

## 29. Shortleaf Pine/Oak-Hickory Forest

**Rarity Rank:** S2S3/G2G3

**Synonyms:** Shortleaf Pine-Oak, Oak-Hickory Forest

**Ecological Systems:**

CES203.378 West Gulf Coastal Plain Pine-Hardwood Forest

CES203.506 East Gulf Coastal Plain Interior Shortleaf Pine-Oak Forest

**General Description:**

The Shortleaf Pine/Oak-Hickory Forest community (SLPOH) occurs on dry hills, principally in central and northern Louisiana, although it may occur sporadically in the Florida Parishes. In the Upper West Gulf Coastal Plain, this was the most prevalent community on the landscape (i.e., it was the matrix community).



Principle overstory species include *Pinus echinata* (shortleaf pine), *Pinus taeda* (loblolly pine), *Quercus falcata* (southern red oak), *Q. stellata* (post oak), *Q. marilandica* (blackjack oak), *Q. velutina* (black oak), *Q. alba* (white oak), *Q. pagoda* (cherrybark oak), *Q. shumardii* (shumard oak), *Carya tomentosa* (mockernut hickory), *C. texana* (black hickory), *C. cordiformis* (bitternut hickory), *Ulmus alata* (winged elm), *Fraxinus americana* (white ash), *Nyssa sylvatica* (black gum), *Liquidambar styraciflua* (sweetgum), and *Acer rubrum* (red maple). Midstory and understory shrubs may include *Vaccinium arboreum* (winter huckleberry), *Vaccinium virgatum* (bunch blueberry), *Bumelia lanuginosa* (chittum-wood), *Callicarpa americana* (french mulberry), *Viburnum rufidulum* (rusty blackhaw), *Ilex decidua* (deciduous holly), *Crataegus* spp. (hawthorns), and *Prunus mexicana* (Mexican plum). Herbaceous flora is usually sparse but may consist of *Eurybia* spp. and *Symphyotrichum* spp. (asters), *Solidago* spp. (goldenrods), *Silphium* spp. (rosin-weeds), *Antennaria plantaginifolia* (plantain-leaf pussy-toes), *Desmodium* spp. (beggar-ticks), *Trillium* spp. (wake-robbers), *Chasmanthium* spp. (spangle-grasses), *Viola* spp. (violets), *Mitchella repens* (partridge-berry), *Helianthus* spp. (sunflowers), *Liatris* spp. (blazing-stars), and *Panicum* spp. (panic grasses).

Fire is an important process in this community. Historical fire frequency is thought to have been 5 to 15 years (Martin and Smith 1993). Oak-hickory forest is the theoretical climax forest stage beyond shortleaf pine/oak-hickory forest in central and north Louisiana. However, no occurrences of oak-hickory forest lacking shortleaf pine have been observed, probably because disturbance has been frequent enough to allow perpetuation of shortleaf pine in the community. It is thought species composition would be essentially similar to that of shortleaf pine/oak-hickory forests. At times, this community may take on the aspect of what has been termed loblolly-shortleaf pine forest.

**Current Extent and Status:**

There was an estimated 4,000,000 to 6,000,000 acres of SLPOH in Louisiana and of this original extent 5 to 10 percent is thought to remain today (Smith 1993). Most of this acreage by far was in northwestern Louisiana in the UWGCP.



Currently there are 4 known high-quality occurrences of SLPOH in the UWGCP in the LNHP database. These sites total approximately 160 acres. There are 2 known additional sites, one in Caddo Parish on Eddie Jones Parish Park that have not been surveyed thoroughly and another in Claiborne Parish on Summerfield Springs Preserve owned by TNC. Eddie Jones Park occurrence is at least 100 acres (L. Raymond, personal communication) and the TNC preserve is a little less than 100 acres. Much of this community has been lost or degraded due to conversion of forest types and fire suppression (NatureServe 2005).

There are about 15 known occurrences in the WGCP and a handful in the Florida Parishes on the EGCP. Several of these are on conservation areas such as KNF.

SHORTLEAF PINE – OAK – HICKORY FOREST SPECIES OF CONSERVATION CONCERN (41)		
<b>AMPHIBIANS</b>	Swainson's Warbler	<b>MAMMALS</b>
Louisiana Slimy Salamander	Kentucky Warbler	Southeastern Shrew
Southern Crawfish Frog	Hooded Warbler	Southeastern Myotis
	Painted Bunting	Silver-haired Bat
<b>BIRDS</b>	Bachman's Sparrow	Big Brown Bat
Bald Eagle	Field Sparrow	Louisiana Black Bear
American Woodcock	Rusty Blackbird	Ringtail
Yellow-billed Cuckoo	Orchard Oriole	Long-tailed Weasel
Chuck-Will's-Widow		Eastern Spotted Skunk
Red-cockaded Woodpecker	<b>BUTTERFLIES</b>	
Brown-headed Nuthatch	Wild Indigo Duskywing	<b>REPTILES</b>
Wood Thrush	Dusted Skipper	Western Slender Glass Lizard
Bell's Vireo	Pepper and Salt Skipper	Southern Prairie Skink
Yellow-throated Vireo	Yucca Giant Skipper	Southeastern Scarlet Snake
Northern Parula	Falcate Orangetip	Timber Rattlesnake
Prairie Warbler	Harvester	
Worm-eating Warbler	Little Metalmark	

**Priority Species Research and Survey Needs:**

Bachman's Sparrow: Intensive surveys are needed to produce estimates of current population size statewide. Develop projects which determine the relationship between population size and vegetation succession on quality sites. Determine whether management activities can create a mosaic of adjacent sites that together provide continuously occupied habitat. Determine dispersal behavior to maximize the benefits/effects of future habitat management.

