

# Natural Communities of Louisiana



## Submergent Vascular Vegetation (Marine & Estuarine)

**Rarity Rank:** S1S2/G3G5

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Submerged Aquatic Vegetation, SAV, Seagrass Bed, Aquatic Bed

### Ecological Systems:

CES203.511 Texas-Louisiana Fresh-Oligohaline Subtial Aquatic Vegetation  
CES203.263 Northern Gulf of Mexico Seagrass Bed



### **General Description:**

- *Ruppia maritima* (widgeon grass), and *Vallisneria americana* (wild celery) dominate estuarine seagrass beds in Louisiana and waters of the northern Gulf of Mexico, while *Thalassia testudinum* (turtle grass) dominates marine grass beds
- These brackish and salt water communities of rooted “grasses” grow in shallow, protected waters with low turbidity
- Temperature, salinity levels, substrate, wave action, and light penetration are key factors in determining the floral and faunal composition of these beds
- Substrates are generally sand/mud bottoms to a water depth of not greater than 3 to 4 feet
- Small beds occur in ponds scattered throughout marshes of coastal Louisiana, but the most extensive beds are found in the Lake Pontchartrain and Barataria Basins, and in and around the Chandeleur Islands
- SAV beds support a diverse invertebrate and epiphytic population, serve as nursery grounds and shelter for many species of fish and shellfish, and act as important waterfowl feeding areas
- These are highly productive natural communities, releasing detritus and nutrients to surrounding waters
- Seagrass beds help to stabilize near shore substrates, preventing damage and substrate removal by wave action



Sting ray in *Vallisneria* bed

### **Plant Community Associates**

**Common species of estuarine seagrass beds include:**

*Ruppia maritima* (widgeon grass)

*Vallisneria americana* (wild celery)

*Najas quadalupensis* (southern naiad)

*Zannichellia palustris* (horned pondweed)

*Potamogeton perfoliatus* (clasping-leaf pondweed, rare in LA)

# Natural Communities of Louisiana



## Common species of marine seagrass beds include:

*Thalassia testudinum* (turtle grass)

*Halophila englemanii* (sea grass)

*Ruppia maritima* (widgeon grass)

*Cymodocea filiformis* (manatee grass)

*Halodule beaudettei* (shoal grass)

## Federally-listed plant & animal species:

*Trichechus manatus* (manatee)

*Chelonia mydas* (green sea turtle)

*Eretmochelys imbricata* (hawksbill sea turtle)

*Lepidochelys kempii* (Kemp's Ridley sea turtle)

*Dermochelys coriacea* (leatherback sea turtle)

*Caretta caretta* (loggerhead sea turtle)

Endangered; G2; SZN

Threatened/Endangered; G3; SZN

Endangered; G3; SZN

Endangered; G1; SZN

Endangered; G2; SZN

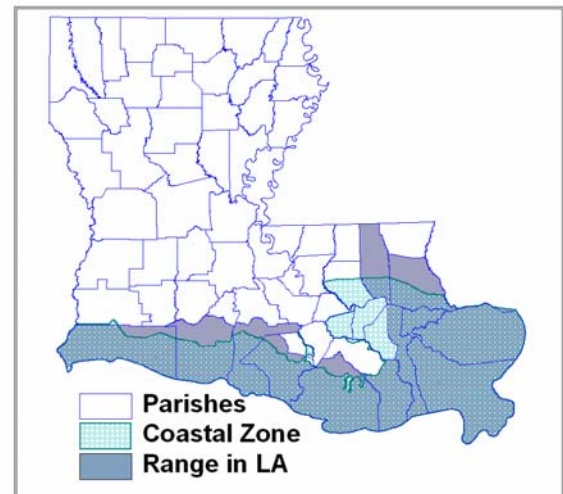
Threatened; G3; S1

## Range:

Can be found throughout Louisiana's coastal zone marshes and estuaries, however, the last remaining extensive beds are found along the north shore of Lake Pontchartrain and into Lake Maurepas, and in and around the Chandeleur Islands.

## LA River Basins:

Pearl, Pontchartrain, Mississippi, Barataria, Terrebonne, Atchafalaya, Vermilion-Teche, Mermentau, Calcasieu, Sabine



## Threats:

- Sea level rise
- Industrial development (oil & gas drilling)
- Hydrological alterations (canal dredging)
- Any activities that increase turbidity and sediment load
- Changes in water quality (increase in salinity levels)
- Construction of pipelines or utilities
- Contamination by chemicals
- Invasive exotic species

## Beneficial Management Practices:

- Prevent conversion of existing natural communities to other uses
- Avoid mechanical and water quality impacts in and around seagrass beds
- Avoid activities in shallow waters (less than 4 feet in depth) that might increase disturbance and turbidity
- Small volume increase in freshwater inputs to offset salt water influences



Manatee mother and calf  
photo: USFWS

Funding provided by the Louisiana Department of Wildlife and Fisheries and the Barataria-Terrebonne National Estuary Program

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# Natural Communities of Louisiana



## Brackish Marsh

**Rarity Rank:** S3S4/G4?

	1	2	3	4	5
State					
Global					
	imperiled		rare	secure	

**Synonyms:** Needle Rush Marsh, Edge-Zone Marsh, Middle Estuary

### Ecological Systems:

CES203.471 Mississippi Delta Salt and Brackish Tidal Marsh

CES203.468 Gulf Coast Chenier Plain Salt and Brackish Tidal Marsh



Photo: Todd Baker

### **General Description:**

- Usually found between salt marsh and intermediate marsh, although it may occasionally lie adjacent to the Gulf of Mexico
- Experiences irregular tidal flooding and is dominated by salt-tolerant grasses
- Small pools or ponds may be scattered throughout
- Plant diversity and soil organic matter content are higher in brackish marsh than in salt marsh
- Typically dominated by *Spartina patens* (wire grass)
- Two other major autotrophic groups in brackish marsh are epiphytic algae and benthic algae
- Vertebrate species population levels generally higher in brackish marsh compared to salt marsh
- Salinity averages about 8 ppt, and this community may be changed to another marsh types by shifts in salinity levels
- Acts as nursery areas for myriads of larval forms of shrimp, crabs, redfish, seatrout, menhaden, etc., and also as important waterfowl habitat
- Functions as a nitrogen and phosphorus sink, thereby improving the quality of water that passes through this ecosystem
- Can alleviate the effects of storms and flooding by acting as a buffer and providing storage for large amounts of water

### **Plant Community Associates**

#### **Common species include:**

*Spartina patens* (wire grass)

*Schoenoplectus olneyi* (three-cornered grass)

*Schoenoplectus robustus* (salt marsh bulrush)

*Paspalum vaginatum* (seashore paspalum)

*Bacopa monnieri* (coastal water hyssop)

*Spartina cynosuroides* (big cordgrass)

*Distichlis spicata* (salt grass)

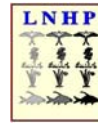
*Ruppia maritima* (widgeon grass)

*Eleocharis parvula* (dwarf spikeseed)

*Juncus roemianus* (black rush)

*Spartina alterniflora* (smooth cordgrass)

# Natural Communities of Louisiana



## Federally-listed plant & animal species:

*Grus americana* (whooping crane)

*Pelecanus occidentalis* (brown pelican)

*Haliaeetus leucocephalus* (bald eagle)

Endangered; G1; SH

Endangered (PS:E); G4; S2

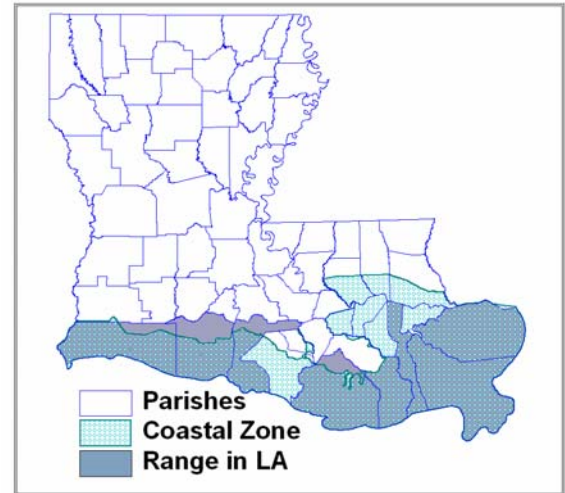
Bald & Golden Eagle Protection Act;  
G4; S2N,S3B

## **Range:**

Presettlement extent of brackish marsh is estimated to have been between 500,000 and 1,000,000 acres with 50 to 75 percent remaining today. At present the total acreage of brackish marsh appears to be increasing due to shifts in marsh salinity levels. However, stable, viable examples of brackish marsh are becoming rare in Louisiana.

## **LA River Basins:**

Pearl, Pontchartrain, Mississippi, Barataria, Terrebonne, Vermilion-Teche, Mermentau, Calcasieu, Sabine



## **Threats:**

- Shoreline erosion and subsidence
- Commercial and industrial development
- Construction of roads, pipelines or utilities
- Hydrological alterations (channelization and leveeing of waterways, canal dredging)
- Contamination by chemicals or industrial discharge
- Fire suppression
- Invasive exotic species

## **Beneficial Management Practices:**

- Prevent conversion of existing natural communities to other land uses
- Allow natural fires to burn freely (if feasible) and establish regular burning regime on managed lands to improve habitat and food quality for wildlife
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means



# Natural Communities of Louisiana



## Coastal Mangrove-Marsh Shrubland

**Rarity Rank:** S3/G2?

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Intertidal Saltwater Swamp, Saltwater Swamp, Mangrove Swamp

**Ecological Systems:** CES203.471 Mississippi Delta Salt and Brackish Tidal Marsh

### General Description:

- Estuarine community generally found adjacent to or surrounded by salt marsh, and often on the leeward side of barrier islands
- Although sometimes termed a swamp, the outward appearance of the community in Louisiana more closely resembles a shrub thicket
- Restricted to Louisiana's outer coastal region due to black mangrove's inability to tolerate freezing temperatures
- Top-kill caused by winter freezes limits mangroves to a shrub-like form (10 feet or less in height), unlike Florida where they attain forest stature
- Extensive root systems stabilize the shoreline and reduce erosion
- Cover and food provided by mangrove shrublands create an excellent nursery area for fish and shellfish
- The presence of mangrove thickets within the salt marsh improves surrounding water quality by filtering nutrients and suspended sediments
- Serves as important nesting areas for colonial waterbirds

### Plant Community Associates

#### Common species include:

*Avicennia germinans* (black mangrove)  
*Spartina alterniflora* (smooth cordgrass)  
*Batis maritima* (saltwort)  
*Salicornia virginica* (creeping glasswort)  
*Iva frutescens* (marshelder)  
*Borrichia frutescens* (sea ox-eye)  
*Distichlis spicata* (salt grass)

#### Federally-listed plant & animal species:

*Pelecanus occidentalis* (brown pelican)  
 Endangered (PS:E); G4; S2



Black mangrove seedling



Avicennia germinans in flower

# Natural Communities of Louisiana



## Range:

Mangroves in Louisiana are found along the fringes of the Deltaic Plain coastal marshes, most commonly flanking large bays and on the leeward side of barrier islands. It is estimated that in the late 1970's a total of 3,900 to 5,900 acres of mangroves occurred in Louisiana. Occasional hard freezes can seriously reduce the extent of this community in coastal Louisiana. However, mild winters of the past decade have allowed expansion of this natural community in southeastern Louisiana's coastal marshes.

## LA River Basins:

Pontchartrain, Barataria, Terrebonne



## Threats:

- Shoreline erosion
- Construction of roads, pipelines or utilities
- Hydrological alterations (to include adjacent areas)
- Contamination by chemicals or industrial discharge
- Invasive exotic species

## Beneficial Management Practices:

- Prevent conversion of existing natural community to other land uses
- Shoreline or island stabilization
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means



Mangrove invading salt marsh near Port Fourchon



Brown pelicans nesting in mangroves



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# Natural Communities of Louisiana



## Intermediate Marsh

**Rarity Rank:** S3S4/G4

	1	2	3	4	5
State					
Global					
	imperiled		rare	secure	

**Synonyms:** Oligohaline Marsh

### Ecological Systems:

CES203.467 Gulf Coast Chenier Plain

Fresh and Oligohaline Tidal Marsh

CES203.470 Mississippi Delta Fresh and Oligohaline Tidal Marsh



### **General Description:**

- This natural community lies between brackish marsh and freshwater marsh, although it infrequently may be adjacent to the Gulf
- Intermediate marsh has an irregular tidal regime and is oligohaline (salinity of 3 to 10 ppt)
- Dominated by narrow-leaved, persistent species particularly *Spartina patens* (wire grass)
- Small pools or ponds may be scattered throughout
- Soil organic matter content is higher than in brackish marsh
- This marsh is characterized by a higher diversity of species than salt or brackish marsh, many of which are found in freshwater marsh and some of which are found in brackish marsh
- Two other major autotrophic groups in intermediate marsh are epiphytic and benthic algae
- Smallest in extent of the four marsh types
- Very important to many species of avian wildlife and supports large numbers of wintering waterfowl
- Also critical nursery habitat to larval marine organisms
- Gradual changes in salinity conditions can cause this habitat to shift towards brackish marsh

### **Plant Community Associates**

#### **Common species include:**

*Spartina patens* (wire grass)

*Sagittaria lancifolia* (= *S. falcata*; bulltongue)

*Eleocharis* spp. (spikesedge)

*Scirpus californicus* (giant bulrush)

*Scirpus americanus* (common threesquare)

*Paspalum vaginatum* (seashore paspalum)

*Leptochloa fascicularis* (bearded sprangletop)

*Cyperus odoratus* (fragrant flatsedge)

*Alternanthera philoxeroides* (alligator weed)

*Spartina spartineae* (gulf cordgrass)

*Phragmites communis* (roseau cane)

*Bacopa monnieri* (coastal water hyssop)

*Scirpus olneyi* (three-cornered grass)

*Vigna luteola* (deer pea)

*Panicum virgatum* (switch grass)

*Pluchea camphorata* (camphor-weed)

*Echinonchloa walteri* (walter millet)

*Najas guadalupensis* (southern naiad)

*Spartina cynosuroides* (big cordgrass)

# Natural Communities of Louisiana



## Federally-listed plant & animal species:

*Pelecanus occidentalis* (brown pelican)

Endangered (PS:E); G4; S2

### **Range:**

Presettlement acreage was estimated at 100,000 to 500,000 acres, but has been reduced by 50 to 75 % of this original extent. The largest contiguous tracts of intermediate marsh occur in Cameron, Vermilion, Terrebonne, and Lafourche parishes.

