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
   - Biological
   - Cultural
   - Mechanical
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.

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

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 and photographs for this guide are thanks to the following sources:

Colo. Dept. of Ag. - Noxious Weed Management Program
www.colorado.gov/ag/weeds
Colo. Weed Management Association - Noxious Weed Info.
www.cwma.org/

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It takes consistent persistence to win the war on weeds!
**Bull thistle**  
*Cirsium vulgare* (Savi) Tenore

**Keys to Id**
- Leaves are prickly-hairy above and cotty 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. Bulb 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: 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**
--- | --- | ---
Clomazone + 2,4-D (Curtil) | 0.2 + 1.0 to 0.3 + 1.5 oz | Apply to rosettes in spring or fall.
Dicamba (Banvel, Engenia, or Clarity) | 0.5 + 1.0 oz | Apply to rosettes in spring or fall.
2,4-D or 2,4-D + dicamba (Rangel) | 1.5 to 2.0 + 0.5 oz | Apply to rosettes in spring.

--- **Control**
- Mech: Sever the root below the soil surface; mow in full bloom and dispose of flowering heads-seeds can mature after plant is cut. Monitor to prevent reoccurrences.
- Bio: Seedhead weevil (Larinus minutus).

**HERBICIDE** | **RATE** | **TIMING**
--- | --- | ---
Aminopyralid (Milestone) | 5 oz/acre | Spring to early summer rosette to bolting growth stages or fall.
Clomazone (Transline) | 0.67 pint/acre | In rosette growth stage. (Spring or Fall)
Clomazone + 2,4-D (Curtil) | 2 quarts/acre | In rosette growth stage. (Spring or Fall)
Picolamid (Tordon 22K) *Restricted Use* | 1.2 pints/acre | In rosette growth stage. (Spring or Fall)
2,4-D | 1 quart/acre | In rosette growth stage. (Spring or Fall)

--- **Hercules** **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 oz/acre | Spring at the pre-bud growth stage and/or to fall regrowth.
Metsulfuron (Escort XP) | 1 oz. product/acre | From rosette to early blooming or in fall to rosettes.
Chlorsulfuron (Teral) | 1 oz. product/acre | From rosette to early blooming or in fall to rosettes.

--- **Musk thistle**  
*Carduus nutans*

**Keys to Id**
- Broad, spine-tipped bracts located under the flower.
- Flowering heads are terminal, solitary, and usually nodding.
- Grows up to 6 ft 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 roots below soil surface; mow in full bloom and dispose of flowering heads-seeds can mature after plant is cut. Monitor to prevent reoccurrences.
- Bio: Seedhead weevil (Larinus minutus).

**HERBICIDE** | **RATE** | **TIMING**
--- | --- | ---
Aminopyralid (Milestone) | 5 oz/acre | Spring to early summer rosette to bolting growth stages or fall.
Clomazone (Transline) | 0.67 pint/acre | In rosette growth stage. (Spring or Fall)
Clomazone + 2,4-D (Curtil) | 2 quarts/acre | In rosette growth stage. (Spring or Fall)

--- **Plumeless Thistle**  
*Carduus acanthoides* L

**Keys to Id**
- Flower heads occur in clusters of 2-5, purple to dark red in color.
- Alternate leaves, stalk-less, hairy on bottom.

**Identification**
- Lifecycle: Biennial
- Growth form: Forb
- Flower: Solitary at the ends of branches or in clusters of 2-5. Bracts appear as sharp spines. Purplish-pink; heads are 1-2 inches in diameter
- Leaves: Alternate, stalk-less, hairy underneath, coarsely lobed, basal leaves spiny. Stems: Spiny, can reach 48" tall.
- Roots: Fleshy taproot
- Other: Plumeless thistle are distinguished from musk thistle by the leaf-like spines on stem and hairy leaf underside; flowers are 1/3rd size of musk.

**Control**
- Mech: Sever roots below soil surface; mow in full bloom and dispose of flowering heads-seeds can mature after plant is cut. Monitor to prevent reoccurrences.
- Bio: Seedhead weevil (Larinus minutus).
Meadow Knapweed  
Centaurea pratensis

**Keys to Id**

- Flowers are pink to purple; nickel size;
- Fringed margins on bracts.

**Identification**

- Lifecycle: Perennial
- Growth form: Forb
- Seeds: White to light brown seeds with short plumes.
- Leaves: Brightly green; lower leaves are entire, coarsely lobed, or toothed.
- Stems: Several upright stems, can reach 40" tall.
- Roots: Long taproot.
- Other: Hybrid - traits can vary between plants.
- Meadow knapweed prefers cooler and wetter conditions than spotted knapweed

**Control**

- Mech: Hand pulling or digging of small populations; remove entire root system. Monitoring for long term is essential to prevent recurrences.
- Bio: Inappropriate, as eradication is the goal.

**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, 2-4 ft 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 (Larinioides minutus), and the root weevil fly (Cyphocleonus achates).

**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 dark 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)

**Spotted Knapweed**  
Centaurea maculosa L.

**Keys to Id**

- Flowers 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 in 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 (Larinioides minutus and Cyphocleonus achates)

**Diffuse Knapweed**  
Centaurea diffusa Lam

**Identification**

- Lifecycle: Biennial or short-lived perennial
- Growth form: Forb
- 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 dark 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)
**Purple loosestrife**

**Lythrum salicaria L.**

**Keys to Id**
- Showy pinkish-purple flowers bloom in long vertical racemes.
- Smooth Lance-shaped leaves.
- Four sided stem.

**Identification**
- Lifecycle: Perennial
- Growth form: Forb or woody sub-shrub
- Flower: Purple/magenta with 5-7 petals arranged in long vertical racemes.
- Seeds/Fruit: Fruits are many-seeded capsules, seeds are small and ovoid.
- Leaves: Simple, entire, opposite or whorled
- Stems: Annual stems arise from a perennial rootstock. Stems are erect, 1.5-8 feet tall. Plants become taller and bushier as the rootstock matures.
- Roots: Short rhizomes and taproot.
- Other: Sometimes confused with fireweed (Epilobium spp.), which have 4-petaled flowers.

**Control**
- Mech: Hand removal, prior to seed set, of isolated individuals on small infestations. Remove the entire rootstalk. Flowerheads must be cut and disposed of properly before a herbicide is applied.
- Bio: Inappropriate, as eradication is the goal. A root feeding weevil (Hyllobius transversovittatus).

**Herbicide Recommendations**
- **Triclopyr** (Garlon 3A)
  - 1-2 qts./acre
  - 1.3-2.5 oz/gal water
  - Summer. If plants are flowering, cut and properly dispose of flower heads before applying Rodeo.
- **Glufosinate** (Rodeo - aquatic safe) *nonselective*
  - 1-2 qts./acre
  - 1.3-2.5 oz/gal water
  - Summer during the flowering stage. Cut and properly dispose of flowerheads before applying Rodeo.

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**Myrtle Spurge**

**Euphorbia myrsinites**

**Keys to Id**
- Low growing, blue green waxy leaves;
- Flowers are yellow-green bract-like bracts;
- Contains milky sap.

**Identification**
- Lifecycle: Perennial
- Growth form: Forb
- Flower: Yellow-green bracts that bloom in the early spring.
- Seeds/Fruit: Hard; round
- Leaves: Alternate, blue-green, fleshy, trailing stems.
- Stems: Mature plants are 4-6' tall and can reach 18" laterally along the ground.
- Roots: Taproot.
- Other: The plant exudes a milky sap that can be irritating to the skin.

**Control**
- Mech: Hand removal, with care, avoid milky sap. Remove the entire rootstalk. Remove any seed source.
- Bio: Inappropriate, as eradication is the goal.

**Herbicide Recommendations**
- **Dicamba** + 2,4-D (amine or ester)
  - 1 pint Dicamba + 2-3 pints 2,4-D
  - Springfall regrowth; 4.0 lbs active ingredient/acre.
- **Picloram** (Tordon 22K *Restricted Use*)
  - 1 quart/acre
  - Spring growth stage during spring or to fall regrowth.

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**Leafy Spurge**

**Euphorbia esula**

**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 herbicide.

**Herbicide Recommendations**
- **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.

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**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 greyish-black, tipped with a plume (pappus) of slender bristles.
- Leaves: Alternates, 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 wooly 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 Recommendations**
- **Picloram** (Tordon 22K *Restricted Use*)
  - 1 pint/acre
  - Apply spring or fall in the rosette stage.
- **Imazapyr** (Milestone)
  - 7 oz/acre
  - Apply spring or fall in the rosette stage.
- **Metolachlor** (Cimarron X-tra)
  - 2 oz/acre
  - Apply rosette to early bolt stages of growth. (Spring)
Yellow toadflax  
Linaria vulgaris P. Miller

**Keys to Id**
- Yellow flowers that are like snapdragons with deep orange centers.
- Stems that are woody at the base and smooth to 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: Alternate, broad, clasping the stem.
- 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: Shallow fibrous root system.

**Control**
- Mech: Hand pulling, digging, or tilling is NOT 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.

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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.

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Dame’s Rocket  
Hesperis matronalis

**Keys to Id**
- Flowers are white or purple with four petals.
- Leaves are lanced shaped with toothed margins and 2-4” long.

**Identification**
- Lifecycle: Biennial or short-lived perennial; member of the mustard family.
- Growth form: Forb
- Flower: White or purple with 4 petals. Flowers are clustered in loose terminal stalks. May-Sept.
- Seeds/Fruit: Seeds are many seeded, long and narrow and cylindrical. Seeds are small (3-4 mm long), angular, grooved and dark reddish-brown.
- Leaves: Alternate, 2-4 in long, lance-shaped, with finely toothed margins.
- Stems: Mature plants range from 4 in to 3 ft tall.
- Roots: Shallow fibrous root system.
- Impact: Commonly planted as an ornamental

**Control**
- Mech: Hand pull/dig when soil is moist, remove flowers before the plant sets seed.
- Bio: None currently available

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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: Seeds in 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 in Colorado.

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<thead>
<tr>
<th>HERBICIDE</th>
<th>RATE</th>
<th>TIMING</th>
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</thead>
<tbody>
<tr>
<td>Picloram (Tordon 225*) *Restricted</td>
<td>1.5 qts/acre</td>
<td>Apply at mid-flowering to late fall</td>
</tr>
<tr>
<td>Chlorsulfuron (Tordon)</td>
<td>1 oz/gal</td>
<td>Apply at mid-flowering to late fall (Aug thru Sept)</td>
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</tbody>
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**HERBICIDE**
- **Picloram**
  - (Tordon 225*) *Restricted
- **Chlorsulfuron**
  - (Tordon) add to
  - Tordon

**RATE**
- 1.5 qts/acre
- 1 oz/gal

**TIMING**
- Apply at mid-flowering to late fall
- Apply at mid-flowering to late fall (Aug thru Sept)

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<tr>
<td>Glyphosate* *Non-selective herbicide</td>
<td>4-5 qts/acre</td>
<td>Apply during flowering or in the fall</td>
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<tr>
<td>Glyphosate* *Non-selective herbicide</td>
<td>4-5 oz/gal</td>
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**HERBICIDE**
- **Roundup Ultra**
  - *Non-selective herbicide
- **Chlorsulfuron**
  - (Tordon) add to
  - Tordon

**RATE**
- 2-4 pint/ac
- 2-3 oz/ac

**TIMING**
- Apply at spring flowering or in the fall
- Apply at spring flowering or in the fall

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Imazapic (Plateau)

**HERBICIDE**
- **Imazapic**
  - (Plateau)

**RATE**
- 12 fl. oz/acre + 2 pints/ac methylated seed oil or crop oil concentrate

**TIMING**
- Apply at late flower to post-flower growth stage.
- (Late Spring to Mid Summer)

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Metsulfuron (Escort XP)

**HERBICIDE**
- **Metsulfuron**
  - (Escort XP)

**RATE**
- 1 oz/acre

**TIMING**
- Apply at the early bud growth stage; i.e. “broccoli” growth stage. (Early Spring to Early Summer)

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Chlorsulfuron (Telar)

**HERBICIDE**
- **Chlorsulfuron**
  - (Telar)

**RATE**
- 1 oz/acre

**TIMING**
- Apply at the early bud growth stage; (Early Spring to Early Summer)
**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.

**Control**
- **Herbicide:**
  - Chlorsulfuron ( Escort XP )
  - Glyphosate
  - Imazapyr ( Telar )
  - Metsulfuron ( Escort XP )
  - Oxynil + Slx ( Grazon P+D )

**Identification**
- **Lifespan:** Perennial
- **Growth:** Deciduous, loosely branched.
- **Flowers:** White to pink in racemes of 5-7 flowers per cluster. Petals are not persistent after fruiting, but seedheads are persistent.
- **Leaves:** Alternate, long and narrow, with a toothed margin.
- **Roots:** Thick, black, woody taproot, with extensive fibrous laterals.
- **Stems:** Produces a dense mat, outcompeting other species.

