

# Plant Diversity Website

## ***Calystegia silvatica*** (Kit.) Griseb.

**Common Names:** shortstalk false bindweed, giant bindweed, greater bindweed (1, 8)

**Etymology:** *Calystegia* comes is Greek for “a covering cup,” derived from two Greek words *kalux*, “cup” and *stegos*, “a covering.” The word *silvatica* means “pertaining to woods” and comes from the Latin *silva*, which can mean “woods,” “trees” or “forest” (3, 10).

**Botanical synonyms:** see subspecies below.

**FAMILY:** Convolvulaceae, the bindweed or morning glory family.

**Quick Notable Features (8, 9, 15):**

- large white flowers sometimes with a slight tinge of pink or purple when exposed to sunlight
- glabrous stems that twine vigorously
- copious white latex, especially in younger parts of vegetative plant



**Plant Height:** climbs to a height of 3m (8).

**Subspecies/varieties recognized (1):**

*C. silvatica* (Kit.) Griseb. ssp. *disjuncta* Brummitt

*C. silvatica* (Kit.) Griseb. ssp. *fraterniflora* (Mackenzie & Bush) Brummitt [syn: *C. fraterniflora* (Mackenzie & Bush) Brummitt, *C. sepium* (L.) R. Br. var. *fraterniflora* (Mackenzie & Bush) Shinnars, *Convolvulus fraterniflorus* (Mackenzie & Bush) Mackenzie & Bush, *Convolvulus sepium* L. var. *fraterniflorus* Mackenzie & Bush]

*C. silvatica* (Kit.) Griseb. ssp. *silvatica*

**Most Likely Confused with:** *Calystegia sepium*, *Calystegia spithamea*, *Convolvulus arvensis*, *Ipomoea* spp., and *Polygonum convolvulus*.

**Habitat Preference:** Found in thickets and along borders of lakes. It is also found in croplands and pasturelands, both abandoned and active. It is also found near “hedgerows, forest and plantation margins close to settlements, also a troublesome weed in gardens” (7, 9).

**Geographic Distribution in Michigan:** According to the USDA website (1) and Gleason & Cronquist’s *Flora* (14) this species is not found in Michigan. However the online update to Voss’ *Michigan Flora* (11) lists the species in Berrien and Monroe counties. Brummitt (13) cites a collection by Farwell [#8836] from Taylor, MI.

**Known Elevational Distribution:** no information yet located.

**Complete Geographic Distribution:** *Calystegia silvatica* ssp. *fraterniflora* is native to the eastern and midwestern United States in all states except ME, NH, RI, MA, NJ, DE, MI, WI, and

MN, and also in several states in the western U.S. The species is also found in Canada, China, most of Europe, Australia and New Zealand (1,17, 18). The other two subspecies are not recognized outside of Florida and New York. Treated broadly, it can be expected throughout the U.S. and is included here because of the distribution in all states to the immediate south of Michigan. It is considered invasive in many parts of the world.



**Vegetative Plant Description:**

The vigorously twining individuals have an extensive and far-reaching rhizome system. The simple, alternate, entire, pinnately veined leaves are 5-18 cm long and 3.5-15 cm wide. They are triangular-ovate, sagittate-ovate or hastate and usually glabrous. The base is deeply cordate with rounded sinuses and 1-2 small lobes on each side, while the apex is acute to acuminate. The 3-11cm petiole is glabrous, but can be hairy, while the stems are usually glabrous. *Calystegia silvatica* is a perennial, herb with

large, sepaloid bracts below the calyx. (1,2,4,7, 9). White latex of a lipid nature is found throughout the plant but especially abundantly flowing from the younger leaves and stems (15).



**Climbing Mechanism:** The stem twines vigorously in a dextral orientation using its stem apices (9).

**Flower Description:** The inflorescence is a solitary, perfect flower with parts in fives borne on a 8-20 (sometimes 30) cm long, narrowly winged peduncle. Peduncles are shorter than the petioles (12). The 5 sepals are 1.5-1.8 cm long and more or less ovate-lanceolate, while the 5 corolla lobes are 5.2-8cm long and 5.5-8cm across. The corolla is usually white and very rarely pale pink, with lobes that are very shallow and inconspicuous. The mid-petal area of

the tube is shining on the outside. The five stamens are 3cm long with filaments that bear glandular hairs along the lower half. The ovary is 1-locular and superior with a glabrous style. The 2 stigmas are oblong and cylindrical (2, 7, 9, 19).

**Flowering Time:** In Illinois, the species flowers from June to August (7).

**Pollinator:** No evidence was found in literature.

**Fruit Type and Description:** The fruit is a 1-1.5cm long subglobose indehiscent capsule with four seeds (7,19).

**Seed Description:** The seed is triangular-ovoid with a rounded outer surface and with slightly concave inner faces; it has a smooth, black seed, that is 4-5mm in diameter (9).

**Dispersal Syndrome:** no direct evidence was found reported for this species

**Distinguished by:** The flowers of *C. silvatica* are much larger than those of *C. sepium* and the bracts of *C. silvatica* are obviously imbricate, while those of *C. sepium* are not or are only scarcely touching (12,13). Bracteoles are described as being saccate and overlapping. The base of the leaf blade in *C. sepium* is a clear V- or U-shape, while that of *C. silvatica* is quadrate (9). The petioles are longer than the peduncles in *C. silvatica*. *Calystegia spithamea* rarely twines and generally stays low to the ground. *Convolvulus arvensis* has smaller bracts, freely branching stems, and flowers that are smaller (1.5-2 cm) (11). The foliage of *C. silvatica* is similar to *Polygonum convolvulus*, however the inflorescences are very different. *C. silvatica* bear large, white, showy flowers, while flowers of *P. convolvulus* are small, green, apetalous, and hardly noticeable (15, pers. obs.). All species of *Ipomoea* in Michigan lack the sepaloid bracts below the flowers, which will be obvious even after flower production.

**Other members of the family in Michigan (number species):** *Calystegia* (3), *Convolvulus* (1), and *Ipomoea* (5)

**Ethnobotanical Uses:** It is not known to be dangerous to humans (8).

**Phylogenetic Information:** Within the family Convolvulaceae the genus *Calystegia* is placed in the tribe Convolvuleae, according to recent molecular studies (6). Also included in this tribe are the widespread species of *Convolvulus*, in which *Calystegia* previously was included, and the genus *Polymeria*, endemic to Australia. Within the family, this tribe is closest to the tribe Jacquemontieae (only consisting of the genus *Jacquemontia*), and both tribes are close to the tribe Aniseieae (including *Aniseia*, *Iseia*, *Odonellia*, and *Tetralocularia*). Convolvulaceae is part of the Solanales, which is one of the four clades of the Euasterids I, which is in turn part of the Core Asterids. Finally, of course, they are Tricolpate Angiosperms (5, 6).

**Interesting Quotation or Other Interesting Factoid not inserted above:**

This species can grow among asparagus in fields and reduces the asparagus' ability to store carbohydrates for the following year and reduce the yield for the current year. It has grown immune to the herbicides typically used to rid asparagus crops of weeds (8).

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