Wild turkeys and shortleaf pine ecosystems

In recent years, longleaf pines (*Pinus palustris*) and the ecosystems associated with this fire-tolerant species in the Southeast have dominated the headlines. Landowners in the historical range of the species have been encouraged to plant longleaf pine through national programs and initiatives, and many have done so. Wild turkey research in longleaf pine ecosystems, especially in association with prescribed fire, has helped to reveal the extensive use that turkeys make of these habitats.

In contrast to all the articles, papers and programs devoted to longleaf pines, until recently not nearly as much attention has been focused on another Southeastern fire-tolerant pine species, the shortleaf pine (*Pinus echinata*). Shortleaf pine forests and their associated ecosystems provide excellent habitat for wild turkeys, especially when carefully managed with prescribed fire. This once widely abundant shortleaf pine ecosystem, however, has lost over 50 percent of its former range in the last 30 years. Fortunately, that decline has not gone unnoticed, and the members of the Shortleaf Pine Initiative, with the NWTF among them, are working to reverse that trend.

As with most habitats, the management of shortleaf pine ecosystems makes a huge difference in their use and importance to wild turkeys. Research has shown that shortleaf pine stands will naturally develop as even- or uneven-aged, depending on how the stand was formed and what disturbances occur during the life of the stand. Stands that develop after catastrophic events or from old fields will become even-aged

The shortleaf pine ecosystem has lost 50 percent of its former range in the last three decades.

BRANDON BOBO

Pine stands and supplemental food sources

Brandon Bobo, NWTF regional biologist in Alabama, has seen the effects proper management of shortleaf pine stands can have on wild turkey habitat. Other supplemental feeding techniques can work, but few alternatives provide the benefits of ongoing shortleaf pine restoration.

"Early successional vegetation in shortleaf pine ecosystems can provide 10 to 25 times more forage than mature, climax forests," Bobo said. "Soft and hard mast production is great, but only for a limited time. So, providing that [young] forage in the time of nesting for brood-rearing habitat and nesting cover is paramount. This is promoted through routine maintenance using prescribed fire."

The Alabama NWTF State Chapter and NWTF staff have partnered with the USDA National Resources Conservation Service through the Shortleaf Pine Initiative — along with the Shortleaf Pine Technical Committee in Alabama — to assist private landowners with costs for shortleaf pine restoration across the Cumberland Plateau, Highland Rim, Ridge and Valley ecoregions of northern Alabama. This approach is helping land managers create lasting habitat.

"Supplemental food sources, such as clover plots, are great, but constitute a small percentage of habitat compared to forests," Bobo said. "Therefore, it is undoubtedly more beneficial to manage forests in a holistic approach at the landscape level."

Other partners on the Shortleaf Pine Technical Committee are also helping by providing technical assistance to landowners, as well as educational field days and workshops on shortleaf pine and prescribed fire. The partners are: American Forest Foundation, Alabama Farmers Association, Alabama Treasured Forest Association, Alabama Forestry Association, Alabama Department of Conservation and Natural Resources, Alabama Forestry Commission, Alabama Cooperative Extension Services through Auburn University, Georgia-Alabama Land Trust, Alabama Wildlife Federation and many others.

stands. If there is frequent disturbance, such as prescribed fire, it likely will create uneven-aged stands. Uneven-aged shortleaf stands are potentially more beneficial for turkeys, especially under a regime of regular fire.

Wild turkeys will benefit most from shortleaf stands either early in their rotation or in mid-rotation or later. Stands in the sapling stage won't be used much, but frequent fire can open these up, making them desirable for turkeys for an extended period. In shortleaf ecosystems where fire is frequent, older stands will become more open, forming savannas, with a stand density of less than 70 square feet per acre. These open areas are conducive to beneficial native warm-season grasses, such as bluestem, along with the associated insect community so important to young turkey poults. In addition to the food sources provided by other sources within the shortleaf ecosystem, the pine seeds are preferred by quail, turkeys and many small mammals. Good seed crops generally occur in one out of three years.

Research in South Georgia in mixed pine/hardwoods areas, some of which are shortleaf, has shown that frequency of fire, as well as time since the last burn, were important reasons wild turkey use these areas. Both hens and gobblers preferred stands that had been burned within 18 months and began to avoid areas that hadn't been burned in more than two years. Similar research in Mississippi showed the same thing.

Of particular interest to land managers, research also has shown how some management practices in shortleaf pines may affect levels of predation, on adult and juvenile turkeys as well as wild turkey nests. One study in shortleaf pine/mixed hardwood sections of Arkansas found that areas consisting of many small shortleaf patches and the resulting high edge density were likely to favor predators and decrease wild turkey productivity. In contrast, areas of large patch size, up to about 1,000 acres and similar in structure, were likely to favor wild turkey productivity. These larger areas make it harder for predators to search for nests efficiently, resulting in a higher percentage of nest success.

The Arkansas research has other interesting results for land managers and for turkey hunters. Different stand arrangement and composition makes a difference to predators, too. Of the turkey predation that occurred in the smaller, mixed woodland tracts and along the edges, most could be credited to coyotes and foxes. Bobcats, on the other hand, preferred larger, more open stands. The biologists noted that canid predation usually resulted in remains including shattered bones and sheared feathers out in the open. Bobcat predation could be distinguished by their habit of covering the carcass with sticks, leaves and other vegetation.

So, while longleaf pine ecosystems have been getting most of the press in recent years, shortleaf pines and their habitats are important to wild turkeys, too. Management considerations for both pine species are similar in many respects, and in both, prescribed fire stands out as the most dominant and efficient tool. — *Tom Hughes, NWTF director of research and science*

Like longleaf stands, prescribed fire remains the most efficient tool for shortleaf pine habitat.

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