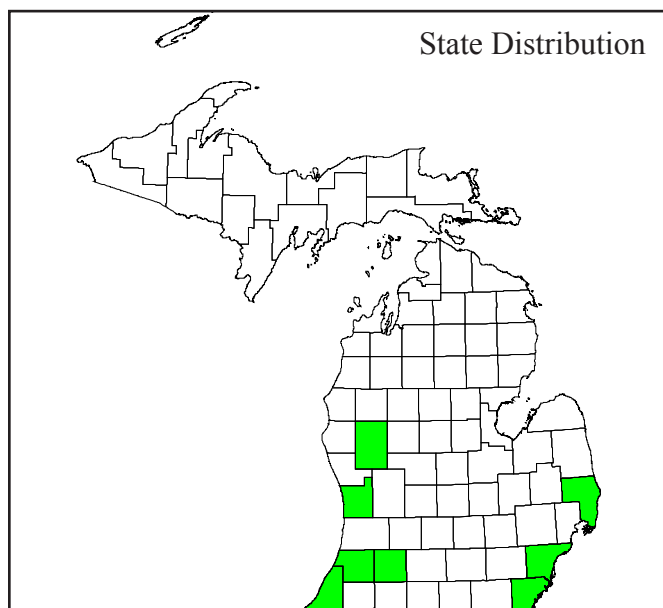


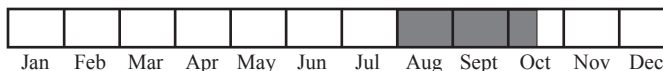
Hypericum gentianoides (L.) B.S.P. gentian-leaved St. John's-wort



Photo by Susan R. Crispin



Best Survey Period



Status: State special concern

Global and state rank: G5/S3

Other common names: orange-grass, orange-grass St. John's-wort

Family: Clusiaceae (St. John's-wort family); also known as the Guttiferae, and sometimes placed in the separate family Hypericaceae, similarly long known as the St. John's-wort family.

Synonym: *Sarothra gentianoides* L.

Taxonomy: Long treated as a separate family, the Hypericaceae is now combined with the Clusiaceae (Guttiferae) by most recent treatments

Range: Primarily occurring in eastern North America, *H. gentianoides* is distributed from Maine to southern Ontario and Minnesota in the north and from Florida to Oklahoma and Texas in the southern end portion of its range. It is considered rare in Iowa, Oklahoma, Ontario, and Vermont (NatureServe 2006).

State distribution: Gentian-leaved St. John's-wort is restricted to southern Lower Michigan, where it is known from approximately 20 localities, ranging from St. Clair County to Berrien County, with more than half

of the occurrences distributed in Wayne, Monroe, Van Buren, and St. Clair counties.

Recognition: *H. gentianoides* is an annual species ranging from 1-2 dm in height or more, with an erect, central stem that terminates in a number of **slender, strongly ascending branches**. When crushed, the plant produces a **faint, citrus-like fragrance** (which has also been described as a peach-like odor), as indicated by some of the common names for this species. The **tiny, linear leaves, which are opposite and appressed (oriented to be parallel with the stem), are highly reduced, scale-like, and less than 3 mm long**. The yellow, five-parted flowers, which are **usually solitary in the upper leaf axils, are less than 3 mm broad, have 3 styles, and bear fewer than 100 stamens**. The "stick-like" appearance of this St. John's-wort, including the minute, linear leaves, makes it unlikely that this will be confused with another species. When keying St. John's-wort species, it is important to determine the correct number of styles (i.e. 3 or 5), which sometimes require teasing apart to adequately view and count.

Best survey time/phenology: Most observations of this species have been made in August and September, and occasionally into early October, and thus the optimal survey period would be from August through about mid-October.



FQI Coefficient and Wetland Category: 6, FACU

Habitat: *H. gentianoides* is a plant of marshy to often sandy ground, particularly within and near areas that experience seasonal water table fluctuations. This includes such communities as coastal plain marshes, lakeplain wet prairie habitats (primarily remnant landscapes), intermittent wetlands, and especially sandy borrow pits that emulate the hydrology of the aforementioned communities and provide ephemeral colonization sites. This species can typically be found on sandy rises, such as low sand dune ridges, and within dune swales (both coastal and inland dunes), and owing to artificial disturbance, also within road and railroad rights-of-way and along and within sandy two-tracks. Elsewhere within its broad range, *H. gentianoides* occurs in a diverse range of habitats, including granite outcrops in the Georgia Piedmont region (Burbanck and Phillips 1983) and sandstone glades in Arkansas (Jeffries 1985).

