Noxious Weed Management

TELLER 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:

US Department of Agriculture
http://plants.usda.gov/java/factSheet

CO Dept. of Ag. - Noxious Weed Management Program
https://www.colorado.gov/pacific/agconservation/noxiousweeds

CO Weed Management Association - Noxious Weed Info.
http://www.cwma.org/

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Weed Control Methods

Preventive: Prevention is the first and, perhaps, the 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.

Fact Sheet: *Sprayer Calibration Fundamentals*
https://extension.colostate.edu/topic-areas/agriculture/sprayer-calibration-fundamentals-5-003/

Always add a nonionic surfactant @ 0.32 oz/gal (1qt/100 gal) unless noted.

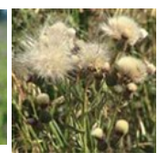
Canada thistle

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.

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 CO.

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.

Fringed Sage

Artemisia frigida

Keys to Id

- Mat-like with slivery color until production of flower stalks
- Strong sage smell can be found
- Bitter tasting


Identification

- Lifecycle: Perennial
- Growth form: Forb
- Flower: yellow
- Leaves: Soft, silver, often in clusters of 3 or 5
- Stems: up to 1.5 ft tall

Control

- *Mech:* Cutting, mowing, or pulling has a negligible effect unless the plants are cut below the surface in the early seedling stage.

HERBICIDE	RATE	TIMING
Picloram (Tordon 22K*) *Restricted	1.5 qts/acre 1 oz/gal	Apply at mid-flowering to late fall
Chlorsulfuron (Telar)	1.25 oz/acre added to Tordon	Apply at mid-flowering to late fall

Hoary Cress (Whitetop)

Cardaria draba

Keys to Id

- White flowers.
- Grows erect 10-24” in height
- Leaf is 3/4-4” long with blunt 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. Hand pull small infestation, removal ALL roots.
- *Bio:* none currently available in Colorado.

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)

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.

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 2/3 gr./gal water	Apply in spring from pre-bloom to bloom and to fall rosettes.

Yellow toadflax

Linaria vulgaris P. Miller

Keys to Id

- Yellow flowers that are dragons with deep orange centers.
- Stems that are woody at the top.

Identification

- Lifecycle: Perennial
- Growth form: Forb
- Flower: Bright yellow and resemble snapdragons, singly on ends of branches, sharp thorns below.
- Seeds: Capsules are round-ovate, and two-celled. Seeds are brown or black, circular, and surrounded by a notched wing.
- Leaves: Soft, lance-shaped, and pale green. Mainly alternate; lower leaves appear to be opposite.
- Stems: Mature plants are 1-3 feet tall with 1-25 smooth erect floral stems covered with cottony hairs
- Roots: Deep taproot, long horizontal roots that can develop adventitious bud sprouts.
- Other: Closely related to Dalmatian toadflax (whos leaves are shorter, wider, and clasp the stem.)

Control

- *Mech:* Long term, persistent hand pulling, or digging, can reduce occurance in lieu of herbicide use.
- *Bio: Calophasia lunula,* a predatory noctuid moth, *Eteobalea intermediella,* a root boring moth and *Mecinus janthinus,* a stem boring weevil are currently available in Colorado.

HERBICIDE	RATE	TIMING
Picloram (Tordon 22K*) *Restricted	1.5 qts/acre 1 oz/gal	Apply at mid-flowering to late fall
Chlorsulfuron (Telar)	1.25 oz/acre added to Tordon	Apply at mid-flowering to late fall (Aug thru Sept)

Dalmatian toadflax

Linaria dalmatica

Keys to ID

- Yellow flowers that are like snapdragons with deep orange centers.
- Thick, waxy, bluish heart-shaped leaves that wrap the stem.

Identification

- Lifecycle: Perennial
- Growth form: Forb
- Flower: Loose, elongate, bright yellow.
- Seeds/Fruit: Fruits are egg-shaped capsules. Seeds are sharply angular, and slightly winged.
- Leaves: Alternate, broad, clasping but crowded.
- Stems: Mature plants are up to 3 ft tall. A single toadflax plant contains from 1-25 vertical, floral stems, are thick-walled and semi-woody.
- Roots: May penetrate 3 ft into the soil. Horizontal roots may grow to be several yards long, and can develop adventitious buds.
- Yellow toadflax is similar, but has more linear pointed leaves, and is generally a smaller plant.

Control

- *Mech:* Hand pulling, for many years after 1st detection, is recommended for eradication.
- *Bio: Calophasia lunula,* a predatory noctuid moth, *Eteobalea intermediella,* a root boring moth and *Mecinus janthinus,* a stem boring weevil are currently available in Colorado.

HERBICIDE	RATE	TIMING
Picloram (Tordon 22K*) *Restricted	2-4 pints/acre 1 oz./gal water	Apply at spring flowering or in fall
Chlorsulfuron (Telar)	2-3 oz/acre	Apply at spring flowering or in fall
2,4-D + Dicamba (Rangestar)	2 qt. + 2 qt./acre 1 oz./gal water	Pre-bloom to flower stage (retreatment is essential)

Leafy spurge

Euphorbia esula L.

Keys to Id

- Flowers are yellowish-green and have a pair of heart shape yellow-green bracts below each inconspicuous flower.
- The entire plant contains white, milky latex.



Identification

- Lifecycle: Perennial
- Growth form: Forb
- Flower: Numerous small clusters of small yellowish-green enclosed by paired heart-shaped yellow-green bracts. May-July.
- Seeds: Oblong, grayish to purple, in a capsule.
- Leaves: Alternate, narrow (1/4" wide), 1-2.5" long.
- Stems: Erect and unbranched (except at flower), thickly clustered, can reach 3 ft tall
- Roots: Extensive lateral root system.
- Seedling: Seed leaves (cotyledons) are linear to lanceolate, with entire margins.
- Other: The entire plant contains white, milky latex. Foliage of the plant is smooth and hairless.

Control

- *Mech:* Mowing will reduce seed production, repeat every 2 to 4 weeks during the growing season
- *Bio:* Both sheep and goats can be effective grazers. Flea beetles (*Aphthona* spp.), are effective especially when combined with grazing and/or herbicides

HERBICIDE	RATE	TIMING
Picloram (Tordon 22K *Restricted Use*)	1 qt./acre 1 oz/gal water	Spring, just after full-bloom and/or fall.
Imazapic (Plateau)	12 oz/acre 0.4 oz/gal water	Fall only treatment prior to hard freeze.
2,4-D Amine	2-3 qts/acre 2-3 oz/gal water	Early spring and fall. Prevents seed formation

Spotted knapweed

Centaurea maculosa L.

Keys to Id

- Floral bracts have black tips, with 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 minutes* 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.

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 solitarily 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.

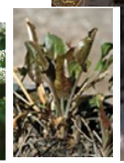
HERBICIDE	RATE	TIMING
Aminopyralid (Milestone)	5 fl. oz./acre	Spring rosette to early bolting or in fall to rosettes.
Metsulfuron (Escort XP)	1 oz. product/acre	Spring from rosette through very early flower stage.
Chlorsulfuron (Telar)	1 oz. product/acre	Spring from rosette through early flower stage.

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 in Colorado.

HERBICIDE	RATE	TIMING
Chlorsulfuron (Telar)	1 oz / acre 0.5 gr./gal water	Bolting to early flower. (Early Spring to Early Summer)
Metsulfuron (Escort XP)	1 oz / acre 0.5 gr./gal water	Bolting growth stage. (Spring)
Imazapyr (Plateau)	12 fl oz / acre + 2 pt/ac seed oil 2 tsp./gal water +1% sol. seed oil	Flower to late flower growth stages. (Summer)

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
Aminopyralid (Milestone)	5-7 oz./acre 1 tsp/gal water	Apply to rosettes in spring or fall.
Dicamba (Banvel, Vanquish, or Clarity)	1 qt./ acre 1oz./gal water	Apply to rosettes in spring or fall
2,4-D or 2,4-D + dicamba (Rangestar)	1 qt./acre 1 oz/gal water	Apply from bolting to bud stages in spring.

Locoweed (White Point, Woolly, Spotted)

Oxytropis sericea or *Oxytropis lambertii*

Abnormal behavior of poisoned animals has been described. This "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. Three varieties are present in Park county, including, Wooley loco, White Loco, and Spotted Loco

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

Scentless Chamomile

Matricaria perforate

Keys to Id

- Flowers have a yellow center disk, with white petals around.
- Odorless when crushed.
- Leaves are alternate, finely divided.

Identification

- Lifecycle: Annual, biennial or short-lived perennial.
- Growth form: Forb
- Flower: White, ¾ inch daisy like flowers that are solitary on each stem.
- Seed: Continually produces flowers and seed all season. One flower head can produce 300 seeds.
- Leaves: Alternate, finely divided and fernlike.
- Stems: 6 in. to 3 feet tall; numerous branches.
- Roots: Large and fibrous.
- Seedling: Seedlings emerging in spring can produce a dense mat, out competing other species.

Control

- *Mech:* Hand pulling small populations; frequent, shallow tillage in non-native areas. Mowing is not effective. Prevent seed production. Combine efforts with chemical options for effective control.
- *Bio:* Nothing available in Colorado.

HERBICIDE	RATE	TIMING
Metsulfuron (Escort XP)	0.33 oz/ac	Apply when plant is in rosette to bolting growth stage.
Chlorsulfuron (Telar)	0.33 oz /ac	Apply when plant is in rosette or bolting growth stage.
Aminopyralid (Milestone)	7 fl oz/ac	Apply when plant is in rosette growth stage.

Oxeye daisy

Chrysanthemum leucanthemum L.

Keys to Id

- Creeping perennial; Daisy-like; grows 10 inches to 2 feet tall.
- White ray flower on yellow disk; 2” diameter.

Identification

- Lifecycle: Perennial, short-lived
- Growth form: Forb
- Flower: Heads are solitary at the ends of branches. Heads are white ray flowers & yellow disk flowers.
- Seeds/Fruit: Fruits have about 10 ribs.
- Leaves: Alternately arranged leaves become progressively smaller upward along the stem. The upper leaves become stalk-less and toothed. Basal and lower stem leaves are 2-5”long, spoon-shaped. Stems: Mature plants are 10-24 in tall with erect, smooth to sparsely hairy stems.
- Roots: Shallow, branched rhizomes.
- Other: Oxeye daisy is easily confused with the ornamental Shasta daisy which has a root ball and is a more robust plant with larger flowers.

Control

- *Mech:* Hand pull or dig when soil is moist and infestations are small, be sure to pull up all roots.
- *Bio:* Goats or sheep can be effective. There are no insect biological controls currently available.

HERBICIDE	RATE	TIMING
Metsulfuron (Escort XP)	1 oz/acre	Surfactant is absolutely necessary. Apply at flowering growth stage. (Summer)
Chlorsulfuron (Telar)	1 oz/acre	Surfactant is absolutely necessary. Apply at flowering growth stage. (Summer)

Houndstongue

Cynoglossum officinale

Keys to Id

- Panicles of reddish-purple 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.

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.

The best weed control is prevention!

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.

Some Additional Resources:

CMG Garden Notes #351, Weed Management
http://cmg.colostate.edu/Gardennotes/351.pdf

CSU Ext, Preparation of small spray quantities
https://extension.colostate.edu/docs/pubs/garden/07615.pdf

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

CSU Ext. Yard and Garden Publications
http://extension.colostate.edu/topic-areas/yard-garden/?target=publications

Utah State University Extension - Yard and Garden
http://extension.usu.edu/yardandgarden/

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