Fall/Winter 2014

# BLUESTEM

Newsletter for the Louisiana Natural Areas Registry

*Working with Landowners towards Conservation of Louisiana's Native Habitats*

Volume 1, Issue 2

## In This Issue

*Page 1*
New Addition to the Registry

*Page 2*
The Chinese Parasol Tree Invasion: *Recognizing the Threat*

*Page 3*
Gopher Tortoise Conservation Efforts in Louisiana

*Page 5*
The Floating Marshes of Coastal Louisiana

*Page 6*
Carolina Lily (*Lilium michauxii*)

*Page 7*
Louisiana Natural Heritage Program Staff

*Back Cover*
Mystery Plant

# Greetings Natural Area Members!

In this issue we report one new addition to the Natural Areas Registry and feature several articles that we hope the reader will find informative. Two of these articles were submitted by owners of registered Natural Areas. This is a start toward increasing interaction among Natural Areas members, and we may soon dive into social media to further that goal. We again invite Registry members to contribute to this publication by submitting articles, news or images. The Natural Areas Registry was dormant for a while, but it is regaining momentum, and 2015 will be a vigorous and successful year!

# New Addition to the Registry

## Delacroix Preserve - Orleans Parish

Delacroix Preserve Natural Area contains a 190-acre bottomland hardwood forest. This forest serves as an important refuge for migratory birds and other local wildlife species. It also serves as vital storm surge and wind protection for the surrounding community. This is Woodlands Conservancy's second natural area. They have been a member of the Natural Areas Registry Program since 2005, when they registered their 520-acre bottomland forest known as Woodlands Trail and Park Bird Sanctuary.

L to R: Lee Dupont, Woodlands Conservancy Board Member; Sairah Javed, LDWF; Dan Dreiling, Woodlands Conservancy Board President; Katie Brasted, Woodlands Conservancy Executive Director

# The Chinese Parasol Tree Invasion: *Recognizing the Threat*

BY John Siebenthaler, *Asklepieion Natural Area, West Feliciana Parish, La.*

When we first walked our West Feliciana property, 8.5 acres a mile east of U.S. 61 on La. 10, we literally couldn't see the forest for the trees. That was in 1999, and we'd never heard about Chinese parasol trees (*Firmiana simplex*).

As Floridians still getting acquainted with the Felicianas and unfamiliar with this particular species, our first thought was that a few weekends of cleanup would restore order and balance. We were mistaken.

I remember asking our realtor about the sheer number of trees blanketing the property. Her offhand remark was that they were parasols, they were popular, and we might be able to recoup our investment simply by setting up a stand on the highway and selling Chinese parasol tree (CPT) seedlings to passers by. It wasn't long before the environmental catastrophe contained within that comment would be realized.

Aside from an acre of pasture in front, the rest of the site, bordered by Alexander Creek in back and ravines to either side, was so thoroughly infested with the invasive weed that there was little else to be seen other than mature beech, sweet gum, a few varieties of oak, hackberry, one lone sycamore, and a single magnolia.

There was a thriving patch of pawpaws, along with an occasional privet, several cedar, and stands of cane here and there. Otherwise, the entire site was an extremely fertile nursery for this rank escape. My unofficial estimate of CPT in various stages of growth easily exceeded 95 percent contamination of the total hardwood population, a number that includes hundreds of mature trees and thousands of saplings.

In the 15 years since, the enormity of CPT infestation manifest throughout the region is staggering. Because it's a perfect and prolific stealth intruder, large property owners can walk by them daily without noticing their presence. CPT numbers are unknown, and as it escapes into the wild, the speed with which CPT can take over woods is phenomenal.

The grey-green bark blends in seamlessly, and as natives are forced out, the attackers replacing them appear as if they've always been present. Prolific reproduction begins with a carpet of seedlings followed by rapid growth that quickly overpowers what would otherwise naturally populate our woods.

Unlike kudzu, for instance, Chinese parasol doesn't appear out of place, and in fact enjoys a Jekyll and Hyde reputation that revels in being touted as a perfect urban landscape selection, even as it's increasingly condemned by localities, states and the U.S. Forest Service as a destructive invasive to be destroyed and eliminated.

Furthermore, thanks to the web, access to seed and container sources are only a Google search term away for anyone wanting their own backyard grove of CPTs to admire. Despite widespread regional infestation, Louisiana has yet to tackle outlawing the sale, transport or commercial reproduction of the species, a contradiction to the availability of one-time grants offered by the state to property owners who want the pest removed.

