

31. Small Stream Forest

Rarity Rank: S3/G3

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:

Small stream forests are relatively narrow wetland forests occurring along small rivers and large creeks in central, western, southeastern, and northern Louisiana. They are seasonally flooded for brief periods. The 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 species composition. Soils are typically classified as silt-loams. At times, the community is



quite similar in species composition to hardwood slope forests (beech-magnolia forests). These forested wetlands are critical components of the landscape filtering surface and subsurface flows, improving water quality, and storing sediment and nutrients (Rummer 2004). Common trees include *Magnolia grandiflora* (southern magnolia), *Fagus grandifolia* (beech), *Nyssa sylvatica* (blackgum), *Quercus michauxii* (swamp white oak), *Q. alba* (white oak), *Q. nigra* (water oak), *Q. laurifolia* (laurel oak), *Q. pagoda* (cherrybark oak), *Liquidambar styraciflua* (sweetgum), *Platanus occidentalis* (sycamore), *Acer rubrum* (red maple), *Betula nigra* (river birch), *Carya ovata* (shagbark hickory), *Carya cordiformis* (bitternut hickory), *Fraxinus americana* (white ash), *F. caroliniana* (water ash), *Prunus caroliniana* (cherry laurel), *Ulmus alata* (winged elm), and *Liriodendron tulipifera* (yellow poplar, southeastern and central Louisiana). *Pinus glabra* (spruce pine) is a common associate in the Florida Parishes, and *Taxodium distichum* (baldcypress) and *Pinus taeda* (loblolly pine) are occasional associates statewide. *Magnolia virginiana* (sweet bay) and *M. macrophylla* (bigleaf magnolia) may be present. Primary midstory and understory associates include *Halesia diptera* (silverbell), *Carpinus caroliniana* (ironwood), *Viburnum dentatum* (arrow-wood), *Itea virginica* (Virginia willow), *Symplocos tinctoria* (sweetleaf), *Alnus serrulata* (hazel alder), *Rhododendron canescens* (wild azalea) and *Styrax grandifolia* (bigleaf snowbell). *Illicium floridanum* (starbush) and *Sebastiania fruticosa* (sebastian bush) are common in the Florida Parishes, the former at times being the dominant understory shrub. *Cyrilla racemiflora* (swamp cyrilla), *Lyonia lucida* (fetterbush), *Leucothoe axillaris* (leucothoe), *L. racemosa* (leucothoe), and *Ilex verticillata* (winterberry) are common understory affiliates in the



eastern Florida Parishes. *Isoetes louisianensis* (Louisiana quillwort), an aquatic fern that is federally-listed as endangered, occurs in and along streams clothed by small stream forests in the eastern Florida Parishes. Communities possessing physical characteristics and species complement of both riparian forest and bayhead swamp occur in central and northern Louisiana.

Current Extent and Status:

Riparian forests are extremely susceptible to damage, and only an estimated 25 to 50% of Louisiana’s original small stream forests remain intact (Smith 1993). Initial habitat loss, degradation and fragmentation of these forested wetlands was due primarily to agricultural conversion and timber harvesting. With the implementation of BMPs for forestry and agricultural uses, current source for stream habitat destruction has shifted primarily to urbanization, although silvicultural and agricultural activities are still contributing some threat (Rummer 2004). The Louisiana Natural and Scenic River System (LNSRS) program currently monitors and protects 70 streams or stream segments in the state with over 3,300 miles of streams in the system. The LNSRS has been effective in protecting some of the state’s riparian forests, however this is only a very small portion of the total stream miles in the state (about 19%). Streams or portions of streams on both federal and state public lands such as KNF and various state parks and WMAs are also afforded some protection. The Natural Areas Registry Program has 12 properties containing small stream forests with a total of 792 acres.



