LOUISIANA NATURAL AREAS REGISTRY
Quarterly Newsletter

September 2008

Volume 6 Number 1 of 4

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

http//www.Louisiana.gov/experience/natural heritage/naturalareasregistry/

Can you name the animal in the above photo? See page 5 for answer.

Natural Areas Registry Update

Our hearts go out to all those effected by Hurricanes Gustav and Ike. I am in the process of contacting all registry members about their well-being and the status of their homes and Natural Areas Registries. Please contact us if you would like us to visit your Natural Area or if you need assistance.

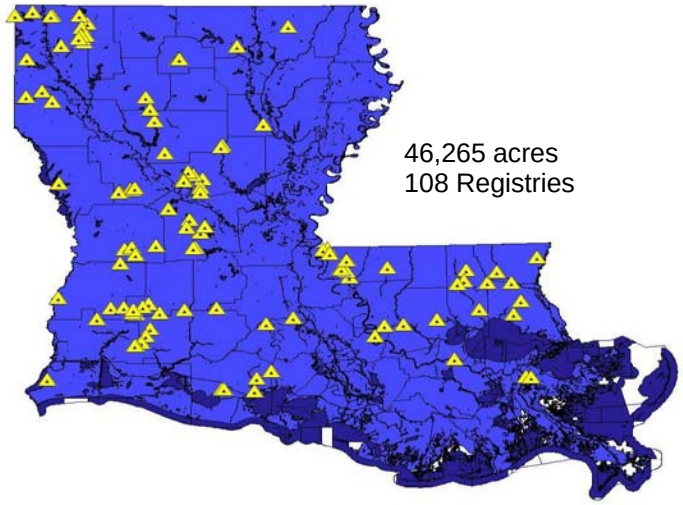
Emergency Watershed Protection Program (EWP): In the wake of Hurricanes Gustav and Ike is widespread damage caused by wind, rain and flooding. Debris left behind, especially downed trees and timber, poses an immediate risk of fire, flooding and threat to health and safety. Your local authorities are working hard to identify areas where debris has accumulated in waterways, ditches and against bridges and levees.

Your local authorities are working with the USDA's Natural Resources Conservation Service (NRCS) to remove debris that poses a threat to health and safety. Your help in identifying areas of obstruction to waterways is crucial in this process. If you are aware of areas where debris is impeding watercourses, drainage channels, breached levees, stream banks in need of stabilization, or channel side slopes that are in need of repair, contact your local office of emergency preparedness, the police jury, the parish president, the mayor, levee board or drainage district immediately so that the area can be identified and addressed.

Through the Emergency Watershed Protection Program (EWP), your local authorities and the NRCS will work closely to address impediments to waterway. The purpose of EWP is to undertake emergency measures, including the purchase of flood plain easements, for runoff retardation and soil erosion prevention to safeguard lives and property from floods, drought, and the products of erosion on any watershed whenever fire, flood or any other natural occurrence is causing or has caused a sudden impairment of the watershed. The United States Department of Agriculture's Natural Resources Conservation Service is responsible for administering the program.

New Registries: We have recognized four new landowners this quarter for registering their ecologically significant lands with the Natural Areas Registry Program that includes Babers Bluff, Clear Creek, and Duhon Wildlife Refuge and Bird Sanctuary Natural Areas. This brings our total number of registries to 108 for 46,265 acres being protected in 34 parishes by private landowners and publicly- owned agencies.

Cheryl Babers Hagar registered **Babers Bluff Natural Area** in Bienville Parish. It consists of 200 acres of a state and globally imperiled mature shortleaf pine / oak-hickory forest community (SLPOH) and a mixed hardwood-loblolly pine forest on ridges and slopes along the east banks of Saline Bayou. The shortleaf pine / oak-hickory forest is in excellent condition with many mature shortleaf pines interspersed with mature hardwoods. Historically this forest type was the matrix (most prevalent) natural community of the Upper West Gulf Coastal Plain. This forest community occurs on dry hills, principally in central and northern Louisiana, although it may occur sporadically in the Florida Parishes. There are nineteen known occurrences of this forest community in Louisiana. Historically there was an estimated 4 to 6 million acres of SLPOH in Louisiana, however, only 5 to 10 percent of this original extent is thought to remain today. Fire is an important process in this community, and frequency is thought to have occurred every five to 15 years.



