

## 22. Live Oak-Pine-Magnolia Forest

**Rarity Rank:** S2/G2G3

**Synonyms:** Maritime Forest, Maritime Mesophytic Forest

**Ecological Systems:** CES203.503 East Gulf Coastal Plain Maritime Forest

### **General Description:**

This community is known in Louisiana from southern St. Tammany Parish, and occurs in a zone within 2 miles of Lake Pontchartrain where the Pleistocene prairie terrace meets the lake. Soils typically are sandy in nature. The community may exhibit site to site variation in species composition and physiognomy depending on soil moisture regime, age, fire history, relative exposure to salt spray, local relief, proximity to drains, and salt-water inundation during very high tides (such as those associated with hurricanes). A number of these factors are related to distance from the lake. The canopy structure of natural stands is believed to be more open than present-day stands. Overstory species include *Quercus virginiana* (live oak), *Pinus palustris* (longleaf pine), *Pinus elliottii* (slash pine), *Pinus taeda* (loblolly pine), and *Magnolia grandiflora* (southern magnolia). Significant canopy associates may include *Quercus nigra* (water oak), *Q. alba* (white oak), *Q. michauxii* (swamp white oak), *Q. laurifolia* (laurel oak), *Q. pagoda* (cherybark oak), *Liquidambar styraciflua* (sweetgum), *Fraxinus* spp. (ashes), *Acer rubrum* (red maple), *Magnolia virginiana* (sweet bay), *Liquidambar styraciflua* (sweetgum), *Celtis laevigata* (hackberry), and *Nyssa sylvatica* (black gum). Principal midstory and understory plants include *Sabal minor* (dwarf palmetto), *Ilex opaca* (American holly), *Ilex vomitoria* (yaupon), *Vaccinium* spp. (blueberries), *Osmanthus americanus* (devil-wood), *Carpinus caroliniana* (iron wood), *Ostrya virginiana* (hophornbeam), *Symplocos tinctoria* (sweetleaf), *Asimina parviflora* (dwarf pawpaw), *Oxydendrum arboreum* (sourwood), *Aralia spinosa* (devil's walking stick), *Persea borbonia* (red bay), *Rhus copallina* (winged sumac), *Morella cerifera* (wax myrtle), *Callicarpa americana* (french mulberry), *Sassafras albidum* (sassafras), *Thelypteris palustris* (southern marsh-fern), *Osmunda cinnamomea* (cinnamon fern), and *Lorinseria areolata* (net-veined chain-fern). Many vine species are present.

This natural community may in reality be a transitional type between mesic Mixed Hardwood-Loblolly Forest and/or Beech-Magnolia Forest and more typical maritime forests that occur in coastal states east of Louisiana. Or it may be an artificial aggregation, with the original species complement disproportionately represented in today's forests. Further field inventories are needed to more fully understand and define this community. Fire, although uncommon, may play an important role in Live Oak-Pine-Magnolia Forest.

**Current Extent and Status:**

This community is extremely restricted in its occurrence in Louisiana, and is known only from St. Tammany Parish along the northshore of Lake Pontchartrain. Presettlement estimates of this habitat type are from 10,000 to 50,000 acres, but only 10 to 25 % of the original extent remains today. A small portion of this habitat is protected at Fontainebleau State Park. All other occurrences are under private ownership.



LIVE OAK – PINE – MAGNOLIA FOREST SPECIES OF CONSERVATION CONCERN (19)		
<b>AMPHIBIANS</b>	Swainson's Warbler	Southeastern Myotis
Oak Toad	Kentucky Warbler	Long-tailed Weasel
	Hooded Warbler	
<b>BIRDS</b>	Field Sparrow	<b>REPTILES</b>
Yellow-billed Cuckoo	Rusty Blackbird	Eastern Glass Lizard
Chuck-Will's-Widow	Orchard Oriole	Pine Woods Littersnake
Wood Thrush		Southeastern Crowned Snake
Yellow-throated Vireo	<b>MAMMALS</b>	Harlequin Coralsnake
Northern Parula	Southeastern Shrew	

**Priority Species Research and Survey Needs:**

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 sparse BBS records.

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.

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

Southeastern Crowned Snake: Recent records are from ridges along the north shore of Lake Pontchartrain, but recent surveys have failed to detect crowned snakes. Initiate pitfall trap surveys at Fontainebleau State Park and Big Branch NWR are needed to assess potential occurrence in developing areas.

Document the habitat relationships of species of conservation concern and how dependent they are upon live oak- pine-magnolia forest habitats, relative to other habitat types.

Determine the microhabitat preferences and requirements of species occupying live oak – pine-magnolia forest to understand how these species are utilizing the habitat to determine management needs.

***Species Conservation Strategies:***

1. 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.
2. Songbirds: Continue to monitor songbird abundance and reproductive success (with emphasis on species of conservation concern) in this habitat through the establishment of MAPS stations.
3. Promote snag retention during logging operations to increase their numbers 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
Incompatible forestry practices	XXX		XXX	
Invasive/alien species	XXX		XXX	
Residential development		XXX	XXX	XXX

***Habitat Conservation Strategies:***

1. Conduct inventories to determine the amount and extent of all remaining undeveloped acres of this habitat type.
2. Support research to identify historic fire regimes and general natural community characteristics of this habitat.
3. Partner with NGOs, OSP, private landowners, etc. to initiate restoration and preservation efforts of live oak – pine – magnolia forests and continue to encourage landowners to enroll this habitat type in the Natural Areas Registry Program.

***References:***

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SMITH, L. M. 1993. Estimated presettlement and current acres of natural plant communities in Louisiana. Louisiana Natural Heritage Program, Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA.

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