



COLORADO

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: <http://www.colorado.gov/ag/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 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 (<http://www.invasive.org/library/>):

- Estimated damage from invasive species worldwide totals more than \$1.4 trillion.
- Russian thistle stands have been known to survive more than 100 years.
- The 2003 Guinness Book of World Species listed giant hogweed as the world's largest weed.
- Before the introduction of embalming, tansy ragwort was used to line coffins before burying the dead because of its ability to repel vermin.

How can Noxious Weeds be Managed?

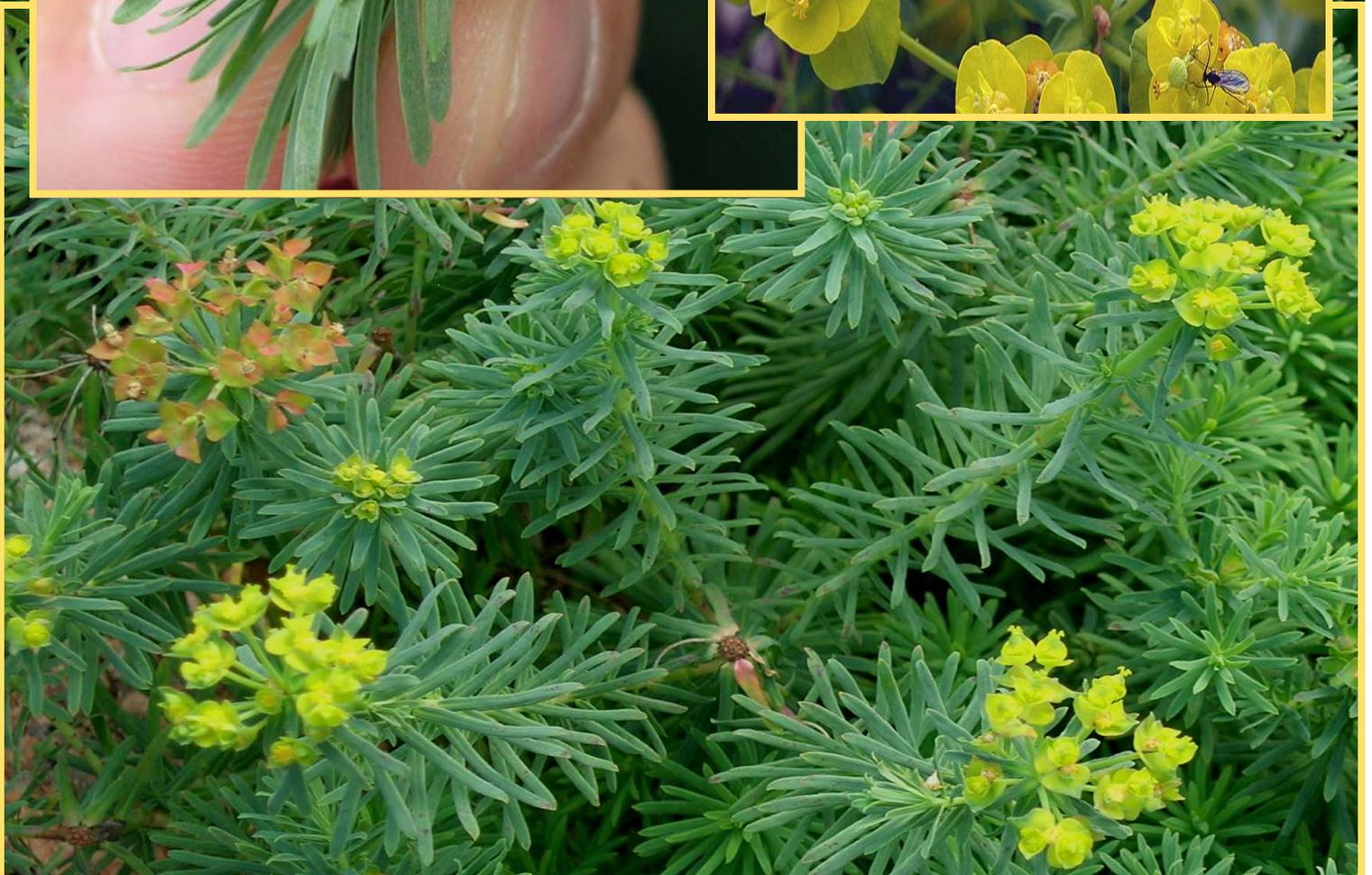
The most effective way to control noxious weeds is through Integrated Pest Management (IPM). IPM incorporates weed biology, environmental information, and available management techniques to create a management plan that prevents unacceptable damage from pests, such as weeds, and poses the least risk to people and the environment. IPM is a combination of treatment options that, when used together, provide optimum control for noxious weeds; however, IPM 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 seedheads.
- **Chemical:** The use of herbicides to suppress or kill 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.

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.

Cypress spurge



LIST A

Cypress spurge - *Euphorbia cyparissias*

A low-growing perennial containing a milky latex that is toxic to horses and cattle, and can cause severe skin irritation to people. An escaped ornamental, popular in xeriscape and rock gardens. Has an extensive root system and can reproduce from root fragments.

Identification:

- Leaves: Linear and needle-like.
- Flowers: Yellow-green bracts, blooms early spring to late fall.
- Seeds: Projected up to 15' feet, and viable for up to 8 years.

Control methods:

Biological:

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

Mechanical:

Hand-pull or dig while infestation is still small, removing all roots; tillage will encourage spreading. Wear rubber gloves and eye protection. Follow-up and perseverance is important.

Chemical:

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

The label is the law!

Quinclorac: Apply during flowering stage.

2,4-D + Dicamba: Apply during flowering stage.

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, since 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:

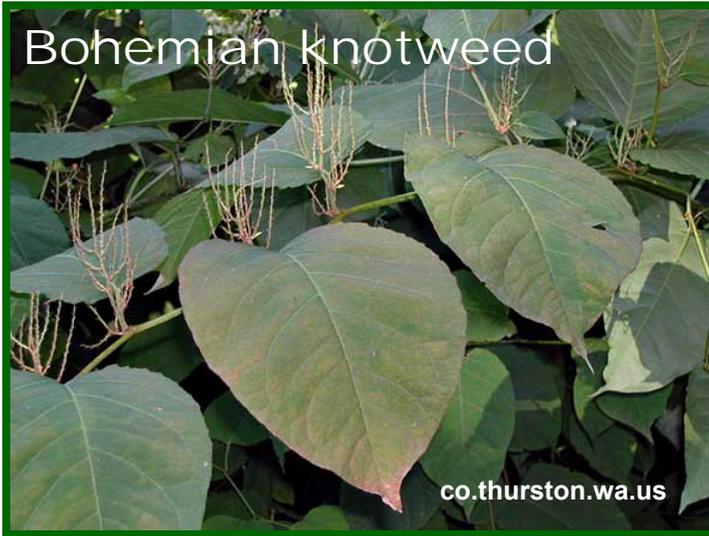
Recommendations only! Always read, understand and follow the label.

The label is the law!

Metsulfuron: Apply during rosette to bloom stages.

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

Knotweeds



LIST A

Giant knotweed - *Polygonum sachalinense*

Japanese knotweed - *Polygonum cuspidatum*

Bohemian knotweed - *Polygonum x bohemicum*

Bright green, bamboo-like perennial plants that grow 5 to 16 feet tall and spread through roots and root fragments. Introduced from Asia as an ornamental, for erosion control and landscape screening. They 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 giant knotweed, which is a List A species, since 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.

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, since 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 30 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 with 1 or 2 small leaves and rosette leaves.
- 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, since 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.

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:

Remove by hand prior to seed set. 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 spraying.

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.

Absinth wormwood



LIST B

Absinth wormwood - *Artemisia absinthium*

A long-lived perennial with a strong odor of sage. Plant can grow 2 to 4 feet in height, with a lateral root system extending 6 feet in all directions. Grows well in disturbed sites, moist soil, and is shade tolerant. Introduced for medicinal purposes.

Identification:

- Leaves: Blue-olive green, alternate and highly divided.
- Flowers: Small, yellowish, arranged in large, spike-like panicles.
- Stems: Numerous, and covered with fine gray hairs.

Control methods:

Biological:

No biological control available.

Mechanical:

Hand-pull or dig when soil is moist. Make certain to pull all roots. Multiple mowings prior to seed production may provide a control option.

Chemical:

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

The label is the law!

Aminopyralid: Apply late spring into summer flowering growth.

Aminopyralid + *Metsulfuron*: Apply late spring into summer flowering growth.

Aminopyralid + *2,4-D*: Apply late spring into summer flowering growth.

Clopyralid: Apply late spring into summer flowering growth.

Picloram + *2,4-D*: Apply late spring into summer flowering growth.
Do not use near trees, shrubs or water.

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.

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, in late spring to mid-summer.

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

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. Can be distinguished from musk thistle by the presence of winged spines extending to the flower heads.

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 prior to before plant flowers.

Chemical:

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

The label is the law!

Aminopyralid: Apply to rosettes through plants 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 (½ 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; 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 combined with fall herbicide treatment.

Chemical:

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

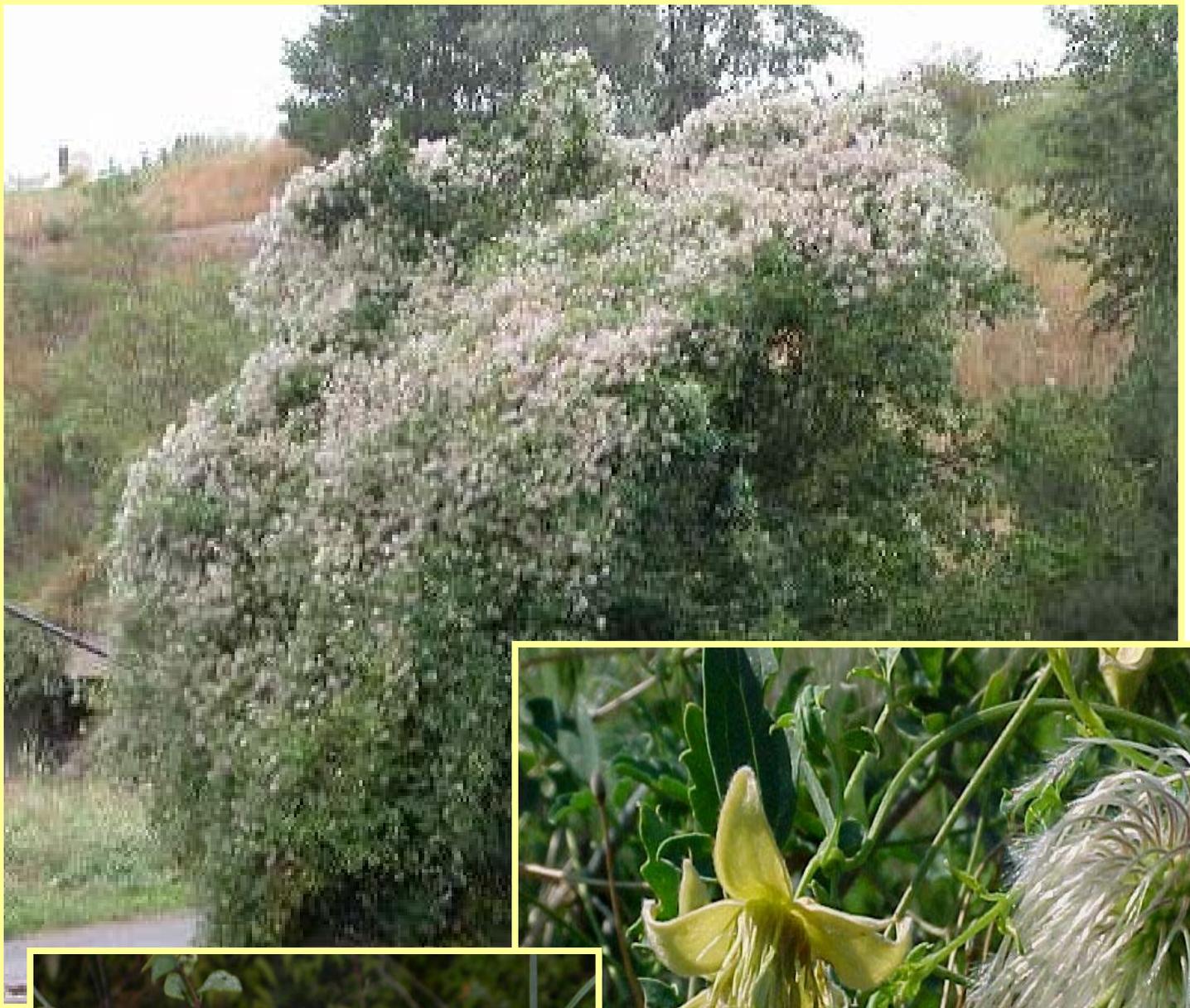
The label is the law!

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.

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.

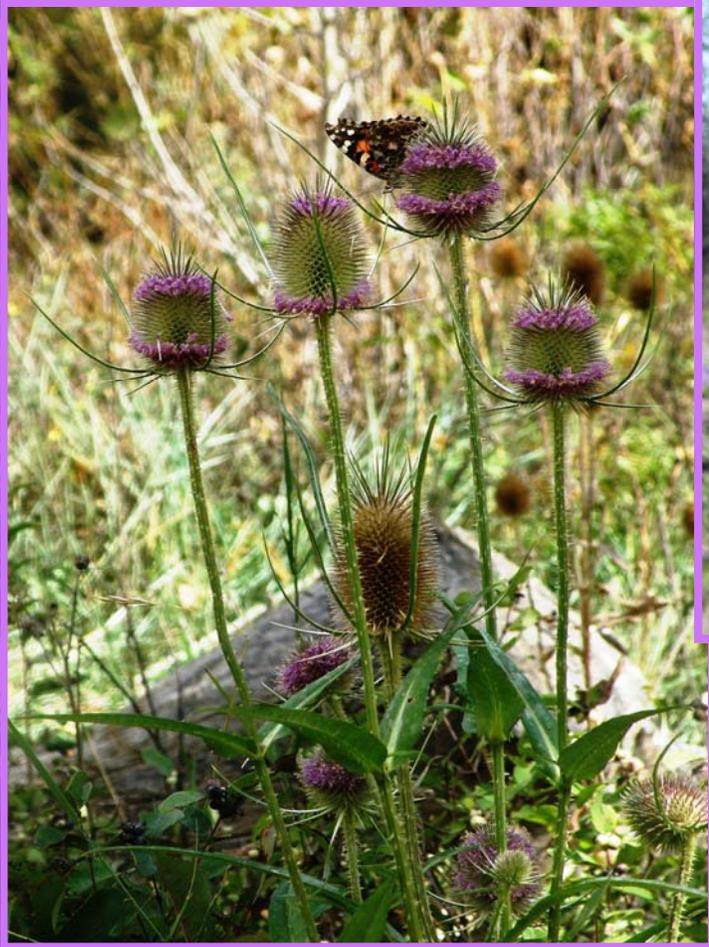
The label is the law!

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

Imazapic: Apply at flowering growth stage.

Aminopyralid: Apply at flowering growth stage.

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 spiny 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: Digging while at the rosette stage and cutting plants near flowering stage can be effective. Re-visit the site frequently to ensure re-growth does not occur.

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.

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.

Identification:

- Flowers: Showy yellow snapdragon-like with an orange throat.
- Leaves: Thick, waxy, bluish, heart-shaped, and wraps the stem.
- Roots: Can regenerate 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.

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 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.

Hoary cress



LIST B

Hoary cress - *Cardaria 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: Blue-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 the bolting stage to stress the plant. Mow several times during the summer, and apply herbicide during the fall for optimum control.

Chemical:

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

The label is the law!

Chlorsulfuron: Apply while flowering.

Metsulfuron: Apply while flowering (Early spring to early 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.

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.
- Seeds: Prickly teardrop-shaped nutlets in a pyramid-shaped receptacle.

Control methods:

Biological:

No biological control available.

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 esula*

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!

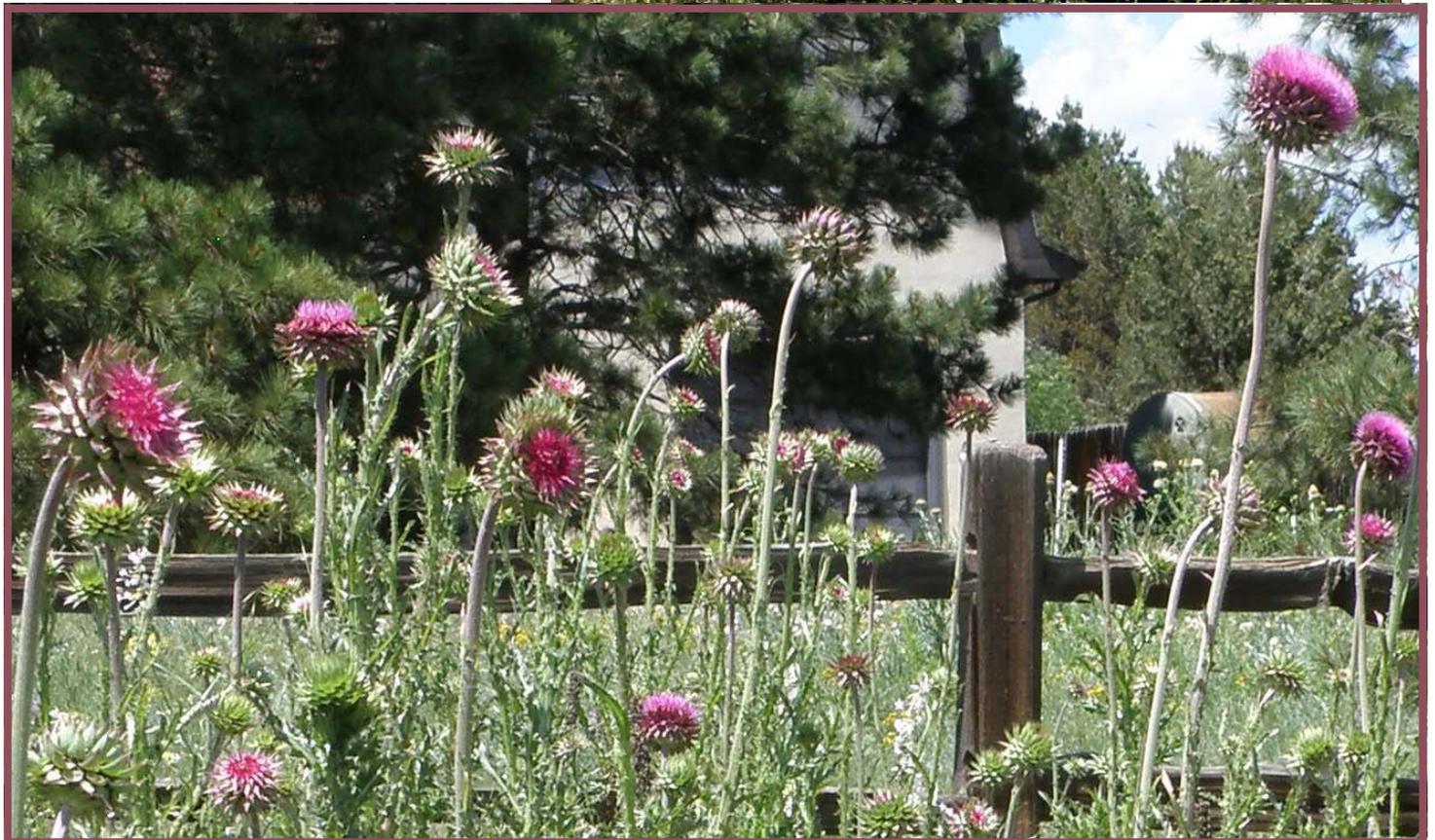
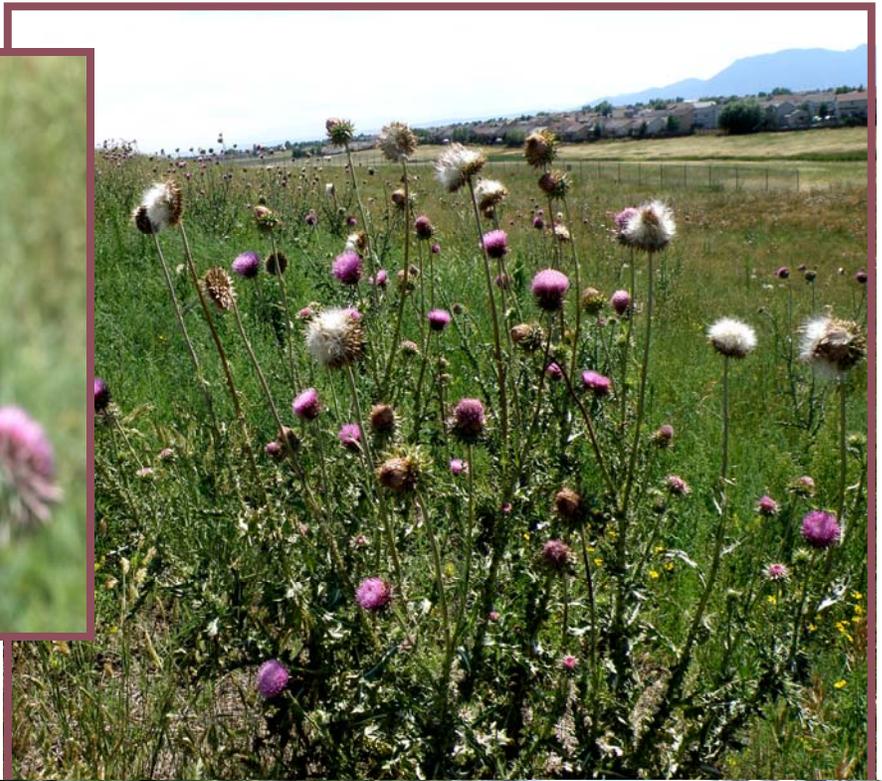
Aminocyclopyrachlor + chlorsulfuron mixed with *Diflufenzopyr + dicamba*:

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, *Trichosiromus horridus*, is available for control.

Mechanical:

Sever the root below the soil surface prior to plant flowering. Mowing is effective at full bloom, but flowering plant parts must be disposed of properly because seeds may still develop on cut plants.

Chemical:

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

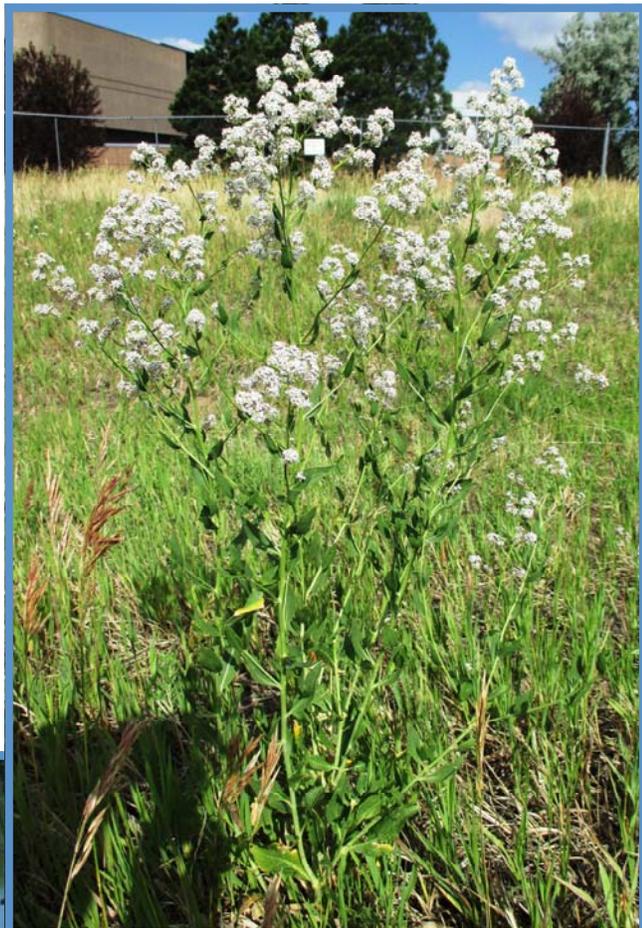
The label is the law!

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 a “salt pump” by absorbing salt from deep in the soil and then excreting salt and depositing it on the soil surface. Many plants cannot tolerate high concentrations of saline. Reproduces by seed, root fragments.

Identification:

- Flowers: Tiny, white in clusters on branch tips.
- Roots: Up to 10 feet deep into 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:

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 - *Acroptilon 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.”

Identification:

- Flowers: Pink to purple, urn-shaped, and solitary at the ends of upper branches, pointed papery tips on rounded bracts.
- Stems: Upright, branched, covered in short stiff hairs.
- Roots: Horizontal, vigorous, and black with a scaly appearance.

Control methods:

Biological:

The gall midge, *Jaapiella ivannikovi*, is currently being established by the Colorado Department of Agriculture, but is not yet available to the public.

Mechanical:

Mow several times before plants bolt. Most effective when mowing is combined with fall herbicide treatment.

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 in the bud to flowering stage.

Aminocyclopyrachlor + clorsulfuron: Apply in fall when stems die back

Russian olive



LIST B

Russian olive - *Elaeagnus angustifolia*

A fast-growing perennial shrub or small tree (up to 30 feet) that reproduces through adventitious roots and seed production. 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: Young twigs, 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 a 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: Apply to the cambial layer of the tree immediately

Scentless chamomile



LIST B

Scentless chamomile - *Matricaria perforata*

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.

Identification:

- Flowers: Yellow-centered disk surrounded by white petals, daisy-like.
- Leaves: Alternate, finely divided, fern-like.
- Stems: 6 inches to 3 feet tall with numerous branches.

Control methods:

Prevent seed production and crowd out infestations through crop competition.

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.

Identification:

- Flowers: 2 to 5 clusters, purple to dark red in color.
- Leaves: Alternate, stalk-less, and spiny edged.
- Stems: Numerous, branched, with broad, spiny wings.

Control methods:

Biological:

No known biological control agents 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 flowering cut 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.

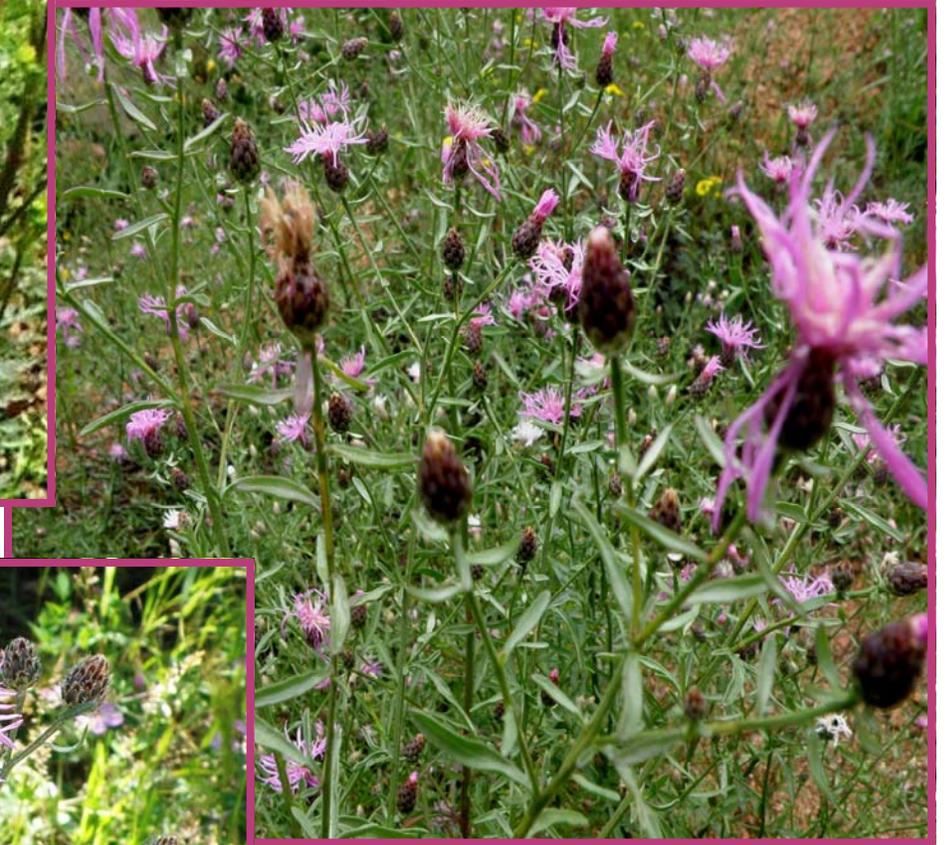
Chlorsulfuron: From bolting to flower bud stages.

Metsulfuron + Chlorsulfuron: Apply 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: Small, oblong, pinnately divided.
- Root: Stout taproot.

Control methods:

Biological:

The insects listed below are available for control:

Root weevil - *Cyphocleonus achates*

Seedhead weevil - *Larinus minutus*

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 plant has 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 rosette stage.

Aminopyralid: Apply in spring at the rosette to early bolt stage
and / 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 (Salt cedar) - *Tamarix spp.*

A 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 flower stalks.
- Leaves: Small, scale-like (like juniper), bluish-green in color.
- Stems: Reddish-brown color.

Control Methods:

Biological:

Diorhabda elongata-Leaf beetle, is available for limited distribution.

Mechanical:

Bulldozing can be used to open up large stands of salt cedar; follow up with herbicide treatment of re-growth when 1 to 2 meters 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, then 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 through prolific seed production. 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 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 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.

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, wooly, with a rounded tip.
- Stems: Erect, rigid up to 6 feet tall covered with wooly 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 in spring at rosette stage before bolting or in fall to rosettes.

2,4-D + Picloram: Apply in spring at rosette stage before bolting or in fall to rosettes.

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

Metsulfuron: Apply in spring or fall to rosettes.

Downy brome / Cheatgrass



List C

Downy brome / Cheatgrass - *Bromus tectorum*

This annual or winter annual, native to the Mediterranean region, ranges in height from 2" to 36". Each plant contains multiple erect stems with multi-branched inflorescences at their tips, which are slender, dense and usually drooping; at maturity they appear greenish-purple. Cheatgrass reproduces solely by seed, which is viable for 2 to 5 years. The root system is fibrous and fleshy. When mature Cheatgrass dries it becomes a major fire hazard, which has increased rangeland fire frequency from once every 60-110 years to once every 3-5 years. Habitats include roadsides, waste areas, misused pastures, rangelands, cultivated fields, and eroded sites. Grazing animals will forage on the green plants, but the sharp seeds on the dried plants can injure grazing animals, getting caught in the mouth, nose and eyes.

Identification:

- Inflorescences: Slender, dense, 3/8" to 3/4" long, usually drooping. Greenish-purple at maturity.
- Leaves: Flat blades, densely covered with soft hairs.
- Stems: Multiple erect stems, 2" to 36" tall.

Control Methods:

Biological: No biological control currently available.

Mechanical: Tillage, mowing and grazing help reduce established plant populations. The key to effective control is to prevent seed production and/or spread.

Chemical:

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

The label is the law!

Imazapic: Apply in fall prior to a hard freeze and/or early spring growth.

Glyphosate: Apply in fall or early spring.

Field bindweed



Steve Dewey, USU, Bugwood.org



LIST C

Field bindweed - *Convolvulus arvensis*

A deeply rooted perennial that reproduces through seeds and rhizomes. Taproots can extend up to 20 feet deep into the soil and seeds can remain viable for up to 40 years. Commonly found throughout Colorado in, pastures, roadsides, waste areas, lawns, and gardens from 4,000 to 8,000 feet in elevation.

Identification:

- Flowers: White to light pink, trumpet or bell-shaped.
- Leaves: Arrowhead shape.
- Stems: Prostrate, twining, up to 6 feet long.

Control Methods:

Biological:

The Bindweed Gall Mite, *Aceria mahlerbae*, is available for control and has been successful.

Mechanical:

Cutting, mowing, and pulling have negligible effects unless plants are cut below the soil surface in the early seedling stage.

Chemical:

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

The label is the law!

Dicamba + 2,4-D: Apply just after full bloom and/or in fall.

Picloram: Apply just after full bloom and/or in fall.

Glyphosate: Apply when plants are in full bloom and/or in fall.

Poison hemlock



LIST C

Poison hemlock - *Conium maculatum*

This plant is native to Europe. 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, purple spots

Control Methods:

Biological:

Agonopterix alstroemeriana, the hemlock moth larvae feed on 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) 390-9134

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

Ark Ecological Services, LLC
(303) 985-4849

Colorado Noxious Weed Management, LLC
(719) 352-1981

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

Horizon Vegetation Management
(303) 419-5332

T-P Enterprises, Inc.
(719) 243-0558

Biological Control

Colorado Department of Agriculture Insectary
750 37.8 Road
Palisade, CO 81526
(866) 324-2963
www.colorado.gov/agmain

Contacts

El Paso County

Community Services Department

Environmental Division

3255 Akers Drive

Colorado Springs, CO 80922-1503

Phone: (719) 520-7839, (719) 520-7846

<http://adm.elpasoco.com/environmental%20division/pages/default.aspx>

Colorado Department of Agriculture

Conservation Services Division

Noxious Weed Program

305 Interlocken Parkway

Broomfield, CO 80021

<https://www.colorado.gov/pacific/agmain>

Colorado State Forest Service

Woodland Park District

113 South Boundary Street

Woodland Park, CO 80863

Phone: (719) 687-2951, (719) 687-2921

Email: CSFS_WoodlandPark@mail.colostate.edu

<http://csfs.colostate.edu/districts/woodland-park-dist/>

Colorado State University Extension Office

17 N. Spruce Street

Colorado Springs, CO 80905

Phone: (719) 520-7690, Master Gardeners (719) 520-7684

<http://elpasoco.colostate.edu/>

Colorado Weed Management Association

PO Box 419

Hotchkiss, CO 81419

(970) 361-8262

www.cwma.org

Natural Resources Conservation Service

Colorado Springs Service Center

5610 Industrial Place, Suite 100

Colorado Springs, CO 80916

(719) 632-9598

www.nrcs.usda.gov

Simla Service Center

PO Box 188

504 Washington Street

Simla, CO 80835

(719) 541-2358