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**OTHER NAMES**

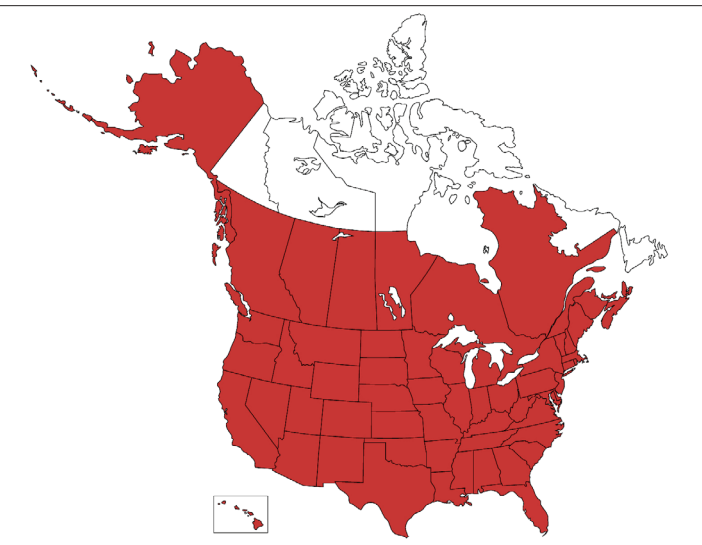
Morning glory, creeping Jenny

**CLASSIFICATION**

RANKING	SCIENTIFIC NAME	COMMON NAME
Kingdom	Plantae	Plants
Subkingdom	Tracheobionta	Vascular plants
Superdivision	Spermatophyta	Seed plants
Division	Magnoliophyta	Flowering plants
Class	Magnoliopsida	Dicotyledons
Subclass	Asteridae	
Order	Solanales	
Family	Convolvulaceae	Morning glory family
Genus	<i>Convolvulus</i>	Bindweed
Species	<i>Convolvulus arvensis</i> L.	Field bindweed

**HISTORY AND DISTRIBUTION**

Field bindweed is native to Europe, Asia, and northern Africa. It was introduced into North America by 1739, likely via contaminated crop and garden seeds. It subsequently spread throughout western North America and is currently present in all 50 U.S. states and nine Canadian provinces (Fig. 1).



**Figure 1.** Field bindweed reported distribution in North America (Credit: EDDMapS, [www.eddmaps.org](http://www.eddmaps.org); USDA PLANTS Database, [plants.usda.gov](http://plants.usda.gov); both accessed 2 December 2024)

**IMPACT**

Field bindweed is highly competitive for nutrients and water and forms large mats that smother crop plants, fencerows, gardens, pastures, and native vegetation in natural areas.

**IDENTIFICATION**

**At a Glance**

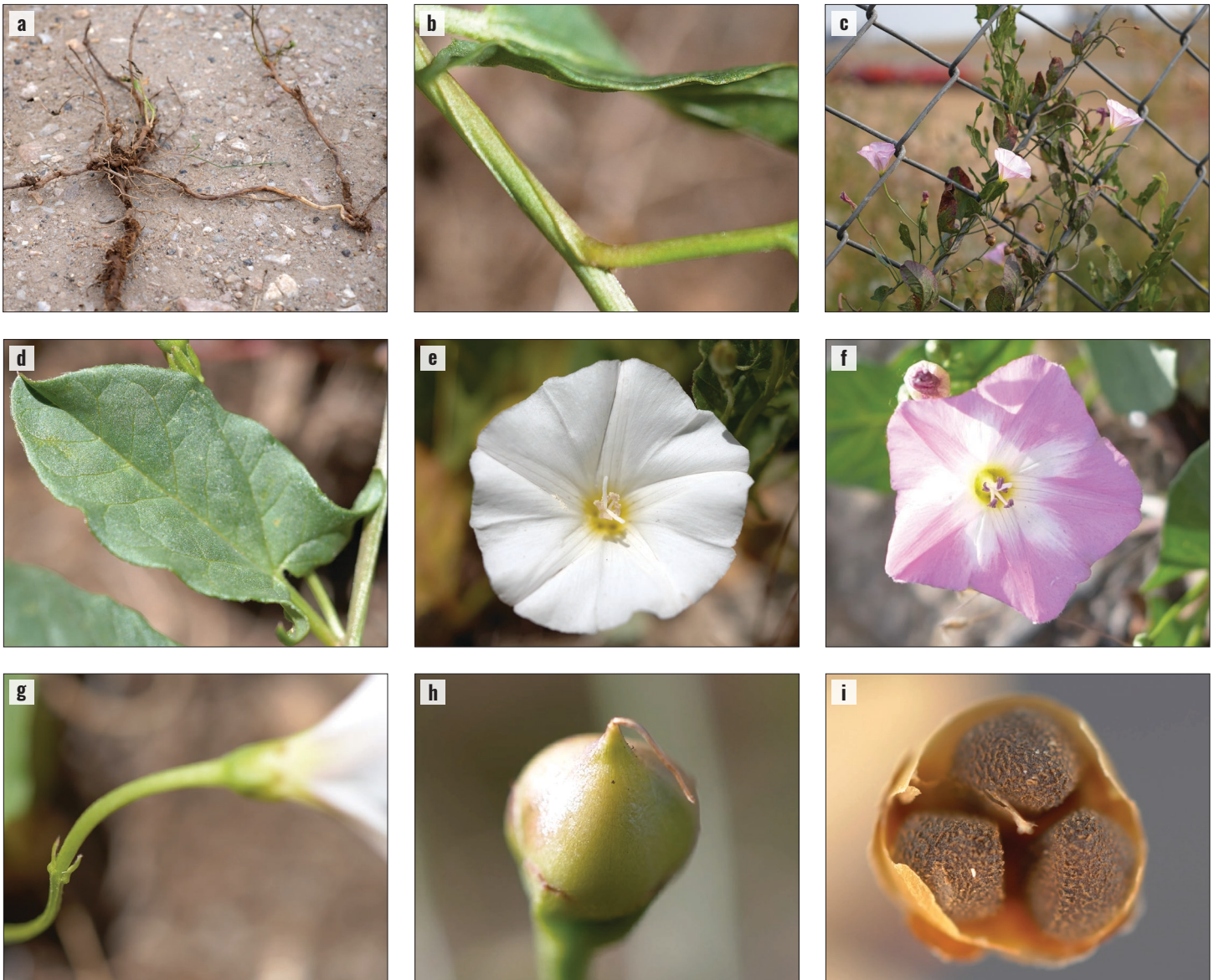
Field bindweed (Fig. 2) is a twining and trailing perennial vine with prostrate stems. It has an extensive root system with taproots and creeping lateral roots. Stems are twisted and up to 6 ft (180 cm) long. Leaves are alternate and often shaped like arrowheads. Flowers are up to 1 in (2 ½ cm) in diameter with five white to pink fused petals. Two small bracts are located below the flower. Fruits are egg-shaped with 1–4 dark brown seeds.

