of the material. A light seeding mix of non-competitive and non-invasive vegetation was used to ensure limited that the newly planted tree seedlings would not have to compete with the ground cover for moisture, sunlight and nutrients. A diverse mixture of both early and late successional species and wildlife friendly species was then planted. A professional tree planter was employed to ensure the tree seedlings were handled properly prior to planting and planted correctly.

The Regional award was given to Fola for its efforts in using the FRA on five of its surface mining permits. Fola's use of the FRA in its reclamation has provided a jump start into the forests of tomorrow on each of these permits.

**Ground View of Bullpen permit showing species diversity.**







## ARRI in Ohio

Oxford Mining has just completed a Forestry Reclamation Approach (FRA) tree planting project on their Permit #D- 2334, also known as Halls Knob, in Guernsey County. The landowner requested the planting of trees on the reclaimed mine site using the FRA. Oxford prepared the site by using a combination of ripping, light grading and lightly seeding the site. The picture below shows the site after ripping with a graded “berm”. The area was lightly seeded with slow growing non-competitive vegetation to reduce competition for the trees.



Over 49,000 trees were planted on 80 acres of reclaimed mine land. The picture below shows the trees becoming established after just 4 months after planting.



The FRA technique results in a non-compacted surface that will increase tree growth and survival assist in water penetration and reduce runoff.

The goals of ARRI is to plant more high value hardwoods, on reclaimed mine lands in Appalachia. Increase the survival and growth and expedite the establishment of forest habitat through natural succession.





## OSM REFORESTATION AWARD TO SCHUYLKILL HEADWATERS ASSOCIATION

From the left, Ben Owens, Chief, OSMRE's Pittsburgh Field Division; Richard Cardinale, Executive Staff Assistant to the Assistant Secretary; Joe Pizarchik, Director, OSMRE; Marcilynn Burke; Acting Assistant Secretary for Lands and Minerals; Sara Fitzsimmons, The American Chestnut Foundation. The group is instructed on the proper way to plant back cross American Chestnut seeds, at a prepared mine site in Schuylkill County, Pennsylvania. Fencing is erected to protect young trees from deer. These seeds are the most advanced blight resistant back cross.



A Pennsylvania Department of Environmental Protection (PADEP) and OSM/PFD partner received a prestigious award for its efforts to reforest surface coal mine sites in Schuylkill County using a tree-planting method endorsed by OSM for promoting tree growth and forest health, and for producing commercially viable timber.

The Schuylkill Headwaters Association (SHA) of Schuylkill County received the Appalachian Region Reforestation Initiative's 2012 State Award from John Stefanko, PADEP's Deputy Secretary for Active and Abandoned Mine Operations, on Earth Day, April 22, at PADEP's headquarters in Harrisburg.

The mission of SHA is to promote the environmental integrity of the Schuylkill River, its tributaries, and the watershed that lies within the boundaries of Schuylkill County. SHA works to protect and enhance the headwaters of the Schuylkill River. Their efforts include educating the residents about the Schuylkill River and implementing projects to reduce and control pollution from abandoned mine drainage (AMD).

The Association was recognized for two reforestation projects in Blythe and Tremont Townships, Schuylkill County. At these sites, the organization and its partnering volunteers used the Forest Reclamation Approach (FRA) to plant more than 28 acres of trees at the Silver Creek AMD Treatment System in New Philadelphia and the Michael Coal Co. Tremont surface mine operation. The then Acting Assistant Secretary of Interior Marcilynn Burke was greatly impressed by the organization and its volunteers when she joined them in planting a site last year.

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## OSM REFORESTATION AWARD TO SCHUYKILL HEADWATERS ASSOCIATION

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The FRA technique, based on the forestry research and scientific studies of several leading universities, has been shown to dramatically improve tree survival and growth on reclaimed sites. Lands reforested using the FRA have also been shown to reduce runoff to nearby water sources. The Appalachian Regional Reforestation Initiative is a coalition of groups, including citizens, the coal industry, and government dedicated to restoring forests on coal mined lands in the Eastern United States.

The Silver Creek AMD treatment system was constructed by the SHA to remediate pollutional impacts from an underground mine discharge into the Schuylkill River. The trees were planted on the surrounding lands. The Michael Coal Company permit was initially reclaimed by the coal company to grass land in accordance with the permit. However, at the urging of the SHA, the company reentered the site and prepared it, using the FRA, for tree planting. The trees were donated and planted using volunteers. Part of the Michael permit was planted with blight-resistant American Chestnut trees under the supervision of The American Chestnut Foundation.