In his books, *Southern Plants for Landscape Design and Plants for American Landscapes*, landscape architect and former director of and professor at LSU's School of Landscape Architecture Neil Odenwald recommends the use of CPT as a specimen tree. That was before he witnessed first hand on our property what happens when the plant escapes into the wild.

To date, the only known formal study on control and eradication was conducted in West Feliciana by LSU's AgCenter Area (Clinton office) Extension Forester Brian Chandler. The eight herbicides used in the test were evaluated for time of application and defoliation rates. Mr. Chandler's documentation graphically illustrates both the extent and the severity of the problem.

Our first amateur attempts at clearing the weed tree involved a small household tank sprayer, lopping shears and a tree hand saw. Today, tools used to combat the visitor include a professional backpack sprayer, chainsaws and a DR 16-h.p. walk behind field mower that can handle some of the slopes. The first step towards achieving control is to destroy the mature trees that spread seed relentlessly.

There is a growing library of web resources that accurately describe the problem posed by CPTs. The actual degree of infestation and the devastation done by the invasive in the wild have yet to be evaluated. If a dollar estimate of the loss of native species and habitat were to be reliably measured, the amount would certainly call attention to the growing threat posed by the intruder. The best answer now? Education.

**LINKS:**

- Controlling the Invasive Chinese Parasol Tree in St. Francisville Louisiana: *http://chineseparasol.siebenthalercreative.com/*
- Facebook Chinese Parasol Tree Invasion: *https://www.facebook.com/ChineseParasolTreeInvasive*
- TexasInvasives.Org: *http://www.texasinvasives.org/plant_database/detail.php?symbol=FISI2*
- A Field Guide for the Identification of Invasive Plants in Southern Forests: *http://wiki.bugwood.org/Archive:IPSF/Firmiana_simplex*
- Invasive Species: State Resources - Louisiana: *http://www.invasivespeciesinfo.gov/unitedstates/la.shtml*
- Louisiana Invasive Species: *http://is.cbr.tulane.edu/index.html*

# Gopher Tortoise Conservation Efforts in Louisiana

*LEFT:* Adult female gopher tortoise at Sandy Hollow Wildlife Management Area in Tangipahoa Parish.

BY Keri Landry, *LDWF Louisiana Natural Heritage Program, Endangered Species Biologist*

In Louisiana, gopher tortoises (*Gopherus polyphemus*) are only found in Tangipahoa, St. Tammany and Washington parishes (*Figure 1*) and represent the westernmost range of this species along the southeastern coastal plain from Louisiana through Florida to South Carolina.

*Figure 1.* Gopher tortoise distribution in Louisiana.

Gopher tortoises are large terrestrial turtles with a dark-brown to grayish-black carapace (upper shell) and yellowish plastron (lower shell). The carapace and plastron of hatchlings are bright yellow-orange. Unlike a box turtle, the plastron of a gopher tortoise averages about 28 cm (11 inches) in length in adults and is unhinged so they cannot close themselves completely into their shell. These creatures have distinct elephantine hind feet and shovel-like forefeet used for digging impressive burrows in the ground. No other Louisiana turtle depends on burrows to the extent of the gopher tortoise. Burrows, which may be nearly 15 m (49.2 feet) long and 2 m (6.6 feet) deep, provide protection from winter cold and summer heat.

Gopher Tortoises require sandy, well drained soils for digging burrows and can be found in a variety of habitat types, but

The entrance to a tortoise burrow is a distinctive "half-moon" shape. Over 360 other species use these burrows, making the gopher tortoise a keystone species.

Prescribed burning conducted on private land in Tangipahoa Parish.

Waif tortoise being released in suitable habitat with fellow waif tortoises.

Adult female tortoise resting a few feet from the entrance of an active burrow.

If you find a gopher tortoise outside of its natural habitat or would like to report a tortoise or burrow sighting, please contact the author at 225-765-2809 or klandry@wlf.la.gov.

prefer well-managed open upland pine and mixed pine-hardwood forests with grassy understories with plenty of sunlight. These tortoises will inhabit marginal habitats if no preferred habitat is available including roadsides, ditch banks, utility and pipeline rights-of-way, and pastures.

