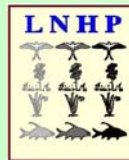


LOUISIANA NATURAL AREAS REGISTRY Quarterly Newsletter

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Number 2 of 4



Working with landowners towards conservation of Louisiana's ecologically sensitive lands

http://www.Louisiana.gov/experience/natural_heritage/naturalareasregistry/



Can you name this flower? See Page 6 for answer.

NATURAL AREAS UPDATE



Amity Bass has joined the Louisiana Natural Heritage Program staff as our new Community Ecologist. She is a native of West Monroe in northeast Louisiana. Amity received her Bachelors in Biology from the University of Louisiana at Monroe (ULM) in 2005 and her undergraduate work

focused on the nesting ecology of turtles on sandbars and herpetofaunal (study of reptiles and amphibians) surveys on state wildlife management areas. Amity is using telemetry in the photo above to track Alligator Snapping Turtles in the swamps of Black Bayou Lake National Wildlife Refuge. She received her Masters in Biology from ULM in 2007 and her graduate work focused on habitat use of alligator snapping turtles. Amity came to work for the Louisiana Department of Wildlife and Fisheries in 2007 as a Private Lands Biologist in the Wildlife Division where she worked in the Mississippi Alluvial Valley providing wildlife and habitat management assistance to private landowners. ♣

They are considered together here due to their floristic similarity and/or similarity in management needs.)

Cypress-Tupelo-Blackgum Swamps throughout the natural range are forested alluvial swamps growing on intermittently exposed soils most commonly along rivers and streams but also occurring in back swamp depressions and swales. The 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. However, even deepwater swamps, with almost continuous flooding, experience seasonal fluctuations in water levels (LNHP 1986-2004). Baldcypress swamps generally occur on mucks and clays, and also silts and sands with underlying clay layers (Alfisols, Entisols, Histosols, and Inceptisols) (Conner and Buford 1998).

Cypress-Tupelo-Blackgum swamps have relatively low floristic diversity. *Taxodium distichum* (baldcypress) and *Nyssa aquatica* (tupelo gum) are co-dominants. Common associates are *Nyssa sylvatica* variable *biflora* (swamp blackgum), *Acer rubrum* variable *drummondii* (swamp red maple), *Salix nigra* (black willow), *Fraxinus profunda* (pumpkin ash), *F. pennsylvanica* (green ash), *Planera aquatica* (water elm), *Gleditsia aquatica* (water locust), *Itea virginica* (Virginia willow), and *Cephalanthus occidentalis* (buttonbush). Composition of associate species may vary widely from site to site. Undergrowth is often sparse because of low light intensity and long hydroperiod. Neither baldcypress nor tupelo gum seeds germinate underwater,

Plant Community CYPRESS-TUPELO SWAMP

Three Registered Natural Areas occur in this plant community located in East Baton Rouge, West Feliciana, and Winn Parishes. Photo at right is Coochie Brake Natural Area on Kisatchie National Forest in Winn Parish.

Rarity Rank: S4 – apparently secure in Louisiana G3G5 – Globally very rare to demonstrably secure

Synonyms: Freshwater Swamp Brake, Swamp Forest, Cypress Slough

General Description: (Note: Baldcypress Swamp (S4), Baldcypress-Tupelo Swamp (S4), Tupelo-Blackgum Swamp (S4), Pondcypress/Blackgum Swamp (S1), Scrub/Shrub Swamp (S4S5), and Shrub Swamp (S4S5) are described as distinct communities in the LNHP Natural Communities of Louisiana.



nor can young seedlings of these trees survive long submergence.

Establishment of young trees can only occur during periods of exceptionally long drought. This probably explains why these species tend to occur in even-aged stands since the environmental conditions favorable for germination and establishment of saplings occur very infrequently.

