



**COLORADO**

Parks and Community Services Department  
Environmental Division

# Noxious Weeds and Control Methods



**Purple loosestrife**  
(EPC Environmental Division)



**Orange hawkweed**  
(EPC Environmental Division)



**Canada thistle**  
(EPC Environmental Division)

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# What is a Noxious Weed?

In 1996 the Colorado Noxious Weed Act (Title 35, Article 5.5) was passed to control noxious weeds in the state. “Noxious weed” means an alien plant or parts of an alien plant that have been designated by rule as being noxious or has been declared a noxious weed by a local advisory board, and meets one or more of the following criteria:

- (a) Aggressively invades or is detrimental to economic crops or native plant communities;
- (b) Is poisonous to livestock;
- (c) Is a carrier of detrimental insects, diseases, or parasites;
- (d) The direct or indirect effect of the presence of this plant is detrimental to the environmentally sound management of natural or agricultural ecosystems.

Plants are prioritized as List A, B, or C species by the Colorado Department of Agriculture (CDA).

**List A:** Rare noxious weeds that must be eradicated statewide.

**List B:** Discretely distributed noxious weeds that must be eradicated, contained, or suppressed, depending on their location, to stop their continued spread.

**List C:** Widespread and well-established noxious weeds in Colorado; control is recommended by the state and may be required by local government.

**Watch List:** Intended to serve advisory and educational purposes only. Identification and reporting of these species to determine future potential status of species as noxious weeds.

For more information on noxious weeds: <https://ag.colorado.gov/conservation/noxious-weeds>

# Why are Noxious Weeds a Threat?

Noxious weeds impose a wide variety of negative impacts on people, wildlife, and the environment. Livestock production and crop yields can be greatly reduced as well as adding the significant costs of weed management. Noxious weeds can also reduce the value of land by over 50% when infestations are severe.

Wildlife habitat and forage are severely degraded by noxious weeds, often rendering the land totally unusable to native animals. Noxious weeds are capable of displacing native plant communities and forming monocultures in their stead, as well as threatening rare and endangered plants.

Many noxious weeds alter or damage environmental processes like hydrology, nutrient cycling, and fire cycles, or degrade the environment by increasing soil salinity or erosion. Many recreational activities such as hiking, biking, fishing, hunting, bird watching, and boating are also negatively impacted by noxious weeds.

A few noxious weed facts:

- Cost of invasive species in the United States exceeds \$138 billion per year.
- Purple loosestrife costs \$45 million per year in control costs and forage losses in the U.S.
- If left untreated, noxious weeds will spread at a rate of 4,600 acres per day nationwide.
- A single hoary cress plant can spread over an area of 12 ft. in diameter in one year.

## How can Noxious Weeds be Managed?

The most effective way to control noxious weeds is through Integrated Weed Management (IWM). IWM incorporates weed biology, environmental information, and available management techniques to create a management plan that prevents unacceptable damage from noxious weeds, and poses the least risk to people and the environment. IWM is a combination of treatment options that, when used together, provides optimum control for noxious weeds; however, IWM does not necessarily imply that multiple control techniques have to be used or that chemical control options should be avoided.

- **Prevention:** The most effective, economical, and ecologically sound management technique. The spread of noxious weeds can be prevented by cleaning equipment, vehicles, clothing, and shoes before moving to weed-free areas; using weed-free sand, soil, and gravel; and using certified weed-free seed and feed.
- **Cultural:** Establishing healthy native or other desirable vegetation. Methods include proper grazing management (prevention of overgrazing), re-vegetating or re-seeding, fertilizing, and irrigation.
- **Biological:** The use of an organism such as insects, diseases, and grazing animals to control noxious weeds; useful for large, heavily infested areas. Not an effective method when eradication is the objective, but can be used to reduce the impact and dominance of noxious weeds.
- **Mechanical:** Manual or mechanical means to remove, kill, injure, or alter growing conditions of unwanted plants. Methods include mowing, hand-pulling, tilling, mulching, cutting, and clipping seed heads.
- **Chemical:** The use of herbicides to suppress, kill, or prevent germination of noxious weeds by disrupting biochemical processes unique to plants.

Whether eradication or suppression is the objective of noxious weed management, priority should always be given to restoring desirable vegetation and a healthy ecosystem to prevent further noxious weed infestations. Depending on the severity of the infestation and the species present, control may take two or more seasons. Prevention of infestation by noxious weeds is the cheapest, most efficient way to control noxious weed populations. Take decisive action quickly and early when noxious weeds are present to save time and money.

This booklet lists chemical controls for noxious weeds as recommended by the Colorado Department of Agriculture (CDA). **Always read and follow the product label** to ensure proper use and application.

For more information regarding agents listed for biological control, contact the CDA Palisade Insectary at 970-464-7916 or 1-866-324-2963.



# Dyer's woad



# LIST A

## Dyer's woad - *Isatis tinctoria*

A winter annual, biennial, or short-lived perennial. Thrives in light sandy and gravelly soils with minimum water. Ranges from 1 to 4 feet tall with a deep taproot. Causes loss of livestock forage by displacing native species. Dyer's woad is an abundant re-seeder and impacts native plant communities by outcompeting native plants.

### Identification:

- Leaves: White mid-rib on upper surface.
- Flowers: Numerous, yellow, and very small.
- Seeds: Pods turn dark purple to black.

### Control methods:

Early detection and control when infestations are small, as well as long term management and monitoring, are essential to ensure eradication.

### Biological:

Not approved for Dyer's woad, which is a List A species, as eradication is the management objective.

### Mechanical:

Hand-pulling or digging when soil is moist are effective control methods. Bag plants carefully to contain seeds if the plant is flowering.

### Chemical:

Recommendations only! Always read, understand and follow the label.

### **The label is the law!**

*Metsulfuron*: Apply during rosette to bloom stages.

*Chlorsulfuron*: Apply at the rosette to early bolt growth stage.



# Hairy willow-herb





# LIST A

## Hairy willow-herb - *Epilobium hirsutum*

A perennial, hairy willow-herb can grow up to 6 feet tall. The plant is covered with fine hairs. The leaves look like those of a willow, therefore the name “willow-herb.” The flowers are very showy, rose to purple color. They have notched petals with white centers and creamy white stigmas. The fruit has silky white hairs with small seeds attached. This semi-aquatic plant reproduces by rhizomes, seeds or fragments of the plant.

### Identification:

- Leaves: Mostly opposite with toothed leaves.
- Flowers: Four separate petals, four separate sepals, deep pink.
- Seeds: Mature plant can produce up to 70,000 seeds. Seeds have long white hairs that are dispersed by the wind.

### Control methods:

#### Biological:

Not approved for Hairy willow-herb, which is a List A species, as eradication is the management objective.

#### Mechanical:

Hand-pull or dig while infestation is still small prior to flowering, removing all roots. Follow-up and perseverance is important.