The Louisiana Natural Heritage Program (LNHP) has been proactive in evaluating the gopher tortoise's conservation status and working on measures to ensure the continued existence of this threatened species in the state. We continue to identify key habitat areas in need of improvement as well as update and add gopher tortoise occurrence records to the LNHP database. Our goals are to obtain a population estimate for the gopher tortoise in Louisiana and work with landowners and managers to improve priority habitat for tortoises. Since the majority of gopher tortoise burrows occur on private lands, LNHP's primary focus is assisting private landowners with restoration and management to increase the amount of quality habitat available for gopher tortoises and to expand their population.

Currently, LNHP is working with the states of South Carolina, Georgia, Florida, Alabama and Mississippi and the National Wild Turkey Federation on the Multi-state Sandhills/Upland Pine Restoration Grant Project. This project, which is funded by the U.S. Fish and Wildlife Service and the Louisiana Department of Wildlife and Fisheries (LDWF), is focused on restoration and management of private lands to benefit the gopher tortoise. Activities funded through this project include prescribed burning and chemical and mechanical brush control to improve up to 16,741 acres of suitable gopher tortoise habitat. This project will also improve habitat for wild turkey, northern bobwhite quail, white-tailed deer, and other wildlife species associated with open pine woodlands. Responses by birds and vegetation will be monitored among levels of habitat improvement for this project. Landowners and managers interested in financial assistance to implement these habitat improvement actions should contact the author. Further habitat management financial assistance for landowners has been provided by LDWF's East Gulf Coast Prescribed Burning Initiative. Created through funding from the State Wildlife Grants Program, this cost-share program is aimed at assisting landowners with habitat improvement and encouraging prescribed burning in southeastern Louisiana. LDWF has enrolled over 6,000 acres into the Prescribed Burning Initiative, and a portion of those acres burned has improved gopher tortoise habitat on private property.

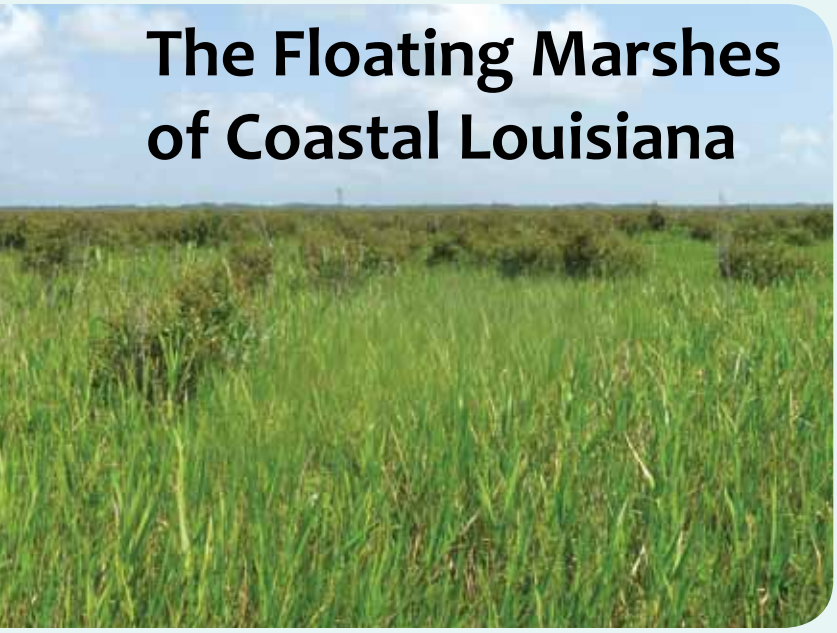
*For more information about the East Gulf Coast Prescribed Burning Initiative please contact the LDWF Hammond field office at 985-543-4777 or Cody Cedotal at 225-765-2354 or ccedotal@wlf.la.gov.*

**"WAIF" TORTOISE PROGRAM**

Waif gopher tortoises are tortoises that have been picked up and removed from their native habitat by Louisianans traveling within or outside of Louisiana. These tortoises have been kept as pets, often because people are unaware of their threatened status. More than 30 of these gopher tortoises have subsequently been marked and released at Sandy Hollow Wildlife Management Area in Tangipahoa Parish, within their historic range, but isolated from the resident population of tortoises.

The number of "waif" tortoises has been steadily increasing over the past few years. If you find a gopher tortoise in its natural habitat, please refrain from disturbing it if it is not in harm's way.

