

Identification Guide

FOR ALBERTA INVASIVE PLANTS

Himalayan Balsam

Prohibited Noxious &
Noxious Weeds legislated under
the Alberta Weed Control Act

ACKNOWLEDGEMENTS

WHEATLAND COUNTY AGRICULTURAL DEPARTMENT

Sarah Schumacher, George Bloom, Ron Bartholow



ACKNOWLEDGEMENT

- Nicole Kimmel - Alberta Agriculture and Forestry
- Kelly Cooley - Southern Alberta Weed Coordinator - *On behalf of the South AAAF Weed Committee Partnership*

PHOTO CREDITS

- Sarah Schumacher, Wheatland County
- Montana State University - Invasive Plant Identification Guide
- Ron Bartholow, Wheatland County
- Kendra Tippe, M.D. of Bighorn
- Linda Harrison
- Nicole Kimmel, Alberta Agriculture and Forestry
- Alberta Agriculture and Forestry
- Kelly Cooley, Southern Alberta Weed Coordinator
- Centre for Invasive Species & Ecosystem Health www.bugwood.org
- Invasive.org www.invasive.org
- Alberta Lake Management Society

INFORMATION SOURCES

- Weeds of North America, France Royer and Richard Dickinson, 2014, Published by the University of Chicago Press
- Weeds of the Prairies - Alberta Agriculture and Forestry
- Weeds of Canada, Royer and Richard Dickinson Published by Lone Pine Publishing
- Alberta Invasive Species Council www.abinvasives.ca
- Montana State University - Invasive Plant Identification Guide
- Invasive.org www.invasive.org
- USDA National Invasive Species Information Centre www.invasivespeciesinfo.gov
- Centre for Invasive Species & Ecosystem Health www.bugwood.org
- Sarah Schumacher - Wheatland County
- George Bloom - Wheatland County
- Rob Bartholow - Wheatland County
- Nicole Kimmel - Alberta Agriculture and Rural Development

ORDERING INFORMATION - www.AAAF.ab.ca

This guide can be ordered from the Alberta Association of Agricultural Fieldman aaaf.ab.ca

* THIS GUIDE SHALL NOT BE SOLD FOR PROFIT

Identification Guide

FOR ALBERTA INVASIVE PLANTS



PRODUCED BY WHEATLAND COUNTY
2017

THE ALBERTA WEED CONTROL ACT

PROHIBITED NOXIOUS WEED

Means a plant designated in accordance with the Weed Control Act regulations as a prohibited noxious weed and includes the plant's seeds. This weed designation can be seen as regulatory support for an "Early Detection, Rapid Response" stage of invasive plant management. Plants in this category are either not currently found in Alberta or are found in few locations such that eradication could be possible. Under the Weed Control Act a person has a responsibility to destroy a prohibited noxious weed.

NOXIOUS WEED

Means a plant designated in accordance with the Weed Control Act regulations as a noxious weed and includes the plant's seeds. This weed designation can be seen as regulatory support for a "containment" stage of invasive plant management. Plants listed in this category are considered too widely distributed to eradicate. Local authorities shall conduct control programs for these weeds as they have significant ecological or economic impact on lands within their municipality.

WEED INSPECTORS

Weed inspectors are appointed across Alberta, at provincial and municipal level, as required by the Act. Inspectors may enter land or personal property to make inquiries, take samples or enforce a weed notice on the regulated species list, as identified in the regulations.

The Weed Control Act is available on line at the Alberta Queens Printer Website or from www.agriculture.alberta.ca

CONTACTS

If you have questions or concerns regarding the Alberta Weed Control Act or for assistance with weed identification contact:

- The Alberta Ag-Info Centre Phone: 310-FARM or 310-3276
- Your local county or municipal Agricultural Fieldman or Weed Inspector
- The Alberta Invasive Species Council www.abinvasives.ca/
- Alberta Native Plant Council www.anpc.ab.ca/

LEGISLATED WEEDS

PROHIBITED NOXIOUS WEEDS

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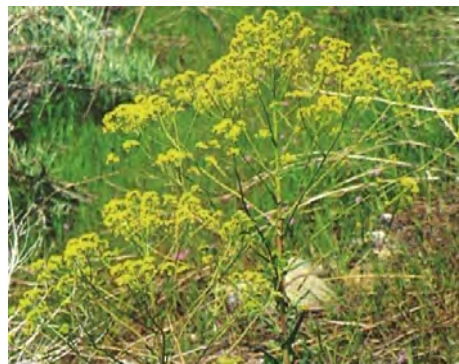
YELLOW FLOWERS



Common Mullein - Pg. 68



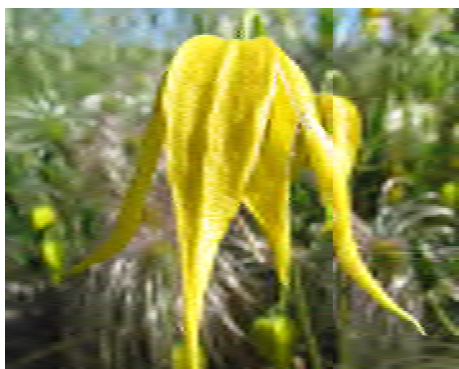
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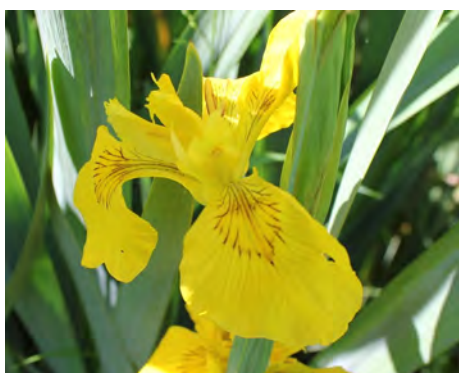
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YELLOW FLOWERS



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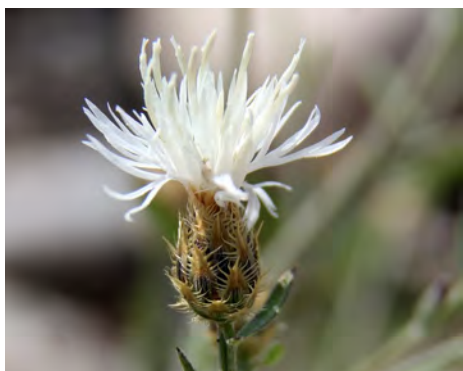
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PURPLE & PINK FLOWERS



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Plumeless Thistle - Pg. 47



Marsh Thistle - Pg. 39



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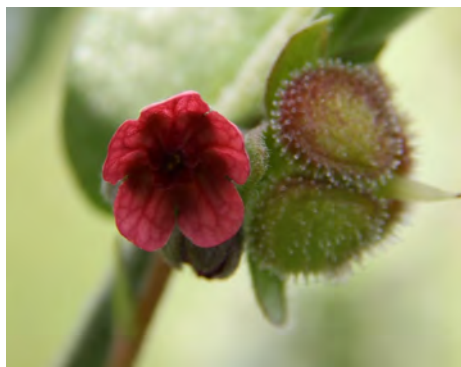
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PURPLE, PINK, RED FLOWERS



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Hybrid Knapweed - Pg. 36



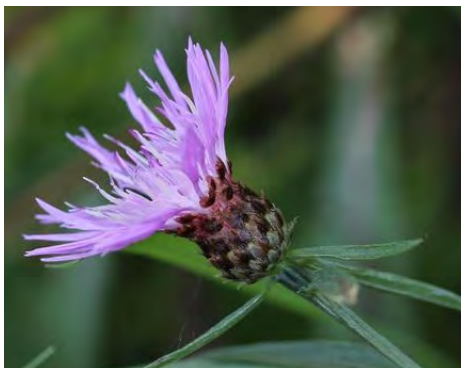
Woolly Burdock - Pg. 87



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PURPLE, PINK, RED FLOWERS



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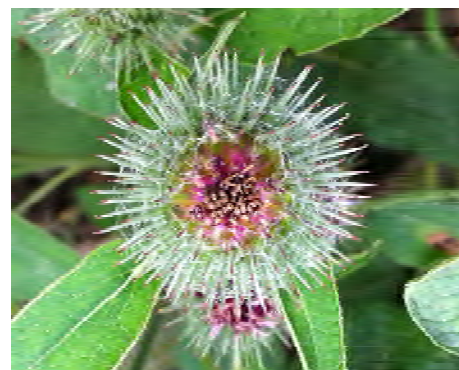
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BLUE FLOWERS



Blueweed - Pg. 64

ORANGE FLOWERS



Orange Hawkweed - Pg. 45

QUICK ID GUIDE

PINK AND PURPLE KNAPWEEDS

Black Knapweed (Pg. 20)



Leaf edges are slightly toothed or smooth, lance shaped, bracts are black or dark brown in the center with long black fringes, hairy stems.

Hybrid Knapweed (Pg. 36)



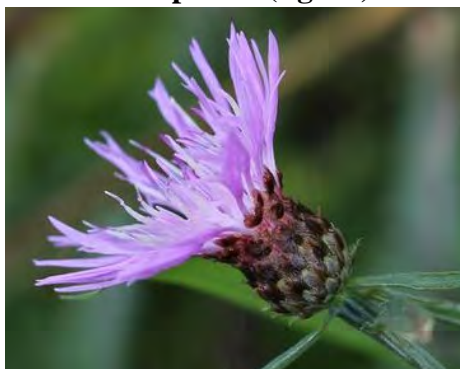
May have features of both Spotted Knapweed and Diffuse Knapweed.

Spotted Knapweed (Pg. 55)



Bracts have dark spot on the tip and short fringed edges. Lower leaves deeply lobed, stem leaves finely divided, highly branched.

Brown Knapweed (Pg. 21)



Prefers cool, moist habitats. Hairy, leaves are shallowly lobed, not highly divided, bracts are overlapping, brown and irregularly torn looking.

Meadow Knapweed (Pg. 41)



May have features of both Black Knapweed and Brown Knapweed.

Squarrose Knapweed (Pg. 56)



Flowers smaller than other knapweeds, bracts have curved spines, deeply divided leaves on the lower portion of the plant, spine-like leaves on the top. Spiny.

Diffuse Knapweed (Pg. 26)



Flowers mostly white, sometimes pink, plant is stiff and prickly, leaves highly divided, and grey-green bracts cream to brown, comb-like with sharp ridged spines.

Russian Knapweed (Pg. 52)



Bracts are green, rounded and have papery edges. Young leaves are hairy, upper leaves are narrow with smooth margins, lobed towards the base of the plant. Rhizomatous.

Tyroll Knapweed (Pg. 59)



Bracts are dark brown-black, tipped with a dark fringe of tooth-comb like wiry lobes in 6-8 pairs. Large lance shaped broad leaves.

QUICK ID GUIDE

BURDOCKS

Great Burdock (Pg. 76)



Up to 3m tall, stems are thick and hollow, grooved, sparsely hairy, very large leaves, ruffled edges, taproot. Clusters of purple-pink flowers, hooked bracts below the flower. Outer floral bracts spread outwards at maturity.

Lesser Burdock (Pg. 81)



Leaves Large, heart shaped at base, woolly underside, reduced in size upwards, alternately arranged on the stem. Up to 3m tall, stems are thick and hollow, branched, reddish tinge, may be grooved or angular, large and fleshy taproot. Clusters of purple-pink flowers, hooked bracts below the flower. Floral bracts are slightly woolly.

Woolly Burdock (Pg. 87)



Large leaves, reduced in size upwards, heart shaped, woolly underneath, alternately arranged on the stem. Up to 3m tall, stems are thick, hollow and hairy. Clusters of purple-pink flowers, hooked bracts below the flower. Floral bracts are very woolly. Taproot.