### **LA River Basins:**

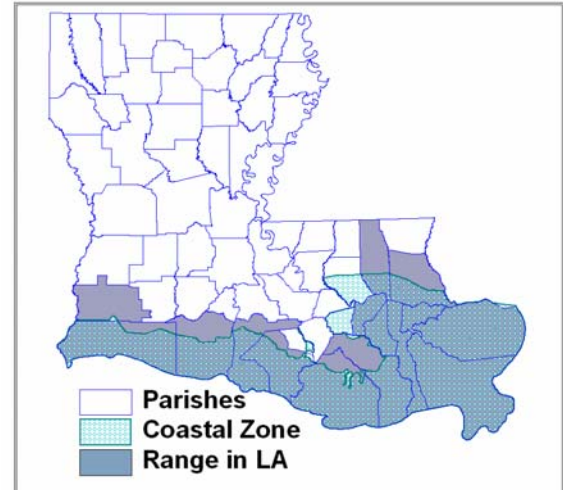
Pearl, Pontchartrain, Mississippi, Barataria, Terrebonne, Atchafalaya, Vermilion-Teche, Mermentau, Calcasieu, Sabine

### **Threats:**

- Saltwater intrusion and subsidence
- Canal dredging
- Commercial, industrial and residential development
- Construction of roads, pipelines or utilities
- Contamination by chemicals or industrial discharge
- Fire suppression
- Invasive exotic species

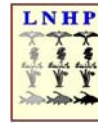
### **Beneficial Management Practices:**

- Prevent conversion of existing natural communities to other land uses
- Allow natural fires to burn freely (if feasible) and establish regular burning regime on managed lands to improve habitat and food quality for wildlife
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means





# Natural Communities of Louisiana



## Salt Marsh

**Rarity Rank:** S3S4/G5

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Smooth Cordgrass Marsh, Saltgrass Marsh, Saline Marsh

### Ecological Systems:

CES203.468 Gulf Coast Chenier Plain

Salt and Brackish Tidal Marsh

CES203.471 Mississippi Delta Salt and Brackish Tidal Marsh



### **General Description:**

- Generally occurring adjacent to or at the interface of coastal lands with the open waters of the Gulf of Mexico
- Varies in size from 1-15 miles in width
- Small pools or ponds are often scattered throughout
- These marshes are regularly tidally flooded, flat, polyhaline areas dominated by salt-tolerant grasses
- Lowest plant species diversity of any of the four marsh types, and is often totally dominated by *Spartina alterniflora* (smooth cordgrass)
- Lowest soil organic matter content of any marsh type
- Microscopic algae on the surface of vascular plants, and benthic algae (usually diatoms) living on or in the marsh sediment are two other major groups of autotrophs found in salt marsh
- Soil and water conditions regulate plant growth, and salinity appears to be the primary factor determining species composition
- Mean salinity of salt marsh is about 16 ppt
- The area of salt marsh is increasing apparently due to salt-water intrusion resulting in shifts in marsh salinity levels and plant species composition
- Acts as nursery areas for myriads of larval forms of shrimp, crabs, redfish, seatrout, menhaden, etc., and also as important waterfowl habitat
- Functions as a nitrogen and phosphorus sink, thereby improving the quality of water that passes through it
- Can alleviate the effects of storms and flooding by acting as a buffer and providing storage for large amounts of water

### **Plant Community Associates**

#### **Common species include:**

*Spartina alterniflora* (smooth cordgrass)

*Distichlis spicata* (salt grass)

*Batis maritima* (salt wort)

*Spartina patens* (wire grass)

*Juncus roemarianus* (black rush)

# Natural Communities of Louisiana



## Federally-listed plant & animal species:

*Grus americana* (whooping crane)

Endangered; G1; SH

*Pelecanus occidentalis* (brown pelican)

Endangered (PS:E); G4; S2

## **Range:**

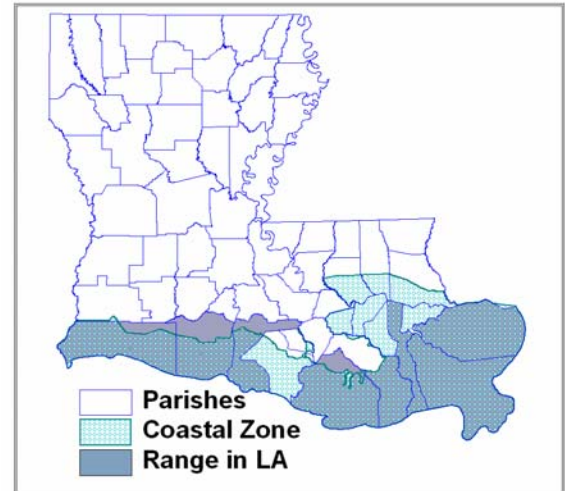
Salt marsh is estimated to have occupied 500,000 to 1,000,000 acres in presettlement times, with an estimated 50 to 75 % remaining. Salt marsh is most common on the deltaic plain of southeast Louisiana.

## **LA River Basins:**

Pearl, Pontchartrain, Mississippi, Barataria, Terrebonne, Vermilion-Teche, Mermentau, Calcasieu, Sabine

## **Threats:**

- Shoreline erosion and subsidence
- Commercial and industrial development
- Construction of roads, pipelines or utilities
- Hydrological alterations (channelization and leveeing of waterways, canal dredging)
- Contamination by chemicals or industrial discharge
- Fire suppression
- Invasive exotic species



## **Beneficial Management Practices:**

- Prevent conversion of existing natural communities to other land uses
- Allow natural fires to burn freely (if feasible) and establish regular burning regime on managed lands to improve habitat and food quality for wildlife
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means
- Create new coastal land masses with dredge or other materials where feasible



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**Synonyms:** Submerged Aquatic Vegetation, SAV, Seagrass Bed, Aquatic Bed

### Ecological Systems:

CES203.511 Texas-Louisiana Fresh-Oligohaline Subtial Aquatic Vegetation  
CES203.263 Northern Gulf of Mexico Seagrass Bed



### **General Description:**

- *Ruppia maritima* (widgeon grass), and *Vallisneria americana* (wild celery) dominate estuarine seagrass beds in Louisiana and waters of the northern Gulf of Mexico, while *Thalassia testudinum* (turtle grass) dominates marine grass beds
- These brackish and salt water communities of rooted “grasses” grow in shallow, protected waters with low turbidity
- Temperature, salinity levels, substrate, wave action, and light penetration are key factors in determining the floral and faunal composition of these beds
- Substrates are generally sand/mud bottoms to a water depth of not greater than 3 to 4 feet
- Small beds occur in ponds scattered throughout marshes of coastal Louisiana, but the most extensive beds are found in the Lake Pontchartrain and Barataria Basins, and in and around the Chandeleur Islands
- SAV beds support a diverse invertebrate and epiphytic population, serve as nursery grounds and shelter for many species of fish and shellfish, and act as important waterfowl feeding areas
- These are highly productive natural communities, releasing detritus and nutrients to surrounding waters
- Seagrass beds help to stabilize near shore substrates, preventing damage and substrate removal by wave action



Sting ray in *Vallisneria* bed

### **Plant Community Associates**

**Common species of estuarine seagrass beds include:**

*Ruppia maritima* (widgeon grass)

*Vallisneria americana* (wild celery)

*Najas quadalupensis* (southern naiad)

*Zannichellia palustris* (horned pondweed)

*Potamogeton perfoliatus* (clasping-leaf pondweed, rare in LA)



# Natural Communities of Louisiana



## ***Common species of marine seagrass beds include:***

*Thalassia testudinum* (turtle grass)

*Halophila englemanii* (sea grass)

*Ruppia maritima* (widgeon grass)

*Cymodocea filiformis* (manatee grass)

*Halodule beaudettei* (shoal grass)

## **Federally-listed plant & animal species:**

*Trichechus manatus* (manatee)

*Chelonia mydas* (green sea turtle)

*Eretmochelys imbricata* (hawksbill sea turtle)

*Lepidochelys kempii* (Kemp's Ridley sea turtle)

*Dermochelys coriacea* (leatherback sea turtle)

*Caretta caretta* (loggerhead sea turtle)

Endangered; G2; SZN

Threatened/Endangered; G3; SZN

Endangered; G3; SZN

Endangered; G1; SZN

Endangered; G2; SZN

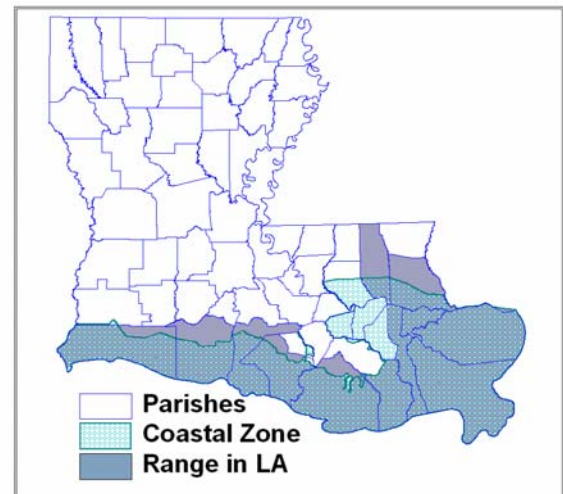
Threatened; G3; S1

## ***Range:***

Can be found throughout Louisiana's coastal zone marshes and estuaries, however, the last remaining extensive beds are found along the north shore of Lake Pontchartrain and into Lake Maurepas, and in and around the Chandeleur Islands.

## ***LA River Basins:***

Pearl, Pontchartrain, Mississippi, Barataria, Terrebonne, Atchafalaya, Vermilion-Teche, Mermentau, Calcasieu, Sabine



## ***Threats:***

- Sea level rise
- Industrial development (oil & gas drilling)
- Hydrological alterations (canal dredging)
- Any activities that increase turbidity and sediment load
- Changes in water quality (increase in salinity levels)
- Construction of pipelines or utilities
- Contamination by chemicals
- Invasive exotic species

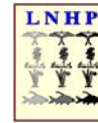
## ***Beneficial Management Practices:***

- Prevent conversion of existing natural communities to other uses
- Avoid mechanical and water quality impacts in and around seagrass beds
- Avoid activities in shallow waters (less than 4 feet in depth) that might increase disturbance and turbidity
- Small volume increase in freshwater inputs to offset salt water influences



Manatee mother and calf  
photo: USFWS

# Natural Communities of Louisiana



## Vegetated Pioneer Emerging Delta

**Rarity Rank:** S2S3/G3G4

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Delta Flats, Emergent Islands

**Ecological Systems:** CES203.470

Mississippi Delta Fresh and Oligohaline Tidal Marsh



### General Description:

- A dynamic community forming primarily within the actively building delta region at the mouth of the Atchafalaya and Mississippi Rivers
- Soils are formed from course to fine-grained alluvial deposits
- Hydrologic regime ranges from intermittently exposed to intermittently flooded
- Zonation of plant species occurs on the newly accreted land
- Naturally deposited island soils contain a greater percentage of sand and are therefore better drained than marsh soils
- The pioneer ridge vegetation is similar to the sand bars and delta of the Mississippi River while the pioneer marsh vegetation is similar to that of fresh marsh areas
- The pioneer community is successional in nature and changes rapidly with time
- The new delta community's ecological functions are similar in nature to marsh and mudflat systems, serving as nursery grounds for fish and aquatic invetebtrate species
- Supports high numbers of wintering waterfowl

### Plant Community Associates

**Common species dominate on higher elevations include:**

*Echinochloa walteri* (coast cockspur grass)

**Common species dominating lower elevation tidally influenced zones include:**

*Sagittaria latifolia* (broadleaf bulltongue)

*Sagittaria platyphylla* (delta arrowhead)

*Leptochloa uninervia* (Mexican sprangletop)

*Cyperus difformis* (variable flatsedge)

*Eleocharis parvula* (dwarf spikerush)

**Common species dominating intermediate zones include:**

*Sagittaria platyphylla* (delta arrowhead)

*Cyperus difformis* (variable flatsedge)

*Bacopa monnieri* (coastal water hyssop)

*Eleocharis parvula* (dwarf spikerush)

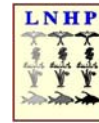
*Leptochloa fusca* ssp. *uninervia* (Mexican sprangletop)

**Other common species include:**

*Salix* spp. (willow)

*Typha latifolia* (common cattail)

# Natural Communities of Louisiana



## ***Other common species continued:***

*Scirpus validus* (softstem bulrush)

*Juncus effusus* (soft rush)

*Scirpus americanus* (threesquare bulrush)

## **Federally-listed plant & animal species:**

*Pelecanus occidentalis* (brown pelican)

*Haliaeetus leucocephalus* (bald eagle)

Endangered, PS:E; G4; S2

Bald & Golden Eagle Protection Act;  
G4; S2N, S3B

*Trichechus manatus* (manatee)

Endangered; G2; SZN

*Chelonia mydas* (green sea turtle)

Threatened/Endangered; G3; SZN

*Eretmochelys imbricata* (hawksbill sea turtle)

Endangered; G3; SZN

*Lepidochelys kempii* (Kemp's Ridley sea turtle)

Endangered; G1; SZN

*Dermochelys coriacea* (leatherback sea turtle)

Endangered; G2; SZN

*Caretta caretta* (loggerhead sea turtle)

Threatened; G3; S1

## ***Range:***

There are two areas of the Louisiana coast supporting this habitat: the actively forming Atchafalaya Delta and the current mouth of the Mississippi River.

## ***LA River Basins:***

Mississippi, Atchafalaya

## ***Threats:***

- Channelization and dredging
- Frequent and prolonged fluctuations in river water levels

## ***Beneficial Management Practices:***

- Allow natural alluvial deposition processes to continue delta formation
- Identify and protect sensitive areas from disturbances such as boats or other motorized vehicles and recreational use
- Develop better strategies for the placement of dredge materials as a restoration method



Funding provided by the Louisiana Department of Wildlife and Fisheries and the Barataria-Terrebonne National Estuary Program

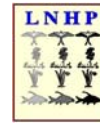
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# Natural Communities of Louisiana



## Batture

**Rarity Rank:** S4S5/G4G5

	1	2	3	4	5
State					
Global					
	imperiled		rare	secure	

**Synonyms:** Riverfront Pioneer Forest, Cottonwood-Willow Forest, Black Willow Forest, Cottonwood Forest

### Ecological Systems:

CES203.190 Mississippi River Riparian Forest

CES203.489 East Gulf Coastal Plain Large River Floodplain Forest

CES203.065 Red River Large Floodplain Forest

CES203.488 West Gulf Coastal Plain Large River Floodplain Forest



### **General Description:**

- Develops on the slope between the natural levee crest and major streams/ivers
- A pioneer community which is first to appear on newly formed sand bars and river margins
- These areas receive sands and silts with each flood
- Soils are semi-permanently inundated or saturated, and inundation or saturation by surface water or groundwater occurs periodically, primarily during spring and summer months
- As river sediments build up, a rapid succession of plant species progresses from willow and cottonwood into bottomland forest types, including the Hackberry-American Elm-Green Ash or Sycamore-Sweetgum-American Elm variations
- The successional sequence is a function of river meander movement rates and point bar formation. Rivers with swift meander movements over unconsolidated sands produce tapered slopes on point bars which are first colonized by the batture community

### **Plant Community Associates**

#### **Primary pioneer tree species include:**

*Salix nigra* (black willow)

*Salix exigua* (sandbar willow)

*Populus deltoides* (cottonwood)

#### **Secondary tree species, appearing as succession progresses, include:**

*Betula nigra* (riverbirch)

*Platanus occidentalis* (American sycamore)

*Celtis laevigata* (hackberry)

*Forestiera acuminata* (swamp privet)

*Ulmus americana* (American elm)

*Acer negundo* (box elder)

*Fraxinus pennsylvanica* (green ash)

*Carya illinoensis* (pecan)

*Acer rubrum* (red maple)

*Planera aquatica* (water elm)

*Taxodium distichum* (baldcypress)

*Morus rubra* (red mulberry)

# Natural Communities of Louisiana



## Federally-listed plant & animal species:

*Haliaeetus leucocephalus* (bald eagle)

Bald & Golden Eagle Protection Act;  
G4; S2N, S3B

### **Range:**

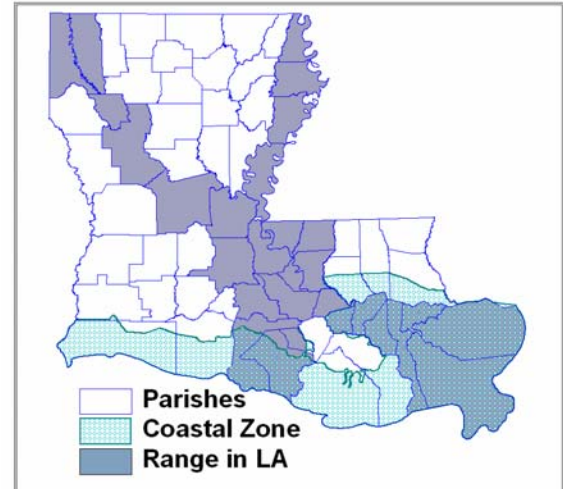
Batture occurs primarily along the Mississippi River but also along the Atchafalaya, Red, and perhaps other smaller rivers. It is apparently a secure and viable habitat in Louisiana.