# The Floating Marshes of Coastal Louisiana



BY Christopher Swarzenski, *Louisiana Water Science Center, U.S. Geological Survey - Baton Rouge, La.*
Chris Reid, *LDWF Natural Heritage Program*

**INTRODUCTION**

The freshwater reaches of the Mississippi River Delta Plain (MRDP) in coastal Louisiana are one of the few areas in the world that contain extensive floating marshes, covering approximately 150,000 hectares. These marshes have highly organic soils, and in many, but not all, the upper 1-2 feet of soil adjust vertically as water levels fluctuate. Depending on their characteristic buoyancy and dominant vegetation, they are known locally as "flotant" and "prairie tremblant." Other areas of the world where floating marshes dominate the wetland landscape include the Danube Delta, where they are known as Plav, the floodplain of the Amazon River, and in various African floodplains and inland deltas, such as the Sudd on the Nile in South Sudan.

**HYDROLOGY AND MAT MOVEMENT**

In addition to the organic soil, the buoyancy of the marsh mat makes floating marshes unique. Some marshes float freely whenever water levels are high enough to lift the mat, and the marsh surface is rarely if ever flooded. Maidencane (*Panicum hemitomon*) and the scrub-shrub wax-myrtle (*Morella cerifera*) community dominate this marsh type. A second type, dominated by bull tongue (*Sagittaria lancifolia*), floats seasonally during summer and fall, after plant roots have developed and fill with air. In the third type, the marsh surface is anchored and moves slightly (trembles) as water levels fluctuate. The belowground exchange of water and solutes between the marsh and adjacent surface waters is more rapid and extensive in floating marshes than in anchored marshes, making floating marshes more susceptible to changes in the amount, timing and quality of water delivery.

**PLANT COMMUNITIES**

Several distinct plant communities form floating marshes in the MRDP. The communities align along a gradient of differential exposure to saltwater pulses from the Gulf of Mexico. In the interior areas, isolated from even occasional pulses, the floating marsh is dominated by maidencane. In the absence of fire, wax-myrtle becomes established in these marshes and forms almost impenetrable woody thickets, which provide excellent habitat for deer. The floor of these fully buoyant wetlands frequently is carpeted with *Sphagnum* mosses. In areas more regularly exposed to saltwater pulses, fully buoyant marshes dominated by marshhay cord grass (*Spartina patens*) occur. In areas between these two salinity extremes, the marshes are typically dominated by the seasonally buoyant bull tongue.

All of these floating marsh types can be found in the Lake Salvador Wildlife Management Area (WMA) in central Barataria Basin. This WMA contains some of the best examples of fully buoyant floating marshes dominated by maidencane in coastal Louisiana. The marshes stretch unbroken, mile after mile. The diversity of this plant community is unmatched for coastal Louisiana, and more than 50 different plant species have been identified in little more than two hours. In plots of 1 $m^2$ in area, 18 to 22 plant species are routinely found. At least five species of orchids can be seen blooming in spring and early summer. Large expanses of floating marsh also can be found near Lake Boeuf in Lafourche Parish and near Bayou Penchant in Terrebonne Parish.

*An excellent video on Louisiana floating marshes can be found at http://gallery.usgs.gov/videos/510#.U1hFGye9KSN.*

**FLOATING MARSH FORMATION**

Floating marshes typically form in one of two ways in the MRDP. In the more common scenario, the marsh soil becomes increasingly organic because of a lack of influx of sediment-rich muddy water from regular overbank flooding as the river progrades downstream. The low-density substrate of these marshes can eventually break loose and begin to float after repeated deep flooding. Floating marshes also can form through the gradual infilling of shallow ponds and waterways. The infilling can occur either from the top down, through colonization by marsh plants of a floating aquatic mat such as water hyacinth, or from the bottom up, through accumulation of detrital material on pond bottoms. Infilling of surface waters is a slow process that might apply only in a few areas.

**THREATS**

The quality of source waters is very important to the building of a strong organic soil. Low-nutrient rain water is characteristic of healthy floating marshes, and the marshes appear to be able to persist indefinitely without any influx of river water. High-nutrient water from the Mississippi River and saltwater from the Gulf of Mexico can weaken the organic soils and may make them more susceptible to scour and erosion that can occur during hurricanes and other extreme events.

Freshwater floating marshes are unique marshes that formed in areas with little or no influence by Mississippi flood waters over the course of centuries following abandonment of associated delta lobes. These marshes are precipitation driven, nutrient-poor and acidic. It seems odd to say this in coastal Louisiana, which is generally sediment impoverished, but Mississippi River water (nutrients) and sediment may actually threaten freshwater floating marshes.

