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Common Name: WHORLED SUNFLOWER

Scientific Name: *Helianthus verticillatus* Small

Other Commonly Used Names:

Previously Used Scientific Names: *Helianthus X verticillatus* E.E. Watson

Family: Asteraceae/Compositae (aster)

Rarity Ranks: G1/S1

State Legal Status: Endangered

Federal Legal Status: Endangered

Federal Wetland Status: OBL

Description: Perennial **herb**, 6½ - 10 feet (200 - 300 cm) tall, with leafy, waxy **stems** that grow in clonal clumps of up to 6 stems, separated from other clumps by several feet. **Leaves** 3 - 7 inches (7.5 - 18.5 cm) long, ¼ - 1¼ inch (0.7 - 3 cm) wide, linear to lance-shaped, with short or no leaf stalks; leaves alternate near the top of the stem, opposite near the base, and in whorls of 3 - 4 (sometimes 5 - 6) leaves at mid-stem; **leaf margins** entire and inrolled. **Flower heads** in a large, branched cluster at the top of the stem; each **head** with 13 yellow ray flowers, a central disk of yellow flowers, and a whorl of narrow, spreading, green bracts beneath. **Fruit** less than ¼ inch long, dry and seed-like.

Similar Species: Whorled sunflower is the only sunflower in northwest Georgia with leafy stems, whorled leaves, and yellow disk flowers. Narrow-leaved sunflower (*Helianthus angustifolius*) has very narrow, opposite and alternate, roughly hairy leaves. Woodland sunflower (*H. divaricatus*) has opposite leaves with rounded leaf bases. Small-headed sunflower (*H. microcephalus*) has smaller flower heads and opposite, toothed leaves.

Related Rare Species: See Smith's sunflower (*Helianthus smithii*) on this web site.

Habitat: Wet, sunny prairie openings in floodplains and wet depressions in the Coosa Valley; with prairie grasses such as little bluestem and big bluestem.

Life History: Whorled sunflower was first described in 1898, based on plants collected in 1892 at a single site in Tennessee. The species was not seen again until 1994, when it was collected in Georgia's Coosa Prairies. During much of the time between its description and re-discovery, whorled sunflower was thought to be a hybrid even though there was no evidence to support that speculation. Once the new populations were discovered and research carried out, it became clear that whorled sunflower is a distinct species. Whorled sunflower is unusual, as rare plants go, in that it has relatively high levels of genetic diversity at both the population and species levels, suggesting that it may once have been more common. Whorled sunflower is probably pollinated primarily by bees and butterflies, as are other members of this genus. Pollinators are attracted to the nectar produced inside the base of the disk flowers. Sunflowers, like most members of the aster family, require cross-pollination to successfully produce seed.

Survey Recommendations: Surveys are best conducted during flowering (late August–October).

Range: Georgia, northeast Alabama, and southwest Tennessee. Reports of plants in Louisiana are in error.

Threats: Conversion of habitat to pine plantations, pasture, farmland, and development; ditching and draining of wetland habitat; logging and other mechanical clearing; fire suppression.

Georgia Conservation Status: Six populations are known in Georgia's Coosa Valley prairies; all are protected by a conservation agreement but require active fire management and monitoring.

Conservation and Management Recommendations: Apply prescribed fire every 2 - 3 years; avoid logging, clearing, and other mechanical disturbances; avoid hydrologic alterations such as ditching, draining, and filling. Avoid herbicide use.

Selected References:

Allison, J.R. 1995. Prairies...in Georgia! *Tipularia* 10:2-8.

Allison, J.R. 1997. Rediscovery of the whorled sunflower, *Helianthus verticillatus* Small. ASB Bulletin 44: 143-144.

Chafin, L.G. 2007. Field guide to the rare plants of Georgia. State Botanical Garden of Georgia and University of Georgia Press, Athens.

Ellis, J.R., C.H. Pashley, J.M. Burke, and D. E. McCauley. 2006. High genetic diversity in a rare and endangered sunflower as compared to a common congener. *Molecular Ecology* 15(9): 2345–2355.

FNA. 2006. *Flora of North America*, Vol. 21, Magnoliophyta: Asteridae, Part 8: Asteraceae, Part 3. Oxford University Press, New York.

Matthews, J.F., J.R. Allison, R.T. Ware, Sr., and C. Nordman. 2002. *Helianthus verticillatus* Small (Asteraceae) rediscovered and redescribed. *Castanea* 67(1): 13-24.

NatureServe. 2007. NatureServe Explorer. Arlington, Virginia.
<http://www.natureserve.org/explorer>

Ranger, S. 1995. The strange sunflower from the Floyd prairies. *Georgia Botanical Society Newsletter* 68(1):1.

