



ARRI Newsletter

UPDATE ON FLIGHT 93 REFORESTATION PROJECT

by: Tiffany Heim, ARRI's AmeriCorp Member

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Volunteers at Flight 93 tree planting event spring of 2015.

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) has built a memorial at the crash site. Currently the NPS is constructing a visitor center and learning center in addition to the memorial 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. They have requested assistance from the Appalachian Regional Reforestation Initiative (ARRI) to direct the reforestation effort and Scott Eggerud is taking the lead on the project.

Phase I of the reforestation effort at Flight 93 National Memorial consisted of 20 acres. This area was prepared for planting in 2011 and planted in the spring of 2012. Phase II consisted of 23 acres was prepared in 2012 and planted in the spring of 2013. Phase III consisted of 30 acres and was prepared in 2013.



The site has been ripped and prepared for tree planting using the ARRI FRA approach.

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The final trees to be planted this year.

Flight 93 Project

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Tiffany Heim and volunteers planting trees at the Flight 93 site.

Phase III consisted of 30 acres was prepared in 2013 and planted in the spring of 2014. Phases I, II, III consisted of 73 acres that were planted adjacent to the memorial. Phase IV is approximately 32 acres and is located north of the memorial, just south of the Lincoln Highway (U.S. 30). This area was planted on April 17th and 18th 2015. Four hundred volunteers helped in the reforestation efforts and memorialized the lives that were lost on September 11th, 2001. Additional phases (acreage) are anticipated well into the future with about 200-250 acres remaining to be reforested.

Site preparation consists of deep ripping with large bulldozers. This mitigates the compaction caused during reclamation of the mining activities. Trees are planted on an 8 foot by 8 foot spacing, in the intersections of the rips. Thus far over 70,000 seedlings have been planted at the Flight 93 National Memorial. 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. In addition The American Chestnut Foundation has donated 3,000 blight resistant American chestnuts and the Forest Service has donated over 150 Dutch Elm Disease resistant American elms. To date over 1,900 volunteers have planted all of the trees at this site. Most of the seedlings have been donated by the Pennsylvania Bureau of Forestry. Funding for this project comes from the National Park Service and the National Park Foundation. The Office of Surface Mining Reclamation and Enforcement provides technical assistance on the project through ARRI. Over 50 ARRI partners have been involved with the restoration project thus far including Green Forests Work (GFW). A DOI grant was secured in 2015 to encourage youth involvement. Through this grant Indiana University of Pennsylvania (IUP) will monitor all four phases of the planting for growth and survival. VISTAs (Volunteers In Service To America) working through the Appalachian Coal Country Team, and students from Penn State Altoona and Penn State Dubois also assisted with this year's planting through this grant.



Pennsylvania Department of Environmental Protection Honors a Clarion County Abandoned Mine Reclamation Project

by: Chris Yeakle, PADEP

The Pennsylvania ARRI Excellence in Reforestation Award for 2014 was presented on April 15, 2015 to the PA Department of Environmental Protection (DEP), Bureau of Abandoned Mine Reclamation and the contractor Morgan's Excavating LLC.

The project eliminated 1,300 linear feet of dangerously steep waste coal piles, ranging from 25 to 45 feet high. The reclamation will provide cover and habitat for the local wildlife and provide enjoyment for the local sportsman of the area for many generations.

"The work done at this site has not only made it safer, but created a new area of recreation for area residents," DEP Deputy Secretary for Active and Abandoned Mine Operations John Stefanko said. "Our staff, the contractor, and the local community should be commended for working together to complete this important project."



Deputy Secretary John Stefanko present awards to the Bureau of Abandon Mine Reclamation Staff (From left, Carol Varano, John Stefanko, Kevin Giles, Ron Lindemuth, David Fromell, Scott Poborsky and Bill Dadamo)

The cut material was dumped or pushed in the fill areas into "hummocky" interlocking non-compacted piles approximately four feet high. The contractor placed material so that adjacent piles interlocked and were staggered

down slope to prevent concentrated storm water runoff pathways. The FRA finished grade surface (in cut areas) was created by ripping long narrow trenches or furrows at 45 degree angles to the contour and again at six foot intervals parallel to the contour into the final cut surface finished grade areas.



Deputy Secretary John Stefanko present awards to Morgan's Excavating LLC. (From left, John Stefanko, Ralph Morgan, Charlesetta Morgan, Alicia Morgan, Ralph Morgan Jr.)