Those areas dominated by tupelo and baldgum are also alluvial but occur on higher topographic positions than baldcypress dominated swamps. Baldcypress is a common associate, along with *Quercus laurifolia* (laurel oak), *Leucothoe racemosa* (leucothoe), *Cyrilla racemiflora* (swamp cyrilla), and *Cornus foemina* (swamp dogwood). *Taxodium ascendens* (pondcypress), along with swamp blackgum dominate a limited number of swamps making this natural community rare in Louisiana. This type seems to be confined to areas along the lower Pearl River, and adjoining the north shore of Lake Pontchartrain and Lake Maurepas (Smith 1999). Pondcypress/Blackgum swamps appear to occupy the backwater portions of larger swamplands, in places much removed from active stream channels. They are related to and often grade into baldcypress swamps more influenced by river flooding (Smith 1999).

Current Extent and Status: Cypress-tupelo-blackgum swamps may be found throughout Louisiana, 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 (Smith 1993, The Nature Conservancy 2004). The Atchafalaya Basin Floodway contains the greatest remaining contiguous acreage in the United States with an estimated 595,000 acres of collective swamp and bottomland hardwoods, the majority of which is privately owned. Large tracts also occur on some state Louisiana Department of Wildlife and Fisheries (LDWF) Wildlife Management Areas (WMAs) with an estimated total of 97,107 acres, United States Fish and Wildlife Service (USFWS) National Wildlife Refuges (NWRs) such as Cat Island, and properties under the administration of the United States Army Corps of Engineers (USACE). Some of these large swamp tracts occur in Louisiana's East Gulf Coastal Plain and are contained within the Bogue Chitto NWR and Pearl River WMA. The lower Tangipahoa River in Tangipahoa Parish, as well as, the Tickfaw and Amite Rivers in Livingston Parish and lands surrounding Lakes Pontchartrain and Maurepas also support large remaining tracts of cypress-tupelo-blackgum swamps (approximately 213,000 acres) (Governor's Science Working Group on Coastal Wetland Forest Conservation and Use 2005). Approximately 50 percent of these swamps fall on state Wildlife Management Areas (Joyce, Maurepas, and Manchac), and the other half are primarily privately owned. The Barataria Basin with 242,000 acres and Lake Verret area with 101,000 acres contain extensive freshwater swamps, again in private

CYPRESS – TUPELO - BLACKGUM SWAMP SPECIES OF CONSERVATION CONCERN (18)

AMPHIBIANS	Kentucky Warbler
Southern Dusky Salamander	Hooded Warbler
BIRDS	BUTTERFLIES
Yellow-crowned Night-Heron	'Seminole' Texan Crescent
Wood Stork	MAMMALS
Swallow-tailed Kite	Southeastern Shrew
Bald Eagle	Southeastern Myotis
Yellow-billed Cuckoo	Louisiana Black Bear
Yellow-throated Vireo	Long-tailed Weasel
Northern Parula	REPTILES
Prothonotary Warbler	Alligator Snapping Turtle
Swainson's Warbler	

ownership. Louisiana State Parks including Chicot, Lake Fausse Pointe, Tickfaw, and Bogue Chitto provide some small refuge for Louisiana's swamps. A total of 4,400 acres of combined swamps and bottomland hardwood forests are registered with the Louisiana Natural Areas Registry Program. And finally, there are a few scattered local community parks containing swamps throughout the state such as Baton Rouge's small 65 acre Bluebonnet swamp operated by Recreation and Park Commission for the Parish of East Baton Rouge.

All of Louisiana's swamps are threatened by land loss and encroaching interests, however, the swamps of the lower Mississippi River Alluvial Plain in south central and southeastern Louisiana face additional peril from subsidence, altered hydrology, coastal erosion, and saltwater intrusion. All of these factors combine to promote rapid loss and prevent adequate regeneration of these swamps.

References:

CONNER, W. H., AND M. A. BUFORD. 1998. Southern deepwater swamps. Pages 261-287 in Southern Forested Wetlands, Ecology and Management. M. G. Messina and W. H. Conner, editors. CRC Press, Boca Raton, FL.

COULSON, J. O. 2004. Identifying swallow-tailed kite activity centers: determining use of the state of Louisiana managed lands. Final report. Report to Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA.

GOVERNOR'S SCIENCE WORKING GROUP ON COASTAL WETLAND FOREST CONSERVATION AND USE. 2005. Conservation, Protection and Utilization of Louisiana's Coastal Wetland Forests: Final Report to the Governor. Baton Rouge, LA.