QUICK ID GUIDE

THISTLES

Nodding Thistle (Pg. 44): Large nodding flower head, dark green leaf with white midrib, spiny, fine woolly hairs



Plumeless Thistle (Pg. 47): Smaller flower than nodding thistle, tall, branched, spiny, leaves winged or stalkless



Canada Thistle (Pg. 66): prickly stems/leaves, bracts have weak spines, stem branched, flowers less than 2.5cm



Marsh Thistle (Pg. 39): Purple bracts spineless, long sticky hairs on stem and leaves, unbranched stem,



QUICK ID GUIDE

HAWKWEEDS

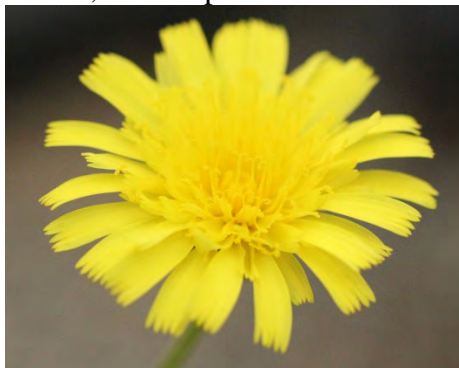
Meadow Hawkweed (Pg. 40)

20 to 50 heads in compact, flat cluster, leaves end in a narrow tip, long hairs above and below leaf, stolons present



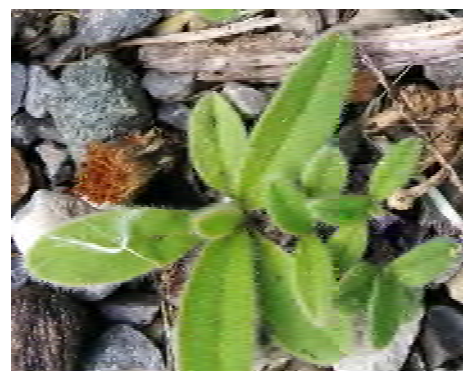
Mouse Ear Hawkweed (Pg. 43)

Flower heads solitary, red stripes on underside of petals, shorter leaves, long hairs on top of leaf and mat of hairs below, stolons present



Orange Hawkweed -(Pg. 45)

20 to 50 heads in open, round topped cluster, leaves end in a broad tip, long hairs above and below leaf, stolons present



OTHER HAWKWEEDS OF CONCERN:

- | | | | |
|------------------------|------------------------------|-----------------------|--------------------------------|
| • Whiplash Hawkweed | <i>Hieracium flagellare</i> | • Wall Hawkweed | <i>Hieracium murorum</i> |
| • Kingdevil Hawkweed | <i>Hieracium floribundum</i> | • Tall Hawkweed | <i>Hieracium piloselloides</i> |
| • Yellowdevil Hawkweed | <i>Hieracium glomeratum</i> | • Queendevil Hawkweed | <i>Hieracium praealtum</i> |
| • Smooth Hawkweed | <i>Hieracium laevigatum</i> | • European Hawkweed | <i>Hieracium sabaudum</i> |
| • Common Hawkweed | <i>Hieracium lachenalii</i> | • Showy Hawkweed | <i>Hieracium vulgatum</i> |
| • Spotted Hawkweed | <i>Hieracium maculatum</i> | | |



Spotted Knapweed

PROHIBITED NOXIOUS WEEDS

Prohibited Noxious weeds pose a serious threat and must be eradicated. These weeds spread rapidly and are highly competitive. Weeds in this category are restricted to prevent establishment in Alberta.

AUTUMN OLIVE

Elaeagnus umbellata Provincial Designation: Prohibited Noxious



Autumn Olive is a member of the Elaeagnaceae (Oleaster) Family, it is native to Asia, and is also known as Japanese Silverberry. It is tolerant of a wide range of conditions and can be easily spread by fruit eating birds.

CONCERN Outcompetes and displaces native vegetation.

LIFE CYCLE Perennial shrub.

ERADICATION Hand pull seedlings (most effective means of control), herbicide and mechanical control may be effective if done repeatedly.

IDENTIFICATION:

FLOWER Tube/ bell shaped, 4 sepals, creamy white to yellow flowers, very fragrant.

LEAVES Alternately arranged on the stem, silver - grey - green in color, simple, wavy leaf margins, scales on the underside, thorns can grow to 2.5 cm long.

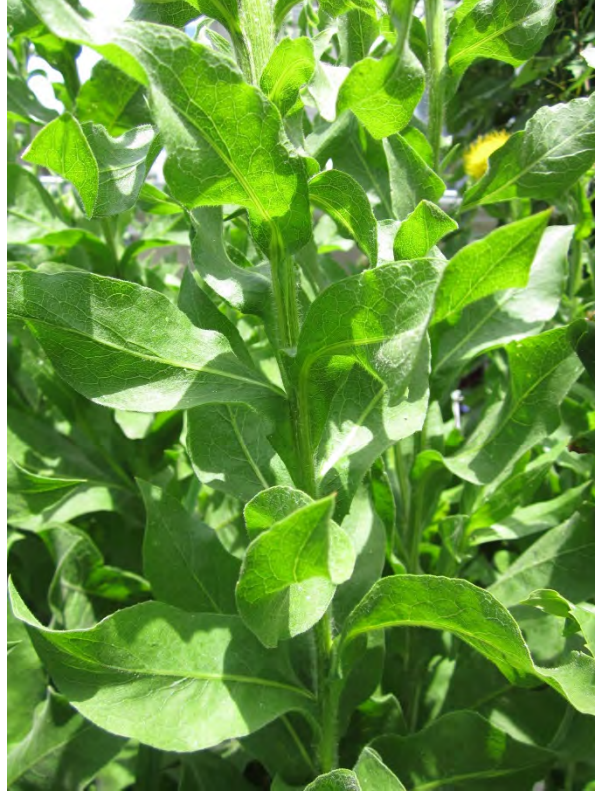
STEM Multiple stems, up 6m tall.

ROOT Nitrogen fixing, woody root.

SEED/FRUITS Small, fleshy, red, egg-shaped with scales, can produce up to 200,000 seeds each year.

BIGHEAD KNAPWEED

Centaurea macrocephala Provincial Designation: Prohibited Noxious



Bighead Knapweed is a member of the Asteraceae (Sunflower Family). It was introduced as an ornamental from Europe and has been cultivated as an ornamental for over 200 years. It is also known as Armenian Basketflower, or Golden Thistle. It is the largest flower in the genus *Centaurea*, earning its common name.

CONCERN Prolific seed production, found in disturbed areas.

LIFE CYCLE Perennial.

ERADICATION Control early, before seed set. Grazing, cultivation, herbicide and mowing may be effecting means of control. Avoid growing this plant as an ornamental.

IDENTIFICATION:

FLOWER Large, solitary, showy yellow flowers, fringed bracts below the flowers.

LEAVES Broad, lance shaped, pointed tips, rough/hairy, large.

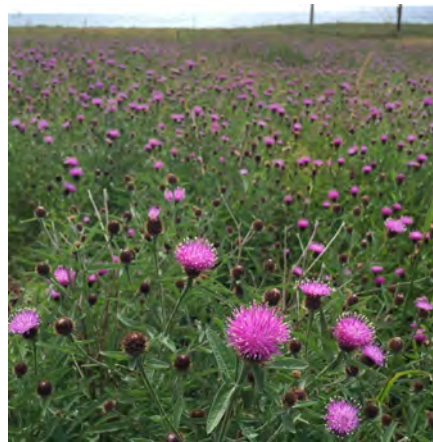
STEM Up to 1.5m tall.

ROOT Woody taproot, woody crown.

SEED/FRUITS Reproduces by seed which can be spread by wind, animals, humans, and vehicles.

BLACK KNAPWEED

Centaurea nigra Provincial Designation: Prohibited Noxious



All: Sarah Schumacher

Black Knapweed is a member of the Asteraceae (Sunflower) family and was introduced from Europe. It is weed of disturbed areas, and tolerates a wide range of conditions. Meadow Knapweed is a hybrid of Black and Brown Knapweeds.

CONCERN Can outcompete native vegetation, reduces forage production, allelopathic (toxic) towards other plants.

SIMILAR SPECIES Brown Knapweed, Meadow Knapweed

LIFE CYCLE Perennial.

ERADICATION Long term control is difficult, hand pick in rosette stage, herbicide control before seed has set.

IDENTIFICATION:

FLOWER Pink - purple, flowers are composed of 40-100 purple tubular florets, comb-like bracts below flowers, bracts are black in the center with long black fringes.

LEAVES Basal leaves have stalks, stem leaves are stalkless and become smaller and narrower moving up the stem, leaf edges are slightly toothed or smooth (not highly divided like some knapweeds).

STEM 20-150cm, branching mid stem, covered in hairs.

ROOT Woody crown, woody taproot.

SEED/FRUITS Short black, unequal bristles on one end.

BROWN KNAPWEED

Centaurea jacea Provincial Designation: Prohibited Noxious



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Brown Knapweed is a member of the Asteraceae (Sunflower) family and was introduced from Europe. It prefers cool, moist habitats. Meadow Knapweed is a hybrid of Black and Brown Knapweeds.

CONCERN Can out compete native vegetation and reduce forage production, allelopathic (toxic) towards other plants.

SIMILAR SPECIES Black Knapweed, Meadow Knapweed.

LIFE CYCLE Perennial.

ERADICATION Long term, control is difficult, hand pick in rosette stage, herbicide control before flowering.

IDENTIFICATION:

FLOWER Pink-purple-white, 2.5cm wide, composed of around 400 florets, flower heads are solitary, occur at the end of the branch. Bracts are overlapping, brown and irregularly torn looking.

LEAVES Basal leaves are up to 15 cm long, tapering at both ends with the broadest part above the middle of the leaf. Stem leaves are lance-shaped, shallowly-lobed and stalkless, and not highly divided like some knapweeds.

STEM 30-150cm tall, branching mid stem.

ROOT Woody crown, woody taproot.

SEED/FRUITS Small, tan, no pappus.

COMMON BARBERRY

Berberis vulgaris **Provincial Designation:** Prohibited Noxious



Sarah Schumacher, Wheatland County



Sarah Schumacher, Wheatland County



Sarah Schumacher, Wheatland County



Nicole Kimmel, ARD



Nicole Kimmel, Alberta Agriculture and Forestry



Nicole Kimmel, Alberta Agriculture and Forestry



Sarah Schumacher, Wheatland County

Common Barberry is a member of the Berberidaceae (Barberry) Family and was introduced from Europe and Asia as an ornamental. It was used initially for hedges, jam and yellow dye. This weed is tolerant of a wide range of conditions and has been found growing in Alberta.

CONCERN Alternate host for stem rust fungus.

LIFE CYCLE Perennial shrub.

ERADICATION Manual control, treat stumps with herbicide in autumn.

IDENTIFICATION:

FLOWER Hanging cluster of yellow flowers, 10-20 flowers per raceme

(inflorescence). Have an unpleasant smell.

LEAVES Alternately arranged in clusters, spines may occur at the base of each leaf, leaf margins are finely toothed, dull green in color, 2-5cm long.

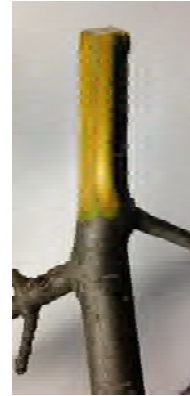
STEM 1-3m tall, bushy shrub, yellow-grey in color, spines occur in groups of 3. The wood is yellow.

ROOT Woody and creeping.

SEED/FRUITS Red clusters of berries, individual berries are 1cm long, and there are 1-3 black seeds per berry. Wildlife feed on fruit and seeds can remain viable through digestion.

COMMON BUCKTHORN

Rhamnus cathartica Provincial Designation: Prohibited Noxious



Nicole Kimmel, Alberta Agriculture and Forestry

Nicole Kimmel, Alberta Agriculture and Forestry



All: Sarah Schumacher, Wheatland County

Common Buckthorn is a member of the Rhamnaceae family. It originated from Eurasia and was introduced as an ornamental plant and was once valued for its ease of propagation. It is tolerant of a wide range of conditions, but seedlings prefer disturbed sites.

CONCERN Outcompetes with native vegetation, may be slightly toxic.

LIFE CYCLE Perennial woody shrub.

ERADICATION Mechanical, herbicide use with basal bark treatment, under-planting.

IDENTIFICATION

FLOWER Yellow or yellow-green, small,

inconspicuous, 4 petals, male and female flowers occur on separate plants.

LEAVES Dark green, glossy, oval shaped, pointed tip, 3-4 veins, slightly jagged edges, mostly opposite. Remains green late into the fall.

STEM Shrub or small tree, trunk up to 25cm in diameter and up to 7m tall, grey-brown bark, yellow in color beneath the bark, rough texture, branches can be opposite or alternate, smaller branches often end in thorns.

ROOT Woody root.

SEED/FRUITS Small, round, black fruit, 3-4 seeds within.

COMMON CRUPINA

Crupina vulgaris Provincial Designation: Prohibited Noxious



All: Montana State University Invasive Plant Identification Guide

Common Crupina is a member of the Asteraceae (Sunflower Family). It is also considered a Prohibited Noxious weed under the Canadian Seeds Act.