The total project covered 17.4 acres which were planted with 9,200 trees. Native tree species were selected to promote natural forest succession. The tree species included: northern red oak, white oak, red pine, eastern white pine (Virginia white pine), gray (sweet) birch, quaking aspen, red maple, tulip poplar, black cherry and sugar maple. Earthen berms were also installed and windrow wildlife habitats were created. Portions of the site were revegetated with grasses and legumes.

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DEP Honors Clarion County Mine Reclamation Project

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Steep Embankment & Water Impoundment



Steep slope prior to reclamation.



Hummocky Piles
(One year's tree growth - May 2014)



On Saturday, May 9, 2015, 36 volunteers, including staff from the Office of Surface Mining Reclamation and Enforcement's Appalachian Regional Office, gathered at the site of the Pittsburgh Botanic Garden to plant trees on a former coal mine that will be part of the Garden. The site is being reclaimed with some of the proceeds from the sale of the coal going towards expanding the Garden's grounds. Approximately 1800 trees consisting of mixed hardwoods and conifers were planted. The site was well prepared for tree

Planting at the Pittsburgh Botanic Garden

by: Mike Bower, OSMRE



Volunteers plant trees on a site well prepared using the Forestry Reclamation Approach



planting using the Forestry Reclamation Approach.

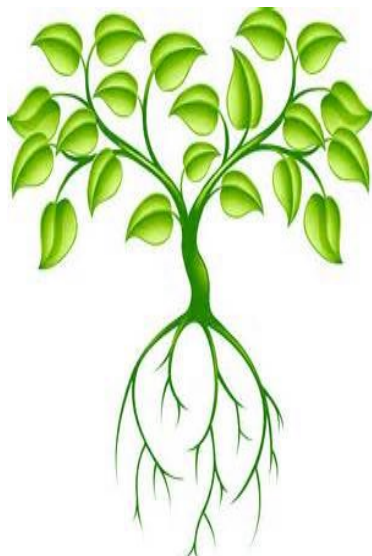
The Pittsburgh Botanic Garden located in Settlers Cabin Park, just west of Pittsburgh, will one day be a world-class botanic garden, including 18 distinct gardens, five diverse woodland experiences, a visitor's center, an amphitheater for outdoor concerts and performances, a celebration center to accommodate large outdoor or indoor weddings and corporate events, and a center for botanic research. The first 60 acres of the Garden, the Woodlands, opened on August 1, 2014, with Secretary of the Interior Sally Jewell and a host of other dignitaries in attendance. The tree planting that took place on May 9th will be one of many that the Garden has planned in the coming years to realize its vision. More information about the Garden can be found at its website:

<http://pittsburghbotanicgarden.org/>.

Virginia pine was one of many species planted on the site



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ASMR/ARRI Hosts a Successful 2015 Joint Conference in Lexington, Kentucky

by: Paul Rothman, Kentucky

The Joint 2015 American Society of Mining and Reclamation (ASMR) and the Appalachian Regional Reforestation Initiative (ARRI) Joint Annual Conference was held June 7 - 11 at the Clarion Hotel in Lexington, Kentucky. Other than 3 days of well attended presentations and technical sessions, the meeting also showcased a number of Lexington's well known venues like the Kentucky State Horse Park, the Hunt-Morgan House, the Henry Clay Estates, and the Shaker Village of Pleasant Hill, KY.

Registration began on Sunday (June 7th) and ASMR hosted a workshop that afternoon that featured OSM's Technical Innovation and Professional Services (TIPS). TIPS is developing and deploying training for Mobile GIS and GPS on several different platforms for use in mining and reclamation. This includes ESRI ArcPAD and Trimble TerraSync on various Windows operating systems and a whole suite of GIS apps for Apple IOS and Android devices. The workshop provided an overview and demonstration of the existing and emerging mobile applications and show how they can be of use in mining and reclamation related fieldwork.

The Plenary Session began on Monday morning (June 8th) and included prominent speakers like Dr. Len Peters, Secretary of the Kentucky Energy and Environment Cabinet, and Joe Pizarchik Director of the federal Office of Surface Mining Reclamation and Enforcement. The 2015 ARRI Awards Luncheon was held on this day as well, and the afternoon was devoted to a number of concurrent technical sessions that covered a broad spectrum of research that included everything from soils and water management to the five steps of the Forestry Reclamation Approach (FRA).