### **LA River Basins:**

Pontchartrain, Mississippi, Barataria, Terrebonne, Atchafalaya, Vermilion-Teche, Red, Ouachita

### **Threats:**

- Operation of drainage or diversion systems
- Hydrological alterations
- Construction of roads, pipelines or utilities
- Invasive exotic species
- Industrial activities and discharge



### **Beneficial Management Practices:**

- Prevent conversion of existing natural forests to other land uses
- Strictly follow [Best Management Practices](#) guidelines
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means



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# Natural Communities of Louisiana



## Bottomland Hardwood Forest

**Rarity Rank:** S4/G4G5

	1	2	3	4	5
State					
Global					
	imperiled		rare	secure	

**Synonyms:** Mixed Bottomland Hardwoods, Broad Stream Margins, Hardwood Bottoms, Floodplain Forests

### Ecological Systems:

CES203.512 Lower Mississippi River Bottomland and Floodplain Forest

CES203.489 East Gulf Coastal Plain Large River Floodplain Forest

CES203.065 Red River Large Floodplain Forest

CES203.488 West Gulf Coastal Plain Large River Floodplain Forest



### General Description:

- Forested, alluvial wetlands occupying broad floodplain areas flanking large river systems
- Maintained by a natural hydrologic regime of alternating wet and dry periods that follow seasonal flooding events
- Provide important ecosystem functions including maintenance of water quality, productive habitat for a variety of fish and wildlife species, regulation of flooding, and stream recharge
- Soils are alluvial deposits, heavy clays to silty clays, high in organic matter and nutrients
- Dominant forest species can be aggregated into specific associations based on environmental factors such as physiography, topography, hydric (wet) soils, and hydrologic regimes
- Vegetation associations are typically mixtures of broadleaf deciduous, needleleaf deciduous, and evergreen trees and shrubs



### Plant Community Associates

#### 1). Overcup Oak - Water Hickory Bottomland Forest

*Quercus lyrata* (overcup oak)

*Fraxinus pennsylvanica* (green ash)

*Cornus foemina* (swamp dogwood)

*Planera aquatica* (planertree)

many vine species

*Carya aquatica* (water hickory)

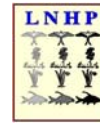
*Celtis laevigata* (hackberry)

*Forestiera acuminata* (swamp privet)

*Cephalanthus occidentalis* (buttonbush)



# Natural Communities of Louisiana



## 2). Hackberry-American Elm-Green Ash Bottomland Forest

*Celtis laevigata* (hackberry)  
*Fraxinus pennsylvanica* (green ash)  
*Quercus texana* (nuttall oak)  
*Quercus nigra* (water oak)  
*Liquidambar styraciflua* (sweetgum)  
*Ulmus alata* (winged elm)  
*Gleditsia aquatica* (water locust)  
*Plantanus occidentalis* (American sycamore)  
*Morus rubra* (red mulberry)

*Ulmus americana* (American elm)  
*Carya aquatica* (water hickory)  
*Quercus phellos* (willow oak)  
*Quercus lyrata* (overcup oak)  
*Acer negundo* (box elder)  
*Acer rubrum* (red maple)  
*Cornus foemina* (swamp dogwood)  
*Crataegus* spp. (hawthorn)  
many vines and herbaceous species

## 3). Sweetgum-Water Oak Bottomland Forest

*Liquidambar styraciflua* (sweetgum)  
*Celtis laevigata* (hackberry)  
*Ulmus americana* (American elm)  
*Acer rubrum* (red maple)  
*Ilex decidua* (deciduous holly)  
*Arundinaria gigantea* (switchcane)

*Quercus nigra* (water oak)  
*Fraxinus pennsylvanica* (green ash)  
*Quercus pagoda* (cherrybark oak)  
*Sabal minor* (dwarf palmetto)  
*Crataegus viridis* (green hawthorn)  
many vines and herbaceous species

### Federally-listed plant & animal species:

*Ursus americanus luteolus* (Louisiana black bear)

Threatened; G5T2; S2

### **Range:**

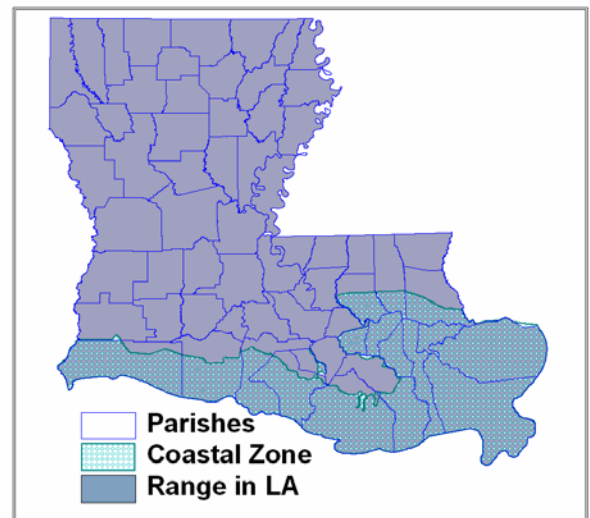
Predominant in the Mississippi River Alluvial Plain, but found throughout Louisiana in all river basins. Also important in the East Gulf Coastal Plain in association with major rivers. Bottomland hardwood forest loss is estimated to be 50 to 75 % of the original presettlement acreage. Old-growth examples are very rare.

### **Threats:**

- Clearing for agricultural production was the primary factor leading to fragmentation and decline
- Hydrological alterations
- Construction of roads, utilities and pipelines
- Invasive exotic species

### **Beneficial Management Practices:**

- Prevent conversion of existing natural forests to other land uses
- Strictly follow [Best Management Practices](#) guidelines
- Maintain natural species composition by following appropriate hardwood management techniques
- No harvesting during wet periods to prevent soil damage
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means
- No soil disturbance or other activities that alter natural waterflow, including from adjacent areas



# Natural Communities of Louisiana



## Coastal Prairie

**Rarity Rank:** S1/G2Q

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Cajun Prairie, Great Southwest Prairie, Eastern Coastal Prairie, Gulf Cordgrass Prairie

### Ecological Systems:

CES203.550 Texas-Louisiana Coastal Prairie

CES203.541 Texas-Louisiana Coastal Prairie Pondshore

CES203.542 West Gulf Coastal Plain Texas-Louisiana Coastal Prairie Slough



### **General Description:**

- May be divided into two main types, upland dry to mesic prairies at the north portion of its range, and marsh fringing prairie on "islands" or "ridges" in the marsh at the south edge of its range
- The region is underlain by an impervious clay pan 6 to 18 inches below the surface that prevents downward percolation of water and inhibits upward movement of capillary water
- Soils are typically circum-neutral to alkaline, saturated in winter, and often very dry to droughty in late spring and fall
- Historically, trees were confined to the more elevated and better drained stream sides or ridges, forming "gallery forests", and acted to divide the coastal prairie into many subunits or "coves"
- The intrinsic soil conditions and frequent burning from lightening strikes prevented invasion by woody trees and shrubs and maintained the prairie vegetation
- Certain woody species may invade this habitat without periodic fire. The introduced species *Triadica sebifera* (= *Sapium sebiferum*; Chinese tallow tree) has become especially problematic, forming dense thickets or forests
- The natural demarcation line between the forest and grassland was (and is) very sharp
- Coastal Prairie vegetation is extremely diverse and dominated by grasses
- Many plants in Coastal Prairie also occur in the pine savannahs and flatwoods that occur immediately north of the coastal prairie region

### **Plant Community Associates**

#### **Common herbaceous species include:**

*Paspalum plicatulum* (brownseed paspalum)

*Schizachyrium scoparium* (little bluestem)

*Schizachyrium tenerum* (slender bluestem)

*Andropogon gerardii* (big bluestem)

*Spartina patens* (wire grass, near marshes)

*Panicum* spp. (panic grasses)

*Sporobolus* spp. (dropseeds)

*Carex* spp. (caric sedges)

*Rhynchospora* spp. (beaked sedges)

*Paspalum* spp. (paspy grasses)

*Aristida* spp. (three-awn grasses)

*Andropogon* spp. (broomsedges)

*Eragrostis* spp. (love grasses)

*Panicum virgatum* (switch grass)

*Sorghastrum nutans* (Indian grass)

*Tridens* spp. (purple-top)

*Cyperus* spp. (umbrella sedges)

*Scleria* spp. (nut-rushes)

# Natural Communities of Louisiana



## ***Common forb (wildflower) species include:***

*Cacalia ovata* (Indian plaitain)  
*Liatris* spp. (blazing-stars)  
*Silphium* spp. (rosin-weeds)  
*Baptisia* spp. (indigos)  
*Rudbeckia* spp. (brown-eyed susans)  
*Euthamia* spp. (flat-topped goldenrods)  
*Ruellia humilis* (wild petunia)  
*Coreopsis* spp. (tickseeds)  
*Agalinis* spp. (false foxgloves)  
*Sabatia* spp. (rose-gentians)  
*Aletris* spp. (colic-roots)

*Helianthus mollis* (sunflower)  
*Asclepias* spp. (milkweeds)  
*Petalostemum* spp. (prairie clovers)  
*Amsonia tabernaemontana* (blue star)  
*Euphorbia* spp. (spurges)  
*Hedyotis nigricans* (bluets)  
*Ludwigia* spp. (water primroses)  
*Solidago* spp. (goldenrods)  
*Eupatorium* spp. (thoroughworts)  
*Polygala* spp. (milkworts)  
*Rhexia* spp. (meadow beauties)

## **Federally-listed plant & animal species:**

*Grus americana* (whooping crane)

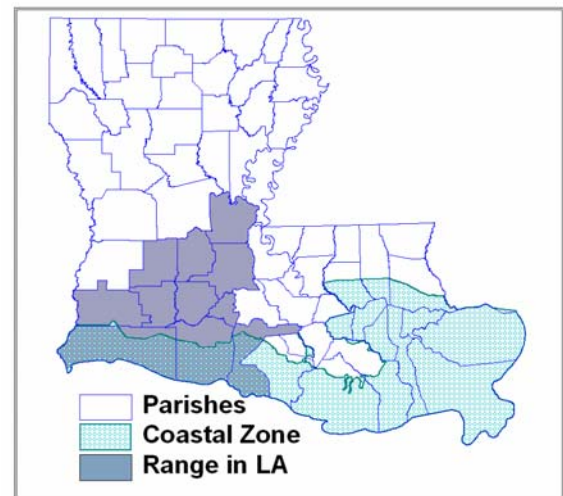
Endangered; G1; SH

## ***Range:***

Remnant Louisiana coastal prairies, once covering an estimated 2.5 million acres, have been reduced to much less than 1 % of the original extent. Only a tiny portion of upland remnant prairies still exist, and they can be found primarily along railroad right-of-ways between railroad tracks and highways. Some of the larger prairie remnants are marsh fringing, wet prairies found in Vermilion and Cameron Parishes.

## ***LA River Basins:***

Vermilion-Teche, Mermentau, Calcasieu, Sabine



## ***Threats:***

- Fire suppression
- Invasive exotic species
- Agricultural, industrial and residential development
- Construction of roads, pipelines or utilities
- Saltwater intrusion and subsidence
- Overgrazing

## ***Beneficial Management Practices:***

- Prevent conversion of existing natural communities to other land uses
- Use of growing season prescribed fire (April-June) at a frequency of every 1 to 2 years
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means
- Prohibit livestock grazing



Restored coastal prairie in Eunice, LA

Funding provided by the Louisiana Department of Wildlife and Fisheries and the Barataria-Terrebonne National Estuary Program

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# Natural Communities of Louisiana



## Cypress Swamp & Cypress-Tupelo Swamp

**Rarity Rank:** S4/G3G5

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Freshwater Swamp, Brake, Swamp Forest, Cypress Slough

### Ecological Systems:

CES203.490 Lower Mississippi River Bottomland Depression

CES203.065 Red River Large Floodplain Forest

CES203.384 Southern Coastal Plain Nonriverine Basin Swamp

CES203.459 West Gulf Coastal Plain Near Coast Large River Swamp



### **General Description:**

- Forested, alluvial swamps growing on intermittently exposed soils most commonly along rivers and streams but also occurring in backswamp depressions and swales
- Soils are inundated or saturated by surface water or ground water on a nearly permanent basis throughout the growing season except during periods of extreme drought
- All swamps, even deepwater swamps with almost continuous flooding, experience seasonal fluctuations in water levels
- Generally occur on mucks and clays, and also silts and sands with underlying clay layers (Alfisols, Entisols, Histosols, and Inceptisols)
- Relatively low floristic diversity, and associate species may vary widely from site to site
- Undergrowth is often sparse because of low light intensity and long hydroperiod
- Establishment of young trees can only occur during periods of exceptionally long drought, since neither baldcypress nor tupelo gum seeds germinate underwater, nor can young seedlings of these trees survive long submergence
- Swamps tend to be even-aged stands since the environmental conditions favorable for germination and establishment of saplings occur very infrequently, and also baldcypress is an intolerant tree species requiring high light conditions for establishment and successful growth
- Provide important ecosystem functions including maintenance of water quality, productive habitat for a variety of fish and wildlife species, and regulation of flooding and stream recharge

### **Plant Community Associates**

**Common overstory tree species include:**

*Taxodium distichum* (baldcypress)

*Nyssa aquatica* (tupelo gum)

# Natural Communities of Louisiana



## Common midstory & understory species include:

*Nyssa biflora* (swamp blackgum)  
*Fraxinus pennsylvanica* (green ash)  
*Acer rubrum* var. *drummondii* (swamp red maple)  
*Gleditsia aquatica* (water locust)  
*Cephalanthus occidentalis* (buttonbush)

*Fraxinus profunda* (pumpkin ash)  
*Salix nigra* (black willow)  
*Planera aquatica* (water elm)  
*Itea virginica* (Virginia willow)

## Federally-listed plant & animal species:

*Haliaeetus leucocephalus* (bald eagle)  
  
*Ursus americanus luteolus* (Louisiana black bear)

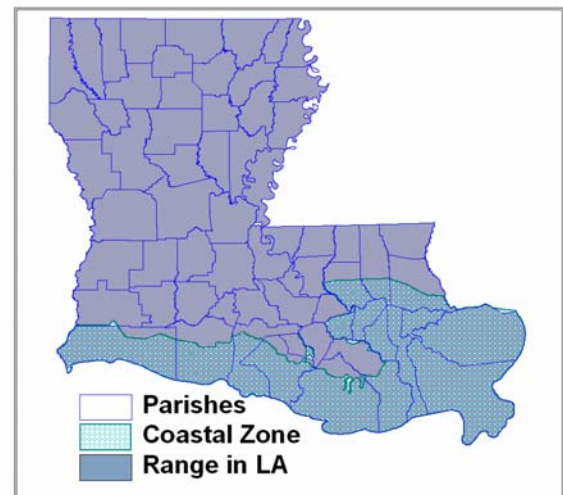
Bald & Golden Eagle Protection Act;  
G4; S2N, S3B  
Threatened; G5T2; S2

## Range:

Cypress-tupelo swamps may be found throughout Louisiana in all river basins, and sizeable areas of swamp still remain, even though the historic extent is considerably reduced. Statewide estimates of swamp loss range from 25 to 50 % of the original presettlement acreage and old-growth examples are very rare.