#### Chemical:

Recommendations only! Always read, understand and follow the label.

**The label is the law!**

*Imazapyr*: Treat in pre-bud to flowering stage.

*Glyphosate* (Aquatic): Pre-bud to flowering stage, at least half of the foliage should still be green.

# Knotweeds



## LIST A

**Giant knotweed** - *Fallopia sachalinense*

**Japanese knotweed** - *Fallopia japonica*

**Bohemian knotweed** - *Fallopia x bohemicum*

Bright green, bamboo-like perennial plants that grow from 5 to 16 feet tall and spread through roots and root fragments. Introduced from Asia as an ornamental, for erosion control and landscape screening. The knotweeds can tolerate many environmental conditions, including high temperatures and drought. Infestations can clog small waterways, displace native vegetation and degrade wildlife habitat. Bohemian knotweed is a hybrid of giant and Japanese knotweed.

### Identification:

- Leaves: Heart-shaped and bright green.
- Flowers: Small, showy, greenish-white, in clusters.
- Stems: Hollow between nodes and swollen at nodes.

### Control methods:

#### Biological:

Not approved for the knotweeds, which are List A species, as eradication is the management objective.

Mechanical: Not recommended due to extensive root system.

#### Chemical:

Recommendations only! Always read, understand and follow the label.

### **The label is the law!**

*Glyphosate* (Aquatic): Apply evenly over leaf surface to wet, not dripping.  
Treat when plants are actively growing.

*Glyphosate* (Aquatic): Use calibrated injection gun to inject just below the third node from July to September.

*Triclopyr* OR *Imazapyr* (Aquatic): Apply to leaf surface to wet, not drip.  
Treat when actively growing. (Do not use Injection for these herbicides.)



# Myrtle spurge



# LIST A

## Myrtle spurge - *Euphorbia myrsinites*

A tap-rooted, low-growing perennial with trailing fleshy stems. Also known as donkey-tail spurge. Leaves and stems have a toxic, milky sap that can cause severe skin irritations. All plant parts considered poisonous. Escaped ornamental, popular in xeriscape and rock gardens.

### Identification:

- Leaves: Fleshy, blue-green.
- Flowers: Yellow-green bracts; blooms in early spring.
- Seeds: Projected up to 15 feet; viable for up to 8 years.

### Control methods:

#### Biological:

Not approved for Myrtle spurge, which is a List A species, as eradication is the management objective.

#### Mechanical:

Hand-pull prior to seed set, wear rubber gloves and eye protection. Follow-up is important.

#### Chemical:

Recommendations only! Always read, understand and follow the label.

### **The label is the law!**

*2,4-D ester:* Apply in spring or during fall re-growth.

*Dicamba + 2,4-D:* Apply in spring or during fall re-growth.

*Picloram + 2,4-D:* Apply when flowering or during fall re-growth.



# Orange hawkweed





# LIST A

## Orange hawkweed - *Hieracium aurantiacum*

A perennial plant that has 5 to 35 bright red-orange, dandelion-like flower heads per stem. The stems and leaves are hairy and bristly and contain a milky juice. Plant reproduces from seeds and underground rhizomes.

### Identification:

- Leaves: Basal, occasionally 1 or 2 small leaves on the stem, rosette leaves very hairy.
- Flowers: Red-orange flowers, petals have notched tips.
- Stems: Hairy, contain a milky sap.

### Control methods:

#### Biological:

Not approved for orange hawkweed, which is a List A species, as eradication is the management objective.

#### Mechanical:

Not recommended because of ability to reproduce by stolons, rhizomes, and root fragments.

#### Chemical:

Recommendations only! Always read, understand and follow the label.

### **The label is the law!**

*Aminopyralid*: Apply when plants are in rosette to bolting stage.

*Clopyralid*: Apply when plants are in the rosette growth stage.

*Clopyralid + 2,4-D*: Apply when plants are in the rosette growth stage.



# Purple loosestrife





# LIST A

## Purple loosestrife - *Lythrum salicaria*

Escaped ornamental that often grows on riverbanks and in wet areas. Pieces of roots and stems can produce new plants, and a mature plant can produce up to 3 million seeds per year that can remain viable in the soil for 5 to 20 years. This plant is one of the most invasive in the United States.

### Identification:

- Leaves: Whorled, smooth edges, 2 to 5 inches long, lance-shaped.
- Flowers: Purple, crushed look, 5 to 7 petals, long flower stalk.
- Stems: Four-sided (square).

### Control methods:

Early detection and control when infestations are small, as well as long-term management and monitoring, are essential to ensure eradication.

### Biological:

Not approved for purple loosestrife, which is a List A species. Eradication is the management objective.

### Mechanical:

On small infestations, remove by hand prior to seed set trying not to leave any stem/root fragments behind. If flowering, clip all flowers and buds, bag them, then apply herbicide to plant.

### Chemical:

Recommendations only! Always read, understand and follow the label.

### **The label is the law!**

Check for aquatic-approved herbicides if growing on or near the water.

*Triclopyr*: Apply in the summer. If plants are flowering, clip, bag, and dispose of flower heads before applying.

*Glyphosate* (aquatic): Apply in summer during flowering stage. Clip, bag, and dispose of flower heads before applying.

*2,4-D Amine* (aquatic): Apply in early spring. Will prevent seed formation only. Re-treatment will be necessary.

DO NOT apply when outside temperatures exceed 85 degrees.

# Yellow flag iris



## LIST A

### Yellow flag iris - *Iris pseudacorus*

An herbaceous perennial which grows in semi-aquatic, wetland conditions. Plants are found in places such as stream and river edges, lakes, and ponds. Forms dense monocultures that grow and expand aggressively to outcompete native vegetation. Plants can grow 3 to 6 feet in height from pink-fleshed rhizomes that grow and divide rapidly. The only yellow iris found in Colorado wetlands. Reproduces mainly by rhizome division, but also seed production. Each pod can have up to 120 seeds which can float for up to two months.

#### Identification:

- Leaves: Blue-green, cattail-like, long, flat, broad, pointed at the tip.
- Flowers: Bright yellow, several per each inflorescence. Three petals and three sepals.
- Stems: Inflorescence stems are round.

#### Control methods:

##### Biological:

Not approved for yellow flag iris, which is a List A species. Eradication is the management objective.

##### Mechanical:

Small infestations may be dug by hand, follow-up treatment and monitoring will be required. Collect as much of the removed plants as possible to prevent re-growth from rhizome pieces left behind. Ineffective mechanical removal can do more harm than good. Remove and bag all flowering stalks, seed pods, and rhizomes.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Glyphosate* (Aquatic): Late spring to early summer.

*Imazapyr* (Aquatic): Good for fall applications on mature plants.



# Bouncingbet





## LIST B

### **Bouncingbet** - *Saponaria officinalis*

An escaped ornamental forb that reproduces by seed and rhizomes. This perennial plant can be poisonous to livestock and humans. Prefers moist, well-drained soils in full sun. Is often found in municipal areas and surrounding natural areas. Eradication is required in all of El Paso County.