UK Starfire reforestation cell with 18 year old white oaks

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ASMR/ARRI Joint Conference in Lexington, Kentucky

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Tuesday (June 9th) was devoted to an all-day forestry tour of the PBV Wildlife Management Area and the Little Elk Mine, and was attended by approximately 100 of the conference participants. While on the PVB Wildlife Management Area the tour participants got to see a number of ongoing practices that included: invasive species removal; American chestnut plantings; a climate change adaptation study; and, a native warm-season grass experiment. Later in the day Pine Branch Mining hosted a live FRA grading demonstration on the Little Elk Mine before the participants were given the opportunity to walk through the University of Kentucky's 18-year old reforestation research areas.

Wednesday (June 10th) was a continuation of technical sessions and included research in the areas of Forestry; federal and energy issues and a continuation of water management concerns. The afternoon sessions also included a Bat Symposium, and a number of presentations by the U.S. Fish and Wildlife Service on topics such as White Nose Syndrome, an update on the bat survey guidelines, and the listing of the Northern Long Eared Bat as a threatened and endangered species.

The conference ended on Thursday (June 11th) after another full day of concurrent technical sessions. In total there were more than 100 concurrent technical sessions presented by speakers from all over the United States, as well as China and Australia. The conference had in excess of 200 participants and was very successful due to the hard work of the ASMR / ARRI conference planning committee, and Pine Branch Mining.



PVB wildlife management area

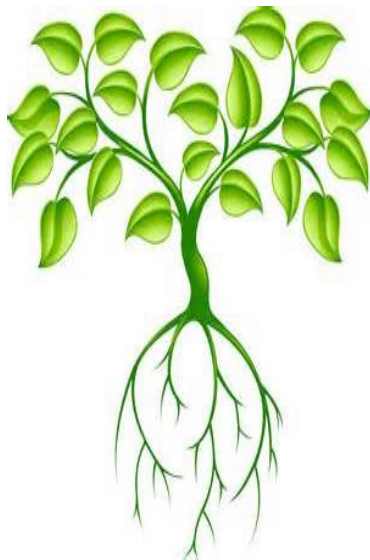


Pine Branch Mining live FRA demonstration





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Looking at GFW and ARRI's Legacy Mine Work over the Past 7 Years

by: Dr. Patrick Angel, OSMRE

From 2009 to 2015, GFW and ARRI partnered with state and federal agencies, watershed groups, coal operators, conservation groups, environmental organizations, faith-based groups, and numerous universities, colleges, and high schools to coordinate 170 tree planting projects/events throughout Appalachia. These events involved over 550 partner organizations and 11,058 volunteers and resulted in the planting of over 1.5 million trees on nearly 2,500 acres of previously reclaimed mine sites where reforestation was not attempted, or where the results were undesirable. The amount of time invested by volunteers is estimated to be approximately 77,902 volunteer hours. Among the volunteers, a total of 6,096 were 24 years old or under, supporting the Secretary of the United States Department of Interior's Engaging the Next Generation Youth Initiative and the spirit of volunteerism across the United States. These events not only provide community service opportunities, but also help to raise awareness of a serious environmental issue and to empower young Americans to take action toward the restoration and beautification of mine-scarred lands. The cultural barriers that have existed for decades for planting trees on surface mines are gradually being broken down as we engage thousands of young Americans in the mitigation of site conditions that impedes natural succession and reforestation on legacy mines. As a result, the public is embracing forestry as the post-mining land use of choice as conventional grassland reclamation methodologies are gradually being replaced by the Forestry Reclamation Approach. GFW's and ARRI's role in these endeavors is to facilitate communication, provide technical assistance and supplies, and to match funding sources with suitable mined land and volunteer groups. Working with ARRI Core and Science Team members, GFW foresters coordinated site selection and evaluation, herbicide treatments, ripping activities, species selection, tree planting, and follow-up surveys.

