

**Presidential Migratory Bird Federal Stewardship Award for 2011  
Nomination Application for OSM's Appalachian Regional Reforestation Initiative**

**1. Applicant (must be a Federal Agency. If more than one, list the lead agency):**

The Office of Surface Mining Reclamation and Enforcement (OSM), USDI.

**2. Co-applicant(s) (if any; can be Federal or non-Federal entity):**

Twenty-two co-applicants are listed: Indiana University of Pennsylvania; Kentucky Department for Natural Resources; Maryland Department of Environment; Ohio Department of Natural Resources; Ohio University; Ohio State University; Pennsylvania Department of Environmental Protection; Pennsylvania State University; Purdue University; Southern Illinois University; The American Chestnut Foundation; United States Forest Service; United States Geological Survey; University of Kentucky; University of Maryland; University of Tennessee; Virginia Department of Mines, Minerals, and Energy; Virginia Polytechnic Institute; West Virginia Department of Environmental Protection; West Virginia University; West Virginia State University; and Wilkes University.

**3. Action (Describe how the action contributes to migratory bird conservation):**

The action described herein is the creation and implementation of the [Appalachian Regional Reforestation Initiative](#) (ARRI) by OSM. The focus of ARRI is restoring forests where deforestation by surface coal mining has occurred, which coincides largely within the Appalachian breeding range of neo-tropical migratory song birds, notably the Cerulean warbler. The positive results of ARRI's actions in reducing existing and potential adverse impacts to migratory birds and their habitats have been nationally and internationally recognized. Virtually all of the land being surface mined for coal in Appalachia was woodland or forest at the time it was mined. However, prior to ARRI, because of the past regulatory emphasis on achieving soil stability and controlling sedimentation, reclamation of these coal mine sites resulted in dense grasslands with few or no trees. These mine sites can end up as abandoned grasslands with little potential for returning to forest—at least without additional site treatments such as “ripping” the soil—because of excessive compaction of the soil surface and competition from the dense ground cover. The resultant forest fragmentation has environmental impacts, reduces carbon sequestration, limits the land's economic value, and reduces habitat for neo-tropical migratory songbirds like the Cerulean warbler that depend on intact interior forests.

Research has demonstrated that planting tree seedlings in loose or lightly-graded material, including rough and rocky spoil, with little or no herbaceous groundcover, produces tree survival and growth rates that exceed those on non-mined lands. This research has led to a 5-step process that describes site preparation and tree planting techniques to maximize tree growth and survival known as the [Forestry Reclamation Approach](#) (FRA). ARRI's goals are to plant more high-value hardwood trees on reclaimed coal mines; increase the survival and growth rates of the planted trees; and expedite the establishment of forest habitat through natural succession.

To begin ARRI, a Core Team was established with representatives from OSM and the regulatory authorities of the seven coal states in the Appalachian region. The Core Team is charged with the responsibility of promoting the initiative and developing ways to provide on-the-ground success. The ARRI Science Team was created to improve the science behind the FRA. The ARRI Science Team is comprised of 33 scientists representing 17 universities and institutions across the country (see list of co-applicants above). ARRI is working to change the preference of the surface mining industry to forestry (using FRA) over grasslands as the post-mining land use. To accomplish this, ARRI has established a reforestation awards program; conducts FRA workshops and an annual reforestation

conference; developed a website and training modules; and distributes brochures, newsletters and other materials promoting the initiative. Under ARRI's leadership, the surface mining industry has planted about 70 million trees on about 103,000 acres of mined land that might have otherwise been reclaimed to grasslands and would have contributed to more forest fragmentation in the mixed-mesophytic forest of Appalachia. In order to draw attention to the potentially cost-effective and beneficial post-mining land use of reforestation by the surface mining industry in Appalachia, ARRI's outreach includes tree-planting events and Arbor/Earth Day celebrations with volunteers reforesting abandoned mine sites. These tree-planting events and celebrations include Volunteers in Service to America (VISTAs) working with OSM, industry representatives, landowners, community groups, conservation/environmental groups, faith-based organizations, college students, school children, etc.

