LOUISIANA NATURAL AREAS REGISTRY

Quarterly Newsletter

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Working with landowners towards conservation of Louisiana's ecologically Sensitive Lands

Can you name the flower species that Chris Reid is holding? See answer on page 7.

NATURAL AREAS REGISTRY UPDATE

We are acknowledging four new Natural Areas Registries this quarter that encompass 4,236.55 acres in three Louisiana Parishes (Beauregard, Livingston, and Winn Parish). This brings our total Registry acreage to 43,800 among 88 registry members in 30 of 64 Louisiana parishes. Austin Arabie contacted me about registering his longleaf pine forest property. After visiting their site, we were delighted to recognize the Arabie Family for their preservation efforts. Patti Faulkner recommended that we recognize Chad Thielen for his efforts in preserving Bill Jackson Longleaf Savannah. Three Office of State Park sites were registered last quarter, and we have registered two new sites this quarter, Tickfaw State Park and Coochie Brake State Preservation Natural Areas. These sites were selected by the Natural Heritage Program as two of the best Louisiana Office of State Parks natural areas.

Recently, an article about the Natural Areas Registry was released in the June 11, 2006 Sunday paper written by Mike Dunne for The Baton Rouge Advocate. The article is available on Louisiana Wildlife and Fisheries website at www.wlf.louisiana.gov under Natural Areas.

Arabie Family Longleaf Pine Forest and Bogs Natural Area is a 720 acre area owned by Austin Arabie, Nickie Arabie, Suzanne Cronce, and Melone Calaway in Beauregard Parish. It consists of five Louisiana plant community types (all of which are ranked as rare and imperiled in Louisiana: flatwoods pond, western hillside seepage bog, bayhead swamp, western acidic longleaf pine savannah, and western upland longleaf pine forest. **Bill Jackson Longleaf Savannah Natural Area** is a 363 acre area owned by Chad Thelien and others in Beauregard Parish. It

In This Issue:	Pages

consists of 2 Louisiana plant communities, Western Acidic Longleaf Pine Savannah and Flatwoods Pond.

Flatwoods ponds (shown above from Arabie's) are natural depressional wetlands embedded within current or historical longleaf pine flatwoods/savannahs of western Louisiana. They are believed to occupy swales and depressions remaining from ancient Pleistocene stream channels (1.8 million to 11,000 years ago) and are often linear in shape. Flatwoods pond communities are seasonally flooded and are vegetated by a variety of obligate and facultative wetland species. Shallow flatwoods ponds are dominated by grasses and sedges, while deeper ponds, which are flooded for longer periods, support woody species such as swamp blackgum, Carolina ash, and snowbell. Western hillside seepage bogs are open, continually moist, floristically diverse habitats occurring along slopes and at the base of hills in upland pine forests. Soils are typically quite sandy and very acidic. They are underlain by an impervious sandstone or clay layer. Ground water seeps constantly to the soil surface. Vegetation is dominated by a large number graminoids like *Arisida* spp. (threeawn grasses). Insect-eating plants like *Sarracenia alata* (Yellow trumpets, shown above right) and Drosera spp. (Sundews, shown above left) are common. *Rhexia* spp. (meadow beauties), various orchids like *Calapogon tuberosus* (shown right), ferns, and club mosses are usually abundant. Bayhead swamp communities are extremely variable ranging from a shrub dominated swamp to a mature swamp forest with evergreen shrubs forming the primary understory and midstory. They occur in the heads of creeks or branches, at the base of slopes, in acid depressions in pine flatwoods, and borders of swamps of the north, central, western, and southeastern Louisiana. Common overstory trees are *Magnolia virginiana* (sweetbay) and *Nyssa sylvatica* (black gum). Western acidic longleaf pine savannahs (shown right from Bill Jackson) are floristically rich, herb-dominated wetlands that are naturally sparsely stocked with *Pinus palustris* (longleaf pine). Savannahs occupy the poorly drained and seasonally saturated/flooded depressional areas and low flats in a mosaic with better-drained slight rises, low ridges, and scattered "pimple mounds" (only in southwestern Louisiana). Herbaceous vegetation is very diverse and is dominated by graminoids like Schizachyrium spp. (bluestems). They also contain pitcher plant bogs and other prominent species like sunflowers, orchids, and club mosses. Western upland longleaf pine forests occur on hilly uplands with acidic loamy sands to clays that are characteristically dissected by small to large branch or creek bottoms. Pinus palustris (longleaf pine) is the dominant overstory species and the herbaceous flora may be exceedingly diverse if fire has frequently occurred. All of these communities require frequent fire to prevent encroachment by woody shrubs and hardwoods. These communities are also important wildlife habitat and loss of mature longleaf pine communities has resulted in the decline of indigenous birds, especially the *Picoides borealis* (Red-cockaded Woodpecker, shown right) is a state-endangered and federally-endangered species.