**Herbicide Summary**

<table>
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</tr>
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</table>
| Metsulfuron      | 1 oz/acre | Apply when plant is in rosette or bolting growth stage.
| (Escort XP)      |      | (Summer)                |
| Chlorsulfuron    | 0.33 oz/acre | Apply when plant is in rosette or bolting growth stage.
| (Telar)          |      | (Summer)                |
| Aminopyralid     | 7 fl oz/acre | Apply when plant is in rosette growth stage.
| (Milestone)      |      | (Summer)                |
| Pickram + 2,4-D  | 4 pints/acre | Apply in spring rosette to early bud growth stages.
| (Grazon P+D)     |      | (Restrictive Use)       |

**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.
- Flower petals are wider than native daisy flowers.

**Identification**
- **Lifespan:** Annual, biennial or short-lived perennial.
- **Growth:** 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:** Alternate, finely divided and fernlike.
- **Seeds:** Continually produces flowers and seed all season. One flower head can produce 300 seeds.
- **Roots:** Large and fibrous.
- **Seeding:** Seedlings emerging in spring can produce a dense mat, outcompeting 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 Summary**

<table>
<thead>
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<th>Herbicide</th>
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| (Escort XP)      |      | (Summer)                |
| Chlorsulfuron    | 0.33 oz/acre | Apply when plant is in rosette or bolting growth stage.
| (Telar)          |      | (Summer)                |
| Aminopyralid     | 7 fl oz/acre | Apply when plant is in rosette growth stage.
| (Milestone)      |      | (Summer)                |
| Pickram + 2,4-D  | 4 pints/acre | Apply in spring rosette to early bud growth stages.
| (Grazon P+D)     |      | (Restrictive Use)       |

**Sc lentless Chamomile**
*Matricaria perforata* (L.) Wigg.

**Keys to Id**
- Flowers have a yellow center disk, with white petals around.
- Odorous when crushed.
- Leaves are alternate, finely divided.

**Identification**
- **Lifespan:** Annual, biennial or short-lived perennial.
- **Growth:** Forb.
- **Flower:** White, ½ 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.
- **Seeding:** Seedlings emerging in spring can produce a dense mat, outcompeting 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.

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| Aminopyralid     | 7 fl oz/acre | Apply when plant is in rosette growth stage.
| (Milestone)      |      | (Summer)                |
| Pickram + 2,4-D  | 4 pints/acre | Apply in spring rosette to early bud growth stages.
| (Grazon P+D)     |      | (Restrictive Use)       |
Sulfur Cinquefoil

**Potentilla recta**

**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.
- Stem: Prostrate, many feet in length.
- Roots: Fibrous roots and lateral rhizomes

**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.

<table>
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<tr>
<th>HERBICIDE</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Picloram</td>
<td>1 pint/acre</td>
<td>Apply at full bloom and/or fall. DO NOT apply near or under trees/shrubs or where soils have rapid permeability.</td>
</tr>
<tr>
<td>Aminosulfuron (Milestone)</td>
<td>6 oz/acre</td>
<td>Apply at full bloom and/or in fall.</td>
</tr>
</tbody>
</table>

Field Bindweed

**Convolvulus arvensis**

**Identification**
- Lifecycle: Biennial
- Growth form: Forb
- Flower: Each head is bristles with hooked tips that form a round bur under a closely packed cluster of many individual, tube-shaped, reddish-purple flowers. Alone or grouped on short stalks attached to the end of main branches.
- Seed: 1/4"-long, brown, oblong, angular with a short, stiff bristle at one end.
- Leaves: Alternate, large rosette leaves attached to the stem by way of hollow petioles that may be purple-tinted. Upper leaf surface is dark green, underside is pale gray tinged. Upper leaf surface is dark green, underside is pale gray-green and wooly.
- Stems: Year 1, stem is close to soil surface. Year 2, the stem elongates reaches 2-6 feet tall.
- Roots: Thick, fleshy taproot, brown, corky, shredded.

**Control**
- Mech: Hand pull dig when flowering. Mowing or top cutting is effective. Intolerant of cultivation.
- Bio: Nothing available in Colorado.

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<tr>
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<tr>
<td>Roundup Ultra*</td>
<td>4-5 oz/gal</td>
<td>Apply at full bloom and/or in fall.</td>
</tr>
</tbody>
</table>

Common Burdock

**Arctium minus**

**Identification**
- Lifecycle: Biennial
- 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.
- Stem: Prostrate, many feet in length.
- Roots: Fibrous roots and lateral rhizomes

**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.

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<tr>
<td>Clarity + 2,4-D Amine (temp must be below 85°)</td>
<td>1 qt/acre</td>
<td>Just after full bloom and/or fall. DO NOT apply near or under trees/shrubs or where soils have rapid permeability.</td>
</tr>
<tr>
<td>Tordon 22K* *Restricted Use</td>
<td>1 oz/gal water</td>
<td>Just after full bloom and/or fall. DO NOT apply near or under trees/shrubs or where soils have rapid permeability.</td>
</tr>
</tbody>
</table>

