Mystery Fungus on Last Page

Louisiana Natural Areas Registry
Quarterly Newsletter

June 2012

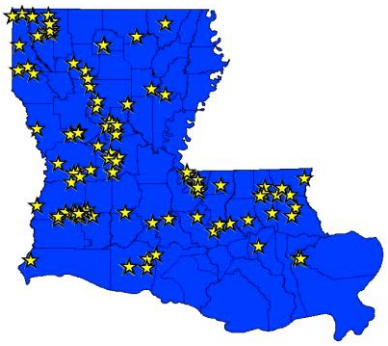
Volume 9 Number 3 of 4

Working with Landowners towards Conservation of Louisiana's Native Habitats

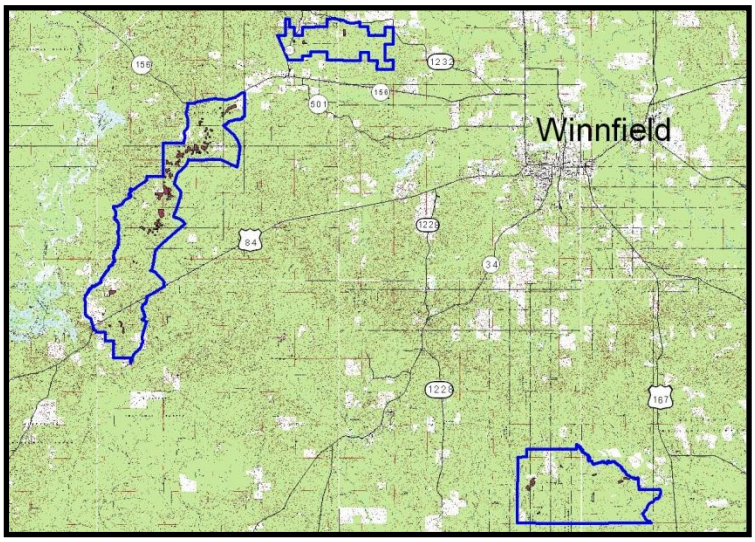
http//www.wlf.louisiana.gov/wildlife/natural-areas-registry-program/

Louisiana Department of Wildlife and Fisheries (LDWF), 2000 Quail Drive; P.O. Box 98000, Baton Rouge, LA 70898-9000

Natural Areas Update



The Natural Areas Registry Program is steadily growing and includes 117 Registered Natural Areas comprising 49,358 acres (indicated by the yellow triangles on the map to the right).



We are recognizing one new Natural Area this quarter: **Keiffer Tancock Natural Area** is owned by Kisatchie National Forest and consists of 11,294 acres**.** It contains one of the most significant calcareous prairie / forest complex areas in the state that is characterized as a series of natural grassland openings occurring in a mosaic with calcareous hardwood-pine forest in Winn Parish. The forestry staff of Kisatchie National Forest has worked hard to identify the prairie and woodland boundaries as well as plant species occurrences (see map of boundaries at top right).

Keiffer Tancock prairies occur on ridge tops and gentle slopes that border numerous small streams that dissect the landscape and are dominated by warm-season perennial grasses, composites, and legumes. The calcareous forests of Keiffer Tancock Natural Area are dominated by hardwoods, with shortleaf pine (*P. echinata*), and loblolly pine (*P. taeda*) present on the upper topographic positions within the forest. Sixty-six calcareous prairies have been documented within the Keiffer Tancock Prairies Natural Area.

Keiffer Tancock Natural Area
Calcareous Prairie

Carolina Larkspur

We recently visited the Carpenter and Coldwater Prairies in mid-May with the Louisiana Native Plant Society and Kisatchie National Forest

representatives. Many prairie plants were in bloom that included butterfly weed (*Asclepias tuberose*), wine cup (*Callirhoe papaver*), white prairie clover (*Dalea candida*), purple prairie clover (*Dalea purpurea*), Carolina larkspur (*Delphinium carolinianum*), pale purple coneflower (*Echinacea pallida*), yellow powderpuff (*Neptunia lutea*), downy phlox (*Phlox pilosa ssp. Pilosa*), prairie parsley (*Polytaenia* nuttallii), self heal (*Prunella vulgaris*), black-eyed Susan (*Rudbeckia hirta*), palmetto (*Sabal minor*), squarestem rosepink (*Sabatia angularis*), blue sage (*Salvia azurea grandiflora*), woodland pinkroot (*Spigelia marilandica*), and Venus' looking glass (*Triodanis perfoliata*).

