

by Brian Cooke, U.S. Forest Service Contract Science Writer

Longleaf pine is a fire-dependent ecosystem, which can create complications in terms of land management. Photo by Randy Tate.

LONGING FOR LONGLEAF: A TALE OF FOREST RESTORATION

The Great Disappearing Forest

In the early 1800s, North America's longleaf pine forest was like the American bison's historical range: It covered such a huge area that its full extent is difficult to comprehend today. Back then, longleaf pine-dominated forests covered about 90 million acres of the southeastern United States — nearly the size of the state of Montana. At the time, it was the biologically richest region on the continent.

Today, that acreage is less than 5 million acres, which would easily fit into New Jersey.

There are relatively few places where one can go today to get a sense of what longleaf forested areas were like 250 years ago. One such location is the Joseph W. Jones Ecological Research Center in southwest Georgia. "When you're in the middle of a longleaf forest like the one at the Jones Center," Longleaf Alliance co-founder Rhett Johnson says, "it's not hard to imagine 90 million acres of longleaf spread across the South. The vistas are overwhelming. There's also the sea of wildflowers and grasses, the birds and these distinctive, columnar trees with their long, shiny needles and huge pinecones. But you can also imagine the early settlers taking it for granted because it was everywhere."

The dense, tightly grained wood from these forests was used to build some of America's great cities and railroads, as well as cottages, castles and mines in the British Isles. In addition, vast sections of the forest were cleared for crops, grazing and human development, while fire suppression and feral hogs degraded other longleaf areas.

A Couple of Johnny Appleseeds

By the 1990s, so few people remembered these immense forested areas that their loss was hardly felt. And many of the scientists who had dedicated their careers to studying longleaf were near the end of their lives.

Two professors at Auburn University — Rhett Johnson and Dean Gjerstad — decided it was time to take action. Johnson says, "We had a couple of meetings in 1994 and we found more interest in longleaf restoration than we'd expected. But no one wanted to take the lead. We had to do it ourselves and on our own time. We both had day jobs, but it was very rewarding, especially in working with private landowners. It was like we were Johnny Appleseeds: We'd scatter like a covey of quail and go to four different states. And it wasn't just about hunting or timber: Some landowners were just excited about restoring this historic, iconic landscape." As time went on, Johnson says,

“Darned if it didn’t take off. We realized that we weren’t capable of managing growth and interest and that we needed partners. And when the USDA Natural Resources Conservation Service (NRCS) started to support us, it was a breakthrough.”

Eight Million Acres in Fifteen Years

According to Kyle Jones, the U.S. Forest Service’s Regional Longleaf Pine Restoration Coordinator, in 2007 the Longleaf Alliance joined forces with more than 20 other organizations from Federal and State agencies as well as the private sector. That partnership became ALRI — America’s Longleaf Restoration Initiative.

ALRI’s conservation plan, which was drafted in 2009, calls for an increase in longleaf-dominant forests to 8 million acres by 2025. It’s an ambitious goal, for several reasons. One is that so much of former longleaf habitat has been and continues to be cleared for agriculture and development. Another is that longleaf ecosystems depend on frequent, low-intensity fire, which is a difficult management prospect for forests near developed areas. In addition, longleaf can be tricky to establish, and although the tree is highly valued for its strength and its resistance to rot, fire, wind and insects, it can be difficult to convince timber companies of longleaf’s economic value relative to faster-growing trees such as slash or loblolly pine.

One such company is Resource Management Service, an Alabama-based timberland investment management organization that manages more than \$4 billion in timberland and related assets. While the company is a for-profit business, it has a sustainability ethic that has lasted for more than 60 years. According to Jimmy Bullock, the company’s senior vice president for forest sustainability, “We’re working with The Conservation Fund and other partners to establish and maintain a working longleaf forest and functional longleaf ecosystem called the Coastal Headwaters Forest in the Florida Panhandle

and southern Alabama. It involves tens of thousands of acres and some pretty significant working forest conservation easements. I think it’s going to help change the notion of whether longleaf pine can be economically feasible for large private landowners.”