## Threats:

- Agricultural, industrial and residential development
- Saltwater intrusion and subsidence
- Hydrological alterations (to include adjacent areas)
- Construction of roads, pipelines or utilities
- Logging on permanently flooded sites where natural or artificial regeneration is not feasible
- Soil damage from timber harvesting or industrial activities
- Contamination by chemicals (herbicides, fertilizers)
- Invasive exotic species



## Beneficial Management Practices:

- Prevent conversion of existing natural forests to other land uses
- Strictly follow [Best Management Practices](#) guidelines
- No logging on permanently flooded sites where natural or artificial regeneration is not feasible
- No logging or heavy equipment use on flooded or saturated soils
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means

# Natural Communities of Louisiana



## Eastern Longleaf Pine Savannah

**Rarity Rank:** S1/G1

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Pine Savannah, Pine Flatwood, Grass-Sedge Bog, Pitcher-Plant Prairie, Pitcher-Plant Meadow, Pitcher-Plant Bog, Herbaceous Bog, Flatwood Bog

**Ecological Systems:** CES203.375 East Gulf Coastal Plain Near-Coast Pine Flatwoods



### General Description:

- Floristically rich, herb-dominated wetlands with many of the plants closely-allied to hillside bogs
- Sparsely stocked with *Pinus palustris* (longleaf pine) as the dominant tree species
- Occupies the poorly drained and seasonally saturated/flooded depressional areas and low flats
- Commonly associated with mesic pine flatwoods on slight rises and low ridges, often grading down slope to slash pine-pondcypress/hardwood forest, bayhead swamp and/or small stream forest
- Subject to a highly fluctuating water table associated with seasonal hydrologic patterns
- Soils are hydric (wet), very strongly acidic, nutrient poor, fine sandy loams and silt loams, low in organic matter
- Soils may be underlain by an impeding layer slowing water movement in the soil
- Fire maintained natural community (frequent fires prevent woody encroachment and maintain herbaceous layer)

### Plant Community Associates

#### Common woody species include:

*Pinus palustris* (longleaf pine)  
*Magnolia virginiana* (sweet bay)  
*Quercus virginiana* (live oak)  
*Quercus laurifolia* (laurel oak)  
*Morella* spp. (wax myrtles)  
*Styrax americana* (littleleaf snowbell)

*Pinus elliotii* (slash pine)  
*Nyssa biflora* (swamp black gum)  
*Quercus marilandica* (blackjack oak)  
*Cyrilla racemiflora* (swamp cyrilla)  
*Hypericum* spp. (St. John's worts)  
*Taxodium ascendens* (pondcypress)

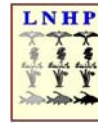
#### Common herbaceous species include:

*Andropogon* spp. (broomsedges)  
*Schizachyrium tenerum* (slender bluestem)  
*Aristida* spp. (three-awn grasses)  
*Muhlenbergia capillaris* (hairawn muhly)  
*Coelorachis* spp. (jointgrasses)  
*Xyris* spp. (yellow-eyed grasses)  
*Scleria* spp. (nut-rushes)  
*Eriocaulon* spp. (pipeworts)  
*Fimbristylis* spp. (fimbry-sedge)

*Schizachyrium scoparium* (little bluestem)  
*Panicum* spp. (panic grasses)  
*Ctenium aromaticum* (toothache grass)  
*Erianthus* spp. (plume-grasses)  
*Rhynchospora* spp. (beak-rushes)  
*Fuirena* spp. (umbrella grasses)  
*Dichromena latifolia* (white top sedge)  
*Lachnocaulon* spp. (bog buttons)



# Natural Communities of Louisiana



## ***Common forb (wildflower) species include:***

*Sarracenia* spp. (pitcherplants)  
*Agalinis* spp. (gerardias)  
*Rhexia* spp. (meadow beauties)  
*Oxypolis filiformis* (hog-fennel)  
*Liatris* spp. (blazing-stars)  
*Drosera* spp. (sundews)  
*Pinguicula lutea* (butterwort)  
*Platanthera* spp. (fringed-orchids)  
*Aletris lutea* (yellow colic-root)  
sunflower family (Asteraceae)  
*Cleistes bifaria* (spreading pogonia)

*Sarracenia psittacina* (parrot pitcherplant)  
*Lobelia* spp. (lobelias)  
*Eryngium integrifolium* (bog thistle)  
*Polygala* spp. (milkworts)  
*Sabatia* spp. (rose-gentians)  
*Pinguicula* spp. (butterworts)  
*Utricularia* spp. (bladderworts)  
lily family (Liliaceae)  
*Tofieldia racemosa* (coastal false-asphodel)  
orchid family (Orchidaceae)  
*Lycopodium* spp. (club-mosses)

## **Federally-listed plant & animal species:**

*Picoides borealis* (red-cockaded woodpecker)

Endangered; G2; S2

## ***Range:***

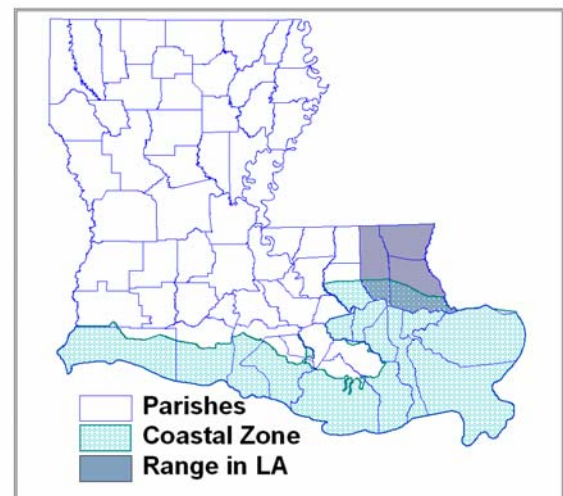
The eastern Florida Parishes of Louisiana were historically dominated by extensive stands of longleaf pine. Now barely 1 % of the original estimated 100,000 to 500,000 acres of longleaf pine savannahs remains.

## ***LA River Basins:***

Pontchartrain, Pearl

## ***Threats:***

- Residential or commercial development
- Construction of roads, pipelines or utilities
- Conversion to slash or loblolly pine plantations
- Hydrological alterations (to include adjacent areas)
- Soil damage from timber harvesting and planting activities (eg. bedding)
- Contamination by chemicals (herbicides, fertilizers)
- Fire exclusion or inappropriate fire regime
- Off-road vehicle use
- Invasive exotic species



## ***Beneficial Management Practices:***

- Prevent conversion of existing natural forests to other land uses
- Use of growing season prescribed fire (April-June) at a frequency of every 1 to 3 years
- No logging during wet periods when the soil is saturated
- Replanting with longleaf seedlings only
- No bedding, plowed fire lines or other soil disturbance that may alter natural water flow patterns
- Prohibit off-road vehicle use, or restrict use to pre-existing trails
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means

Funding provided by the Louisiana Department of Wildlife and Fisheries and the Barataria-Terrebonne National Estuary Program

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# Natural Communities of Louisiana



## Freshwater Marsh

**Rarity Rank:** S1S2/G3G4

	1	2	3	4	5
State					
Global					
	imperiled		rare	secure	

**Synonyms:** Fresh Marsh,  
Paille Fine (pronounced "pie feen") Marsh

### Ecological Systems:

CES203.467 Gulf Coast Chenier Plain Fresh and Oligohaline Tidal Marsh

CES203.470 Mississippi Delta Fresh and Oligohaline Tidal Marsh



### **General Description:**

- Generally located adjacent to intermediate marsh along the northern most extent of the coastal marshes, although it may occur beside coastal bays where freshwater input is entering the bay (e.g., Atchafalaya Bay)
- Small pools or ponds may be scattered throughout
- Floristic composition of these sites is quite heterogeneous and is variable from site to site
- Salinities are usually less than 2 ppt and normally average about 0.5-1 ppt
- Frequency and duration of flooding, which are intimately related to microtopography, seem to be the primary factors governing species distributions
- Substrate, current flow, salinity, competition, and allelopathy are also important in determining species distribution patterns
- Has the greatest plant diversity of any of the marsh types. One report claims 92 plant species in fresh marsh versus only 17 different species in salt marsh
- Has the highest soil organic matter content of any marsh type
- It is frequently dominated by *Panicum hemitomon* (maidencane)
- Epiphytic and benthic algae are two other major autotroph groups in freshwater marsh
- A significant portion of freshwater marsh is floating marsh (flotant), which occurs in the Deltaic Plain of southeast Louisiana
- Wildlife populations are generally highest in this marsh type and it supports high numbers of wintering waterfowl
- Freshwater marsh acts as important nursery areas for the young of many marine species, such as croaker, seatrout, blackdrum, flounder, and juvenile brown and white shrimp
- Saltwater intrusion may cause a change to a more saline marsh type or even open water, if the increase in salinity levels is rapid and persistent

### **Plant Community Associates**

#### **Common species include:**

*Panicum hemitomon* (maidencane)

*Sagittaria lancifolia* (= *S. falcata*)

*Alternanthera philoxeroides* (alligator weed)

*Eleocharis* spp. (spikesedge)

*Spartina patens* (wire grass)

*Phragmites communis* (roseau cane)

# Natural Communities of Louisiana



## Common species continued:

*Bacopa monnieri* (coastal water hyssop)  
*Cyperus odoratus* (fragrant flatsedge)  
*Pontederia cordata* (pickerelweed)  
*Hydrocotyle* spp. (pennyworts)  
*Myriophyllum* spp. (water milfoils)  
*Typha* spp. (cattail)  
*Vigna luteola* (deer pea)

*Ceratophyllum demersum* (coontail)  
*Eichhornia crassipes* (water hyacinth)  
*Peltandra virginica* (arrow arum)  
*Lemna minor* (common duckweed)  
*Nymphaea odorata* (white waterlily)  
*Utricularia* spp. (bladderworts)  
*Zizaniopsis miliacea* (southern wildrice)

## Federally-listed plant & animal species:

*Grus americana* (whooping crane)  
*Haliaeetus leucocephalus* (bald eagle)

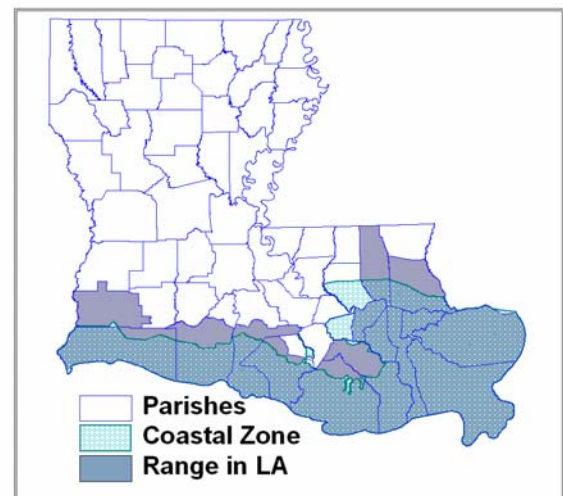
Endangered; G1; SH  
Bald & Golden Eagle Protection Act;  
G4; S2N, S3B

## Range:

Freshwater marsh has undergone the largest reduction in acreage of any of the marsh types over the past 20 years. Presettlement acreage was estimated at 1 to 2 million acres, but has been reduced by 25 to 50 % of this original extent. The largest contiguous tracts of fresh marsh occur in Terrebonne, St. Mary, Vermillion, Cameron, LaFourche and St. Charles Parishes.