Calcareous Prairie Management

Historically there was an estimated 2,000 to 10,000 acres of calcareous prairie in Louisiana. Today, only five to 10 percent of the original extent is thought to remain. As with the associated calcareous forests, calcareous prairies have mainly been lost to land use changes. Conversion to agriculture or pine plantations and fire suppression represent the greatest loss, while construction of roads, pipelines and utilities, invasive and exotic species, physical damage from timber harvesting, contamination by chemicals (herbicides, fertilizers), and off-road vehicle use all threaten remaining calcareous prairies.

Management strategies should include: Use of periodic prescribed fire every 3 to 5 years. Randomly spaced prescribed fire is important to promote the growth of different species. Winter and early spring burns favor forbs, while mid to late spring burning favors warm season grasses. As little as a three week difference in time of spring burning can have a dramatic influence on the vegetation. Individual prairies should be burned on a random seasonal schedule from late winter/early spring to late spring. This will simulate the historic random timing of natural fires in the prairies.

Removal of any invasive or exotic species by spot herbicide treatments or mechanical means. Control of persimmon and hawthorn requires additional management schemes since prescribed fire does not substantially reduce encroachment into the prairie openings. These two species persist or increase regardless of season of burn. Therefore, mechanical and herbicide treatment are necessary.

Prevent degradation that includes: Pig control is important because they can destroy a prairie opening very quickly by uprooting plants that can lead to erosion, excess soil moisture, and the inability to operate equipment. Prohibit uses such as logging sets, off-road vehicles, and trails.

Calcareous Woodland Management

Only 25 to 50 percent of the original presettlement extent remains today. Land use changes have brought about habitat destruction. Conversion to agriculture or pine plantations represent the greatest loss, while construction of roads, pipelines and utilities, invasive and exotic species, fire suppression, physical damage from timber harvesting, contamination by chemicals (herbicides, fertilizers), and off-road vehicle use all threaten remaining calcareous forests.

Management strategies should include: Use of periodic prescribed fire every 5 to 10 years. Fire should not carry far into the hardwood-dominated forests. Therefore, it may be best not to create fire breaks

at the prairie/forest ecotone, but rather allow the fire to burn itself out in the woods. Fire breaks should be placed in the forest rather than at the prairie edge to assist in control of shrubby thickets that often develop at prairie edges and may encroach if not burned. Prevent wildfire from burning the calcareous forests.

Maintain natural species composition by following appropriate hardwood management techniques that include 1) High tree species diversity 2) Multiple tree size classes within stands and 3) Creation of forest canopy gaps to establish/release desirable advanced regeneration and internal stand structure.

Wildlife forestry practices that focus on: 1) Desired Forest Conditions that create vertical and horizontal structural diversity in terms of tree species, size, age and growth form 2) Practice Long-term Forest Sustainability that ensures that desired tree species on the appropriate sites are successfully regenerated and 3) Silvicultural Practices for desired forest conditions across the property are attained through thoughtfully planned and carefully executed timber harvests.

Pine component management in calcareous woodlands involves thinning and regeneration methods. Thinning should target loblolly pine for removal and favor shortleaf pine as "leave" trees because loblolly pine is a prolific seed producer. Pines are intolerant of shade, therefore loblolly and shortleaf regeneration will require creation of canopy gaps by using single or small group harvesting of hardwood tree species.

Prevention of degradation to calcareous woodlands involves not allowing harvesting during wet periods to prevent soil damage and survey for and removal of any invasive plant species (exotics or woody) with use of spot herbicides or mechanical means.

Observe streamside management zones of the many streams that occur throughout the mosaic of calcareous prairie and woodland complex. Clearly defining the stream boundaries will help plan for protection of water quality from sediment and erosion from natural or man-made disturbances. Utilize a 100 foot or greater buffer along streams and consider topography when planning.