The Schuylkill Headwaters Association was assisted by the American Chestnut Foundation, Office of Surface Mining, Pennsylvania Bureau of Deep Mine Safety, Pennsylvania Department of Conservation and Natural Resources, Schuylkill Conservation District, Tremont borough and township, Pine Grove Area School District, Northern Swatara Watershed Association, Port Carbon Cub Scouts, FEMA, and Schuylkill Municipality Authority.

## PITTSBURGH BOTANIC GARDEN

Many use a green thumb to grow flowers, but a legion of volunteers in Pittsburgh is using theirs to turn an abandoned coal mine site into a botanical garden. In the early 1900s, the site was underground and surfaced mined for the Pittsburgh coal seam. The legacy of that mining is mine drainage and unreclaimed mining benches. The volunteers are restoring a creek killed by acid mine drainage (AMD) to a habitable environment for fish, and are working to replace invasive weeds with a healthy forest - a perfect environment to aid the rescue of a nearly extinct American



The Pittsburgh Botanical Garden (PBG) is doing all these things as it works with partners, including Pennsylvania DEP, the Pittsburgh Field Division, and the Appalachian Region Reforestation Initiative to turn 460 acres into one of the country's largest botanical gardens. The PBG is on land leased from Allegheny County and is located in Settlers Cabin County Park. The park is just a few miles from downtown Pittsburgh, and is easily accessible to the metropolitan's 2.6 million population. When completed, the garden will include an arboretum, classical gardens, educational gardens, production facilities, and two visitor's centers.

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## PITTSBURGH BOTANIC GARDEN

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Although much of the surface has naturally reforested over the decades, the resulting trees and shrubs are not as diverse as the Botanic Garden desires, and the site is crowded with invasive weed and shrub species. The PBG is working to plant additional tree species representing the woodlands of the world, and to remove invasive species in favor of native shrubs, ferns, and other flowers and plants.

On April 18, 2013, Regional Director Tom Shope and members of his staff toured the PBG to look at two sites of special interest to the Office of Surface Mining.

The Botanic Garden has constructed a passive limestone down-flow system to treat about 10 gallons per minute of mine drainage from the long abandoned , which is mostly contained within the Garden boundaries. Most of the \$320,052 in funding came from Pennsylvania's Growing Greener Program (\$302,802). OSM contributed \$75,000.00 from the Watershed Cooperative Agreement Program. The Foundation for Pennsylvania's Watersheds contributed \$30,000. When this portion of the Woodlands section of the PBG is opened this fall, an interpretative trail will pass through the AMD treatment area, providing education opportunities to tens of thousands of visitors every year.

On the other side of the PBG is a remining permit. This 40-acre permit is day-lighting the Pittsburgh coal seam to recover coal left behind by the underground mine. In addition to providing revenue to the PBG, the hope is that the day-lighting will alleviate several mine discharges currently flowing out of the underground mine and resolve serious surface subsidence issues which create a public safety hazard. Because of its interest in developing forest lands, the PBG is working with the mine operator to have the reclaimed mine site re-vegetated using the principles of the Forestry Reclamation Approach (FRA), under the Appalachian Regional Reforestation Initiative (ARRI). Blight-resistant American Chestnut trees and other Appalachian hardwood tree species will be planted in non-compacted soils, using the FRA technique, which promotes tree survival, rapid growth, and quick establishment of a naturally sustaining forest ecosystem. The PBG is planning interpretative trails throughout the reclaimed mine site. OSM will closely follow the development of the PBG over the coming years and its incorporation of two programs which OSM sponsors.