David and Mary Ann Daigle registered **Clear Creek Natural Area** in Allen Parish and they have permanently protected this ecologically important site with a Cajun Prairie Conservation

Servitude. The Daigles have registered two other sites in Allen and Beauregard Parishes that are also longleaf pine communities. Additionally, David is co-owner of a third longleaf pine community natural area in Beauregard Parish. Clear Creek consists of 449 acres of two excellent examples of Louisiana critically imperiled plant communities, Western Acidic Longleaf Pine Savannah and Flatwoods Pond. Western Acidic Longleaf Pine Savannahs are floristically rich, herb-dominated (non-woody) wetlands that are naturally sparsely stocked with PINUS PALUSTRIS (longleaf pine). Wet savannahs occupy the poorly drained and seasonally saturated/flooded depressional areas and low flats, while the non-wetland flatwoods occupy the better-drained slight rises, low ridges and "pimple mounds" (only southwest Louisiana). Herbaceous vegetation of pine savannahs is very diverse. They are dominated by graminoids (grasses, sedges, and rushes) and are similar to vegetation that occurs on hillside bogs. Various additional species belonging to the lily family, sunflower family, and orchid family are prominent. Club-mosses and sphagnum moss are often abundant in savannahs. Flatwoods Ponds are relatively small, natural depressional wetlands embedded within current or historic longleaf pine flatwoods / savannahs of western Louisiana. They are believed to occupy swales and depressions remaining from ancient Pleistocene stream channels, and are often linear in shape, although circular and elliptic ponds are common. Generally treeless, these ponds are vegetated by a variety of obligate (grows only in particular habitat or set of environmental conditions) and facultative (adapted to a wide range of conditions) wetland herbaceous species, mainly tall sedges and grasses. Historically, fire maintained both of these plant communities by killing encroaching shrubs and trees and rejuvenating the herbaceous ground cover. Louisiana's RCW Safe Harbor Program is considering this site for enrollment in their program.

Stanley Duhon registered **Duhon Wildlife Refuge and Bird Sanctuary Natural Area** in Lafayette Parish. It consists of 11.5 acres of an old growth bottomland hardwood forest with a species composition characterizing this natural community as a Hackberry - American Elm – Green Ash Forest (picture below). Common associates in this forest are Water Hickory (CARYA AQUATICA), Water Oak (QUERCUS NIGRA), and Baldcypress (TAXODIUM DISTICHUM). Old-growth character that is adjacent to Carencro Bayou is carpeted by dayflowers (COMMELINA species). This community type functions as an important wildlife habitat and serves as vital resting habitat for neotropical (region from southern Mexico to tip of South America) migratory birds. Hundreds of different species of birds use these forests as a stop-over during spring and fall migration. Bottomland hardwood forests are maintained by a natural hydrologic regime of alternating wet and dry periods that follow seasonal flooding events. Additionally, they provide important ecosystem functions including maintenance of water quality, providing productive habitat for a variety of fish and wildlife species, and regulation of flooding and stream recharge. Statewide, bottomland hardwood forest loss is estimated to be 50 to 75 % of the original presettlement acreage. Old-growth examples of this habitat type are very rare. Restoration efforts have been in progress since the 1980's, and reconnecting fragmented forest blocks and restoration of wetland forest functions are the major challenges to reforestation efforts. I

Western Hillside Seepage Bogs

(Eight Natural Areas Registries occur in this community type).