Most Michigan records provide little substantive ecological data. In a glacial lakeplain region in St. Clair County, *H. gentianoides* occurs in a remnant lakeplain prairie area, especially in and near the sandy ground of former borrow pits, where it is found in seasonally moist soil with such species as the state threatened *Aristida longespica* (three-awn grass), *A. necopina* (three-awn grass), *Solidago nemoralis* (old field goldenrod), *Polygala sanguinea* (field milkwort), *Aster ericoides* (heath aster), *Baptisia tinctoria* (wild indigo), *Lespedeza capitata* (bush clover), *Lechea* spp. (pinweeds), *Euthamia remota* (flat-topped goldenrod), *Liatris spicata* (marsh blazing star), *Rhynchospora capitellata* (beak-rush), *Ludwigia alternifolia* (seedbox), and several other wet prairie and coastal plain marsh species.

Biology: Gentian-leaved St. John's-wort is an annual species and likely persists in seed banks during years when conditions are unsuitable for germination, similar to many of its associated species. As an early successional species (Levin 1966), *H. gentianoides* depends on disturbance to germinate, colonize, and persist. Given the types of natural communities it is known to occur in, water table fluctuation (yearly and seasonally) and the occurrence of wildfire are important disturbance factors in maintaining habitats, whereas the existence of this species in many current sites is due to the presence of artificial disturbance that creates

temporary refugia.

Conservation/management: Few, if any populations occur within sites that are managed to promote the long-term perpetuation of this species. One site occurs within a state park where it can be protected. However, more detailed and comprehensive field surveys are needed in order to better establish the status of known occurrences as well as to identify new sites, such that priority areas for conservation can be highlighted. Experimental restoration management and monitoring would be extremely useful to help determine the regimes required by this species for emergence and the perpetuation of colonies.

Comments: Einsmann et al. (1999) studied the nutrient requirements of *H. gentianoides* via a greenhouse experiment in a comparison with associated species representing contrasting life forms.

Research needs: Based on the available literature, the majority of research conducted on this species has been within the context of ecological studies of succession. Basic natural history investigations on virtually any aspect of life history, breeding system, genetic diversity, and the like are thus warranted, in addition to experimental management studies.

Related abstracts: Coastal plain marsh, lakeplain wet prairie, Blanding's turtle, Eastern massasauga, king rail, marsh wren, Northern harrier, least bittern, spotted turtle, appressed clubmoss, black-fruited spike-rush, few-flowered nut-rush, Hall's bulrush, meadow beauty, mermaid-weed, panicked screw-stem, short-fruited rush.

Selected references:

- Burbanck, M.P. and D.L. Phillips. 1983. Evidence of plant succession on granite outcrops of the Georgia Piedmont. *Amer. Midl. Nat.* 109: 94-104.
- Einsmann, J.C., R.H. Jones, M.Pu, and R.J. Mitchell. 1999. Nutrient foraging traits in 10 co-occurring plant species of contrasting life forms. *J. Ecol.* 87: 609-619.
- Jeffries, D.L. 1985. Analysis of the vegetation and soils of glades on calico rock Sandstone in Northern Arkansas. *Bull. Torrey Bot. Club.* 112: 70-73.



Levin, M.H. 1966. Early stages of secondary succession on the Coastal Plain, New Jersey. *Amer. Mid. Nat.* 75: 101-131.

NatureServe. 2006. NatureServe Explorer: an online encyclopedia of life [web application]. Version 6.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: December 15, 2006).

Abstract citation:

Penskar, M.R. 2009. Special Plant Abstract for gentian -leaved St. John's-wort (*Hypericum gentianoides*). Michigan Natural Features Inventory, Lansing, MI. 3 pp.

Copyright 2009 Michigan State University Board of Trustees.

MSU Extension is an affirmative-action, equal-opportunity organization.

Funding for abstract provided by the Michigan Department of Transportation.

