Nevada Project WEEDS

Fact Sheet 98-73

WANTED— Dead, Not Alive!

This outlaw weed is hiding out! Find it. Eradicate it.

Russian Knapweed

Alias: *Centaurea repens*

Russian knapweed, like other knapweeds, is native to Eurasia. It is a perennial in Nevada and can be found in cultivated fields, orchards, pastures, roadsides, and rangelands. It prefers areas where the water table is within 20 feet of the surface. It can easily dominate cultivated fields and rangelands where its deep roots penetrate to free water. Transporting infested soils and moving contaminated equipment spreads this weed. Russian knapweed is listed as a noxious weed by Nevada Administrative Code.

This deep-rooted perennial can easily dominate cultivated fields and rangelands.

Distinguishing features:

- Grows 18 inches to 3 feet tall.
- Stems are erect and multi-branched.
- Leaves are blue-green, toothed, and covered with fine hair.
- Showy pink flowers bloom from June to September. The pearly bracts at the base of the flower head are rounded with papery margins. Flowers are small, ¼ to ½ inch, cone shaped, and usually pink, but can be white to purple.
- Dense colonies can form from adventitious roots.

Take action:

- Report its location to the land owner, gardener, manager or park ranger.
- Avoid walking on, driving on, or camping in Russian knapweed-infested areas and remove all weed seeds before moving out of an infested area.
- Dispose of the seeds, shoots, and roots in a sealed garbage bag through the trash. Herbicides may be available to kill this plant.
- Do not purchase, move, or use contaminated soil.

Your reward:

A cleaner, healthier environment and the satisfaction that you have helped make the difference!

For more information about controlling this and other invasive weeds, contact:

Nevada Cooperative Extension
775-784-1334;
Nevada Division of Agriculture
Bureau of Plant Industry,
775-688-1180; or
Your local Weed District manager or Conservation District:

University of Nevada, Reno Cooperative Extension
A County-State-Federal Partnership

Weed Profile: Russian Knapweed

COMMON NAME: Russian Knapweed
BOTANICAL NAME: *Acroptilon repens*
FAMILY: Asteraceae (Sunflower family)
DESCRIPTION / IDENTIFICATION : Grows 18 to 36" tall. Deeply lobed leaves are 2 to 4" long with gray pubescence. Flowers are pink, lavender, or white, and are produced from June to September. Rosettes have toothed leaves covered with fine hair.

NATIVE TO: Ukraine, S.E. Russia, Iran, and Kazakh to Mongolia.

CURRENT DISTRIBUTION: Found in most western states in cultivated fields, pastures, disturbed sites, roadsides, waste areas, and dry rangelands.

LIFE CYCLE CLASSIFICATION : Perennial; emerges in early spring.

MOST COMMONLY REPRODUCES ITSELF BY: Seed and rhizomes.

NUMBER OF SEEDS/ PLANT: 50 to 500 per shoot.

Control Methods

MECHANICAL: Use mowing in combination with herbicide treatments and then tilling to overcome allelopathic effects. Continuous tillage is somewhat effective, especially when combined with an herbicide program. Hand-pull only while wearing gloves.

CULTURAL: A good management program is essential. Seed competitive perennial grasses after control measures. Avoid overgrazing pastures and range. Use proper irrigation and fertilization.

BIOLOGICAL: Russian knapweed gall nematode.

CHEMICAL: Picloram (Tordon®, restricted use) should be applied after the first killing frost. Till the following spring to remove leaves, then treat again as needed with picloram. Control may be achieved in 2 to 4 years. Clopyralid (Stinger®; Transline®; Curtail® (includes 2,4-D)) works well during flowering, but is not yet registered for use in Nevada. Use chlorsulfuron (Telar®), 2,4-D, and/or dicamba (Banvel®) with cultural practices.

ADDITIONAL COMMENTS: Exhibits allelopathy. Toxic to horses, with irreversible damage resulting in the inability of the horse to pick up and chew food. Does not appear to affect cattle and sheep.

Donadlson, S. and Bowers, G. Weed Identification and Control Guide. University of Nevada, Reno Cooperative Extension. EB98-01.

Weed Notes: *Centaurea maculosa*

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Mechanical Control: Hot prescribed burns may reduce established stands of knapweed. A follow-up of selective pulling and digging will further reduce populations. Annual burns have reduced populations by 5-90% and may be correlated with burn intensity. Reseeding with a native species is recommended. However, single, low intensity burns may actually worsen the problem since it is not hot enough to prevent resprouting and seed germination. Also, fires may disturb the area promoting colonization.

Chemical Control: Clopyralid (Transline) applied at 0.13-0.19 L/ha (0.66-1.0 pt/acre) or clopyralid + 1.12 kg/ha 2,4-D (Curtail) provide control with little soil residual. Apply during the bolt or bud stage. Less control was achieved when applied to the rosette, flowering and after flowering stages.

Picloram (Tordon) (0.28 kg/ha), as listed in the ESA for *C. maculosa*, can control plants and seedling for 2-3 years. However, as mentioned in the ESA, there is a long residual and it is costly (as is dicamba - listed below). The residual may be shorter on gravel soils, wet areas and areas with high soil organic matter. The optimum time for the application of picloram is during the rosette growth stage in the fall or in the bud to bloom stage in the spring. Picloram can not be used near water or in porous substrata overlying ground water. Picloram does not affect grasses, but long term affects have been observed from it on shrubs and trees, possibly due to it leaching in ground water.

Dicamba (Banvel) will also provide control of plants and shorter residual control of seedlings at a rate of 0.18-0.37 kg/ha (1-2 lbs/acre). A follow-up treatment of 2,4-D at 0.18 kg/ha (1 lb/acre) annually may be needed to prevent reinfestation.

2,4-D is listed in the ESA for control, however, after stem elongation it should not be applied since control is not very effective. There is no residual control and so annual applications are necessary.

Triclopyr (water-soluble formulation) applied at the rate of 3% a.i. can be sprayed on the plant (except the flower) 3-4 times a year for control. Triclopyr does not affect grasses.

For all chemical applications treat the area around *C. maculosa* patches (3-4.5 m). Follow-up treatments are extremely important for the continual control of spotted knapweed.

Biological Control: In addition to the biocontrol agents listed in the ESA, a seedhead weevil, *Bangasternus fausti* (Reitter), that is native to Europe, was released in the US in 1991 for the control of spotted knapweed, diffuse knapweed (*C. diffusa*) and purple star-thistle (*C. calcitrapa*). The weevil has become established in several states: Montana, Nebraska and Oregon. It has not been shown to reduce populations or even significantly slow their spread. While the larvae can destroy 100 percent of the seeds in a seedhead, not all seedheads are affected and so seed production is still high. Many seeds that do develop may not germinate. TNC has not used this biocontrol and gaining approval would be a formidable task.

References:
1. Sheley, R.L., J.S. Jacobs and M.F. Carpinelli. 1998. Distribution, biology, and management of diffuse knapweed (Centaurea diffusa) and spotted knapweed (Centaurea maculosa). Weed Technology v. 12:353-362.
2. www.ndsuext.nodak.edu/extpubs/plantsci/weeds.h942w.htm
3. www.dnr.state.wi.us/org/land/er/invasive/factsheets/knapweed.htm
4. www.nysaes.cornell.edu/ent/biocontrol/weedfeeders/bangasternus_fausti.html