**4. When was the action initiated? (Initiation date must be 2001 or later)**

ARRI was created in 2004.

**5. Is the action local, regional, national or international in scale? Please explain.**

ARRI is local, regional, national, and international in scale. On the local level, ARRI works on the ground in the Appalachian coal fields by reaching out to all possible stakeholders and potential partners. In cooperation with conservation groups and other agencies, ARRI developed and is actively distributing a brochure titled, '[Reforestation for Appalachia's Wildlife](#)' that targets people on the local level. The brochure explains why reforestation is important, how to reforest mine sites with the FRA methodology, and identifies wildlife species that are dependent on mature forests.

On the regional and national scale, ARRI is fully engaged with the 7 Appalachian coal field states (see list of co-applicants above) and has a growing influence on mine sites in the mid- and far-western coal states. Since the FRA is based on basic forestry and soil science concepts, it is applicable on any drastically-disturbed land areas where reforestation is desired. In 2007, ARRI received the Department of the Interior's highest honors, the Cooperative Conservation Award, which recognizes the achievements of collaborative conservation efforts among Federal, state, and local governments, private for-profit and non-profit institutions, other non-government entities, and individuals.

ARRI signed a memorandum of understanding (MOU) in 2008 with the United Nations Environmental Program (UNEP) establishing a goal to plant 38 million trees on reclaimed coal mines in 3 years. This was part of a larger UNEP goal to plant 300 million trees in North America and 7 billion trees worldwide. The commitment by OSM through ARRI was the largest for the UNEP Campaign. In 2009, UNEP participated in an ARRI tree planting event on a barren surface mine site in Letcher County, Kentucky. ARRI has attracted significant international attention and the development and execution of the reforestation initiative in Appalachia is serving as an organizational model for other groups across the world whose goals are to restore disturbed landscapes with reforestation on a regional scale. ARRI's Statement of Mutual Intent has been signed by 7 international conservation groups and numerous individuals from foreign countries. ARRI Scientists have made ARRI presentations at international conferences in Asia, Australia, Europe, and South America. At the request of the Director, US Fish and Wildlife Service (USFWS), an ARRI representative traveled to South America to participate in the 3rd Cerulean Warbler Summit in Bogotá and San Vicente de Chucuri, Colombia in October 2008. During the visit, representatives of the USFWS, US Forest Service, the American Bird Conservancy, and ARRI met with the President of the Colombian Coffee Federation and the Director of Cenicafe in Bogotá. The meeting generated an in-depth discussion about the potential win-win opportunities available for the coffee and coal industries with the formation of a partnership built around appropriate forestry activities (namely the FRA and

"shade" coffee) that benefit the Cerulean Warbler. The concept of a working partnership was enthusiastically embraced by the Colombian officials. ARRI also contributed to the making of the video "[Shade Grown Coffee and Saving Migratory Birds of North and Latin Americas](#)".

**6. How does the action meet or exceed agency mandates or daily activities?**

Since passage of the federal surface mining law in 1977, more than 1.2 million acres of Appalachian forest have been impacted by surface mining. The majority of this land is no longer under the regulatory jurisdiction of OSM. ARRI set out to test and demonstrate ways to address the forest fragmentation in Appalachia on those mine sites where the mine operator had long ago received a bond release and where they no longer had any reclamation liability. Starting in 2009, and using mitigation methodologies developed by the ARRI Science Team, ARRI foresters selected mine sites as pilot projects where the compacted mine soil was ripped with bulldozers, the herbaceous competition was eliminated, and high-value hardwood trees were planted. Initially, the sizes of the tree planting projects were small and all of the work was done with donated materials and labor.

However, because of the efforts of 2,500 ARRI volunteers planting 177,500 trees over two years, funding is beginning to materialize for the 2011 spring tree-planting season and ARRI is projecting that 5 times more trees and acres (>1,000 ac) of abandoned mined land will be planted compared to last year. The work will be made possible by corporate and philanthropic contributors, at no cost to the taxpayers. By tapping into non-government funding sources, this action by ARRI far exceeds the capabilities of OSM to address the Appalachian forest fragmentation that can affect migratory birds in Appalachia. Having proven that abandoned mine land can be successfully reforested, the ARRI Science Team has created the Green Forests Work program. This 501(c)(3) non-profit organization is modeled after the Civil Conservation Corp of President Roosevelt's administration to stimulate the economy, create green jobs and improve the environment by planting millions of trees on thousands of acres of mined land.