## LA River Basins:

Pearl, Pontchartrain, Mississippi, Barataria, Terrebonne, Atchafalaya, Vermilion-Teche, Mermentau, Calcasieu, Sabine



## Threats:

- Shoreline erosion and subsidence
- Commercial and industrial development
- Construction of roads, pipelines or utilities
- Hydrological alterations (channelization and leveeing of waterways, canal dredging)
- Contamination by chemicals or industrial discharge
- Fire suppression
- Invasive exotic species

## Beneficial Management Practices:

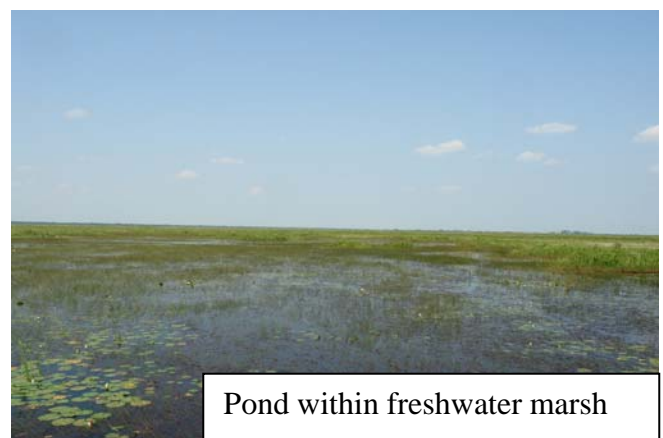
- Prevent conversion of existing natural communities to other land uses
- Allow natural fires to burn freely (if feasible) and establish regular burning regime on managed lands to improve habitat and food quality for wildlife. Burning should be used only when marshes are flooded to avoid intense heat damage, and never burn in floatant marshes
- Remove any invasive exotic plant species with use of approved herbicides or mechanical means

Funding provided by the Louisiana Department of Wildlife and Fisheries and the Barataria-Terrebonne National Estuary Program

For more information, please visit our Web pages at

[www.wlf.louisiana.gov/experience/naturalheritage](http://www.wlf.louisiana.gov/experience/naturalheritage) or 225-765-2811

[www.BTNEP.org](http://www.BTNEP.org) or 1-800-259-0869



Pond within freshwater marsh



# Natural Communities of Louisiana



## Live Oak Natural Levee Forest

**Rarity Rank:** S1S2/G2

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Natural Levee Forest, Frontland Forest

### Ecological Systems:

CES203.512 Lower Mississippi River Bottomland and Floodplain Forest

### **General Description:**

- Occurs principally in southeastern Louisiana on natural levees or frontlands, and on “islands” within marshes and swamps
- 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, however natural levee forests have a greater species richness and diversity
- Composed primarily of sandy loams and clays, these ridges range from 4 to 6 feet above sea level
- Soil pH is circumneutral (6.6 – 7.0), and organic matter content is high
- Important wildlife habitat and serves as vital resting habitat for trans-gulf-migratory birds



### **Plant Community Associates**

#### **Common overstory tree species include:**

*Quercus virginiana* (live oak)  
*Ulmus americana* (American elm)  
*Acer rubrum* (red maple)  
*Quercus laurifolia* (laurel oak)  
*Liquidambar styraciflua* (sweetgum)

*Quercus nigra* (water oak)  
*Celtis laevigata* (hackberry)  
*Fraxinus pennsylvanica* (green ash)  
*Gleditsia triacanthos* (honey locust)  
*Acer negundo* (box-elder)

#### **Common midstory & understory species include:**

*Crataegus viridis* (green hawthorn)  
*Morus rubra* (red mulberry)  
*Cornus foemina* (swamp dogwood)  
*Persea borbonia* (red bay)

*Diospyros virginiana* (persimmon)  
*Sabal minor* (dwarf palmetto)  
*Morella cerifera* (wax myrtle)  
*Viburnum dentatum* (arrowwood)

#### **Common herbaceous layer species include:**

*Tradescantia* spp. (spiderworts)  
*Solidago sempervirens* (seaside goldenrod)  
*Sanicula canadensis* (snakeroot)

*Arisaema dracontium* (green dragon)  
*Samolus verlandieri* (water-pimpernel)  
*Nemophylla aphylla* (baby blue eyes)

# Natural Communities of Louisiana



## ***Common herbaceous layer species continued:***

*Geum canadensis* (geum)  
*Eupatorium* spp. (thoroughworts)  
*Polygonum virginica* (jumpseed)  
*Packera glabella* (= *Senecio glabellus*) (yellow-top)  
*Mikania scandens* (climbing hempvine)  
*Cocculus carolinianum* (Carolina moonseed)  
*Berchemia scandens* (rattan vine)  
*Thelypteris* spp. (marsh ferns)

*Hydrocotyle* spp. (penny-worts)  
*Polygonum* spp. (smartweeds)  
*Panicum* spp. (panic grasses)  
*Oplismenus hirtellus* (basket grass)  
*Campsis radicans* (trumpet creeper)  
*Toxicodendron radicans* (poison ivy)  
*Smilax rotundifolia* (greenbrier)

## ***Common epiphytes include:***

*Tillandsia usneoides* (Spanish moss)  
*Polypodium polypodioides* (resurrection fern)

*Phoradendron tomentosum* (mistle-toe)

## **Federally-listed plant & animal species:**

*Ursus americanus luteolus* (Louisiana black bear)

Threatened; G5T2; S2

## ***Range:***

Occur in the Deltaic Plain of extreme southeastern Louisiana parishes from Orleans and St. Bernard Parishes westward to St. Mary Parish. Of the original 500,000 to 1,000,000 acres in Louisiana, currently only 1-5 % of presettlement extent remains.

## ***LA River Basins:***

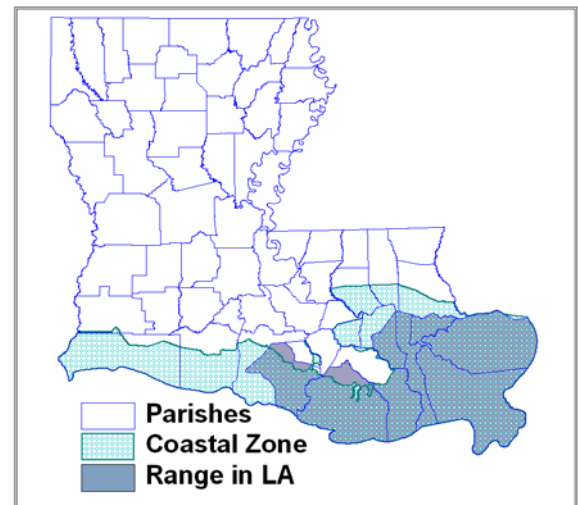
Pontchartrain, Mississippi, Barataria, Terrebonne, Atchafalaya, Vermilion-Teche

## ***Threats:***

- Residential development
- Roads and utility construction
- Coastal erosion and saltwater intrusion
- Invasive and exotic species
- Overgrazing which damages understory vegetation and inhibits natural stand regeneration

## ***Beneficial Management Practices:***

- Prevent conversion of existing natural forests to other land uses
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means
- Prohibit livestock grazing



Prothonotary warbler (*Protonotaria citrea*) is one of the migratory bird species that utilize coastal natural levee live oak forests.

Funding provided by the Louisiana Department of Wildlife and Fisheries and the Barataria-Terrebonne National Estuary Program

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[www.BTNEP.org](http://www.BTNEP.org) or 1-800-259-0869



# Natural Communities of Louisiana



## Pine Flatwoods

**Rarity Rank:** S3/G2G3

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Wet Pine Flatwoods

**Ecological Systems:** CES203.375 East Gulf Coastal Plain Near-Coast Pine Flatwoods  
CES203.557 East Gulf Coastal Plain Southern Loblolly-Hardwood Flatwoods  
CES203.191 West Gulf Coastal Plain Wet Longleaf Pine Savanna and Flatwoods



### General Description:

- Found on the Pleistocene prairie terraces of Louisiana's East and West Gulf Coastal Plains
- Found in a mosaic with other flatwoods, savannahs, and bayhead swamps
- Occur on flat, low-relief areas with a high water table
- Soils are mesic, strongly acidic and fine sandy or silty loams with presence of a clay hardpan
- In Louisiana's Florida Parishes, *Pinus palustris* (longleaf pine) and *Pinus elliottii* (slash pine) are often co-dominants. In southwest Louisiana, only longleaf pine and *Pinus taeda* (loblolly pine) are present
- Fire dependent natural community
- Varies considerably in structure and somewhat in composition from one place to another, as a consequence of minor variations in topography, soil conditions, and hydrologic and fire regimes
- Has a stratified appearance with pine dominating the canopy, a low woody shrub layer, and a herbaceous layer

### Plant Community Associates

#### Common tree species include:

*Pinus palustris* (longleaf pine)  
*Pinus taeda* (loblolly pine)  
*Quercus nigra* (water oak)  
*Magnolia virginiana* (sweetbay magnolia)  
*Liquidambar styraciflua* (sweetgum)  
On wetter sites:  
*Taxodium distichum* (baldcypress)

*Pinus elliottii* (slash pine, SE LA)  
*Pinus glabra* (spruce pine, SE LA)  
*Quercus laurifolia* (laurel oak)  
*Acer rubrum* (red maple)  
*Nyssa sylvatica* (blackgum)

*Taxodium ascendens* (pondcypress, SE LA)

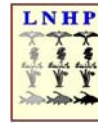
#### Common midstory and understory species include:

*Sabal minor* (palmetto)  
*Ilex coriacea* (sweet gallberry)  
*Lyonia lucida* (fetterbush, SE LA)  
*Morella cerifera* (waxmyrtle)

*Cyrilla racemiflora* (swamp cyrilla)  
*Ilex glabra* (littleleaf gallberry)  
*Hypericum* spp. (St. John's-worts)  
*Clethra alnifolia* (summer sweet, SE LA)



# Natural Communities of Louisiana



## ***Common midstory and understory species continued:***

*Rubus* spp. (blackberries)

*Vaccinium* spp. (blueberries)

*Gaylussacia* spp. (huckleberries, SE LA)

## ***Common herbaceous species include:***

*Liatris* spp. (blazing-stars)

*Andropogon* spp. (broomsedges)

*Chaptalia tomentosa* (sunbonnet)

*Panicum* spp. (panic grasses)

## **Federally-listed plant & animal species:**

*Picoides borealis* (red-cockaded woodpecker)

Endangered; G2; S2

## ***Range:***

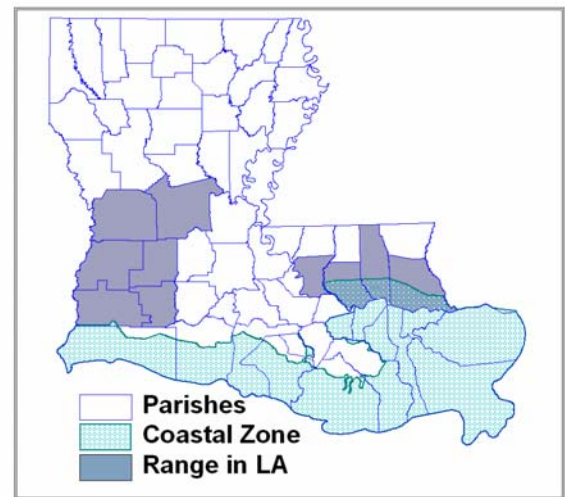
Within Louisiana, found primarily in the Florida Parishes and southwest LA with a few occurrences extending up into central LA

## ***LA River Basins:***

Pontchartrain, Pearl, Vermilion-Teche, Mermentau, Calcasieu, Sabine

## ***Threats:***

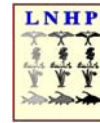
- Construction of roads, pipelines or utilities
- Conversion to slash or loblolly pine plantations
- Residential or commercial development
- Soil damage from timber harvesting and planting activities (eg. bedding)
- Hydrological alterations (to include adjacent areas)
- Contamination by chemicals (herbicides, fertilizers)
- Off-road vehicle use
- Fire exclusion or inappropriate fire regime
- Invasive exotic species



## ***Beneficial Management Practices:***

- Prevent conversion of existing natural forests to other land uses
- Use of growing season prescribed fire (April-June) at a frequency of every 5 to 10 years
- No logging during wet periods when the soil is saturated
- No bedding or other soil disturbance that may alter natural water flow patterns
- Prohibit off-road vehicle use, or restrict use to pre-existing trails
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means

# Natural Communities of Louisiana



## Pondcypress-Swamp Blackgum Swamp

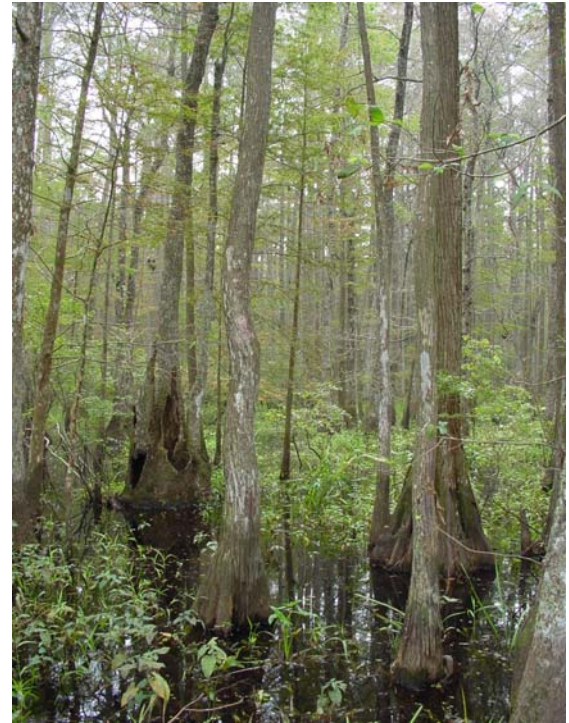
**Rarity Rank:** S1/G3

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Pondcypress Flooded Woodland

### Ecological Systems:

CES203.489 East Gulf Coastal Plain Large River Floodplain Forest



### **General Description:**

- *Taxodium ascendens* (pondcypress), along with *Nyssa biflora* (swamp blackgum) dominate a limited number of swamps making this natural community rare in Louisiana
- Pondcypress/blackgum swamps appear to occupy the backwater portions of larger swamplands, in places much removed from active stream channels
- Related to and often grade into baldcypress swamps more influenced by river flooding
- Soils are inundated or saturated by surface water or ground water on a nearly permanent basis throughout the growing season except during periods of extreme drought
- Subject to seasonal fluctuations in water levels
- Floristic diversity higher than that of traditional cypress swamps or cypress-tupelo swamps
- Herbaceous species may occur as a “flotant” on a fibrous root mat
- Provide important ecosystem functions including maintenance of water quality, productive habitat for a variety of fish and wildlife species, and regulation of flooding and stream recharge

### **Plant Community Associates**

#### **Common overstory tree species include:**

*Taxodium ascendens* (pondcypress)

*Nyssa biflora* (swamp blackgum)

#### **Common midstory & understory woody species include:**

*Nyssa sylvatica* var. *biflora* (swamp blackgum)

*Fraxinus profunda* (pumpkin ash)

*Fraxinus pennsylvanica* (green ash)

*Salix nigra* (black willow)

*Acer rubrum* var. *drummondii* (swamp red maple)

*Planera aquatica* (water elm)

*Gleditsia aquatica* (water locust)

*Itea virginica* (Virginia willow)

*Cephalanthus occidentalis* (buttonbush)

*Cyrilla racemiflora* (titi)

#### **Common herbaceous species include:**

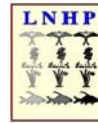
*Ludwigia pilosa* (hairy primrose-willow)

*Bacopa caroliniana* (blue waterhyssop)

*Carex decomposita* (cypress knee sedge, state rare)

*Saururus cernuus* (lizard's tail)

# Natural Communities of Louisiana



## **Common herbaceous species continued:**

*Xyris smalliana* (Small's yelloweyed grass)  
*Lachnanthes caroliana* (Carolina redroot)  
*Triadenum walteri* (greater marsh St. Johnswort)  
*Osmunda regalis* var. *spectabilis* (royal fern)  
*Andropogon glomeratus* (bushy bluestem)

*Xyris fimbriata* (fringed yelloweyed grass)  
*Ptilimnium* sp. (bishopweed)  
*Pluchea rosea* (rosy camphorweed)  
*Andropogon glaucopsis* (purple bluestem)  
*Woodwardia areolata* (netted chain fern)

## **Federally-listed plant & animal species:**

*Haliaeetus leucocephalus* (bald eagle)

Bald & Golden Eagle Protection Act;  
G4; S2N, S3B

## **Range:**

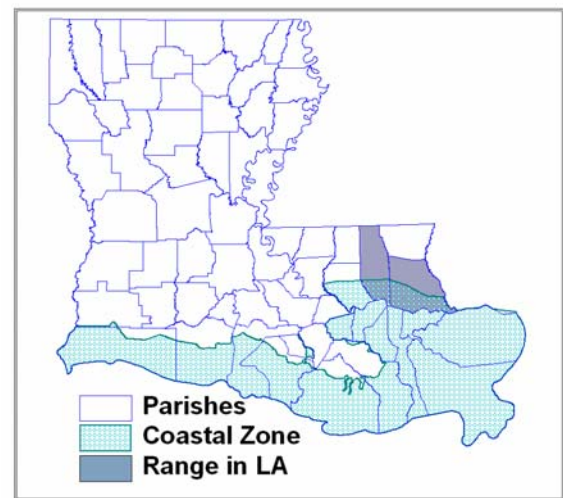
This type seems to be confined to areas along the lower Pearl River, and adjoining north shore of Lake Pontchartrain and Lake Maurepas. The historic extent is unclear, but it is currently only known from one site in Tangipahoa Parish.