Small, J.K. 1898b. Studies in the botany of the southeastern United States, XIV. *Bulletin of the Torrey Botanical Club* 25: 465-482.

Weakley, A.S. 2007. *Flora of the Carolinas, Virginia, Georgia, and surrounding areas*. University of North Carolina Herbarium, Chapel Hill. <http://www.herbarium.unc.edu/flora.htm>

Author of species account: Linda G. Chafin

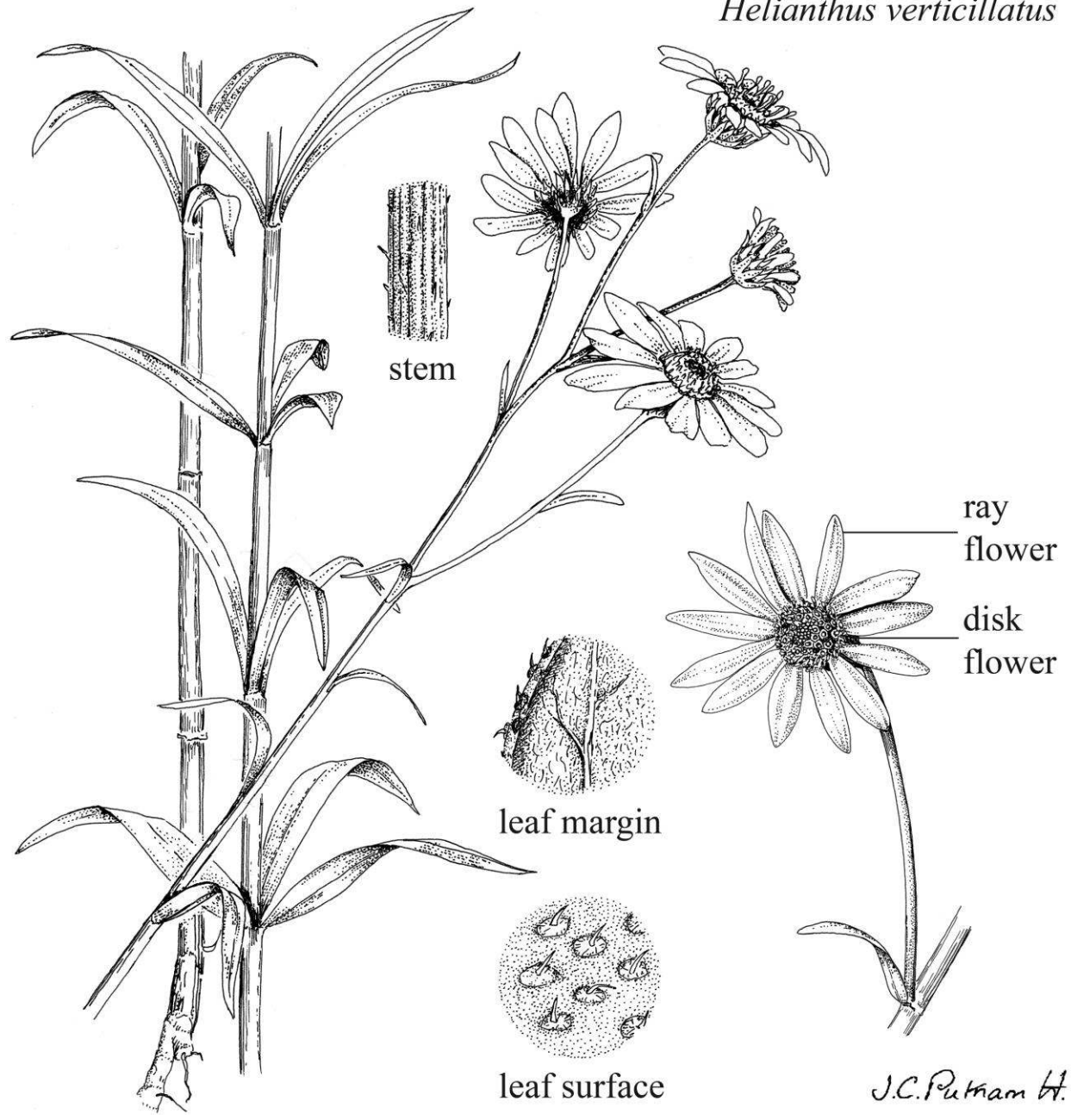
Date Compiled or Updated:

L. Chafin, Mar. 2007: original account

K. Owers, Feb. 2010: added pictures

G. Krakow, Apr. 2016: updated federal status and deleted WFWS candidate reference

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