

# BLUESTEM

Newsletter for the  
Louisiana Natural  
Areas Registry

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

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## New Addition to the Registry!

We are delighted to report the addition of Evergreen Farm at Carter Bottom to Louisiana's Natural Areas Registry. This 35-acre Natural Area is located in Bienville Parish and is owned by Beth and Steve Fontenot. The broad uplands of this part of Louisiana were historically covered by shortleaf pine-oak-hickory woodlands. It is not difficult to find shortleaf pine or most of the associated canopy species in northern Louisiana today. However, woodlands supporting the characteristic canopy composition, open structure, and intact herbaceous ground cover are extremely rare. Shortleaf pine-oak-hickory woodlands have been living in the conservation shadow of longleaf pine woodlands and savannas which historically dominated landscapes further south. The dire status of shortleaf pine systems is becoming more widely recognized, and these habitats are now garnering more conservation attention. Evergreen Farm at Carter Bottom supports predominantly shortleaf pine-oak-hickory woodland with forested seeps occurring along a drain traversing part of the property. The addition of Evergreen Farm to the Natural Areas Registry provides much needed representation of this habitat type in the Registry, and we are extremely pleased and excited to have the Fontenots join the family.



**Beth and Steve Fontenot receiving their Natural Areas certificate.**

## Don't Forget to Contribute!

We always welcome member contributions to the newsletter. Any Natural Areas member may submit news, an informative article, or images for potential publication in *Bluestem*. Please email your contributions to Chris Doffitt ([cdoffitt@wlf.la.gov](mailto:cdoffitt@wlf.la.gov)) or save it to a CD and snail mail it to him at 1995 Shreveport Hwy, Pineville, LA, 71360.

## Stewardship Capability Added to the Natural Areas Registry

Natural Areas are rarely "hands-off" sites. Because of interruptions of ecological processes characteristic of today's landscape, simply setting Natural Areas aside and neglecting them is not appropriate for their long term maintenance. Few of the habitats represented on the 121 active Natural Areas are without stewardship needs. For example, many habitats are fire-dependent. Some sites are being impacted by invasive plants and animals. Several Natural Areas have been impacted by activities carried out by trespassers, such as trash dumping, vegetation clearing, and ATV use.

In 2017, LDWF will begin offering direct assistance to Natural Areas owners, through the Natural Areas Registry, to accomplish habitat stewardship actions. This new capability will increase the conservation impact of the Natural Areas Registry.

Owners of Natural Areas who see the need for certain management actions, but lack expertise, time, or finances to accomplish these actions, may complete and submit the enclosed Request for Stewardship Assistance form. This form can also be found online at <http://www.wlf.louisiana.gov/sites/default/files/stewardship.pdf>. The form requires preliminary information, including the site, habitat present, the owner's assessment of needed stewardship, and contact information for owner's preferred contractors. The stewardship request intake period begins on July 1 and ends on Aug. 15, 2017. After the intake period, LNHP biologists will review requests and schedule site visits with all Natural Areas owners who are requesting stewardship assistance. Site visits and face-to-face interactions with owners will give LNHP a better understanding of the management objectives and solidify approaches. Following site visits, decisions will be made by LNHP regarding which stewardship actions to fund and implement. These decisions will consider factors such as the landscape context of the Natural Area, rarity of the habitat(s) proposed to receive management, number of Species of Greatest Conservation Need associated with the habitat, estimated habitat recovery potential following stewardship implementation, and funding available. Other criteria may also be considered.

The details on stewardship implementation are being worked out now. The hope is that this pilot intake will enable LNHP to work through the "red tape" and establish an efficient model for the future. Should anyone have questions about the stewardship process, please contact Chris Doffitt or Chris Reid directly (contact information is given on page 7).



# KEIFFER-TANCOCK PRAIRIES NATURAL AREA

BY David Moore, *Kisatchie National Forest*

As recently as the late 1800s, Louisiana was home to millions of acres of tallgrass prairie. The largest of these (about 2.5 million acres) was the coastal prairie that stretched from New Iberia to Ville Platte along the west bank of the Atchafalaya Swamp to the Sabine River west of Lake Charles. However, less than one percent of that wondrous sea of grass remains today.