Freshwater floating marshes also support many plants which are more characteristic of seepage bogs and wet acidic pine savannas in interior Louisiana, including several orchids. This bog/wet savanna flora distinguishes floating marsh from other marsh types.

**Source material:**


- Swarzenski, C.M., Swenson, E.M., Sasser, C.E., and Gosselink, J.G., 1991, Marsh mat flotation in the Mississippi Delta Plain: Journal of Ecology vol 79, p. 999-1012.
- Swarzenski, C.M., and Swenson, E.M., 1994, Effect of mat movement on soil salinity fluctuations in some coastal Louisiana marshes: Estuarine, Coastal and Shelf Science vol 39, p. 143-156.
- Swarzenski, C.M., T.W. Doyle and T.G. Hargis, 2005, Pore-water and substrate quality of the peat marshes at the Barataria Preserve, Jean Lafitte National Historical Park and Preserve, and comparison with Penchant Basin marshes, south Louisiana, 2000-2002: U.S. Geological Survey Scientific Investigations Report 2005-5121, 27 p.
- McKee, K.L., 2011, The floating marshes of Louisiana: a unique environment: U.S. Geological Survey Multimedia Gallery: *http://gallery.usgs.gov/videos/510#.U1hFGye9KSN*

Snowy Orchid (*Platanthera nivea*)

Grass-pink Orchid (*Calopogon tuberosus*)

# Carolina Lily (*Lilium michauxii*)

BY James R. Turner, *FAAR, FASLA*
*Fleeta Springs Natural Area*
*Vernon Parish, La.*

When we first joined the Louisiana Natural Areas Registry in December 2010, we were pretty excited. Why? Well, we thought our little 40 acres in far west Louisiana was a jewel. Sure enough, the Louisiana Department of Wildlife and Fisheries agreed. One spot on our property that they identified had a rather exotic name, a Beech-Magnolia-Loblolly Slope Forest (BMLS). My favorite wildflower, the rare and charming Carolina lily, was known to exist in this "plant community." This is an odd, delicate and wildly colorful classic. It is odd because it likes the shade and also likes the fragile, unstable borders of the BMLS forest. To compensate, its colors are orange, yellow and red, like fire. It looks out of place, like it ought to be in a conservatory in Kew Gardens, London, instead of out here in nowhere, west Louisiana.

Another good description of this plant is picayunish. For us, it is never abundant and is easily damaged by careless footfalls or even a stout wind. It breaks off and retreats until the following year. Protection, such as an informal border of fallen branches or an old stump placed just so, is required for it to thrive. It rises from a bulb no bigger than the end of your little finger. One stalk of delicate, whorled leaves clears the forest floor by seldom more than 24 inches. Then, in late summer, it BLOOMS! Holy Toledo, it is beautiful. Of course, all lilies are rather spectacular, but Carolina tops them all, I think. The petals, red and spotted over orange and yellow, curl back to the stalk, while the pistils and sepals, pale yellow and rusty red, blow forward like the blast from a good clarinet. Now, unless you've had a cold, wet winter and regular rains right on into spring and early summer, you can count the Carolina lily out. Like I said, picayunish.

If you're interested in more information about the wonderful wildflowers of our area, Vernon Parish, "the Wildflower Capitol of Louisiana," try *Wild Flowers of the Big Thicket: East Texas, and Western Louisiana* by Geyata Ajilvsgi.