**Roots**

Field bindweed has an extensive root system made of fleshy taproots and creeping lateral roots. The root system can be up to 20 ft (6 m) long and 10 ft (3 m) deep at maturity. Field bindweed stems sprout from creeping lateral roots throughout the growing season, and even small root sections can give rise to new plants.



**Figure 2.** Field bindweed plant (Jennifer Andreas, Washington State University Extension)



**Figure 3.** Field bindweed roots are extensive and creeping (a). Stems are twisted and are typically prostrate (b), but may climb up suitable structures or vegetation (c). Leaves (d) are alternate and shaped like arrowheads. Flowers have 5 white (e) to pink (f) petals fused into a funnel or bell shape. Two small bracts (g) are located  $\frac{1}{2}$ –1 in (1–2½ cm) below the flower. Fruits (h) are small and egg-shaped with 1–4 wedge-shaped seeds (i). (a–i: Travis McMahon, MIA Consulting)

### STEMS AND LEAVES

Stems are green, slender, and twisted (**Fig. 3b**), and typically grow 1–6 ft (30–180 cm) long. They tend to grow prostrate on the ground (**Fig. 2**), though they may climb upward after contacting structures or suitable plants (**Fig. 3c**). Leaves are alternate, up to 2½ in (6 cm) long, and often shaped like arrowheads with lobes at their base (**Fig. 3d**). Leaf tips are usually somewhat rounded.

### FLOWERS

Flowers grow on stalks from leaf axils. They have five petals completely fused together, giving them a bell or funnel shape (**Fig. 3e**). They are 1 in (2½ cm) in diameter and are typically

white but may also be deep pink, especially around the flower margins (**Fig. 3f**). Two small bracts are located  $\frac{1}{2}$ –1 in (1–2½ cm) below the flower (**Fig. 3g**).

### FRUITS AND SEEDS

Fruits are small, egg-shaped capsules (**Fig. 3h**) less than  $\frac{1}{2}$  in (12 mm) long that contain 1–4 wedge-shaped seeds. Seeds are dark brown and roughly pitted (**Fig. 3i**).

### ECOLOGY

Field bindweed spreads both by seed and vegetatively through its creeping roots. In North America, peak seed germination is from April to May, and seedlings rapidly



establish an extensive, deep root system. Flowering occurs from early summer through fall. Seeds may remain viable in the soil for up to 50 years. Aboveground stems die back with autumn frosts or drought, and plants re-sprout throughout the following growing season from their creeping lateral roots.

## HABITAT

Field bindweed is well-adapted to many different habitats and climates. It does especially well in dry soils and in open and disturbed areas including orchards, gardens, lawns (**Fig. 4a**), abandoned fields (**Fig. 4a**), and roadsides.