Rarity Rank: Western Hillside Seepage Bog – S2 (imperiled in Louisiana) / G2G3 (globally imperiled or very rare)

Synonyms: Pitcher Plant Bog, Herbaceous Bog, Hillside Seep, Hillside Bog

Ecological Systems: CES203.194 West Gulf Coastal Plain Herbaceous Seepage Bog

General Description:

- Open, mostly treeless, herb-dominated wetlands of hilly, sandy uplands historically associated with *Pinus palustris* (longleaf pine) ecosystems
- Commonly found on mid- to low slopes, on persistently saturated, strongly acidic (pH ca. 4.5 - 5.5) and nutrient-poor substrates of fine sandy loams or loamy fine sands with relatively high organic matter content

Chris Reid surveying privately owned hillside bog

- Underlain by an impervious clay or sandstone layer that causes ground water to constantly seep to the soil surface.

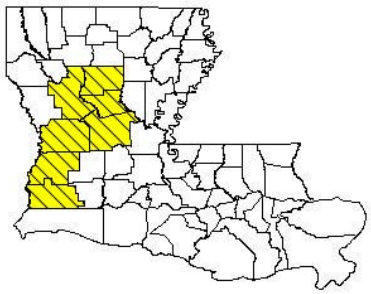
- Variable in size, most often less than 1 acre but rarely exceeding 10 acres
- Fire dependent systems; frequent fire deters invasion by shrubs and trees and stimulates growth, flowering and seed production by indigenous bog herbs
- Degree to which a bog remains wet throughout the year depends on the size of the watershed, the soil infiltration rate upslope, the rate of saturated flow in the soil, the topographic position of the bog, the bog's water storage capacity, and the rate of water leaving the bog from evapo-transpiration and through surface and sub-surface flow. Bogs are extremely sensitive to surrounding land management activities, and are easily degraded or destroyed by activities that alter natural hydrologic regimes.

Plant Community Associates

Common herbaceous species include: *Andropogon* spp. (broomsedges), *Aristida* spp. (three-awn grasses), *Panicum* spp. (panic grasses), *Ctenium aromaticum* (toothache grass), *Muhlenbergia capillaris* (hairawn muhly), *Rhynchospora* spp. (beak-rushes), *Rhynchospora stenophylla* (narrow-leaved *Xyris* spp. (yellow-eyed grasses) beakrush) (S1G4), *Eriocaulon* spp. (pipeworts), *Lachnocaulon* spp. (bog buttons), *Dichromena latifolia* (white top sedge), *Scleria* spp. (nut-rushes), *Fuirena* spp. (umbrella grasses), *Fimbristylis* spp. (fimbry-sedge)

Common forb (wildflower) species include: *Sarracenia alata* (green pitcher plant), *Rhexia* spp. (meadow beauties), *Polygala* spp. (milkworts), *Liatris* spp. (blazing stars), *Aletris lutea* (colic-root), *Eupatorium* spp.(thorough-worts), *Coreopsis linifolia* (narrow-leaved tickseed), *Drosera* spp. (sundews), orchid family (Orchidaceae), *Platanthera* spp. (fringed orchids), *Osmunda cinnamomea* (cinnamon fern), *Osmunda regalis* (royal fern), *Lycopodium* spp. (club-mosses)

Federally-listed plant & animal species: In adjacent upland longleaf: *Picoides borealis* (red-cockaded woodpecker) Endangered; G2; S2



Range: Lower West Gulf Coastal Plain ecoregion in the southwest and west central portions of the state from Calcasieu north to Natchitoches and Winn Parishes.

Threats & Management Considerations: Western hillside seepage bogs in Louisiana have been reduced by 25 to 50% of the original extent. The primary threat to bogs includes any activities that alter the natural hydrology of the bog or surrounding landscape. Changes to the natural water flow patterns and water storage capacity of a bog will degrade the natural community composition and structure and ultimately cause destruction and loss of this habitat type. Other factors that threaten bogs include fire suppression, introduction of invasive plant or animal species, damage to soils from off-road vehicles or harvesting activities, planting tree species, contamination by chemicals (herbicides, fertilizers), and residential or commercial development.

