

18. Freshwater Marsh

Rarity Rank: S1S2/G3G4

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:

Freshwater marsh is normally located adjacent to intermediate marsh along the northern most extent of the coastal marshes, although it may occur beside coastal Bays where freshwater is entering the bay (e.g., Atchafalaya Bay). Small pools or ponds may be scattered.



The floristic composition of these sites is quite heterogeneous and is variable from site to site. 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. Freshwater Marsh has the greatest plant diversity and highest soil organic matter content of any marsh type. Chabreck (1972) reported 92 plant species in fresh marsh versus only 17 different species in salt marsh. It is frequently dominated by *Panicum hemitomon* (maidencane). Other characteristic species include *Eleocharis* spp. (spikesedge), *Sagittaria lancifolia* (= *S. falcata*), *Alternanthera philoxeroides* (alligator weed), *Spartina patens* (wire grass), *Phragmites communis* (roseau cane), *Bacopa monnieri* (coastal water hyssop), *Ceratophyllum demersum* (coontail), *Cyperus odoratus* (fragrant flatsedge), *Eichhornia crassipes* (water hyacinth), *Pontederia cordata* (pickerelweed), *Peltandra virginica* (arrow arum), *Hydrocotyle* spp. (pennyworts), *Lemna minor* (common duckweed), *Myriophyllum* spp. (water milfoils), *Nymphaea odorata* (white waterlily), *Typha* spp. (cattail), *Utricularia* spp. (bladderworts), *Vigna luteola* (deer pea), and *Zizaniopsis miliacea* (southern wildrice) (LNHP 1986-2004). 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 Louisiana. Salinities are usually less than 2 ppt and normally average about 0.5-1 ppt.

Current Extent and Status:

Freshwater marsh has undergone the largest reduction in acreage of any of the marsh types over the past 20 years due mainly to salt water intrusion, canal dredging, and commercial, industrial and residential development. Presettlement acreage was estimated

at 1 to 2 million acres, but has been reduced by 25 to 50 % of this original extent (Smith 1993). The largest contiguous tracts of fresh marsh occur in Terrebonne, St. Mary, Vermillion, Cameron, LaFourche and St. Charles Parishes (Hartley et al. 2000). In the Chenier Plain of southwestern Louisiana, Sabine, Cameron Prairie, and Lacassine NWFs have a combined 75,121 acres of fresh marsh. State lands in the Chenier Plain include the White Lake Wetlands Conservation



Area with approximately 52,000 acres of freshwater marsh, and Rockefeller Wildlife Refuge with a total area of 76,042 acres, approximately one-third of which is fresh marsh. Both of these conservation areas are managed by the LDWF. In the Deltaic Plain of southeastern Louisiana, LDWF lands with freshwater marsh habitat include the Atchafalaya Delta WMA (total land area of 19,000 acres and unknown acres of fresh marsh), Salvador WMA (30,000 acres), Timken WMA (3,000 acres), Pass-a-Loutre WMA at the terminous of the Mississippi River (115,000 total acres, the majority are canals and waterways with some freshwater and intermediate marsh), Pearl River WMA (total 36,000 acres with approximately one-fourth in freshwater and intermediate marsh), and very small amounts of freshwater marsh on Joyce and Maurepas Swamp WMAs. NWRs with freshwater marsh in the Deltaic Plain include the Delta NWR (48,800 acres of fresh and brackish marsh), Bayou Sauvage NWR (23,000 acres of fresh and intermediate marsh), Big Branch NWR (total land area of 15,000 acres and unknown acres of fresh and intermediate marsh), and Mandalay NWR (total land area of 4,212 acres of cypress swamp and some fresh marsh). One Natural Areas Registry site with fresh marsh in St. Charles Parish totals 82.5 acres, and TNC protects a total of 586 acres on their White Kitchen Preserve (unknown number of fresh marsh acres).

Wildlife populations are generally highest in this marsh type and it supports high numbers of wintering waterfowl. As with the other marsh types, freshwater marsh acts as important nursery areas for the young of many marine species, such as croaker, seatrout, blackdrum, and flounder. The community may change to a more saline marsh type because of salt water intrusion or may become open water. The drought periods of 1999 and 2000 have contributed to cattail invasions of freshwater ponds and led to substantial loss of open water ponds in freshwater marshes east of LA Hwy 27, and in other areas. "Flotant" creation has occurred in many areas and this is having an impact on waterfowl and other wetland species. Places which were open "black water" areas with good amounts of *Lemna* sp. have become non-waterfowl areas with choked up flotant and *Salvinina* sp. and other mat-forming plants taking over and has resulted in a great loss of waterfowl habitat.