#### **Identification:**

- Leaves: Opposite, smooth, narrow, 2 to 4 inches long, 3 distinct veins from the leaf base.
- Flowers: White to light pink, 5 petals, clustered at branch ends, slightly notched apex.
- Stems: Three feet tall, erect, sparingly branched, smooth and forming.

#### **Control methods:**

##### Biological:

No biological control available.

##### Mechanical:

Not recommended due to extensive root system. Hand-pull or dig individual plants, removing all roots when the soil is moist. Prevent seed production by clipping and disposing of flower heads.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Chlorsulfuron*: Apply at bolting to bud stage, late spring to mid-summer.

*Sulfometuron*: Apply at bolting to bud stage, late spring to mid-summer.

*Picloram*: Apply at bolting to bud growth. Do not apply near trees, shrubs or water.

# Bull thistle



## LIST B

### **Bull thistle** - *Cirsium vulgare* (Savi) Tenore

A biennial forb introduced as a seed contaminant. Mature plants produce up to 4,000 seeds. Presence of bull thistle in hay decreases forage and lowers market value. Will grow on gravel and clay-textured soils. Bull thistle can be distinguished from musk thistle by the presence of winged spines extending to the flower heads. Eradication is required in all of El Paso County.

#### **Identification:**

- Leaves: Prickly-hairy on top and cottony underneath.
- Flowers: Gum-drop shaped, pinkish to dark purple.
- Seeds: Capped with circle of plume-like white hairs.

#### **Control methods:**

##### Biological:

No biological control available in Colorado.

##### Mechanical:

Sever the root below the soil surface before plant produces flowers.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Aminopyralid*: Apply to rosettes through bolting stage in spring or to fall rosettes.

*Chlorsulfuron*: Apply in spring from bolting to bud stages.

*Clopyralid*: Apply to rosettes through flower bud stage in spring or to fall rosettes.

*Aminocyclopyrachlor + chlorsulfuron*: Apply from seedling to bolting stage.



# Canada thistle



## LIST B

### Canada thistle - *Cirsium arvense*

A deep-rooted perennial that spreads mainly through an aggressive rhizomatous root system, but also through seed production. Often grows in wet areas, but can grow in a variety of habitats. Small pieces of root (1/4 inch) can form new plants. Tilling and hand-pulling stimulate the growth of plants and are not an effective means of control.

#### Identification:

- Leaves: Spine-tipped, dark green, oblong, and crinkled.
- Flowers: Small purple (sometimes white) clusters on ends of branches.
- Stems: Hollow and spineless.

#### Control methods:

Biological: Grazing by cattle, goats, and sheep when plants are young. Insects available but have not shown effective control.

Rust fungus (*Puccinia punctiformis*) collection and distribution methods are being refined.

Mechanical: Neither hand-pulling or tilling is an option. Mowing can be effective if done every 10 to 21 days during the growing season. Especially effective when combined with a fall herbicide treatment.

#### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

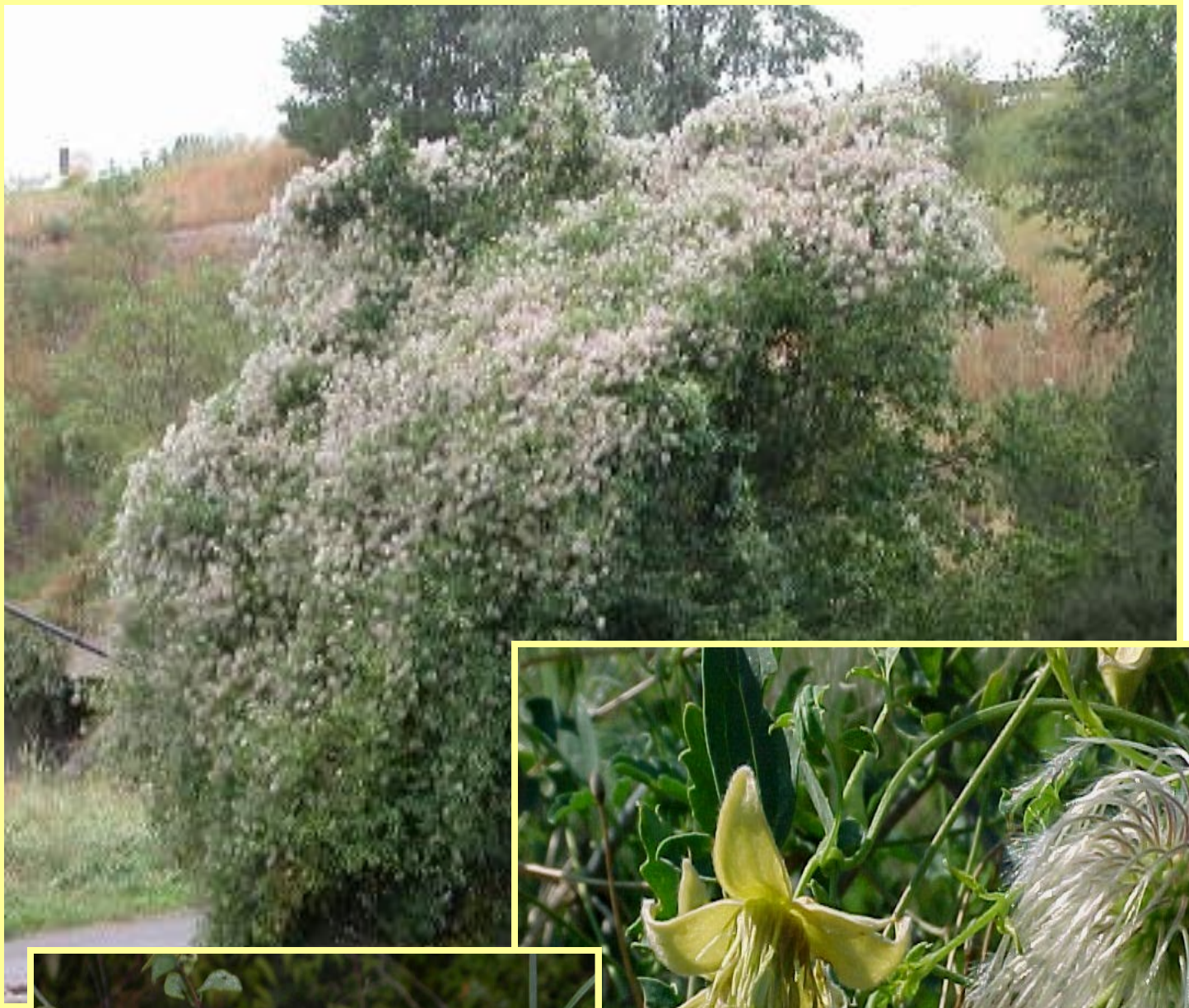
*Aminopyralid*: Apply in spring until flowering and/or to fall re-growth.  
Especially effective in fall after the first light frost.