Use of appropriate management activities and developing a compatible management plan prevents destruction or degradation of this habitat type and promotes long-term maintenance of healthy seepage bogs. Management strategies should include:

- Use of growing season prescribed fire (spring/summer) every 1 to 3 years
- No tree planting within bogs when reforesting adjacent areas
- No ditching, bedding, plowed fire lines or other soil disturbance within bogs or adjacent areas that may alter natural water flow patterns
- Walk-in only access – no off-road vehicles
- Surveying for and removal of any invasive plant species (exotics or woody) with use of spot herbicides or mechanical means.

Red-devil Crawfish

Cambarus ludovicianus

Secure status **in Louisiana**

Red-devil crawfish are known to occur near hillside seepage bogs in Louisiana. They are members of the family Astacidae, freshwater crayfish resembling small lobsters. Crawfish have two pairs of antennae whereas all other arthropods have one pair or none. The first 3 pairs of legs have claws, the front pair being the largest. In addition to antennae, the sensory structures of crayfish include compound eyes, simple eyes, statocysts for orientation, chemoreceptors, proprioceptors, and tactile setae. Red-devil crawfish are primary burrowers – tend to remain in their burrows continuously and live in areas without permanent water except during breeding when they must migrate to a nearby water source. They make their burrows in silt or mud where they hide during the day except for emergence for breeding.

Reproduction and Brooding: Mating occurs just after a female has molted in the fall. The male turns the female onto her back and deposits nonflagellated sperm near the openings of the female's gonoducts. Fertilization occurs after copulation, as the eggs are shed. Brooding occurs in the spring and possibly less seasonal in southernmost parts of range. Females use abdominal swimmerets to attach the sticky developing eggs until hatching. Fanning movements of the swimmerets over the eggs keeps them aerated. The development of crawfish embryos is direct, with young hatching as miniature adults.

Food: Red-devil and other crawfish prey upon other invertebrates, eat plant matter, and scavenge dead and dying animals.

References:

Animal. 2001. Smithsonian Institution. Dorling Kindersley Limited. Page 584.

NatureServe. www.NatureServe.org

Miller, Stephen A. and John P. Harley. 1994. Zoology. Wm. C. Brown Publishers. Pages 360 – 364.

Carnivorous Plants
Pitcher Plant and Sundew

Edited by Patti Faulkner

Have you ever heard of meat-eating plants? Just like many animal species, some plant species are carnivorous – that is, they consume insects and other small animals for a primary source of nutrients and minerals for growth. Instead of actually eating insects, carnivorous plants trap them by various means, depending on the kind of plant. After animals such as flies, grasshoppers, and spiders are trapped, a pool of enzymes secreted by the plant digests the prey.

Carnivorous plants are found in many parts of the U.S., but are particularly abundant and diverse in some floodplains and small wetlands in the Southeast. Wetlands that are good for carnivorous plants generally have little or no drainage and low levels of essential plant nutrients. Nutrient-poor habitats typically have soils that are acidic or high in clay content; therefore, nutrients and minerals are not available in forms that are accessible to plants. The ability of carnivorous plants to capture and digest insects, supplemented by their capacity to make energy stores by photosynthesis as other green plants do, makes them highly competitive in nutrient-poor habitats.

Researchers have discovered that not only do carnivorous plants depend upon the nutrition from devoured insects for survival, but some invertebrates also depend solely upon carnivorous plants for food and/or reproduction. In the Yellow Trumpet pitcher plant, *Sarracenia flava*, for example, some mosquito and other insect species somehow evade capture and reproduce inside the rainwater-filled leaves.