LNHP. 1986-2004. The natural communities of Louisiana. Louisiana Natural Heritage Program, Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA.

NATURESERVE. 2005. NatureServe Explorer: An online encyclopedia of life [web application]. Version 4.2. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer>. (Accessed: March 10, 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.

SMITH, L. M. 1999. Historic vegetation of the Florida Parishes. Louisiana Natural Heritage Program, Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA.

THE NATURE CONSERVANCY. 2004. Conservation area plan for the Pearl River. Submitted to Louisiana Department of Environmental Quality, CFMS Cooperative Agreement No.583066. The Nature Conservancy, Pearl River Field Office, New Orleans, LA. ♣



Associated Plant
Species
CYPRESS-KNEE
SEDS
Carex decomposita

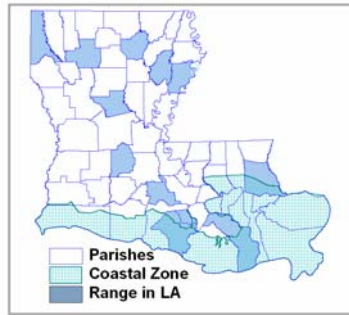
Sedge Family (Cyperaceae)

Rarity Rank: S3 – Rare in Louisiana G3 – Globally very rare

Range: Occurs in much of the eastern United States and north to Michigan and New York.

Recognition: Cypress-knee sedge is a stout, robust, clump-forming sedge that is approximately one meter

tall and grows almost always on woody substrate such as stumps, floating logs, or on living trees. The inflorescences are branched and distinctly drooping. Perigynia ("sacs" that envelope the female flowers and fruits) are dark brown at maturity and widest above the middle (= obovate). The plants are usually very leafy. Leaf blades are long and v-shaped in cross-section. Cypress-knee sedge flower and fruit from April to June and prefer shade to full sun.



Wetland Indicator Status: OBL – almost always occurs in wetlands

Habitat: Cypress-knee sedge occurs in cypress-tupelo swamps, cypress-studded lakes, isolated natural ponds, beaver ponds, and wet swales in bottomland hardwoods. It almost always grows on woody substrate such as living trees, stumps and logs. They most frequently grow on baldcypress (*Taxodium distichum*) and buttonbush



Associated Animal Species

WOOD STORK

Mycteria americana

Status: Endangered

Wood storks are tall, white denizens of freshwater or brackish wetlands and swamps. They can be identified by their long legs, featherless heads, and prominent bills.

These waders feed on minnows in shallow water by using their bills to perform a rare and effective fishing technique. The stork opens its bill and sticks it into the water, then waits for the touch of an unfortunate fish that wanders too close. When it feels a fish, the stork can snap its bill shut in as little as 25 milliseconds—an incredibly quick reaction time matched by few other vertebrates.

The storks prefer to employ this technique in isolated pools created by tides or falling freshwater levels, where fish congregate en masse. In some areas, such as Florida, breeding begins with the dry season that produces these optimal fishing conditions.

Though wood storks eat small fish, they eat a lot of them. An average nesting pair, with two fledglings, may eat over 400 pounds (181 kilograms) of fish during a single breeding season.

Wood storks are social animals. They feed in flocks and nest in large rookeries—sometimes several pairs to a single tree. Females lay two to five eggs, which both sexes incubate for about one month. Young fledge about two months after hatching.

(*Cephalanthus occidentalis*). They have also been observed in Louisiana growing on tupelogum (*Nyssa aquatica*), swamp blackgum (*Nyssa biflora*), overcup oak (*Quercus lyrata*), green ash (*Fraxinus pennsylvanica*) and water hickory (*Carya aquatica*). Photo below at left is *Carex decomposita* on baldcypress trees in Cross Lake, Caddo parish, LA; photo taken in October 2006 by Chris Reid.

Threats: Alteration of hydrology (drowning or drying), chemical pollution and excess turbidity, and herbicide drift from adjacent agricultural operations.

Beneficial Management Practices: Preservation of hydrologic regime and protection of lakes and ponds from agricultural run-off.