ARRI's and GFW's 2015 tree planting Season has been a Huge Success

by: Tiffany Heim, ARRI's AmeriCorp Member

The 2015 tree planting season on legacy mines has been a resounding success for ARRI and GFW! Over 1,500 ARRI/GFW volunteers and professional tree planters planted nearly 325,000 seedlings on over 525 acres. A typical example of a GFW volunteer tree planting project on a legacy mine site is on the University of Kentucky's Robinson Forest in Breathitt County, Kentucky where alternate spring break college students, boy scouts, members of conservation groups, and the general public contributed to the planting of about 35 acres of mined land. Made possible by a grant from the National Fish and Wildlife Foundation (NFWF) and the USDA Forest Service-State and Private Forestry (USFS) the Robinson Forest project provided forest restoration on an old, degraded surface mine site near Rowdy, Kentucky. The NFWF and USFS partnership funded similar reforestation projects on mine land in five other Appalachian coal states through a program called the Appalachian Forest Renewal Initiative. Often braving mud and cold rain, students from the following schools planted trees on the project: Appalachian State University, Berea College, Drew University, Elon University, Emory University, Georgetown University, Mitchell College, University of Kentucky, University of North Carolina-Chapel Hill, and Warren Wilson College. The students were joined by members of the Cumberland Chapter of the Sierra Club and seven different Boy Scout Troops from across Kentucky. Over a period of two weeks in March 2015, about 140 volunteers contributed to the planting of over 23,000 trees.



Tennessee Arbor Day Event

by: Chris Miller, OSMRE

Tennessee's held its annual Arbor Day event on April 21, 2015 at DRC Coal, LLC's White Oak Mine in Campbell County, Tennessee. The event was organized by ARRI core team members from OSMRE's Knoxville Field Office, the Coal Creek Watershed Foundation (CCWF), and DRC Coal, LLC. The White Oak mine experienced a wildfire in 2013 which burned a hillside and subsequently torched two acres of seedlings planted that year. When approached by OSM, DRC Coal happily agreed to host the event and saw it as an opportunity to re-plant the affected area.

Over 80 students from the 5th to 8th grade at Clairfield and White Oak schools attended this year's event. These schools use the Arbor Day event as an educational tool and chance for the students to learn about the coal industry and environmental protection in their community. White Oak mine is located on land that was historically used extensively by the mining and logging industries, leaving barren land, open pits, and highwalls. Students learned how re-mining and use of the FRA can reclaim barren lands and turn them into productive forests. ARRI core team members taught the students and volunteers about how proper tree planting techniques influence seedling survival. However, many of the students had attended the previous year's Arbor Day event. These children were quick to help new students learn the techniques they learned in the previous year. This cooperation among the students along with the 12 additional adult volunteers made it possible for volunteers to plant several American chestnuts and 800 other mixed hardwood trees on 1.5 acres in a few short hours.



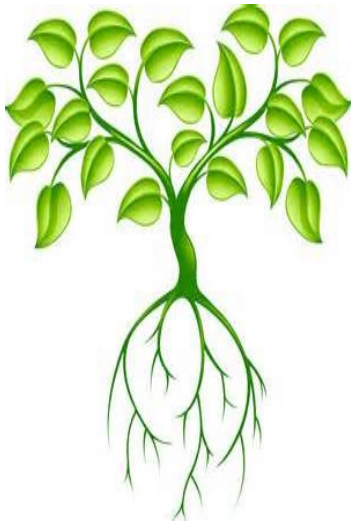
Students plant an American chestnut on a site ripped according to the FRA



OSMRE Geographer Jonathan Middleton and AmeriCorps GIS intern Logan Carpenter show students proper tree planting techniques.



ARRI Core Team member Chris Miller educates students about re-mining and the FRA.



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DRC Coal, LLC wins the Regional ARRI Excellence in Reforestation Award

by: Chris Miller, OSMRE

At right: Dave Hartos (left, Deputy Regional Director, OSMRE) presents Dean Chambers (middle, Reclamation Supervisor, DRC Coal, LLC) and Phil Boggs (right, engineering consultant, Mark V Mining and Engineering, Inc.) the Regional ARRI – Excellence in Reforestation Award.



The ARRI Excellence in Reforestation Awards are presented annually to honor active and abandoned coal mine reclamation operations from each state in the Appalachian Region that best exemplifies the use of the Forestry Reclamation Approach (FRA). Each year, states nominate one of their award winning projects for consideration of the Regional Award. This year, representatives from DRC Coal, LLC - White Oak Surface Mine accepted the award at the 2015 ASMR/ARRI joint conference in Lexington, Kentucky. White Oak Surface Mine is a 649 acre surface and underground mining operation that was historically used extensively by the mining and logging industries. These industries left degraded land that had orphan highwalls, numerous open pits, non-native grasses, and barren soil. Through re-mining, this permit is reclaiming abandoned land that was unusable to citizens and landowners in the White Oak community.

