

Category C—Low

Field bindweed (*Convolvulus arvensis*)

Identification and Impacts



Photo credit: B. Ackley



Photo credit: USFS



Photo Credit: D. Cappaert

Key ID Tips

- Creeping prostrate vines that use other plants for support.
- Single flowers with five fused petals.
- Heart-shaped to ovate petals with a rounded tip.

Navajo Name
Ch'il natł oi łigaí

Origin
Native to Eurasia

Description

Field bindweed is a perennial creeping vine. Its leaves are green and ovate to heart-shaped to arrowhead shaped but rounded on top with the shape becoming more distinct further along the vine. Flowers are bell or trumpet-shaped with five fused petals and are white to pink. Flowers also open during the day and close at night. They occur along the stem as mostly solitary flowers but can be in cymes of 2 to 4. Plants have vine like stems that are glabrous and curl around other plants for support. Bindweed has deep thin tap roots that can grow to 10 feet deep with lateral creeping roots. As a result, a single plant can have multiple stems attached to the same tap root.

Biology

Bindweed can reproduce by seed or vegetatively. A single plant can produce up to 500 seeds. The seeds can survive buried for 15 to 20 years, with some studies finding seeds surviving for up to 60 years. They grow in disturbed sites, gardens, pastures, and along trails and roadsides. They prefer well drained soils.

Locations

Widespread on the Navajo Nation on rangeland, agricultural fields and roadsides.

Ecological Threat and Management Concerns

Field bindweed can spread and grow aggressively. Its ability to resprout from small root fragments makes it difficult to control, especially as its roots are thin and break easily. They are also prolific seeders with seeds that can survive most conditions for long periods of time. Roots can penetrate fabrics, plastic, and other barriers. They typically grow in large patches, making spot treatments difficult unless done frequently. Because they use other plants for support, their stems can reduce the growth of other plants and removal can sometimes affect more desirable plants in the vicinity.



Photo credit: Bureau of Indian Affairs

Management Recommendations

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Additional safety measures and limitations may apply for each method. Refer to the [Navajo Nation Integrated Weed Management Plan](#) for more information.

Mechanical/Manual Removal

Hand pulling is only effective on seedlings and young adults but becomes ineffective once the tap root develops. Mowing is not effective due to bindweed's low profile, its use of other plants for support, and its vigorous resprouting. Tilling, grubbing, and cutting are not recommended as it can cause vigorous resprouting from cut stems and root fragments, which can increase the size of the infestation. Deep tillage down to 3 feet can be effective, but must be repeated over the next several years.

Biological

Two biological control organisms are available for use on the Navajo Nation. These include a gall mite and a moth whose larvae eat the leaves and flowers.

Cultural Control

Grazing and burning are not recommended to control bindweed as both can lead to resprouting.

Chemical

Use of herbicides can be effective. Refer to the product labels for information application rates, timing, and approved application methods.

Recommended herbicides include:

- 2,4-D
- Dichlobenil
- Glyphosate
- Picloram*

*Restricted Use by U.S. EPA

References

DiTomaso, J.M., G.B. Keyser et al. 2013. *Weed Control in Natural Areas in the Western United States*. Weed Research and Information Center, University of California. 544 pp.

USDA, NRCS. 2023. PLANTS Database. Available at <https://plants.sc.egov.usda.gov/>. National Plant Data Team, Greensboro, NC 27401-4901 USA.



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