Wildlife Conservation Land Priority Habitat Management Guidelines

Longleaf Pine Forest

Species associated with longleaf pine forest include Bachman's sparrow, bobwhite quail, brown-headed nuthatch, Carolina gopher frog, Eastern coach whip, Eastern diamondback rattlesnake, Eastern tiger salamander, fox squirrel, red-cockaded woodpecker, and Southern hog-nosed snake. Groundcover is the most important aspect of any longleaf stand for providing wildlife habitat.

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Habitat Description

Seven distinct longleaf pine plant communities have been identified in North Carolina: xeric sandhill scrub, pine/scrub oak sandhill, mesic pine flatwoods, wet pine flatwoods, coastal fringe sandhill, pine savanna, and piedmont longleaf forest. Longleaf pine communities are rapidly disappearing in North Carolina. The majority of the loss of this habitat type is due to development, conversion of forested sites to agriculture, and regeneration to faster-growing pine species such as loblolly. Even where longleaf pine forests still exist, they are often in a degraded condition that does not provide quality habitats for wildlife.

Plant species in longleaf forests vary by community type, but all naturally functioning longleaf stands contain native herbaceous ground cover and native grasses. Ground cover is the most important aspect of a longleaf ecosystem while the percentage of longleaf pines in the overstory is less important.

Most of the current remnant longleaf forests in North Carolina occur in the Coastal Plain, but there are significant longleaf restoration efforts underway in the Piedmont.

The North Carolina Wildlife Action Plan identifies 36 priority wildlife species associated with longleaf forests. Some of the better-known species are bobwhite quail, brown-headed nuthatch, Eastern coach whip, fox squirrel, and red-cockaded woodpecker.

Raking pine straw in a longleaf stand degrades the groundcover and reduces the wildlife value of the stand. Raked stands should not be considered functioning longleaf forests for the purposes of the Wildlife Conservation Lands Program.

Management Considerations – Wildlife Conservation Land Program (WCLP)

The following bulleted list includes considerations for longleaf stands included in the WCLP program.

- Mixed pine stands are acceptable if longleaf exist as an overstory component and management is used to maintain suitable ground cover.
- Mixed pine/hardwood stands are acceptable if actions are taken to reduce hardwood competition. While hardwoods can cause excessive shading that is detrimental to groundcover, a small number of mast-producing hardwoods are acceptable and beneficial for longleaf-associated wildlife species.
- Management with fire, herbicides, or mechanical means is required for land to qualify as wildlife conservation land.
- The percentage of longleaf overstory can vary in a longleaf stand as long as sunlight reaches the forest floor and management is used to maintain suitable ground cover.
- The current condition in an existing stand of longleaf pine will dictate the management needed to allow the understory to develop. In bare stands devoid of ground cover, the natural understory should be allowed to recover so that fire can be used to promote a diverse plant community. In stands choked with heavy hardwood competition, a combination of mechanical and chemical control may be needed. For tall vegetation, a hand crew can be used to remove oaks with brush blades or chainsaws. Herbicide can then be applied to eliminate the smaller hardwoods. After the stands are opened up, a rotational burning program will need to be established to keep woody competition under control and encourage the development of the natural grasses and forbs found in the longleaf community.
- Under WCLP, landowners with mature trees who do not need the income from timber harvest have the option of managing their stands for old growth longleaf pine. Longleaf pine is a very long-lived species that can reach 200 years of age or more. Older trees often develop heart-rot which allows the endangered red-cockaded woodpecker to excavate nesting cavities. Programs such as Safe Harbor are available to landowners interested in managing for these birds.
- Restoration of longleaf pine communities will also qualify for WCLP. New stands can be established with 300-500 trees per acre but must be managed for plant species diversity during sight preparation and establishment. Longleaf pine seedlings should be burned while in the grass stage between 12 months post-planting and prior to initiating height growth. This will reduce vegetative competition and disease while promoting growth. After longleaf have initiated height growth, it is advisable to wait unit they have reached 5+ feet in height if high sapling survival is desirable. Otherwise stands can be placed under a rotational burning program to promote a diverse understory free from woody competition throughout the life of the stand although there is a risk of lower sapling survival.
- Timber harvest is acceptable if management is planned to retain groundcover and perpetuate longleaf in the overstory. Harvests may include thinning or final cuts with replanting to longleaf.

Conservation easements are strongly encouraged to help protect this unique habitat type.

This and other priority habitat types are listed as habitats of concern in the North Carolina Wildlife Action Plan (NCWAP) and more detailed information concerning each habitat type may be found at www.ncwildlife.org/fs_index_07_conservation.htm.