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
   - Chemical
   - 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 for this guide are thanks to the following sources:

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

It takes consistent persistence to win the war on weeds!

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.**

**Canada thistle**

- **Redeem**
- **2,4** Clopyralid + Milestone

### Identification
- **Lifestyle:** 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, oblanceolate 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.

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

### Rate and Timing

<table>
<thead>
<tr>
<th>HERBICIDE</th>
<th>RATE</th>
<th>TIMING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aminopyralid</td>
<td>5.7 oz/acre</td>
<td>Spring at the pre-bud growth stage and/or to fall regrowth.</td>
</tr>
<tr>
<td>Chlorsulfuron</td>
<td>1.3 oz/acre</td>
<td>Spring during bud to bloom stage and/or to fall regrowth.</td>
</tr>
<tr>
<td>Clopyralid + 2,4-D</td>
<td>3 pints/acre</td>
<td>From rosette to bud stage when all plants have emerged.</td>
</tr>
</tbody>
</table>

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# Orange Hawkweed

**Hieracium aurantiacum**

**Orange Hawkweed**

- **Floral bracts are spineless.**
- **Small heads, vanilla scent.**

### Identification
- **Lifestyle:** Perennial
- **Growth form:** Forb
- **Flower:** Orange
- **Leaves:** Basal with one or two small leaves occasionally occurring on the stem.
- **Stems:** Bristy, 10-20” tall

### Control
- **Mech:** NOT recommended because of the weed’s ability to reproduce by stolons, rhizomes and root fragments. This often renders mechanical control obsolete.
- **Bio:** No biological control is recommended for list A’s since the goal is eradication.

### Rate and Timing

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<tbody>
<tr>
<td>Aminopyralid (milestone)</td>
<td>6.7 oz product/acre + 0.25% v/v non-ionic surfactant</td>
<td>Apply when plants are in rosette to bolting stage. (Spring to early Summer)*</td>
</tr>
<tr>
<td>Clopyralid (Transline)</td>
<td>1.33 pint product/acre + 0.25% v/v non-ionic surfactant</td>
<td>Apply when plants are in rosette to bolting stage. (Spring to early Summer)*</td>
</tr>
<tr>
<td>Clopyralid + 2,4-D (Curtail)</td>
<td>2 qt product/acre + 0.25% v/v non-ionic surfactant</td>
<td>Apply when plants are in rosette to bolting stage. (Spring to early Summer)*</td>
</tr>
</tbody>
</table>

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# Black Henbane

**Hyoscyamus niger**

**Black Henbane**

- **Floral bracts are spineless.**
- **Small heads, vanilla scent.**

### Identification
- **Lifestyle:** Biennial forb
- **Flower:** Brownish-yellow with dark purple veines. On long racemes in the axils of the upper leaves.
- **Seeds/Fruit:** Fruits are approximately 1 in long, five-lobed, and clustered on 2 rows that emerge in the fall. Each fruit capsule contains hundreds of tiny seeds. Seeds are kidney-shaped to oval, brownish-gray to black, and pitted.
- **Leaves:** Alternate, coarsely toothed to shallowly lobed and pubescent with a characteristically foul odor.
- **Stems:** Mature plants are coarse, hairy, and 1-3 feet tall.
- **Seedling:** The large rosettes have serrated leaves that are covered with fine hair.
- **Other:** Poisonous to livestock, but rarely consumed.

### Control
- **Mech:** Hand pull or dig, remove all parts of plant. Tillage may control, however, not advised.
- **Bio:** None currently available in Colorado.

### Rate and Timing

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<tr>
<th>HERBICIDE</th>
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<tbody>
<tr>
<td>Metsulfuron (Escort XP)</td>
<td>1 oz / acre</td>
<td>Late bolt to early flowering. Surfactant is essential.</td>
</tr>
<tr>
<td>Picloram (Tordon 22K)</td>
<td>1 qt / acre</td>
<td>When actively growing.</td>
</tr>
<tr>
<td>Dicamba (Banvel, Clarity, or Vanquish)</td>
<td>8-32 oz / acre</td>
<td>Rosette to bolting stages.</td>
</tr>
</tbody>
</table>