Common Mullein

**Verbascum thapsus**

**Identification**
- Lifecycle: Biennial
- 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.
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<tr>
<td>Glyphosate</td>
<td>1.5 lb ai/ac</td>
<td>Prior to bud formation.</td>
</tr>
</tbody>
</table>

**Notes:**
- None of these herbicides are labeled for field bindweed in Colorado.
- Apply at rosette stage.

**References:**
- OSU Ext.
Poisonous Plants

**Downy brome (Cheatgrass)**
*Bromus tectorum*

**Keys to Id**
- Drooping seedhead
- Densely hairy leaves
- Green-up in early spring
- Changes to purple/tan in early summer

**Identification**
- Lifecycle: Summer/Winter Annual.
- Growth form: Grass
- Flower: panicles (loose, irregularly compound flowering part of plant with flowers borne on individual stalks).
- Seeds: Spikelets including awns are 0.8-2’ long, nodding, with 2-8 florets.
- Leaves: Light-green and hairy. Lower sheaths are conspicuously hairy, upper sheaths are smooth.
- Stems: Erect, slender, glabrous, or slightly hairy.
- Roots: Fibrous root system.

**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 or grazing before seed set.

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<tr>
<td>Glyphosate</td>
<td>6 - 12 oz / acre</td>
<td>Apply early spring prior to seed set</td>
</tr>
<tr>
<td>Imazapic (Plateau)</td>
<td>2 - 12 oz / acre</td>
<td>Late summer to early fall before emergence</td>
</tr>
</tbody>
</table>

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Poisonous Plants

**Western Whorled Milkweed**
*Asclepias subverticillata*

**Keys to Id**
- Whorled linear leaves
- Greenish white flower
- Slender seed pod
- Milky latex sap

**Control**
- Mech: Hand pull, dig, grub to remove all parts of plant, especially roots - highly toxic.
- Repeated mowing close to the ground.
- Wear protective clothing, plant is highly toxic to humans in addition to livestock.
- Chemical: Triclopyr, 2,4-D plus dicamba, or Glyphosate. Rate: Mix as recommended on label.

**Showey Milkweed**
*Asclepias speciosa*

**Keys to Id**
- Opposite elliptical leaves
- Pink/white crown like flower
- Erect stem can reach 5 ft.
- Milky latex sap

**Control**
- Mech: Hand pull, dig, grub to remove all parts of plant, especially roots - highly toxic.
- Repeated mowing close to the ground.
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Poisonous Plants

**Conium hemlock**
*Conium maculatum*

**Keys to Id**
- Fern-like leaves
- Purple spotted stems
- White flower: umbrella shaped clusters
- Biennial lifecycle

**Control**
- Mech: Hand pull, dig, grub to remove all parts of plant, especially roots - highly toxic.
- Repeated mowing close to the ground.
- Wear protective clothing, plant is highly toxic to humans in addition to livestock.
- Chemical: Triclopyr, 2,4-D plus dicamba, or Glyphosate. Rate: Mix as recommended on label.

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---

Poisonous Plants

**Field Scabious**
*Knautia arvensis*

**Keys to Id**
- Flowers are violet to pink, clover-like at the ends of long leafless stalks
- Leaves are coarsely toothed, feather-shaped.
- Unpalatable to livestock.
- Deep woody taproot.

**Control**
- Mech: Mowing, or tillage
- Chemical: Tordon 22K
- Rate: 1 qt. / acre (spring or fall application)

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**Species of Concern**

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- Repeated mowing close to the ground.
- Wear protective clothing, plant is highly toxic to humans in addition to livestock.
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**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.

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**Additional Resources:**

- Melissa Sever
  Pitkin County Weed Program Manager
  (970) 920-5390
  melissa.sever@co.pitkin.co.us

- Pitkin County Land Management Department
  www.aspengrove.com/Departments/Public-Works/land-management/

- CMG Garden Notes #351, Weed Management
  www.cmg.colostate.edu/gardennotes/351.pdf

- Preparation of small spray quantities of pesticides
  www.ext.colostate.edu/pubs/garden/07615.pdf

- CSU Ext, Weed Management for small rural acreages
  www.ext.colostate.edu/pubs/natres/03106.pdf

- CSU Ext, Yard and Garden Publications
  www.ext.colostate.edu/pubs/pubs.html#garden

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