This brochure was created to increase awareness of Noxious Weeds, the importance of identification, the value in implementing 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 aggressive plants that disrupt native vegetation. They have no natural controls, are able to adapt, and degrade our lands. The Colorado Noxious Weed Act places these weeds on three separate lists for management (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:

- CO Dept. of Ag - Noxious Weed Management Program: www.colorado.gov/pacific/agconservation/noxiousweeds
- CO Weed Management Association - Noxious Weed Info: www.cwma.org

Compiled by: John Rizza
Small Acreage Management Specialist
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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 many years for success. However, this method can be successful especially when combined with other control methods.

- **Chemical:** Always read the label before using any herbicide! Weed control with herbicides is an effective tool for many target weed species. However, there are several aspects to consider when choosing a chemical program. These include: ID of target weed; herbicide selection; timing of application; desirable crops or plant species near control areas; the number of applications per year, and the number of years for treatment. Sprayer calibration methods can be obtained from your local Extension office. (Sprayer Calibration Fundamentals)
  
  [http://www.ext.colostate.edu/pubs/farmng/0503.html](http://www.ext.colostate.edu/pubs/farmng/0503.html)

Always add a nonionic surfactant @ 0.32 oz/gal (1qt/100 gal) unless otherwise noted.
Bull thistle
*Cirsium vulgare* (Savi) Tenore

**Keys to Id**
- Leaves are prickly-hairy above and corynoid 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.
- Seeds/Fruit: One-seeded fruits (achenes) are straw or light brown, straight or slightly curved
- Leaves: Spiny, alternate, oblong, with the base leaves stalkless 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: Grazing when plants are young and succulent in the spring. Pathogenic rust fungus (*Puccinia punctiformis*) can be effective on large infestations.

<table>
<thead>
<tr>
<th>HERBICIDE</th>
<th>RATE</th>
<th>TIMING</th>
</tr>
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<tbody>
<tr>
<td>Aminopyralid</td>
<td>5-7 ounces/acre 1 galater</td>
<td>Spring at the pre-bud growth stage and/or to fall regrowth.</td>
</tr>
<tr>
<td>Chlorsulfuron</td>
<td>1-3 ounces/acre 0.50 gr/gal water</td>
<td>Spring during bud to bloom stage and/or to fall regrowth.</td>
</tr>
<tr>
<td>Clopyralid + 2,4-D</td>
<td>1.0 oz/acre 1 gal water</td>
<td>Apply from rosette to bud stage when all plants have emerged.</td>
</tr>
</tbody>
</table>

**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: Biennial (creeping)
- Growth form: Perennial 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 plumule (pappus) of white hair-like bristles.
- Leaves: Alternate, dark green, deeply lobed, and spiny margined. The leaves extend onto the stem giving a winged appearance. Basal rosettes are well developed, leaves elliptical to lanceolate, 6-14 in, smooth to densely hairy.
- Stems: Mature plants can grow as tall as 6 ft. It can appear solitary or with several stems from one base, and is highly branched above.
- Roots: Fleshy taproot

**Control**
- Mech: Sever the root below the soil surface. Mowing is most effective before seed set at full bloom.
- Bio: crown weevil is an effective control on large infestations.

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<tr>
<td>Aminopyralid (Milestone)</td>
<td>5.0 fl. oz/acre</td>
<td>Spring rosette to early bolting or to fall to rosettes.</td>
</tr>
<tr>
<td>Chlorsulfuron (Telar)</td>
<td>1.0 oz/acre 1 gal water</td>
<td>Apply from rosette to bud stage when all plants have emerged.</td>
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**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 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 plumule (pappus) of white hair-like bristles.
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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 grayish-black, tipped with a plume (pappus) of slender bristles.
- Leaves: Alternate, large, irregularly lobed, and have sharp yellow spikes. Rosette leaves may be up to 2 feet long and 1 foot wide. Upper and lower leaf surfaces are covered with a thick mat of cotton-like or woolly hairs, giving the foliage a gray-green color.
- Stems: Mature plants can grow up to 12 feet tall, and have a large, fleshy taproot. Stems are numerous, branched, and have broad spiny wings.
- Roots: Thick fleshy taproot
- Seedling: Forms rosette

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

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<tr>
<td>Aminopyralid</td>
<td>1 oz/acre 1 gal water</td>
<td>Apply from rosette to bud stage when all plants have emerged.</td>
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- Lifecycle: Biennial
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- Flower: Heads are numerous, 1-2 inches in diameter, with spine-tipped bracts.
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- Bio: none currently effective

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**Diffuse knapweed**
*Centaraea 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**
- **Flowers** are white or lavender
- **Floral bracts** have yellow and the root boring bio:
- **Mech:** is most effective when plants are at full bloom

**Control**
- **Mech:** Mow or cut flowering stems before seed nutlets develop
- **Bio:** none currently available in Colorado

**Herdicide**

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<tr>
<td>Aminopyralid</td>
<td>5-7 oz/acre</td>
<td>Spring at rosette to early bolt stage and/or in the fall to rosettes.</td>
</tr>
<tr>
<td>(Milestone)</td>
<td>1 gal/gal water</td>
<td></td>
</tr>
<tr>
<td>2,4-D Amine (temp must be &lt; 85°)</td>
<td>1 qt/acre</td>
<td>Spring/fall rosettes - before flowering stalk lengths.</td>
</tr>
<tr>
<td></td>
<td>1 oz/gal water</td>
<td></td>
</tr>
<tr>
<td>Clopyralid + Triclopyr (Redeem R&amp;P)</td>
<td>1.5-2 pints/acre</td>
<td>Rosette to early bolt stage of growth and/or in the fall to rosettes.</td>
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<tr>
<td></td>
<td>0.75 oz/gal</td>
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**Spotted knapweed**
*Centaraea maculosa L.*

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

**Identification**
- **Flowers** are pink to purple, but rarely white.
- **Floral bracts** are yellow.
- **Flowers** are broad, coryd, 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 obovate 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.
- **Seeding:** 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) fly

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<td>1 oz/gal water</td>
<td></td>
</tr>
<tr>
<td>Clopyralid + Triclopyr (Redeem R&amp;P)</td>
<td>2-3 qts/acre</td>
<td>Rosette to early bolt stage of growth and/or in the fall to rosettes.</td>
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<td></td>
<td>2-3 qts/acre</td>
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**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**
- Lifecycle/Growth form: Perennial forb (creeping)
- **Flowers:** Heads are urn-shaped, solitary, and composed of disk flowers. Floral bracts are broad, coryd, 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 obovate 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.
- **Seeding:** 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:** 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

**Herdicide**

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<td>1 oz/gal water</td>
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<tr>
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<td>2-3 qts/acre</td>
<td>Rosette to early bolt stage of growth and/or in the fall to rosettes.</td>
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<td>2-3 qts/acre</td>
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**Houndstongue**
*Acroptilon repens (L.) De Candolle*

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

**Identification**
- Lifecycle: Biennial
- Growth form: Forb
- **Flowers:** 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, round, 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, 1-3 feet tall, branched above.
- **Roots:** Thick, black, woody taproot.
- **Seeding:** 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

**Herdicide**

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<tr>
<td>Metsulfuron Methyl + Chlorsulfuron (Cimarron X-tra)</td>
<td>2.0 oz. / acre</td>
<td>Apply in spring to early bud growth stage.</td>
</tr>
<tr>
<td>Picloram (Tordon 22K) <em>Restricted Use</em></td>
<td>1 qt./acre</td>
<td>Apply in spring to bud flowering stage or fall rosette.</td>
</tr>
<tr>
<td></td>
<td>1 oz/gal water</td>
<td></td>
</tr>
<tr>
<td>Picloram + 2.4-D (Grazon P+D) <em>Restricted Use</em></td>
<td>4 pints /acre</td>
<td>Apply in spring to early bud growth stage.</td>
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<td>2 gal /3 gal water</td>
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</tbody>
</table>
Leafy spurge

*Restricted Use* (Tordon 22K, Picloram)

- **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.*), which have 4-petaled flowers.

**Identification**
- Lifecycle: Perennial (creeping)
- Growth form: Forb
- Flower: Numerous small clusters of yellow flowers enclosed by heart-shaped yellow-green bracts. May-July.
- Seeds: Oblong, grayish to purple, in a capsule.
- Leaves: Alternately arranged leaves become progressively smaller upward along the stem.
- Roots: Shallow, branched rhizomes.
- Other: The entire plant contains white, milky latex. Foliage of the plant is smooth and hairless.

**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.

**NOTES:** Use of a silicone based surfactant is advised.

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<td>Picloram</td>
<td>1 qt/acre</td>
<td>Spring, just after full bloom and/or fall.</td>
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<tr>
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<td>1 oz/gal water</td>
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<tr>
<td>Imazapic</td>
<td>12 oz/acre</td>
<td>Fall only treatment prior to hard freeze.</td>
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<td></td>
<td>0.4 oz/gal water</td>
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<tr>
<td>2,4-D Amin</td>
<td>2-3 qts/acre</td>
<td>Early spring and fall. Prevents seed formation</td>
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<td>2-3 oz/gal water</td>
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Oxeye daisy

*Chrysanthemum leucanthemum L.*

**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. Seed/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, smooth to sparsely hairy stems.
- Roots: Short, branched rhizomes.
- 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 rootstock. Flowerheads must be cut and disposed of properly before a herbicide is applied.
- Bio: Inappropriate in CO, as eradication is the goal, a root feeding weevil (*Hylobius transversovittatus*).

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<tr>
<td>Metsulfuron (Escort XP)</td>
<td>1 oz/acre</td>
<td>Apply at the early bud growth stage; i.e. &quot;broccoli&quot; growth stage. (Early Spring to Early Summer)</td>
</tr>
<tr>
<td>Chlorsulfuron (Tela)</td>
<td>1 oz/acre</td>
<td>Apply at 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 post-flower growth stage. (Late Spring to Mid Summer)</td>
</tr>
</tbody>
</table>

Purple loosestrife

*Lythrum salicaria L.*

**Identification**
- Lifecycle: Perennial (creeping)
- Growth form: Forb
- 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: Mowing several times before the plants bolt stresses it and allows for better chemical efficacy.
- Bio: none currently available

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<tr>
<td>Triclopyr (Garlon 3A)</td>
<td>1-2 qts/acre</td>
<td>Summer. If plants are flowering, cut and properly dispose of flower heads before applying</td>
</tr>
<tr>
<td>Glyphosate* (Rodeo - aquatic safe)</td>
<td>1-2 qts/acre</td>
<td>Summer during the flowering stage. Cut and properly dispose of flowerheads before applying Rodeo.</td>
</tr>
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Hoary Cress

*Cardaria draba* (Whitetop)

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

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

*Centauraea solstitialis*

**Keys to Id**
- Winged stems
- Yellow ray & disk flowers
- Stiff spines at flower base
- Plant has a unique blue-green color

**Identification**
- Lifecycle: Winter annual
- Growth form: Forb
- Flower: Heads are yellow, located singly at the base of branches, distinguished by sharp, straw-colored thorns, which are up to 0.75 inches long.
- Seeds: two types: plumed and plumeless.
- Leaves: Basal leaves are deeply lobed while the upper leaves are entire and sharply pointed.
- Stems: Mature plants have 1-2 feet tall and have rigid, branching, winged stems that are covered with cottony hairs.
- Roots: Taproot.
- Seedling: Ovate, tongue-shaped cotyledons

**Control**
- Mech: Hand pull, make certain to pull all the roots. Remove all parts of plant including dry skeletons. Mowing is NOT advised.
- Bio: Inappropriate, as eradication is the goal, none currently approved for use in Colorado.

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**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: 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 (whose leaves are shorter, wider, and clasp the stem.)

**Control**
- Mech: Hand pulling, digging, or tillage is NOT recommended for eradication.
- Bio: *Calophasia lunula*, a predatory noctuid moth is currently available in Colorado.

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**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 clamping bases, unlike Hoary cress leaves with clamping 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 CO. Do NOT graze—toxicity is high.

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**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, Tylida luctuosa* are effective in Colo.
Kochia scoparia (L.) Roth

**Identification**
- Lifecycle: Summer annual
- Growth form: Forb
- Flower: Head is a spike, formed by clusters of inconspicuous, green, petal-less, stalk-less flowers that grow in the axils of reduced leaves.
- Seeds: Egg shaped, flattened, and very small.
- Leaves: Alternate, simple, linear to lance shaped.
- Stems: Multi branched from base, erect, reddish tint
- Roots: Taproot.
- Seedling: Cotyledons are very narrow, essentially linear in outline, dull green in color, and covered with hairs.
- Other: seeds spread prolifically by tumbleweed mechanism over vast distances

**Control**
- Mech: Till seedlings early in spring. Mow or slash plants before flowering to reduce seed production.
- Bio: None known.

**Poisonous Plants**
These plants are poisonous to domestic livestock

**Western Whorled Milkweed**
*Asclepias subverticillata*

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

**Control**
- Mech: Hand pulling, digging, to remove all parts of plant when found in grazing pasture land, combine with chemical treatment option.
- Chemical: Dicamba (Banvel, Oracle, Clarity) with any 2,4-D Amine product. Rate: Mix one ounce of each product into one gallon of water (1 oz/gal).

**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 pulling, digging, to remove all parts of plant when found in grazing pasture land, combine with chemical treatment option.
- Chemical: Dicamba (Banvel, Oracle, Clarity) with any 2,4-D Amine product. Rate: Mix one ounce of each product into one gallon of water (1 oz/gal).

**Winter Annuals**
Select problem landscape plants

**Cheatgrass - Downy brome**
*Bromus tectorum*

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

**Mustards - Sheperd's-purse**
*Capsella bursa-pastoris*

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

**Mustards - Tumble mustard**
*Stylosium altissimum*

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

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

**Backyard Weed Control Tips**

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

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

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:**
- Mesa County Weed & Pest
  (970) 255-7121
  weed.pest@mesacounty.us
  2775 Highway 50; Grand Junction, CO

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

CSU Ext, Preparation of small spray quantities of pesticides
http://www.ext.colostate.edu/pubs/garden/07615.pdf

CSU Ext, Weed Management for small rural acreages
http://www.ext.colostate.edu/pubs/natree/03106.pdf

CSU Ext, Yard and Garden Publications
http://www.ext.colostate.edu/pubs/pubs.html?garden

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