

33. Spruce Pine-Hardwood Flatwood

Rarity Rank: S1/G1G2

Synonyms: Pine-Hardwood Flatwoods

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

General Description:

This flatwoods type is a natural mixed forest community indigenous to the western Florida Parishes in southeast Louisiana. A wetland variant of this community occupies poorly drained flats, depressional areas and small drainages (sometimes called “slashes”) that lie in a mosaic with higher, non-wetland areas. Such higher areas support a mesic spruce pine-hardwood flatwoods forest. Both variants are distinguished by the



prevalence of *Pinus glabra* (spruce pine) over *P. 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. These soils are significantly higher in nutrient levels than those historically supporting the *P. palustris* (longleaf pine) communities occupying similar hydrologic settings immediately to the east (Smith 1996). This edaphic factor may have precluded longleaf from this community type. Historically fire was probably very rare as the component plant species are not fire adapted and fuel conditions are not conducive to fire. Additional characteristic native tree, shrub and vine species include: *Acer rubrum* (red maple), *Ampelopsis arborea* (peppervine), *Berchemia scandens* (rattan vine), *Brunnichia cirrhosa* (ladies' eardrops), *Campsis radicans* (trumpet creeper), *Carya glabra* (pignut hickory), *Cephalanthus occidentalis* (buttonbush), *Cornus foemina* (swamp dogwood), *Crataegus opaca* (mayhaw), *C. viridis* (greenhaw), *Diospyros virginiana* (persimmon), *Fraxinus caroliniana* (Carolina ash), *F. pennsylvanica* (green ash), *Ilex decidua* (deciduous holly), *I. opaca* (American holly), *Itea virginica* (Virginia willow), *Liquidambar styraciflua* (sweetgum), *Magnolia grandiflora* (Southern magnolia), *Morella cerifera* (wax myrtle), *Nyssa biflora* (swamp blackgum), *N. sylvatica* (blackgum), *Quercus laurifolia* (laurel oak), *Q. michauxii* (swamp chestnut oak), *Q. nigra* (water oak), *Q. pagoda* (cherrybark oak), *Q. phellos* (willow oak), *Toxicodendron radicans* (poison ivy), *Salix nigra* (black willow), *Sambucus canadensis* (elderberry), *Smilax glauca*, *S. rotundifolia*, *Styrax americanus* (snowbell), *Viburnum dentatum* (arrowwood), and *Vitis rotundifolia* (muscadine). Spruce pine-hardwood flatwoods typically have a dense canopy resulting in heavy shading and usually a sparse understory. *Sabal minor* (dwarf palmetto) is often an understory dominant. Other understory natives include: *Arundinaria gigantea* (switchcane), *Boehmeria cylindrica* (hempweed), *Carex* spp. (sedges), *Chasmanthium* spp.

(spikegrasses), *Cyperus* spp. (flatsedges), *Gratiola virginiana* (roundfruit hedgehyssop), *Hygrophila lacustris* (Gulf swampweed), *Hypericum* spp. (St. Andrew’s cross), *Juncus* spp. (rushes), *Justicia ovata* (waterwillow), *Ludwigia* spp. (primrose willow) , *Lycopus rubellus* (taperleaf horehound), *L. virginicus* (water horehound), *Lysimachia radicans* (trailing yellow loosestrife, *Onoclea sensibilis* (sensitive fern), *Osmunda regalis* (royal fern), *Panicum gymnocarpon* (savannah panicgrass), *Polygonum* spp. (smartweed), *Rhynchospora* spp. (beaksedge), *Sabatia calycina* (coastal rose gentian), *Saururus cernuus* (lizard’s tail), *Schoenoplectus* spp. (bullrushes), *Solidago gigantea* (goldenrod), *Thelypteris palustris* (Southern shield fern), *Triadenum walteri* (greater marsh St. John’s wort), *Vernonia gigantea* ssp. *gigantea* (giant ironweed), and *Woodwardia areolata* (netted chain fern).