Amity Bass

Nicole Lorenz

Carolyn Michon

Sam Holcomb

Chris Reid

Jeff Boundy

Beau Gregory

Michael Seymour

Keri Landry

Sairah Javed

Dan O'Malley

Neil Douglas

# Louisiana Natural Heritage Program Staff


**Louisiana Department of Wildlife and Fisheries**
2000 Quail Drive
Baton Rouge, LA 70898
(225) 765-2820

**Amity Bass**
Program Manager
abass@wlf.la.gov
(225) 765-2975

**Carolyn Michon**
Assistant Data Manager
cmichon@wlf.la.gov
(225) 765-2357

**Chris Reid**
Botanist
creid@wlf.la.gov
(225) 765-2820

**Beau Gregory**
Zoologist
bgregory@wlf.la.gov
(337) 491-2575

**Keri Landry**
Endangered Species Biologist
klandry@wlf.la.gov
(225) 765-2809

**Dan O'Malley**
Field Biologist
domalley@wlf.la.gov
(225) 765-2823

**Charles Battalgia**
Field Biologist
cbattalgia@wlf.la.gov
(337) 491-2575

**Sarah Lessard**
Data Technician
slessard@wlf.la.gov

**Nicole Lorenz**
Data Manager
nlorenz@wlf.la.gov
(225) 765-2643

**Sam Holcomb**
State Wildlife Grants Coordinator
sholcomb@wlf.la.gov
(225) 765-0239

**Jeff Boundy**
Herpetologist
jboundy@wlf.la.gov
(225) 765-2815

**Michael Seymour**
Ornithologist
mseymour@wlf.la.gov
(225) 765-3554

**Sairah Javed**
Field Biologist/Natural Areas Coordinator
sjaved@wlf.la.gov
(318) 487-5885

**Neil Douglas**
Turtle Biologist
nhdouglas@att.net

**Chris Doffitt**
Field Biologist
cdoffitt@wlf.la.gov
(318) 487-3412

**Tracy Mancuso**
Administrative Assistant
tmancuso@wlf.la.gov
(225) 765-2812

**Zach Leggett**
Student Worker
zleggett@wlf.la.gov

Charles Battalgia

Chris Doffitt

Tracy Mancuso

Sarah Lessard

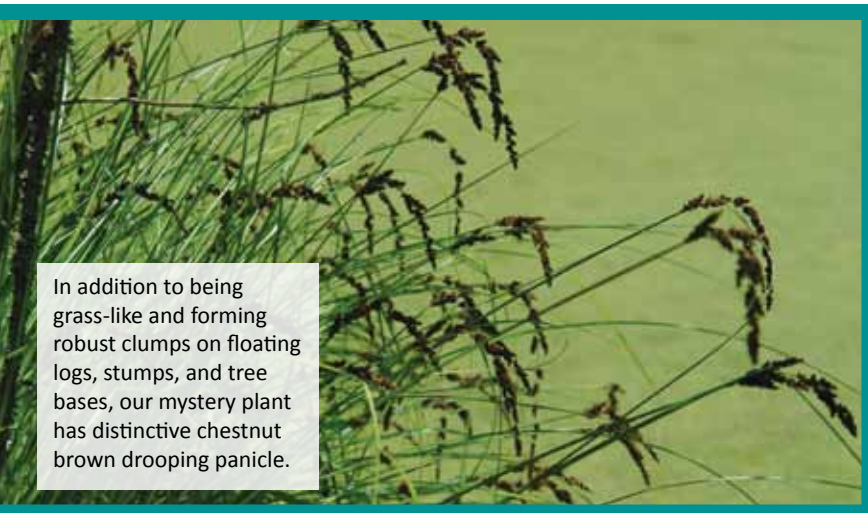
Zach Leggett

Visit us on the Web!

*www.wlf.louisiana.gov/wildlife/louisiana-natural-heritage-program*

**LOUISIANA NATURAL HERITAGE PROGRAM**
**Louisiana Department of Wildlife & Fisheries**
P.O. Box 98000
Baton Rouge, LA 70898

This public document was published at a total cost of $. 130 copies of this public document were published in the first printing at a cost of $. This document was published by the Louisiana Department of Wildlife and Fisheries, 2000 Quail Drive, Baton Rouge, LA to provide information to Louisiana residents and non-residents about the Louisiana Natural Areas Registry Program. This material was printed in accordance with the standards for printing by state agencies established pursuant to R.S. 43:31. Printing of this material was purchased in accordance with the provisions of Title 43 of the Louisiana Revised Statutes.



In addition to being grass-like and forming robust clumps on floating logs, stumps, and tree bases, our mystery plant has distinctive chestnut brown drooping panicle.

# MYSTERY PLANT

The mystery plant for this issue is a large perennial sedge that grows in cypress-tupelo swamps, buttonbush thickets, beaver ponds and other small isolated (often natural) ponds, and along swampy lake shores (e.g. oxbows). It is unique in that it grows almost exclusively on floating logs, stumps and on the bases of living trees. This species is widely distributed but is patchy, rare throughout much of its range. It is considered rare in Louisiana, but many new occurrences have been discovered in recent years. Given the amount of suitable habitat available for this species in Louisiana, it is likely more common than we currently know. If you encounter this plant, please let us know, since we do track it.

## WHAT IS IT?

Email your answers to Chris Reid (creid@wlf.la.gov)
or Sairah Javed (sjaved@wlf.la.gov)

***The mystery plant from last issue was Christmas berry (*Ardisia crenata*).**

Our mystery plant growing on the base of a buttonbush in a duck weed covered pond.