## Tennessee Presents the ARRI Excellence in Reforestation State Award

Each year, ARRI core team members from Tennessee select a coal company to be awarded the ARRI Excellence in Reforestation – Tennessee State Award. Selection criteria state that the company should best exemplify the use of the Forestry Reclamation Approach (FRA) in conducting reclamation operations. However, for the first time in Tennessee, the award was not given to a coal company. This year, the award was presented to a non-profit organization which the Knoxville Field Office feels best represents the spirit of the FRA. This organization has fully embraced the efforts of ARRI, especially through the implementation of the FRA on mines in the coal producing

communities around Coal Creek. With the benefits that reforestation has shown to provide on a mined watershed, the organization has found that promotion of the FRA fits closely with their objective to “improve the quality of life in the Coal Creek Watershed.” On November 4, 2013, ARRI Core Team members from Tennessee presented ARRI’s “Excellence in Reforestation - Tennessee State Award” to the Coal Creek Watershed Foundation (CCWF) at the annual Tennessee Mining Conference in Gatlinburg, TN. The award was received by Barry Thacker and Carol Moore of CCWF.



**CCWF is awarded the ARRI Excellence in Reforestation – TN State Award. Pictured from left to right is Chris Miller (ARRI Core Team member), Carol Moore (CCWF), Barry Thacker (CCWF), Will DeBord (ARRI Core Team member), and Vic Davis (Former ARRI Core Team member).**

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**Barry Thacker (CCWF) educates students about mining and reforestation.**



**Students plant American chestnuts on a mine site in TN.**



## Tennessee Presents the ARRI Excellence in Reforestation State Award

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For the past six years, OSM's Knoxville Field Office has partnered with CCWF in organizing Tennessee's annual Arbor Day Events. Through these events, OSM and CCWF have had the opportunity to educate students and other volunteers about mining history, environmental service in the community, and the benefits of reforestation on mined lands. With seeds provided by CCWF, students are able to gain hands-on experience in mined land reforestation as they grow American chestnuts into seedlings which they plant on Arbor Day. In addition to the chestnuts, several hundred mixed hardwood tree species are provided by CCWF, and planted annually. As a result of the six years CCWF has collaborated with OSM on Arbor Day events, there are now 4,500 trees planted by over 300 students from seven elementary and middle schools in Tennessee's coalfields. Many of these students are sons, daughters, relatives, or descendants of coal miners in their community. Their experience drives home the importance of balancing the need for coal production with protection of the environment. During one Arbor Day event, a student remarked he was "glad he could plant trees on a mine his grandfather worked in."

The Knoxville Field Office is proud to have presented CCWF with the "ARRI Excellence in Reforestation – Tennessee State Award", and looks forward to continuing the collaboration with them in organizing Tennessee's Arbor Day events.



**Students preparing a hole for their next seedling.**







## Reforestation of the Summit Bechtel Reserve, a Partnership to Benefit the Boy Scouts of America

The Boy Scouts of America (BSA) are building a permanent Jamboree site at the Summit Bechtel Reserve near Glen Jean, West Virginia. This 15,000 acre tract was formally owned by the New River Coal Company. This land has been mined and logged multiple times over the past 100 years. The West Virginia Abandoned Mine Lands Program recently reclaimed about 1,500 acres in preparation for the construction of the Summit Bechtel Reserve. This reclamation included the elimination of approximately 26 miles of dangerous high walls. Refuse piles and deep mine openings were also reclaimed. Bat gates were installed on many of the underground openings so the abandoned mines could still serve as hibernacula. The endangered Indiana Bat is one of several species of concern in this area. Three large lakes have been constructed along with bridges, and recreational facilities such as zip lines, rock climbing walls and hiking trails.

ARRI has initiated tree planting on the reclaimed high walls, construction sites, and around the camping areas. In 2013 63,000 native seedlings, mostly hardwoods, were planted on about 80 acres. Most of these seedlings were purchased from the West Virginia Division of Forestry at discounted prices. Green Forests Work (GFW) donated another 6,000 seedlings. These seedlings came from a donation from Arborgen. Professional tree planters were used on this first phase of reforestation. ARRI, GFW and the West Virginia Division of Forestry submitted a proposal to the U.S Forest Service's Appalachian Forest Renewal Initiative (AFRI) for the next phase of reforestation on this site. This proposal includes 50 acres of mine land reforestation, 50 acres of Timber Stand Improvement (TSI), and interpretive hiking trails, an observation deck, and signage. The TSI work will occur in adjacent woodlands and will create habitat for species of concern such as golden winged warblers. Again, successful partnerships will allow this work to continue. The Summit Bechtel Reserve is located adjacent to the New River Gorge in Fayette County, WV.





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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 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 Tech**

**Dr. Christopher Barton, University of Kentucky**

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