Current Extent and Status:

Spruce pine-hardwood flatwoods are restricted to Louisiana, occurring 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 (Smith 1993). The predominant threat to this habitat type is conversion to commercial and residential developments due to the rapid expansion of urbanization along the Interstate-12 corridor in the Florida Parishes of Louisiana. Other major factors threatening this association include logging and conversion to commercial pine plantations, and hydrological alterations. Today the remaining spruce pine flatwoods are primarily in private ownership. Only one private tract of 152 acres is registered with the Louisiana Natural Areas Registry Program, and an additional site of unknown acreage is protected within Tickfaw State Park.



SPRUCE PINE – HARDWOOD FLATWOOD SPECIES OF CONSERVATION CONCERN (19)		
AMPHIBIANS	Northern Parula	MAMMALS
Southern Dusky Salamander	Prothonotary Warbler	Southeastern Shrew
Four-toed Salamander	Swainson’s Warbler	Southeastern Myotis
Gulf Coast Mud Salamander	Hooded Warbler	Long-tailed Weasel
	Rusty Blackbird	
BIRDS	Orchard Oriole	REPTILES
American Woodcock		Scarlet Kingsnake
Yellow-billed Cuckoo	BUTTERFLIES	Timber Rattlesnake
Wood Thrush	Appalachian Brown	
Yellow-throated Vireo		

Priority Species Research and Survey Needs:

Songbirds: Continued research on the effects of silviculture/land management practices on all songbird species.

Appalachian Brown: Conduct surveys to determine its current distribution and abundance for inclusion in the LNHP database.

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

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

Determine the microhabitat preferences and requirements of target species occurring in spruce pine- hardwood flatwood forests to understand how these species are utilizing the habitat to determine management needs.

Species Conservation Strategies:

1. **Four-toed Salamander:** Recent Louisiana records are all from Spruce Pine – Hardwood Flatwood forest. Reproduction requires fishless gum ponds. Locate gum ponds and buffer from anthropogenic modification to perpetuate reproduction.
2. Work with landowners to initiate or continue the implementation of PIF bird conservation plans, conservation plans developed for amphibians and reptiles, and USFWS threatened and endangered species recovery plans over the next 10 years.

Threats Affecting Habitat:

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

Source of Threat	Threat				
	Altered Composition/ Structure	Habitat Destruction or Conversion	Habitat Disturbance	Habitat Fragmentation	Modification of Water Levels; Changes in Natural Flow Patterns
Commercial/industrial development		XXX			
Construction of ditches, drainage or diversion systems	XXX		XXX		XXX
Conversion to agriculture or other forest types		XXX		XXX	
Development/maintenance of pipelines, roads or utilities		XXX	XXX	XXX	
Incompatible forestry practices	XXX		XXX		XXX
Invasive/alien species	XXX				
Residential development		XXX	XXX	XXX	

Habitat Conservation Strategies:

1. Conduct surveys to determine the current extent and condition of this habitat type.
2. Work with appropriate planning commissions to provide them with LNHP data that illustrates locations of this habitat type.
3. Partner with NGOs, OSP, private landowners, etc. to initiate restoration and preservation efforts of spruce pine – hardwood flatwood forests and continue to encourage landowners to enroll this habitat type in the Natural Areas Registry Program.
4. Work with interested groups to promote SFI guidelines and develop new BMPs specific to this habitat. Distribute these guidelines to landowners/land managers through technical pamphlets and the LDWF website.
5. Promote the use of federal cost share programs (NRCS) to control invasive species.
6. Provide education/outreach to promote conservation and preservation of this habitat type with an emphasis on the effects of invasive/exotic plant species (tallow, privet, etc.).
7. Work with the legislature to provide incentives (tax breaks, etc.) to landowners to retain the natural state of areas where this habitat occurs.
8. Encourage LDAF and other growers to produce spruce pine seedlings for distribution to landowners interested in restoring this habitat type.
9. Promote controlled access for recreational use/vehicles in this habitat type.

References:

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