THE FORESTRY SOURCE

News for forest resource professionals published by the Society of American Foresters

November 2015 • Vol. 20, No. 11

forests. resources. communities.

IN THIS ISSUE

DEPARTMENTS

Louisiana's Forests Face Threats from Insects, Fire, but Opportunities Abound

By Steve Wilent

Bald Cypress near Good Hope, Louisiana. Source: Gerald J. Lenhard, Louisiana State University, Bugwood.org

With the 2015 SAF National Convention in Baton Rouge this month, Louisiana's forests will receive a great deal of attention. There's a lot of forest to consider: 13.8 million acres, covering about half of the state's area—including oak-hickory, loblolly and shortleaf pine, longleaf and slash pine, mixed oak-pine, and oak-gum-cypress types. Most of that land is privately owned—there are more than 148,000 woodland owners in Louisiana. Private, nonindustrial landowners own 81 percent of the state's forestland; forest-products companies own 29 percent; and the public owns the rest, about 9 percent. The forest-products industry is big business here. According to the Louisiana Department of Agriculture and Forestry (LDAF), forestry is the number one agricultural industry in the state, with an annual value of more than $2.9 billion.

To learn more about the state's forests and the issues its foresters face, I talked with Louisiana State Forester Wade Dubea and Associate State Forester Epney Brasher. Dubea, an SAF member, joined the LDAF in 2001 and has been state forester since 2008. Brasher has been with the agency for about 14 years and in her current position for about five years.

We hear a lot about drought out West this year, but I read that on October 1, the US Department of Agriculture declared Natchitoches Parish in Louisiana as a primary natural disaster area due to drought. Sounds serious.

LOUISIANA ■ Page 4

Green Forests Work Leads Return of Forests to Reclaimed Appalachian Coal Mine Lands

By Andrea Watts

Volunteers prepare seedlings for planting at the Flight 93 National Memorial near Shanksville, Pennsylvania. The efforts to restore forest at the site, a former surface mine, began in 2012. Thus far, about 100 acres and 70,000 seedlings have been planted by about 1,500 volunteers. Photo courtesy of Chris Barton.

With Green Forest Work's planting of nearly two million trees across more than one thousand acres since 2009, reclaimed coal mines are growing into Appalachian forests. At the group's planting events, environmentalists and coal-mining operators are brought

RECLAIMED MINES ■ Page 6

Research Matters: Does Fuels Management Work? Study Says Yes

By Steve Wilent

Most any forester will tell you that managing forest fuels can have a significant effect on the likelihood of fire ignition, fire behavior, tree mortality, and, ultimately, the health of a stand and the ecosystem. You might think that a large body of research supports this common knowledge. However, although the authors of a paper in the August 2015 edition of the *Journal of Forestry* found substantial scientific literature on how forests in the southwest United States respond to fire, most of the studies they reviewed considered areas without prefire treatments. They found little information comparing the response of overstory and understory vegetation following fire between treated and untreated sites.

The paper, "Fuel and Vegetation Trends after Wildfire in Treated versus Untreated Forests," was written by Douglas S. Cram, Terrell T. Baker, Alexander G.

RESEARCH MATTERS ■ Page 7

An aerial view of the Starfire Mine in Kentucky in 2015. The site was reforested in 1997 with native hardwood species (oak, ash, yellow-poplar, and black walnut) and white pine. Today, the trees are about 40 feet in height, and survival has been about 70 percent. Photo courtesy of Chris Barton.

together, and as each acre is restored, not only are wildlife habitat and ecosystem services returning to the landscape, but so too will jobs, this time for forest managers.

Based at the University of Kentucky, GFW (greenforestswork.com) was formed in 2009 in response to the need for restoration on reclaimed coal-mine lands.

"Lands that were being surface mined for coal in Appalachia were predominately forested prior to the mining, and they were being reclaimed as grasslands, grasslands that really weren't getting utilized," explained Chris Barton, president of GFW and professor of forestry at the University of Kentucky. "They ended up being referred to as legacy lands, unwanted or unused lands that could be productive."

Forests weren't returning to the reclaimed coal-mine lands because of the reclamation processes used in the 1970s and until current day.

"The way they are being reclaimed, using heavy equipment and compacting the soils, these sites wouldn't return to their natural condition for centuries, if at all," Barton said.

The planting of shrubs and grasses, oftentimes invasive species, resulted in the sites being in a state of arrested succession, explained Mary Beth Adams, an SAF member and research soil scientist with the US Forest Service Northern Research Station.

Several regional universities started research programs in the 1990s on how to return the forest to these sites. Through demonstration projects, the university research generated successful restoration stories, but the results weren't being shared with the coal-mining industry. This led to the creation of the Appalachian Regional Reforestation Initiative (ARRI) in 2004.