## SIMILAR SPECIES

Many species present in North America resemble field bindweed with their twining vines and similar flowers or leaves. Texas bindweed (*Convolvulus equitans*) is native to the southern and western USA and has a lot of similar features. It can be differentiated by having narrower and longer leaves, and its flowers have a pink center or entirely pink petals. Several similar-looking morning glory (*Ipomoea*) species, both native and introduced, are established in North America. Most differ by having larger leaves, flowers that are more pink, purple or blue, many grow as annuals, and many have roots that are fibrous or tuberous. The cosmopolitan hedge bindweed (*Calystegia sepium*) differs from field bindweed by having larger leaves and flowers, and its two flower bracts are large, immediately beneath the flower, and completely enclose the flower's sepals. The introduced wild buckwheat (*Fallopia convolvulus*) is another similar vine. Its leaves are more pointed than field bindweed, it has a papery sheath that encircles the stem at the base of the leaf, and its clustered flowers are small and greenish-white. Species most closely resembling field bindweed are listed in **Table 1**, along with key characteristics that can be used for differentiation.

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**Figure 4.** Field bindweed is often found in open, dry, and disturbed areas (a: Travis McMahon, MIA Consulting; b: Jennifer Andreas, Washington State University Extension)

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## ACKNOWLEDGMENTS

The authors thank two anonymous reviewers for providing helpful comments on earlier versions of this publication. This fact sheet was produced by the North American Invasive Species Management Association (NAISMA) with financial support from USDA Forest Service. The layout was designed by Rachel Winston, MIA Consulting.



**Table 1.** Key traits for differentiating field bindweed from similar species.

SPECIES	SIMILARITIES	DIFFERENCES	PLANT	LEAVES	FLOWER
<b>Texas bindweed</b> <i>Convolvulus equitans</i> Convolvulaceae Native perennial	Habitat: twining growth; alternate, arrowhead-shaped leaves; bell-shaped, whitish-pink flowers; capsule fruit; 1–4 rough seeds per fruit	Taproot; stems only up to 1 ft (30 cm) long; leaves longer, narrower, covered in short dense hairs; flowers pink center			
<b>Moonflower</b> <i>Ipomoea alba</i> Convolvulaceae Native perennial	Twining growth; alternate, arrowhead-shaped leaves; 5 fused flower petals; flowers mostly whitish; capsule fruit; up to 4 seeds per fruit	Stems up to 98 ft (30 m) long; leaves more heart-shaped, up to 6 in (15 cm) long with stalk up to 8 in (20 cm) long; flowers up to 5½ in (14 cm) across, bloom at night			
<b>White morning glory</b> <i>Ipomoea lacunosa</i> Convolvulaceae Native annual	Habitat: twining growth; stems up to 6 ft (1 m) long; leaves alternate, arrowhead-shaped; 5 fused flower petals; flowers mostly whitish; capsule fruit	No creeping lateral roots; stems slightly hairy; leaves up to 4 in (10 cm) long, more heart-shaped or sharply lobed; flowers ¾ in (2 cm) across			
<b>Hedge bindweed</b> <i>Calystegia sepium</i> Convolvulaceae Native perennial	Twining growth; alternate, arrowhead-shaped leaves; bell-shaped, white to pinkish flowers; capsule fruit; 1–4 dark seeds per fruit	More climbing; stems up to 10 ft (3 m) long; leaves up to 5 in (12½ cm) long, lobes less pointed; flowers 2–3 in (7–8 cm) across; bracts larger, enclose sepals			
<b>Wild buckwheat</b> <i>Fallopia convolvulus</i> Polygonaceae Introduced annual	Habitat: prostrate growth; leaves alternate, arrowhead-shaped	No creeping lateral roots; leaf bases encircled by paper sheaths; leaf tips more pointed, lobes not as narrow; flowers tiny, greenish-white; fruit tiny, 3-sided			

**Photos:** Texas bindweed plant (Dulceyareli, iNaturalist.org CC BY-NC 4.0), Texas bindweed leaf (Sam Kieschnick, iNaturalist.org CC BY 4.0), Texas bindweed flower (Lanechaffin, iNaturalist.org CC0); moonflower plant (BJ Stacey, iNaturalist.org, CC BY-NC 4.0), moonflower leaves (Mmkimberly, iNaturalist.org, CC BY-NC 4.0), moonflower flower (Douglas Meyer, iNaturalist.org, CC BY-NC 4.0); white morning glory plant (Tim Allsup, iNaturalist.org, CC BY-NC 4.0), white morning glory leaves (cwwood, iNaturalist.org, CC BY-SA 4.0), white morning glory flower (Lindak22, iNaturalist.org, CC BY-NC 4.0); hedge bindweed plant (Travis McMahon, MIA Consulting), hedge bindweed leaf (Justinedussably, iNaturalist.org, CC BY-NC 4.0), hedge bindweed flower and bracts (William Thomas, SEINet CC BY-SA 3.0); wild buckwheat plant (Nikolay Panasenکو, iNaturalist.org CC BY-NC 4.0), wild buckwheat leaves (Travis McMahon, MIA Consulting), wild buckwheat flowers (Andreas Rockstein, iNaturalist.org, CC BY-NC 4.0)

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needed by the professional invasive species management community.

## SUGGESTED CITATION

Andreas, J.E., J. Littlefield, and J. Milan. 2024. Field Bindweed (*Convolvulus arvensis*): History and Ecology in North America. In: R.L. Winston, Ed. Biological Control of Weeds in North America. North American Invasive Species Management Association, Milwaukee, WI. NAISMA-BCW-2024-10-FIELD BINDWEED-P.

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