LA River Basins: Pearl, Pontchartrain, Barataria, Terrebonne, Atchafalaya, Vermilion-Teche, Mermentau, Red, and Ouachita

References:

Hill, S. R. 2006. Conservation assessment for the cypress knee sedge (*Carex decomposita* Muhl.) (Draft undergoing peer review). USDA Forest Service, Eastern region. Milwaukee, Wisconsin.

NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life [web application]. Version 6.2. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. ♣

Range & Distribution: In the United States, Wood Storks can be found year-round in Florida, Georgia, and South Carolina. Elsewhere in the Western Hemisphere, the birds breed from Mexico to northern Argentina, and in the Caribbean islands of Cuba and Hispaniola. After nesting, some move into Texas, Louisiana, Mississippi, Alabama, and North Carolina, mainly along coastlines and large rivers. In the summer, flocks from western Mexico may appear in southern California and the American Southwest.

Wood storks breed in the southeastern United States and are the only stork to breed in the U.S. They also breed in Central and South America from Mexico to Argentina. Though U.S. populations are endangered—probably because of the loss of optimal feeding habitat—the South American stork populations are in better shape.

Conservation Issues & Effort: Many Wood Stork nesting and feeding habitats have been destroyed by development and agricultural expansion, and water management practices that have disrupted



natural flooding and drought cycles. Wood Stork nesting grounds must remain inundated during nesting season to prevent predation and abandonment. In addition, the birds require alternate periods of flooding, when fish populations multiply, and dryness, when

shrinking pools concentrate the prey at higher densities. Increased manipulation of water levels in southern Florida via canals, levees, gates, and water storage has negatively impacted the storks. Other threats include raccoon predation, the failure of nest trees to regenerate, and human disturbance of stork rookeries.

However, Wood Storks can adapt to certain human-caused changes; they sometimes move to more suitable habitats when historic colonies are no longer viable. Others alter their behavior to meet the limitations of new environments—for instance, by nesting in smaller colonies, and feeding individually rather than in groups. The birds also use human-made or enhanced wetland sites for feeding and nesting. At Audubon's Silver Bluff Plantation Sanctuary in South Carolina, flocks of Wood Storks are drawn to artificial feeding ponds created specifically for them. The birds also nest successfully on artificial platforms erected at Georgia's Harris Neck National Wildlife Refuge. In coastal South Carolina and Louisiana, where water impoundments are managed for waterfowl, the storks are often attracted during "drawdowns."

References:

COULTER, M. C. J. A. RODGERS, J. C. OGDEN, AND F. C. DEPKIN. 1999. Wood Stork (*Mycteria americana*). In *The Birds of North America*, No. 25 (A. Poole, P. Stettenheim, and F. Gill, Eds.). Philadelphia: The Academy of Natural Sciences; Washington, DC: The American Ornithologists' Union.

KAUFMAN, KENN. *Lives of North American Birds*, Houghton Mifflin Company, New York, 1996.

Sibley, David Allen. *The Sibley Guide to Birds*. Alfred A. Knopf, New York, 2000.

U. S. FISH AND WILDLIFE SERVICE. 1996. Revised recovery plan for the U.S. breeding population of the wood stork. U.S. Fish and Wildlife Service. Atlanta, Georgia.

AUDUBON

<http://web1.audubon.org/waterbirds/species.php?speciesCode=woosto>

NATIONAL GEOGRAPHIC

<http://animals.nationalgeographic.com/animals/birds/wood-stork.html> ♣

Guidelines for Practicing Forest Environmental Enhancement

Forest landowners and land managers who wish to maintain and enhance the natural communities and associated species in their care can follow recommendations outlined in LNHP's Guidelines for Practicing Forest Environmental Enhancement in Louisiana. Remember, these are only general guidelines that will require site-by-site interpretation and application by professional forest ecologists / ecological foresters. The Louisiana Natural Heritage Program can provide additional specific management recommendations that promote environmental enhancement for forested tracts anywhere in Louisiana.