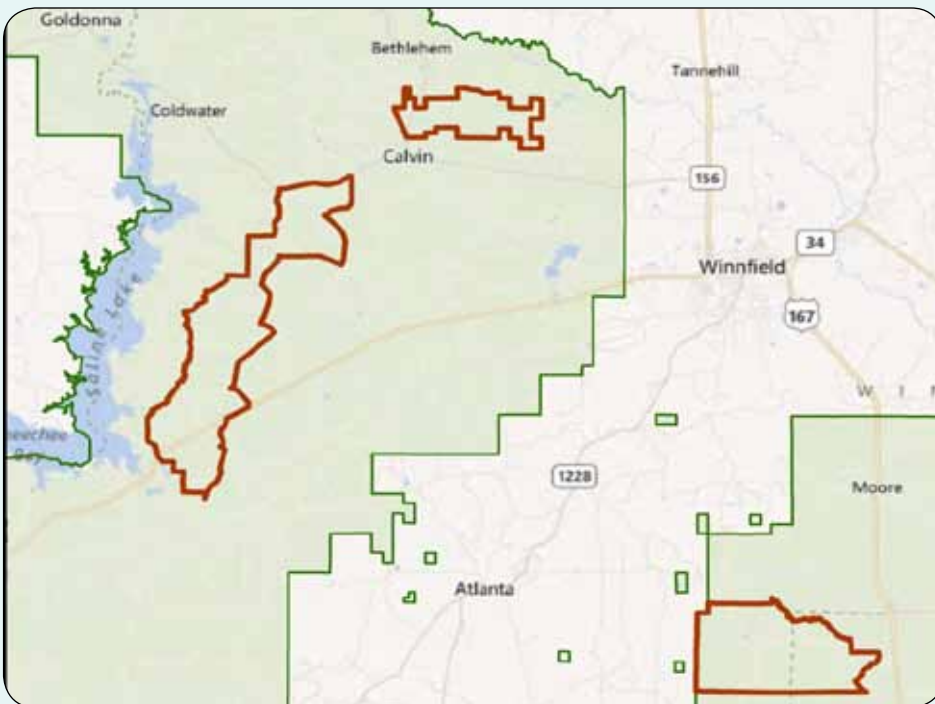
Other large Louisiana prairies included the Avoyelles Prairie near Marksville, the Anacoco Prairie north of Leesville, the Tullos Prairie at Tullos, the Copenhagen Prairie southeast of Columbia, and the Mer Rouge Prairie near Bastrop.

Also prominent in the pre-European landscape, and still one of the most extensive prairies in Louisiana, are the Keiffer and Tancock (Packton) prairies in Central and Southern Winn Parish.

The Keiffer-Tancock prairies are found on calcareous soils derived from ancient sea beds that formed during the Eocene Epoch, a span of time that lasted between 37 and 58 million years ago. Evidence of this can be seen today in some prairies where fossilized coral, sea shells, lime nodules, and even shark's teeth occur in washes and eroded gullies.

The soils on these prairies have a high pH, and support many species of plants not typically found in the acid, sandy soils that are typical of Central Louisiana. Because of these unique soil properties, as well as limited distribution, these prairies provide habitat for over a dozen species of rare plants, including Great Plains ladies' tresses (*Spiranthes magnicamporum*) and slender heliotrope

## LOCATION OF THE KEIFFER-TANCOCK PRAIRIES NATURAL AREA



Zebra swallowtail on butterfly weed (*Asclepias tuberosa*).



**ABOVE:** (Right) Prairie pleatleaf (*Nemastylis geminiflora*). (Left) Ground Plum (*Astragalus crassicaerpus var. trichocalyx*) - one of the few locations in Louisiana is on the Keiffer Prairies.