CONCERN It has invaded more than 25,000 ha of rangeland and non-crop areas in the US. It is not in Canada yet, but BC, AB and SK are vulnerable.

LIFE CYCLE Winter annual.

ERADICATION Herbicide use and repeated hand pulling can be effective means of control.

IDENTIFICATION:

FLOWER 1-5 flowers can occur per flower head which are 1.5cm long, flower

heads occur at the branch tips or in the upper leaf axil, narrow (length three to four times greater than width), rose-purple petals.

LEAVES Fleshy oval seedling leaves widest near the tip, with distinct purple midrib. Rosette and stem leaves pinnately lobed with short stiff spines, alternate and smaller toward the top of the plant.

STEM One main stem 30-90cm tall, with several secondary branches, rigid and covered with short stiff spines.

ROOT Short taproot.

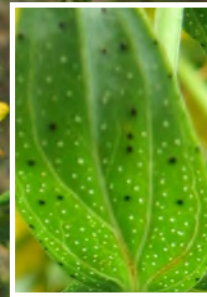
SEED/FRUITS A ring of dark, stiff bristles (pappus) encircle the seed, barrel shaped.

COMMON ST. JOHNSWORT

Hypericum perforatum Provincial Designation: Prohibited Noxious



Nicole Kimmel, Alberta Agriculture and Forestry



All: Sarah Schumacher, Wheatland County

Common St. John's wort is a member of the Clusiaceae family. Widely cultivated as a medicinal and ornamental plant, it was introduced from Eurasia and North Africa.

CONCERN Toxic to livestock.

LIFE CYCLE Perennial.

ERADICATION Limited options for control, herbicide control may be effective.

IDENTIFICATION:

Has unique glands on leaves and flowers.
Looks similar to native species.

FLOWER Numerous five-petaled, yellow flowers form flat-topped clusters, flowers are up to 2.5cm in diameter, black glands can be seen along petal margins.

LEAVES Oval-shaped, up to 2.5cm long, opposite, lack stalks, darker green above, tiny transparent dots on the leaf surface.

STEM 30-90cm tall, black dots, erect, with two opposite longitudinal ridges, may branch many times near the top.

ROOT Extensive taproot and lateral roots.

SEED/FRUITS Pods are 5mm long and contain numerous rust colored seeds in a three-pointed capsule. A single plant may produce up to 35,000 seeds per year and may be fire tolerant.

DIFFUSE KNAPWEED

Centaurea diffusa Provincial Designation: Prohibited Noxious



Diffuse Knapweed is a member of the Asteraceae (Sunflower Family). It was introduced from Eurasia and is an extremely tough plant, tolerant of drought, and trampling.

CONCERN Poses a threat to pastureland and native areas in Alberta.

SIMILAR SPECIES Spotted Knapweed, Hybrid Knapweed.

LIFE CYCLE Annual, biennial or short-lived perennial.

ERADICATION Long term monitoring, hand pick, herbicide, biological control agents.

IDENTIFICATION:

Plants may be shorter than other Knapweeds, stiff, prickly and are grey-green in color, unlike similar species.

FLOWER White or sometime pink flower head, located at the tip of a branch. Bracts form stiff, cream to brown coloured spines divided into comb-like teeth. Bracts are yellow with sharp rigid sharp spines.

LEAVES Seedlings have finely divided leaves with small hairs. Mature leaves are divided into linear segments, broadly lance-shaped, grayish - green, covered with woolly hairs, and alternate.

STEM Up to 60cm tall and highly branched, may tumble.

ROOT Deep taproot, may be phytotoxic.

SEED/FRUITS Small, brown or grayish, . Up to 18,000 of seeds per plant.

DYER'S WOAD

Isatis tinctoria Provincial Designation: Prohibited Noxious



All: Montana State University Invasive Plant Identification Guide

Dyer's Woad is a member of the Brassicaceae (Mustard Family), and a native to Russia. It was traditionally used as a source of indigo dye and as a medicinal herb.

CONCERN Poses a threat to rangelands and native areas because of its rapid growth rate and prolific seed production.

LIFE CYCLE Winter annual, biennial or short-lived perennial.

ERADICATION Hand pulling can be very effective or herbicide control before seed production.

IDENTIFICATION:

FLOWER Flower cluster occurs on upper

stem in a flat-topped inflorescence. Flowers have 4 bright yellow petals, 3mm long.

LEAVES All leaves bluish-green with white midrib. Rosette (first) leaves have long slender stalks, are widest near the tip and covered with soft hairs. Stem leaves lack hairs, are alternate, lance shaped, and clasp the stem. Cream colored mid rib and powdery white film on the upper leaf surface are distinct features.

STEM 30 - 120cm tall, multi-branching.

ROOT Fleshy taproot and lateral roots.

SEED/FRUITS Purplish-brown, tear drop shaped seed pods hang from small stalks. Plants can produce on average 350 to 500 seeds.

EURASIAN WATER MILFOIL

Myriophyllum spicatum Provincial Designation: Prohibited Noxious



Montana State University Invasive Plant Identification Guide

Eurasian Water Milfoil is a member of the Haloragaceae (Water Milfoil Family). Similar to other native milfoil species. It is an aquatic weed which can be transported by recreational boats and is a target for Alberta's Clean, Drain, Dry Campaign.

CONCERN Forms mats and prevents sunlight from entering a waterbody. A single segment of stem or leaf can form a new colony. Tolerant of a wide range of conditions

LIFE CYCLE Aquatic perennial.

ERADICATION Prevention.

IDENTIFICATION:

FLOWER Rigid, pink flowering spike, 5 to 20cm long, grows erect above water

surface. Small, yellow, four petaled flowers are arranged in clusters.

LEAVES 3-5 bright-green to red leaves, 3cm long with 12 to 48 thread - like divisions are whorled around stem at each joint. Leaves rarely extend above water surface and mat when removed from water.

STEM Slender, hairless, leafless toward base, 3m long or longer and 2mm thick. Grow to water surface then branch forming dense floating mats. Somewhat whitened when dry.

ROOT Numerous at base and along stem, can re-root from root fragments.

SEED/FRUITS Segmented capsule contains four seeds and floats.

FLOWERING RUSH

Butomus umbellatus Provincial Designation: Prohibited Noxious



All: Sarah Schumacher, Wheatland County



Kendra Tippet, Rocky View County



Nicole Kimmel, Alberta Agriculture and Rural Development

Flowering Rush is a member of the Flowering Rush Family (Butomaceae) and is the only plant in its plant family. It is a aquatic/semi-aquatic invasive plant which was sold as an ornamental. May be confused with native rushes and sedges.

CONCERN Thrives in moist areas and has been found in lakes, rivers, streams and irrigation canals in Alberta. Challenging to remove once established.

LIFE CYCLE Perennial.

ERADICATION Prevention is most effective, few control measures exist, chemical control during drier seasons and careful mechanical control (so as to not spread the bulblets) may be effective.

IDENTIFICATION:

FLOWER Umbrella-shaped clusters of flowers, pink to white flowers have three petals 2-3cm in diameter, below the petals are 3 purplish brown bracts.

LEAVES Erect or floating, opposite, 90cm long and 1-1.5cm wide with smooth edges, triangular cross section, twisted tips and triangular leaf stem.

STEM Leafless, green and have a round cross section. May be upright in shallow water but floating in deeper water.

ROOT Spreads by thick creeping rhizomes and pea sized bulblets.

SEED/FRUITS Inflated, dark brown, beaked fruits, 1-1.5cm long.

GARLIC MUSTARD

Alliaria petiolata Provincial Designation: Prohibited Noxious



Garlic Mustard is of the Brassicaceae (Mustard Family) and was introduced as a food plant from Europe. It grows in moist, woodland areas and can establish in dense shade. not palatable to livestock

CONCERN Allelopathic (toxic) towards other plants and inhibits mycorrhizal fungi needed for tree growth.

LIFE CYCLE Herbaceous biennial,

ERADICATION Hand pick before seed set (making sure to get the entire root), herbicide control may be needed for large infestations.

IDENTIFICATION:

FLOWER Small white flowers, 4 petals.

LEAVES Rosette leaves (first) are heart shaped and dark. Mature (second) leaves are spade shaped with a jagged, toothed edge. Leaves are alternately arranged on the stem and have a garlic odor when crushed.

STEM Plant can grow up to 1.5m tall.

ROOT White, slender taproot, has a crook just below ground level (or s bend).

SEED/FRUITS Pods, seeds are small and easily spread on animals, people, vehicles and water. 150-850 seeds per plant.

Nicole Kimmel, ARD

Maureen Vadnais, Alberta Agriculture & Rural Development

Sarah Schumacher, Wheatland County

Nicole Kimmel, ARD

All: Nicole Kimmel, Alberta Agriculture and Forestry

GIANT HOGWEED

Heracleum mantegazzianum Provincial Designation: Prohibited Noxious



Donna R. Ellis, University of Connecticut, Bugwood.org



Nicole Kimmel, Alberta Agriculture and Forestry



Terry English, USDA APHIS PPQ, Bugwood.org



Nicole Kimmel, Alberta Agriculture and Forestry



Giant Hogweed is of the Apiaceae (Carrot Family) and was introduced as an ornamental plant from Asia. It grows in moist areas similar to many native look-alike species but is differentiated by its height.

CONCERN The sap produced by this plant can cause a severe rash, blisters, blindness (in the case of eye contact) and scarring.

SIMILAR SPECIES Cow Parsnip (native)

LIFE CYCLE Tall herbaceous biennial.

ERADICATION Remove seedlings early, chemical stump treatment, deadhead flowers. Use safe practices and cover skin when handling this weed.

IDENTIFICATION:

FLOWER Umbel (umbrella shaped) flower head, up to 75cm wide. Flowers are small, white, 5 petaled, hairy.

LEAVES Alternate, lower leaves compound with 3 leaflets, deeply lobed, toothed, up to 1m wide, underside is covered in coarse white hairs.

STEM 2-6m tall, hollow stem, 5-10cm wide, covered in bristles and red-purple mottles.

ROOT Large deep taproot.

SEED/FRUITS Capsule contains 1 seed, seed is flat and has 2 wings. Each plant can produce up to 120,000 seeds (typically 50,000).

GIANT KNOTWEED

Fallopia sachalinensis Provincial Designation: Prohibited Noxious



Giant Knotweed is a member of the Polygonaceae (Buckwheat or Smartweed) Family. This plant is the largest of the Knotweeds. It thrives in moist areas and grows in dense stands. It is considered an invasive plant in many other countries around the world.

CONCERN Can outcompete native vegetation and is fast spreading. Root growth can damage building foundations.

SIMILAR SPECIES Japanese Knotweed and Hybrid Knotweed.

LIFE CYCLE Herbaceous, creeping perennial.

ERADICATION Long term herbicide control.

IDENTIFICATION

FLOWER Small greenish-white flowers occur in showy branched clusters in leaf axils near the ends of the stems.

LEAVES Giant knotweed leaves are generally twice the size of the other 2 species. Leaves are 20-40 cm long, and heart shaped at base. Hairs on underside of leaf.

STEM Hollow, smooth, weakly woody, jointed, swollen at nodes, 3.5m or taller, base surrounded by membranous sheath. Stems can grow 4 - 5cm per day.

ROOT Rhizomatous.

SEED/FRUITS The fruit is 3-sided, black and shiny.

HIMALAYAN BALSAM

Impatiens glandulifera Provincial Designation: Prohibited Noxious



Alli Sarah Schumacher, Wheeland County

Roni Bartholomew, Wheeland County

Himalayan Balsam is a member of the Balsaminaceae (*Impatiens*) Family, and was introduced from India as an ornamental. Other common names include Policeman's Helmet, *Impatiens*, and Touch-Me-Not. Shade tolerant.

LIFE CYCLE Annual herb.

CONCERN Himalayan Balsam is a weed of concern because of its potential impact on aquatic habitats (riparian and wetland areas). Can out compete native vegetation.

ERADICATION Do not plant as an ornamental, it can be easily controlled by hand pulling.

IDENTIFICATION:

FLOWER Showy, irregular, pink-purple-white, 5 petals, resembles an old fashioned policeman's helmet.

LEAVES Simple, oblong, large, serrated edge, oppositely arranged on the stem.

STEM Large, hollow, 4 sided (square), the plant can grow up to 120cm tall. Stems have various shades of red, from all red to hints of red.

ROOT Shallow and fibrous.

SEED/FRUITS Pods are explosive when ripe, seeds can shoot up to 10m, and can float. A single plant can produce up to 4000 seeds.