What does Forest Environmental Enhancement mean? Ultimately, environmental enhancement of a forest, or the practice of ecological forestry, means doing what is necessary to maintain or promote the natural integrity of the forest ecosystem that is present or should be present on any piece of ground, considering site factors such as surface geology, soils, topography, hydrology and geographic location. It means determining what forest community or communities (habitats) were originally present on the site, considering the above factors, and working to maintain the natural integrity of that habitat, if it is still present, or working to promote and restore those natural conditions that have been lost or degraded through past land use practices. The natural integrity of an

ecosystem is probably best assessed by evaluating the composition, structure, and functions of the current forest on site and comparing these to the composition, structure and functions of the system originally present. Restoring/maintaining the natural composition, structure and functions of the system is really what forest environmental enhancement is all about.

The Louisiana Natural Heritage Program of the Louisiana Department of Wildlife and Fisheries can provide information to landowners regarding this approach to forest management.

Implementing Forest Environmental Enhancement: Following is a brief outline of some major aspects of this approach to management.

- **Maintain/restore** historical stand composition and structure.
- **Do not convert natural forests** (those similar to their indigenous condition in structure and composition) to commercial plantation forests, even if they are third or fourth-growth forests.
- **Favor a full natural balance of species** that would be expected at a site given site factors. Do not "push" the forest to be overly stocked with commercially-desirable trees or selected wildlife trees if this upsets the natural balance of species. Do not intentionally eliminate species indigenous to a site.
- **A forest that is out of balance** in composition, structure and function, or that has been highly altered from its original condition, can be brought back toward natural balance through a carefully-devised management regimen. Such management often includes environmentally sensitive timber harvest.
- Where **commercial timber production** is desired, practice timber removal methods that duplicate as nearly as possible natural disturbance regimes that our forest systems evolved with. The great majority of natural disturbances are small-scale events (e.g., lightning strike mortality, thunderstorm down-bursts, small-scale insect infestations) that operate at scales of less than an acre to only a few acres. An all-aged (uneven-aged) management system such as single-tree/small group selection, appears to best duplicate these events.
- If a natural forest must be clear cut, **Retain Some Components** of the original stand, such as, snags and a variety of green trees throughout the harvest area to provide some vertical diversity. Suggest 8 - 15 trees of various ages, sizes, species and vigor retained per acre.
- If a natural forest must be clear cut, do not perform intensive mechanical/chemical **site preparation**. These practices favor weedy species and degrade forest ecosystems in many ways. The trade-off for possible reduced tree growth is that natural forest integrity (and perhaps long-term productivity) is favored.
- Consider **surrounding landscape conditions** when formulating management plans. Do not try to maximize diversity on every tract of land by closely intermixing different vegetation condition classes. Take a landscape perspective: if this tract supports an indigenous habitat type that is largely missing from the general landscape (for example, shortleaf pine-hardwood forests, longleaf pine forests, or older natural forests of any type), it is important to maintain this condition on as much of the tract as possible.
- In natural stands actively managed for timber production, designate "**No-Entry Zones**" of at least an acre in size each, into which no machines are to enter and no trees are to be removed for any reason -- these areas can act as miniature refuges.
- The **Number of No-Entry Zones** will depend on size of the stand to be logged and on management in the surrounding stand. One

"large" zone may be designated to take the place of several small ones.

