

21. Live Oak Natural Levee Forest

Rarity Rank: S1S2/G2

Synonyms: Natural Levee Forest, Frontland Forest

Ecological Systems:

CES203.512 Lower Mississippi River Bottomland and Floodplain Forest

General Description:

This community occurs principally in southeastern Louisiana on natural levees or frontlands and on islands within marshes and swamps. It is similar in some respects to coastal live oak-hackberry forest in that both develop on natural ridges in the coastal zone and overstory dominants are comparable. *Quercus virginiana* (live oak) typically dominates the stand, but *Q. nigra* (water oak), *Ulmus americana* (American elm), *Celtis laevigata* (hackberry), *Acer rubrum* var. *drummondii* (Drummond red maple), and *Fraxinus pennsylvanica* (green ash) are usually prominent community members, and may be predominant in areas. Overstory associates may include *Q. pagoda* (cherrybark oak), *Q. texana* (Nuttall oak), *Gleditsia triacanthos* (honey locust), *Liquidambar styraciflua* (sweetgum), and *Acer negundo* (box-elder). *Nyssa aquatica*



(tupelo gum) and *Taxodium distichum* (baldcypress) are often present in wet depressions or on edges. *Sabal minor* (dwarf palmetto) is usually the most conspicuous midstory and understory shrub, often attaining heights of up to 4 m, but a number of other shrubs may be present, including *Ilex decidua* (deciduous holly), *Crataegus viridis* (green hawthorn), *Cornus foemina* (swamp dogwood), *Planera aquatica* (water elm), *Morella cerifera* (wax myrtle), *Sambucus canadensis* (elderberry), and *Persea borbonia* (red bay). The herbaceous layer is often poorly developed, but may contain such species as *Tradescantia* spp. (spiderworts), *Solidago sempervirens* (seaside goldenrod), *Samolus verlandieri* (water-pimpernel), *Sanicula canadensis* (snakeroot), *Arisaema dracontium* (green dragon), *Nemophylla aphylla* (baby blue eyes), *Geum canadensis* (geum), *Hydrocotyle* spp. (penny-worts), *Eupatorium* spp. (thoroughworts), *Polygonum* spp. (smartweeds), *Polygonum virginica* (jumpseed), *Packera glabella* (= *Senecio glabellus*) (yellow-top), *Panicum* spp. (panic grasses), *Oplismenus hirtellus* (basket grass), and *Thelypteris* spp. (marsh ferns). Vines are usually prominent and include *Mikania scandens* (climbing hempvine), *Cocculus carolinianum* (Carolina moonseed), *Campsis radicans* (trumpet creeper), *Toxicodendron radicans* (poison ivy), *Berchemia scandens* (rattan vine), and *Smilax rotundifolia* (common greenbrier). Epiphytes are significant community members and include the highly conspicuous *Tillandsia usneoides* (Spanish moss), plus *Polypodium polypodioides* (resurrection fern), and *Phoradendron tomentosum* (mistle-

toe). Several introduced species have become serious invaders of this habitat, including *Lygodium japonicum* (Japanese climbing fern), *Triadica sebifera* (= *Sapium sebiferum*) (Chinese tallow tree), and *Lonicera japonica* (Japanese honeysuckle).

Current Extent and Status:

Louisiana’s live oak natural levee forests occur in the Deltaic Plain of extreme southeastern parishes from Orleans and St. Bernard Parishes westward to St. Mary Parish. Since this forest type is found only on natural levees which are higher and drier than the surrounding bottomlands and marshes, they were the first areas to be cleared for agriculture and residential development. Of the original 500,000 to 1,000,000 acres in Louisiana, currently only 10,000 to 50,000 acres remain, 1-5 % of presettlement extent. The majority of these remnant forests are altered and fragmented, and threats continue from residential development, roads and utility installation, overgrazing, coastal erosion and saltwater intrusion. The majority of natural levee forests are in private ownership. A portion is protected within Jean Lafitte National Historical Park and Bayou Sauvage NWR. There are also a few remnant strips on the Wisner, Pointe-aux-Chenes, and Salvador WMAs. One tract of 71 acres, owned by Plaquemines Parish, is part of the Louisiana Natural Areas Registry Program.



| LIVE OAK NATURAL LEVEE FOREST SPECIES OF CONSERVATION CONCERN (16) | | |
|---|-----------------------|--------------------|
| BIRDS | Yellow-throated Vireo | Orchard Oriole |
| Yellow-crowned Night-Heron | Northern Parula | |
| Wood Stork | Prothonotary Warbler | MAMMALS |
| Bald Eagle | Swainson's Warbler | Long-tailed Weasel |
| American Woodcock | Kentucky Warbler | |
| Yellow-billed Cuckoo | Hooded Warbler | REPTILES |
| Wood Thrush | Painted Bunting | Timber Rattlesnake |

Priority Species Research and Survey Needs:

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

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

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

Determine the microhabitat preferences and requirements of species occupying live oak natural levee forests to understand how these species are utilizing the habitat to determine management needs.

Species Conservation Strategies:

1. Timber Rattlesnake: Naturally low-occurring population levels and persecution make their persistence in isolated forest blocks untenable. Prohibit killing timber rattlesnakes. Reduce vehicular travel where possible to avoid snake kills.
2. Swallow-tailed Kite: Implement conservation and management recommendations of SWG project T9 (Coulson 2004).
3. Bald Eagle: Continue with long-term monitoring of active bald eagle nests, successful breeding pairs, and fledged eagles.
4. Identify IBA's or potential IBA's and partner with BRAS, OAS, and the NAS to implement conservation recommendations from SWG project T27 upon completion.
5. Work with landowners to initiate or continue the implementation of PIF bird conservation plans, conservation plans developed for amphibians and reptiles, and USFWS endangered and threatened species recovery plans over the next 10 years.

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 | Herbivory |
| Development/maintenance of pipelines, roads or utilities | | XXX | XXX | XXX | |
| Invasive/alien species | XXX | | | | |
| Management of/for certain species | | | | | XXX |
| Recreational use/vehicles | | | XXX | | |
| Residential development | | XXX | XXX | XXX | |
| Saltwater intrusion | XXX | XXX | | | |

Habitat Conservation Strategies:

1. Work with the legislature to develop tax incentives and conservation servitudes or leases for landowners to encourage conservation of this habitat type.

2. Partner with NGOs, private landowners, etc. to promote protection of live oak forests and continue to encourage landowners to enroll this habitat type in the Natural Areas Registry Program.
3. Work with COE and NRCS to develop strategies for the placement of dredge materials as a restoration method for this habitat type.
4. Provide educational information on this habitat type and its importance to species of conservation concern to landowners/land managers through technical pamphlets and the LDWF website.
5. Support NRCS and DNR efforts for shoreline stabilization and habitat restoration.
6. Work with LCA, CWPPRA to broaden the coastal restoration projects to include live oak forests.
7. Work with local parish planning commissions and DNR to change zoning classifications to reduce development within this habitat type.

References:

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