

Russian knapweed (*Acroptilon repens*)



Photo credit: M. Licher



Photo credit: J.M. DiTomaso



Photo Credit: Bureau of Indian Affairs

Navajo Name
Ch'ildích'í'libáhí

Origin
Native to central Asia.

Description
Russian knapweed is an herbaceous perennial that grows to about 3 feet tall. Its stems are erect and branched with leaves covered in gray hair. Leaves are alternate with upper leaves sparse, narrow and lanceolate while basal leaves are oblong, longer and pinnately lobed. Flowers are in panicle to flat-topped clusters with white, pink, to lavender disk flowers, interspersed with bristles. Flowers can remain on stems long after senescence and turn into straw-yellow to ivory achenes with a tuft of hair at the top. As a result, plants can accumulate dead, dry material over time. They have deep roots that branch to form extensive lateral and vertical roots.



Photo credit: P. Alexander

Biology
Russian knapweed grows in many soil types but prefers moist soils and runoff areas. It is extremely drought tolerant and prefers full sun. It can reproduce vegetatively due to its extensive root system and ability to resprout. It produces few viable seeds which can survive for a few years. It also can alter soil chemistry by redepositing zinc to the top soil. Plants begin as a basal rosette before bolting to flowering stems. It also produces unknown toxins that can cause nigropallidal encephalopathy, or “chewing disease” in livestock, which can be fatal.

Locations
It is found throughout the Navajo Nation on farms, rangeland, near waterways, and along roadsides.

Ecological Threat and Management Concerns
Russian knapweed is a vigorous weed that can develop extensive root systems and alter soils to suppress the growth of native vegetation. Its extensive root system makes it difficult to control as pieces as small as 1 cm can regrow. The compounds it produces makes it harmful to livestock, which contributes to reduced grazing capacity and wildlife habitat quality.

Key ID Tips

- Small, pink, purple, to white disk flowers with interspersed bristles.
- Lower leaves are lobed while upper leaves are entire. All covered in gray hairs.
- Extensive, creeping root system.

Russian knapweed (*Acroptilon repens*)

Category B—Medium

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 and digging are effective at controlling seedlings but become less effective as plants mature. Mowing can suppress Russian knapweed but will not eliminate populations and can stimulate root growth and density. Though cutting and mowing three times a year does deplete root stores. Tilling is not recommended as it can spread root fragments. Equipment must be thoroughly cleaned to prevent spread to new areas. However, repeated tilling to over 1 feet deep for 3 years can kill much of the roots.

Biological

Four biological control organisms are available for use on the Navajo Nation. These include a nematode, a type of gall midge, and two types of flower gall flies.

Cultural Control

Grazing is not recommended due to the risk of toxic exposure to livestock. Burning is not recommended as it can stimulate regrowth but can be helpful for removing accumulated thatch. Because Russian knapweed does not do well in shaded areas, cultivation of taller native vegetation or crops can help control populations.

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
- Dichlobenil
- Glyphosate
- Imazapyr
- Triclopyr

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

Management Recommendations



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