"[The initiative] was formed with the goal of going out and spreading the word on how you can actually get forests established on mined sites, and it involved a partnership between federal government agencies, universities, state governments, coal-mining companies, environmental groups, and anybody who was interested in the return of the forest to areas in Appalachia that were being affected by coal mining," Barton said.

The ARRI is composed of two teams: Core and Science. The Core team includes representatives from the Office of Surface Mining Reclamation and Enforcement and the state agencies responsible for regulating coal mining in Kentucky, Maryland, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia. The Science team has 34 members, with representatives from academia and the American Chestnut Foundation, US Forest Service, US Geological Survey, American Bird Conservancy, and US Office of Surface Mining. Adams, and Willis Vogel are the Forest Service representatives.

"One of the things [the Core team does], in addition to providing communication, is to tell the Science team what science questions they have, and the Science team develops research programs and projects out of that," Adams said.

The Future of Mine Sites

One of the ARRI's accomplishments was transforming the reclamation process, particularly in the central Appalachian coal field, to focus on what the reclaimed sites should look like in the future. Prior to the ARRI's formation, a majority of mining permits had post-mining land uses of hay land/pasture or wildlife habitat; today, a majority of new permits designate forestry as the post-mining land use. This change "was a huge effort that involved hundreds of people working to get the message out that reclaimed grasslands contribute to forest fragmentation and impact native wildlife populations and that we have proven techniques for establishing forests on mined lands that should be utilized," Barton said.

Recently ripped pasture land on a mine site in Breathitt Co., Kentucky. Deep ripping is required to reduce compaction created by regrading soil during the reclamation process. Photo courtesy of Chris Barton.

Yet that success hid a reality that Barton recalls being shocked to realize: more than one million acres had already been reclaimed with a post-mining land use of pasture. Hence the creation of Green Forests Work.

Although the organization's mission was embraced at all levels of government, as well as by environmental groups and coal-mine operators, there was no money to formally fund the organization. Yet in its first year, 30,000 trees were planted, an accomplishment made possible by donations of seedlings and equipment. In 2010, another 130,000 seedlings were planted, and the Appalachian Regional Commission provided funding for establishing a nonprofit organization and to hire staff and move the program forward. Five years later, Barton said, 375,000 trees were planted at 55 planting events over the course of the year, with even more events expected to be held in 2016. GFW has also been awarded a number of grants to pursue restoration work.

GFW is reforesting dozens of sites throughout Appalachia, and while the goal of each site is to restore the native forest, the future use of the site and landowner goals determine what native tree species are planted. Tree species vary and include native hardwoods such as oak, ash, maple, and hickory, as well as species for wildlife habitat and even some for fruit production. With the land ownership highly varied, including federal and state governments, mining companies, and private individuals, "we work with the individual landowner or group to provide whatever they want," Barton said.

This can include restoration of wildlife habitat, as is the case with a current Natural Resources Conversation Service grant for reducing forest fragmentation for the benefit of the Cerulean warbler, or working with a private landowner who wants to plant a forest for future timber profits.

"Some people want the forest back for recreational purposes and hunting," Barton explains, "Every person that we come in contact with about a potential project tells a different story and has a unique set of objectives."

As part of the forest reclamation process, ARRI's Core Team is asking questions about the benefits that reforestation provides. Most recently, Adams said members expanded their interpretation of wildlife to include pollinators, and work has just begun on how the reforestation process can be adapted to promote species that are utilized by pollinators and to measure the benefits of these actions.

"One of the strengths of ARRI is the partnerships," she said. "Everyone likes to see you planting trees, but we're not just planting trees, we're planting forests."

With this restoration is also a return of tree species whose absence from the landscape is linked to coal mining or disease. The American Chestnut Foundation is one of Green Forests Work's partners in planting blight-resistant chestnuts in the tree's native range. In the Monongahela National Forest, the Forest Service is restoring red spruce. But when selecting the trees for planting, there is also concern on whether they will survive not only growing on reclaimed mine lands, but also in the face of invasive pests and diseases. Adams is conducting research on how Dutch elm disease–tolerant American elm will grow on reclaimed mine sites as a replacement for the ash trees being lost due to the emerald ash borer.

While some of the planting is being done by volunteers, Barton said that the GFW's initiative is also creating jobs, from the equipment operators hired to run the bulldozers that rip up the land in preparation for planting, to the nursery staff growing the trees, and to the professional tree planters and future forest managers.

"One thing this region has for the future is forests and forest products," Barton said, "and so we're hoping we'll be able to provide opportunities, if not this generation, then the next generation, for jobs and economic security." FS

Andrea Watts is associate editor of The Forestry Source. *Contact her at andwatts@live.com.*