**7. Explain how the action promotes effective migratory bird conservation.**

The benefits of reforestation provide one of the few areas of common ground for industry and the conservation and environmental communities. Forests play a critical role in moderating temperatures, controlling runoff, improving water quality, sequestering carbon, and providing biological diversity. Abandoned mine lands provide tremendous opportunities to restore a diversity of habitats (e.g., mature forests, early successional forests, shrublands, wetlands, grasslands) across the Appalachian landscape that could support populations of numerous priority species. Additionally, reforestation efforts on current and future mining operations could be paramount to the success of bird conservation partnerships. Certain priority bird species have been identified that require large blocks of diverse and mature forests, as well as early successional habitats (grasslands, shrublands); abandoned mine lands offer opportunities to *improve* (mainly grasslands and shrublands) or *increase* (mainly shrublands and forests) these habitats for priority bird species.

**8. Provide details that demonstrate how the action is innovative.**

The secret to ARRI's success is in its utilization of an innovative 'concentric ring management model' that builds successive layers of active partnerships. ARRI was started and continues to operate with limited resources and funding as a bottom-up effort by a handful of high motivated and dedicated field people that formed the Core and Science Teams. Furthermore, the concepts and methodologies embodied by ARRI require reclamation practitioners to "think outside the box" and to create mine landscapes that take on a look that is fundamentally different from conventionally reclaimed surface mine sites. Therefore, an innovative approach for promoting the science-based FRA had to be

implemented to overcome the cultural barriers that developed over a period of 30+ years prior to the establishment of ARRI.

Promotion of ARRI concepts and methodologies has been a carefully controlled effort that has followed a concentric ring path to reach out to and recruit various partners and stakeholders. The Core and Science teams concentrated on instructing each potential group or ring of ARRI partners about the virtues of reforesting coal mined lands using the FRA before moving to the next outer ring. This concentric ring management model allowed each ring of partners to become thoroughly familiar with ARRI and the FRA. Once a full ring of partners was adequately informed, recruited, and had signed ARRI's Statement of Mutual Intent, the partners of that ring joined inner ring partners in the promotion of the initiative to the next outer ring to insure that information passed to them was accurate and timely. This innovative, bottom-up effort created a reforestation renaissance in the coal fields of Appalachia. It allowed for the "outside the box thinking" necessary to successfully promote mined land reforestation to landowners, mine operators, reclamation practitioners and the general public. This highly acclaimed grassroots effort by dedicated field people to reforest the barren mined lands of the eastern coal fields was done with no direct funding and with limited resources.

**9. Describe the roles and responsibilities of partners (if any).**

ARRI has enlisted support from a broad spectrum of organizations and individuals to promote the use of the FRA. In addition to changing the culture with the industry and regulatory authorities to make forestry the post-mining land use of choice, ARRI has recruited volunteers from conservation and environmental groups, academia, all levels of government, as well as private citizens to donate time, money and effort to prepare mine sites and plant trees on those sites where bonds have been released but trees do not grow. These efforts are resulting in the reestablishment of forests for the benefit of migratory birds. To help inform stakeholders about the FRA, ARRI recruits partners through signing a Statement of Mutual Intent. To date, over 1,000 people representing 207 different organizations have joined ARRI, including: 52 government agencies; 59 coal industry organizations; 17 watershed/citizen groups; 10 environmental groups; 17 academic institutions; 17 conservation groups; 8 faith-based groups; 7 international groups; 5 schools; and 15 other groups.

