Weed Identification in Alberta

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The Weed Control Act

Alberta's Weed Control Act exists to enforce the control of weeds in order to protect landowners and our environment. The Act charges landowners with the responsibility to control weeds on their property, so as to prevent the spread to adjacent properties. For the purposes of the Act, weeds are designated into one of three categories.

Restricted Weeds

Weeds in this category pose a serious threat, and as such must be eradicated. Generally these weeds possess characteristics of rapid spread, and superior competition. These weeds are usually found in small numbers in Alberta, and are designated restricted to prevent their establishment. Individual municipalities have the power to, and from time to time do elevate certain species to restricted status. Check with your local municipality for weed designations in your area.

Handling Procedures

Restricted weeds are to be eradicated. Contact the local municipality, or Agricultural Fieldmen and inform them of the location before taking any action. Many of these infestations require hand pulling, but in some circumstances other controls may be necessary.

Noxious Weeds

Weeds designated noxious have the ability to spread rapidly, and cause severe crop losses and economic hardship. These weeds must be controlled to prevent further establishment, and spread.

Handling Procedures

When working on an easement right of way where noxious weeds are present, all equipment must be thoroughly cleaned (i.e. steam cleaned) before proceeding to the next section of the job. Noxious weeds shall not be transferred from one property to the next or from one county to the next.

Nuisance Weeds

These weeds are common to the Province, and in many cases are native species. They can be found on nearly all land throughout the Province, and as such are very difficult to eradicate. They can cause significant economic losses, but are so biologically suited that they cannot effectively be eradicated.

Handling Procedures

Every attempt should be made to prevent the spread of weeds. Equipment should be thoroughly cleaned between jobs.

Control & Handling

An inspector who finds any restricted or noxious weeds in or on any land, premises, vehicle, standing crop, hay, fodder, machine, grain, elevator, crop processing plant, or equipment shall give notice to destroy the restricted weeds, and may give notice to control noxious weeds. For nuisance weeds the inspector may issue a notice to prevent the spread of these weeds.

The following pages contain pictures of the restricted and noxious weeds listed in the Weed Control Act. Weed control is by legislation the responsibility of the landowner and the occupant. The Agricultural Fieldman in each Alberta Municipality request that you contact them should you find any of these weeds. With your help we can protect our lands, and maintain agricultural productivity and environmental biodiversity. Urban residents should call their locally appointed weed inspector.

For additional information about this booklet, contact your local Agricultural Fieldman.

Weed Lifecycle

ANNUAL

- Annual weeds complete their lifecycle in one growing season. Annual weeds spread by seed, and therefore must be prevented from producing seed.

BIENNIAL

- Biennial weeds require 2 growing seasons to complete their lifecycle. Biennial weeds spread by seed, and therefore must be prevented from producing seed.

PERENNIAL

- Perennial weeds grow from root stalks year after year. Perennial weeds spread by seeds and roots, and therefore the entire plant must be destroyed.

Description

Name: Dodder (Cuscuta spp.)

Classification: Restricted

Recognizable features:

- Stem: yellowish, lacks chlorophyll, twining
- Leaves: absent or reduced to fine scales
- Flowers: white to pink, cup-like, numerous in compact clusters

General:

Parasitic annual that spreads by seed. Broadleaf plants serve as hosts, with alfalfa and clover being the most susceptible.
**Description**

**Name:** Eurasian water milfoil  (*Myriophyllum spicatum*)

**Classification:** Restricted

**Recognizable features:**
- **Stem:** slender
- **Leaves:** whorled, finely divided, feathery
- **Flowers:** small, 4 petals and 4 sepals which quickly fall off, alternately arranged along the terminal ends of stems, attached directly to the stem

