

Plant Diversity Website

Fallopia convolvulus (L.) A. Löve

Common Names: Black bindweed, wild buckwheat, climbing buckwheat, climbing knotweed, cornbind, dullseed cornbind, pink smartweed, wild buckwheat, knot bindweed, bearbind (1,14).

Etymology: *Fallopia* was named for Gabriello Fallopio, a 16th century professor of botany and anatomy (2). *Convolvulus* comes from the Latin *convolv*, which means 'rolling together' or 'twining' (3).

Botanical synonyms (1):

Bilderdykia convolvulus (L.) Dumort

Polygonum convolvulus L.

Polygonum convolvulus var. *convolvulus* L.

Reynoutria convolvulus (L.) Shinnars

Tinaria convolvulus (L.) Webb & Moq.



FAMILY: Polygonaceae (the buckwheat family)

Quick Notable Features:

- Dull black, granular achene, just barely exceeding the papery, persistent calyx
- Angled stems with linear bands of fine scales
- Glabrous, relaxed ocrea (enlarged stipule)
- Deeply cordate leaves on an herbaceous apically twining weed

Plant Height: Can grow to 1m or longer; usually less than 6m (4,17).

Subspecies/varieties recognized: none (1)

Most Likely Confused with: *Dioscorea villosa*, species of *Convolvulus*, *Calystegia*, and *Ipomoea* (Convolvulaceae), other *Fallopia* spp. in our area (*F. cilinode*, *F. scandens*), and *Smilax* spp.

Habitat Preference: *F. convolvulus* prefers full to partial sun with loamy soil, but is often found in poor soils along railways, roadsides, and in old farm pastures and waste grounds (5,6,7,8,10).

Geographic Distribution in Michigan: Found in all but Iron County in the Upper Peninsula and all but fourteen randomly scattered counties in the Lower Peninsula (8).

Known Elevational Distribution: In the Himalayas, the species is found up to 3800m (15).

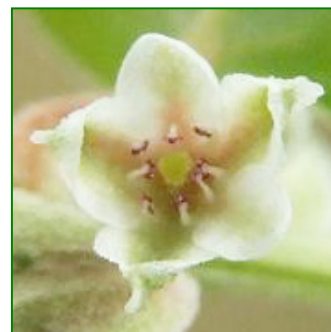
Complete Geographic Distribution: Native to Europe, and introduced to parts of North America, South America, Africa, Australia, and New Zealand (7). It is found in every state, province, and territory of the United States and Canada, with the exception of Puerto Rico and Nunavut (8).

Vegetative Plant Description: An annual vine that trails or twines. The angled stems of *F. convolvulus* are lightly scabrous, with scales often arranged in lines. The alternate, simple, lightly scabrous leaves are borne on slender petioles that are longer toward the base of the stem and shorter toward the apex. The leaves are sagittate or cordate with acuminate apices, up to 6cm long and 5cm wide. The tan or green ocrea, found at the leaf node, is glabrous, small, and slightly relaxed (4,5,6,7).

It is described as non-rhizomatous but deep-rooting (7,14). Because of its deep roots, it is very successful in low-nitrogen soils.

Climbing Mechanism: Plants of *F. convolvulus* twine with the stem apex in a sinistral direction, from right to left, see first image (4, pers. observ.).

Flower Description: *F. convolvulus* bears both terminal and axillary racemes, 2-6cm long, with clusters of 3-6 flowers. Small leaves are sometimes borne at the base of each raceme, but not always. Each individual flower is borne on a 1-2mm pedicel. The persistent, 3 + 2 sepals are each 1.5-2mm long and green, frequently with purple speckles or a purple tinge at the base, and the three outer sepals often have a narrow wing. No petals are present. Stamens are 8. The superior ovary is triangular with 3 divergent styles bearing capitate stigmas (4,5,6,7,18).



Flowering Time: May through October in Illinois (9).

Pollinator: According to Hilty (10), “little information about insect pollinators is available for Black Bindweed, although the flowers of a closely related species, *Fallopia scandens* (Climbing Buckwheat), are visited by short-tongued bees, wasps, and flies.”

Fruit Type and Description: The black achenes are 1.8-2.3mm broad and 3-4mm long. While it is rarely winged, the margins of the achene can be flat to undulate and form narrow wing-like ridge 0.4-0.9mm wide at maturity. All sources describe the achene as having a “dull” and “granular” surface. It just barely exceeds the calyx wings (4,5,6,7,17).



Seed Description: none found, largely because the achene does not open.

Dispersal Syndrome: Disperses its fruits prolifically (14).

Distinguished by: *Fallopia convolvulus* can be distinguished from *Dioscorea villosa* by its veins: *D. villosa* has arcuate-parallel venation, with 7-11 veins converging in the leaf apex. Furthermore, the leaf nodes of *D. villosa* lack an ocrea, and its fruit is a large, three-winged capsule (5,6).

In general, species of Convolvulaceae have latex in their stems and/or leaves, and *F.*

convolvulus does not. Convolvulaceae fruits tend to be capsules, instead of achenes, and the stems lack an ocrea (5,6). All our Convolvulaceae species twine from left to right.

Smilax species climb with tendrils borne on the petioles, and also have no ocrea at their leaf nodes. Additionally, *Smilax* species typically have arcuate, apically converging veins, rather than reticulate, venation (5,6).

F. convolvulus may be distinguished from other members of *Fallopia* in our area by its granular achene; both *F. cilinode* and *F. scandens* have a glossy, shiny achenes. Furthermore, *F. scandens* has conspicuously winged achenes, and the ocrea of *F. cilinode* is bristly and hairy rather than glabrous as in *F. convolvulus* (5,6).

Other members of the family in Michigan (number of species): *Fagopyrum* (2), *Fallopia* (4) *Polygonella* (1), *Polygonum* (24), *Rheum* (1), *Rumex* (14) [source: 8].

Ethnobotanical Uses: No current uses found. However, a survey of Paleolithic settlements in Germany (16) found evidence that seeds and fruits from *F. convolvulus* were “certainly deliberately collected and used for human and consumption in prehistoric times.”

Phylogenetic Information: A study by Kim et al. (11) on flavonoid compounds in *F. scandens*, *F. cilinodus*, *F. convolvulus*, *F. dentatoalata*, and *F. dumetorum* found them to be closely related, but distinct species. *Fallopia* has been assigned to the Polygonoideae subfamily of the Polygonaceae, which is a member of the Caryophyllales, a member of the core eudicots within the angiosperms (12,13).

Interesting Quotation or Other Interesting Factoid not inserted above: NAPPO (14) describes *F. convolvulus* as a pest for every crop in the temperate zone, and notably detrimental to cereal crops. Besides overtaking fields with its aggressive growth habit, *F. convolvulus* can produce prolific amounts of fruit and contaminate seed stock.

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