The FRA was used extensively throughout this operation and DRC Coal, LLC has repeatedly gone above and beyond what the permit calls for in order to help promote and implement the FRA. Flat areas were reclaimed with the end dump method and ripping method. Sloped areas were reclaimed with the one-pass method. DRC Coal worked with the inspector to ensure compliance with FRA in each year of reclamation. As a result of their efforts, the land use of the site has been improved, native species are invading, and wildlife habitat has been established. The Knoxville Field Office would like to thank DRC Coal, LLC for their continued support and promotion of the FRA.



At left: Phil Boggs thanks the awards committee on behalf of DRC Coal, LLC.

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Regional ARRI Excellence in Reforestation Award

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Above: Pre-SMCRA mining in the White Oak area.



Above: The reclaimed site in 2013 (courtesy Google Earth.)



Above: One-pass grading and tree-compatible roundcover is evident on this FRA prepared slope.



Above: A northern red oak growing well on an FRA prepared slope.



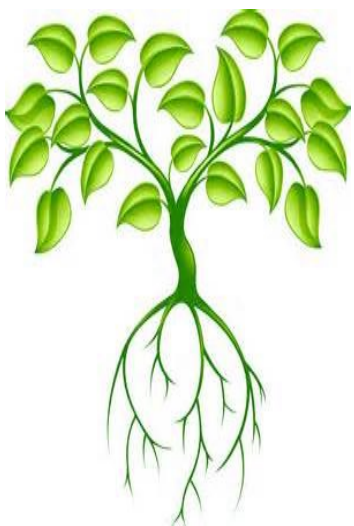
Above: A small reclamation dozer striking off the tops of end-dumps.



Above: Native hardwood seedlings emerging from the end-dumps with naturally succeeding native vegetation present.



At right: A northern red oak on DRC Coal's White Oak Surface Mine.



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Restoring Appalachian Soils to Restore the Forests

Mary Beth Adams, Northern Research Station,
Forest Service Research & Development
and ARRI Science Team member



Forestry students from Glenville State College (WV) and other volunteers are shown here planting DED-tolerant American elm and blight resistant American chest-nut trees in tree tubes on reclaimed mined land in WV. Photo: Mary Beth Adams

When you think of Appalachia, you might think of its forest-covered hills, its mountain people and music, and perhaps coal. Coal has played an important role in the development of Appalachian culture, but mining for coal has also created a need for restoration in extensive areas of the nine states that makes up the Appalachian region. The forests of Appalachia are considered to be among the most diverse temperate deciduous forests in the world, with as many as 30 different tree species growing together.

Shrubby fields have replaced large swaths of the forests that once covered Appalachia, and they have proven to be resistant to change. These fields so stubbornly resist becoming forests that some refer to their condition as “arrested” ecological succession. The implications of this, for the loss of ecosystem services provided by the former forests and for wildlife, have concerned land managers for many years.

Coal mining and, ironically, efforts to restore the land after mining ended, have both played a part in this transformation. By one expert’s estimate, as much as a million acres—an area slightly smaller than the size of Delaware—of deciduous, temperate forest are devoid of the trees that once thrived on them.

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Restoring Appalachian Soils

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Forestry students from Glenville State College (WV) and other volunteers are shown here planting DED-tolerant American elm and blight resistant American chestnut trees in tree tubes on reclaimed mined land in WV. Photo: Mary Beth Adams

But now, forests are returning to these shrublands, thanks to decades of research by soil scientists and foresters, help from volunteers, and funding from state and federal governments and from private sources including coal operators. Coal mining companies are once again planting trees on the earth dug out from mines, also known as mine spoil. And soil that was already “reclaimed” once for trees—but ended up packed to the consistency of parking lots by heavy equipment—is being returned to productive forest land.

One of the problems, according to Dr. James Burger, Professor Emeritus with Virginia Tech, is that mining turned the soils upside down. The soil in which trees grew best was buried, leaving a completely different soil type on top when the land was flattened.