**General:** Aquatic, mostly immersed in water.

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**Description**

**Name:** Nodding thistle  (*Carduus nutans*)

**Classification:** Restricted

**Recognizable features:**
- **Stem:** first year forms a large rosette, following year grows up to 2.5 m tall, usually unbranched
- **Leaves:** alternate, spiny margins, deeply lobed, twisted or wavy, dark green with light green mid-vein, woolly to densely hairy, up to 25 cm long
- **Flowers:** small pink to purple flowers clustered in a head to resemble a single flower, solitary at ends of branches, flower head 4 - 6 cm in diameter, nodding, 1 - 3 heads / plant, below each head are several rows of spiny bracts

**General:** Biennial that spreads rapidly by seed forming extremely dense stands
**Description**

**Name:** Yellow star-thistle (*Centaurea solstitialis*)

**Classification:** Restricted

**Recognizable features:**

- **Stem:**
  - erect, branching, rough, up to 1 m tall

- **Leaves:**
  - lower leaves are deeply lobed, upper leaves have an entire margin and become smaller towards the top of the plant, fine hairs

- **Flowers:**
  - small yellow flowers clustered in a head to resemble a single flower, solitary at ends of branches, sharp yellowish spines up to 2 cm long extend from below the flower head

**General:**

Annual that spreads by seed. Unable to utilize rangeland when yellow star-thistle is present. If grazed, causes a nervous disorder known as “chewing disease” that can result in death of the animal.

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**Description**

**Name:** Diffuse knapweed (*Centaurea diffusa*)

**Classification:** Restricted

**Recognizable features:**

- **Stem:**
  - erect with numerous branches, up to 1 m tall

- **Leaves:**
  - initially form a rosette, later become alternate, divided into narrow segments, rough, hairy, grayish-green

- **Flowers:**
  - small white to purple flowers clustered into a narrow head to resemble a single flower, solitary at ends of branches, prominent spines on head

**General:**

Annual to short lived perennial that spreads by seed. Commonly confused with spotted or Russian knapweed. However, diffuse knapweed is easily distinguished as the flower head is covered with prominent spines. Also, the leaves are more finely divided and the stem is more branched in diffuse knapweed. Reported to exude chemicals which prevents the germination or establishment of neighboring plants.
**Description**

**Name:** Spotted knapweed (*Centaurea maculosa*)

**Classification:** Restricted

**Recognizable features:**
- Stem:
  - branched, up to 1 m tall
- Leaves:
  - initially form a rosette, later become alternate, divided into segments, slightly hairy
- Flowers:
  - small pink to purple flowers clustered into a head to resemble a single flower, solitary at ends of branches, bracts with black tips

**General:**
Biennial to short lived perennial that spreads by seed. Commonly confused with diffuse or Russian knapweed. However, spotted knapweed is easily distinguished by the "spotted" bracts on the flower head. Reported to exude chemicals which prevents the germination or establishment of neighboring plants.

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**Description**

**Name:** Russian knapweed (*Centaurea repens*)

**Classification:** Noxious

**Recognizable features:**
- Stem:
  - erect, much branched, becoming hairless with maturity, up to 80 cm tall
- Leaves:
  - initially form a rosette, later become alternate, lower leaves toothed to deeply lobed, upper leaves attached directly to stem, smooth to toothed margins
- Flowers:
  - small pink to purple flowers clustered in a head to resemble a single flower, solitary at ends of leafy branches, bracts green with whitish tips

**General:**
Perennial that spreads by seed and black creeping roots. Commonly confused with diffuse and spotted knapweed. However, Russian knapweed is easily distinguished as it has neither black spots or spines on the flower head as spotted or diffuse knapweed respectively. Reported to exude chemicals which prevents the germination or establishment of neighboring plants.
**Description**

**Name:** Canada thistle (*Cirsium arvense*)

**Classification:** Noxious

**Recognizable features:**
- **Stem:**
  - upright, branching near the top, hollow
- **Leaves:**
  - alternate, slightly clasping the stem, variable, from a smooth margin with no spines to irregularly lobed with sharp spines
- **Flowers:**
  - small white to purple flowers clustered into a head resembling a single flower, male (round) and female (flask or urn shaped) flowers found on separate plants, positioned at the ends of branches

**General:**
Perennial that spreads by seed and creeping roots. Feathery hairs (pappus) attached to seeds to aid in short distance dispersal.

