

Plant Diversity Website

***Calystegia spithamea* (L.) Pursh.**

Common Names: low false bindweed, low bindweed, upright bindweed, erect bindweed, dwarf bindweed (1, 10)

Etymology: *Calystegia* comes from two Greek words: *kalux*, "cup," and *stegos*, "a covering." The word *spithamea* comes from the Latin *spithama* or the Greek *spithame*, which means "span," and refers to it reaching the height of a span (3, 7, 14).

Botanical synonyms (11):

Convolvulus spithameus L.
Calystegia spithamea Pursh
Volvulus spithameus Kuntze
Convolvulus camporum Greene
See below for synonyms of the subspecies of this species (11).



FAMILY: Convolvulaceae, the bindweed or morning glory family

Quick Notable Features (11):

- ▮ low-growing, rhizomatous plant
- ▮ has a single stem, but may have a few ascending branches
- ▮ one to four solitary, erect pink to white flowers that can grow quite large and arise from the median to lower leaf axils

Plant Height: The plant only usually grows to a height of 7-50cm (11).

Subspecies/varieties recognized (1):

C. spithamea (L.) Pursh ssp. *purshiana* (Wherry) Brummitt [syn: *C. sepium* (L.) R. Br. var. *pubescens* Gray, *C. spithamea* (L.) Pursh var. *pubescens* (Gray) C.F. Reed, *Convolvulus purshianus* Wherry, *Convolvulus sepium* L. var. *pubescens* (Gray) Fern., *Convolvulus spithameus* L. var. *pubescens* (Gray) Fern.]

C. spithamea (L.) Pursh ssp. *spithamea* [syn: *Convolvulus spithameus* L.]

C. spithamea (L.) Pursh ssp. *stans* (Michx.) Brummitt

Most Likely Confused with: *Calystegia sepium*, *Convolvulus arvensis*, *Polygonum cilinode*

Habitat Preference: Plants of this species are usually found in dry, rocky or sandy soil, fields and open aspen, oak and/or jack pine woodland. In these soils it is often on banks, bluffs or clearings where there has been some disturbance. It is sensitive to competition and does well after fires. It is often found with bracken fern (2, 4, 11).

Geographic Distribution in Michigan: *C. spithamea* ssp. *purshiana* is not found in Michigan; however, the other two subspecies are. They are found in 42 of 68 counties in the Lower Peninsula and 11 of 15 Upper Peninsula counties. The counties they are not found in are

mostly in the thumb area and southwest portion of the Lower Peninsula and the middle of the Upper Peninsula (1).

Known Elevational Distribution: no specific elevation data found yet.

Complete Geographic Distribution: This American native is found in every state east of or adjacent to the Mississippi River except AR, LA, MS and FL (1).

Vegetative Plant Description: The somewhat dense pubescent stems of this perennial herb rarely twine and rarely branch (3). They are erect at least until the flowering portion, then elongating and declining. It is usually a low-growing, rhizomatous perennial. The simple, alternately arranged oblong to obovate leaves are 3-8 cm long, and 2.5-4.5 cm wide. The blade margin is entire, and pinnately veined, with an acute to rounded apex and a truncate to cordate base that meets a short petiole (0.5-2cm), usually less than half the length of the blade (3). The upper leaves are sessile and the lower leaves are very small, while the intermediate leaves are nearly uniform. The leaves are always more or less hairy. Below the calyx are two 15-30 mm sepaloid oblong to ovate bracts, often called an epicalyx (1, 2, 5, 6, 11).

Climbing Mechanism: According to Voss, this species does not actually twine, but its “erect stem may twist a little toward the tip” (4). If it does twine, we suspect it will twine dextrally like others in the genus, but this has not yet been observed.

Flower Description: The inflorescences are usually solitary, rarely with 2-4 flowers, arising from the lower axils on 4-angled peduncles. The inflorescences are few, but when they do form, the peduncles are 2-8 cm long and produced 5-20 cm above the base of the plant, but below the twisted part of the stem. The five white or pink petals are 4-7 cm long and broad surrounded by five appressed sepals. By inference and comparison with other species in the genus, we assume the stamen number to be 5, but have not confirmed this yet. The superior ovary is more or less unilocular with two oblong, cylindrical, flat stigmas. Below the calyx are two 15-30 mm sepaloid oblong to ovate bracts, often called the epicalyx (2, 5, 11).



Flowering Time: In the central and northeastern United States, and in adjacent parts of Canada, flowering occurs from May to July and can extend into August (7).

Pollinator: Little is known about this species' pollinator, but it is suggested that “generalists, such as native flies or bees, or even moths” would be the most likely pollinators (11). One genus of bee, *Diadasia*, uses pollen from species of *Calystegia* and *Convolvulus* (12).

Fruit Type and Description: The fruits are capsules, when produced, globose to nearly globose, bilocular, and 1 cm long. Most fruits that are produced are abortive (5, 11).

Seed Description: Two glabrous seeds per fruit. They have impermeable seed coats, which become permeable when exposed to large fluctuations in temperature between day and night or via direct heat from fires (11).

Dispersal Syndrome: The species most commonly spreads vegetatively by rhizomes and it is not known whether it is “capable of successful sexual reproduction *in situ*.” Fruits have been observed, but are usually abortive. When successful fruits are produced, mammals, wind, and water are the most likely dispersal agents (11, 12).

Distinguished by: Distinguished from *Calystegia sepium* by very rarely twining, and *C. sepium* grows up to 3m bearing hastate or sagittate leaves. *Convolvulus arvensis* has smaller bracts, freely branching stems, and flowers that are smaller (1.5-2 cm) and mostly bloom later in the year (June to September) (11).

The foliage of *C. spithamea* is similar to *Polygonum convolvulus*, however the inflorescences are very different. *C. spithamea* bear large, white, showy flowers, while flowers of *P. convolvulus* are small, green, apetalous, and hardly noticeable (15, pers. obs.).

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

Ethnobotanical Uses: no information yet found.

Phylogenetic Information: Within the family Convolvulaceae the genus *Calystegia* is placed in the tribe Convolvuleae according to recent molecular studies. 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*). The family Convolvulaceae is included in the Solanales, one of the four clades of the Euasterids I, a Core Asterid. Finally, of course, they are Tricolpate Angiosperms (8, 9).

Interesting Quotation or Other Interesting Factoid not inserted above:

- It rarely twines and usually grows upright
- It is one of the first vascular plants to regenerate after fire, as soon as 100 days after a severe fire.
- It is considered threatened or endangered in CT, MA, ME, NH, NJ and VT (1).

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