## **LA River Basins:**

Pontchartrain, Pearl

## **Threats:**

- Agricultural, industrial and residential development
- Saltwater intrusion and subsidence
- Hydrological alterations (to include adjacent areas)
- Construction of roads, pipelines or utilities
- Logging on permanently flooded sites where natural or artificial regeneration is not feasible
- Soil damage from timber harvesting or industrial activities
- Contamination by chemicals (herbicides, fertilizers)
- Invasive exotic species

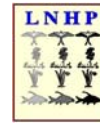


## **Beneficial Management Practices:**

- Prevent conversion of existing natural forests to other land uses
- No logging on permanently flooded sites where natural or artificial regeneration is not feasible
- No logging or heavy equipment use on flooded or saturated soils
- Strictly follow [Best Management Practices](#) guidelines
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means



# Natural Communities of Louisiana



## Scrub/Shrub Swamp

**Rarity Rank:** S4S5/G3?

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Shrub Swamp, Buttonbush Swamp

**Ecological Systems:** CES203.489 East Gulf Coastal Plain Large River Floodplain Forest  
CES203.490 Mississippi River Bottomland Depression  
CES203.488 West Gulf Coastal Plain Large River Floodplain Forest  
CES203.065 Red River Large Floodplain Forest



### General Description:

- A low, flat freshwater swamp with large shrubs and small trees less than 35 feet in height
- This community likely represents a transitional phase of regeneration following disturbance such as cutting or natural blowdown of canopy trees. Additionally, shrubs and trees may be stunted due to some environmental conditions present on the site
- Often associated with newly accreted lands and partially drained wetlands
- Generally occur along sluggish streams and occasionally in semi-permanent pools associated with depressions, old ox bows, and scour channels
- May be found in transition zones between marsh and higher areas such as cheniers
- Soils are often continually flooded, but can become dry during the summer months or during prolonged drought

### Plant Community Associates

#### Common species include:

*Cephalanthus occidentalis* (buttonbush)  
*Acer rubrum* var. *drummondii* (swamp red maple)  
*Baccharis halimifolia* (saltbush)  
*Morella cerifera* (waxmyrtle)  
*Amorpha fruticosa* (lead plant)

*Forestiera acuminata* (swamp privet)  
*Planera aquatica* (water elm)  
*Salix* spp. (willows)  
*Iva frutescens* (marsh-elder)  
*Sabal minor* (palmetto)

#### Federally-listed plant & animal species:

None

# Natural Communities of Louisiana



## **Range:**

Occurs throughout Louisiana in depressions and bottoms associated with floodplains of rivers and streams

## **LA River Basins:**

Mississippi, Pearl, Pontchartrain, Barataria, Terrebonne, Atchafalaya, Vermilion-Teche, Mermentau, Calcasieu, Sabine, Red, Ouachita

## **Threats:**

- Construction of roads, pipelines or utilities
- Hydrological alterations (to include adjacent areas)
- Contamination by chemicals (herbicides, fertilizers)
- Invasive exotic species

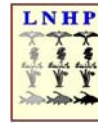
## **Beneficial Management Practices:**

- Prevent conversion of existing natural forests to other land uses
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means





# Natural Communities of Louisiana



## Slash Pine-Pondcypress/Hardwood Forest

**Rarity Rank:** S2S3/G2?

	1	2	3	4	5
State					
Global					
	imperiled	rare	secure		

**Synonyms:** Wet Slash Pine Flatwoods

**Ecological Systems:** CES203.375 East Gulf Coastal Plain Near-Coast Pine Flatwoods



### General Description:

- Restricted to the wet acidic flatwoods on the far eastern Pleistocene prairie terraces of Louisiana's East Gulf Coastal Plain
- Found in a mosaic with longleaf pine flatwoods and savannahs, and bayhead swamps, existing in a hydrologic/topographic transitional zone between the higher, "drier" longleaf pine flatwood savannahs to the lower, wetter bayhead swamps
- May also be present on broad flats that are partially protected from frequent surface fires by surrounding bayheads or seeps
- Soils are hydric (wet), strongly acidic and nutrient poor silt loams and fine sandy loams
- Two principal soils are Myatt fine sandy loam and Guyton silt loam
- Surface soils are typically saturated for much of the year and shallow water may be present in the late fall/winter/early spring and after rains during the growing season
- Varies considerably in structure and somewhat in composition from one place to another, apparently as a consequence of minor variations in topography, soil conditions, and hydrologic and fire regimes
- Fire dependent natural community; both slash pine and pondcypress are fire-adapted species however, neither is as fire resistant as longleaf pine
- Fire interval is difficult to estimate but is believed to have varied between 5 and 20 years

### Plant Community Associates

#### Common tree species include:

*Pinus elliottii* (slash pine)

*Nyssa biflora* (swamp black gum)

*Taxodium ascendens* (pondcypress)

*Magnolia virginiana* (sweetbay)

#### Common understory species include:

*Cyrilla racemiflora* (swamp cyrilla)

*Lyonia lucida* (fetterbush)

*Itea virginica* (Virginia willow)

*Morella cerifera* (waxmyrtle)

*Arundinaria gigantea* (switch cane)

*Ilex coriacea* (sweet gallberry)

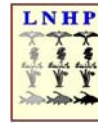
*Ilex glabra* (littleleaf gallberry)

*Morella heterophylla* (bigleaf waxmyrtle)

*Smilax* spp. (greenbriers)



# Natural Communities of Louisiana



## **Common ground layer species include:**

*Sphagnum* spp. (sphagnum moss)

minimal herbaceous undergrowth

Scattered, depauperate specimens of herbs, more typical of sunny wet pine savannahs (e.g., *Sarracenia alata*, yellow pitcher-plant), may be observed.

*Pteridophytes* (ferns)

## **Federally-listed plant & animal species:**

*Picoides borealis* (red-cockaded woodpecker)

Endangered; G2; S2

## **Range:**

Presettlement extent of this habitat is estimated at 50,000 to 100,000 acres, with only 10 to 25% currently remaining. Restricted to the East Gulf Coastal Plain; primarily associated with pine flatwoods including eastern longleaf pine savannahs and occasional bogs.

## **LA River Basins:**

Pontchartrain, Pearl

## **Threats:**

- Construction of roads, pipelines or utilities
- Conversion to slash or loblolly pine plantations
- Residential or commercial development
- Soil damage from timber harvesting and planting activities (eg. bedding)
- Hydrological alterations (to include adjacent areas)
- Contamination by chemicals (herbicides, fertilizers)
- Off-road vehicle use
- Fire exclusion or inappropriate fire regime
- Invasive exotic species

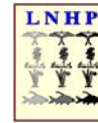
## **Beneficial Management Practices:**

- Prevent conversion of existing natural forests to other land uses
- Use of growing season prescribed fire (April-June) at a frequency of every 5 to 10 years
- No logging during wet periods when the soil is saturated
- No bedding or other soil disturbance that may alter natural water flow patterns
- Prohibit off-road vehicle use, or restrict use to pre-existing trails
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means



Georgia tickseed (*Coreopsis nudata*), rare plant found in slash pine flatwoods and eastern longleaf pine savannahs.

# Natural Communities of Louisiana



## Small Stream Forest

**Rarity Rank:** S3/G3

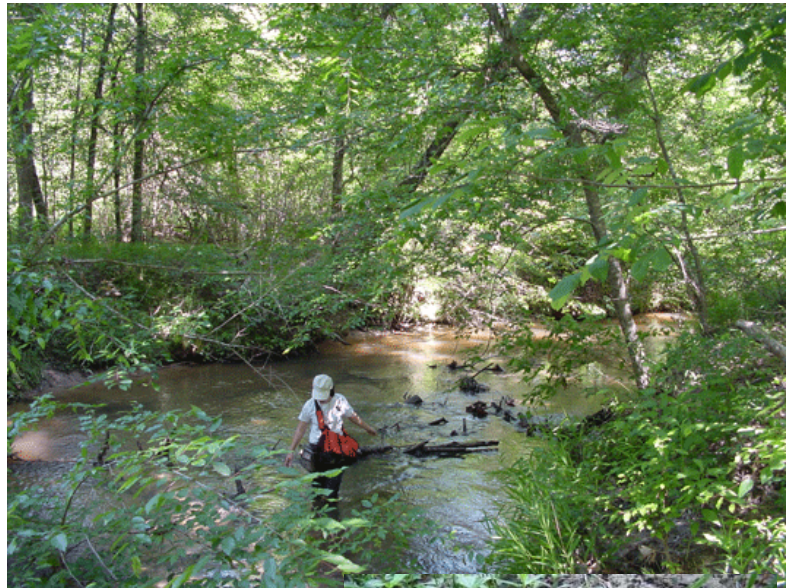
	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Riparian Forest, Small Stream Floodplain Forest, Creek Bottom Forest, Sandy Branch Bottom, Upland Stream Forest, Hammock

### Ecological Systems:

CES203.559 East Gulf Coastal Plain Small Stream and River Forest

CES203.487 West Gulf Coastal Plain Small Stream and River Forest



### **General Description:**

- Narrow wetland forests occurring along small rivers and large creeks
- Seasonally flooded for brief periods
- Percentage of sand, silt, calcareous clay, acidic clay, and organic material in the soil is highly variable (depending on local geology) and has a significant effect on plant species composition
- Soils are typically classified as silt-loams
- Quite similar in species composition to hardwood slope forests in some locals
- Critical ecosystem functions include the filtering of surface and subsurface flows, improving water quality, and storing sediment and nutrients

### **Plant Community Associates**

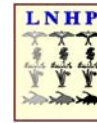
#### **Common overstory tree species include:**

*Magnolia grandiflora* (southern magnolia)  
*Nyssa sylvatica* (blackgum)  
*Quercus alba* (white oak)  
*Quercus laurifolia* (laurel oak)  
*Liquidambar styraciflua* (sweetgum)  
*Acer rubrum* (red maple)  
*Carya ovata* (shagbark hickory)  
*Fraxinus americana* (white ash)  
*Prunus caroliniana* (cherry laurel)  
*Liriodendron tulipifera* (yellow poplar)  
*Taxodium distichum* (baldcypress)  
*Magnolia virginiana* (sweet bay)

*Fagus grandifolia* (beech)  
*Quercus michauxii* (swamp white oak)  
*Quercus nigra* (water oak)  
*Quercus pagoda* (cherrybark oak)  
*Platanus occidentalis* (sycamore)  
*Betula nigra* (river birch)  
*Carya cordiformis* (bitternut hickory)  
*Fraxinus caroliniana* (water ash)  
*Ulmus alata* (winged elm)  
*Pinus glabra* (spruce pine-FL Parishes)  
*Pinus taeda* (loblolly pine)



# Natural Communities of Louisiana



## Common midstory & understory species include:

*Halesia diptera* (silverbell)  
*Viburnum dentatum* (arrow-wood)  
*Symplocos tinctoria* (sweetleaf)  
*Rhododendron canescens* (wild azalea)

*Carpinus caroliniana* (ironwood)  
*Itea virginica* (Virginia willow)  
*Alnus serrulata* (hazel alder)  
*Styrax grandifolia* (bigleaf snowbell)

## Florida Parishes - common midstory & understory species include:

*Illicium floridanum* (starbush)  
*Cyrilla racemiflora* (swamp cyrilla)  
*Leucothoe axillaris* (leucothoe)  
*Ilex verticillata* (winterberry)

*Sebastiania fruticosa* (sebastian bush)  
*Lyonia lucida* (fetterbush)  
*Leucothoe racemosa* (leucothoe)

## Federally-listed plant & animal species:

### In East Gulf Coastal Plain occurrences:

*Isoetes louisianensis* (Louisiana quillwort)  
*Alosa alabamiae* (Alabama shad)

Endangered; G3; S1  
Candidate; G3; S1

### In Lower West Gulf Coastal Plain occurrences:

*Margaritifera hembeli* (Louisiana pearlshell)

Threatened; G1; S1

## Range:

Found in the Upper and Lower West Gulf Coastal Plains in west, central and northwest Louisiana. Also known from the Florida Parishes in the East Gulf Coastal Plain and Upper East Gulf Coastal Plain

## LA River Basins:

Pearl, Pontchartrain, Mississippi, Vermilion-Teche, Mermentau, Calcasieu, Sabine, Red, Ouachita

## Threats:

- Habitat conversion
- Gravel mining
- Invasive exotic species
- Construction of roads, utilities and pipelines
- Use of off-road vehicles



## Beneficial Management Practices:

- Prevent conversion of existing natural forests to other land uses
- Strictly follow [Best Management Practices](#) guidelines
- Maintain natural species composition by following appropriate hardwood management techniques
- No harvesting on steep slopes and during wet periods to prevent soil damage
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means
- Prohibit off-road vehicle use or restrict use to existing trails
- No soil disturbance or other activities that alter natural waterflow, including from adjacent areas

Funding provided by the Louisiana Department of Wildlife and Fisheries and the Barataria-Terrebonne National Estuary Program

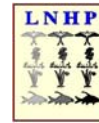
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# Natural Communities of Louisiana



## Sandbars

**Rarity Rank:** S4S5/G4

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** River Sandbar

**Ecological Systems:** CES203.190 Mississippi River Riparian Forest



### General Description:

- A sand/gravel deposit in or adjacent to permanently flowing freshwater contained within a natural river channel
- Soils are formed from coarse to fine-textured alluvial deposits
- Plant community structure is dependent on the mix and stability of substrate, severity and depth of flooding, and permanent nature of the particular site
- Hydrologic regime ranges from intermittently exposed to intermittently flooded
- Generally barren, however when present, vegetation is dominated by sparse to dense growth of shrubby or herbaceous species
- The community is successional in nature but generally remains unforested because of repeated flooding
- Due to the early successional nature of sandbars they are easily invaded by exotic plant species
- Serve as critical nesting areas for the federally-endangered interior least tern (*Sterna antillarum athalassos*)