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**Description**

**Name:** Perennial sow-thistle (*Sonchus arvensis*)

**Classification:** Noxious

**Recognizable features:**
- **Stem:**
  - upright, leafy at the base with only a few leaves on the stem, up to 2 m tall
- **Leaves:**
  - initially form a rosette, later become alternate, up to 20 cm long, clasp the stem, variable, deeply lobed with spiny edges to smooth leaf margins, color varies from light green to dark green
- **Flowers:**
  - small deep yellow flowers clustered into a head to resemble a single flower, each flower head up to 4 cm in diameter, heads arranged in a loose terminal cluster with approximately 20 heads / plant

**General:**
Commonly confused with annual sow-thistle and prickly lettuce. However, perennial sow-thistle spreads by seed and by extensive underground roots, whereas annual sow-thistle spreads only by seed and has a smaller root system. Perennial sow-thistle is also easily distinguished from prickly lettuce as it does not have the distinctive ridge of spines on the micrib on the underside of the leaf that is associated with prickly lettuce. Entire plant contains a milky juice. Feathery hairs (pappus) attached to the seed aid in dispersal.
**SCENTLESS CHAMOMILE**
*Matricaria maritima*

**Description**

*Name:* Scentless chamomile (*Matricaria maritima*)

*Classification:* Noxious

*Recognizable features:*
- **Stem:**
  - highly branched, bushy, smooth, up to 1 m tall
- **Leaves:**
  - alternate, very finely divided into thread-like segments, usually hairless
- **Flowers:**
  - white and yellow, daisy-like, solitary at the ends of long branches

*General:*
Annual or winter annual to short lived perennial that spreads by seed (400,000 seeds / plant). Commonly confused with ox-eye daisy when in flower. However, scentless chamomile is easily distinguished by the finely divided leaves and bushy growth. Also confused with pineapple weed when flowers are absent. Although, easily distinguished by the lack of odor when leaves are crushed (“scentless”), while pineapple weed has a distinct fruity odor (“pineapple”).

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**OX-EYE DAISY**
*Chrysanthemum leucanthemum*

**Description**

*Name:* Ox-eye daisy (*Chrysanthemum leucanthemum*)

*Classification:* Noxious

*Recognizable features:*
- **Stem:**
  - generally unbranched and hairless, up to 1 m tall
- **Leaves:**
  - lower leaves are stalked, up to 15 cm in length, stem leaves progressively smaller and attached directly to the stem, generally hairless, irregularly lobed or wavy margin
- **Flowers:**
  - white and yellow, daisy-like, solitary at the ends of long branches, up to 5 cm in diameter

*General:*
Perennial that spreads by seed and underground horizontal stems (rhizomes). Commonly confused with scentless chamomile as the flowering heads are very similar. However, the leaves of scentless chamomile are more finely dissected.
**COMMON TANSY**  
*Tanacetum vulgare*

**Description**

**Name:** Common tansy (*Tanacetum vulgare*)

**Classification:** Noxious

**Recognizable features:**
- Stem:
  - several stems in a cluster, branched, up to 2 m tall
- Leaves:
  - alternate, deeply divided into toothed segments
- Flowers:
  - small yellow flowers grouped into button-like heads, 1 cm wide, 20 - 200 flower heads / plant arranged in a flat topped cluster

**General:**
Aromatic perennial that spreads by seed and short underground horizontal stems (rhizomes). Forms dense patches. Toxic to animals.