HOARY ALYSSUM

Berteroa incana Provincial Designation: Prohibited Noxious



Hoary Alyssum is a member of the Brassicaceae (Mustard) Family and was introduced from Russia. It can be found on sand and gravel soils and establishes on roadsides, railway lines and heavily grazed pastures.

CONCERN Abundant in BC and SK, toxic to horses in both fresh and in cured hay. Alternate host for crop diseases.

LIFE CYCLE Annual, biennial or short-lived perennial.

ERADICATION Hand pick

IDENTIFICATION:

FLOWER 4 small, white, deeply notched petals (making it appear as though there are 8 petals), on slender stalks, with hairy sepals.

LEAVES Greyish-green with tiny star shaped hairs. Basal leaves are 2-8cm long with slender stalks. Stem leaves face upward, pressed to stem. Lower leaves have short stalks, upper leaves lack stalks. Alternate.

STEM 20-90cm tall, erect, sometimes branched, may be slightly purplish, covered with tiny star-shaped hairs. Up to 10 stems per taproot may form.

ROOT Taproot.

SEED/FRUITS Flattened oval seed pods, with star-shaped hairs close to stem, pod chambers contain 3 to 7 seeds, each plant can produce up to 2500 seeds, which can remain viable for up to 10 years.

HYBRID KNOTWEED

Fallopia × bohemica Provincial Designation: Prohibited Noxious



Alii Sarah Schumacher, Westland County

Hybrid Knotweed is a member of the Polygonaceae (Knotweed) Family and is also known as Bohemian Knotweed. It is a hybrid cross between Japanese Knotweed and Giant Knotweed, it can have characteristics of both species and is able to hybridize with either one.

CONCERN It can outcompete native vegetation and is fast spreading, grows in moist areas, tolerant of wide range of conditions.

SIMILAR SPECIES Japanese and Giant Knotweed.

LIFE CYCLE Herbaceous perennial.

ERADICATION Herbicide control.

IDENTIFICATION:

FLOWER Flowers are small, creamy white to greenish white, growing in showy plume-like, branched clusters from leaf axils near the ends of the stems. Flower clusters are generally about the same length as the adjacent leaf, unlike the shorter flower clusters found on giant knotweed and the longer clusters found on Japanese knotweed.

LEAVES Alternate, leaf shape can be variable, stalked, hairs on the underside.

STEM Tall, hollow, smooth, weakly woody, jointed, swollen at nodes, base surrounded by membranous sheath.

ROOT Rhizomatous (creeping).

SEED/FRUITS The fruit is 3-sided, black and shiny.

HYBRID KNAPWEED

Centaurea × psammogena Provincial Designation: Prohibited Noxious



Spotted Knapweed +



Diffuse Knapweed =



Hybrid Knapweed

Hybrid Knapweed is a member of the Asteraceae (Sunflower) Family and is a hybrid of Spotted Knapweed and Diffuse Knapweed.

CONCERN Control is difficult. Poses a threat to native vegetation and pastureland in Alberta and is allelopathic (toxic towards other plants).

SIMILAR SPECIES Spotted Knapweed, Diffuse Knapweed.

LIFE CYCLE Biennial or short lived perennial.

ERADICATION Long term monitoring, hand pick, herbicide, and biological agents.

IDENTIFICATION:

Traits are variable and will share characteristics from both Spotted Knapweed and Diffuse Knapweed.

FLOWER Purple or white, bracts have a dark tip (similar to Spotted Knapweed) and long bristles on the margins (similar to Diffuse Knapweed).

LEAVES Finely divided, covered with fine hairs.

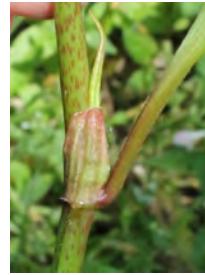
STEM 20-80cm tall, branched.

ROOT Woody taproot.

SEED/FRUITS Prolific seed producer.

JAPANESE KNOTWEED

Fallopia japonica Provincial Designation: Prohibited Noxious



Japanese Knotweed is a member of the Polygonaceae (Buckwheat/ Smartweed) family and was introduced from Asia as an ornamental landscape hedge.

CONCERN Can outcompete native vegetation, is fast spreading due to creeping roots. Root growth can damage building foundations.

SIMILAR SPECIES Hybrid Knotweed, Giant Knotweed

LIFE CYCLE Perennial.

ERADICATION Early, herbicide control.

IDENTIFICATION:

FLOWER Small, creamy white to greenish white, grow in showy plume-like branched clusters from leaf axils near the

ends of the stems. The Japanese knotweed flower head is larger than that of giant knotweed.

LEAVES Alternate, stalked, ovate with a flat base, reaching 7-15cm long by 5-12 cm wide, pointed tips, leaves arranged in zig zag pattern along the stem.

STEM Hollow, smooth, weakly woody, jointed, swollen at nodes, base surrounded by membranous sheath, 1-3 m tall.

ROOT Creeping, lateral roots up to 10m, and 3m vertically and can reproduce from a single piece of root.

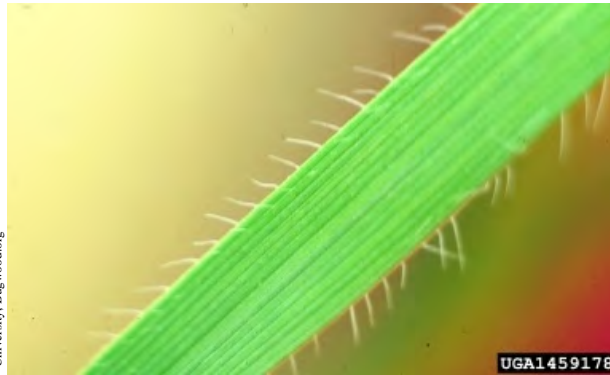
SEED/FRUITS White fruit. Seeds are small, black and shiny. Produces up to 200,000 seeds per plant, but has a low seedling survival rate.

JOINTED GOATGRASS

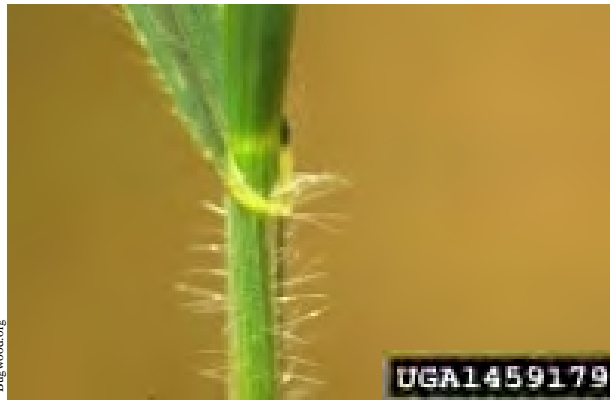
Aegilops cylindrica Provincial Designation: Prohibited Noxious



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Jointed Goatgrass is a member of the Poaceae (Grass) family and it originated in Russia. It was introduced as a seed contaminant in wheat and is also considered Prohibited Noxious Weed under the Canada Seeds Act. It prefers dry, open habitat.

LIFE CYCLE Winter annual.

CONCERN Genetically related to Winter Wheat (and can hybridize with it), can lower crop yields, alternative host for crop diseases and pests.

ERADICATION Use clean seed, request a certificate of seed analysis, destroy plants before seed set. Will require long term integrated management in a cropping situation.

IDENTIFICATION:

FLOWER Cylindrical panicle, long awns, glumes on upper spikelets, 2-4 flowers per spikelet.

LEAVES Evenly spaced hairs at a 90-degree angle to the leaf edge, narrower than wheat leaves, sheath open.

STEM Erect 35-80cm tall, hairy auricles present and sickle shaped. Can produce up to 130 tillers from the base.

ROOT Fibrous root.

SEED/FRUITS 2 seeds per spikelet.

MARSH THISTLE

Cirsium palustre Provincial Designation: Prohibited Noxious



Marsh Thistle is a member of the Asteraceae (Sunflower) family and may hybridize with Canada Thistle and native marsh thistles. Prefers moist clay, open, undisturbed habitat, and can be a problem in cut blocks.

SIMILAR SPECIES Canada Thistle, Plumeless Thistle, and native thistles.

LIFE CYCLE Biennial (rosette in the first year, flowers in the second).

CONCERN Can outcompete native vegetation in moist/wet environments.

ERADICATION Control in first year (rosette stage) or before seed set, mowing may be effective.

IDENTIFICATION:

FLOWER Many flowers per plant, purple, bracts spineless. Few to many flower heads occur in dense clusters at branch tips.

LEAVES Covered with long sticky hairs, lobed, 15-20cm long, woody veins on underside, sessile, larger towards the base.

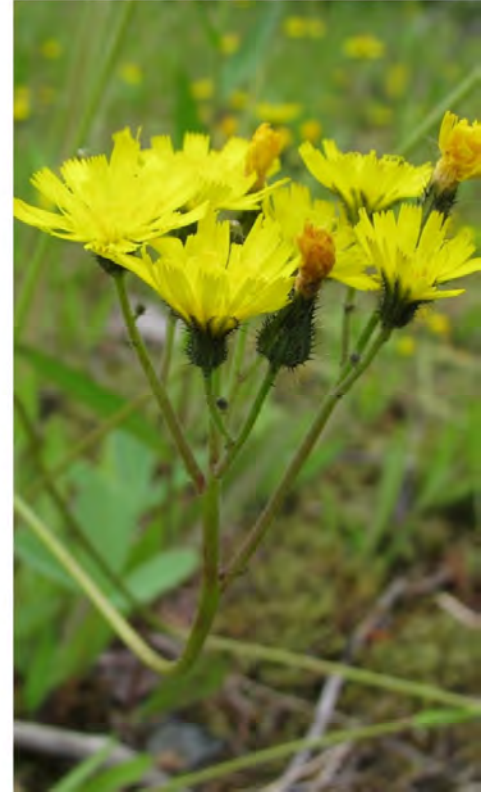
STEM Distinguished from other thistles by its slender, un-branched stem with spiny wings, branched at top, thick, reddish in color, covered in long sticky hairs, 1-1.5m tall, can grow up to 3m in moist forest openings.

ROOT Fibrous root system.

SEED/FRUITS Tuft of bristles (pappus) for seed dispersal. Produce 2 types of seed, one for near parent plant and one for new sites. 300-2000 seeds can be produced by a single plant.

MEADOW HAWKWEED

Hieracium caespitosum Provincial Designation: Prohibited Noxious



Meadow Hawkweed is a member of the Asteraceae (Sunflower) family and was introduced from Europe. It is tolerant of a wide range of conditions but prefers moist habitats. It is capable of producing seed without sexual reproduction.

CONCERN Quick spreading, may be allelopathic (toxic to other plants), forms dense stands, difficult to control.

SIMILAR SPECIES Mouse-ear Hawkweed and other Hawkweed species.

LIFE CYCLE Perennial.

ERADICATION Chemical.

IDENTIFICATION

FLOWER Has a dandelion - like flower,

5 to 30 bright yellow flower heads per plant, flowers can mature from closed bud to seed within 1 day.

LEAVES Basal rosettes have hairy, narrow, spatula-shaped leaves, dark green above and light green below. Mostly leafless stems.

STEM Rosettes produce 10 to 25 flowering stems up to 90cm tall (taller than Mouse-ear Hawkweed), covered in short, stiff hairs and few, if any, leaves. The entire plant contains a milky juice.

ROOT Shallow fibrous roots, stolons (above ground) and rhizomes allow the plant to reproduce by vegetatively.

SEED/FRUITS Black, tiny, and plumed.

MEADOW KNAPWEED

Centaurea moncktonii Provincial Designation: Prohibited Noxious



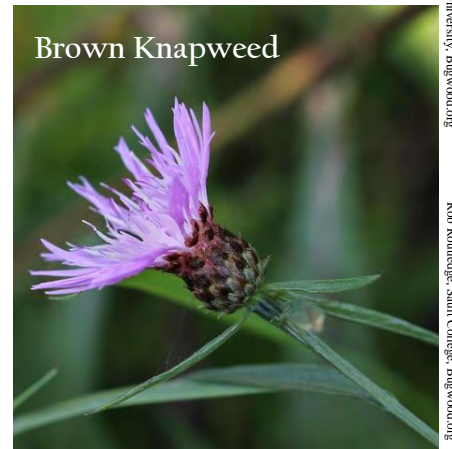
Sarah Schumacher, Wheatland County



Cindy Roehle, Bugwood.org



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Rob Routledge, Saint College, Bugwood.org

Meadow Knapweed is a member of the Asteraceae (Sunflower) family. It is a weed of disturbed areas and tolerates a wide range of conditions although prefers moist and cool conditions.

