



U.S. Fish & Wildlife Service

Arlington, Texas Ecological Services Field Office

Texas screwstem

Texas screwstem

Bartonia texana

Description

Texas screwstem is a slender, erect annual plant that measures 6 to 14 inches tall. Leaves are reduced to scales and alternate, but can be positioned opposite of each other at the top of the stem. Flowers are four-lobed and arranged in clusters. The sepals are slender, awl-shaped lobes that are fused at the base. The petals are whitish, egg-shaped tapering gradually to a point or ending in a small abrupt point. The fruit is a capsule that splits at its apex to release seeds.



Figure 1: Texas screwstem (Erik Keith, Botanist)

Distribution

Texas screwstem has been recorded in nine East Texas counties (Angelina, Hardin, Jasper, Nacogdoches, Newton, Polk, San Augustine, San Jacinto, Tyler) at 21 sites. Five sites occur on US Forest Service lands, four sites occur on

National Park Service lands in the Big Thicket National Preserve, and twelve sites occur on private property including one owned by The Nature Conservancy. Plants also have been located in three parishes (Caddo, Jackson, and Ouachita) in Louisiana.

Life History

In Texas, flowering has been observed in mid-September to early November and fruiting has been seen from early October to mid-November. In Louisiana, plants have been collected in flower starting in August. To date, population trends, demographics, habitat requirements, and reproductive information are lacking and additional research is needed to better inform conservation and recovery of this species.

Habitat

The Texas screwstem is a very rare species restricted to baygall communities in sandy soils of the West Gulf Coastal Plains in Texas and Louisiana. Baygall communities in eastern Texas are commonly associated with the following vegetation: Swamp Blackgum (*Nyssa biflora*), Sweetbay (*Magnolia virginiana*), Diamondleaf Oak (*Quercus laurifolia*), Titi (*Cyrilla racemiflora*), Big Gallberry (*Ilex coriacea*), and Wild Azalea (*Rhododendron oblongifolium*). The Texas screwstem typically grows in wet, shady forests on mounds of sphagnum moss located on gently sloping to flat sites with perennial springs, seepages, or creeks. Erosion in these wet areas creates elevated clumps (or hummocks) of tree bases, roots, and logs, which are associated with mosses and liverworts, and soils with high organic matter. Plants are most commonly found on loamy sand and loamy very fine sand soil types.

Conservation

Although not listed as endangered or threatened by the State of Texas, Texas screwstem is ranked as an imperiled species (G2) by NatureServe and is ranked as a Sensitive Species by the United States Forest Service. The species is also listed on the Texas Parks and Wildlife Department's 2010 List of the Rare Plants of Texas and as a Species of Greatest Conservation Need in the Texas Parks and Wildlife Department State Conservation Action Plan.

Modification and/or loss of habitat are likely threats for this species. It has been suggested that poor streamside management practices like clear-cutting, planting pines across streams, and converting headwater baygalls to ponds

or lakes can alter Texas screwstem habitat to the point where plants can no longer grow. Survey efforts and other conservation activities are ongoing.

