

The Carnivorous Plants of Longleaf Ridge

Sarracenia: the Pitcher Plants

Sarracenia alata

Pale Pitcher Plant, Yellow Pitcher Plant, Yellow Trumpets, Pale Trumpet, Trumpet Pitcher Plant, Flycatcher

Sarracenia alata, the largest carnivorous plant in East Texas, is an obligate wetland species, meaning it almost always occurs in wetlands. It prefers hillside seepage bogs in longleaf pine savannas. These hillside seepage bogs have acid soil, normally sand over clay, and are usually poor in nutrients, notably lacking nitrogen. The leaves of this carnivore are shaped like a pitcher or trumpet with a hood so that they will collect water, but not fill completely up. They contain enzymes to digest trapped insects, which supply the nitrogen lacking in the soil. This gives carnivorous plants a competitive edge over the non-carnivorous plants in these nutrient poor soils.

Insects may be attracted to nectar droplets that form from the many glands on the inside of the leaf's hood, which is slick due to waxes, causing the unsuspecting forager to lose footing and fall into the pitcher. Another attraction is the "V" of the pitcher lip that is sometimes brightly colored, mimicking a flower, and often drenched with a heavy amount of nectar secretion. The unsuspecting insect is lured to explore the tube, which has downward pointing hairs that are easy to descend but nearly impossible to climb back up on. Down past the hairs, the walls are slick, and covered with sunken glands that exude digestive fluids instead of nectar. At this point, the tube is narrow enough that wings cannot be extended for escape from the pool laced with digestive enzymes at the bottom of the pitcher.

While the deadly trumpet shaped leaves mimic flowers to lure in prey, the actual flowers hang at the tip of a leafless stem, facing downward. They pose no threat to insects and are pollinated the same as any other flower.

One clever insect, appropriately dubbed the Pitcher Plant Mining Moth, *Exyra semicrocea*, has specialized legs that can cling to the surfaces of *Sarracenia* pitchers without falling. These moths spend nearly their entire life cycle in the pitchers of *Sarracenia*. They emerge at night to move from plant to plant and find mates within pitchers, where they lay their eggs. The larvae, pupa and adult feed on the tissue inside.

The habitat of *Sarracenia alata* is split into two geographically separate areas: one ranging from eastern Louisiana across southern Mississippi and into Alabama, and another ranging from east Texas into western Louisiana. Its conservation status is under review in Texas, Louisiana, and Mississippi, and it is listed as Apparently Secure in Alabama.

Carnivorous plant habitats are usually very delicate. Over-visitation can damage the moss mats that hold the soil together and prevent erosion. In East Texas, they are particularly susceptible to feral hogs who will root up an entire area. Poaching is a significant threat, as carnivorous plants are popular in the nursery industry. About 95% of the wetland habitats in the USA have already been lost to development for and influences from the increasing species of *Homo sapiens*.

This fragile ecosystem is also critical to the *Sarracenia Spiketail*, *Cordulegaster sarracenia*, a dragonfly which breeds exclusively in pitcher plant bogs. It is arguably the rarest dragonfly in North America, and is a likely candidate for federal listing as endangered. It was discovered in 2010 and described as a new species to science in 2011 based on photographs taken at Boykin Springs. It is currently known only from five counties in East Texas, including Jasper and Newton, and two Parishes in Louisiana. It's flight season is only from mid-March through April. The nymphs live in the very shallow seeps of pitcher plant bogs, where they burrow just beneath the muck and decaying organic matter.

Drosera: the Sundews

D. brevifolia, *D. capillaris* and *D. intermedia*

Sundews are sticky flypaper plants. Their leaves are covered with long tentacles tipped with glands which exude not only an attractive nectar, but also adhesive compounds and digestive enzymes. When insects are lured to land on the leaves, they stick and are trapped until they are dissolved and absorbed through glands.

D. brevifolia leaves are more wedge-shaped than *capillaris*, which tends to have more of an abrupt saucer shape at the end. If you can't tell by the shape, you can tell by the flower scape, which is densely covered with glandular hairs. *D. intermedia*, Spoon-leaf Sundew, is, according to BONAP, native to Jasper, Newton and Tyler Counties, but I have yet to see it here.

D. brevifolia and *D. capillaris* are fairly common all along the Gulf Coast, but are listed as Vulnerable, Imperiled or Critically Imperiled in States just north of the coast, where it previously was secure. *D. intermedia* is secure in large parts of Canada, and fairly common along the Gulf Coast, although it is listed as Imperiled in Louisiana, and Critically Imperiled or Vulnerable in several other states.

Utricularia: the Bladderworts

U. cornuta, *U. gibba*, *U. juncea*, *U. radiata*, *U. subulata*

The bladderworts are prized among carnivorous plant enthusiasts for their attractive flowers, which pose no threat to visiting insects. The fastest predator in the plant kingdom, bladderworts feature underwater bladders that suck in their prey in less than a millisecond. The bladder has a trap door. Small organisms trigger a trap door on the bladder to open, causing water to rush in, carrying the animals with it. The trap door seals shut and digestive enzymes are released. These species of bladderworts are all fairly common along the Gulf Coast, but they are all listed as Vulnerable, Imperiled or Critically Imperiled in many states, and a couple of species are listed as Presumed Extirpated in some places.

Pinguicula: the Butterworts

Pinguicula pumila

The Latin name *Pinguicula* means greasy and little, which is a reference to the somewhat slimy leaves that are sticky and glandular to trap their prey. Forming a basal rosette, often at ground level, the leaves pose no threat to pollinators that visit the attractive flowers held far above on a long stalk. In its preferred habitat, this flower is fairly common in some areas of the Gulf Coast, but it is listed as Critically Imperiled in OK, MS, and AL, and Imperiled in NC.