

# Diffuse knapweed (*Centaurea diffusa*)

Identification and Impacts



Photo credit: J.M. DiTomaso



Photo credit: C. Roche



Photo Credit: Oregon State University

**Navajo Name**  
Ch'il lat'á dei níngí

**Origin**  
Native to the southeastern Eurasia

**Description**  
Diffuse knapweed is an herbaceous biennial that grows to about 3 tall. Its upper leaves are entire and linear, while lower stem leaves are deeply pinnately lobed and longer. They are also covered with short interwoven gray hairs. Plants start as a basal rosette in the fall and winter and bolt to its flowering stems in the late spring and summer, with many branches. Flowers have spiny, comb-like phyllaries and small white to pale purple disk flowers. Their seeds lack a pappus and disperse when branches break off and tumble across areas by the wind.



Photo credit: M. Lavin, University of Montana

**Biology**  
Diffuse knapweed grows in a variety of sites and thrives in arid to semi-arid environments. It is unknown how long seeds survive in the soil, with some estimates between 2 to 5 years, and some incidences where they have survived longer. Diffuse knapweed does poor in cultivated areas and does poorly in shaded and moist soils. It is also known to hybridize with spotted knapweed.

**Locations**  
Widespread infestations have been documented on the Navajo Nation along roadsides, in mining areas, and in community development areas.

**Ecological Threat and Management Concerns**  
Since some diffuse knapweed seeds can survive for long periods of time, germination in treated sites is common. Dead plants can also act as seed sources when branches break off and create tumbleweeds, depositing seeds in its path. It can increase erosion and sedimentation near open water is decreases habitat and forage quality (USFS 2005)

**Key ID Tips**

- Spiny, comb-like phyllaries.
- Seeds do not have a pappus.
- Deeply lobed leaves with gray hairs.
- White to purplish small disc flowers

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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 removal is effective for small, scattered populations and should be repeated 3 times a year for at least 5 years. Hand pulling, digging, and tilling should aim to remove at least 2 to 4 inches of the root head below the soil to limit resprouting. Gloves should also be worn. Removal is most effective when done before seed set. Mowing is generally not effective, but if done when blooming, it can reduce seed production. Mowing can also remove dead material to improve herbicide applications.

### Biological

Four biological control organisms are available for use on the Navajo Nation. These include three types of seedhead feeding weevils and a root feeding weevil.

### Cultural Control

Grazing is not effective but can reduce and control populations. Cattle, sheep, and goat grazing in the early spring can reduce seed production. Grazing in the fall can also reduce plant density over time. Burning can be effective as it can stimulate grass growth. However, burning may stimulate germination. Burning can be used to increase the effectiveness of herbicide applications.

### 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
- Aminopyralid
- Clopyralid
- Diclobenil
- Fluroxypyr
- Indaziflam
- Picloram\*

\*Restricted use by U.S. EPA

### References

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

U.S. Forest Service. 2005. Final Environmental Impact Statement for Integrated Treatment of Noxious or Invasive Weeds. U.S. Forest Service Southwestern Region. 601 pp.

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