A Shared Vision, With Very Different Priorities

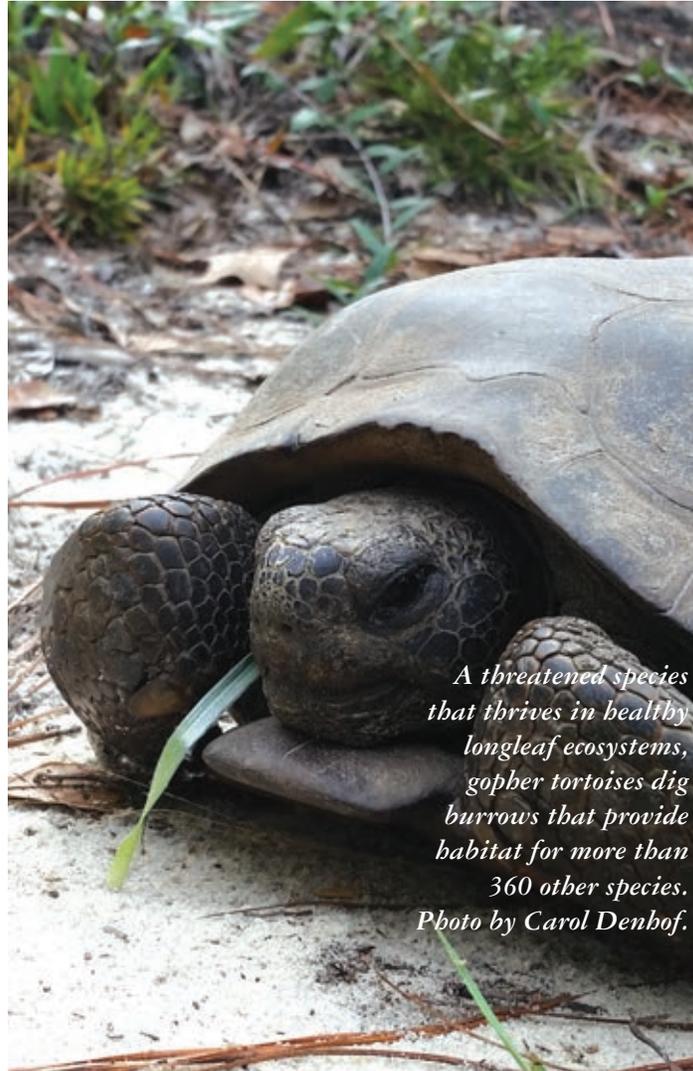
Many representatives of ALRI’s more than 30 partner organizations observe that it’s unusual to have partners with so many different agendas working toward the same goal. According to Jones, “It’s inspiring to go to a meeting and see a conservationist working closely with an executive from the timber industry.”

The Forest Service is an important partner in this effort, partly due to the fact that, of all ALRI partners, it manages the largest amount of historic longleaf property — more than 4 million acres, of which only about 850,000 are current longleaf forests. “There’s a huge opportunity for us to move the needle,”

Jones says, “and we’re doing that with the Million Acre Challenge, which is an effort that we announced last year to add a million acres of longleaf stands on National Forest land. By doing this, we’re hoping to cause a ripple effect with acreage commitments from other State and Federal agencies.”

Working with Public and Private Landowners

As another part of this effort, the Forest Service and the NRCS work closely with state governments as well as private landowners to restore and manage for healthy longleaf forests. According to Kay Reed, the director of cooperative forestry for the Forest Service’s Southern Region, “In the South, private landowners own most of the forest land. Some landowners already know about longleaf and they’re passionate about it, while others can benefit from learning more about the ecosystem and the assistance available under the Cooperative Forestry Assistance Act and through state forestry agencies.”



A threatened species that thrives in healthy longleaf ecosystems, gopher tortoises dig burrows that provide habitat for more than 360 other species.
Photo by Carol Denbof.

