

5. Bayhead Swamp/Forested Seep

Rarity Rank: S3/G3?

Synonyms: Baygall, Reed Brake, Acid Seep Forest, Spring-Head, Green-Head

Ecological Systems: CES203.505 Southern Coastal Plain Seepage Swamp and Baygall
CES203.372 West Gulf Coastal Plain Seepage Swamp and Baygall

General Description:

(Note: Bayhead Swamp and Forested Seep are described as distinct communities in the LNHP Natural Communities of Louisiana. They are considered together here due to their floristic similarity and similarity in management needs.)



Bayhead Swamps are typically densely stocked, often-flooded forested wetlands that develop in broad, shallow, braided drains, or along margins of creeks with little or no creek banks (LNHP 1986-2004, Brooks et al 1993, Guillory et al 1990, Smith 1996). They are also found in relatively deep depressional areas in flatwoods, or in the headwaters of creeks in sandy, acidic uplands across much of the state. They occur on the sandy uplands of western Louisiana in both the Upper and Lower West Gulf Coastal Plains (UWGCP and LWGCP), but are probably most common in the pine flatwoods of the East Gulf Coastal Plain (EGCP) lying on the Pleistocene Terraces that flank the Bogue Chitto River in Washington Parish (Smith 1999). They are seasonally to semi-permanently saturated or flooded.

Forested Seeps occur in northwest, central, and western Louisiana (UWGCP and LWGCP), typically in association with mixed pine-hardwood forests, on hillsides, to the base of slopes. The plant species composition is very similar to that of bayhead swamps. Forested seeps are continually moist due to constant seepage forced to the surface by an underlying impervious layer (LNHP 1986-2004).

Soils of bayhead swamps/forested seeps are deep, very poorly drained, very strongly acid loamy fine sand, fine sandy loam or silt loam, with relatively high organic matter content. Available water capacity is high, surface runoff is very slow to ponded. Inherent fertility is low. Some typical soils are Myatt fine sandy loam, Guyton silt loam and Osier loamy fine sand (Smith 1996).

The overstory of both bayheads and forested seeps is typically characterized by a closed to nearly closed canopy. The midstory is often densely stocked with various shrubs, many of which are evergreen, and there is often an abundance of ferns, except in the lowest, often-flooded depressions where little herb cover is present, other than

Sphagnum spp., which can form thick mats. These forests naturally vary from a few acres up to more than 100 acres in size (Brooks et al 1993, Smith 1996).

Bayhead swamps generally occupy the lowest positions on the landscape, with the exception of the principal permanent streams that drain the area. They are found just down the topographic gradient from pine and hardwood flatwoods. The highly acidic nature of the soils combined with the abundance of organic muck that accumulates on the swamp floor often produces a "blackwater" (actually tea-colored water) condition in streams associated with bayhead swamps.

Fire probably played a minor role in bayhead swamps because of its topographic position, usually wet nature, and general lack of appropriate fuels to carry a fire. However, fires may have occurred during exceedingly dry periods in broader bayheads, or may have been fairly frequent in narrow bayhead drains. Switch cane (*Arundinaria gigantea*), a highly combustible woody grass, can form dense thickets in bayheads (particularly at their edges, hence the old name "reed brake"), and may have played a key role in the fire dynamics of this community, especially in narrower bayhead drains (Smith 1996).

Magnolia virginiana (sweet bay, often dominant) and *Nyssa sylvatica* (black gum) are the common overstory trees. *Quercus laurifolia* (laurel oak), *Acer rubrum* (red maple), *Liquidambar styraciflua* (sweet gum), *Q. nigra* (water oak), *Taxodium distichum* (baldcypress), *T. ascendens* (pondcypress, in EGCP), *Pinus elliotii* (slash pine, in EGCP), and *P. palustris* (longleaf pine) may be present. A diversity of shrubs or small trees, primarily evergreen, are prevalent in the community. Species that may be present include *Persea borbonia* (red bay), *Cyrilla racemiflora* (swamp cyrilla, in EGCP and southwest Louisiana), *Morella heterophylla* (bigleaf wax myrtle), *M. cerifera* (wax myrtle), *Ilex glabra* (little-leaf gallberry, in EGCP), *I. coriacea* (sweet gallberry, in EGCP and southwest Louisiana), *I. opaca* (American holly), *Lindera subcoriacea* (S1/G2) (bog spicebush, in EGCP), *Lyonia lucida* (fetterbush, in EGCP), *L. ligustrina* (fetterbush), *Leucothoe axillaris* (leucothoe, in EGCP), *L. racemosa* (leucothoe), *Itea virginica* (Virginia willow), *Aronia arbutifolia* (red chokeberry), *Viburnum nudum* (possum-haw viburnum), *Rhus vernix* (poison sumac), *Clethra alnifolia* (summer sweet, primarily in EGCP), *Alnus serrulata* (hazel alder), *Styrax americana* (American snowbell), *Rhododendron serrulatum* (summer azalea), *R. canescens* (wild azalea), *Rhododendron oblongifolium* (wild azalea, central, western, and north Louisiana), and other species. *Smilax laurifolia* (bamboo greenbrier) and *Decumaria barbara* (climbing hydrangea) are often conspicuous community members. Herbaceous flora is usually sparse but may include ferns, such as *Lorinseria areolata* (net-veined chain fern), *Onoclea sensibilis* (sensitive fern), *Osmunda cinnamomea* (cinnamon fern), and *O. regalis* (royal fern), and a few orchid species (LNHP 1986-2004, NatureServe 2005).

