Conservation Partnership

Why it Matters: *Wildlife Need Large Landscapes; It Takes a Lot of People to Manage Ecosystems*

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Editor's Note: *The following is the first in a series of articles that will address efforts to enhance conservation on a large-scale, commonly referred to as "landscape level conservation."*

The high tech community likes to talk about the "business ecosystem," but they can't hold a candle to the real thing - the kind made of blood, rock, sinew and chlorophyll - where people and organizations work in symbiotic partnerships playing important roles in the living systems of which we are all a part.

WHEN TIMBER HARVEST IS WILDLIFE'S BEST FRIEND

In recent years, wildlife biologists working in Mississippi Alluvial Valley bottomland hardwood habitat have collaborated with land managers and foresters to develop forest management recommendations that will sustain habitat beneficial to wildlife dependent on these bottomland forests. Broadly termed "Desired Forest Conditions" or DFCs, these recommendations are based on the combined needs of hundreds of species, from black bears and deer to Swainson's warblers and downy woodpeckers.

Duck Locascio is one of eight biologist foresters at the Louisiana Department of Wildlife and Fisheries (LDWF) whose primary job is to manage the state's wildlife management areas (WMAs) to produce optimum wildlife habitat and healthy forests. "We use the cheapest most effective way to make changes on the landscape, and that is through commercial harvest of timber. A portion of the receipts from timber sales helps offset the direct costs of forest management, and any remainder goes to LDWF for purchasing or managing additional land for the WMA system," explains Locascio.

With a schedule that evaluates between 15,000 to 25,000 acres per year, it takes Locascio's team, along with WMA biologists and technicians, about 20 years for the management rotation to reach all 450,000 acres they are responsible for in the WMA system. Of the 15,000 to 25,000 acres evaluated annually, about 6,000 to 8,000 acres are treated with some type of commercial timber harvest to improve wildlife habitat.

The DFC recommendations provide a vision for improving forest health, stand quality and stand structure to benefit wildlife for the short and long term. The vision can be achieved using a variety of timber harvest and habitat management techniques. "We strive to create highly complex forests that are diverse in tree species, tree

Commercial timber harvest is often the most effective way to enhance wildlife habitat.

diameter, stem age, stem density, forest structure, and canopy density," explains Locascio. "Managing for quality forest products allows for greater wildlife management flexibility."

Locascio continues, "For example, when I walk transects and cruise timber, I'm constantly jotting down notes about wildlife habitat within the stand. Deer requirements are pretty straightforward, but other species have nuances. For example, Louisiana black bears require den sites sufficiently high to provide refuge from spring flooding, so a typical timber prescription in black bear country might specify keeping large cavity trees. If such trees are limited, the prescription might specify girdling a large oak on every 20 acres, focusing on an oak that is not saw timber quality. Managing for healthy timber helps draw in the loggers we need, and the income pays for extra services like tree-girdling or treating invasive plants with herbicides."

"The sky is the limit," Locascio promises. "There are no rigid requirements. Most treatments are on the light side, but we're always trying to open the tree canopy to get light penetration to encourage growth of midstory and understory vegetation. We also like to maintain about 200 cubic feet of coarse woody debris (tree tops, limbs and other logging debris) per acre because everything starts on the forest floor: bugs, salamanders, many small mammals, etc., all providing nourishment for others up the food chain."

The development of DFCs was a project of the Lower Mississippi Valley Joint Venture, Forest Resource Conservation Working Group. DFCs are simply recommendations, they are not regulatory or mandatory in any way. It took five years of give and take among the 56 participants on that working group to hammer out a concurrence defining "Desired Forest Conditions." Briefly, the DFCs recommend a canopy that provides 60-70 percent coverage, midstory coverage of 25-40 percent, and understory coverage of 25-40 percent. However, "you can't take care of every species on the same acre," Locascio explains. "Plus, trees grow and trees die." That's why a key DFC recommendation is to manage in thirds, with about 30 percent of the landscape in the ideal conditions, 30 percent growing into it, and about 30 percent with a more closed canopy - on its way to thinning and harvest. The DFC recommendations suggest leaving approximately 10 percent of the acreage untouched, "to take care of any other species not covered in the recommendations, to act as scientific controls, or simply to keep a landowner's favorite spot uncut."