Jeffrey Vail, former acting deputy regional forester for state and private forestry, described efforts working with for-profit organizations and State Forests such as Tate's Hell State Forest in the Florida panhandle. Once a swampy mix of cypress sloughs, wet prairies, wetlands and pine forests, Tate's Hell was home to rare species such as Florida black bears, red-cockaded

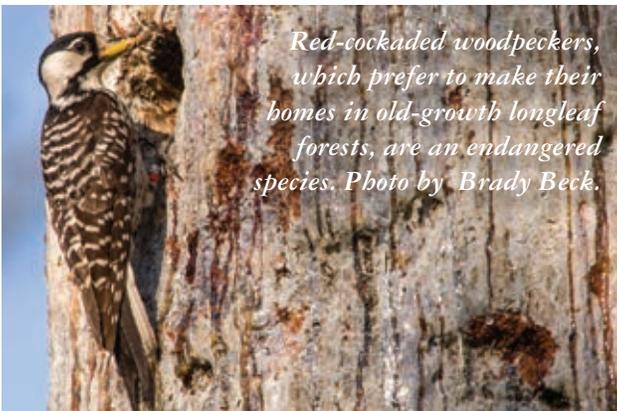
"But we still have much more work to do, and we encourage forest landowners to visit their local USDA service center to learn about the assistance that we offer." Through the Farm Bill, a variety of conservation programs are available to landowners to cover much of the costs for carrying out these practices.



Healthy longleaf pine ecosystems are home to an incredibly diverse range of plants and animals, including many that have become difficult to find across the South. Photo by Randy Tate.



Ongoing research is helping to restore knowledge of how to reintroduce and maintain healthy longleaf forests. Photo by Randy Tate.



Red-cockaded woodpeckers, which prefer to make their homes in old-growth longleaf forests, are an endangered species. Photo by Brady Beck.

woodpeckers, Chapman's butterwort and small-flowered meadow beauties. From the 1950s through the 1990s, much of it was converted to slash pine plantations, which support a very different ecosystem. "If you go there today," Vail says, "you can see the efforts made to restore longleaf habitat and remove other species while restoring fire to the ecosystem."

Meanwhile, the NRCS works with forest landowners and other agricultural producers to plan and implement conservation practices that restore and protect longleaf forests while improving the sustainability and profitability of forestry operations. Practices include managing overgrowth of competing plants, using prescribed fire, establishing new longleaf forests and protecting existing forests. "With the help of private landowners and conservation partners, we've made significant progress in reversing the decline of longleaf pine forests since 2010," says USDA acting chief Leonard Jordan.

Employing a Powerful Conservation Tool

On the Federal level, there's another key partner with a very specific focus: the U.S. Fish and Wildlife Service. According to Aaron Valenta, chief of the Fish and Wildlife Service's Division of Restoration and Recovery, "Our primary interest in longleaf restoration is that it's an ecosystem that holds a whole suite of species, including many that depend on that ecosystem for survival." In fact, according to the Fish and Wildlife Service, longleaf forests are associated with 29 species on Federal threatened or endangered lists.

The Fish and Wildlife Service has a powerful tool in the restoration process. It's called a safe harbor agreement, and it's a voluntary agreement between the Fish and Wildlife Service and non-Federal property owners. According to Valenta, "The lumber industry in the Southeast was facing a potential crisis related to red-cockaded woodpeckers, which are closely reliant

on longleaf pine forests that are maintained as an open forest canopy and that burn every few years. Those companies were worried that the Endangered Species Act would prevent them from harvesting their land. We went to landowners and proposed an agreement: 'If you manage the land in a way that we both find acceptable and a red-cockaded woodpecker moves

outside of our installations and land protections are triggered under the Endangered Species Act, that would restrict our ability to use the land for training purposes." This is why, Orndorff explains, the Endangered Species Act requires Federal agencies to develop and implement conservation programs and to consult with the Fish and Wildlife Service on actions that



Across nine states from Virginia to Texas, longleaf was once the dominant forest of the southeastern U.S. coastal plain. Photo by Randy Tate.

onto your land, you'll have no liability under the Endangered Species Act.' Once they had the legal right to not worry, red-cockaded woodpeckers became a non-issue."