Current Extent and Status:

Presettlement extent of bayheads and seeps statewide in Louisiana is estimated to have been 100,000 to 200,000 acres, with only 25 to 50% currently remaining (Smith

1993). Some of these habitats occur on public lands in the UWGCP and LWGCP where they are protected and in most cases, appropriate management is applied. These public lands include KNF, Fort Polk, Barksdale Air Force Base and Bodcau WMA. Bodcau and KNF have a total of 145 acres of a forested seep habitat registered with the Natural Areas Registry Program (one site on each area). Clear Creek and West Bay WMAs, which are in the southwest part of the state, certainly support this habitat but the status of it on these areas is not known. Both of these areas are owned by forest products companies and are leased by LDWF. Also in central and northwest Louisiana there are three privately owned forested seeps totaling 71 acres which are entered in the Natural Areas Registry Program. There is only minimal protection for remaining bayhead swamps in the EGCP. TNC’s Abita Creek, Talisheek and Charter Oak Preserves in St. Tammany Parish contain the largest protected areas of bayhead swamps in the Florida Parishes. The combined preserves total 3,928 acres with an unknown number of acres in bayhead swamp and including longleaf pine savannahs and flatwoods, hillside seepage bogs, slash pine-pondcypress/hardwood and riparian forests. In addition, 20 acres are protected within the Bogue Chitto State Park in Washington Parish. There are currently no bayhead properties in the EGCP registered with the Louisiana Natural Areas Registry Program. Today these wetlands are most often found surrounded by commercial timberlands and are affected by management on these adjacent lands. One such bayhead, of 20 acres or less, has been given a “special site” designation by the forest industry owner.



BAYHEAD SWAMP – FORESTED SEEP SPECIES OF CONSERVATION CONCERN (20)		
AMPHIBIANS Southern Dusky Salamander Gulf Coast Mud Salamander BIRDS American Woodcock Yellow-billed Cuckoo Wood Thrush Yellow-throated Vireo	Northern Parula Prothonotary Warbler Swainson's Warbler Kentucky Warbler Hooded Warbler Painted Bunting Rusty Blackbird Orchard Oriole	BUTTERFLIES Pepper and Salt Skipper Falcate Orangetip Harvester MAMMALS Southeastern Shrew Southeastern Myotis Long-tailed Weasel

Priority Species Research and Survey Needs:

Southern Dusky Salamander: This species is exhibiting drastic declines in relatively pristine areas throughout its range; its status is not currently being addressed by the Federal government. Initiate status surveys at reference sites to determine the extent of population declines in protected sites.

Pepper and Salt Skipper: Conduct surveys to determine current distribution and abundance for inclusion in LNHP database.

Southeastern Shrew: Considered imperiled in Louisiana, Louisiana represents the western edge of its range together with Arkansas and Missouri. Intensive surveys needed to update occurrence records and abundance for inclusion in LNHP database.

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

Songbirds: Continue to fund monitoring of songbird populations within this habitat type and the effects of forest management on these species.

Species Conservation Strategies:

1. When appropriate, support recommendations by the Ecosystem Management and Restoration Research Program (EMRRP) (Martin 2002).

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	Groundwater Depletion	Habitat Destruction or Conversion	Habitat Disturbance	Habitat Fragmentation	Modification of Water Levels; Changes in Natural Flow Patterns	Sedimentation
Channelization of rivers or streams	XXX			XXX	XXX		XXX	XXX
Construction of ditches, drainage or diversion systems	XXX			XXX	XXX		XXX	XXX
Conversion to agriculture or other forest types				XXX		XXX		XXX
Development/maintenance of pipelines, roads or utilities	XXX			XXX	XXX	XXX	XXX	XXX
Excessive groundwater withdrawal			XXX					
Fire suppression	XXX							
Incompatible forestry practices	XXX	XXX			XXX		XXX	XXX
Invasive/alien species	XXX				XXX			
Recreational use/vehicles	XXX				XXX			
Residential development				XXX	XXX	XXX		XXX

Habitat Conservation Strategies:

1. Work with Louisiana Forestry Association (LFA) to produce a publication for landowners which discusses BMPs for Streamside Management Zones (SMZs) and methods for effective landowner/logger communication.
2. Conduct surveys to determine the current extent and condition of this habitat type.
3. Develop management plans/recommendations for this habitat type.
4. Support research investigating the effects of altered hydrology regimes within this and adjacent habitats.
5. Work with appropriate planning commissions to provide LNHP data that illustrates locations of this habitat type.

References:

- BROOKS, A. R., E. S. NIXON, AND J. A. NEAL. 1993. Woody vegetation of wet creek bottom communities in eastern Texas. *Castanea* 58(3):185-196.
- GUILLORY, H. D., C. M. ALLEN, M. F. VIDRINE, C. H. STAGG, AND S. D. PARRIS. 1990. Baygalls-wildlife havens. *Louisiana Conservationist*. Nov/Dec:24-26.
- LNHP. 1986-2004. The natural communities of Louisiana. Louisiana Natural Heritage Program, Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA.
- MARTIN, C. 2002. Riparian Habitat Management for Mammals on Corps of Engineers Projects. Ecosystem Management and Restoration Research Program, ERDC TN-EMRRP-SI-29.
- MCINNIS, N. C. 1997. Barksdale Air Force Base - threatened and endangered species - natural areas survey. The Nature Conservancy, Louisiana Field Office, Baton Rouge, LA.
- NATURESERVE. 2005. NatureServe Explorer: An online encyclopedia of life [web application]. Version 4.2. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: March 15, 2005).
- SMITH, L. M. 1993. Estimated presettlement and current acres of natural plant communities in Louisiana. Louisiana Natural Heritage Program, Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA.
- . 1996. Rare and sensitive natural wetland plant communities of interior Louisiana. Louisiana Natural Heritage Program, Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA.
- . 1999. Historic vegetation of the Florida Parishes. Louisiana Natural Heritage Program, Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA.