

# Weed Management Pocket Guide



LAS ANIMAS COUNTY  
COLORADO STATE UNIVERSITY  
EXTENSION



SMALL ACREAGE  
MANAGEMENT  
COLORADO STATE UNIVERSITY  
EXTENSION

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This brochure was created to increase awareness of Noxious Weeds, the importance of identification, the importance of a weed management program, and some methods of weed control based on local, state and national research-based information.

## How do I control weeds on my property?

1. Identify the weeds on your property.
2. Once a weed is identified, understand the life cycle of the weed
  - winter or summer annual
  - biennial
  - simple or creeping perennial
3. Understand the types of controls
  - Preventative
  - Cultural
  - Mechanical
  - Biological
  - Chemical
4. Develop a weed management plan
  - planning saves money and increases effectiveness
  - include long term monitoring to address any reinfestations.
  - timing is a critical part of successful weed control. Regardless of which combination of control methods are used, implementing those control methods at the correct stage of weed development will increase the chances for successful weed control in the shortest period of time, with the least cost.

It takes consistent persistence to win the war on weeds!

## What are noxious weeds?

Noxious weeds are non-native plants that disrupt native vegetation because they have no natural controls and are able to adapt to varied conditions. As a result of the Colorado Noxious Weed Act, these weeds have been placed on three separate lists (weed names are color-coded corresponding to the list they are on):

List A plants: Eliminated everywhere

List B plants: Spread should be stopped

List C plants: Control is recommended



Palisade Insectory - Home of Colorado's Biological control program (CO Dept of Ag)

Effective management occurs over time and requires repeated exposure to the recommended techniques and control methods. After years of investment in mitigating the weeds on your property, the plant will eventually be destroyed.

This brochure is not meant to be all inclusive or restrictive, but offers guidelines and recommendations. References for this guide are thanks to the following sources:

CO Dept. of Ag. - Noxious Weed Management Program  
[www.colorado.gov/pacific/agconservation/noxiousweeds](http://www.colorado.gov/pacific/agconservation/noxiousweeds)

CO Weed Management Association - Noxious Weed Info.  
[www.cwma.org](http://www.cwma.org)

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## Weed Control Methods

**Preventive:** The first and, most important step in a weed control program. In addition, prevention is probably the most cost-effective method of weed control. Methods include: maintaining healthy pastures, using weed-free crop seed, weed-free manure and hay, and clean harvesting and tillage equipment, as well as the elimination of weed infestations in areas bordering cropland, and in irrigation ditches and canals.

**Cultural:** Methods include, and are not limited to: Establishing and managing an adequate population of desirable vegetation to compete with the weeds; utilizing livestock (cattle, goats, sheep) when possible; mulching; burning; and even plastic weed barriers.

**Mechanical:** Methods include, and are not limited to: Hand-pull, hoe, mow and tillage.

**Biological:** Biological weed control involves the utilization of natural enemies for the control of specific weed species. Biological weed control is never 100% effective, and can take 5 to 10 years for success. However, this method can be successful especially when combined with other control methods.

**Chemical:** Always **read the label** before using any herbicide! Weed control with herbicides is an effective tool for many target weed species. However, there are several aspects to consider when choosing a chemical program. These include: ID of target weed; herbicide selection; timing of application; desirable crops or plant species near control areas; the number of applications per year, and the number of years for treatment. Sprayer calibration methods can be obtained from your local Extension office.

**Sprayer Calibration Fundamentals**  
<http://www.ext.colostate.edu/pubs/farmmgmt/05003.html>

\*\*Always add a nonionic surfactant at 0.32 oz/gal (1qt/100 gal) or per instructions.

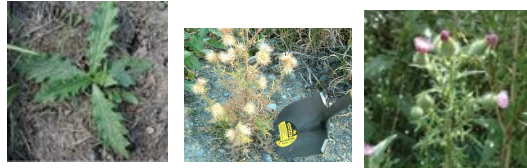
# Bull thistle

*Cirsium vulgare (Savi) Tenore*



## Keys to Id

- Leaves are prickly-hairy above and cottony below.
- Heads cobwebby-pubescent
- Flowers are composite and purple



## Identification

- Lifecycle: Biennial
- Growth form: Forb/herb
- Flower: Flowers are 1.5-2 in wide and clustered at the ends of branches. The flower bracts are somewhat tapered and covered with spines (Whitson et al. 1996).
- Seeds/Fruit: Seeds are capped with a circle of plume-like white hairs.
- Leaves: Leaves are alternate. Bull are the only thistles in Colorado that are prickly hairy on the top surface of the leaves. They are cottony-hairy on the undersides.
- Stems: In mature plants the leaves extend down, clasping the stem and are divided into segments (i.e. strongly decurrent).

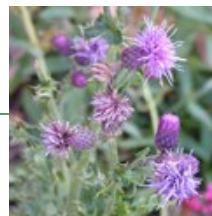
## Control

- *Mech*: sever the root below the soil surface
- *Bio*: *Urophora stylata*, a fly predator, can be used to help control this thistle.

HERBICIDE	RATE	TIMING
Clopyralid + 2,4-D (Curtail)	0.2 + 1.0 to 0.3 + 1.5 oz	Apply to rosettes in spring or fall.
Dicamba (Banvel, Vanquish, or Clarity)	0.5 + 1.0 oz	Apply to rosettes in spring or fall
2,4-D or 2,4-D + dicamba (Rangestar)	1.5 to 2.0 1.0 + 0.5 oz	Apply to rosettes in spring.

# Canada thistle

*Cirsium arvense (L.) Scop.*



## Keys to Id

- Purple flowers form in clusters of 1-5 per branch.
- Floral bracts are spineless.
- Small heads, vanilla scent.



## Identification

- Lifecycle: Perennial
- Growth form: Perennial forb
- Flower: Flowerheads are purple and borne in clusters of 1-5 per branch. Heads are only about 3/4 in wide. June-Oct.
- Seeds/Fruit: One-seeded fruits (achenes) are straw or light brown, straight or slightly curved
- Leaves: Leaves are spiny, alternate, oblong or lance-shaped, with the base leaves stalkless and clasping, or extended down along the stem.
- Stems: Mature plants range from 2-4 ft tall.
- Roots: Two types of roots, horizontal and vertical. The horizontal roots produce numerous shoots, while vertical roots store water and nutrients in their many small branches.
- Seedling: Early spring growth appears as rosettes with spiny-tipped, wavy leaves.
- Other: The floral bracts are spineless.

## Control

- *Mech*: Mowing can be effective if done every 10 to 21 days throughout the growing season.
- *Bio*: Cattle, goats, and sheep will graze when plants are young and succulent in the spring.

HERBICIDE	RATE	TIMING
Aminopyralid (Milestone)	5-7 ounces/acre 1 t./gal water	Spring at the pre-bud growth stage and/or to fall regrowth.
Chlorsulfuron (Telar DF)	1-3 ounces/acre 0.50 gr/1 gal water	Spring during bud to bloom stage and/or to fall regrowth.
Clopyralid + 2,4-D (Redeem)	3 pints/acre 1.25 oz/gal water	Apply from rosette to bud stage when all plants have emerged.

# Musk thistle

*Carduus nulans*



## Keys to Id

- Broad, spine-tipped bracts located under the flower
- Flowering heads are terminal, solitary, and usually nodding
- Grows up to 6 feet tall



## Identification

- Lifecycle: Biennial, or sometimes winter annual
- Growth form: Forb
- Flower: Heads are terminal, solitary, 1 1/2-3 in wide, and usually nodding. Deep rose, violet or purple, occasionally white. Flowers are subtended by broad, spine-tipped bracts. May-July.
- Seeds/Fruit: One-seeded oblong fruit (achene) about 0.2 inches long, shiny, yellowish-brown with a plume (pappus) of white hair-like bristles.
- Leaves: Alternate, dark green, deeply lobed, and spiny margined. The leaves extend onto the stem giving a winged appearance. Basal rosettes are well developed, leaves elliptical to lanceolate, 6-14 in, smooth to densely hairy.
- Stems: Mature plants can grow as tall as 6 ft. It can appear solitary or with several stems from one base, and is highly branched above.
- Roots: Fleshy taproot

## Control

- *Mech*: sever the root below the soil surface. Mowing is most effective when plants are at full-bloom.
- *Bio*: seed head weevil and the crown weevil are effective on large infestations.

HERBICIDE	RATE	TIMING
Aminopyralid (Milestone)	5 fl. oz./acre	Spring rosette to early bolting or in fall to rosettes.
Metsulfuron (Escort XP)	1 oz. product/acre	Spring from rosette through very early flower stage.
Chlorsulfuron (Telar)	1 oz. product/acre	Spring from rosette through early flower stage.

# Scotch thistle

*Onopordum acanthium L.*



## Keys to Id

- Flower heads cluster 2-5 and are purple
- Leaves are alternate, stalk-less and hairy underneath.



## Identification

- Lifecycle: Biennial
- Growth form: Forb
- Flower: Heads are numerous, 1-2 inches in diameter, with spine-tipped bracts.
- Seeds/Fruit: One-seeded fruit (achene) is wrinkled, brown to grayish-black, tipped with a plume (pappus) of slender bristles.
- Leaves: Leaves are alternate, large, irregularly lobed, and have sharp yellow spikes. Rosette leaves may be up to 2 feet long and 1 foot wide. Upper and lower leaf surfaces are covered with a thick mat of cotton-like or woolly hairs, giving the foliage a gray-green color.
- Stems: Mature plants can grow up to 12 feet tall, and have a large, fleshy taproot. Stems are numerous, branched, and have broad spiny wings.
- Roots: Thick fleshy taproot
- Seedling: Forms rosette

## Control

- *Mech*: sever the root below the soil surface. Mowing is most effective when plants are at full-bloom.
- *Bio*: none currently effective

HERBICIDE	RATE	TIMING
Picloram (Tordon 22K) *Restricted Use	1 pint/acre	Apply spring or fall in the rosette stage.
Aminopyralid (Milestone)	7 fl. oz./acre	Apply spring or fall in the rosette stage.
Metsulfuron (Cimarron X-tra)	2 oz./acre	Apply rosette to early bolt stages of growth. (Spring)

# Diffuse knapweed

*Centaurea diffusa* Lam



## Keys to Id

- Floral bracts have yellow spines with teeth like a comb and a distinct terminal spine
- Flowers are white or lavender
- Seedlings have finely divided leaves



## Identification

- Lifecycle: Biennial or short-lived perennial
- Growth form: Forb
- Flower: Broadly urn-shaped, 0.6-0.8 in tall, terminal solitary or in clusters of 2-3. Floral bracts are yellowish with a brownish margin, fringed on the sides, and terminating in a slender bristle or spine. The heads contain two types of flowers, ray flowers (white, rose-purple, to lavender) around the edges surrounding tubular disk flowers. June-Aug.
- Seeds: Seeds are light brown to black.
- Leaves: Basal leaves are stalked and divided into narrow, hairy segments. Stem leaves are smaller, alternate, less divided, stalkless, and become bract-like near the flower clusters.
- Stems: Upright, 4-24 in tall, highly branched, angled, with short, stiff hairs on the angles.
- Seedling: Finely divided leaves; covered by short hair

## Control

- *Mech*: sever the root below the soil surface. Mowing is most effective when plants are at full-bloom.
- *Bio*: livestock, seedhead weevil (*Larinus minutus*), and the root weevil fly (*Cyphocleonus achates*)

HERBICIDE	RATE	TIMING
Aminopyralid (Milestone)	5-7 oz/acre 1 t./gal water	Spring at rosette to early bolt stage and/or in the fall to rosettes.
2,4-D Amine (temp must be below 85°)	1 qt./acre 1 oz/gal water	Spring/fall rosettes - before flowering stalk lengthens.
Clopyralid + Triclopyr (Redeem R&P)	1.5-2 pints/acre 0.75 oz/gal	Rosette to early bolt stage of growth and/or in the fall to rosettes.

# Spotted knapweed

*Centaurea maculosa* L.



## Keys to Id

- Floral bracts have black tips, with comb-like spines of equal length.
- Flowers are pink to purple, but rarely white.
- Leaves are pinnately divided.



## Identification

- Lifecycle: Biennial or short-lived perennial
- Growth form: Forb
- Flower: Flowering heads are solitary at the ends of branches. The floral bracts are stiff and tipped with a dark comb-like fringe. The flowers are pinkish-purple or rarely cream colored.
- Seeds: Have a tuft of persistent bristles.
- Leaves: Alternate rosette leaves are up to 6 in long, and deeply lobed. The principal stem leaves are pinnately divided, have smooth margins, and become smaller toward the top of the shoot.
- Stems: Mature plants are 1-3 ft tall, single stemmed
- Roots: Spotted knapweed has a stout taproot.
- Seedling: Rosettes of spotted and diffuse knapweed are nearly indistinguishable. Leaves are narrow and 1-2 times pinnately divided

## Control

- *Mech*: remove all roots below the soil surface. Mowing is most effective when plants are at full-bloom.
- *Bio*: Seed head and Root weevils (*Larinus minutus* and *Cyphocleonus achates*)

HERBICIDE	RATE	TIMING
Aminopyralid (Milestone)	5-7 ounces/acre or 1 t./gal water	Spring at rosette to early bolt stage and/or in the fall to rosettes.
Clopyralid (Transline, Stinger)	2/3 - 1 pint/acre	Apply to spring/fall rosettes - before flowering stalk lengthens.
Clopyralid + 2,4-D (Curtail)	2-3 qts./acre	Apply in spring and fall to rosettes.

# Russian knapweed

*Acroptilon repens* (L.) De Candolle



## Keys to Id

- Distinguished by the pointed papery tips of the floral bracts.
- The roots are dark brown and have scale leaves.



## Identification

- Growth form: Perennial forb
- Flower: Heads are urn-shaped, solitary, and composed of disk flowers. Floral bracts are broad, ovoid, entire, and greenish at the base with papery, finely hairy edges. The petals are pink or purple.
- Seeds: Oval, grayish or ivory, with long white bristles (pappus) at the tip when young.
- Leaves: Alternate. Lower stem leaves are narrowly oblong to lance-shaped, and deeply lobed. The upper leaves are oblong, toothed, and become progressively smaller. Rosette leaves are lance-shaped, tapering at both ends, broadest at the tip.
- Stems: Mature plants are between 18-36 inches tall. The stems are erect, thin, stiff, branched, and when young are covered with soft, short, gray hair.
- Roots: Well-developed, recognizable by their black color and presence of small scale leaves.
- Seedling: The seed leaves are oval, with shallow toothed or smooth edges. The surface of the leaves looks grayish-green, but is not hairy.

## Control

- *Mech*: Mowing repeatedly before the plants bolt during the summer, then herbicide in the fall.
- *Bio*: gall midge (*Jaapiella ivannikovi*)

HERBICIDE	RATE	TIMING
Aminopyralid (Milestone)	4-6 ounces/acre	Bud and flowering stage and to dormant plants in the fall.
Picloram (Tordon 22K) *Restricted Use	1 qt./acre 1 oz/gal water	Apply in spring to bud/early flower stage or fall rosette.
Chlorsulfuron (Telar)	1-3 oz/acre 2 gr /3 gal water	Apply in spring from pre-bloom to bloom and to fall rosettes.

# Houndstongue

*Cynoglossum officinale*



## Keys to Id

- Panicles of reddish-purple flowers with 5 petals and 5 soft, hairy sepals.
- Velcro-like seeds with 4 nutlets.



## Identification

- Lifecycle: Biennial
- Growth form: Forb
- Flower: Flowers are reddish-purple, with five petals, arranged in panicles in the upper leaf axils.
- Seeds/Fruit: The fruit is composed of four prickly nutlets each about 1/3 inch long
- Leaves: Alternate, 1-12 inches long, 1-3 inches wide, rough, hairy, and lacking teeth or lobes. Basal leaves are elliptical and tapered at the base.
- Stems: Produces a single flowering stem. Stem is erect, stout, heavy, 1.5-3 ft tall, branched above.
- Roots: Thick, black, woody taproot.
- Seedling: Forms a rosette in the first year

## Control

- *Mech*: Cut or pull, and remove entire root crown when in the rosette stage. Remove the accumulated dense litter layer to stimulate germination of desired plants. Mow or cut flowering stems before seed nutlets develop
- *Bio*: none currently available in Colorado

HERBICIDE	RATE	TIMING
Metsulfuron Methyl + Chlorsulfuron (Cimarron X-tra)	2.0 oz. / acre	Apply in spring rosette to early bud growth stages.
Picloram + 2,4-D (Grazon P+D) *Restricted Use	4 pints / acre	Apply in spring rosette stage.

# Common Mullein

*Verbascum thapsus*

## Keys to Id

- Leaves - felt-like, bluish green in color.
- 5-10ft. tall flower spike.
- Biennial, rosette year 1, tall flowering stem year 2.



## Identification

- Lifecycle: Biennial
- Growth form: Forb
- Flower: 5 lobed sulfur to pale yellow color, developing as the flower spike extends.
- Seeds: Numerous tiny, angular, brownish seeds in 2-chambered capsules.
- Leaves: Year 1: rosette leaves are felt-like soft, and bluish-green in color; Year 2; large fuzzy alternate overlapping leaves on stem.
- Stems: Produces a single flowering stem. Stem is erect, 2-8 ft tall; dried stalks stand through winter.
- Roots: Shallow taproot.
- Seedling: Forms a rosette in the first year

## Control

- **Mech:** Dig or pull, and remove entire root when in the rosette stage. Will not tolerate tillage. Mowing is not as effective, repeated mowing is necessary.
- **Bio:** none currently available in Colorado
- **Chemical:** must apply with surfactant to aid in the penetration of chemical through the hairs on leaves.

HERBICIDE	RATE	TIMING
Metsulfuron = Methyl + Chlorsulfuron (Cimarron X-tra)	0.5 oz. / ac	Apply at rosette stage.
Glyphosate	12-16 oz. / ac	Apply in spring rosette stage.

# Locoweed (Wooly)

*Oxytropis sericea* or *Oxytropis lambertii*

Abnormal behavior of poisoned animals called "locoed" behavior results from locoweed-induced neurologic damage. Most of the time, animals become depressed and lethargic. Although some of the toxic effects resolve after animals are removed from infested areas, the neurologic damage may be permanent.



## Keys to Id

- Flowers are white or purple with a pointed keel (pea-like) and borne on a leafless stalk.
- Leaves: Opposite, pinnate, and covered with silvery hairs.
- Seed pods are erect, stalkless, with a short beak that splits open to release numerous smooth brown seeds.

## Control

### Cultural:

- Reduce grazing pressure in pastures to maintain healthy desirable species.
- Defer grazing from locoweed-infested sites in the spring when locoweed is green and growing.

### Mech:

- Hand pull, dig, grub to remove all parts of plant, especially seed.
- Wear protective clothing, plant is toxic to humans in addition to livestock.

**Chem:** Vegetative/early bloom in spring

HERBICIDE	RATE	TIMING
Picloram + 2-4,D (Grazon P&D)	2 qt./acre 0.625 lbs ai/ac	Spring, vegetative to early bloom
Metsulfuron (Escort, Ally)	0.6-0.8 oz/acre	Spring, vegetative to early bloom
Clopyralid	20-30 gm ae/Ac	Spring, vegetative to early bloom

# Salt Cedar (Tamarisk)

*Tamarix ramosissima* Ledeb. or *T. parviflora* DC.

## Keys to Id

- Saltcedar is a tall shrub or small tree
- Flowers are white to pink in clusters called racemes.
- Leaves are small and scaly.



## Identification

- Lifecycle: Perennial
- Growth: deciduous, loosely branched.
- Flower: Whitish or pinkish in clumps 2-5 cm long on the current year's branches. Petals retained on fruit.
- Seeds: Very small capsule, tuft of hair at one end.
- Leaves: Scale-like, alternate, bluish-green.
- Stems: Smooth, slender, flexible, break easily; may become 15-25 ft. tall; reddish-brown bark.
- Roots: deep taproot, extensive spreading horizontal roots. Produces adventitious buds.

## Control

- **Cultural:** Maintain healthy riparian vegetative cover.
- **Mech:** Chainsaw, bulldozer, mulching, and mowing MUST be combined with chemical treatments.
- **Bio:** The saltcedar leaf beetle (*Diorhabda elongata*) feeds on foliage causing stem dieback.

HERBICIDE	RATE	TIMING
Triclopyr (Garlon 4) **approved aquatic label	- <b>Foliar</b> : 2-4 qt/acre - <b>Cut-stump</b> : 100% - <b>Basal bark</b> : 1:3 herbicide:natural oil	<b>Foliar</b> : late spring to early fall <b>Cut-stump</b> : anytime unless snow present. <b>Basal bark</b> : anytime unless snow present.
Glyphosate (Rodeo) *nonselective **aquatic label	- <b>Cut-stump</b> : 100%	Anytime unless snow present. Treat the cambium after cut; fully wet the surface.
Imazapyr (Arsenal) or (Habitat) **aquatic label	- <b>Foliar</b> : 0.5-6.5 oz/gal water - <b>Cut-stump</b> : 8 -12 oz/gal water	<b>Foliar</b> : late spring to late summer; avoid spray solution run-off. <b>Cut-stump</b> : anytime except spring.

# Hoary Cress (Whitetop)

*Cardaria draba*

## Keys to Id

- White flowers.
- Grows erect 10-24" in height
- Leaf is 3/4-4" long with blunt end and fine white hairs.



## Identification

- Lifecycle: Perennial
- Growth form: Forb
- Flower: Numerous white flowers with four petals, plant has white, flat-topped appearance. May-June.
- Seeds/Fruit: Seed capsules are heart shaped, and contain two reddish-brown seeds.
- Leaves: Alternate, blue green, and lance-shaped. Lower leaves are stalked, while the upper leaves have two lobes clasping the stem.
- Stems: Mature plants reach 2 ft tall with erect stems
- Roots: Rhizomatous; 29-32 inches deep

## Control

- **Mech:** Mowing several times before the plants bolt stresses it and allows for better chemical efficacy
- **Bio:** none currently available

HERBICIDE	RATE	TIMING
Metsulfuron (Escort XP)	1 oz/acre	Apply at the early bud growth stage; i.e. "broccoli" growth stage. (Early Spring to Early Summer)
Chlorsulfuron (Telar)	1 oz/acre	Apply at the early bud growth stage; (Early Spring to Early Summer)
Imazapic (Plateau)	12 fl. oz./acre + 2 pints/acre methylated seed oil or crop oil concentrate	Apply at late flower to post-flower growth stage. (Late Spring to Mid Summer)

# Kochia

(*Kochia scoparia* L.)

## Keys to Id

- Soft green-grey leaves on branched stems
- Pyramidal or conical shaped bushes can reach 6 ft in height.



## Identification

- Lifecycle: Summer Annual
- Growth form: Forb
- Flower: Inconspicuous
- Seeds/Fruit: Wedge-shaped, dull brown
- Leaves: Alternate, lance-shaped
- Stems: Branched, round, slender, often red tinged
- Similar in looks to Russian Thistle

## Control

- **Mech:** Hand pulling. If plants have set seed, collect and dispose of plants. Small plants may be tilled.
- **Bio:** None.

HERBICIDE	RATE	TIMING
Aminopyralid (Milestone)	6-7 oz product/acre + 0.25% v/v non ionic surfactant	Apply before plants have seeded
Metsulfuron + Mythel+ Chlorsulfuron (Cimarron X-tra)	0.5 oz/acre	Apply before plants have seeded

# Russian Olive

*Elaeagnus angustifolia* L



## Keys to ID

- A tall shrub or small tree
- Many yellowish olive-shaped fruits.
- Leaves are light green above and silvery beneath.

## Identification

- Lifecycle: Perennial
- Growth: deciduous, small tree.
- Flower: Small, light yellow clusters, bisexual.
- Seeds: Olive-shaped fruits, silver at first becoming yellow-red when mature. Produces great quantities.
- Leaves: Simple, alternate, narrow 2-3 inches long, and are untoothed. Upper surface is light green, the lower surface is silvery white with dense scales.
- Stems: Has 1-2 inch thorns on trunk and branches.
- Roots: Can produce root suckers. Shade tolerant.

## Control

- **Cultural:** Maintain healthy riparian vegetative cover.
- **Mech:** Brush mowing and removal of cut material-MUST be combined with chemical treatments.
- **Bio:** Tubercularia canker girdles tree over time.
- **Bio:** The saltcedar leaf beetle (*Diorhabda elongata*) feeds on foliage causing stem dieback.

HERBICIDE	RATE	TIMING
Triclopyr (Garlon 4) **approved aquatic label	- <u>Cut-stump</u> : 100%	<u>Cut-stump</u> : Apply to the cambial layer immediately after the cut-stump treatment.
Imazapyr (Arsenal) or (Habitat) **aquatic label	- <u>Foliar</u> : 4-6 pts./acre	Broadcast spray individual trees; low or high volume spray.
Imazapyr (Arsenal) or (Habitat) **aquatic label	- <u>Cut-stump</u> : dilute: 8 -12 oz/gal water	- <u>Cut-stump</u> : Apply to the cambial layer immediately after the cut-stump treatment.

# Perennial Pepperweed

*Lepidium latifolium*

## Keys to Id

- Dense clusters of white flowers.
- Leaves and stem - covered with waxy layer.



## Identification

- Lifecycle: Perennial, member of the mustard family.
- Growth form: Forb
- Flower: White; packed in dense clusters near the ends of branches. May-Aug.
- Fruit: Nearly round, very small and sparsely hairy.
- Leaves: Alternate, lance-shaped, may be toothed, bright-green to gray-green, basal leaves are larger than the upper leaves.
- Stems: Mature plants are 1-3 ft tall.
- Roots: Deep-seated roots.
- Other: The leaves and stem are covered with a waxy layer.
- Exotics: Do not have clasping bases, unlike Hoary cress leaves with clasping bases.

## Control

- **Mech:** Hand pull/dig is not effective. Instead, mow in spring before seed-set and combine with chemical treatments.
- **Bio:** none currently available, eradication is goal in Mesa County. Do NOT graze—toxicity is high.

HERBICIDE	RATE	TIMING
Chlorsulfuron (Telar)	1 oz / acre	Bolting to early flower. (Early Spring to Early Summer)
Metsulfuron (Escort XP)	1 oz / acre	Bolting growth stage. (Spring)
Imazapyr (Plateau)	12 fl oz / acre + 2 pt / ac. seed oil	Flower to late flower growth stages. (Summer)

# Field Bindweed

*Convolvulus arvensis*

## Keys to Id

- Flowers are funnel-shaped, white to pink, and have two small bracts one inch below the flower base.
- Leaves are shaped like arrowheads.



## Identification

- Lifecycle: Perennial
- Growth form: Forb
- Flower: bell or trumpet-shaped, white to pink in color, and are about 1 inch long, small bracts below
- Seeds/Fruit: Seeds can remain viable for 40 years.
- Leaves: Alternate, arrowhead shaped.
- Stems: Prostrate, many feet in length
- Roots: Rhizomatous with deep taproot

## Control

- **Mech:** Cutting, mowing, or pulling has a negligible effect unless the plants are cut below the surface in the early seedling stage.
- **Bio:** The bindweed gall mite, *Aceria mahlerbae*, and *bindweed moth*, *Tyta luctuosa* are effective in Colo.

HERBICIDE	RATE	TIMING
Clarity + 2,4-D Amine (temp must be below 85°)	1 qt/acre 1 oz/gal water	Just after full-bloom and/or fall. DO NOT apply near or under trees/shrubs or where soils have rapid permeability.
Tordon 22K* *Restricted Use	1 qt/acre 1 oz/gal water	Just after full-bloom and/or fall. DO NOT apply near or under trees/shrubs or where soils have rapid permeability.
Roundup Ultra* *non-selective herbicide	4-5 qts/acre 4-5 oz/gal	Apply at full-bloom and/or in fall.

# Common Cocklebur

*Xanthium strumarium L.*



## Keys to ID

- 2 to 4 feet tall.
- Fruits are about 1" long and prickly, stick easily to fur, hair and fabrics.

## Identification

- Lifecycle: Annual
- Growth: Forb, branching
- Flower: Small, in axils of upper leaves, male and female flowers are separate.
- Seeds: Dark brown, flattened, pointed tips.
- Leaves: Alternate, triangular or heart-shaped, rough on both sides
- Stems: Erect, branched, ridged, rough.
- Seeds and seedlings are toxic to livestock

## Control

- **Cultural:** Maintain healthy stand of natives/desired perennials, carefully manage grazing to ensure protection of desired plant species.
- **Mech:** Cutting or mowing has a negligible effect, repeated hand pulling must be done to include as much of the remaining root system as possible.
- **Chemical:** Glyphosate herbicides applied at the recommended label rate to young seedlings will be effective when combined with other control methods.

# Rabbit Brush

*Ericameria nauseosa*



## Keys to ID

- 2 to 4 feet tall.
- Bright, fragrant yellow flowers
- Grey-green leaves

## Identification

- Lifecycle: Perennial
- Growth: Forb, branching
- Flower: Yellow, terminal, clustered
- Leaves: Numerous, slender, alternate, 3/4-2"
- Stems: Silky, wooly covered
- Native invader

## Control

- **Cultural:** Avoid over-grazing
- **Mech:** Cutting or mowing has a negligible effect, due to re-sprouting from crown.
- **Chemical:** Glyphosate herbicides applied at the recommended label rate to young seedlings will be effective when combined with other control methods.
- **Bio:** *Trirhabda nitidicollis* leaf beetle Both the adult and larvae feed on rabbitbrush leaves, though use by larvae is heavier and more likely to result in mortality. Moderately effective control is possible; USDA approval status for formal use is uncertain.

HERBICIDE	RATE	TIMING
Aminocyclopyrachlor + metsulfuron methyl + triclopyr	4.75 to 8 oz + 1.0 to 1.5 lb	Most effective in late summer-early fall before frost.
Clopyralid + 2,4-D	2.2 kg/ha	During active growth with 2.5-4 inches of new growth, but when grasses are going dormant

# Winter Annuals

Select problem landscape plants

## Cheatgrass - Downy brome

*Bromus tectorum*

### Keys to ID

- Drooping seedhead
- Densely hairy leaves
- Greens early spring
- Changes to purple/tan in early summer



## Mustards Shepard's purse

*Capsella bursa-pastoris*

### Keys to ID

- Lobed basal leaf
- Deeply toothed leaf
- Long, slender flower stalk
- Terminal flower cluster
- Small white 4-petal flowers



## Mustards - Tansy mustard

*Sisymbrium altissimum*

### Keys to ID

- Coarse deeply divided leaf
- Narrow lobed upper leaf
- Stem erect and branched
- Small yellow 4-petal flowers
- Tumbles in the wind



## Control

- **Prevent Seed Production**
- **Cultural:** Maintain healthy stand of natives/desired perennials, carefully manage grazing to ensure protection of desired plant species.
- **Mech:** Cutting or mowing has a negligible effect, repeated hand pulling must be done to include as much of the remaining root system as possible.
- **Bio:** Domestic livestock grazing, when timed correctly can help reduce invasive plants over time.
- **Chemical:** Glyphosate herbicides applied at the recommended label rate to young seedlings will be effective when combined with other control methods.

# Backyard Weed Control Tips

Weeds (or undesirable vegetation) are a concern anytime they compete with the desired vegetation of your landscape or garden area. Weeds are opportunistic and will occupy any space that they can readily invade. Know that tolerating a few weeds can allow a healthy, functioning, attractive sustainable system.

Proper management, whether it be healthy turfgrass, adequate native plantings, or adequate mulch depth, can help to severely limit the impact that invasive and weed plants have.

An integrated management approach to weed prevention will allow for the best results to reduce any weed concerns on your property. This takes time and attention over the long term to achieve successful results.

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CSU Ext, Preparation of small spray quantities of pesticides  
<http://extension.colostate.edu/docs/pubs/garden/07615.pdf>

CSU Ext, Weed Management for small rural acreages  
<http://extension.colostate.edu/docs/pubs/natres/03106.pdf>

CSU Ext. Yard and Garden Publications  
<http://extension.colostate.edu/topic-areas/yard-garden/>

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