

37. Western Upland Longleaf Pine Forest

Rarity Rank: S2S3/G2G3

Synonyms: Sandhill Pine Forest, Clayhill Pine Forest

Ecological Systems:

CES203.293 West Gulf Coastal Plain Upland Longleaf Pine Forest and Woodland

General Description:

This habitat occurs in the hilly uplands in western and central Louisiana. It occurs on acidic loamy sands to acid clays associated with Pleistocene or Tertiary formations. The community is characteristically dissected by small to large branch or creek bottoms. *Pinus palustris* (longleaf pine) is the dominant overstory species, and in locations where fire has frequently occurred, it is often the only canopy species. Where fire is less frequent or suppressed, a number of overstory associates may occur, including



Pinus echinata (shortleaf pine), *Pinus taeda* (loblolly pine), *Nyssa sylvatica* (black gum), *Liquidambar styraciflua* (sweetgum), *Quercus falcata*, *Q. stellata* (post oak), *Q. marilandica* (blackjack oak), *Q. shumardii* (shumard oak), *Q. alba* (white oak), *Q. nigra* (water oak), *Prunus serotina* (black cherry), *Carya tomentosa* (mockernut hickory), *C. texana* (black hickory, central Louisiana), *Acer rubrum* (red maple), *Diospyros virginiana* (persimmon), and *Sassafras albidum* (sassafras). In sandy soils, *Q. incana* (bluejack oak) and *Q. hemisperica* (upland laurel oak) are frequent associates. Significant shrub species include *Cornus florida* (flowering dogwood), *Vaccinium arboreum* (winter honeysuckle), *V. elliotii* (elliott's blueberry), *V. stamineum* (deer berry), *V. darrowii* (dwarf blueberry, southeast Louisiana), *Gaylussacia dumosa* (dwarf huckleberry, southeast Louisiana), *Callicarpa americana* (French mulberry), *Morella cerifera* (wax myrtle), *Bumelia lanuginosa* (chittum-wood), *Ilex vomitoria* (yaupon), *I. opaca* (American holly), *Rubus* spp. (blackberries), and *Rhus copallina* (winged sumac). Common vines include *Vitis* spp. (grapes), *Smilax* spp. (greenbriers), *Parthenocissus quinquefolia* (Virginia creeper), and *Gelsemium sempervirens* (yellow jessamine). The herbaceous flora may be exceedingly diverse if fire has frequently occurred. Grasses, composites, and legumes are predominant in the ground layer. *Andropogon* spp. (broomsedges) and *Schizachyrium* spp. (bluestems) are usually the dominant grasses, but several other genera are usually present, including *Aristida* (three-awn grasses), *Sporobolus* (dropseeds), *Panicum* (panic grasses), *Anthaenantia* (silky scales), *Ctenium aromaticum* (toothache grass), *Digitaria* (crab grasses), *Eragrostis* (love grasses), *Erianthus* (plume grasses), *Gymnopogon* (skeleton grasses), *Muhlenbergia* (muhly grasses), *Paspalum* (pasp grasses), and *Setaria* spp. (bristle grasses). Composites include *Eurybia* spp. and *Symphotrichum* spp. (asters), *Carphephorus odoratissimus*

(vanilla plant), *Chrysopsis* spp. (golden asters), *Heterotheca* spp. (golden asters), *Elphantopus* spp. (elephant-foot), *Eupatorium* spp. (thoroughworts), *Euthamia* spp. (flat-topped goldenrods), *Gnaphalium* spp. (rabbit tobaccos), *Helenium* spp. (sneeze-weeds), *Helianthus* spp. (sunflowers), *Liatris* spp. (blazing-stars), *Rudbeckia* spp. (brown-eyed susans), *Solidago* spp. (goldenrods), and *Vernonia* spp. (ironweeds). Prominent legumes are *Baptisia* spp. (indigos), *Cassia* spp. (partridge-peas), *Centrosema virginianum* (butterfly pea), *Clitoria mariana* (pigeon wings), *Crotolaria* spp. (rattle pods), *Desmodium* spp. (beggar's ticks), *Lespedeza* spp. (bush clovers), *Stylsanthes biflora* (pencil-flower), *Rhynchosia* spp. (snout beans), and *Tephrosia* spp. (hoary peas). Additional frequent forbs include *Oenothera* spp. (evening primroses), *Polygala* spp. (milkworts), *Lobelia* spp. (lobelias), *Callirhoe papaver* (poppy-mallow), *Ruellia* spp. (wild petunias), *Hypoxis* spp. (yellow-eyed grasses), *Asclepias* spp. (mildweeds), *Lechea* spp. (pinweeds), *Euphorbia* spp. (spurges), *Sabatia* spp. (rose-gentians), *Agalinis* spp. (false foxgloves), and *Rhexia* spp. (meadow beauties). The fern *Pteridium aquilinum* (bracken fern) is often conspicuous in large colonies.

Current Extent and Status:

Western upland longleaf pine forests historically dominated large areas in the LWGCP. However much of this area has been converted to other forest types or developed. The estimated presettlement acreage of this habitat is 2,000,000 to 4,000,000 with an estimated 10 to 25 % remaining (Smith 1993). While much of this habitat has been lost or altered, there are a number of high quality occurrences, particularly on KNF, Ft. Polk, and Peason Ridge Military Reservation (Grace and Smith 1995, Hart and Lester 1993, Martin and Smith 1991, 1993).