### Plant Community Associates

#### Common overstory tree species include:

*Salix nigra* (willow)

*Populus deltoides* (cottonwood)

#### Common herbaceous species include:

*Eragrostis* spp. (lovegrass)

*Heliotropium procumbens* (four-spike heliotrope)

*Fimbristylis vahlii* (Vahl's fimbry)

*Eclipta prostrata* (false daisy)

*Ludwigia decurrens* (winged primrosewillow)

*Lindernia dubia* (yellowseed false pimpernel)

*Sporobolus cryptandrus* (sand dropseed, on dry sands)

*Croton* spp. (goatweed)

*Pluchea camphorata* (camphor)

*Panicum capillare* (witchgrass)

*Juncus* spp. (rushes)

*Leucospora multifida* (narrowleaf paleseed)

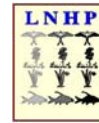
*Bergia texana* (Texas bergia)

#### Federally-listed plant & animal species:

*Sterna antillarum athalassos* (interior least tern)

Endangered; G4T2Q; S1B

# Natural Communities of Louisiana

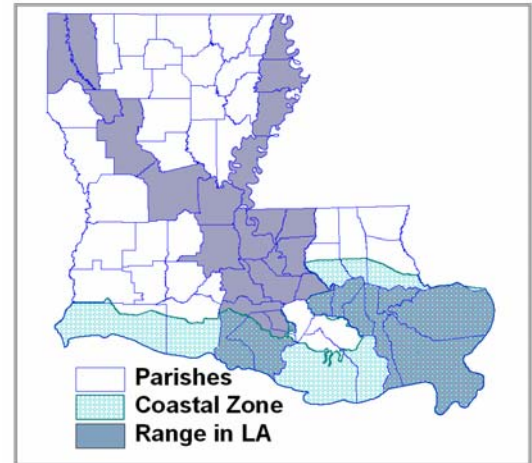


## Range:

Found within the channels of major rivers including the Mississippi, Red, and Atchafalaya Rivers. Sandbar habitat within the Mississippi River has shown a general decline over the past 50 years, decreasing by a reported 33 % between Memphis, Tennessee and Baton Rouge, Louisiana from 1948 to 1994.

## LA River Basins:

Pontchartrain, Mississippi, Barataria, Terrebonne, Atchafalaya, Red



## Threats:

- Channelization
- Frequent and prolonged fluctuations in river water levels
- Gravel mining
- Invasive exotic species
- Construction of roads, utilities and pipelines
- Use of off-road vehicles and other recreational use

## Beneficial Management Practices:

- Normalize water levels during tern breeding seasons to prevent inundation of sandbars
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means
- Prohibit off-road vehicles and other recreational use



Interior least tern nesting, eggs, and chick  
Photos: U.S. Fish & Wildlife Service

Funding provided by the Louisiana Department of Wildlife and Fisheries and the Barataria-Terrebonne National Estuary Program

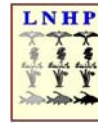
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# Natural Communities of Louisiana



## Barrier Island Live Oak Forest

**Rarity Rank:** S1/G1

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Maritime Forest

### Ecological Systems:

CES203.513 Mississippi Delta Maritime Forest



### **General Description:**

- Currently restricted to Grand Isle, Jefferson Parish, Louisiana, where it occupies a small area (less than 1,000 acres)
- Only known occurrence is impacted by development, exotic species, clearing of understory vegetation, and habitat fragmentation
- Appears to be distinct from other *Quercus virginiana* (live oak) communities occurring to the east and west, but little is known about this habitat type
- Trees can exhibit the effects of saltwater spray and wind, having a stunted appearance and leaning away from the prevailing wind

### **Plant Community Associates**

#### **Common woody species include:**

*Quercus virginiana* (live oak)  
*Zanthoxylum clava-herculis* (toothache tree)  
*Gleditsia triacanthos* (honeylocust)  
*Persea borbonia* (red bay)

*Celtis laevigata* (hackberry)  
*Diospyros virginiana* (persimmon)  
*Morella cerifera* (waxmyrtle)

### Federally-listed plant & animal species:

None

### **Range:**

There is no complete information regarding the presettlement extent of this natural community type on Louisiana's barrier islands. The last remaining barrier island live oak forest in Louisiana occurs on Grand Isle.

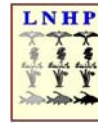
### **LA River Basins:**

Barataria





# Natural Communities of Louisiana

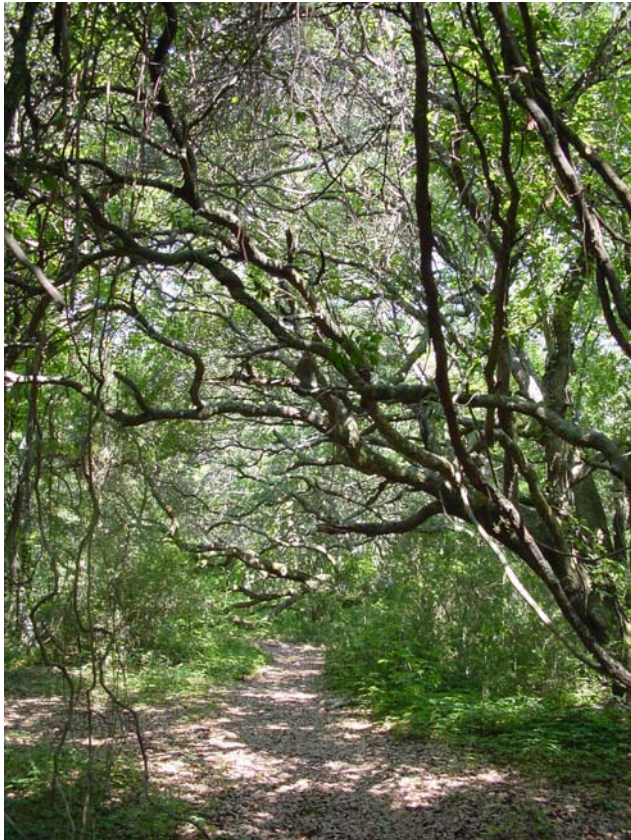


## ***Threats:***

- Residential or commercial development
- Construction of roads, pipelines or utilities
- Off-road vehicle use
- Invasive or exotic species
- Coastal land loss

## ***Beneficial Management Practices:***

- Prevent conversion of existing natural forests to other land uses
- Prohibit off-road vehicle use, or restrict use to pre-existing trails
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means
- Restoration of coastal land forms such as barrier islands and inland wetlands



Funding provided by the Louisiana Department of Wildlife and Fisheries and the Barataria-Terrebonne National Estuary Program

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# Natural Communities of Louisiana



## Coastal Dune Grassland

**Rarity Rank:** S1S2/G2G3

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Maritime Grassland, Dune Meadow, Dune Grass

### Ecological Systems:

CES203.469 Louisiana Beach

CES203.471 Southeastern Coastal Plain

Interdunal Wetland



### **General Description:**

- Occurs on beach dunes and relatively elevated backshore areas (ridges) above intertidal beaches on barrier islands and on the mainland
- The dunes of Louisiana's barrier islands and mainland beaches are poorly developed because of the high frequency of overwash associated with hurricanes and storms, and a limited amount of eolian-transported sand
- Dune swales may be extensive, and dunes and ridges may be shifted or eroded by storm floods, destroying vegetation
- Normally xeric (excessively drained) due to the sandy substrate and elevation above the highest flood mark (except during hurricanes)
- Vegetative cover ranges from sparse to fairly dense and is dominated by salt spray tolerant grasses
- These sites are exposed to moderate to high amounts of salt spray, have limited nutrient availability, and substrate instability which create harsh conditions for establishment and growth of coastal dune vegetation

### **Plant Community Associates**

#### **Common grasses include:**

*Spartina patens* (wire grass)

*Panicum amarum* (beach panic)

*Paspalum vaginatum* (jointgrass)

*Schizachyrium maritimum* (seacoast bluestem)

*Chloris petraea* (finger grass)

*Eragrostis oxylepis* (red lovegrass)

*Uniola paniculata* (sea oats)

*Triplasis purpurea* (purple sandgrass)

*Distichlis spicata* (saltgrass)

*Cenchrus* spp. (sandburs)

*Sporobolus virginicus* (coast dropseed)

*Andropogon* spp. (broomsedges)

#### **Common forbs include:**

*Batis maritima* (salt wort)

*Ipomea stolonifera* (beach morning-glory)

*Heliotropium currasivicum* (seaside heliotrope)

*Agalinis maritima* (seaside false foxglove)

*Solidago sempervirens* (seaside goldenrod)

*Hydrocotyle bonariensis* (large leaf pennywort)

*Iva imbricata* (sumpweed)

*I. pes-caprae* (goat-foot morning-glory)

*Strophostyles helvola* (sand wild bean)

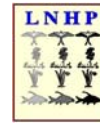
*Cakile* spp. (sea rockets)

*Croton punctatus* (punctate goatweed)

*Sabatia stellaris* (seastar rose-gentian)



# Natural Communities of Louisiana



## ***Common forbs continued:***

*Heterotheca subaxillaris* (camphor weed)  
*Sesuvium portulacastrum* (sea purselane)  
*Aphanostephus skirrobasis* (lazy daisy)  
*Sueda linearis* (annual seepweed)  
*Lippia nodiflora* (common frog-fruit)

*Atriplex arenaria* (quelite)  
*Pluchea camphorata* (camphor-weed)  
*Salicornia* spp. (glassworts)  
*Centrosema virginianum* (butterfly pea)

## **Federally-listed plant & animal species:**

*Lepidochelys kempii* (Kemp's Ridley sea turtle)  
*Caretta caretta* (loggerhead sea turtle)  
*Pelecanus occidentalis* (brown pelican)

Endangered; G1; SZN  
Threatened; G3; S1  
Endangered (PS:E); G4; S2

## ***Range:***

Coastal dune grasslands are estimated to have occupied less than 2,000 acres in presettlement times, and 50 to 75% was thought to remain prior to the 2005 hurricanes. The most extensive examples of coastal dune grasslands are generally found on Louisiana's barrier islands and the Chenier Plain of southwest Louisiana.

## ***LA River Basins:***

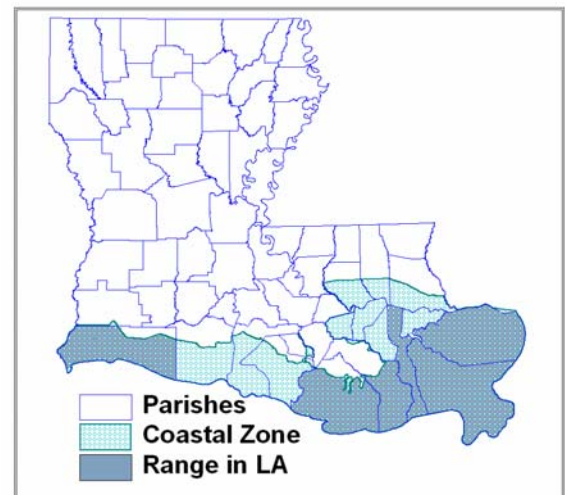
Pontchartrain, Mississippi, Barataria, Terrebonne, Mermentau, Calcasieu, Sabine

## ***Threats:***

- Shoreline erosion
- Construction of roads, pipelines or utilities
- Contamination by chemicals or industrial discharge
- Off-road vehicle use
- Invasive exotic species
- Overgrazing

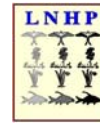
## ***Beneficial Management Practices:***

- Prevent conversion of existing natural communities to other land uses
- Shoreline or island stabilization
- Prohibit off-road vehicle use
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means
- Prohibit livestock grazing





# Natural Communities of Louisiana



## Coastal Dune Shrub Thicket

**Rarity Rank:** S1/G3?

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure



**Synonyms:** Beach dune thicket

**Ecological Systems:**

CES203.469 Louisiana Beach

**General Description:**

- Occurs on established sand dunes and beach ridges on barrier islands and the mainland coast
- Very limited extent in Louisiana due to poorly developed coastal dune system
- Sites are typically xeric (dry) to xeric/mesic and moderately exposed to salt spray
- Normally appears as a relatively dense stand of shrubs
- A variety of salt-tolerant shrubs occur, that are often covered with a dense growth of lichens
- May be destroyed by sand dune migration or erosion and may be replaced by Coastal Dune Grassland
- Often serve as important nesting areas for colonial waterbirds

**Plant Community Associates**

**Common species include:**

*Morella cerifera* (wax myrtle)

*Iva* spp. (marsh elder)

*Zanthoxylum clava-herculis* (toothache tree)

*Lycium carolinianum* (Christmas berry)

*Smilax* spp. (greenbriers)

*Ipomea stolonifera* (beach morning-glory)

*Ilex vomitoria* (yaupon)

*Baccharis halimifolia* (saltbush)

*Acacia smallii* (acacia)

*Opuntia* sp. (prickly pear cactus)

*Vitis mustangensis* (wild grape)

*I. pes-caprae* (goat-foot morning-glory)

**Federally-listed plant & animal species:**

*Pelecanus occidentalis* (brown pelican)

Endangered (PS:E); G4; S2



# Natural Communities of Louisiana



## **Range:**

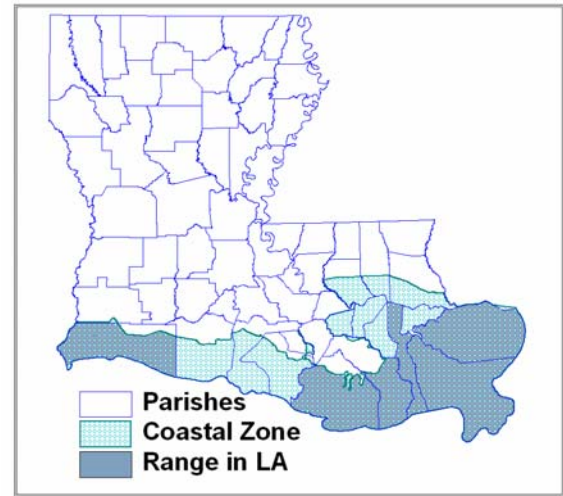
Coastal dune shrub thickets are estimated to have occupied less than 2,000 acres in presettlement times, and 50 to 75% was thought to remain prior to the 2005 hurricanes. The most extensive examples of coastal dune thickets are generally found on Louisiana's barrier islands and the Chenier Plain of southwest Louisiana.