LIFE CYCLE Perennial.

SIMILAR SPECIES Meadow knapweed is a hybrid of Black and Brown Knapweeds.

CONCERN Can out compete native vegetation and reduce forage production, allelopathic (toxic) towards other plants.

ERADICATION Long-term management, hand pick, herbicide.

IDENTIFICATION:

FLOWER Pink-purple, composed of 40-100 florets, the heads are solitary at the

ends of the upper branches. Comb-like bracts below flowers are overlapping, fringes on bracts are as long or longer than the width of the bract, Brown Knapweed has brown bracts, and the tips of Black Knapweed bracts are black. Meadow knapweed can be either.

LEAVES Not highly divided like many of the other knapweeds. Basal leaves are up to 15 cm long, stem leaves are stalk-less.

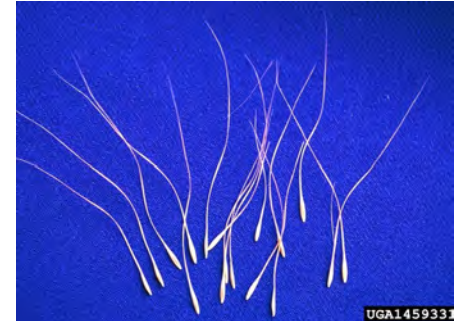
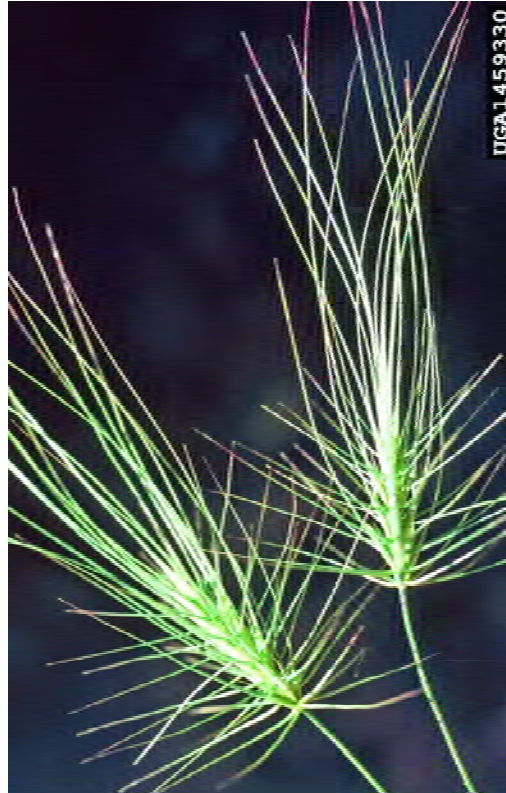
STEM 20-80cm, mature plants can reach up to 1 m tall, several stems with many branches mid stem.

ROOT Deep-rooted perennial.

SEED/FRUITS Reproduces by seed.

MEDUSAHEAD

Taeniatherum capu-medusae Provincial Designation: Prohibited Noxious



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Medusahead is a member of the Poaceae (Grass) Family and was introduced from the Mediterranean. It is a weed of forage and pastureland and has been known to outcompete Downy Brome. Unpalatable to livestock.

LIFE CYCLE Annual or winter annual.

SIMILAR SPECIES Seedlings may be confused with Downy Brome, flower resembles Fox Tail Barley.

CONCERN Barbed awns can cause injury to grazing animals, fire hazard.

ERADICATION Mowing, early grazing and cultivation.

IDENTIFICATION

FLOWER Spike, awns are 2-7cm long, stiff, and finely barbed, straight when green but twist after drying. Mature plants can be confused with native Foxtail Barley, but the seeds do not break apart in the same way.

LEAVES Produces tillers but very few leaves, narrow, sometimes hairy, auricles are present as well as a membranous ligule.

STEM Hairy.

ROOT Fibrous.

SEED/FRUITS Seed twists as fruit matures, reproduces by seed, doesn't shatter, short term viability.

MOUSE-EAR HAWKWEED

Hieracium pilosella Provincial Designation: Prohibited Noxious



Mouse-ear Hawkweed is a member of the Asteraceae (Sunflower) Family and was introduced from Europe.

CONCERN Fast spreading, creates dense mats.

SIMILAR SPECIES Meadow Hawkweed, Orange Hawkweed and native hawkweeds.

LIFE CYCLE Perennial.

ERADICATION Long-term control, hand pick, chemical.

IDENTIFICATION

FLOWER Yellow, flower heads are solitary at the end of each leafless stalk. (unlike meadow hawkweed). Yellow ray

flowers will usually have red stripes underneath, sepals are covered in star shaped hairs.

LEAVES Basal rosettes have hairy, long, narrow, spatula-shaped leaves, dark green above and light green below. Noticeably white under the leaf due to mat of hairs.

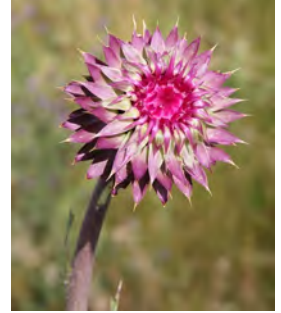
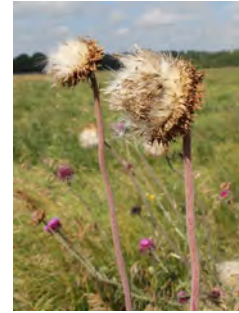
STEM May be shorter than other hawkweeds, up to 30 cm tall, bristly hairs, no leaves on stem.

ROOT Shallow fibrous roots, with stolons and rhizomes.

SEED/FRUITS Black, tiny, and plumed.

NODDING THISTLE

Carduus nutans Provincial Designation: Prohibited Noxious



Nodding Thistle is a member of the Asteraceae (Sunflower) Family and is native to Europe and is also commonly known as Musk Thistle. It has a long history as a rangeland pest.

CONCERN Prolific seed producer, and can outcompete native vegetation.

SIMILAR SPECIES Plumeless Thistle, Marsh Thistle and native thistles.

LIFE CYCLE Biennial, large rosette leaves in the first years growth, flowers in the second.

ERADICATION Hand picking is very effective, herbicide control before seed set.

IDENTIFICATION:

FLOWER Large, nodding, purple. Large thorny bracts occur below the flower, up to 8cm in diameter.

LEAVES Clasping, alternately arranged on the stem, deeply lobed/ wavy edge, spines along edge, hairy, sometimes pinkish, up to 25cm, long prominent white midrib.

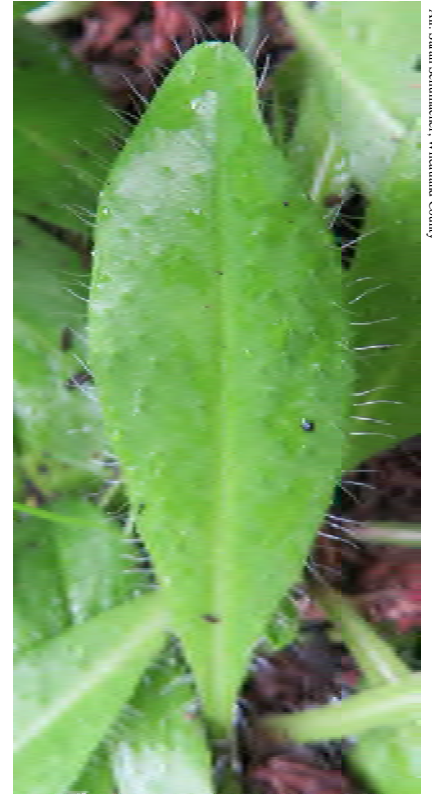
STEM Spines along stem, hairy, 20cm to 2.5m tall, unbranched.

ROOT Fleshy taproot.

SEED/FRUITS Pappus present, each flower head may produce hundreds of seeds.

ORANGE HAWKWEED

Hieracium aurantiacum Provincial Designation: Prohibited Noxious



All: Sarah Schumacher, Wheatland County

Kelly Corder

Orange Hawkweed is a member of the Asteraceae (Sunflower) Family and was introduced from Europe as an ornamental. Also known as Devil's Paintbrush.

CONCERN Highly invasive, and quick spreading.

SIMILAR SPECIES Meadow Hawkweed, Mouse-ear Hawkweed and native hawkweeds.

LIFE CYCLE Perennial.

ERADICATION Herbicide.

IDENTIFICATION

FLOWER 5 to 30 brilliant orange flowers form a compact umbrella-like

inflorescence at top of the stem, petals have notched tips. The bracts are green and are covered with distinct black coarse hairs.

LEAVES Rosette leaves are narrow, stem leaves are club shaped, hairy, 5-15cm long.

STEM 30-90cm tall with bristly hairs and 0 - 3 small leaves. The entire plant contains a milky juice.

ROOT Shallow, fibrous, creeping. Differs from native hawkweeds in that it produces stolons.

SEED/FRUITS Small, dark brown or black with ridges and bristly plumes. Up to 1500 seeds per plant, 7 year viability.

PALE YELLOW IRIS

Iris pseudacorus Provincial Designation: Prohibited Noxious



Pale Yellow Iris is of the Iridaceae (Iris) Family and is native to Europe. It is an escaped ornamental that has become an aquatic/ semi-aquatic invasive plant. Buyer beware - this plant may still be sold as an ornamental.

CONCERN May be toxic to livestock. Thrives in moist areas such as wetlands, ponds and irrigation canals.

LIFE CYCLE Creeping perennial.

ERADICATION Early, hand pick, chemical

IDENTIFICATION:

FLOWER Large pale to deep yellow flowers have three downward - and three upward-pointing petals, some with light-

brown to purple veins or flecks. Distinctive from other similar plants by brown/purple veins on the sepals.

LEAVES Long, linear, dark green, emerge from the ground in a fanlike arrangement, smooth edged, basal leaves are mostly flattened, sword-like with a pointed tip and raised midrib.

STEM 90 -150cm tall, round to flattened.

ROOT Has tuberous roots and spreads by bulbs and rhizomes.

SEED/FRUITS Three-angled cylindrical capsule 2-10cm long, contains many flat brown seeds. Seed has a hard seed coat, beneath there is a gas space allowing seeds to float in water.

PLUMELESS THISTLE

Carduus acanthoides Provincial Designation: Prohibited Noxious



Plumeless Thistle is a member of the Asteraceae (Sunflower Family) and may also be called Bristly Thistle or Spiny Plumeless Thistle.

CONCERN Highly invasive, found in riparian areas and river banks.

SIMILAR SPECIES Marsh Thistle, Canada Thistle, Nodding Thistle, native thistles.

LIFE CYCLE Herbaceous biennial, or winter annual. Rosette leaves in the first years growth, flowers in the second.

ERADICATION Hand pull, herbicide control before seed set. Not usually grazed due to the amount of spines.

IDENTIFICATION

FLOWER Purple, small, erect, spine tipped bracts, smaller flower head than Nodding Thistle. Flowers are mostly solitary at stem and branch ends.

LEAVES Clasping, alternately arranged on the stem, spines along edge and at leaf tip, hairy, lobed. Rosette leaves can be very large.

STEM Covered in winged ridges, 3 - 5 mm spines along the stem, up to 2m tall.

ROOT Taproot, large and fleshy.

SEED/FRUITS Spread by seed, pappus attached to seed for wind dispersal.

PUNCTUREVINE

Tribulus terrestris Provincial Designation: Prohibited Noxious



Puncturevine is a member of the Zygophyllaceae (Caltrop) Family and was introduced from the Mediterranean and Africa in sheep wool. In some places people have used it as a tonic despite it having toxins that can harm humans.

CONCERN Poisonous to livestock. Seeds can stick in tires and attach to clothing, fur and feathers.

LIFE CYCLE Annual.

ERADICATION Hand pick, chemical.

IDENTIFICATION

FLOWER Yellow, 5 petals, 4-10mm wide. Flowers open in morning and close and shed their petals in the afternoon.

LEAVES Opposite, hairy, leaves 6cm long, pinnately compound, 8-16 leaflets less than 1cm wide.

STEM Branched, hairy stems radiate from the crown, prostrate (on the ground) from 10cm to over 1m long.

ROOT Woody taproot, up to 2.5m deep.

SEED/FRUITS Pod, 4 - 5 single seeded nutlets with 2 - 4 sharp spines (10mm long), hard. Up to 10,000 seeds, 5 year viability.