Backyard Pesticide Use may Fuel Bee Die-Offs

by Brandon Keim, April 13, 2012, on web site: Wired Science
http://www.wired.com/wiredscience/2012/04/neonicotinoids-gardens/

The controversy over possible links between massive bee die-offs and agricultural pesticides has overshadowed another threat: the use of those same pesticides in backyards and gardens. Neonicotinoid pesticides are ubiquitous in everyday consumer plant treatments, and may expose bees to far higher doses than those found on farms, where neonicotinoids used in seed coatings are already considered a major problem by many scientists.

"It's amazing how much research is out there on seed treatments, and in a way that's distracted everyone from what may be a bigger problem," said Mace Vaughan, pollinator program director at the Xerces society, an invertebrate conservation group. The vast majority of attention paid to neonicotinoids, the world's most popular class of pesticides, has focused on their agricultural uses and possible effects. A growing body of research suggests that, even at non-lethal doses, the pesticides can disrupt bee navigation and make them vulnerable to disease and stress. Neonicotinoids are now a leading suspect in colony collapse disorder, a mysterious condition that's decimating domestic and wild bee colonies across much of North America and Europe. The emergence of colony collapse disorder coincided with a dramatic increase in agricultural neonicotinoid use.

Several European countries, including France, Germany and Italy, have banned agricultural neonicotinoids, though some researchers and pesticide-manufacturing companies say evidence of low-dose harm is still incomplete and methodologically unsound. **To determine if a pesticide contains a neonicotinoid**, look at the ingredients: Imidacloprid, acetamiprid, dinotedfuran, clothianidin, thiacloprid and thiamethoxam are all neonicotinoids.

A Garden Center Shelf.
Photo: Matthew Shepherd with The Xerces Society

A garden center shelf. Photo: Matthew Shepherd/The Xerces Society.

Few researchers, however, doubt that high doses of neonicotinoids are harmful to bees — and though research on neonicotinoid use by gardeners, nurseries and urban landscapers has proceeded slowly, a troubling picture has emerged of products found on the shelves of most any garden center. **"For homeowner use products, for backyard plants, the amount of neonicotinoids used is like 40 times greater than anything allowable in agricultural systems," said entomologist James Frazier of Penn State University.**

The Environmental Protection Agency sets its LD50 — the dose at which 50 percent of exposed honeybees will die — for imidacloprid, a common neonicotinoid, at a range of 40 to 400 parts per billion. In a recent study on the effects of imidacloprid, a food dose of just 20 ppb destroyed honeybee colonies. Critics said that bees in the wild wouldn't be exposed to such a high dose.

Even higher doses, however, have been measured in neonicotinoid-treated gardens. According to toxicologist Vera Krischik of the University of Minnesota, using a standard Bayer plant care product produced imidacloprid levels of 501 ppb in milkweed nectar and 682 ppb in the nectar of agastache, a bee foraging favorite. In an official company statement from Bayer Crop Science, the company said that its "neonicotinoid-based insecticides — both for lawn and garden and crop applications — are safe for honey bees and other pollinators when used according to label directions."

Yet Krischik's results came from by-the-label use. "It's not an artificially high dose," said Krischik, who doesn't consider agricultural neonicotinoids to be a threat to bees. "It's a much higher rate in landscapes than in agriculture. It's 4 milligrams per square foot in agriculture, but you can put up to 250 milligrams in a three-gallon pot."

Not everyone may follow instructions, either. "Gardeners have no training in their use, and will often overdose," said bee biologist Dave Goulson of Scotland's University of Stirling, co-author of a recent paper on neonicotinoids and hive health. Goulson said in an e-mail that "gardens and fruit-growing areas are potentially interesting/bad."

A review of neonicotinoids published by the Xerces Society cited several other findings of extremely high non-agricultural imidacloprid levels: up to 850 ppb in rhododendron blossoms measured nearly six months after being treated, and roughly 2,000 ppb in cherry trees tested more than one year after dosing.

According to Krischik, several other studies have found extremely high neonicotinoid levels in eucalyptus, maple and linden trees. "Linden trees are the best bee plants out there," she said. The Xerces Society also calculated that non-commercial apple trees receive neonicotinoid doses an order of magnitude higher than their commercial counterparts.