Coochie Brake State Preservation Natural Area is owned by Louisiana Office of State Parks, and it encompasses 1,919.42 acres in Winn Parish. It consists of four plant community types: Cypress-Tupelo Swamp (shown below), Hackberry-American Elm-Green Ash Forest, Small Stream Forest, and a Mixed Hardwood-Loblolly Pine Forest. Coochie Brake was once a salt lake that formed as a result of periodic

advance and retreat of the seas approximately 200 million years ago. Subsequent depositions resulted in successive layering of sedimentary material over the salt bed. The less dense salt is rising intrusively and the upward pressure created a salt dome, approximately 2,000 feet subsurface, which is resisted by the overlying strata. This pressure formed a cap rock that is composed primarily of calcium sulfate. A false cap rock was also formed on top of the cap rock that is composed of sandstone and limestone. This false cap rock uplifted on the north side and exposed the cap rock at the surface. Intermittent streams and springs flow through the brake created a Cypress-tupelo swamp. Swamps are important nutrient and sediment sinks. They improve the quality of water that flows through them and also act in flood

regulation. Many aquatic food webs depend on the input of leaf litter of other organic debris that the wetland forest provides and aquatic fauna like crawfish, aquatic insect larvae, reptiles, and amphibians are abundant. Cypress-tupelo swamps are periodically flooded and regeneration requires prolonged droughts for germination and establishment of young baldcypress trees. The Cypress-Tupelo Swamp transitions into a Hackberry-American Elm-Green Ash Forest and then into a Mixed Hardwood-Loblolly Pine Forest on the slopes and upper ridges. Small Stream Forest communities occur along intermittent streams. Soils in Hackberry-American Elm-Green Ash Forests are seasonally inundated or saturated periodically for 1 to 2 months during the growing season. Mixed Hardwood-Loblolly Pine Forests are variable depending on elevation and consequent moisture regime. Loblolly (*Pinus taeda*) comprises 20 percent or more of the overstory in a mixture with a number of hardwood species. Succession in this community is strongly toward hardwood dominance, and it may be considered transitional to various hardwood types. Fire maintains the loblolly pine component.

Tickfaw State Park Natural Area encompasses 1,234.13 acres in Livingston Parish. It supports five community types: Bottomland Hardwood Forest, Baldcypress-Tupelo Swamp, Mixed Hardwood-

Loblolly Forest, Spruce Pine-Hardwood Forest (shown above), and Tickfaw River. A potential den tree (shown below) suitable for hibernation by Louisiana Black Bear was seen while we surveyed the sight in May 2006. Spruce Pine-Hardwood Flatwoods is a naturally mixed forest community indigenous to the western Florida Parishes. *Pinus glabra* (spruce pine) is prevalent over *P. taeda* (loblolly). Soils are significantly higher in nutrient levels than those historically supporting the *P. palustris* (longleaf pine)

communities occuping similar hydrologic settings immediately to the east. This edaphic factor may have precluded longleaf from this community type. Spruce pine-hardwood flatwoods typically have a dense canopy resulting in heavy shading and usually a sparse understory. *Sabal minor* (dwarf palmetto, shown in understory of picture above) is often an understory dominant.

INVASIVE SPECIES CONTROL

Invasions by nonnative plants pose one of the greatest threats to southern forests. Invasive nonnative plants infest forest understories, edges, and and interior

openings, increasingly eroding forest productivity, hindering forest use and management activities, and reducing plant diversity and wildlife habitat. Often called nonnative, exotic, nonindigenous, alien, or noxious weeds, they occur as trees, shrubs, vines, grasses, ferns, and forbs. Some have been introduced into this country accidentally, but most were brought here as ornamentals or for livestock forage. These plants arrived without their natural predators (insects and diseases) that keep native plants in natural balance. Now they increase across the landscape unchecked, beyond the control and reclamation measures applied by landowners and managers on individual land holdings.

The decision to use a specific control method depends on several variables including the biology of the invasive plant, the size of the infestation, proximity to desirable native plants and sensitivity of the site. It is advisable to consult a weed specialist when selecting herbicides to treat a specific invasive species. Chemical herbicide applicators should receive training in the proper use and safety precautions when using these products. Always follow the label directions for a given herbicide exactly. It is a Federal offense not to do so. Specific chemical treatments for each species population are recommended in the next section.