PURPLE LOOSESTRIFE

Lythrum salicaria Provincial Designation: Prohibited Noxious



All: Sarah Schumacher, Wheatland County

Purple Loosestrife is a member of the Lythraceae (Loosestrife Family) and is native to Europe, Asia and Africa. It was introduced as an ornamental and has become a significant aquatic/semi-aquatic invasive plant in Canada. A Purple Loosestrife eradication program in Alberta in the 1990's was successful in reducing the numbers in the province.

CONCERN Poses a threat to aquatic, riparian and wetland habitats.

LIFE CYCLE Perennial.

ERADICATION Handpick, herbicide.

IDENTIFICATION

FLOWER Clustered on vertical terminal

spike extending 5cm to 90cm, one or more flowering branches; rose to purple, four to eight sepals (petal-like).

LEAVES Clasping, lance-shaped leaves have a notched base and smooth margins, slightly hairy, opposite or whorled on the stem.

STEM up to 2.5m tall, mostly square, woody, covered in a downy hair.

ROOT Extensive root system of rhizomes and taproot, clump forming.

SEED/FRUITS Small brown capsules with many seeds, can produce up to 2 - 3 million seeds/plant, which can remain viable up to 20 years.

RED BARTSIA

Odontites vernus Provincial Designation: Prohibited Noxious



Red Bartsia is a member of the Scrophulariaceae (Figwort/ Snapdragon) Family and originated from Europe. It is a weed of pastureland, hayland and roadside ditches and is unpalatable to livestock. It is also a Prohibited Noxious Weed under the Canada Seeds Act.

CONCERN May be parasitic to other plant species, and is able to outcompete forage plants and native vegetation.

LIFE CYCLE Annual.

ERADICATION Avoid contaminated feed sources, sanitize equipment to prevent spread. Control with cultivation, and/or herbicide before flowering.

IDENTIFICATION

FLOWER Has a Snapdragon-like tube shaped flower which is reddish, purple and hairy, fused sepals.

LEAVES Narrow and hairy with a toothed edge. Leaves are oppositely arranged and clasp the stem.

STEM Upright, branching, 15-30cm tall, hairy.

ROOT Taproot.

SEED/FRUITS 1,400 seeds per plant, covered in coarse hairs which allows them to attach to things and they can float

RUSH SKELETONWEED

Chondrilla juncea Provincial Designation: Prohibited Noxious



Photo courtesy of Weeds of the West! <http://www.org/nash-skeletonweed.html>



Montana State University Invasive Plant Identification Guide



Joseph M. DiTomaso, University of California - Davis, Bugwood.org



Montana State University Invasive Plant Identification Guide



Steve Dewey, Utah State University, Bugwood.org

UGA145956

Rush Skeletonweed is a member of the Asteraceae (Sunflower) Family and is native to Europe, Asia and Africa. Other names include Gum Succory, Devils Grass and Nakedweed.

CONCERN Prolific seed production, can outcompete native and forage vegetation.

LIFE CYCLE Perennial.

ERADICATION Long term management with hand pulling and early grazing can be effective, herbicide control during the rosette stage.

IDENTIFICATION

FLOWER Small (5mm in diameter), yellow, scattered on the stems and branch

tips, flowers occur in single or clusters of two to five, healthy plants can produce up to 1,500 flower heads.

LEAVES Sharp, deeply toothed rosette leaves wither as the stem bolts, occasional narrow leaves on stem, milky juice.

STEM Downward bent, reddish, coarse hairs occur on the lower 10-15cm of the green stems. A mass of wiry stems with barely visible narrow leaves, produces a milky juice, can grow up to 1.2 m tall.

ROOT Taproot.

SEED/FRUITS Light brown to black, ribbed, and with white bristles, can produce up to 20,000 seeds.

RUSSIAN KNAPWEED

Acroptilon repens Provincial Designation: Prohibited Noxious



Russian Knapweed is a member of the Asteraceae (Sunflower) family and is native to Eurasia. It is so different from other knapweeds that it has its own genus.

CONCERN Control is difficult, it forms dense, long lived stands, and is very persistent. Can cause chewing disease in horses, and is allelopathic (toxic towards other plants).

SIMILAR SPECIES Spotted Knapweed, Black Knapweed, Brown Knapweed, Meadow Knapweed, Squarrose Knapweed.

LIFE CYCLE Perennial.

ERADICATION Long term, hand pick before seed set, herbicide control late in the growing season.

IDENTIFICATION

FLOWER One purple flower head per branch tip, 1.2cm in diameter. Bracts are green, rounded and have papery edges.

LEAVES Basal leaves may or may not be lobed, are covered with fine hairs, grayish - green, 5-10 cm long. Lower stem leaves can be as long as 15cm, and narrow, maybe lobed. Upper stem leaves are narrow, un-lobed, and are significantly shorter. Young plants covered in cobwebby hairs.

STEM One or more stems up to 1 m tall. Branched.

ROOT Rhizomatous with black or dark brown with scales.

SEED/FRUITS Oval, grey or ivory with long white bristles. Up to 1,200 seeds.

SALT CEDAR/TAMARISK

Tamarix sp. Provincial Designation: Prohibited Noxious



Alt: Sarah Schumacher, Wheatland County

There are 3 species from the Tamaricaceae (Tamarisk) Family listed under Act, Chinese Tamarix (*Tamarix chinensis*), Small Flower Tamarisk (*Tamarix parviflora*) and Saltcedar (*Tamarisk ramossima*). These plants were introduced as an ornamentals from Eurasia and have now invaded many parts of the USA. Buyer beware - these plants may still be sold as ornamentals (i.e. "Pink Cascade").

CONCERN Potential invasion of aquatic or semi-aquatic environments. A single, large plant can consume up to 750 litres of water a day. Dense stands can significantly reduce stream flow and groundwater reserves, and can also increase surface soil salinity.

LIFE CYCLE Perennial, deciduous or evergreen shrub or small tree.

ERADICATION Do not plant, remove from garden.

IDENTIFICATION

FLOWER Small, pink to white, 5 petaled flowers borne in finger like clusters on terminal and lateral branches.

LEAVES Alternate, small, overlapping, and appear scale-like, foliage is salty to taste as salt accumulates among leaf scales during evapo-transpiration, deciduous, leaves turn yellow-orange in autumn.

STEM Up to 8m tall, highly branched, smooth, dark brown to reddish brown bark.

ROOT Deep taproot and adventitious roots of stems and branches.

SEED/FRUITS Extremely small, tuft of hairs on tip, contained in capsules.

SALTLOVER

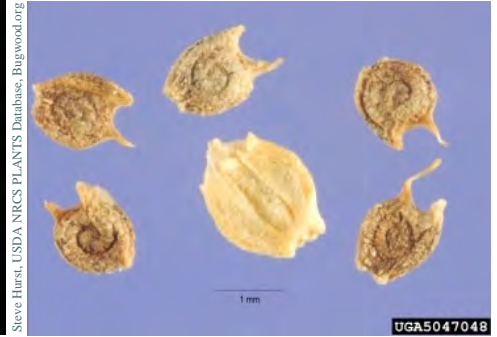
Halogeton glomeratus Provincial Designation: Prohibited Noxious



Clinton Shock, Oregon State University



Joseph M. DiTomasso, University of California - Davis, Bugwood.org



Steve Hurst, USDA NRCS PLANTS Database, Bugwood.org

UGA5047048



Clinton Shock, Oregon State University

Saltlover is of the Chenopodiaceae (Goosefoot) family, another common name is Halogeton. It is tolerant of saline and alkaline soils and is mostly found on disturbed sites and overgrazed rangeland. It grows quickly taking advantage of infrequent precipitation. It also tumbles like other members of this family.

CONCERN It is poisonous to livestock and can lead to salt accumulation on the soil surface.

LIFE CYCLE Summer/ winter annual.

ERADICATION Competition, and mechanical control are effective. Herbicide control may not be effective.

IDENTIFICATION

FLOWER 2 types, 5 sepals, the large flower is 2-3mm wide, the smaller flowers have toothed sepals, are inconspicuous, occur in leaf axil, both are light yellow-green, with a pink-ish centre.

LEAVES Alternate, simple, small, fleshy and succulent, tubular, blue-green. Hair at the end of each leaf.

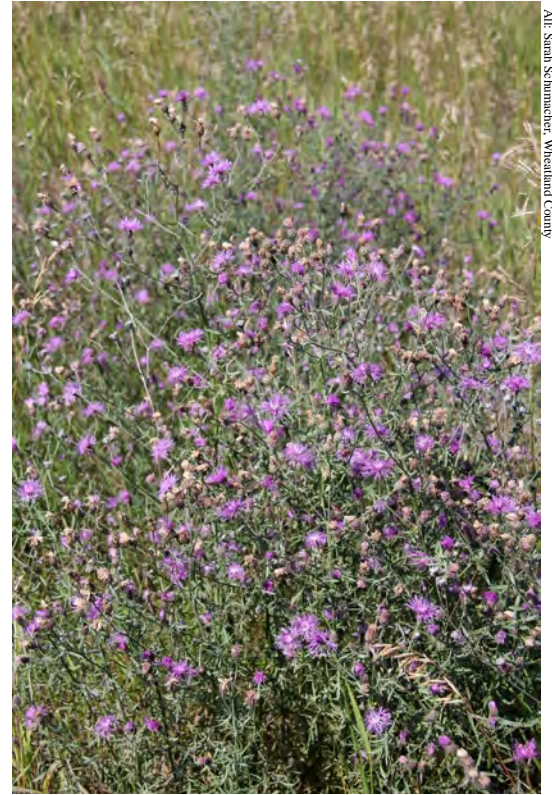
STEM 8-30cm tall, branched, succulent, red when young, yellow-white at maturity.

ROOT Taproot, up to 5m deep.

SEED/FRUITS Early germination, reproduced from 2 types of seeds, viable for up to 10 years. Produces up to 50,000 seeds.

SPOTTED KNAPWEED

Centaurea stoebe Provincial Designation: Prohibited Noxious



Spotted Knapweed is a member of the Asteraceae (Sunflower) family and was introduced from Europe in ship's ballast or as a contaminant in alfalfa. It covers vast areas of land in Canada and the USA, and is tolerant of a wide range of conditions.

CONCERN Control is difficult, and is allelopathic (toxic towards other plants).

SIMILAR SPECIES Russian Knapweed, Black Knapweed, Brown Knapweed, Meadow Knapweed, Diffuse Knapweed, Squarrose Knapweed, Hybrid Knapweed

LIFE CYCLE Perennial.

ERADICATION Long term as control is difficult, hand pick in rosette stage, herbicide control before flowering.

IDENTIFICATION:

FLOWER One pinkish-purple flower head on each branch. Bracts have dark spot on the tip and short fringed edges.

LEAVES Rosette leaves are deeply lobed, grayish green, and up to 15cm long. Stem leaves are finely divided into linear segments, alternate, bitter taste.

STEM Up to 120cm tall and highly branched.

ROOT Taproot.

SEED/FRUITS Black, 2mm long, can produce up to 2000 seeds per plant.

SQUARROSE KNAPWEED

Centaurea virgata Provincial Designation: Prohibited Noxious



Squarrose knapweed is a member of the Asteraceae (Sunflower) Family and was introduced from Eastern Mediterranean/Asia. It is a weed of range, pasturelands, and open habitats.

CONCERN Can form very dense stands in healthy rangeland communities.

SIMILAR SPECIES It looks similar to Diffuse Knapweed in growth form but has pink flowers.

LIFE CYCLE Perennial (long lived).

ERADICATION Early detection, hand picking, herbicide control before flowering, early season grazing.

IDENTIFICATION

FLOWER Pink, smaller than the other pink/purple knapweeds, composed of 10 to 14 pink or pale purple florets. Bracts below the flowers have curved spines with 4-6 pairs of lateral spines. Can have as many as 100 flower heads/plant.

LEAVES Rosette leaves in first years growth, deeply divided leaves on the lower portion of the plant, spine-like leaves on the top, green-grey in color.

STEM 30-50cm tall, stiff, highly branched. Under tough conditions will remain as a rosette for several years.

ROOT Taproot.

SEED/FRUITS Reproduces by seed, remains viable for many years.

SULPHUR CINQUEFOIL

Potentilla recta Provincial Designation: Prohibited Noxious



All: Sarah Schumacher, Wheatland County

Sulphur Cinquefoil is a member of the Rosaceae (Rose) Family. It has plenty of native “look a likes” making identification difficult.

CONCERN Unpalatable to livestock, aggressive, and can outcompete native vegetation.

SIMILAR SPECIES Tall Buttercup, native cinquefoil species.

