



© Iowa Plants

like white hairs. Seeds remain viable for approximately three years. Mature plants can produce up to 4,000 seeds per plant. Bull thistle generally needs soil temperature between 50° and 80°F, moisture and canopy gaps to germinate seeds.

Bull thistle invades dry to moist environments. It prefers nitrogen-rich soils, and it grows on gravelly to clay-textured soils. It thrives in areas such as pastures, overgrazed rangeland, roadsides, and logged areas. Bull thistle infestations are heaviest in the northwestern portion of Colorado. It is widespread throughout the United States and parts of Canada.

Hheavy infestations reduce livestock forage. The presence of bull thistle in hay decreases the forage value and lowers the market price. It is an aggressive weed, but it will not withstand cultivation. Bull thistle is often a transient species, appearing in recently disturbed areas and becoming a dominant species for several years if left untreated. It can cause hay fever in some individuals.

Maintaining healthy pastures and rangeland, guarding against disturbance or overuse is the best prevention measure against bull thistle. As with most biennials, limiting seed production is critical to effective control. Chemical control is the most effective and efficient method of eradication if applied during the rosette stage, spring or early fall. To reduce seed production, plants with buds or flowers should be collected and

Bull thistle, *Cirsium vulgare* (Savi) Ten., is a biennial forb that was introduced to North America as a seed contaminant. Flowers are in a raceme arrangement. The gumdrop-shaped disk flowers are pinkish to dark purple in color and 1 ½ to 2 inches in diameter. The pappus has feather-like bristles; the receptacle is densely bristly. The flower bracts are somewhat tapered and covered with spines 2-5 mm long. Leaves are alternate with deeply lobed margins that are spiny. In mature plants the base of the leaves clasp the stem and extend down the stem to the lower node. The plant has one short, fleshy taproot with several lateral roots. There is debate about the effectiveness of self-pollination in bull thistle; outcrossing though pollination produces an abundance of viable seed. Flower buds and heads that are removed from the stalk can still mature and become viable. Seeds are capped with a circle of plume-



© Bruce Ackley, OH State University

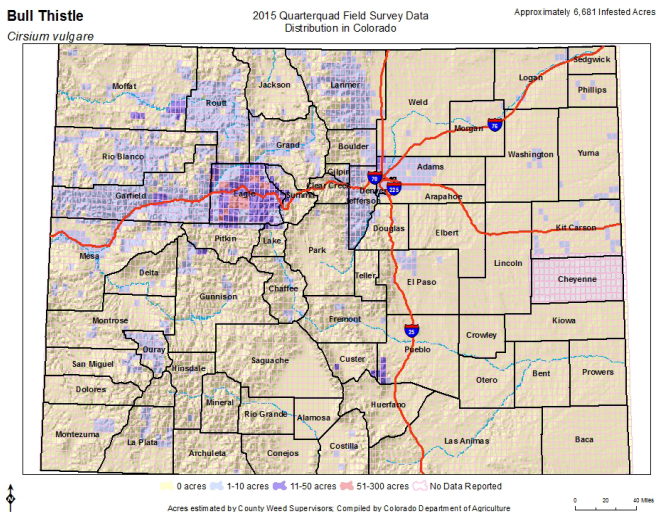


© Steve Dewey, UT State University



Bull thistle
Cirsium vulgare (Savi) Ten.

2015 Quarter Quad Survey



bagged, disposed of or destroyed. Mechanical control, such as pulling, has limited effectiveness.

Bull thistle is designated as a “List B” species in the Colorado Noxious Weed Act. It is required to be eradicated; some populations may be contained or suppressed depending on state regulations. For state regulations described for each county, refer to the most recent Rule, or visit www.colorado.gov/ag/weedcontacts for details.

Key ID Points

1. Flowers arranged in a raceme; flower is gum-drop shaped.
2. Base of leaves clasp the stem & extend down the stem to node below
3. Top surface of leaves have stiff, rough hairs

Integrated Weed Management Recommendations

Bull thistle *Cirsium vulgare* (Savi) Ten.