CHEMICAL CONTROL METHODS

Basal bark application – This method is used to kill young sapling sized trees or large shrubs. The selected herbicide is mixed with an oil penetrate (diesel fuel, mineral oil) applied to the lower 12 to 20 inches of the stem. The mixture is applied with either a backpack sprayer or a wick applicator (where desirable species are in close proximity). This method is most effective on trees with smooth, young bark, and less than 6 inches in diameter.

Cut-stump treatment – This strategy is most effective to treat woody stems over 6 inches in D.B.H. It involves the application of herbicides to the surface of freshly cut stems. The stem is cut at or near the ground with a handsaw or chainsaw. The sawdust is brushed away leaving a clean surface to which an herbicide concentrate is immediately applied. The herbicide is applied with a backpack sprayer or a wick applicator. The significant factor is to thoroughly wet the exposed surface with herbicide mixture. A 25% concentrate of triclopyr or glyphosate mixed with water and a non-ionic surfactant is the most frequently recommended option. Where multiple stems are present, all surfaces must be treated.

Hack and squirt or injection – This method is especially efficient and effective when treating a large population of trees/shrubs, or when treating in sensitive areas where impact to non-targets would be too detrimental to the conservation goals. It involves the use of a hatchet or machete to make a series of spaced, downward cuts or incisions around the base of the stem. A measured amount of herbicide mixture is immediately injected or sprayed into these cuts. A simple spray bottle can be used to apply the herbicide. With practice, the applicator can quickly alternate cutting and squirting around the base of a tree, treating dozens of trees within a few hours. This method is usually most effective from early spring through summer.

Foliar applications – This method involves the direct application of a diluted herbicide mixture with a non-ionic surfactant and water to the foliage of the target plants. This is the least expensive method and requires fewer hours of work. Sprays are aimed at the target plants and applied until all leaves are wet. Foliar applications are usually made using a backpack sprayer and a spray wand equipped with an adjustable cone spray tip. These tools work well with vegetation up to about 18 feet tall using wand extensions and higher spraying pressures than for shorter vegetation. There are several options of spraying equipment and set-ups. Foliar applications are most effective in late summer and early fall when plants are translocating nutrients to the roots. The primary drawback is the impact to non-target plants in the understory and surrounding vegetation.

MECHANICAL CONTROL METHODS

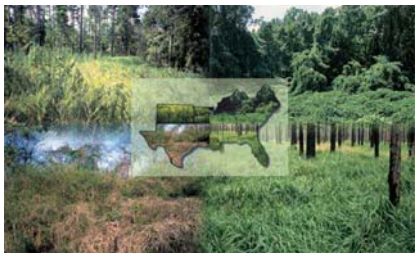
Hand-pulling – This method is very labor intensive, but works well to remove young seedlings and small, isolated patches of new infestations of herbaceous or woody-stemmed plants. Site will need to be monitored for several years to pull any new growth from seed or from any root fragments left behind. The most effective time is in the spring when the soil is wet and loose, making full removal of the plant and its root system most likely.

Root talon and Weed Wrench – Small shrubs can be dug out with a root talon or even a shovel. However, the root talon works much better because it is more efficient at pulling the whole plant including the roots system. The Weed Wrench works well on shrubs over an inch in diameter. These tools should be used in the spring or on any day when the soil is saturated and loose. Monitoring is especially important as many species germinate from tiny root fragments.

Cutting and mowing – Cutting is another labor-intensive method but one which is often recommended as part of an integrated management approach with chemical methods. Many invasive species respond to cutting by sprouting from stumps and roots. Consequently, cutting alone is never advisable. However, when land managers have the time and resources, repeated cuttings (3 to 4) during a growing season can be very effective at reducing the spread and weakening some populations. Herbaceous ground cover can be cut with a string trimmer or mower, and there are mowers designed to cut woody stems up to 3 or 4 inches in diameter.

Brush hogging – Multi-acre infestations of tall woody-stemmed invasive plants are often most efficiently treated by brush hogging the entire area. The brush is removed and burned or disposed of in a landfill. This method usually requires an aggressive re-vegetation program to begin immediately after cutting. Brush hogging is best done in the spring. Brush hogging without a follow-up herbicide treatment in the fall or following spring or a re-planting program often leads to massive root suckering and stump sprouting of species like autumn olive and knotweed.