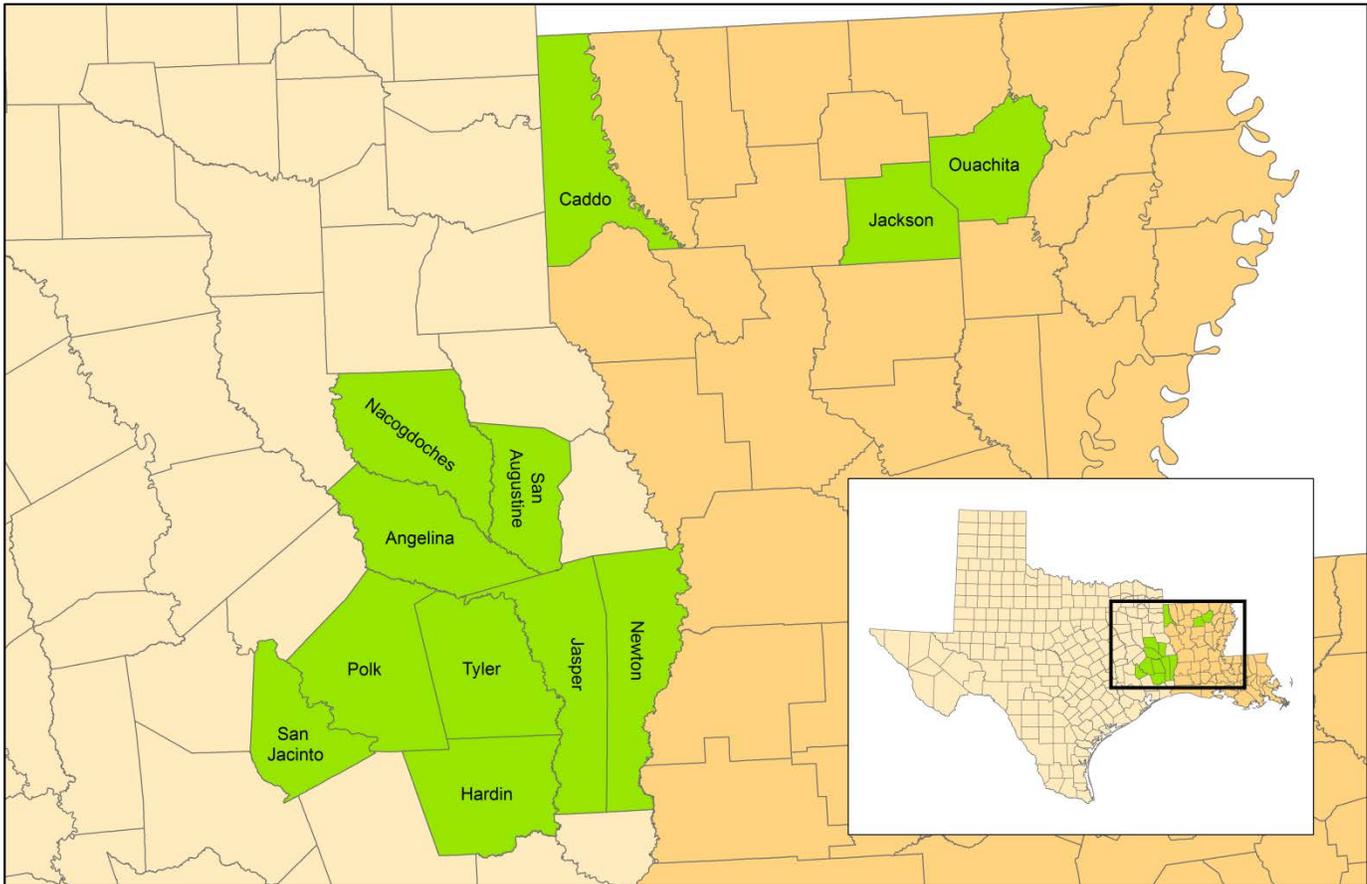


Figure 2: Green areas represent Texas Counties and Louisiana Parishes where Texas screwstem have been reported. Counties include Caddo, Jackson, and Ouachita Parishes in Louisiana and Angelina, Hardin, Jasper, Nacogdoches, Newton, Polk, San Augustine, San Jacinto, and Tyler Counties in Texas.

References

Strong, A., and Williamson, P. 2015. Pages 53-64 in “Data synthesis and species assessments to aid in determining future candidate or listed status for plants from the USFWS lawsuit settlements.” Section 6 Final Report: E-146

Poole, J.M., Carr, W.R., Price, D.M., and Singhurst, J.R. 2007. Rare Plants of Texas, A field guide. Texas A&M University Press, College Station, Texas.

For Additional Information Contact:

U.S. Fish and Wildlife Service
Ecological Services Field Office
2005 NE Green Oaks Boulevard, Suite 140
Arlington, Texas 76006

August 2017