FRESHWATER MARSH SPECIES OF CONSERVATION CONCERN (31)		
BIRDS	Black Rail	Short-eared Owl
American Bittern	Clapper Rail	Sedge Wren
Yellow-crowned Night-Heron	King Rail	Loggerhead Shrike
Wood Stork	Sandhill Crane	Nelson's Sharp-tailed Sparrow
Mottled Duck	Whooping Crane	
Northern Pintail	Marbled Godwit	BUTTERFLIES
Canvasback	Dunlin	Neamathla Skipper
Redhead	Short-billed Dowitcher	Dion Skipper
Lesser Scaup	Gull-billed Tern	Great Southern White
Bald Eagle	Caspian Tern	
Northern Harrier	Common Tern	REPTILES
Yellow Rail	Forster's Tern	Alligator Snapping Turtle

Priority Species Research and Survey Needs:

Dion Skipper, Neamathla Skipper and Great Southern White: Conduct surveys to determine current distribution and abundance for inclusion in the LNHP database.

Rails: Initiate intensive surveys to better understand population densities and distributions in coastal marsh habitats.

Terns: Continue with nesting surveys and initiate research that focuses on factors (predation, human disturbance, etc.) effecting overall population densities.

Whooping Crane: Continue to coordinate with USFWS and LSU to develop plans for reintroduction of species on the White Lake Wetlands Conservation Area.

Waterbirds: Continue to conduct rookery surveys to update the LNHP database.

Species Conservation Strategies:

1. Shorebirds, Wading Birds:

- Provide public education regarding the importance of waterbird nesting colonies and shorebird feeding areas. Reduce the negative effects on these areas from recreational and other uses.
- Work with landowners to implement management and conservation recommendations for waterbirds (especially rails) of SWG project T18 upon completion.
- Coordinate with GCJV to implement recommendations of shorebird and wading bird conservation plans.
- Disturbance and loss of nesting habitat are major threats to these species. Continue with protection and restoration efforts of coastal. Develop new and/or improve existing partnerships to achieve this goal.

2. Waterfowl:

- Continue to encourage the creation/enhancement/maintenance of high-quality habitat across Louisiana.
- Work with DU, DW, and USFWS to assuring that quality habitat, including refuge from hunting and other disturbance, is distributed across the landscape.
- Encourage maintenance of rice agriculture and discourage conversion to crops with lower value to waterfowl.
- Continue LDWF partnerships with DU, DW, USWFS, and state wildlife management agencies to conserve habitat on the northern breeding grounds.

3. Bald Eagle: Continue with long-term monitoring of active bald eagle nests, successful breeding pairs, and fledged eagles.

Threats Affecting Habitat:

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

Source of Threat	Threat						
	Altered Composition/ Structure	Altered Water Quality	Habitat Destruction or Conversion	Habitat Disturbance	Herbivory	Modification of Water Levels; Changes in Natural Flow Patterns	Salinity Alteration
Channelization of rivers or streams	XXX	XXX	XXX			XXX	XXX
Construction of ditches, drainage or diversion systems		XXX	XXX			XXX	XXX
Development/maintenance of pipelines, roads or utilities		XXX	XXX	XXX		XXX	XXX
Grazing practices	XXX	XXX	XXX	XXX			
Invasive/alien species	XXX	XXX	XXX		XXX		
Levee or dike construction	XXX	XXX	XXX	XXX		XXX	
Residential development			XXX	XXX			
Saltwater intrusion	XXX	XXX	XXX	XXX			XXX

Habitat Conservation Strategies:

1. Encourage the NRCS Plant Materials Center and other growers to produce a greater variety of plant species for the restoration of coastal habitats.

2. Work with COE and NRCS to develop better strategies for the placement of dredge materials as a restoration method for this habitat type.
3. Work with COE to influence water levels in the Atchafalaya Basin to benefit this habitat type.
4. Work with LCA, CWPPRA to broaden coastal restoration projects to include freshwater marsh.
5. Work with appropriate planning commissions to provide LNHP data that illustrates locations of this habitat type.

References:

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