An open research question is whether neonicotinoids, which spread through a plant's vascular system and remain active for extended periods of time, accumulate from year to year, especially in perennial plants. "Maybe if we treat once, it stays below lethal levels. But if you treat it two or three or four times, we have no idea," said Vaughan.

Vaughan said that neonicotinoids are also commonly used in nurseries. People may purchase plants with the intent of providing habitat for bees, but end up poisoning them.

However, Vaughan stressed that an outright ban on neonicotinoids would be a mistake. They're popular in large part because they're far less toxic to people than earlier pesticides. In certain situations, such as in-home termite control, they may be appropriate. The key, he said, is determining what those situations are.

More than 1.25 million people have petitioned the Environmental Protection Agency to review its stance on neonicotinoids, which were approved on the basis of limited, largely industry-run safety studies. "The EPA didn't ask for the data. They didn't realize systemic insecticides last a long time in pollen and nectar. They didn't give money to researchers to look at this. It was an oversight," said Krischik. "It's not anybody's fault. Things happen. And we need to fix it before we lose the bees."

"I don't think anybody should be using these things in their backyards. I think they don't understand that they're having such a negative impact," said Vaughan, who wants all neonicotinoid-containing consumer pesticides to be labeled. "Maybe a big butterfly with an X over it and a sign that says, 'May Kill Pollinators.'"

LOUISIANA NATURAL HERITAGE PROGRAM (LNHP)

AMITY BASS – Biologist Manager/Community Ecologist (225) 765-2975 bass@wlf.la.gov
JEFF BOUNDY – Herpetologist (225) 765-2815 jboundy@wlf.la.gov
BLAIN CERAME – Contractor, (225) 763-5492 bcerame@wlf.la.gov
CONNIE DUNN – Administrative Assistant (225) 765-2811 cdunn@wlf.la.gov
BEAU GREGORY – Zoologist (225) 765-2820 bgregory@wlf.la.gov
SAIRAH JAVED – Botanist (225) 765-2828, sjaved@wlf.la.gov
JUDY JONES – Natural Areas Registry Coordinator (225) 765-2822 jjones@wlf.la.gov
KERI LANDRY – Section 6 Biologist (225) 765-2809 klandry@wlf.la.gov
NICOLE LORENZ – Data Manager (225) 765-2643 nlorenz@wlf.la.gov
TRACY MANCUSO – Administrative Assistant (225) 765-2812 tmancuso@wlf.la.gov
CAROLYN MICHON – Assistant Data Manager (225) 765-2357 cmichon@wlf.la.gov
CHRIS REID – Botanist (225) 765-2828
MICHAEL SEYMOUR – Nongame Avian Biologist (225) 763-3554 mseymour@wlf.la.gov
RANDY WIGGINS – Biologist (225) 765-2823 rwiggins@wlf.la.gov

Mystery Fungus is the The **OLD MAN OF THE WOODS (*Strobilomyces floccopus*)** mushroom that was seen at Keiffer Tancock Natural Area in May this year. These smoke gray to black mushrooms have caps that can be two to five inches across and are covered with large tufts of wooly scales or warts. White flesh can be seen in cracks between the scales and thick scales that overhang the cap margin which can be seen clearly on the photo on the first page. The flesh of these mushrooms turn colors when cut, bruised or damaged. The tubes are white to grey and will turn coral to red when bruised (shown in photo above). They occur naturally in mixed coniferous and hardwood forest where they can be quite common. Old Man of the Woods mushrooms are edible but do not have a distinctive odor or taste.

References:

Roger Phillips. 2010. Mushrooms and Other Fungi of North America. Firefly Books LTD.

"Wildman" Steve Brill at web site http://www.wildmanstevebrill.com/Mushrooms.Folder/Old%20Man.html

PREVIOUS NEWSLETTER FEBUARY 2012 VOL. 9 NO. 2 OF 4
Introduced Sairah Javed as new LNHP botanist, articles on Coastal Forest Conservation Initiative, Coastal Live Oak Hackberry Forest, Private Landowner's Network, Chinese Tallow, Whooping Cranes special license plate, and Devil's Tongue.