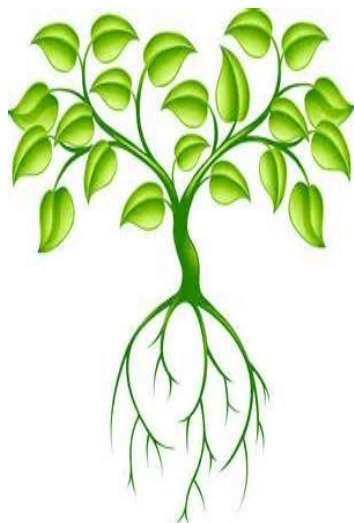
“The inverted soil profile can make a poor basis for reforestation,” says Dr. Mary Beth Adams, a research soil scientist with the USDA Forest Service, “and it fostered another problem, as well. Not only did trees grow poorly, but invasive species were also able to take root and ‘capture the landscape.’ As a result, we lost the productivity and diversity of the native forest.” The question then became how to bring those benefits back.

In 2004, the Office of Surface Mining Reclamation and Enforcement (OSMRE) within the Department of Interior created the Appalachian Regional Restoration Initiative (ARRI; <http://arri.osmre.gov>). Comprising the efforts of federal and state regulators as well as academic and government scientists, it seeks to reforest the mined lands of Appalachia. Chief among those efforts is a set of guidelines for promoting the growth of healthy forests, known as the Forestry Reclamation Approach. From the beginning, the U.S. Forest Service has been a partner in ARRI contributing scientific expertise, land for tree planting, and on the ground support.

The reclaimed mine land also may be a good match for the American chestnut, which used to grow widely in Appalachia until its population was devastated by fungal diseases. The soil and light characteristics suit the tree, and researchers hypothesize that the mine spoils may well be free of most pathogens, at least initially.

With seed funding from the Appalachian Regional Commission, an organization called Green Forest Works (GFW) seeks to re-establish healthy and productive forests on formerly mined lands in Appalachia. With the aid of over 9,000 volunteers, Green Forest Works has planted more than one million trees on nearly 2,000 acres of former mined land since 2009.

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Restoring Appalachian Soils

Along with other area organizations, Green Forest Works has obtained an \$8 million grant to enhance 12,500 acres of forest as habitat for the Cerulean Warbler, whose original habitat has been sharply reduced. Under the grant, Green Forest Works will also reforest 1,000 acres of reclaimed mine land with American chestnut.

ARRI has also been working with the coal industry, notes Dr. Patrick Angel, Forester and Soil Scientist with OSMRE. Since 2004, the industry has planted 95 million trees on 140,000 acres that have been returned to forest.

As these groups continue coming together to tackle the issue, they've now got one critical piece of knowledge in their pockets that they didn't before. Bringing back the region's forests and their wealth of aesthetic, environmental, and economic benefits means first restoring the soil.

"Healthy forests," Adams says, "require healthy soils."



Field Trip to Bent Mountain

by: Dr. Patrick Angel, OSMRE

The Council on Forest Engineering (COFE) is an international organization interested in matters relating to the field of forest engineering. This year COFE's annual conference was hosted by the Department of Forestry at the University of Kentucky. This meeting was held July 19-22 2015, and the theme for this meeting was "Engineering Solutions for Non-Industrial Private Forest Operations". Sixty forest engineers attended this conference. Discussions and topics included:

- Forest operations as a means to improve and restore forest health
- Biomass utilization for energy production
- Best management practices to reduce site disturbances and maintain stream water quality
- Transition to mechanized operations in hardwood forests
- Small scale forest operations for non-industrial private landowners

In addition to the topics listed, attendees participated in a field trip and tour of UK's research complex on Bent Mountain in Pike, Co Kentucky. This research complex demonstrates a healthy productive forest where the Forestry Reclamation Approach (FRA) is utilized. This site also exemplifies how well the blight resistant American chestnut grows on mined lands that implement the FRA. Many of the chestnut trees are bearing nuts and some have attained heights of 20 feet or more-a few are even overtopping the adjacent yellow poplars that were planted a full year prior to the chestnut plantings.

This tour was yet another attempt to introduce how the FRA can be applied and succeed in reforesting mined lands. Overall this meeting and tour was well received and a positive reforestation tech-transfer to forestry and engineering professionals.



Students Propel Maryland's Reclaimed Mine Project by Planting Trees During Frostburg Event

by: Mark Carney, MDBOM

FROSTBURG, MD (April 16, 2015) -- As the eager high school students bored into the rich, soft soil to plant another tree sapling Wednesday, the Maryland Department of Environment's reclaimed mine project, located up a steep grade from Sand Spring Run and near Frostburg State University's football fields, came closer to an end.