- **"Edge" is not utopia for all wildlife.** While most early successional species prosper when edge is introduced, plants and animals adapted to forest interior conditions usually have problems. It is important to maintain relatively large blocks of mature natural forest for these species. There is currently a super-abundance of "edge" and early successional habitat in the state. Older natural forests are becoming scarce, particularly patches larger than 100 acres.
- **Maintain old-growth** natural forests where possible.
- **Fire** is critical in maintaining/restoring many forest types. Use prescribed fire as appropriate for different ecosystems and their inclusions. Some recommended fire intervals are:
 - longleaf pine** and included communities - once every 1 – 3 yrs
 - shortleaf** pine-hardwood forest - once every 5 - 15 yrs
 - mixed** hardwood-loblolly forest - once every 20 - 40 yrs
- Use **growing-season fires** when possible; our forest ecosystems evolved under a regime of fires started by lightning, mainly in the spring and summer. Apply most fires in the spring, in the interval mid-April to late June. Growing-season fires can be rotated with dormant-season fires.
- Where prescribed fire is to be used, establish **permanent burn units** using "low-intensity" fire breaks (such as disked fire-breaks planted in winter with non-invasive cover, e.g., oats) only where needed. To minimize erosion and soil movement, avoid "high-intensity" plowed fire-breaks created with a v-plow. Do not place plowed fire-breaks above streams, branch bottoms, or around other "embedded" habitats; allow the fire to create its own ecotonal patterns on the landscape as it originally did.
- Do not mechanically or chemically disturb **unique areas** (e.g., bogs, seeps, temporary natural ponds, deep sandy spots, prairies or forests on calcareous clays, glades, shortleaf pine, longleaf pine, etc.) that may be present.
- Do not disturb **stream-side zones**; do not disturb **steep slopes** above streams.
- Maintain/restore historical **hydrologic patterns**, to the extent practicable.
- Practice state-of-the-art prevention/detection/control of **southern pine beetle problems**. Be ever vigilant in detection and control of the beetles.
- Remain alert for **rare species and habitats** and devise specialized management for any rare species or habitats present. The Louisiana Natural Heritage Program can provide a list of rare species and habitats and the parishes and habitats they are found in. We can also review properties to determine if any rare species or habitats have been observed from the vicinity.
- **Retain snags and low-vigor/damaged trees** within the stand. These are natural components of natural forests and are important for various ecological reasons.
- Likewise, **large downed woody material** (e.g., rotting logs) are important parts of naturally functioning forests. A tree has fulfilled only a portion of its ecological function in a forest at the time it dies.

- Avoid disturbance/disruption of the **groundcover** in longleaf pine forests or other open forest types with substantial non-weedy herbaceous groundcover.
- **Control/remove aggressive non-native plant species** that are displacing native vegetation. Some of the worst are Japanese honeysuckle, privet-hedge, Chinese tallow tree, and Japanese climbing fern (bridle-veil fern). Careful use of appropriate herbicides will probably be necessary to accomplish this. ♣

Streamside Management Zones

A streamside management zone (**SMZ**) serves as a natural filter of vegetation adjacent to a natural or manmade water body. These zones, also called **riparian zones**, reduce erosion by both slowing the flow of surface water runoff and increasing water filtration. These water bodies may include streams, rivers, bayous, and lakes. To protect water quality, extra precautions may be necessary in carrying out some forest practices.

The **key objective of SMZs** is to protect and maintain the quality of water on forest lands by the following:

- ◆ Maintaining a vegetative filtration strip on ephemeral (short-lived) areas.
- ◆ Providing an adequate canopy of forest cover along all perennial streams to maintain normal water and shade conditions.
- ◆ Minimizing forest soil erosion by maintaining the appropriate amount of residual ground cover or forest cover under various soil and slope conditions.

When timber is harvested within the SMZ, care should be taken not to compromise the objective of the SMZ.

SMZs should be provided on perennial and intermittent streams and other water bodies. This includes springheads, oxbows, upland flats, and drains bordered by steep or erodible slopes. Any existing drainage structures that over time have come to resemble natural drains are also included.

A **perennial stream** is one that has a well-defined channel and flows year-round except during periods of extreme drought, when they retain pools of water. **Intermittent streams** have seasonal flow and a continuous well-defined channel. **Ephemeral streams** flow during and for a few hours or days after periods of heavy rain and the stream channel is less recognizable than either perennial or intermittent streams.

Streams designated as scenic rivers will be managed in accordance with state law. See LOUISIANA'S NATURAL AND SCENIC RIVER SYSTEM, page 45.

SMZ width is dependent on watershed characteristics and the risk of erosion in the SMZ and adjacent area. The risk is increased by sandy soil, steep grade, large watershed size or increasing stream width. Estimated normal flow width is the distance in feet between the water's edge on one side to the water's edge on the other. This width will be estimated at a time when the stream is at its normal (low) flow. Normal flow width will be an average for the stream, taking into consideration the stream will widen as it flows farther from its source.