Seven years of growth following a group selection harvest on Big Lake WMA. Group selection harvests provide nesting cover for wild turkey and many species of non-game birds.

Top: When light is restricted by the overstory, the resulting sparse understory provides little browse and cover for wildlife.
Bottom: A diverse midstory and understory results from a silvicultural treatment designed to promote "Desired Forest Conditions."

WHY DO FORESTS NEED MANAGEMENT?

"Historically," says Locascio, "Native Americans used fire even in bottomland hardwood forests to open up the forest and improve conditions for game. We're trying to mimic precolonial habitat management, whether by Mother Nature or people. For example, before the widespread development and agriculture of today, one large tornado might have created hundreds of square miles of forest disturbance, whereas now it's often hit-or-miss whether that same storm would even touch any of the scattered remaining forest patches. Because natural disturbances can no longer be relied upon to provide the diversity of habitat needed, forest management, including timber harvests, serves as the disturbance, and it more easily fits the scope of disturbance to the needs of today's habitats."

Southern forests were extensively cut around the turn of the 20th century, continuing into the 1940s. Since then, most bottomland forests in the Mississippi Alluvial Valley have been "sitting there without active forest management," explains Locascio. For decades both federal and state agencies had preservation attitudes, which led to low management and a predominately closed canopy, resulting in an open, park-like understory with little to no mid- or understory vegetation. This condition does not provide good habitat for the many types of wildlife, particularly birds, which are dependent on diverse hardwood forest structure.

DEER ON MY PROPERTY MEANS DEER ON YOURS TOO

Traditionally, wildlife managers and landowners have thought and planned in terms of a single tract or a single landowner. However, in order to sustain wildlife populations we need to maintain

and develop quality habitat across large landscapes. To meet the needs of most species of wildlife, managers need to consider large expanses of habitat. Seldom, if ever, can the needs of most species of wildlife be met on the acreage owned by a single landowner. This is obvious for migratory birds, but other animals such as deer and bears need large acreages to sustain their populations over the long-term. We have areas that big in Louisiana, but even so, many places border expansive agricultural lands or industrial pine forests. The task is to find commonality between the needs of wildlife and desires of landowners so both will ultimately benefit.

All it took to initiate real change was for one influential landowner to read about DFCs. This particular individual owned hardwood properties operated as recreational hunt clubs since the 1940s. "He had been trying to manage for deer with patch clear cuts, which worked great for a few years, but when the canopy closed, he was left where he started but with trees only 15 feet tall and a shaded understory with little browse available," says Locascio. Tired of the boom/bust cycle, the landowner was introduced to Locascio, who helped the landowner understand the DFC management philosophy.

Now several hunt clubs in the region have formed a coalition to plan their timber sales at the same time. This provides a greater incentive for loggers to cut and haul the timber to distant mills, since the DFC management actually covers more acreage but yields less harvested timber per acre. The landowners now have lower overhead costs and instead of treating 50-100 acres at a time, they are treating hundreds of acres and managing on a landscape level.

NEW PARTNERSHIPS FOR DESIRED FOREST CONDITIONS

Currently, LDWF is participating in a West Gulf Coastal Plain working group to define DFCs for pine forests, which will ultimately combine their recommendations with those of another group concentrating on the East Gulf Coastal Plain.

The south's pine forests are very diverse, with loblolly, slash, longleaf and shortleaf pine dominating the forests. These forests harbor so many specialized plant communities, such as wet grasslands and pitcher plant bogs, that the region is widely known for its plant diversity. "DFC guidelines for pine will also have to address controlled burning and ideal fire intervals," says Locascio.