*Clopyralid* + *triclopyr*: Apply in spring until flowering or fall regrowth.

*Aminoclopyrachlor* + *chlorsulfuron*: Effective from rosette to bud stage, also to fall regrowth.



# Chinese clematis



## LIST B

### Chinese clematis - *Clematis orientalis*

A perennial, herbaceous-to-woody climbing vine that is capable of completely covering trees and bushes, causing death to young trees and shrubs. An escaped ornamental that prefers well-drained soils and sunny locations, and is often found along roadsides, riparian areas, and rocky slopes. Eradication is required in all of El Paso County.

#### Identification:

- Flowers: Solitary, four yellow sepals (petal-like), often nodding.
- Fruits: Feathery, long-tailed, conspicuous all winter.
- Roots: Five to ten feet long.

#### Control methods:

Biological: No biological control agents available.

Mechanical: Pull or dig up the plant prior to flowering when soil is moist; remove all roots.

#### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*2,4-D amine*: Apply whenever plant is actively growing.  
(will damage neighboring broadleaf species if present).

*Imazapic*: Apply at flowering growth stage (fall).

*Aminopyralid*: Apply at flowering growth stage (fall).



# Common teasel





## LIST B

### **Common teasel - *Dipsacus fullonum***

A biennial or sometimes monocarpic perennial forb that can grow up to 6 feet tall. Generally found along irrigation ditches, rivers, abandoned fields, pastures, waste areas, and forests. Can produce more than 2,000 seeds per plant, and seeds can stay viable for up to 14 years. Plants die after seed production.

#### **Identification:**

- Flowers: Purple or white and egg-shaped with long floral bracts.
- Leaves: Clasp the stem and appear wrinkled.
- Fruits: Four-angled achene, each containing a single seed.

#### **Control methods:**

Biological: No biological control agents available.

Mechanical: Sever roots below soil surface during rosette stage. Cutting plants near flowering stage can be effective. Re-visit the site frequently to ensure re-growth does not occur with cut plants.

Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Metsulfuron*: Apply when in rosette or bolting growth stage.

*Aminopyralid*: Apply when in rosette or bolting stage.

Best choice of herbicide in riparian areas.

*Imazapic*: Apply when in rosette or bolting stage.

Good herbicide choice in riparian areas.

*Aminocyclopyrachlor + chlorsulfuron*: Apply from seedling to bolting.



# Dalmatian toadflax



## LIST B

### Dalmatian toadflax - *Linaria dalmatica*

A perennial forb introduced from the Mediterranean as a folk remedy, fabric dye, and ornamental. Grows up to 3 feet high in disturbed open sites, fields, pastures, rangelands, and wildlife habitats. Reproduces by seed (up to 500,000 per plant) and extensive, creeping rhizomes. Eradication is required in all of El Paso County.

#### Identification:

- Flowers: Showy yellow snapdragon-like with an orange throat.
- Leaves: Thick, waxy, bluish, heart-shaped, and wraps the stem.
- Roots: Early spring regeneration from vegetative buds.

#### Control methods:

Controlling toadflax is expensive and difficult. Control when infestations are small, but prevention is the best option.

#### Biological:

*Calophasia lunula* - a predatory noctuid moth, feeds on flowers and leaves.

*Eteobalea intermediella* - root boring moth.

*Mecinus janthinus* - a stem boring weevil

#### Mechanical:

Pulling by hand can be effective for small infestations. Pull every year (5 to 6 years) to deplete root system reserves.

#### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Aminocyclopyrachlor + chlorsulfuron:*

Apply when flowering, in spring or to fall regrowth.

*Picloram:* Apply when flowering, in spring and/or to fall regrowth.

*Chlorsulfuron:* Apply when flowering, in spring or to fall regrowth.



# Diffuse knapweed





## LIST B

### **Diffuse knapweed - *Centaurea diffusa***

A tap-rooted plant that is a biennial forb. It reproduces by seeds only, and is capable of producing 18,000 seeds per plant. Following seed production, the plant dries out and takes the form of a tumbleweed, spreading seeds great distances.

#### **Identification:**

- Flowers: Usually white, sometimes lavender; spiny bracts with a distinct central spine and fringed comb-like edges.
- Leaves: Finely divided, become reduced as plant matures.

**Control methods:** Prevent seed production.

#### Biological:

Insects listed below provide good control when used together, but may take 3 to 5 years to establish and achieve optimum results.

Seedhead weevil - *Larinus minutus*

Root weevil - *Cyphocleonus achates*

#### Mechanical:

Sever the taproot below ground prior to flowering. Mowing is effective at or just before full-bloom; plant parts must be disposed of properly as seed can still develop on cut plants.

#### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Aminocyclopyrachlor + chlorsulfuron:*

Use as a pre-emergent or apply from seedling to mid-rosette stage.

*Aminopyralid:*

Rosette to early bolt stage (spring) and/or in the fall to the rosettes.

*Clopyralid:*

Apply in spring or fall to rosettes before flowering stalk lengthens.



# Hoary cress





## LIST B

### Hoary cress - *Lepidium draba*

A.K.A. whitetop, this perennial member of the mustard family (*Brassicaceae*) reproduces by seeds and creeping rhizomes. One of the first noxious weeds to emerge in the spring, it flowers in early spring and sets seed by mid-summer. Single plants are capable of producing as many as 4,800 seeds that can remain viable in the soil for about 3 years. Hoary cress prefers moderate precipitation, alkaline soils, lots of sun, and disturbed sites, and can grow in a variety of habitats.

#### Identification:

- Flowers: White with four petals, flat-topped flower clusters.
- Leaves: Grayish-green, lance-shaped, serrated edges, blunt ends.
- Seeds: Heart-shaped capsules hold two flat reddish-brown seeds.

#### Control methods:

##### Biological:

No biological control available.

##### Mechanical:

Mow frequently in early spring before Hoary cress bolts to stress the plants followed by a herbicide application. Mow several times during the summer prior to a fall herbicide application for further control.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Chlorsulfuron*: Apply while flowering. (Early spring to early summer)

*Metsulfuron*: Apply while flowering. (Early spring to early summer)

*Imazapic*: Apply at late-flower to post-flower growth.

(Late spring to mid-summer)



# Houndstongue



## LIST B

### Houndstongue - *Cynoglossum officinale*

A short-lived perennial or biennial forb. Produces rosettes in the first year, and bolts a stout, erect stem that is 1 to 4 feet tall by mid-summer of the second year. Seeds have barbs like Velcro and will cling to animals, clothing, and machinery. Houndstongue is poisonous and can be lethal to wildlife and livestock. Eradication is required in all of El Paso County.

#### Identification:

- Flowers: Reddish-purple with 5 petals and 5 soft, hairy sepals. Slightly drooping from densely clustered panicles.
- Leaves: Lance shaped, with a smooth edge and no teeth or lobes. Leaf tip is sharply pointed, like a hound's tongue and covered with soft hairs.
- Seeds: Prickly teardrop-shaped nutlets in a pyramid-shaped receptacle.

#### Control methods:

##### Biological:

No biological control has been approved for use in Colorado.

##### Mechanical:

Cut or pull plants, remove entire root crown when plants are in rosette stage.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

**The label is the law!**

*Metsulfuron + 2,4-D*: Rosette to early flower growth stages.

*Chlorsulfuron + 2,4-D*: Rosette to early flower growth stages.

*Metsulfuron + chlorsulfuron*: Rosette to early flower growth stages.



# Leafy spurge



Norman E Reese, USDA ARS, Bugwood.org



## LIST B

### Leafy spurge - *Euphorbia virgata*

A long-lived perennial that emerges early in spring with an extensive creeping root system. Roots can extend to a depth of 30 feet. Plants contain a milky latex that can damage sensitive skin and eyes. A single plant can produce up to 130,000 seeds that can be projected up to 15 feet from the plant, these seeds are capable of remaining viable in the soil for at least 8 years. The plant also reproduces from the large numbers of vegetative buds on its roots.

#### Identification:

- Flowers: Small, enclosed by yellowish-green heart-shaped bracts.
- Leaves: Alternate, narrow, and linear.
- Stems: Erect, 1 to 3 feet tall, unbranched except at flower clusters.

#### Control methods:

##### Biological:

Both sheep and goats can be effective grazers of leafy spurge.

Three flea beetles (below) are available for control.

Flea beetle - *Ahpthona nigriscutis*

Flea beetle - *Aphthona czwalinae / lacertosa*

Flea beetle - *Ahpthona cyparissiae*

##### Mechanical:

Hand-pulling is not an option due to the vast root system. Frequent mowing can reduce seed production but will not provide long-term control.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Aminocyclopyrachlor + chlorsulfuron* mixed with *Diflufenzopyr + dicamba*: While flowering (spring) or fall application.

*Quinclorac* mixed with *Diflufenzopyr + dicamba*: While flowering (spring) or fall application.

*Aminocyclopyrachlor + chlorsulfuron*: Post-emergence (spring) until flowering, or to rosettes (fall).



# Musk thistle





## LIST B

### Musk thistle - *Carduus nutans*

A biennial thistle with very showy flowers producing up to 20,000 seeds per plant. Flower heads often bend over or nod, giving rise to the common name “nodding thistle.” Flowers emerge mid to late summer, seeds develop shortly after. Reproduces only by seeds. Often found in disturbed/overgrazed areas, but can invade various habitats.

#### Identification:

- Flowers: Purple, rarely white, 1.5 to 3 inches wide, nodding, solitary on stems; large triangular-shaped, spine-tipped bracts.
- Leaves: Spiny, dark green, white margins, prominent white midrib.
- Stems: Leaves usually absent or very reduced below flower. Stem smooth below flower head. Stem has winged spines throughout remainder of plant with spiny margined leaves.

#### Control methods:

##### Biological:

The crown weevil, *Trichosiocalus horridus*, is available for control.

##### Mechanical:

Sever the root below the soil surface prior to plant flowering in the rosette stage. Mowing is effective at full bloom, but flowering plant parts must be disposed of properly because seeds will develop on cut plants and germinate.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Aminopyralid*: Apply in spring during rosette to early bolting stages, or to rosettes in fall.

*Chlorsulfuron*: Apply in spring from rosette through very early flowering stages.

*Clopyralid*: Apply to rosette through flower bud stage or to fall rosettes.



# Perennial pepperweed





## LIST B

### **Perennial pepperweed** - *Lepidium latifolium*

A very invasive perennial forb. Plants act as “salt pumps” by absorbing salt from deep in the soil and then excreting salt and depositing it on the soil surface. Most desirable plants cannot tolerate high concentrations of salts so this plant is able to form a monoculture. Reproduction is by seed and roots. Plants range from one to five feet tall. Eradication is required in El Paso County.

#### **Identification:**

- Flowers: Tiny, white clusters on branch tips with four petals.
- Roots: Up to 10 feet deep into the soil.
- Leaves: Alternate, lance shaped, serrated edges.

#### **Control methods:**

##### Biological:

No biological control available.

##### Mechanical:

Most mechanical methods are not recommended and can increase the density of pepperweed. Spring mowing, combined with chemical treatments can be effective.

Chemical: Herbicides, when applied at the flower bud stage, are very effective. Repeat applications for up to five years.

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Chlorsulfuron:* Apply from early flower to flowering growth stage.

*Metsulfuron:* Apply from early flower to flowering growth stage.

*Imazapic:* Apply from early flower to flowering growth stage.



# Russian knapweed





## LIST B

### Russian knapweed - *Rhaponticum repens*

A deep-rooted, creeping perennial that reproduces primarily from adventitious buds on the roots, but it also reproduces from seed. The plant is allelopathic, meaning it exudes a toxic substance that inhibits the growth of surrounding plants. It is also toxic to horses, and prolonged consumption results in “chewing disease” which results in serious injury and/or death. Eradication is required in all of El Paso County.

#### Identification:

- Flowers: Pink to purple, urn-shaped, and solitary at the ends of upper branches, papery, rounded bracts.
- Stems: Upright, branched, covered in short stiff hairs.
- Roots: Aggressive, creeping, brown / black with a scaly appearance.

#### Control methods:

##### Biological:

*Jaapiella ivannikovi* - Gall midge

*Aulacidea acroptilonica* - Gall wasp not yet available by CDA for distribution.

##### Mechanical:

Mow several times before plants bolt to stress them; works well when followed by a fall herbicide application. Mowing alone will stimulate shoot sprouting and increase infestation.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Aminopyralid*: Apply in fall when stems die back or spring during early bolt before the flower buds form.

*Aminocyclopyrachlor + chlorsulfuron*: Apply in fall when stems die back or spring during early bolt prior to flower buds forming.



# Russian olive





## LIST B

### **Russian olive - *Elaeagnus angustifolia***

A fast-growing perennial shrub or small tree that reproduces through root suckers and seed. It possesses an extensive root system, and can grow on bare, mineral substrates within the soil. It tolerates many soil, light, and moisture conditions, but prefers open, moist, riparian areas and often out-competes native riparian vegetation. Prior to being listed as a noxious weed by the CDA, it was commonly used for erosion control and can be found in home landscaping.

#### **Identification:**

- Leaves: Narrow, linear, upper surface is light green, lower surface is silvery white.
- Branches: Twigs are reddish and flexible with 1" to 2" thorns.
- Fruit: Olive-shaped, become yellow-red when mature.

#### **Control methods:**

##### Biological:

Tubercularia canker is an unapproved bio-control; however, it can girdle entire stems and kill stressed plants over time.