**LEFT:** Eared Goldenrod (*Solidago auriculata*) a characteristic plant of calcareous forests.

(*Heliotropium tenellum*). Uncommon, but not rare, plants include prairie pleatleaf (*Nemastylis geminiflora*), compass plant (*Silphium laciniatum*), and purple prairie clover (*Dalea purpurea*). Many different kinds of pollinators are also found in these prairies.

Lying downslope and between the prairies are calcareous forests. Calcareous forests have their own unique flora and provide habitat for uncommon plants such as eared-goldenrod (*Solidago auriculata*) and nutmeg hickory (*Carya myristiciformis*).



**LEFT:** A prairie being lost to Eastern red cedar encroachment. Fire will not kill these cedars. They must be cut down and dragged away, or girdled and left to die on the stump. Once sunlight is able to reach the ground, the prairie grasses and forbs will re-colonize the site (depending on the seedbank viability). **RIGHT:** A typical prairie with wildflowers in June. The orange flower is butterfly weed (*Asclepias tuberosa*) and the yellow flower is Lanceleaf tickseed (*Coreopsis lanceolata*).



**DID YOU KNOW?**

Twenty percent of the rare plant species on the Kisatchie National Forest occur on calcareous prairies - and most of these are known only from the Winn Ranger District.

According to local residents, some prairies that were utilized as agriculture land or pasture land were not frequently plowed, because the soils would not support crops typical of the region for extended periods.

A southern branch of the El Camino Real passed through the prairies on the southern end of the Winn Ranger District. It was on these prairies that settlers heading west camped for the night and grazed their livestock. Some old homesteads were even called “blackland places” in reference to the dark-colored soil common on some prairies.

Throughout time, annual wildfires and grazers such as a bison and elk helped control encroachment of woody vegetation, thus preserving these prairies. In the absence of those wildfires and grazers, trees such as Eastern red cedar and sweetgum will quickly invade a prairie and in short time eradicate the herbaceous plants (including many rare and unique ones) from the area.

As with the associated calcareous forests, many calcareous prairies have been lost to land use changes. Conversion to agriculture (some prairies have been planted to alfalfa, cotton, and sweet potatoes) and changes resulting mainly from fire suppression, represent the greatest threats.

About 160 acres remain in good condition, and today they can be seen west and northwest of Winnfield on the Winn Ranger District of the Kisatchie National Forest.



# Wake Robins (*Trillium*) of Louisiana

BY Chris Doffitt, LDWF Field Botanist/Natural Areas Coordinator

The genus *Trillium* is native to both Asia and North America and is yet another example of one of the many plant and animal species that exhibit an East Asia/Eastern North America disjunct distribution. Other examples of plants and animals that exhibit this distribution include, Eastern red bud, tulip poplar, lady slipper orchids, and numerous genera of frogs, lizards, and salamanders. This distribution pattern has spurred the imagination of scientist for centuries resulting in a plethora of research papers on this topic (Qian & Ricklefs 2004; Xiang, Soltis & Soltis 1998; Li 1952; Macey et al. 2006). The Southern Appalachian region is the center of diversity for wake robins in Eastern North America (Farmer 2006; Freeman 1975).

Since I began studying botany I have been fascinated by these plants. I think initially my fascination was driven by their preference for rich hardwood and mixed pine hardwood forests, which is one of my favorite forest types. I also associate them with the beginning of spring and the oncoming burst of flowers and greenery that awaits. However, as I began to read more about them and their biology my interest only increased.

One of the more interesting aspects of *Trillium* biology is the mode of seed dispersal. Trilliums are reported to be my-mecochorus, meaning their seeds are dispersed by ants. There have been numerous studies of this aspect of *Trillium* biology dating back to the late 1800s and perhaps even earlier (Robertson 1897; Kalisz et al. 1999; Howe & Smallwood 1982). Plant

## DISTRIBUTION OF TRILLIUM SPECIES IN LOUISIANA

Map 1: *Trillium foetidissimum*



Map 2: *Trillium ludovicianum*



Map 3: *Trillium texanum*



Map 4: *Trillium recurvatum*



Map 5: *Trillium gracile*





species with this method of seed dispersal typically have a structure attached to the seed called an elaiosome. The seed and the elaiosome collectively are referred to as a diaspore. Elaiosomes are rich in lipids and amino acids and are therefore extremely attractive to ants as a food source. Ants carry the diaspore back to the mound, remove the elaiosome and the seeds are then either ejected from the mound or discarded in subterranean middens.