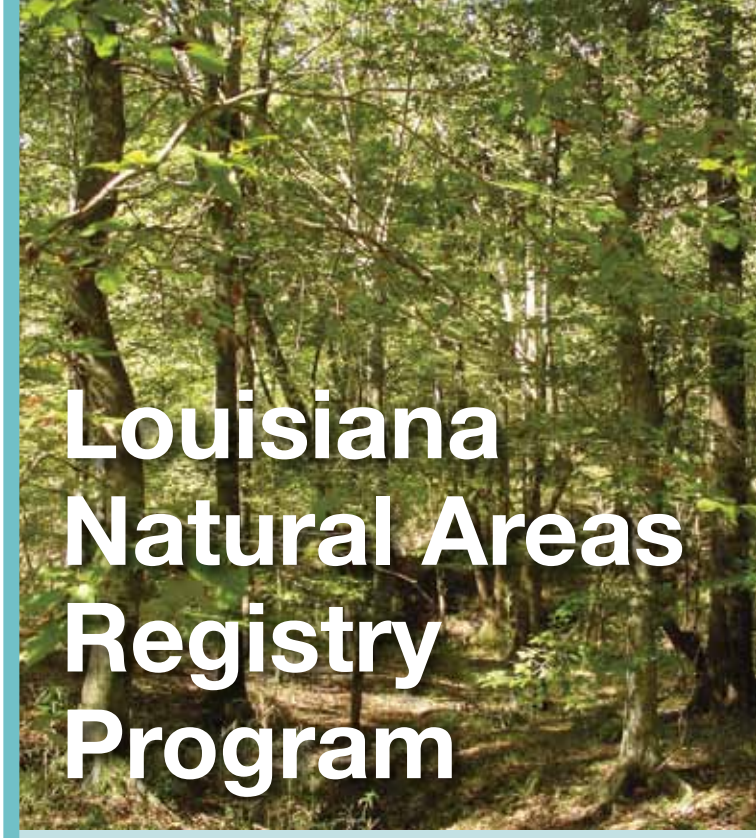
"This is all ground-breaking stuff," stresses Locascio. "It was Kenny Ribbeck's (Chief of the LDWF Wildlife Division) vision 20 years ago that the LDWF should have an expanded forestry section dedicated to the long-term management of the forest resources on WMAs. It takes habitat manipulation to make good wildlife habitat, and he saw the value of in-house foresters to apply wildlife-driven forestry."

Now LDWF's eight biologist foresters have joined with the Mississippi Department of Wildlife, Fisheries and Parks (MDWFP) to share their experience and expertise. They have been working with and training MDWFP staff picked specifically to learn the forestry side of wildlife management.

According to Locascio, "the Mississippi guys know the habitat they need, they just didn't have the experience using timber sales in bottomlands to produce that habitat. Through short courses and by trading visits where we mark timber together and view sites with varying management histories, both states are facilitating landscape scale management beyond state boundaries."

The landowner's version of the technical DFC report emphasizes managing for game wildlife, since that is a primary interest to most landowners. But every thicket managed for turkey nesting habitat is a thicket that will also benefit Swainson's warblers and many other species.

"We recognize that this is not the only way to manage bottomland hardwoods," Locascio cautions, "but if a landowner's priority is wildlife, then this guide is for them. Furthermore, if you are a private landowner managing with good uneven-aged cuts, you are probably closer to the ideal habitat management for wildlife than you might think."



Louisiana Natural Areas Registry Program

BY JUDY JONES

The Natural Areas Registry is a voluntary program of the Louisiana Department of Wildlife and Fisheries (LDWF) which allows the state to recognize property owners for their commitment to the protection of Louisiana's habitats and rare species. The registry was created by an act of the Louisiana Legislature in 1987 to assist with wildlife habitat conservation efforts on private and publicly owned lands. This program is an important tool for outreach to private landowners, since greater than 80 percent of wildlife habitat in Louisiana occurs on privately owned property. Outreach to landowners is achieved through Louisiana Natural Heritage Program (LNHP) staff who contact landowners of potentially important habitat after locating these sites using topographic maps, aerial photos, and information in the rare, threatened and endangered species and natural habitat database. By informing owners of the importance of these sites, the program reduces the chance that significant natural areas might unknowingly be destroyed.

One of the first Natural Areas Registry sites is Oak Hill, which entered the program in May 1988. This property is owned by Murrell Butler in West Feliciana Parish. Butler permanently protected his 351 acre southern mesophytic forest in 2011 with a conservation servitude. To date, approximately 22,000 acres on 42 of the 117 Natural Areas Registries are in servitudes. The option of permanent protection through a LDWF conservation servitude is available. Conservation servitudes are legal agreements that identify the conservation values on a property, place restrictions on use and development that would threaten those conservation values, and defines permissible uses that are consistent with their protection. Properties nominated for the Natural Areas Registry must go through an evaluation and review process to determine if the area qualifies for a LDWF conservation servitude. For information on the Natural Areas Registry Program, contact Amity Bass or Chris Reid with the Natural Heritage Program (abass@wlf.la.gov; creid@wfl.la.gov).