LIFE CYCLE Annual, biennial or perennial. Long term infestations have documented 20 year old plants.

ERADICATION Repeated cultivation over a long time, or herbicide (do not mow).

IDENTIFICATION

FLOWER 5 light yellow petals with deeply notched tips and a yellow center.

5 hairy sepals.

LEAVES Palmately compound with 5-7 toothed leaflets, relatively few basal leaves, most leaves grow along an upright stem, leaf stalk length and size decreases toward top. Unlike native species the underside of the leaf is green not silvery.

STEM One to several erect stems, 30-60cm tall, may be branched with terminal, multi-flower inflorescence. Stems have hairs perpendicular to stem and leaf-stalks.

ROOT Fibrous spreading roots. Shoots re-emerge from woody root stalks.

SEED/FRUITS Comma - shaped, brownish purple, covered with net-like ridges.

TANSY RAGWORT

Senecio jacobaea Provincial Designation: Prohibited Noxious



http://www.co.stevens.wa.us/weedboard/image_weeds/tr2.jpg

Tansy Ragwort is a member of the Asteraceae (Sunflower) family and is native to Eurasia. It is also known as Stinking Willie because of its odour. It prefers dry open areas.

CONCERN Toxic to some animals, may cause irreversible liver damage, toxins remain in cured hay and silage.

LIFE CYCLE Biennial or short-lived perennial.

ERADICATION Hand pulling, good pasture management and herbicide control.

IDENTIFICATION

FLOWER Daisy-like flowers, yellow petals, yellow center, less than 2.5cm diameter, clustered on the end of the stem. Bracts surrounding the flower head are black-tipped.

LEAVES Rosette has 10 - 20 leaves with web-like hairs. Basal leaves 5cm-25cm long, lobed into leaflets and leaflets lobed again. Stem leaves alternate, evenly distributed, lower leaves larger, strong odour when crushed. Leaves are deeply indented and blunt toothed lobes give them a ruffled appearance.

STEM Commonly 30-90cm tall but up to 1.8m, several or solitary stems may branch near the top of the flower head. Stems and leaf stalks often purplish and have cobwebby hairs.

ROOT Taproot.

SEED/FRUIT Small, prominently ribbed, tipped by hair-like plumes, plants can produce over 150,000 seeds, that are viability for up to 20 years.

TYROL KNAPWEED

Centaurea nigrescens Provincial Designation: Prohibited Noxious



Tyrol Knapweed is a member of the Asteraceae (Sunflower) family and is native to Europe. It has a larger leaf than the other Knapweed species.

CONCERN Invades pastures and natural areas, competing with native plants and forage.

SIMILAR SPECIES The flower is similar to other Knapweed (*Centaurea*) species.

LIFE CYCLE Perennial.

ERADICATION Long term, hand pick (remove root) and chemical control.

IDENTIFICATION:

FLOWER Pink-purple, bracts present, composed of 40-100 purple florets, the outer ring of florets is usually larger than the inner ring. Bracts are dark brown-black, tipped with a dark fringe of tooth-comb like wiry lobes in 6-8 pairs.

LEAVES Basal leaves stalked, variable margins, oblong to lance shaped. Stem leaves smaller towards the top of the plant, stalkless, with variable shape and margin.

STEM 30-150cm, erect, branching, hairy.

ROOT Taproot.

SEED/FRUITS Reproduces by seed and root.

YELLOW NUTSEDGE

Cyperus esculentus Provincial Designation: Prohibited Noxious



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Yellow Nutsedge is a member of the Cyperaceae (Sedge) family. Not tolerant of cold climates.

CONCERN It grows in wet habitats and can become troublesome in irrigated soils. It is difficult to control because of its aggressive root system.

LIFE CYCLE Perennial.

ERADICATION Cultivation may increase distribution but if done at the right time of year and repeatedly, cultivation can be an effective method of control.

IDENTIFICATION

FLOWER Umbrella shaped cluster of straw-colored or golden-yellow flower heads.

LEAVES Alternate, most leaves basal, grass-like, waxy, prominent midrib, narrow, linear, 20–90cm long by 0.2–1cm wide, bright green to yellow-green foliage. 3-7 leaves per stem.

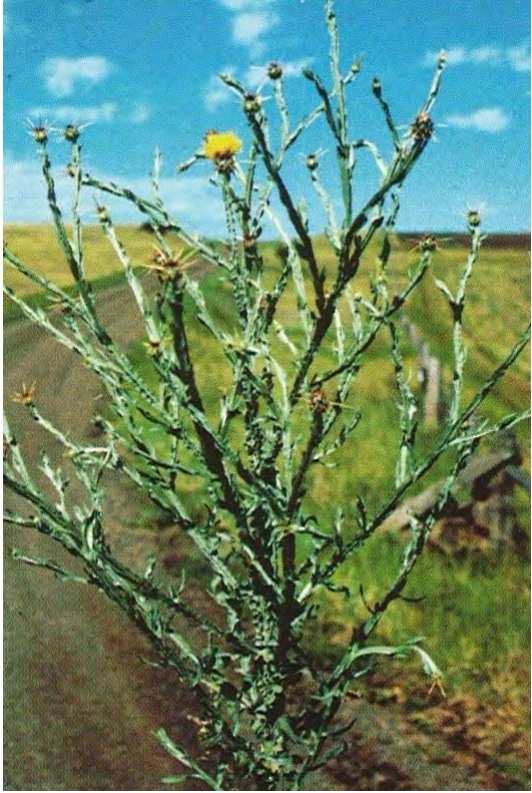
STEM Triangular in cross section, 15cm to 75cm tall.

ROOT Fibrous, aggressive creeping roots and woody reproductive tubers. Within a single growing season, one tuber can produce hundreds of shoots.

SEED/FRUITS Low viability. Over 90,000 seeds per plant.

YELLOW STAR-THISTLE

Centaurea solstitialis Provincial Designation: Prohibited Noxious



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All: Montana State University Invasive Plant Identification Guide



Yellow Star-thistle is a member of the Asteraceae (Sunflower) Family and is native to Europe and Asia.

CONCERN Ingestion causes a fatal nervous disorder known as chewing disease in horses. It can outcompete native vegetation and reduce forage production. Can monopolize soil moisture and is a prolific seed producer.

LIFE CYCLE Annual, biannual, perennial

ERADICATION Can graze early in the season by livestock (with the exception of horses), hand pulling, mowing or herbicide control can be effective before flowering.

IDENTIFICATION:

FLOWER One yellow flower head per branch, sharp straw-colored spines up to 2cm long radiate from the bracts. Up to 1000 flower per plant.

LEAVES Rosette leaves are deeply lobed with pointed tip. Stem leaves are vertical, flat extensions along the stem and covered with cottony hairs.

STEM Up to 2m tall, rigid, branched, covered with hairs.

ROOT Taproot, can be up to 1m deep.

SEED/FRUITS Only reproduces by seed. Seed is smooth and about 2 - 3 mm long. Most seeds have a short (2-5 mm), stiff pappus. Produces up to 150,000 seeds per plant.



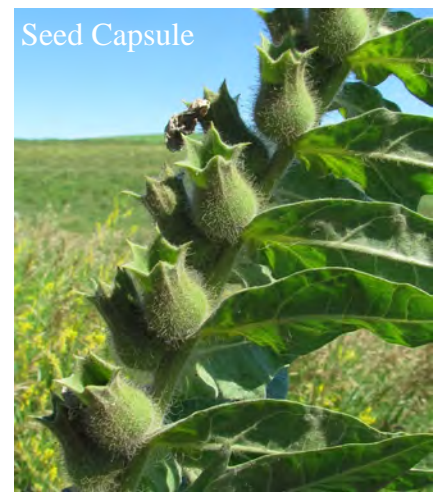
NOXIOUS WEEDS

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

BLACK HENBANE

Hyoscyamus niger Provincial Designation Noxious

All Sarah Schumacher, Wheatland County



Black Henbane is a member of the Solanaceae (Nightshade) family and was introduced from the Mediterranean. It is commonly a weed of disturbed areas such as roadside ditches, new developments and field edges.

CONCERN All parts of this plant are poisonous to livestock and humans.

LIFE CYCLE Biennial or annual depending on local conditions.

CONTROL Control first years growth by cultivation, mowing or hand pulling, or cut stem at the base of the plant before the flowering stage.

IDENTIFICATION

FLOWER Bell shaped with 5 lobes, large, yellowish, many purple veins, purple centre, multiple flowers per stem.

LEAVES Alternate, large, slightly sticky, slight offensive odor, up to 45cm long, and 15cm wide, stalkless, hairy, margins variably lobed. Basal rosette leaves occur in the first stage of growth and flowers in the second.

STEM Up to 1m tall, branched, hairy, robust.

ROOT Taproot.

SEED/FRUITS Reproduces by prolific seed production. Seeds are small, found in a hairy capsule, and are poisonous. 5 year viability.

BLUEWEED

Echium vulgare Provincial Designation Noxious



Blueweed is a member of the Boraginaceae (Borage) family and is also known as Viper's Bugloss, it was introduced from Africa as an ornamental. It increases in overgrazed pastures and grows in well gravel pits, and riparian areas.

CONCERN Invades riparian areas, may be toxic to humans and livestock, the seeds attach to fur and the stiff hairs may cause skin irritation.

LIFE CYCLE Biennial or short lived perennial. Basal rosette leaves occur in the first stage of growth, flowering in the second.

CONTROL Hand pick, remove roots or herbicide control in rosette stage.

IDENTIFICATION

FLOWER Flowers can be blue, purple or

pink, numerous, 1-2cm long, 5 fused petals, irregular funnel shape, short stems, alternately arranged on the stem.

LEAVES Basal leaves are narrow, 1-15cm long, stalked. Stem leaves are alternate, smaller and stalkless near the top of the plant, covered with stiff hairs, small reddish glands occur on the underside.

STEM Up to 90cm tall, covered with short and long stiff hairs, reddish green, often has swollen reddish spots.

ROOT Black, deep taproot with fibrous lateral roots.

SEED/FRUIT Nutlets are clustered in groups of four, greyish brown, angular, roughened, and wrinkled. Can reproduce up to 2,800 seeds per plant.

BROAD LEAVED PEPPER GRASS

Lepidium latifolium Provincial Designation Noxious



Broad Leaved Pepper Grass is a member of the Brassicaceae (Mustard) family and is also known as Perennial Pepperweed, Tall Whitetop, Giant Whiteweed and Ironweed. This weed is very tolerant of saline soils.

CONCERN Spreads vigorously from root structures to form large populations can impact wetlands, riparian areas, rangelands, and roadsides.

LIFE CYCLE Creeping perennial.

CONTROL Herbicide can be effective, hand pulling or digging is not recommended.

IDENTIFICATION

FLOWER Small, less than 1cm wide with four white petals, flowers occur on rounded clusters at the end of the braches.

LEAVES Bright green to gray-green, alternately arranged on the stem, broadest at base and tapering to a pointed tip, prominent whitish mid-vein. Basal leaves are up to 30cm long and 10cm wide with long stalks, covered with a waxy layer. Stem leaves are smaller with shorter stalks.

STEMS Up to 1.5m tall, branched.

ROOT Deep spreading roots, up to 40% of plant biomass.

SEED/FRUIT Flat, rounded, slightly hairy, 2-3mm long, reddish brown capsule, can produce large quantities of seed.

CANADA THISTLE

Cirsium arvense Provincial Designation Noxious



All Sarah Schumacher, Wheatland County



Canada Thistle is a member of the Asteraceae (Sunflower) family and was introduced from northern Europe. It is now found across most of Alberta, commonly in overgrazed pastures, roadside ditches and riparian areas.

CONCERN Competes with, and displaces native vegetation and reduces agricultural production.

SIMILAR SPECIES Plumeless Thistle, marsh thistle and other native thistles.

LIFE CYCLE Creeping perennial

CONTROL Herbicide (using fall rosette treatment), early season grazing.

IDENTIFICATION

FLOWER Purple, pink or white with

diameter of 1.5 - 2cm, clusters form at branch ends, bracts have weak prickles (no spines), male and female flowers occur on separate plants, sweet smelling when in bloom.

LEAVES Alternately arranged on the stem, wavy edge, lobed, lance shaped, spine-tipped, lack stalks, upper leaves smaller than lower leaves.

STEMS 30-120cm tall, sometimes spiny, erect, ridged, branched, slightly hairy.

ROOT Horizontal and vertical creeping roots, white, may be very deep.

SEED/FRUIT Long, flattened seeds with tufts of white hairs, low germination rate.