Nonnative Invasive Plants of Southern Forests: A Field Guide for Identification and Control



By James H. Miller, Research Ecologist, USDA Forest Service, Southern Research Station, Auburn University, AL 36849. Revised August 2003. Gen. Tech. Rep. SRS–62. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 93 p.

Book available to Registry Members by contacting Patti Faulkner at Louisiana Natural Heritage Program.

The objective of this book is to provide information on accurate identification and effective control of the 33 plants or groups that are invading Southern forests. The book explains both growing and dormant season traits, and explains control recommendations and selective application procedures.

Integrated vegetation management programs are needed to combat invading nonnative plants. Strategies of surveillance and treatment of new arrivals will safeguard lands, and reclamation of existing infestations can be achieved by concerted control measures and reestablishment of native vegetation.

CONTENTS

EXOTIC AQUATICS OF THE GULF COAST

http://lamer.lsu.edu/topics/exotics/

They come from all over the world. Some arrive as stowaways on boats, some are smuggled here in suitcases and cars, some come in aquariums... but they all have one thing in common: they are not native to our area. While some exotic species are not harmful to

our community, many species behave like unwelcome intruders, often out-competing beneficial native plants and animals.

The problem with exotic species is that they can cause harmful changes to our natural biological communities. For example, some eat species that are native to our area, or out-compete them for food. They can change the physical habitat, making it a less comfortable or even stressful place for native species to continue to live and reproduce.

A multitude of exotic plants, animals and microorganisms have found their way to our continent. Exotic species, or non-native plants and animals, are often stowaway organisms that hitch a ride on an air or water current, boat, or plane and find their way to a foreign shore. Sometimes imported species, such as nutria or water hyacinth, escape from enclosures into the wild. About 15% of these new species find the new environment ideal. Many become invaders, causing widespread problems. Problems arise when these organisms reproduce unchecked by natural controls or predators. The cost of dealing with and trying to control exotic species that have become pests is very high. Groups concerned with preserving and conserving the environment in a watershed must be aware of the presence of exotic species within their watershed and the potential impact they can have if left unchecked.

They have 3 characteristics in common:

- Prolific reproduction
- Broad ability to adjust to environmental stress
- Advanced capacity to acquire nutrition

How to prevent the spread of aquatic invasive species:

- Never release nonnative organisms into the wild
- Never move water, animals or plants from one body of water to another
- Learn to recognize common invaders
- Share your knowledge with others to prevent the spread of AIS
- INSPECT your boat, trailer and equipment and REMOVE visible aquatic plants, animals and mud before leaving the water access area.
- DRAIN water from livewells, bilge, motor, bait buckets and transom wells before leaving the access area.
- EMPTY bait buckets into the trash.
- DRY the boat and equipment for at least five days before transferring to a new lake.
- If drying isn't possible, RINSE boat, tackle, downriggers and trailers with hot (above 104 degrees F) and/or SPRAY with high-pressure water.
- Learn what invasive organisms look like and REPORT questionable species to your local DNR office for identification assistance; preserved specimens are needed to confirm sightings.

	**Zebra Mussel (Dreissena polymorpha)** These small bivalves are a real problem in some freshwater byways. The little critters can plug up water intakes and change the ecosystem.
	**Water Hyacinths (Eichhornia crassipes)** These water plants look beautiful along our bayous and in our swamps. But they form floating mats that cut off sunlight for other organisms and cause big problems for boaters, anglers and fish.
	**Hydrilla (Hydrilla verticillata)** This submersed plant can grow to the water's surface in all types of waterbodies. It forms dense vertical mats that can tangle in propellers and obstruct recreational boats, sometimes preventing angling and boating.
	Others Hundreds of nonindigenous species have become invasive in certain areas of the U.S. Download Be on the Lookout.pdf (3.06MB) to learn about the invaders and possible invaders to Louisiana. Go to http://www.usgs.gov/invasive_species/plw/ to learn about invaders in places throughout the U.S.

Additional contact information:

Contact your local United States Department of Agriculture for information on nonnative invasive species. Information is also available on line at http://www.invasivespeciesinfo.gov/contactus.shtml The site describes databases available online related to invasive species as well as general biodiversity. See other sections for species specific information, expertise, and geographic based information.

Answer to name of flowers on first page.
Louisiana Squarehead - *Tetragonotheca ludoviciana*
Aster Family – Asteraceae
State rare plant that was located by Chris in sandy woodlands near Caddo Lake in Caddo Parish, June 2006.

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