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**FIELD BINDWEED**  
*Convolvulus arvensis*

**Description**

**Name:** Field bindweed (*Convolvulus arvensis*)

**Classification:** Noxious

**Recognizable features:**
- Stem:
  - vine-like, twining, prostrate, up to 3 m long
- Leaves:
  - alternate, shaped like a slender arrowhead with spreading lobes at the base, on stalks, margins smooth or entire, up to 5 cm long
- Flowers:
  - bell to funnel shaped, white to pink, up to 5 cm across, 2 small leaf-like bracts on the stem below the flower

**General:**
Perennial weed that spreads rapidly by seed and creeping roots. Forms dense tangled mats or twines around other plants, fences, etc. Commonly confused with wild morning glory and wild buckwheat. However, field bindweed is easily distinguished by the presence of two small leaf-like bracts on the stem below the flower. Also, the absence of a papery sheath (ocrea) at the base of the leaf stalk also distinguishes field bindweed from wild buckwheat.
**Description**

**Name:** White cockle (*Lychnis alba*)

**Classification:** Noxious

**Recognizable features:**

**Stem:**
- covered in short hairs, upright, swollen at the point where leaves are attached (node), up to 1 m tall

**Leaves:**
- opposite, elongate, pointed at the tip, covered in short hairs, smooth leaf margin, up to 10 cm long

**Flowers:**
- 5 deeply notched white petals sometimes giving the appearance of 10 petals, 2 kinds of flowers, one with 10 veins on the lower part of the flower (calyx) which is inflated and produces seed (female), one with 20 veins on the calyx which is slender and produces pollen (male)

**General:**
Biennial to short lived perennial that spreads by seed. Commonly confused with night flowering catchfly. However, white cockle is easily distinguished as it does not have sticky leaves or stems.

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**Description**

**Name:** Bladder campion (*Silene cucubalus*)

**Classification:** Noxious

**Recognizable features:**

**Stem:**
- branching, smooth, swollen at point where leaves attach to stem (node), up to 50 cm tall

**Leaves:**
- opposite, ovate to elongate, margins generally smooth or entire, without stalks, waxy

**Flowers:**
- white, in clusters at ends of branches, base of flower (calyx) becomes inflated, veiny and purplish brown as plant matures

**General:**
Persistent perennial weed that spreads rapidly by seed and roots branching from a central taproot. Commonly confused with white cockle and night flowering catchfly. However, bladder campion is easily distinguished as it is not covered in hairs.
**Description**

**Name:** Knawel (*Scleranthus annuus*)

**Classification:** Noxious

**Recognizable features:**

**Stem:**
- much branched, swollen at the point where the leaves are attached (node), weak, up to 25 cm tall

**Leaves:**
- opposite, attached directly to the stem, needle-like, a few hairs may be present at base of leaf

**Flowers:**
- small, green, no petals, sepals fused into a cup-like structure, in small clusters at the base of the upper leaves

**General:**
Annual or winter annual that spreads by seed. Possible indicator of acidic soils. Commonly confused with corn spurry. However, knawel is easily distinguished as the leaves are opposite and the flowers are green and inconspicuous.

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**Description**

**Name:** Cleavers (*Galium spurium*)

**Classification:** Noxious

**Recognizable features:**

**Stem:**
- square, trailing to twining, short bristles, up to 2 m in length

**Leaves:**
- in whorls (6-8 leaves at one point of attachment), pointed at the tip, rough texture

**Flowers:**
- small, 4 white petals, found on small stems in leaf axils

**General:**
Annual or winter annual that spreads by seed. Entire plant is covered in bristles which snag like velcro. Fruiting structures are found in pairs.
Description

Name: Hoary cress (Cardaria spp.)

Classification: Noxious

Recognizable features:

Stem:
- Upright with a few branches, lower stem sparsely to densely hairy, upper stem hairless to sparsely hairy, up to 60 cm tall

Leaves:
- Alternate, lower leaves sparsely to densely hairy, stalked, upper leaves hairless to sparsely hairy and attached directly to the stem, leaf margin smooth to irregularly toothed, up to 8 cm long

Flowers:
- Small, 4 white petals, flowers clustered to alternately arranged at the end of the stem

General:
Perennial that spreads by seed and creeping roots. Three species of Hoary cress are found in Alberta. Each is named according to the distinct shape of the fruiting structure (pod): heart-podded, lens-podded, and globe-podded hoary cress.

Description

Name: Toadflax (Common / Yellow) (Linaria vulgaris)

Classification: Noxious

Recognizable features:

Stem:
- Often several stems forming dense patches, unbranched to few branches in upper stem, hairless, up to 1 m tall

Leaves:
- Alternate to spirally arranged, numerous, attached directly to the stem, hairless, margins smooth or entire, linear, up to 10 cm long

Flowers:
- Resemble snapdragon, bright yellow with yellow-orange throat, up to 3.5 cm long including the spur extending from the base, alternately arranged along terminal ends of stems

General:
Perennial that spreads by seed and creeping roots. Commonly confused with leafy spurge when flowers are absent. However, yellow toadflax is easily distinguished by the absence of milky juice in the plant. Also confused with delmation toadflax, but easily distinguished by the presence of long linear leaves compared to the short broad leaves of delmation toadflax.
**Description**

**Name:** Dalmation Toadflax (*Linaria dalmatica* L.)

**Classification:** Nuisance

**Recognizable features:**
- **Stem:**
  - often several stems forming dense patches, unbranched to few branches in upper stem, hairless, up to 1 m tall
- **Leaves:**
  - alternate, hairless, broad base, clasp stem
- **Flowers:**
  - resemble snapdragon, bright yellow with yellow-orange throat, up to 3.5 cm long including the spur extending from the base

**General:**
Easily distinguished from Common or Yellow Toadflax by the broad leaves. Perennial reproducing by seed and creeping roots.

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**Description**

**Name:** Leafy spurge (*Euphorbia esula*)

**Classification:** Noxious

**Recognizable features:**
- **Stem:**
  - thickly clustered, hairless, up to 1 m tall
- **Leaves:**
  - alternate to spirally arranged, numerous, hairless, attached directly to the stem, narrow, margins smooth or entire, up to 7 cm long
- **Flowers:**
  - greenish-yellow, petals and sepals are absent, clustered with 1 female flower surrounded by several male flowers held within a cup-like structure, subtended by 2 green leaf-like bracts

**General:**
Perennial that spreads by seed and creeping roots. Forms dense stands. Commonly confused with cypress spurge. However, leafy spurge is easily distinguished as the plant is taller and leaves are longer, with less branching in the upper part of the plant. All plant parts contain a milky juice which can cause skin irritations.
**Description**

**Name:** Cypress spurge (*Euphorbia cyparissias*)

**Classification:** Noxious

**Recognizable features:**

- **Stem:**
  - erect, usually much branched near top of plant, up to 80 cm tall

- **Leaves:**
  - alternate, numerous, small, narrow, linear

- **Flowers:**
  - greenish-yellow, small, clustered at the ends of branches, petals and sepals are absent, subtended by yellowish-green heart shaped bracts which usually turn reddish-green with maturity

**General:**

Spreads by seed and an extensive root system. Forms dense stands. Contains a milky juice which is a skin irritant and may also be toxic to animals. Commonly confused with leafy spurge. However, cypress spurge is easily distinguished as the plant and leaves are shorter, and there is more branching in the upper part of the plant.