In Louisiana, there are currently five species of *Trillium* recognized including stinking trillium (*Trillium foetidissimum*), slender trillium (*Trillium gracile*), Louisiana wakerobin (*Trillium ludovicianum*), bloody butcher (*Trillium recurvatum*), and Texas trillium (*Trillium texanum*). The majority of the species are sessile flowered and in general have morphological differences that are associated with definitive distribution patterns. The ranges of each are somewhat geographically restricted but they do overlap in areas (see maps 1-5).

As mentioned above, four of the five species of *Trillium* that occur in Louisiana are described as being sessile flowered, meaning the flower does not have a stalk and sits directly on the leaves of the plant. All of the sessile flowered species in Louisiana have maroon petals. Texas trillium is the only member of this genus that has pedicilate flowers (flowers with a stalk below the flower). Texas trillium has an additional distinction when compared to other Trilliums in the state in that it is the only species that has white petals. Below is a list of each of the species that occur in the state with included common names and notes on habitat and distribution.

#### KEY TO IDENTIFYING THE TRILLIUM OF LOUISIANA

<b>1</b>	a. Plant with stalked (pedicillate) white flowers, pedicels 2-4 cm long.	<i>T. texanum</i>
	b. Plant with sessile flowers (not stalked/pedicillate).	Go to step 2
<b>2</b>	a. Flowers with reflexed sepals.	<i>T. recurvatum</i>
	b. Flowers with sepals that are not reflexed.	Go to step 3
<b>3</b>	a. Plants from east of the Mississippi River, restricted to counties of southwestern Mississippi and the Florida Parishes in Louisiana. Flowers smelling strongly of a foul or "fetid" odor.	<i>T. foetidissimum</i>
	b. Plants primarily occurring west of the Mississippi River	Go to step 4
<b>4</b>	a. Plants primarily of west and west-central and Louisiana. Ovary 3 angled. Anther dehiscence introse (i.e. anthers open towards the inside of the flower facing the stigma in the center). Plants typically flowering from mid to late April.	<i>T. gracile</i>
	b. Plants primarily of north and central Louisiana. Ovary 6 angled. Anther dehiscence lateral (i.e anthers open on their sides). Plants typically flowering from early March to early April.	<i>T. ludovicianum</i>

\*Key adapted from Freeman 1975 and Case & Case 1977.



#### *Trillium foetidissimum* Freeman

**Common names:** Fetid Trillium, Stinking Trillium & Mississippi River Wakerobin

Fetid trillium is only known to occur east of the Mississippi River in the Florida Parishes in Louisiana and counties in extreme southwest Mississippi. This species is locally common within its range, but has a very restricted range on a global scale. It is typically found along river bluffs dominated by beech trees, ravines, floodplains and low ground in rich wooded areas. Soils are usually silts, sands or sandy alluvium. This species is documented from the following parishes in Louisiana: East Baton Rouge, East Feliciana, Livingston, St. Helena, St. Tammany, Tangipahoa, Washington, and West Feliciana (Map 1) (Thomas & Allen 1998; Charles Allen Pers. Comm.)



#### *Trillium ludovicianum* Harbison

**Common name:** Louisiana Wakerobin

In past treatments Louisiana wakerobin has often been lumped with Spotted wakerobin (*Trillium maculatum*) providing yet another example of how many of the sessile flowered Trilliums are superficially very similar. This species occurs primarily in north and north central Louisiana, but it is also reported to occur in Texas and Mississippi. This species prefers mostly low flatwoods, floodplains along streams, and occasionally steep slopes adjacent to streams. Records from the following parishes are reported for Louisiana: Allen, Caddo, Caldwell, Catahoula, De Soto, Evangeline, Franklin, Grant, LaSalle, Natchitoches, Ouachita, Rapides, Sabine, Vernon, Webster, and Winn (Map 2) (Thomas & Allen 1998; Charles Allen Pers. Comm.).