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# Hoary Cress

**Cardaria draba**

**Hoary Cress (Whitetop)**

- **Floral bracts are spineless.**
- **Small heads, vanilla scent.**

### Identification
- **Lifestyle:** 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.

### Rate and Timing

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<tbody>
<tr>
<td>Metsulfuron (Escort XP)</td>
<td>1 oz/acre</td>
<td>Apply at the early bud growth stage. (Late Spring to Mid Summer)</td>
</tr>
<tr>
<td>Chlorsulfuron (Tela)</td>
<td>1 oz/acre</td>
<td>Apply to the early bud growth stage; (Early Spring to Early Summer)</td>
</tr>
<tr>
<td>Imazapic (Plateau)</td>
<td>12 fl. oz/acre + 2 pints/acre methylated seed oil or crop oil concentrate</td>
<td>Apply at late flower to post-flower growth stage. (Late Spring to Mid Summer)</td>
</tr>
</tbody>
</table>
Diffuse knapweed
Centaraea diffusa Lam

Identification
- Lifecycle: Biennial or short-lived perennial
- Growth form: Forb
- Flower: Broadly urn-shaped, 0.6-0.8 in. in 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.
- Seed: Finely divided leaves; covered by short hair
- 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 (Lanmissinus minutus), and the root weevil fly (Cyphocles uschates)

Control
- Picloram (Tordon 22K®) Restricted
  - Apply at mid-flowering or in fall
- Chlorosulfuron (Télar)
  - Apply at mid-flowering or in fall

Russian knapweed
Acmop Philip L.) De Candolle

Identification
- Lifecycle: Perennial
- Growth form: 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 not hairy.

Control
- Mech: Mowing repeatedly before the plants bolt during the summer, then herbicide in the fall.
- Bio: gall midge (Jaspeella iannikovi)

Control
- 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.

Yellow toadflax
Linaria vulgaris P. Miller

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 corymb hairs
- Roots: Deep taproot, long horizontal roots that can develop adventitious buds.
- Chlorsulfuron (Télar) 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 occurrence 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.

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.

Dalmatian toadflax
Linaria dalmatica

Identification
- Lifecycle: Perennial
- Growth form: Forb
- Flower: Yellow flowers that are like snapdragons with deep orange centers.
- Seeds are sharply baccate, 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
- 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.

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.
## Euphorbia esula L. (Leafy Spurge)

### Keys to Id
- Lifecycle: Perennial
- Growth form: Forb
- 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 needle-like, can reach 3 ft tall
- Other: The entire plant contains white, milky latex.

### 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

### Identification
- Lifecycle: Biennial or short-lived perennial
- Growth form: Forb
- 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.

### 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
| Aminopyralid | 5-7 ounces/acre | Spring | 1 oz./gal water | 1 pint/acre | Apply to rosettes in 3 months after emergence. |
| Clopyralid + 2,4-D (Curtail) | 2-3 qts./acre | Early spring and fall | 1/4 oz./gal water | Apply in spring and fall to rosettes. |
| Imazapic | 0.4 oz./gal water | Fall only | 3 oz./acre | Apply to rosettes in late spring. |
| Aminopyralid (Milestone) | 1 qt./acre | Spring, just after full bloom and/or fall. |

## Centaurea maculosa L. (Spotted Knapweed)

### Keys to Id
- Lifecycle: Biennial or short-lived perennial
- Growth form: Forb
- 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.

### 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

### Identification
- Lifecycle: Biennial or short-lived perennial
- Growth form: Forb
- 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.

### 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
| Aminopyralid | 5-7 ounces/acre | Spring | 1 oz./gal water | 1 pint/acre | Apply to rosettes in 3 months after emergence. |
| Clopyralid + 2,4-D (Curtail) | 2-3 qts./acre | Early spring and fall | 1/4 oz./gal water | Apply in spring and fall to rosettes. |
| Imazapic | 0.4 oz./gal water | Fall only | 3 oz./acre | Apply to rosettes in late spring. |
| Aminopyralid (Milestone) | 1 qt./acre | Spring, just after full bloom and/or fall. |

## Carduus nutans L. (Musk Thistle)

### Keys to Id
- Lifecycle: Biennial, or sometimes winter annual
- Growth form: Forb
- 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.

### 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

### Identification
- Lifecycle: Biennial, or sometimes winter annual
- Growth form: Forb
- 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.

### 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
| Aminopyralid | 5-7 ounces/acre | Spring | 1 oz./gal water | 1 pint/acre | Apply to rosettes in 3 months after emergence. |
| Metsulfuron (Escort XP) | 2 tsp./gal water | Apply to rosettes in late spring. |
| Aminopyralid (Milestone) | 1 oz. product/acre | Spring from rosette to early flowering. |
| Chlorsulfuron (Telia) | 2 tsp./gal water | Apply to rosettes in late spring. |

## Lepidium latifolium (Perennial Pepperweed)

### 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.
- Seeds: Oblong, grayish to purple, in a capsule.
- 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-seeded roots.
- Other: The leaves and stem are covered with a waxy layer.

### 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
| Chlorsulfuron (Telia) | 1 oz./acre | 0.5 gr./gal water | Spring from rosette to late flowering. |
| Metsulfuron (Escort XP) | 1 oz./acre | 0.5 gr./gal water | Spring from rosette to late flowering. |
| Imazapic | 12 fl oz / acre | 2 pt/ac seed oil | Spring from rosette to late flowering. |
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 (Whiston 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.

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**Bull thistle**

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<tbody>
<tr>
<td>Aminopyralid (Milestone)</td>
<td>5-7 oz./acre</td>
<td>Apply to rosettes in spring or fall.</td>
</tr>
<tr>
<td>Dicamba (Barvel, Vanquish, or Clarify)</td>
<td>1 qt./acre</td>
<td>Apply to rosettes in spring or fall.</td>
</tr>
<tr>
<td>2,4-D or 2,4-D + dicamba (Rangestar)</td>
<td>1 qt./acre</td>
<td>Apply from bolling to bud stages in spring.</td>
</tr>
</tbody>
</table>

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Locoweed (White Point, Woolly, Spotted)
*Oxytropis sericea* or *Oxytropis lamberti*

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, Woolley 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.
  - Deferred 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

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<tbody>
<tr>
<td>Picloram + 2,4-D (Grazon P&amp;D)</td>
<td>2 qt./acre 0.625 lbs ai/ac</td>
<td>Spring, vegetative to early bloom</td>
</tr>
<tr>
<td>Metsulfuron (Escort, Ally)</td>
<td>0.6-0.8 oz/acre</td>
<td>Spring, vegetative to early bloom</td>
</tr>
<tr>
<td>Clopyralid</td>
<td>20-30 gm ae/ac</td>
<td>Spring, vegetative to early bloom</td>
</tr>
</tbody>
</table>
**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, 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 feathery.
- 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.

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**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. 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.

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**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.
- Stem: 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.

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### Herbicides

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metsulfuron (Escort XP)</td>
<td>0.33 oz/ac</td>
<td>Apply when plant is in rosette or bolting growth stage.</td>
</tr>
<tr>
<td>Chlorsulfuron (Telar)</td>
<td>0.33 oz/ac</td>
<td>Apply when plant is in rosette or bolting growth stage.</td>
</tr>
<tr>
<td>Aminopyralid (Milestone)</td>
<td>7 fl oz/ac</td>
<td>Apply when plant is in rosette growth stage.</td>
</tr>
<tr>
<td>Metsulfuron (Escort XP)</td>
<td>1 oz/acre</td>
<td>Surfactant is absolutely necessary. Apply at flowering growth stage. (Summer)</td>
</tr>
<tr>
<td>Chlorsulfuron (Telar)</td>
<td>1 oz/acre</td>
<td>Surfactant is absolutely necessary. Apply at flowering growth stage. (Summer)</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>12-16 oz./ac</td>
<td>Apply in spring rosette stage.</td>
</tr>
<tr>
<td>Metsulfuron = Chlorsulfuron (Cimarron X-tra)</td>
<td>0.5 oz/ ac</td>
<td>Apply at rosette stage.</td>
</tr>
</tbody>
</table>

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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!

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### Additional Resources:
- CMG Garden Notes #351, Weed Management
  [http://cmg.colostate.edu/Gardennotes/351.pdf](http://cmg.colostate.edu/Gardennotes/351.pdf)
- CSU Ext, Preparation of small spray quantities
  [https://extension.colostate.edu/docs/pubs/ntares/03106.pdf](https://extension.colostate.edu/docs/pubs/ntares/03106.pdf)
- CSU Ext, Weed Management for small rural acreages
  [https://extension.colostate.edu/docs/pubs/yard/garden/07615.pdf](https://extension.colostate.edu/docs/pubs/yard/garden/07615.pdf)
- CSU Ext, Yard and Garden Publications
  [http://extension.colostate.edu/topic-areas/yard-garden/?target=publications](http://extension.colostate.edu/topic-areas/yard-garden/?target=publications)
- Utah State University Extension - Yard and Garden
  [http://extension.usu.edu/yardandgarden/](http://extension.usu.edu/yardandgarden/)
- Teller-Park Noxious Weed Program
  Marisa Neuzil
  719-472-3671
  Teller County Extension