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**Description**

**Name:** Stork’s bill (*Erodium cicutarium*)

**Classification:** Noxious

**Recognizable features:**

- **Stem:**
  - hairy, trailing, up to 2 m long

- **Leaves:**
  - opposite, hairy, finely divided into feathery lobes or toothed segments

- **Flowers:**
  - pink to purple, 5 petals, in clusters

**General:**

Annual, winter annual or biennial that spreads by seed. Emerges late and stays green into the fall. Fruit has a long beak (“stork's bill”) that coils at maturity and splits open from bottom to top.
BLUEWEED
Echium vulgare

Description

Name: Blueweed (Echium vulgare)

Classification: Noxious

Recognizable features:
Sect:
- covered in short stiff hairs, up to 1 m tall
Leaves:
- Initially forms a rosette, later the leaves become alternate, rough texture, hairy
Flowers:
- bright blue, showy, arranged in 1-sided short arching branches

General:
Biennial to short lived perennial. Commonly found in marginal soils.

SPREADING DOGBANE
Apocynum androsaemifolium

Description

Name: Spreading dogbane (Apocynum androsaemifolium)

Classification: Noxious

Recognizable features:
Sect:
- much branched, up to 60 cm tall
Leaves:
- opposite, dark green above, lighter green below, broad at the base and narrow towards tip, attached to stem by a short stalk
Flowers:
- white to pink, 5 petals partially joined to form a bell shape, in loose clusters at the ends of branches and in leaf axils

General:
Perennial that spreads by seed and rhizomes. Exudes a milky juice which can be toxic to animals.
**Description**

**Name:** Field scabious (*Knautia arvensis*)

**Classification:** Noxious

**Recognizable features:**

**Stem:**
- covered in short stiff hairs, sparsely branched, up to 1.5 m tall

**Leaves:**
- opposite, covered in short stiff hairs, lower leaves toothed, middle leaves lobed, upper leaves reduced in size

**Flowers:**
- small blue to purple flowers clustered into a head to resemble a single flower, below the head is a ring of narrow green bracts, solitary on the ends of long leafless stems, flower heads up to 4 cm in diameter

**General:**
Perennial that spreads by seed.

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**Description**

**Name:** Hound's tongue (*Cynoglossum officinale*)

**Classification:** Noxious

**Recognizable features:**

**Stem:**
- up to 1.5 m tall

**Leaves:**
- initially form a rosette, later become alternate, rough textured (like a hound's tongue), hairy, smooth or entire margin, large, up to 30 cm long

**Flowers:**
- reddish-purple

**General:**
Biennial that spreads by seed. Contains toxic alkaloids that can cause liver damage to grazing animals. Produces numerous bristly seeds that spread by attaching to animals or clothing.
Description

Name: Tall buttercup (*Ranunculus acris*)

Classification: Noxious

Recognizable features:
- Stem: much branched above, up to 90 cm tall
- Leaves: lower leaves deeply divided into 3 - 5 lobes, upper leaves reduced to 3 - 4 narrow segments, hairy
- Flowers: yellow, waxy, 5 petals

General:
Perennial that spreads by seed. Contain acrid juice that causes pain and inflammation in grazing animals. Common in wet areas and pastures.

Description

Name: Purple loosestrife (*Lythrum salicaria*)

Classification: Noxious

Recognizable features:
- Stem: square, woody, several stems/plant, up to 2.5 m tall
- Leaves: opposite to spirally arranged, attached directly to stem, smooth margins
- Flowers: numerous, pink to purple, 6 wrinkled petals, attached directly to stem in a dense spike

General:
Wetland perennial that forms dense brush-like stands. Spreads mainly by seed (2.5 million / plant). Also spreads by underground horizontal stems (rhizomes).
PERSIAN DARNEL  
*Lolium persicum*

**Description**

**Name:** Persian darnel (*Lolium persicum*)

**Classification:** Noxious

**Recognizable features:**
- **Stem:** upright, branching from a reddish base, up to 45 cm tall
- **Leaves:** lower surface glossy, dark green, 6 mm wide
- **Flowers:** clusters of small flowers attached directly to the stem forming a spike; spikelets sitting edgewise on the stem, bristles (awns) extending from each spikelet

**General:** Annual grass that spreads by seed. Fibrous roots.