SMALL STREAM FOREST SPECIES OF CONSERVATION CONCERN (36)		
<p>AMPHIBIANS</p> <ul style="list-style-type: none"> Southern Dusky Salamander Four-toed Salamander Webster's Salamander Louisiana Slimy Salamander Southern Red-backed Salamander 	<ul style="list-style-type: none"> Prothonotary Warbler Worm-eating Warbler Swainson's Warbler Louisiana Waterthrush Kentucky Warbler Hooded Warbler Rusty Blackbird Orchard Oriole 	<p>MAMMALS</p> <ul style="list-style-type: none"> Southeastern Shrew Southeastern Myotis Northern Myotis Silver-haired Bat Big Brown Bat Ringtail Long-tailed Weasel Eastern Spotted Skunk
<p>BIRDS</p> <ul style="list-style-type: none"> American Woodcock Yellow-billed Cuckoo Chuck-Will's-Widow Wood Thrush Bell's Vireo Yellow-throated Vireo Northern Parula 	<p>BUTTERFLIES</p> <ul style="list-style-type: none"> Pepper and Salt Skipper Falcate Orangetip Harvester 'Seminole' Texan Crescent Creole Pearly Eye Appalachian Brown 	<p>REPTILES</p> <ul style="list-style-type: none"> Common Rainbow Snake Timber Rattlesnake

Priority Species Research and Survey Needs:

Bell's Vireo: Initiate surveys to determine their population abundance and distribution in the northern portion of state and develop species management recommendations.

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

Butterflies: Conduct surveys to determine current distribution and abundance of all butterfly species, especially species of conservation concern, for inclusion in the LNHP database.

Bats:

- Northern Myotis: This species was first documented in Louisiana in 2003 (Crnkovic 2003). Conduct intensive surveys to determine its current status in Louisiana and to evaluate the importance of bridges as roost sites (Leberg 2004).
- Develop projects that target species of conservation concern and focus on their distribution, abundance, and ecological needs in this habitat type (Lacki and Schwierjohann 2001).
- Research the genetic identities of different Myotis species in the state (Leberg 2004).

Ringtail: Louisiana represents the eastern edge of its range. Intensive surveys are needed to determine its current status in Louisiana.

Eastern Spotted Skunk: Considered critically imperiled in Louisiana. 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.

Conduct habitat use and life history studies for mammal species of conservation concern that may potentially use this habitat.

Document the habitat relationships of species of conservation concern to understand how dependent they are upon small stream forest habitats, relative to other habitat types.

Species Conservation Strategies:

1. Louisiana Slimy Salamander: Requires intact, relatively old-growth forest. Encourage timber companies to designate no-cut zones in riparian bottoms.
2. Timber Rattlesnake: Naturally low-occurring population levels and persecution make persistence in isolated forest blocks untenable. Prohibit killing of timber rattlesnakes and retain the connectivity of required habitats.

3. 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.
4. When appropriate, support recommendations by the 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	Habitat Destruction or Conversion	Habitat Disturbance	Habitat Fragmentation	Modification of Water Levels; Changes in Natural Flow Patterns	Sedimentation	Toxins/ Contaminants	
Channelization of rivers or streams	XXX		XXX	XXX		XXX	XXX		
Commercial/industrial development			XXX	XXX	XXX		XXX		
Construction of ditches, drainage or diversion systems						XXX	XXX		
Conversion to agriculture or other forest types			XXX		XXX	XXX			
Dam construction	XXX		XXX		XXX	XXX	XXX		
Development/maintenance of pipelines, roads or utilities			XXX	XXX	XXX		XXX	XXX	
Gravel mining		XXX	XXX				XXX	XXX	
Incompatible forestry practices	XXX	XXX		XXX	XXX	XXX	XXX	XXX	
Invasive/alien species	XXX			XXX			XXX		
Livestock production practices	XXX	XXX							
Mining practices			XXX				XXX		
Oil or gas drilling			XXX		XXX				
Parasites/pathogens	XXX								
Recreational use/vehicles				XXX					
Residential development			XXX	XXX	XXX		XXX		

Habitat Conservation Strategies:

1. Conduct a comprehensive state inventory on the status and condition of Louisiana’s streams, including ownership patterns, landscape context and uses.
2. Work with TNC and other partners to develop guidelines and funding mechanisms for restoration of abandoned gravel mines.

3. Form a committee composed of gravel mining interests, LDEQ, LDNR, TNC, and other interested groups to develop BMPs for current and proposed gravel mines to prevent or reduce the impacts to streams and the surrounding forest habitat.
4. Develop educational information that focuses on the importance of streamside zones as wildlife corridors and distribute them to landowners/land managers through technical pamphlets and the LDWF website.
5. Work with LFA to produce a publication for landowners which discusses BMPs for SMZs and methods for effective landowner/logger communication.
6. Where livestock production is an issue, encourage the use of Environmental Quality Incentives Program (EQIP) and other incentive programs to aid farmers in fencing off riparian zones and providing alternative water sources for livestock.

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