Sarracenia Family – Pitcher Plants

Pitcher plants occur along the margins of baygalls and in seepage bogs, and savannas. All pitcher plant species are uncommon due mostly to habitat loss and destruction. In the springtime, the pitcher plants produce flowers on a leafless stem, in addition to producing a new growth of leaves (its "pitchers"). Pitcher Plants have hollow, green, hood-like leaves. The hood prevents the pitcher from filling with water. All pitcher plants produce insect-attracting nectar in strategic places and insects cannot resist following the nectar trail nto the pitcher. The inside of the leaf is coated with a slick wax and thick downward pointing hairs. Eventually, the insects fall into the hollow part of the leaf and are trapped. Once trapped, a fluid of secreted enzymes kills the insects and slowly digests them. The pitcher plant absorbs the nutrients and minerals resulting from the captured insects.

Droseraceae Family – Sundews

Sundews, like pitcher plants, have digestive enzymes that allow them to absorb minerals and nutrients from captured insects. Most species within this carnivorous plant family grow low to the ground, enabling the plant to capture crawling as well as flying insects. In some species the leaves are red, which is unusual but very functional. Red pigments absorb ultraviolet light and are very attractive to insects, which can see wavelengths that humans cannot. *Drosera* brevifolia shown above. In effect the red pigments are a visual lure for the insect prey. Leaves are covered with slimy hairs tipped with sticky glands that reflect sunlight, so they appear to sparkle like dew in the sun. When an insect crawls across a sundew leaf the sticky hairs trap it. As the insect struggles, the leaves secrete more of the mucus-like digestive substance. The leaf ends roll into a cup shape, which further prevents the insect from escaping and enhances digestion of the prey. In Louisiana, sundew habitats include flatwood savannas, seepage bogs, and margins of baygalls.

Three Drosera species that occur in Louisiana are *Drosera* capillaris, *Drosera brevifolia*, and *Drosera intermedia*. *Drosera capillaris* is the typical sundew you are likely to encounter in the southeastern USA. *Drosera* brevifolia plant with flower stalk at right and its flower shown below. Most of them are pink-flowered, but the occasional white-flowered plant is reported.

Drosera brevifolia is a cute little plant that can be identified by its wedge-shaped leaves. Another way to identify it in the field is by the flower scape, which is densely glandular. *Drosera intermedia* has long narrow pedicels that point in the air at all angles, making a sort of hemisphere of death. This basic form is useful to keep in mind when trying to identify plants in the field. (Stipule form is also helpful in separating this from *Drosera capillaris*). Another useful character is how the inflorescence does not emerge straight up from the center of the rosette---instead it emerges horizontally, then arcs upwards. This plant has a wide geographic range, so it should be no surprise that it has many variant forms. In some regions, *Drosera intermedia* is a ground-hugging rosette that looks

very similar to *Drosera capillaris*. In other areas the petioles are exceedingly long.

References:

http://www.uga.edu/srel/ Sept. 2008. Savannah River Ecology Laboratory Environmental Outreach Program. The University of Georgia.

International Carnivorous Plant Society. Sept. 2008.

We urge all registry members to take advantage of state and federal programs available to landowners through district National Resource Conservation Services offices that provide assistance with cost-share programs, technical and management assistance, burning assistance, invasive species eradication and restoration. Please feel free to contact Judy Jones or Patti Faulkner about these programs and we will be happy to help you.

Previous Newsletter, June 2008, Vol. 4, No 4 of 4. We recognized one new Natural Areas Registry that encompassed 111 acres. We covered Renewal of Increased Tax Incentives for Conservation Easements, Coastal Dune Grassland, and Louisiana Native Plant Initiative.

Picture from front page: Caterpillar of the larva of the **Cecropia moth**, also known as the Robin moth. This picture was taken at Bocdau WMA in Bossier Parish in July 2003 by LNHP. The Robin moth, is America's largest moth. It is a member of the family of giant silkmoths - the Saturniidae. They feed on many different species of hardwoods. In the late summer or early fall, the larva spins an overwintering cocoon attached to a twig on the plant where the larva fed. The large adult moth emerges in May to July.

http://www.ces.ncsu.edu/chatham/ag/SustAg/farmphotoaugust1505.htm
http://www.wormspit.com/cecropia.htm

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