

Category A—High

# Scotch thistle (*Onopordum acanthium*)

Identification and Impacts



Photo credit: EnviroPlan Partners



Photo credit: Bureau of Land Management



Photo Credit: J.M. DiTomaso

### Key ID Tips

- Leaves are covered in cottony hairs along with stems, appearing bluish green.
- Large purple to pink flowers in clusters.
- Flat bracts with green to orange spines

### Navajo Name

Zéé hókaniít béei

Whosh waa'

### Origin

Native to Eurasia

### Description

Scotch thistle is an erect biennial forb, with long, green spiny leaves, covered in fine cottony hairs. They start as a rosette, 1 to 2 feet in diameter before bolting to 4 to 6 feet tall. Flower heads are large, which can be in clusters of 2 to 7 at the end of each stem. Flowers are spherical to hemispherical and have numerous spiny green to orange bracts while the disk flowers are showy purple to pink compound flowers. Spines are present on the leaves and stems, which also have a broad vertical rib.



Photo credit: J.M. DiTomaso

### Biology

Scotch thistle reproduces solely by seed. However, seeds contain a water-soluble germination inhibitor that can keep 80% of seeds dormant for several years. Germination occurs in the spring and fall when soil moisture is highest. Seeds are dispersed by wind or by animals or humans. Scotch thistle grows in a variety of disturbed sites and is associated with degraded annual plant communities.

### Locations

Found throughout the Navajo Nation along roadsides and riparian washes and farms.

### Ecological Threat and Management Concerns

Because Scotch thistle can produce numerous seeds with the ability to delay germination, eradication is difficult and can continue for several years. Populations can expand rapidly during wet years due to increased germination. The sharp spines can injure wildlife and livestock and create natural barriers that prevent movement.

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

### Mechanical/Manual Removal

Small infestations can be removed by digging plants and severing the root below the surface. Mowing during bud development can prevent seed development. However, if done too early, it can delay flower development and can still lead to viable seed set. Mowing should be done repeatedly during the growing season. Cutting flowers can also prevent expansion. Tilling can control emerged plants but can also increase germination.

### Biological

No biological control organisms are available for use on the Navajo Nation.

### Cultural Control

Sheep, goats, and horses can reduce thistles for small populations and when young. Sheep prefer the small rosettes, while goats will eat the flowerheads and seed heads, preventing seed production. Grazing with cattle is not recommended. Overgrazing can promote growth. Fire is not effective as it can stimulate growth. Maintaining perennial native plant cover and prevent establishment.

### Chemical

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

Recommended herbicides include:

- 2,4-D
- Aminopyralid
- Clopyralid
- Dichlobenil
- Imazapic
- 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.

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



Bureau of Indian Affairs  
 Navajo Region  
 301 West Hill Street  
 Gallup, NM 87301  
 Phone: (505) 863-8314  
[www.bia.gov/regional-offices/Navajo-region](http://www.bia.gov/regional-offices/Navajo-region)