WESTERN UPLAND LONGLEAF PINE FOREST SPECIES OF CONSERVATION CONCERN (32)		
AMPHIBIANS	Loggerhead Shrike	MAMMALS
Eastern Tiger Salamander	Prairie Warbler	Southeastern Myotis
Louisiana Slimy Salamander	Bachman's Sparrow	Silver-haired Bat
Southern Red-backed Salamander	Field Sparrow	Big Brown Bat
Southern Crawfish Frog	Henslow's Sparrow	Ringtail
	Le Conte's Sparrow	Long-tailed Weasel
BIRDS	BUTTERFLIES	REPTILES
Northern Bobwhite	Wild Indigo Duskywing	Western Slender Glass Lizard
American Woodcock	Dusted Skipper	Southern Prairie Skink
Yellow-billed Cuckoo	Pepper and Salt Skipper	Southeastern Scarlet Snake
Red-cockaded Woodpecker	Falcate Orangetip	Louisiana Pine Snake
Brown-headed Nuthatch	Harvester	
Sedge Wren	Little Metalmark	
Wood Thrush		

Priority Species Research and Survey Needs:

Brown-headed Nuthatch: Investigate the impacts of silviculture/land management practices on this species and the causes of this species' decline.

Loggerhead Shrike: BBS data for the period 1966-2000 indicate a 71% population decline rangewide. Monitoring of this species reproductive success and the effects of pesticides in reducing food availability are needed along with a statewide evaluation of changes in available habitat.

Songbirds:

- Continue to support research on the effects of silviculture/land management practices on all songbird species.
- Develop longterm monitoring projects that focus on species abundances and reproductive success (with emphasis on species of conservation concern) in this habitat type through the establishment of MAPS stations and BBS routes.

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

Bats:

- Develop projects that target species of conservation concern and focus on their distribution, abundance, and ecological needs in this habitat type (Lacki and Schwierjohann 2001).
- Research the genetic identities of different *Myotis* species in the state (Leberg 2004).

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

Long-tailed Weasel: Considered vulnerable in Louisiana. Intensive surveys are needed to update occurrence records and abundance for inclusion in the LNHP database.

Louisiana Pine Snake: The quality of remaining habitat has been degraded due to logging, fire suppression, short-rotation silviculture, and conversion to pasture lands. Some of the best remaining populations occur on industrial forest lands. Continue to support research into this species life history, limiting factors that reduce reproductive success, and the use of herbicides instead of prescribed burning on composition and/or density of ground cover vegetation and its effects on pocket gophers.

Species Conservation Strategies:

1. Northern Bobwhite and Grassland Birds: Support the implementation of recommended habitat restoration actions specified in NBCI and by LDWF Quail and Grassland Bird Task Force.

2. Red-cockaded Woodpecker:
 - Continue to support implementation of the Louisiana Statewide RCW Safe Harbor Program.
 - Support USFWS recovery efforts outlined in the RCW recovery plan, 2nd Revision.
 - Encourage the establishment of new RCW populations.
 - Investigate potential land acquisition of this habitat type to increase and support new populations.
3. Brown-headed Nuthatch: Encourage landowners to use group-selection and single-tree selection harvesting methods and maintain or increase the number of standing snags.
4. Henslow's Sparrow, Bachman's Sparrow:
 - Implement conservation and management recommendations of SWG projects T22 and T32 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.
5. Western Slender Glass Lizard, Louisiana Pine Snake:
 - Continue to work with timber industry, USFS, and USFWS to promote habitat and species conservation strategies to increase populations on quality sites.
 - Implement conservation and management recommendations of SWG project T10 upon completion.
6. Promote the use of appropriate silvicultural techniques to restore/manage western upland longleaf pine forests for wildlife (include importance of tree species diversity, den trees for birds and mammals, leaf litter, etc).
7. Promote snag retention during logging operations to increase the numbers available for cavity-nesting species.
8. Develop management recommendations 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			XXX
Incompatible forestry practices	XXX		XXX	
Invasive/alien species	XXX			
Oil or gas drilling		XXX	XXX	
Recreational use/vehicles			XXX	

Habitat Conservation Strategies:

1. Conduct surveys to determine the extent and condition of this habitat type with a focus on identifying the surrounding landscape context (i.e., residential developments, etc.) that might be affected by prescribed burning.
2. Encourage longer rotation ages when compatible with the landowner’s management objectives.
3. Work with land managers/hunting clubs/extension agents, etc. to discourage the placement of food plots in this habitat type.
4. Educate landowners, adjacent residents, developers, and the general public about the crucial role of prescribed burning in the management of longleaf pine ecosystems (multi-agency, multi-group effort).
5. Promote advantages of growing longleaf pine and associated herbaceous ground cover.
6. Promote utilization of state and federal cost share programs (FLEP and NRCS programs) to address invasive species problems.
7. Promote value-added products produced from longleaf pine to encourage landowners to replant longleaf pine instead of off-site pine species.
8. Provide additional cost share funds through programs such as FLEP in order to drastically reduce or eliminate landowners’ costs associated with conducting prescribed burns their property.
9. Investigate the availability of additional cost-share funding opportunities, through FLEP, FPP or other programs, for landowners to reduce the cost of longleaf pine management.
10. Work with the Longleaf Alliance to incorporate their strategies for longleaf pine management and restoration into current restoration efforts.
11. Work with appropriate planning commissions to provide them with LNHP data that illustrates locations of this habitat type.

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