##### Mechanical:

Cut trees, then immediately treat stumps with an herbicide to prevent re-sprouting.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Triclopyr*: Apply to the cambial layer of the tree immediately after the stump is cut or to the roots above soil surface.

*Glyphosate (aquatic approved version)*: Apply to the cambial layer of the tree immediately after the stump is cut or to the roots above soil surface.



# Scentless chamomile



## LIST B

### **Scentless chamomile**

- *Tripleurospermum inodorum*

An annual, biennial, or short-lived perennial forb that is native to Europe. Produces a dense mat that out-competes other plants. A single plant can produce 300,000 seeds. Seeds and flowers are continuously formed, producing many generations during the growing season. Eradication is required in all of El Paso County.

#### **Identification:**

- Flowers: Yellow-centered disk surrounded by white petals; daisy-like.
- Leaves: Alternate, finely divided, fern-like.
- Stems: From 6 inches to 2 feet tall with numerous branches.

#### **Control methods:**

Combine tillage, herbicide treatment and establish competitive plants.

#### Biological:

There is no biological control available at this time.

#### Mechanical:

Frequent shallow tilling can help exhaust seed bank. Hand pulling effective if repeated as new plants appear, prior to blooming.

#### Chemical:

Recommendations only! Always read, understand and follow the label.

**The label is the law!**

*Metsulfuron:* Apply when plant is in rosette to bolting stage.

*Chlorsulfuron:* Apply when plant is in rosette to bolting stage.



# Scotch thistle





## LIST B

### **Scotch thistle** - *Onopordum acanthium*

### **Scotch thistle** - *Onopordum tauricum*

A non-native biennial forb that reproduces solely by seed. Can produce up to 14,000 seeds per plant. Due to spiny nature, Scotch thistle can act as a living barbed wire fence to livestock and can grow up to 12 feet tall. Invades overgrazed pastureland, roadsides, and irrigation ditches. Eradication is required in all of El Paso County.

#### **Identification:**

- Flowers: 2 to 5 clusters, purple to dark red in color, terminal with spine-tipped bracts.
- Leaves: Alternate, spiny with a distinct white mid-rib.
- Stems: Numerous, branched, with broad, spiny wings entire length of the stem.

#### **Control methods:**

##### Biological:

No known biological control agents are effective against Scotch thistle.

##### Mechanical:

Any physical method that severs the root below the soil surface prior to seed production will kill the plant. Properly dispose of cut flowering plants, as seeds can mature and become viable.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Aminopyralid*: Apply in spring or fall during the rosette stage.

*Chlorsulfuron*: From bolting to flower bud stages.

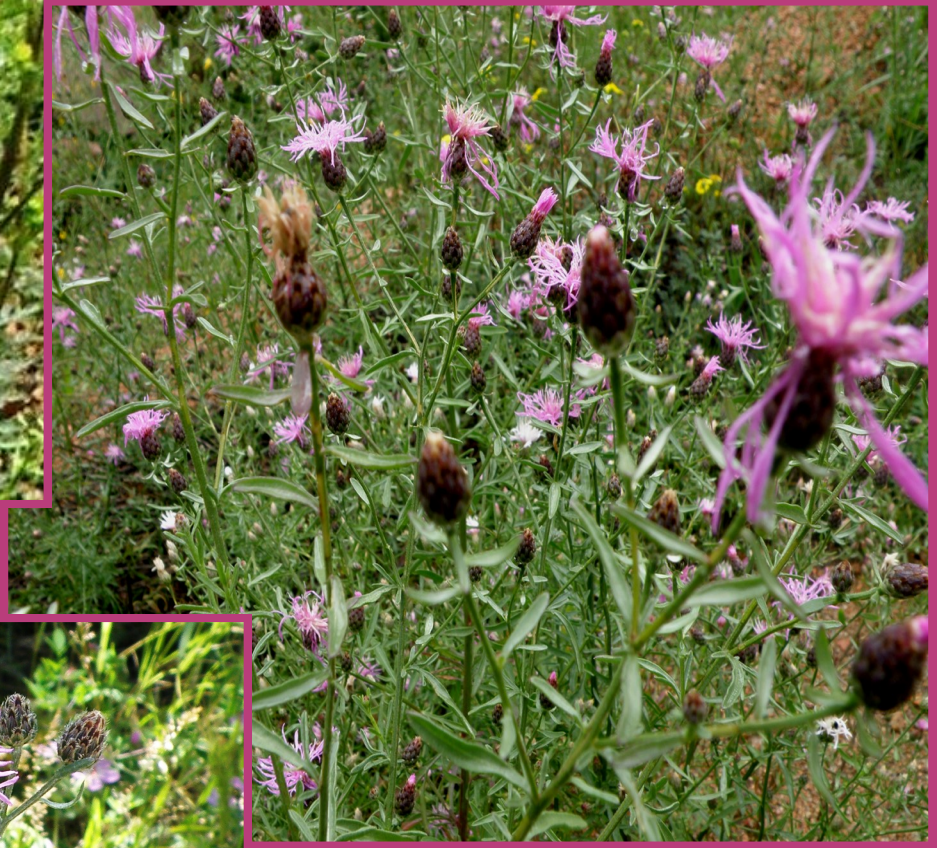
*Metsulfuron + Chlorsulfuron*: Apply from rosette to flower bud stages.

*Clopyralid*: Apply to rosettes in spring or fall.

*Aminocyclopyrachlor + chlorsulfuron*: Apply from seedling to bolting stage.



# Spotted knapweed





## LIST B

### Spotted knapweed - *Centaurea stoebe*

A short-lived perennial that reproduces mostly by seed. Each plant is capable of producing an average of 900 seeds annually. Plants tend to invade disturbed/overgrazed areas and can tolerate both dry conditions and high moisture areas.

#### Identification:

- Flower: Urn-shaped, pink to purple, solitary at the end of branches with black-tipped (“spotted”) spiny bracts.
- Leaves: Alternate, deeply lobed; become smaller near the tips of the stem.
- Root: Stout taproot.

#### Control methods:

##### Biological:

The insects listed below are available for control:

Seedhead weevil - *Larinus minutus*

Root weevil - *Cyphocleonus achates*

This is a great option for large infestations; optimum results take 3-5 years.

##### Mechanical:

Dig when the soil is moist, removing all roots. Mow when the plants have flower buds or early flowers to stress the plant; all parts must be disposed of properly, as seed may still develop on cut plants.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Aminocyclopyrachlor + chlorsulfuron:*

Apply as a pre-emergent, or from seedling to mid-rosette stage.

*Aminopyralid:*

Apply in spring at the rosette to early bolt stage or in fall to the rosettes.

*Clopyralid:*

Apply to spring or fall rosettes. When plants bolt, mix with 2,4-D to treat.



# Tamarisk





## LIST B

### **Tamarisk (Saltcedar) - *Tamarix spp.***

A deciduous small shrub or tree that reproduces vegetatively and by seed. Mature plants can produce up to 600,000 seeds that are viable for up to 45 days. It increases the salinity of the soil surface, which favors its growth while hindering native plant growth. It is often found in floodplains, along river banks, stream banks, irrigation ditches, and marshes.

#### **Identification:**

- Flowers: Tiny, pink to white, 5 petals, slender racemes.
- Leaves: Small, scale-like (like juniper), bluish-green in color.
- Stems: Reddish-brown color.

#### **Control Methods:**

##### Biological:

*Diorhabda carinulata* - established throughout the state.

*Diorhabda elongata* - Saltcedar leaf beetle, limited distribution.

##### Mechanical:

Bulldozing can be used to open up large stands of salt cedar; follow up with herbicide treatment of re-growth when 3 to 6 feet tall.

The cut-stump method can be applied with a chainsaw, or loppers for smaller plants.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

Cut-stump method refers to mechanically cutting down the tree and immediately applying herbicide to the stump.

*Triclopyr*: Cut-stump & basal bark - Summer to fall.

*Glyphosate* (Aquatic): Cut-stump - Summer to fall. Treat the cambium immediately after cutting and to roots above the ground.

*Triclopyr + Aminopyralid*: Broadcast foliar treatment: Apply when plants are growing rapidly—May to September.



# Yellow toadflax





## LIST B

### Yellow toadflax - *Linaria vulgaris*

A perennial with an extensive creeping root system that reproduces vegetatively, and also a prolific seed producer. It is well-adapted to moist or dry sites and is found in all soil types. Very competitive due to early spring emergence from vegetative buds on root stock. Herbicide control results can be highly variable. Known to be mildly poisonous to cattle, but has little effect to sheep or goats.

#### Identification:

- Flowers: Snapdragon-like, bright yellow with orange centers, long spur.
- Leaves: Narrow, linear, 1 to 2 inches long.
- Stems: Woody at the base and smooth toward the top, 1 to 3 feet tall.

#### Control Methods:

Controlling toadflax is expensive and difficult. Control when infestations are small. Prevention is the best option.

#### Biological:

The following insects are available for control:

Noctuid moth - *Calophasia lunula*

Root boring moth - *Eteobalea intermediella*

Stem-boring weevil - *Mecinus janthinus*

#### Mechanical:

Hand-pulling and tillage are not recommend due to its extensive creeping root system. A single new plant might be an exception.

#### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Aminocyclopyrachlor + Chlorsulfuron:*

Apply at flowering through fall post-flower into senescence.

*Picloram + Chlorsulfuron:*

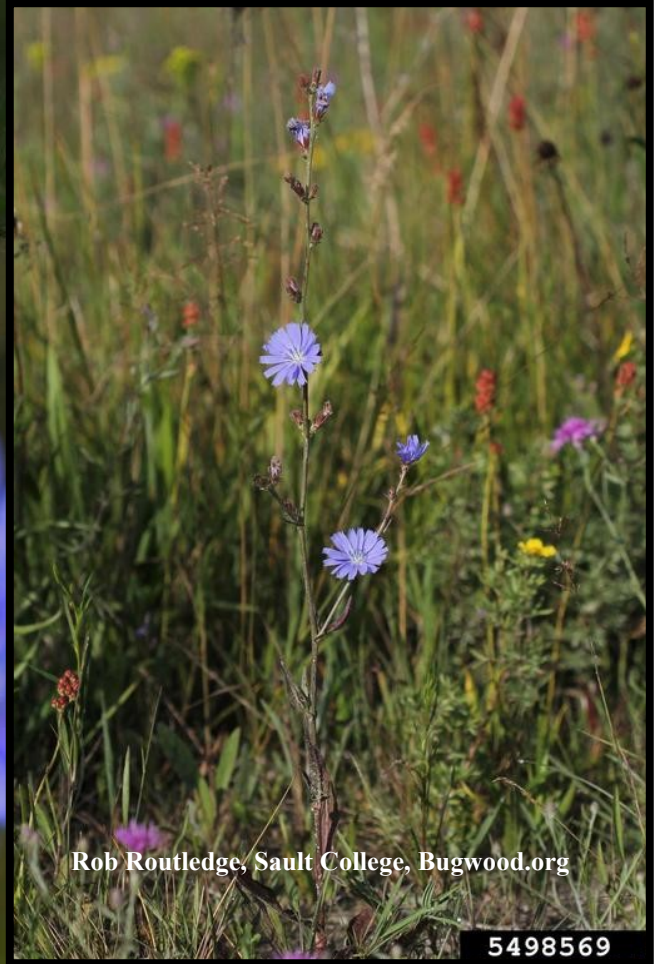
Fall application, late August through September has best results.



# Chicory



Rob Routledge, Sault College, Bugwood.org



Rob Routledge, Sault College, Bugwood.org

5498569



Ohio State Weed Lab, The Ohio State University, Bugwood.org

1555189

## List C

### Chicory - *Cichorium intybus*

This perennial forb is native to Eurasia. Plants initially appear as basal rosettes which resemble the common dandelion measuring 3 to 10 inches in length. Plants can be 3 to 5 feet tall with hollow stems, milky sap, and linear ribs. Has been cultivated for its long taproots as a coffee substitute and its leaves as greens. May be confused with our native blue flax (*Linum lewisii*). Prefers roadsides and disturbed areas and reproduces by seed throughout the growing season.

#### Identification:

- Inflorescences: One inch flowers with only ray flowers in clusters of one to three. Color ranges from cornflower blue to off white. Petals toothed.
- Leaves: Basal leaves resemble common dandelion. Stem leaves are rigid with smooth margins and short stiff hairs on both sides.
- Stems: Sticky to the touch. Branches spaced widely. Flowering stems appear later in the season.

#### Control Methods:

Biological: Sensitive to grazing by sheep, goats, and cattle.

Mechanical: Best for small infestations. Severing the flowering stems below the root crown may be effective but often requires follow-up treatment. Collect, bag and dispose of flowers and seeds. Mowing not recommended without being followed by herbicide treatment.

Chemical:

Recommendations only! Always read, understand and follow the label.

**The label is the law!**

*2,4-D*: Apply in rosette to bud stage.

*Aminopyralid*: Apply in rosette to bud stage.

*Clopyralid*: Apply in rosette to bud stage.



# Common burdock



## LIST C

### Common burdock - *Arctium minus*

Common burdock is a biennial forb that comes from Europe. The first year of growth is a rosette with large, heart-shaped leaves that are very hairy. The second year of growth produces a branched, erect stem that ranges from 3 to 10 feet tall. Common burdock grows from a large, thick taproot and prefers moist soils, roadsides, waste places, streambanks, and fencerows. Flowering and seed production occurs from July to October.

#### Identification:

- Flowers: Pink to purple, sometimes white. Surrounded by hooked spines that dry into an easily dispersible bur around the seeds.
- Leaves: Dark green, heart shaped, toothed to wavy margins with dense hairs.
- Stems: Flowering stems arise the second year and are branched with flowers at the tips.

#### Control Methods:

##### Biological:

No biological control available.

##### Mechanical:

Hand pull or dig. Repeated mowing is effective. Prevent seed production and spread.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

**The label is the law!**

*Dicamba + 2,4-D:* Apply to young, actively growing plants in spring.

*Aminopyralid:* Apply in rosette stage in spring or fall.

*Clopyralid:* Apply to young, actively growing plants in spring.



# Common mullein



## LIST C

### Common mullein - *Verbascum thapsus*

Common mullein, often mistaken as a native plant, is a biennial plant that originated in Eurasia. It can be found in disturbed areas, preferring dry, stony soil. It reproduces by seed, up to 250,000 per plant, which can remain viable in the soil for over 80 years.

#### Identification:

- Flowers: Yellow, saucer-shaped, attached to stem.
- Leaves: Oblong, woolly, with a rounded tip.
- Stems: Erect, rigid up to 6 feet tall covered with woolly hairs.

#### Control Methods:

##### Biological:

No insect biological control available.

##### Mechanical:

Easy to pull before flowering due to shallow taproot. If flowers are present, bag and dispose of plants to prevent spread of seeds.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*Chlorsulfuron*: Apply during rosette stages spring (before bolting) or fall.

*2,4-D + Picloram*: Apply during rosette stages spring (before bolting) or fall.

*Picloram*: Apply in spring at rosette stage to early growth or in fall to rosettes.

*Metsulfuron*: Apply in spring or fall to rosettes.



# Poison hemlock





## LIST C

### Poison hemlock - *Conium maculatum*

This plant is native to Europe. Biennial with leaves that resemble parsley. The plants are easily confused with other members of the carrot family. Habits include wetland areas and roadside ditches. ALL parts of this plant are poisonous! Consumption can be fatal.

#### Identification:

- Flowers: White, umbrella-like clusters.
- Leaves: Fern-like, lacy.
- Stems: Hollow with purple spots. Four to eight feet tall.

#### Control Methods:

##### Biological:

*Agonopterix alstroemeriana*, the hemlock moth larvae feed on the plant and cause severe defoliation and death of the plant.

##### Mechanical:

Hand pull or dig. ALWAYS wear gloves! Bag plants to contain seeds if flowering.

##### Chemical:

Recommendations only! Always read, understand and follow the label.

#### **The label is the law!**

*2,4-D*: Apply during rosette to early bolting stage.

*Chlorsulfuron*: Apply during rosette to early bolting stage.

*Metsulfuron*: Apply during rosette to early bolting stage.

*Picloram + 2,4-D*: Apply during rosette to early bolting stage.



# Glossary

**Adventitious:** Tissue that is not growing at the typical location on the plant.

**Annual:** A plant completing its lifecycle within a single growing season.

**Apex:** The tip of a leaf, root, or stem.

**Biennial:** Herbaceous plant that completes its life cycle in two years: in the first year, plants germinate and typically exist as basal rosettes; in the second year, plants bolt, flower, and die.

**Bolting:** Producing erect, elongated flowering stems from a basal rosette of leaves. Usually associated with winter annuals or biennials.

**Bracts:** A very reduced leaf-like structure usually associated with the base of a flower or inflorescence.

**Inflorescence:** The flowering part of a plant.

**Midrib:** Central vein of a leaf.

**Perennial:** A plant that lives through several growing seasons (more than two years).

**Restricted-Use Pesticide:** Use of pesticide requires a certified applicator's license from the Colorado Department of Agriculture.

**Rhizome:** An underground, horizontal stem capable of producing shoots above ground and roots below ground. A plant with rhizomes is often referred to as **rhizomatous** or a **creeping perennial**.

**Rosette:** A circular cluster of leaves arising from a very short stem at the surface of the soil. Lacks an erect stem.

**Sepal:** A flower part that usually encloses and protects the flower bud.

**Spur:** A tubular projection from a flower.

**Taproot:** A prominent root with few branches, sometimes swollen to store nutrients.

**Viable:** Capable of germination.

**Whorl:** More than two leaves or flowers attached at a node.

*Listings are informational only, not an endorsement by El Paso County.  
Application of restricted chemicals requires a certified professional.*

## **Herbicide Vendors**

### **Big R**

165 Fontaine Blvd.  
Colorado Springs, CO 80911  
(719) 390-9130

5845 Constitution Ave  
Colorado Springs, CO 80915  
(719) 591-1830

14155 E. Highway 24  
Peyton, CO 80831  
(719) 749-9136

840 Spanish Bit Drive  
Monument, CO 80921  
(719) 488-0000

## **Herbicide Applicators**

**A Green Image** (719) 243-0773

**Colorado Stoneworks Landscaping** (719) 538-6016

**Colorado Vegetation Management, Inc.** (719) 545-6163

**Falcon Weed Control** (719) 749-2551

**Horizon Vegetation Management** (303) 419-5332

**OutWest Weed Control** (719) 492-0166

**Rocky Mtn. Weed Management LLC** (719) 492-8515

**Timberline Landscaping** (719) 638-1000

## **Biological Control**

### **Colorado Department of Agriculture Insectary**

750 37.8 Road  
Palisade, CO 81526  
(866) 324-2963  
<https://ag.colorado.gov/conservation/palisade-insectary>



# Contacts

## **El Paso County**

Parks and Community Services Department  
Environmental Division  
3255 Akers Drive  
Colorado Springs, CO 80922-1503  
EVSnoxiousweeds@elpasoco.com  
<https://communityservices.elpasoco.com/environmental-division/>

## **Colorado Department of Agriculture**

Conservation Services Division  
Noxious Weed Program  
305 Interlocken Parkway  
Broomfield, CO 80021  
<https://ag.colorado.gov/conservation/noxious-weeds>

## **Colorado State Forest Service**

Woodland Park District  
113 South Boundary Street  
Woodland Park, CO 80863  
Phone: (719) 687-2951, (719) 687-2921  
<https://csfs.colostate.edu/woodland-park/>

## **Colorado State University Extension Office**

17 N. Spruce Street  
Colorado Springs, CO 80905  
Phone: (719) 520-7690  
<http://elpaso.extension.colostate.edu/>

## **Colorado Weed Management Association**

7187 W 79th Drive  
Arvada, CO 80003  
(303) 210-7077  
[www.cwma.org](http://www.cwma.org)

## **Natural Resources Conservation Service**

[www.nrcs.usda.gov](http://www.nrcs.usda.gov)  
Colorado Springs Service Center  
5610 Industrial Place, Suite 100  
Colorado Springs, CO 80916  
(719) 632-9598

Simla Service Center  
PO Box 188  
504 Washington Street  
Simla, CO 80835  
(719) 541-2358