Chuck-Will's-Widow: Research is needed to better understand the population dynamics of this species. Studies should focus on distribution patterns, habitat availability and use, nesting success, and territory size requirements. Implementation of night-time surveys along with sighting reports by foresters, birders, etc. are needed to augment spars BBS records.

Brown-headed Nuthatch: Investigate the impacts of silviculture/land management practices and their effects on species declines.

Rusty Blackbird: Initiate surveys to determine wintering population abundances and habitat use to augment Christmas Bird Counts.

Songbirds: Continued research on silviculture/land management practices and their effects on all songbird species.

Butterflies: Conduct surveys to determine current distribution and abundance of all butterfly species, especially species of conservation concern, for inclusion in the LNHP database.

Ringtail: Louisiana represents the eastern edge of its range, intensive surveys are needed to determine its current status in Louisiana.

Eastern Spotted Skunk: Considered critically imperiled in Louisiana, intensive surveys are needed to update occurrence records and abundance for inclusion in LNHP database.

Southeastern Shrew: Considered imperiled in Louisiana. Together with Arkansas and Missouri, Louisiana represents the western edge of its range. Intensive surveys are needed to update occurrence records and abundance for inclusion in the LNHP database.

Bats: Develop projects that target species of conservation concern. Conduct research which focuses on their distribution, abundance, and ecological needs in this habitat type (Lacki and Schwierjohann 2001).

Establish monitoring systems and protocols for all bat and mammal species of conservation concern associated with shortleaf pine-oak-hickory forest.

Determine the microhabitat preferences and requirements of species occurring in shortleaf pine-oak-hickory forest to understand how these species are utilizing this habitat in order to develop management guidelines for these species.

***Species Conservation Strategies:***

1. Louisiana Slimy Salamander: Requires intact, relatively old-growth forest. Encourage timber companies to designate no-cut zones, especially on slopes and riparian borders.

2. Bachman’s Sparrow:
  - Implement recommendations of SWG project T22 upon completion.
  - Monitor reproductive success of Bachman’s sparrows to determine limiting factors.
  - Work with landowners to encourage the use of BMPs for prescribed fire management and timber harvesting techniques to improve habitat quality.
3. Chuck-Will's-Widow: Work with federal agencies and bird conservation organizations to produce technical pamphlets highlighting the habitat and management requirements of this species and make them available to landowners.
4. Brown-headed Nuthatch: Encourage landowners to use group-selection and single-tree selection harvesting methods and maintain or increase the number of standing snags.
5. Louisiana Black Bear: Partner with the BBCC, USFWS and continue to support the implementation of recovery efforts for this species.
6. Work with landowners to initiate or continue the implementation of PIF bird conservation plans, conservation plans developed for amphibians and reptiles, and USFWS threatened and endangered species recovery plans over the next 10 years.
7. Encourage snag retention during logging operations to increase the numbers available for cavity-nesting species. Efforts need to be made to maintain sufficient levels of woody debris in stands for reptiles, amphibians and small mammals.

**Threats Affecting Habitat:**

The following table illustrates the threats identified for this habitat type and the sources of these threats. This represents all threats and sources of threats identified across all ecoregions of the state where this habitat occurs.

Source of Threat	Threat			
	Altered Composition/ Structure	Habitat Destruction or Conversion	Habitat Disturbance	Habitat Fragmentation
Conversion to agriculture or other forest types		XXX		XXX
Development/maintenance of pipelines, roads or utilities		XXX	XXX	XXX
Fire suppression	XXX			
Incompatible forestry practices	XXX		XXX	
Invasive/alien species	XXX		XXX	
Mining practices		XXX		XXX
Recreational use/vehicles			XXX	
Residential development		XXX	XXX	XXX

***Habitat Conservation Strategies:***

1. Conduct surveys to determine the current extent and condition of this habitat type.
2. Develop best management practices for restoration of this habitat type including appropriate fire regimes and herbicide uses.
3. Work with USFS, Department of Defense (DOD), and Office of State Lands to encourage the conservation and restoration of this habitat where it exists on public lands.
4. Encourage LDAF and other growers to produce shortleaf pine seedlings for distribution to landowners interested in restoring this habitat type.
5. Develop partnerships with federal and state agencies, NGO's and others to identify potential parcels of this habitat type for acquisition and conservation.
6. Work with the legislature to provide incentives (tax breaks, etc.) to landowners to retain the natural state of areas where this habitat occurs.
7. Provide education/outreach to illustrate the value of this habitat to wildlife and to promote conservation and preservation of this habitat type.

***References:***

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