## *Trillium texanum* Buckley

**Common name:** Texas Trillium

Texas Trillium is our rarest species of Trillium in the state and occurs only in Caddo Parish in Louisiana and is tracked by the Louisiana Natural Heritage Program. This species is also currently being petitioned for federal listing as threatened.

Texas Trillium is the only species in the state that has stalked (pedicilate) flowers. In Louisiana this species occurs in Caddo Parish in the extreme northwest corner of the state where it grows in forested wetlands called bay-galls. Baygalls are typically areas with acidic soils with peat moss (*Sphagnum* sp.), netted chain fern, royal fern and cinnamon fern in the understory. The mid story of the forest type is frequently dominated by wax myrtle, red bay and various holly species, and the overstory frequently has sweet bay or swamp black gum in the canopy. (Map 3) (Thomas & Allen 1998; Allen Pers. Comm.).



## *Trillium recurvatum* Beck

**Common name:** Bloody Butcher

Other than *Trillium texanum*, this is likely the easiest species of Trillium to identify. It has petiolate leaves, clawed flower petals, and reflexed sepals. This species is wide spread in portions of its range further north in the Mississippi River Basin; however, here in Louisiana we are approaching the southern-most extent of its range. As a result this species is rare and is tracked by the Louisiana Natural Heritage Program. This species typically prefers rich moist woods and clayey floodplains.

Records of this species in Louisiana are reported from the following parishes: Bossier, Caddo, Caldwell, Claiborne, Jackson, Lincoln, Union, and Winn (Map 4) (Thomas & Allen 1998; Charles Allen Pers. Comm.).

## *Trillium gracile* Freeman

**Common names:** Slender Trillium & Sabine River Wakerobin.

Slender Trillium occurs in west to west central Louisiana. This species differs from Louisiana Wakerobin mostly in floral detail and blooming season. Typically this species does not flower until mid to late April and is reported to still be in bud when *T. ludovicianum* is in full flower. Slender Trillium is a West Gulf Coastal Plain endemic occurring only in East Texas and West Central Louisiana. This species is documented from the following parishes in Louisiana: Calcasieu, Catahoula, De Soto, Evangeline, Grant, Natchitoches, Rapides, Red River, Sabine, and Vernon (Map 5) (Thomas & Allen 1998; Charles Allen Pers. Comm.).

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# LOUISIANA NATURAL HERITAGE PROGRAM

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## MYSTERY ANIMAL

This issue's mystery animal is native to much of the central United States ranging from Arizona north to South Dakota and east to Louisiana. It has not been documented in Louisiana since 1971. This terrestrial turtle species is found in prairies and open grasslands, feeding mainly on invertebrates. It has a domed shell that is flat on top, allowing it to more readily bury itself at the base of plants or ground litter when seeking shelter. The hind-feet have 4 toes and the bottom portion of the shell is hinged giving this turtle more protection from would-be predators.

### WHAT IS IT?

**\*The mystery animal from last issue was the long-tail weasel (*Mustela frenata*).**

Email your answers to Chris Doffitt ([cdoffitt@wlf.la.gov](mailto:cdoffitt@wlf.la.gov))

## MYSTERY PLANT

This mystery plant in this issue is native to Georgia, Louisiana, Mississippi and Texas. However, it has not been seen in Mississippi in many years and may now be extinct in that state. This species is a herbaceous perennial with alternate leaves, that flowers from late March to early May. It prefers moist acidic soils and is often in close proximity to creeks, streams, and bayous. The undersides of the leaves have velvety white pubescence. If a leaf is broken the plant begins to exude a milky sap which contains a variety of compounds that make it uninviting to herbivores.

### WHAT IS IT?

**\*The mystery plant from last issue was the yellow butterwort (*Pinguicula lutea*).**