## **LA River Basins:**

Pontchartrain, Mississippi, Barataria, Terrebonne, Mermentau, Calcasieu, Sabine

## **Threats:**

- Shoreline erosion
- Construction of roads, pipelines or utilities
- Contamination by chemicals, industrial discharge, or oil spills
- Off-road vehicle use
- Invasive, exotic species
- Overgrazing



## **Beneficial Management Practices:**

- Prevent conversion of existing natural communities to other land uses
- Shoreline or island stabilization
- Prohibit off-road vehicle use
- Remove any invasive, exotic plant species with use of spot herbicides or mechanical means
- Prohibit livestock grazing

# Natural Communities of Louisiana



## Coastal Live Oak-Hackberry Forest

**Rarity Rank:** S1S2/G2

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Cheniere, Maritime Forest

**Ecological Systems:** CES203.466 West Gulf Coastal Plain Chenier and Upper Texas Coastal Fringe Forest and Woodland



### General Description:

- Coastal Live Oak-Hackberry Forest or Cheniere (French for "place of oaks") formed on abandoned beach ridges primarily in southwest Louisiana
- These ancient beaches were stranded via deltaic sedimentation by the constantly shifting Mississippi River
- Composed primarily of fine sandy loams with sand and shell layers or deposits, these ridges range in height from 4 to 5 feet above sea level
- Soils of medium fertility; high permeability
- Serve as important storm barriers limiting saltwater intrusion into freshwater habitats. Typically, marshes north of chenieres are fresher than those gulfward
- Important wildlife habitat and serves as vital resting habitat for trans-gulf-migrating birds

### Plant Community Associates:

#### Common overstory tree species include:

*Quercus virginiana* (live oak)  
*Gleditsia triacanthos* (honeylocust)  
*Zanthoxylum clava-herculis* (toothache tree)  
*Salix nigra* (black willow)

*Celtis laevigata* (hackberry or sugarberry)  
*Ulmus americana* (American elm)  
*Carya illinoensis* (sweet pecan)

#### Common midstory & understory species include:

*Crataegus viridis* (green hawthorn)  
*Sabal minor* (palmetto)  
*Sideroxylon lanuginosum* (chittim wood)  
*Cephalanthus occidentalis* (buttonbush)

*Diospyros virginiana* (persimmon)  
*Ilex decidua* (deciduous holly)  
*Morella cerifera* (wax myrtle)  
*Ilex vomitoria* (yaupon)

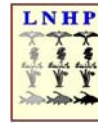
#### Common herbaceous layer species include:

*Opuntia* spp. (prickly pear cactus)  
*Ampelopsis arborea* (peppervine)  
*Toxicodendron radicans* (poison ivy)  
*Parthenocissus quinquefolia* (Virginia creeper)

*Oplismenus hirtellus* (basket grass)  
*Vitis* spp. (wild grape)  
*Campsis radicans* (trumpet creeper)



# Natural Communities of Louisiana



## Common epiphytes include:

*Tillandsia usneoides* (Spanish moss)

*Polypodium polypodioides* (resurrection fern)

*Phoradendron tomentosum* (mistle-toe)

## Federally-listed plant & animal species:

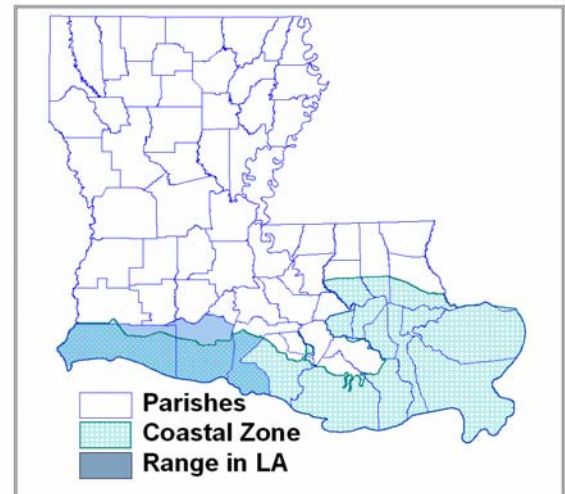
None

## Range:

Louisiana's coastal chenier forests occur in the Chenier Plain from Iberia Parish westward across Vermilion and Cameron parishes. Of the original 100,000 to 500,000 acres in Louisiana, only 2,000 to 10,000 acres remain, 2-10 % of presettlement extent

## LA River Basins:

Vermilion-Teche, Mermentau, Calcasieu, Sabine



## Threats:

- Residential development
- Roads and utility construction
- Overgrazing which damages understory vegetation and inhibits natural stand regeneration
- Invasive and exotic species introduction

## Beneficial Management Practices:

- Prevent conversion of existing natural forests to other land uses
- Prohibit livestock grazing
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means



Magnolia Warbler (*Dendroica magnolia*) is one of the migratory bird species that utilize coastal live oak-hackberry forests

Funding provided by the Louisiana Department of Wildlife and Fisheries and the Barataria-Terrebonne National Estuary Program

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# Natural Communities of Louisiana



## Salt Dome Hardwood Forest

**Rarity Rank:** S1/G1

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** None

**Ecological Systems:** CES203.466 West Gulf Coastal Plain Chenier and Upper Texas Coastal Fringe Forest and Woodland



### General Description:

- Restricted to salt domes in coastal Louisiana called the “Five Islands”
- Developed on fertile, circum-neutral to slightly alkaline loessial deposits over salt dome cap rock
- Upland hardwood dominated forest similar to hardwood slope or Southern mesophytic forests
- Highly erodible loess soils that have worn over thousands of years to form a characteristic well-dissected landscape of high, narrow ridges, steep slopes, and deep ravines
- Topographic characteristics of the region create a relatively cool, moist micro-climate on the slopes and in the ravines

### Plant Community Associates

#### Common overstory tree species include:

*Quercus virginiana* (live oak)  
*Quercus pagoda* (cherrybark oak)  
*Celtis laevigata* (hackberry)  
*Tilia americana* var. *caroliniana* (basswood)  
*Carya glabra* (pignut hickory)

*Magnolia grandiflora* (Southern magnolia)  
*Ulmus americana* (American elm)  
*Liquidambar styraciflua* (sweetgum)  
*Quercus nigra* (water oak)

#### Common midstory & understory species include:

*Prunus caroliniana* (cherrylaurel)  
*Sabal minor* (dwarf palmetto)  
*Aesculus pavia* (red buckeye)  
*Parthenocissus quinquefolia* (Virginia creeper)  
*Vitis rotundifolia* (muscadine grape)  
*Ampelopsis arborea* (peppervine)

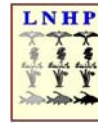
*Ilex vomitoria* (yaupon)  
*Callicarpa americana* (french mulberry)  
*Asimina triloba* (pawpaw)  
*Smilax rotundifolia* (common greenbriar)  
*Toxicodendron radicans* (poison ivy)  
*Smilax bona-nox* (saw greenbriar)

#### Common herbaceous layer species include:

*Oplismenus hirtellus* ssp. *setarius* (bristle basketgrass) *Sanicula canadensis* (black snakeroot)  
*Malvaviscus arboreus* var. *drummondii* (wax mallow) *Rubus* spp. (blackberry)  
*Elephantopus carolinianus* (Carolina elephant’s foot)



# Natural Communities of Louisiana



## **Common epiphytes include:**

*Tillandsia usneoides* (Spanish moss)

*Polypodium polypodioides* (resurrection fern)

*Phoradendron tomentosum* (mistle-toe)

## **Federally-listed plant & animal species:**

*Ursus americanus luteolus* (Louisiana black bear)

Threatened; G5T2; S2

## **Range:**

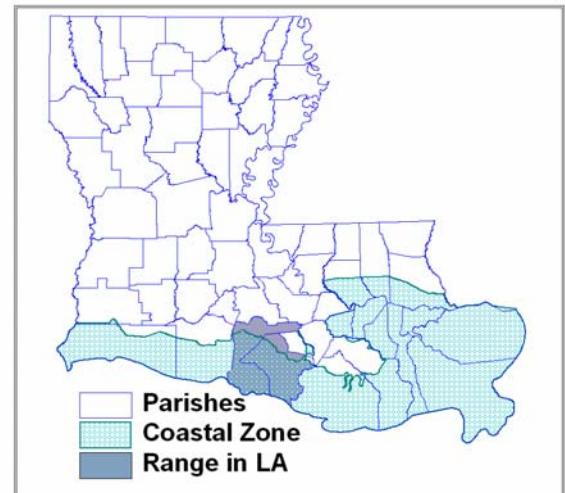
Gulf Coast Prairies and Marshes ecoregion in the southwest portions of Louisiana; specifically restricted to the five salt domes, or “islands” of south central Louisiana: Avery, Belle Isle, Cote Blanche, Jefferson, and Weeks Islands.

## **LA River Basins:**

Atchafalaya, Vermilion-Teche

## **Threats:**

- Industrial activities
- Residential development
- Construction of roads, pipelines and utilities
- Invasive exotic species
- Overgrazing



## **Beneficial Management Practices:**

- Prevent conversion of existing natural forests to other land uses
- Maintain natural species composition by following appropriate hardwood management techniques
- No harvesting on steep slopes and during wet periods to prevent soil damage
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means
- Prohibit off-road vehicle use or restrict use to existing trails
- Prohibit livestock grazing



Louisiana black bear

Funding provided by the Louisiana Department of Wildlife and Fisheries and the Barataria-Terrebonne National Estuary Program

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# Natural Communities of Louisiana



## Spruce Pine-Hardwood Flatwood

**Rarity Rank:** S1/G1G2

	1	2	3	4	5
State					
Global					
	imperiled		rare		secure

**Synonyms:** Pine-Hardwood Flatwoods

**Ecological Systems:** CES203.557 East Gulf Coastal Plain Southern Loblolly-Hardwood Flatwoods

### General Description:

- Flatwoods type indigenous to the western Florida Parishes of southeast Louisiana
- Wetland variant occupies poorly drained flats, depressional areas and small drainages (sometimes called “slashes”) that lie in a mosaic with higher, non-wetland areas which support a mesic variant
- Both variants are distinguished by the prevalence of *Pinus glabra* (spruce pine) over *Pinus taeda* (loblolly pine), although loblolly is usually present at some level
- Hardwoods usually dominate the forest, but spruce pine can dominate areas within the stand
- Soils are hydric, acidic silt loams including the Encrow, Gilbert and Springfield series
- Soils are significantly higher in nutrient levels than those historically supporting the *Pinus palustris* (longleaf pine) communities occupying similar hydrologic settings immediately to the east
- Fire in these forests is considered very rare as fuel conditions are not conducive to fire and the component plant species are not fire adapted



### Plant Community Associates of Wet Hardwood Flatwoods

#### Common overstory tree species include:

*Pinus glabra* (spruce pine)

*Acer rubrum* (red maple)

*Fraxinus caroliniana* (Carolina ash)

*Fagus grandifolia* (American beech)

*Nyssa biflora* (swamp blackgum)

*Quercus laurifolia* (laurel oak)

*Quercus nigra* (water oak)

*Quercus phellos* (willow oak)

*Pinus taeda* (loblolly pine)

*Carya glabra* (pignut hickory)

*Fraxinus pennsylvanica* (green ash)

*Magnolia grandiflora* (Southern magnolia)

*Nyssa sylvatica* (blackgum)

*Quercus michauxii* (swamp chestnut oak)

*Quercus pagoda* (cherrybark oak)

*Liquidambar styraciflua* (sweetgum)

#### Common midstory & understory species include:

*Cephalanthus occidentalis* (buttonbush)

*Crataegus opaca* (mayhaw)

*Cornus foemina* (swamp dogwood)

*Arundinaria gigantea* (switchcane)

# Natural Communities of Louisiana



## ***Common midstory & understory species continued:***

*Diospyros virginiana* (persimmon)  
*Ilex opaca* (American holly)  
*Morella cerifera* (wax myrtle)  
*Sambucus canadensis* (elderberry)  
*Styrax americanus* (snowbell)  
*Vitis rotundifolia* (muscadine)  
*Berchemia scandens* (rattan vine)  
*Campsis radicans* (trumpet creeper)

*Ilex decidua* (deciduous holly)  
*Itea virginica* (Virginia willow)  
*Toxicodendron radicans* (poison ivy)  
*Smilax* spp. (greenbriars)  
*Viburnum dentatum* (arrowwood)  
*Ampelopsis arborea* (peppervine)  
*Brunnichia cirrhosa* (ladies' eardrops)  
*Sabal minor* (dwarf palmetto)

## ***Common herbaceous & fern species include:***

*Boehmeria cylindrica* (hempweed)  
*Chasmanthium* spp. (spikegrasses)  
*Hypericum* spp. (St. Andrew's cross)  
*Justicia ovata* (waterwillow)  
*Onoclea sensibilis* (sensitive fern)  
*Polygonum* spp. (smartweed)  
*Panicum gymnocarpon* (savannah panicgrass)  
*Thelypteris palustris* (Southern shield fern)  
*Triadenum walteri* (greater marsh St. John's wort)

*Carex* spp. (sedges)  
*Cyperus* spp. (flatsedges)  
*Juncus* spp. (rushes)  
*Ludwigia* spp. (primrose willow)  
*Osmunda regalis* (royal fern)  
*Rhynchospora* spp. (beaksedge)  
*Saururus cernuus* (lizard's tail)  
*Woodwardia areolata* (netted chain fern)  
*Vernonia gigantea* ssp. *gigantea* (ironweed)

**Federally-listed plant & animal species:** None

## ***Range:***

Occurs in a very narrow range in Livingston, East Baton Rouge and perhaps Ascension Parishes. Presettlement acreage is estimated at 50,000 to 100,000 acres with only 10 % currently remaining.

## ***LA River Basins:***

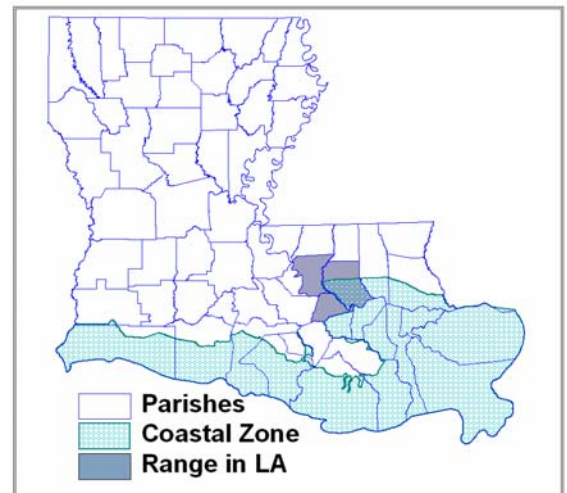
Pontchartrain, Mississippi

## ***Threats:***

- Residential or commercial development
- Construction of roads, pipelines or utilities
- Conversion to slash or loblolly pine plantations
- Hydrological alterations (to include adjacent areas)
- Invasive exotic species

## ***Beneficial Management Practices:***

- Prevent conversion of existing natural forests to other land uses
- Maintain natural species composition by following appropriate hardwood management techniques
- No harvesting during wet periods to prevent soil damage
- No bedding or other soil disturbance that may alter natural water flow patterns
- Remove any invasive exotic plant species with use of spot herbicides or mechanical means



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For more information, please visit our Web pages at

[www.wlf.louisiana.gov/experience/naturalheritage](http://www.wlf.louisiana.gov/experience/naturalheritage) or 225-765-2811

[www.BTNEP.org](http://www.BTNEP.org) or 1-800-259-0869