ARRI also has an MOU with the American Chestnut Foundation, and has joined with this group to jointly envision restoring the range of the American chestnut, which was decimated by blight in the early part of last century. Not only does this range closely coincide with the Appalachian coalfields, but including the blight-resistant form of the chestnut as part of the Appalachian forest landscape is an additional benefit for bird conservation and high-quality habitat re-establishment following mining and reclamation

**10. How might the action be transferrable to other sites managed by this agency?**

A total of 52 state and federal government agencies have become active ARRI partners. Numerous government agencies work to regulate, facilitate, and provide technology transfer for the processes of coal surface mining and reclamation. Therefore, these partnerships are critical in the effort to disseminate information about the benefits of restoring healthy and productive forests on surface mines for migratory birds. An active partnership between the USFWS and ARRI was established with the signing of the Statement of Mutual Intent by the Directors of the USFWS and OSM in November 2007. Since that event, ARRI representatives have provided numerous presentations about mined land reforestation to USFWS meetings and conferences. In order to make the FRA and ARRI's efforts transferable and to enhance outreach, the ARRI Science Team is publishing a series of publications called the Forest Reclamation Advisories. These 2-4 page publications are informational

documents put together by the ARRI Science Team that clearly explain the FRA and address questions about reclamation practices that can be used to prepare coal mined lands to forestry related land uses. The Advisories are written to be easily understood and are for audiences that include the mining industry and agency personnel, landowners, and anyone interested in growing trees on surface mines.

**11. How does the action impact your agency's migratory bird conservation practices?**

ARRI serves as OSM's key focus for the agency's migratory bird conservation practices. Major ARRI partners include notable bird conservation organizations such as the American Bird Conservancy, the Appalachian Mountains Joint Venture, the Cerulean Warbler Technical Group, the Golden-Winged Warbler Working Group, the National Fish and Wildlife Foundation, The Trust for Wildlife, and many other conservation and environmental groups and associations. "Public participation" is one of the main objectives of the Federal surface mining law, which is implemented by OSM. ARRI serves as the vehicle by which the bird conservation community has a seat at the table with OSM, the state regulatory authorities, the mining industry, landowners, and academia regarding bird conservation practices and the effects of mining and reclamation on migratory birds.

**12. How does the action benefit migratory bird species of concern? If yes, how?**

Because a remarkable overlap occurs between Cerulean Warbler habitat and existing areas of Appalachian coal and Andean coffee production, ARRI partners organized a summit for coal industry representatives from Appalachia, Colombian coffee officials, and Cerulean Warbler conservationists on April 14, 2009 in Charleston, West Virginia to discuss proactive conservation opportunities for Cerulean Warblers across their range in North and South America. The primary purpose of ARRI's Coal-Coffee-Cerulean summit in Charleston was to explore the possibility of a partnership that links the two industries with the Cerulean Warbler Technical Group (CWTG).

Participants in ARRI's Coal-Coffee-Cerulean summit discussed ways to reverse population declines of Cerulean Warblers, thereby reducing the likelihood of listing the species under the Endangered Species Act in the future. Proactive, strategic, and coordinated conservation/restoration of forested habitat on breeding and non-breeding grounds would improve or maintain ecosystem functions in key areas for Ceruleans. Conference attendees discussed strategies to increase, maintain, and protect shade-grown agriculture and primary forest in South America, reclaim surface mined lands back to functional native hardwood forests by using the FRA in North America, and educate children, communities, and industry professionals about the international connection of coal, coffee, and Cerulean Warblers. The results of the ARRI Coal-Coffee-Cerulean summit directly benefit Cerulean Warblers and other migratory birds by raising awareness and concern for the results of deforestation in key industry players on both continents.

ARRI is partnering with the South American bird conservation group ProAves and CWTG in a pen-pal program linking high school students from the coal fields of the Appalachian Mountains with students of the coffee region in the Andean Mountains of Colombia, South America. Science and Spanish school teachers on both continents are invited to participate in the program in an effort to link the students. The "ambassador" between the two cultures is the Cerulean Warbler. ARRI, ProAves, and the CWTG provides instructional materials and teaching aids to the teachers on the Cerulean Warbler, surface mine reforestation, shade-grown coffee production, and ways to foster goodwill and cooperation in the field of conservation between the youth of the US and Colombia. The program has become so successful and popular with the students that the teachers on both continents have reported that the students are enthusiastically continuing their own letter exchanges under their parents' supervision.