This approach is proving useful for other longleaf-dependent species such as the gopher tortoise and the Eastern indigo snake. Valenta explains, "Not all of these species are listed under the Endangered Species Act, but we're not waiting for that to happen. Our vision is to work with private landowners and State and Federal agencies by understanding their needs in the context of restoring endangered, threatened or at-risk species. For the gopher tortoise, landowners are stepping up to help manage the land to prevent the species from being listed."

Cooperation from the Department of Defense

One such landowner is none other than the Department of Defense. Like other Federal agencies, the Department of Defense is subject to Section 7 of the Endangered Species Act, which requires Federal agencies to work to conserve endangered and threatened species. According to Ryan Orndorff, director of the Department's Natural Resource program, "A number of Southern military installations have healthy populations of red-cockaded woodpeckers, gopher tortoises and other species that depend on these ecosystems. If that habitat continues to be lost

might affect listed species. The Department of Defense even has a name — and, of course, an acronym — for these efforts: They're called Integrated Natural Resource Management Plans, or INRMPS.

INRMPS are why, on military installations such as Eglin Air Force Base in the Florida Panhandle, you'll find thoughtful placement of military exercises as well as a willingness to manage the land with frequent fire — approaches that preserve longleaf ecosystems. "It's a process that takes a significant amount of time and resources," Orndorff says, "but if we can sustain conditions that prevent habitat losses and prevent the need for habitat restrictions, we can maintain flexibility of land use while supporting conservation efforts." The Department of Defense also works with other Federal, State and private partners to coordinate efforts across a broader landscape, through a program called Readiness and Environmental Protection Integration, or REPI.

Funding Restoration Efforts: The Longleaf Stewardship Fund

The Department of Defense is one of several Federal agencies and private companies that support the Longleaf Stewardship Fund, a partnership managed by the National Fish and Wildlife

Foundation. According to Jon Scott, the Foundation's Southern Forests Program Director, the Fund and related efforts have awarded more than \$32 million in Federal grants for longleaf restoration, which has leveraged an additional \$78 million in non-Federal grant matches and helped restore and enhance more than 1.5 million longleaf acres. Scott explains, "We support a variety of longleaf-related efforts, including funding burn crews, so landowners have access to trained and qualified experts."

The National Fish and Wildlife Foundation is also an important partner in bringing together a wide range of partners. Scott explains, "We were chartered by Congress but we're also an independent nonprofit agency. That means we can bring together a Federal agency that's complying with legal requirements and a company like International Paper that's interested in responsible, sustainable forest stewardship."

"The Most Successful Ecosystem Restoration Project on the Planet"

According to Ken Arney, the acting Regional Forester of the Forest Service's Southern Region, "It's quite a success story, and I mean that in a collective sense, since a lot of agencies and groups have been involved. It's evolved to be what The Nature Conservancy has described as the most successful ecosystem restoration project on the planet. I think we've made a lot of progress, even though we have a long way to go."

While this initiative will transform parts of the South, the effort also has implications for landscape-wide ecosystem restoration efforts elsewhere. Arney says, "Our hope is that we can reach our goal of 8 million acres by 2025 while also demonstrating that this kind of effort can be replicated in other landscapes around the country."

Andrew Schock, Georgia State Director of Conservation Acquisition for The Conservation Fund and the chair of ALRI's Longleaf Partnership Council, is also optimistic. According to Schock, "Personally, I hope to have a change in culture towards using longleaf pine where appropriate as timber and for ecosystem restoration, especially for endangered or threatened species." And although it may take decades to change targeted areas back into healthy longleaf pine ecosystems, Schock says, "It's happening."

For more information about ALRI, please visit www.americaslongleaf.org.

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