Effective integrated management means using a variety of eradication methods that also includes restoration, prevention of seed production and dispersal, and monitoring. Maintain robust healthy native landscapes and restore degraded sites. Avoid soil disturbance. As with most biennials, prevent seed production in the first and second year of bull thistle growth. Prevent seed from dispersing, such as on contaminated equipment. Rest sites until they are effectively restored.



© Bonnie Million, NPS

CULTURAL CONTROL METHODS

Since bull thistle germinates in canopy gaps, maintain or restore a competitive forb and cool and warm season grass assemblage to reduce spacing between plants. Use locally adapted and ecologically appropriate seeds whenever possible to improve competitiveness. Ensure annual species are included in the native seed mix as well as perennial. Incorporate soil amendments, soil microbes and mycorrhizal fungi in restoration efforts. Manage land uses so they do not cause soil disturbance or create bare mineral soil.



© Eric Coombs, OR Dept of Agriculture

BIOLOGICAL CONTROL METHODS

Horses, goats and sheep may eat flower heads on a few young individual plants, but seeds likely pass through their digestive tracks unaltered; cattle avoid bull thistle. Dense stands and large plants are usually avoided. Thus, bull thistle can become an “increaser” in over-grazed systems. Properly managed grazing can improve vigor of desired plants and indirectly reduce bull thistle. There is a biological control agent for this species, the bull thistle gall fly, *Urophora stylata*, but it was found to be ineffective in Colorado. Since it is not ethical to promote ineffective non-native insects in the state, this fly is not available in Colorado. For more information, visit the Colorado Department of Agriculture’s Palisade Insectary website at www.colorado.gov/ag/biocontrol.



© UAF Cooperative Extension

MECHANICAL CONTROL METHODS

Methods, such as hoeing, tilling and digging, are best for infestations smaller than 0.5 acres. Sever roots below the soil surface during the first year before the plant stores energy, and in the second year before seed production. Mowing, chopping and deadheading stimulates more flower production; these methods require consecutive years of season-long treatments. Flower heads and buds must be collected, bagged, and disposed of or destroyed; seeds will mature and germinate if left on the ground. Prescribed fire that leads to high soil burn severity can damage roots and above ground biomass of bull thistle but also damages desired plants. Fire favors bull thistle and is not recommended.

CHEMICAL CONTROL METHODS

NOTE: The following are recommendations for herbicides that can be applied to pastures and rangeland. Rates are approximate and based on equipment with an output of 30 gal/acre. Follow the label for exact rates. Always read, understand, and follow the label directions. The herbicide label is the LAW!

HERBICIDE	RATE	APPLICATION TIMING
Aminopyralid* (Milestone)	6 oz. product/acre + 0.25% v/v non-ionic surfactant	Apply to rosettes through bolting stage in spring, or to fall rosettes. *Product not permitted for use in the San Luis Valley.
Chlorsulfuron** (Telar)	1 oz. product/acre (0.75 oz. active ingredient/acre)+ 0.25% v/v non-ionic surfactant	Spring from bolting to bud stages. **This herbicide has residual soil activity that will affect all broadleaf seedlings germinating after application has occurred.
Clopyralid (Transline)	0.67-1.33 pints product/acre + 0.25% v/v non-ionic surfactant	Apply to rosettes through flower bud stage in spring, or to fall rosettes.
Aminocyclopyrachlor + chlorsulfuron (Perspective)*	4.75-8 oz. product/acre + 0.25% v/v non-ionic surfactant	Apply from the seedling to the bolting stage. IMPORTANT: Applications greater than 5.5 oz. product/acre exceeds the threshold for selectivity. DO NOT treat in the root zone of desirable trees and shrubs. Not for use on grazed or feed forage. *Product not permitted for use in the San Luis Valley.



Colorado Department of Agriculture - Conservation Services

305 Interlocken Parkway

Broomfield, CO 80021

(303) 869-9030

www.colorado.gov/ag/weeds