Note: SMZ widths are measured from the top of each bank and established on each side of the stream. Determination of **SMZ** width should be site-specific and should be made by foresters or other qualified professionals. Soil type, slope gradient, vegetation cover, volume flow, and stream classification should be taken into consideration when designing each SMZ.

BMP's for Streamside Management

Along perennial streams, timber can be harvested carefully within an SMZ provided that the filtering effects of the SMZ are not compromised.

- ◆ Take precautions to protect the remaining timber stands within the SMZ.
- ◆ **Do not remove trees** from banks, beds or steep slopes if removal will destabilize soil and degrade water.
- ◆ Permanent residual tree cover is not required along intermittent and ephemeral streams if vegetation and organic debris are left to protect the forest floor during regeneration.
- ◆ Flag or mark SMZ's adjacent to all perennial and intermittent streams and lakes before harvesting.
- ◆ Plan harvests to minimize stream crossings.
- ◆ Locate stream crossings where stream impacts are likely to be minimal.
- ◆ Locate roads, skid trails, fire lanes, and logging sets outside the SMZ.
- ◆ To minimize damage, limit harvesting on SMZ's and sensitive forested wetlands during abnormally wet periods.
- ◆ Consider using wide-tire skidders, forwarders, cable skidders, and tracked equipment to minimize soil disturbance in an SMZ.
- ◆ Construct stream crossings to minimize stream bank and channel disturbance.
- ◆ Cross streams at right angles when practical.
- ◆ Consider using portable bridges for temporary stream crossings.
- ◆ Promptly remove all temporary crossings and restore the site after harvesting is completed.

AVOID

- ◆ Skidding across perennial or large intermittent streams, except over an adequately designed crossing.
- ◆ Excessive skidding within an SMZ.

SUGGESTED SMZ WIDTHS

<u>Stream Type</u>	<u>SMZ Width (each side)</u>
Intermittent	35 feet
Perennial	
Less than 20 feet wide	50 feet
More than 20 feet wide	100 feet

REFERENCES:

LOUISIANA DEPT OF AGRICULTURE & FORESTRY (LDAF)
<http://www.ldaf.louisiana.gov/portal/Offices/Forestry/ForestManagement/BestManagementPractices/tabid/232/Default.aspx> ♣

Photo from the front page is a close up of the native plant **Cardinal Flower** or **Indian Pink** (*Lobelia cardinalis*) in the Bellflower Family of Campanulaceae. Its common name alludes to the bright red robes worn by Roman Catholic cardinals and they can grow three



to six feet tall. Cardinal flowers depend on hummingbirds for pollination because most insects find it difficult to navigate the long tubular flowers that bloom from May through October. They prefer moist to wet soil and prefer partial shade. Cardinal flowers are found in moist meadows, thickets, swamps, and along banks of streams. Propagation:

collect and crush the capsules with a rolling pin and pick out the seeds from the litter, retrieve the capsules that have remaining seeds and then plant the seeds right away. American Indians used Cardinal Flowers as root tea for stomach aches, syphilis, typhoid, worms and leaf tea was used for colds, croup, nosebleeds, fevers, headaches, and rheumatism. However, the entire plant is poisonous and toxic only if eaten in large quantities. Photo above by William C Miller, III of a Ruby-throated Hummingbird at a Cardinal Flower.

References:

LADY BIRD JOHNSON WILDFLOWER CENTER at
http://www.wildflower.org/plants/result.php?id_plant=LOCA2

USDA – NRCS PLANT GUIDE FOR CARDINAL FLOWER

http://plants.usda.gov/plantguide/doc/cs_loca2.doc ♣

Previous Newsletter, September 2009, Vol. 7, No 1 of 4. We had an update on Louisiana Quillwort (*Isoetes louisianensis*) transplanting project – 52 percent of transplants relocated in streams and preliminary results to be presented at the Center for Plant Conservation Reintroduction Symposium in October 2009, Macon Ridge Green Ash Pond Plant Community in northeast Louisiana with the Macon Ridge and adjacent areas, Louisiana State University (LSU's) Herbarium Plant Keys online, birding during fall migration that peaks early September through mid October, farewell from LNHP community ecologist Patti Faulkner, and our mystery photo was toothache tree (*Zanthoxylum clava-herculis*).

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