A total of 39 students from Mountain Ridge High School in Frostburg and Allegany County Career and Technical Center in Cumberland, along with volunteers from MDE's Mining Program and the federal Office of Surface Mining, combined to plant 1,700 trees on Wednesday at the four-acre site. Among the tree species planted were American chestnuts, white pines, black locust, black cherry, redbuds, willow oaks, spicebush and sycamores.

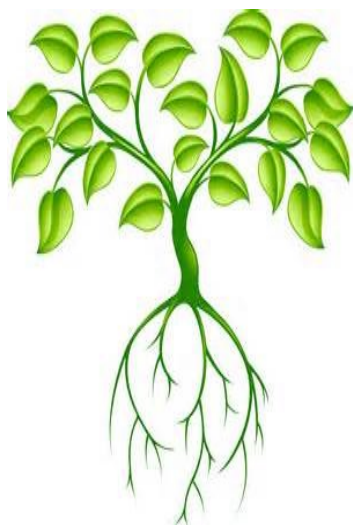


Students from Mountain Ridge High School planting trees on a abandoned mine land site at Frostburg, Maryland.

"This is a wonderful project to bring the land back to its natural state," said Allegany County teacher Carol Garner, admiring the work of her students as they meticulously spaced the trees eight feet apart. MDE's Mark Carney said the abandoned coal mine site was active into the 1960s and has cost about \$500,000 to remediate. Planting the trees, which kicked off a number of MDE Earth Day events around the state, is among the final steps in the project and will assist greatly in reducing sedimentation into Sand Spring Run, which is in the watershed of the Potomac River. The event was also held in recognition of Arbor Day.

The students received a great workout for nearly three hours and received gift tokens of appreciation for their efforts from MDE. They also listened to lectures about sustainability, including the history of the American chestnut and how it was once the dominant species of trees in the forest stretching from Maine to Alabama and used traditionally for a number of products, including furniture, cradles and coffins. "I would like to thank all the students and our volunteers for their hard work and getting so much of the tree planting done," Carney said. "They will be able to admire the work they did for many years after this restoration is completed."

The mission of MDE's Mining Program is to protect the public and the environment from the potential impacts of active mining and to promote the restoration and enhancement of active and abandoned mine land and water resources. The Mining Program's Abandoned Mine Lands Division performs reclamation of abandoned (pre-1977 mining law) coal mines, land and remediation of acid mine drainage from coal mines in Allegany and Garrett counties.



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Partners Plant 45,000 seedlings at the Boy Scouts of America's Summit Bechtel Reserve

by: Scott Eggerud, OSMRE



Volunteers plant American chestnuts at the Summit Bechtel Reserve.

Approximately 45,000 seedlings were planted across 80 acres in April of 2015 at the Boy Scouts of America's Summit Bechtel Reserve near Glen Jean, West Virginia. This was all made possible by a U.S. Forest Service grant administered by Green Forests Work (GFW). The Appalachian Forest Renewal Initiative (AFRI) grant will provide up to \$66,000.00 for tree planting, invasive species removal, and timber stand improvement work for species of concern in adjacent woodlands. This grant requires a one to one match from partner organizations.

The West Virginia Division of Forestry (WVDOF) working with GFW and ARRI (Appalachian Regional Reforestation Initiative) has put together a proposal for the mine land reforestation work and the timber stand improvement work. The WVDOF has donated the seedlings, part of the match, and will contribute in-kind work for the invasive species removal and the marking of the TSI work. A volunteer tree planting event was held on April 25, 2015. Approximately 30 local volunteers planted 1,500 seedlings including 400 Restoration 1.0 American Chestnuts provided by The American Chestnut Foundation. Most of the seedlings were planted on a highly visible point above a future recreation area, see attached photo. Professional tree planters planted the remainder of this phase.

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Boy Scouts of America

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This was the second large scale tree planting at the Summit Bechtel Reserve. 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. Additional acreage is available at this site for future mine land reforestation.



Green Forest Work and American Chestnut Foundation.



400 American chestnuts for the Boy Scout's of America's Summit Bechtel Reserve.



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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.

ARRI 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:

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Mike Bower, OSM Appalachian Region

Science Team Leaders:

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Dr. Christopher Barton, University of Kentucky

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