COMMON BABY'S BREATH

Gypsophila paniculata Provincial Designation Noxious



All Sarah Schumacher, Wheeland County

Common Baby's Breath is a member of the Caryophyllaceae (Pink) family and was introduced from Europe as an ornamental, other names include *Gypsophila* and Maiden's-Breath. It remains a common ornamental species in floral displays.

CONCERN Commonly found growing in roadside ditches, pasture and hayland, It is most aggressive in dry, sandy soils. Host for Aster Yellows.

LIFE CYCLE Perennial.

CONTROL Herbicide control before flowering, cultivation.

IDENTIFICATION

FLOWER Numerous small white flowers, 5 petals, star shaped, sweet scent.

LEAVES Opposite, long and narrow 3-10cm long, have a prominent mid vein, not conspicuous when in bloom. Reduced in size upwards, stalkless.

STEMS Can grow up to 1m tall, numerous branches, nodes occur at the base of the leaves. May tumble at maturity.

ROOT Large woody root (up to 4m deep), very drought tolerant.

SEED/FRUITS This plant is a prolific seed producer. The seed is black, kidney shaped, and bumpy. Can produce up to 14,000 seeds per plant, 5 year viability.

COMMON MULLEIN

Verbascum thapsus Provincial Designation Noxious



Common Mullein is a member of the Scrophulariaceae (Figwort/ Snapdragon) family, it was introduced from Europe as a medicinal plant. It is also known as Candlestick Plant, or Velvet Dock or “cowboy toilet paper”. It has been used as a piscicide (for control of fish).

CONCERN It is a weed of disturbed areas, roadsides, gravel pits and railway lines. It can overtake and displace native species.

LIFE CYCLE Biennial, perennial or, rarely, an annual.

CONTROL Hand pick or use mechanical control methods before flowering.

IDENTIFICATION

FLOWER Flowers in the second stage of growth. Dense spike, yellow flowers, 5 petals. Plants die after flowering.

LEAVES Large leaves, very woolly, oppositely arranged on the stem, larger leaves at the base of the plant, smaller towards the top. In the first stage plants develop a basal rosette of felt-like leaves.

STEMS Up to 2.5 m tall, woolly.

ROOT Deep taproot.

SEED/FRUITS Small seeds, hairy capsule. Each plant can produce 100,000 - 300, 000 seeds, and have very long term viability (100 years).

COMMON TANSY

Tanacetum vulgare Provincial Designation Noxious



Common Tansy is a member of the Asteraceae (Sunflower) Family and was introduced as an ornamental from Europe. It is commonly found across much of Alberta in river valleys, roadside ditches and field boundaries.

CONCERN Common along roadsides, and riparian areas, may be mildly toxic to humans and livestock.

LIFE CYCLE Perennial.

CONTROL Herbicide control can be effective, although may be limited by proximity to water.

IDENTIFICATION

FLOWER Numerous (20 to 100) yellow-

orange, button-like flower heads appear in a flat-topped, dense clusters at the end of the stem. Flowers lack (ray) petals.

LEAVES Alternate, consistent in size, deeply divided into leaflets with toothed margins (fern-like). Leaves have a strong odour when crushed.

STEMS 30cm -1.8m tall, often purplish red, woody, robust, erect.

ROOT Rhizomatous, woody.

SEED/FRUIT Small yellowish-brown seeds have five toothed ridges. Up to 50,000 seeds, which can remain viable for up to 25 years.

CREeping BELLFLOWER

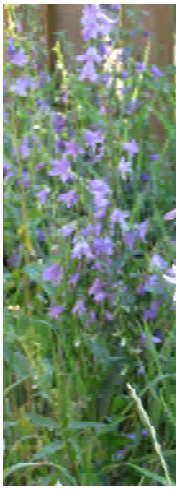
Campanula rapunculoides Provincial Designation Noxious



Leaf Variability



All Sarah Schumacher, Wheatland County



Creeping Bellflower is a member of the Boraginaceae (Borage) family, it was introduced as an ornamental from Europe, other names include Creeping Campanula or Creeping Bluebell.

CONCERN Aggressive root system, forming dense colonies can be extremely difficult to control.

SIMILAR SPECIES Native bluebells.

LIFE CYCLE Creeping perennial.

CONTROL Long term management, hand pull before seed set (although its difficult to get the entire root), resistant to some herbicides, mowing will not kill this plant, but will prevent flowering.

IDENTIFICATION

FLOWER Purple, bell shaped, 5 lobes, 5 green sepals, nodding.

LEAVES Alternately arranged on the stem, heart shaped with jagged edges (variable), lower leaves have longer stems (petiole), upper leaves have little to no stem.

STEMS No branching, hairy, 20- 100cm tall.

ROOT Thick creeping rhizomes make this plant very aggressive and difficult to control.

SEED/FRUIT One plant can produce thousands of seeds per year, seeds are small and light brown, 10 year viability.

DALMATIAN TOADFLAX

Linaria dalmatica Provincial Designation Noxious



Dalmatian Toadflax is a member of the Scrophulariaceae (Figwort/ Snapdragon) family and was introduced from Europe as an ornamental. It is tolerant of dry sandy or gravelly soils.

CONCERN It is often a weed of pasture, rangelands, roadsides and railways. Unpalatable or mildly toxic to livestock.

SIMILAR SPECIES Yellow Toadflax

LIFE CYCLE Perennial.

CONTROL Prevent seed production, deplete root reserves, and remove seedlings before vegetative reproduction begins. Herbicide control may be effective, biological control is available and sheep may graze.

IDENTIFICATION

FLOWER Develops at base of the upper leaves, snapdragon-like, bright yellow with an orange throat and a long spur.

LEAVES Waxy, pale green to bluish green, oval to heart-shaped, alternate with smooth edges, stalkless, clasps the stem.

STEMS Up to 120 cm tall, robust, waxy.

ROOT Taproot and horizontal roots with adventitious buds, woody. Can reach depths of up to 3m.

SEED/FRUIT Irregular angled seeds in two-celled capsule. Up to 500,000 seeds per plant, viable for up to 10 years.

DAME'S ROCKET

Hesperis matronalis Provincial Designation Noxious



All Sarah Schumacher, Wheatland County

Dame's Rocket is a member of the Brassicaceae (Mustard) family and was introduced from Europe as an ornamental it is also known as Dames Violet. It is often found growing as an escaped ornamental plant in moist habitats.

CONCERN May be spread in wild flower mixes, displaces native vegetation, host for crop diseases, prolific seed producer.

LIFE CYCLE Perennial.

CONTROL Hand picking or herbicide control before flowering.

IDENTIFICATION

FLOWER 4 petals, showy purple-pink-white petals, fragrant.

LEAVES Stalkless, alternately arranged on the stem, small hairs on both sides, toothed edges. Rosette leaves can be as long as 15cm and stem leaves are 5-15cm (smaller towards the top of the plant).

STEMS Up to 1m tall, branched, covered with small hairs.

ROOT Shallow, slender, root.

SEED/FRUITS Reproduces by seed, thin, wiry seed pods are 5-10cm long, each plant can produce up to 20,000 seeds, highly viability.

DOWNY BROME

Bromus tectorum, Provincial Designation Noxious

All Sarah Schumacher, Wheatland County



Downy Brome is a member of the Poaceae (Grass) family, other names include Downy Chess, and Cheat Grass. Introduced from the Mediterranean.

LIFE CYCLE Annual or winter annual, blooms early in the growing season.

CONCERN This weed can reduce agricultural production and is a fire hazard in roadside ditches. Alternate host for crop viruses, awns can also irritate the mouths of livestock.

SIMILAR SPECIES Japanese Brome.

CONTROL Early spring grazing, herbicide control before flowering, hand pick.

IDENTIFICATION

FLOWER Nodding Panicle, 7-20 cm long, often reddish-purple when mature (Japanese Brome turns brown), long awns, covered with soft hairs.

LEAVES Leaf blades are 2- 4 mm wide, 5-12 cm long and covered with soft hairs. The ligule is present; toothed, 1-3 mm long.

STEMS Covered with soft hairs, 5 - 60 cm tall (may be shorter than Japanese Brome) .

ROOT Fibrous roots, up to 1.5 m deep.

SEED/FRUITS Aggressive seed producer, producing up to 5000 seeds per plant. Viable for up to 5 years.

FIELD BINDWEED

Convolvulus arvensis Provincial Designation Noxious



Ron Bartholow, Wheatland County



Alli Sarah Schumacher, Wheatland County



Field Bindweed is a member of the Convolvulaceae (Morning Glory) Family native to Africa, Asia and Europe. Also known as Devils Vine, and Wild Morning Glory. It was most likely introduced as a contaminant in a crop seed.

LIFE CYCLE Perennial vine.

CONCERN Can tolerate a wide range of conditions, often found on roadsides or growing on fence lines. It can outcompete native species, and may be mildly toxic to livestock.

CONTROL Herbicide, hand pick before flowering and seed set.

IDENTIFICATION

FLOWER 2.5cm in diameter, tubular or bell-shaped, and white to pinkish. Two bracts on stem below flower.

LEAVES Alternate, dark green, pointed tips, arrow head shaped with sharp pointed lobes at base, grow on one side of the stem.

STEMS Up to 3m long, growing horizontally or climbing, often has a twist, numerous shoots.

ROOT Deep taproot with lateral creeping roots.

SEED/FRUIT One plant can produce up to 500 seeds which can remain viable for up to 20-50 years.

FIELD SCABIOUS

Knautia arvensis Provincial Designation Noxious



All Sarah Schumacher, Wheatland County

Field Scabious is a member of the Dipsacaceae (Teasel) Family and was introduced from Europe as an ornamental. Also known as Blue Buttons and Bachelors Buttons.

LIFE CYCLE Perennial.

SIMILAR SPECIES There are many similar ornamental species in the Teasel family.

CONCERN Can invade pasture, rangeland and native areas and is difficult to control once established. May be irritating to the skin.

CONTROL Prevent seed set by mowing or spraying with herbicide before flowering.

IDENTIFICATION

FLOWER Pink-purple, occur at the end of the stem, 4cm wide. Below the flower head is a ring of narrow green bracts.

LEAVES Large leaves are oppositely arranged on the stem, deeply divided/lobed, hairy, reduced in size upwards.

STEMS Up to 1.5m tall, erect, several stems per plant, covered by coarse stiff hairs, and black dots.

ROOT Taproot.

SEED/FRUITS Hairy, pappus, small. One plant can produce 2,000 seeds which can remain viable in the soil for several years.

GREAT BURDOCK

Arctium lappa Provincial Designation Noxious



All Sarah Schumacher, Wheatland County

Great Burdock is a member of the Asteraceae (Sunflower) family and was introduced from Europe. It can be found in disturbed areas such as gravel pits, alleys, and riparian areas.

LIFE CYCLE Biennial; basal leaves in the first year of growth, flowers in the second.

CONCERN Seed pods (“burs”) can stick to clothing and animals.

SIMILAR SPECIES Lesser Burdock, Woolly Burdock.

CONTROL Control in the rosette stage (first years growth) before bolting and flowering. Hand cutting can be effective.

IDENTIFICATION

FLOWER Clusters of purple-pink flowers, hooked bracts below the flower. Outer bracts spread out at maturity.

LEAVES Large, alternately arranged, heart shaped, woolly underneath, reduced in size upwards.

STEMS Plant can be as large as 3m tall, stems are thick and hollow, grooved, sparsely hairy.

ROOT Taproot.

SEED/FRUITS Large seed pods with hooks attach themselves to clothing and fur, a mature plant can produce from 6,000 to 16,000 seeds.

HOARY CRESS

Lepidium spp. Provincial Designation Noxious



Hoary Cress is of the Brassicaceae (Mustard) family. There are 3 similar species are listed under the Weed Control Act which includes: Globe podded (*Lepidium appelianum*), Lens podded (*Lepidium chalepense*), and Heart podded (*Lepidium draba*). These species may also be know as Whitetop, Peppergrass, Pepperweed. Introduced from western Asia.

CONCERN Can form large infestations that can displace native species and reduce grazing quality.

SIMILAR SPECIES Perennial Pepper Grass.

LIFE CYCLE Creeping perennial.

CONTROL Herbicide only, cultivation or mowing may increase populations.

IDENTIFICATION

FLOWER Numerous white flowers with 4 petals borne on 1cm long stalk. Dense clusters create a white, flat-top appearance.

LEAVES Blue green to gray green leaves are alternate, covered with soft white hairs, and lance to arrow head shaped. leaves clasping stem, basal leaves stalked.

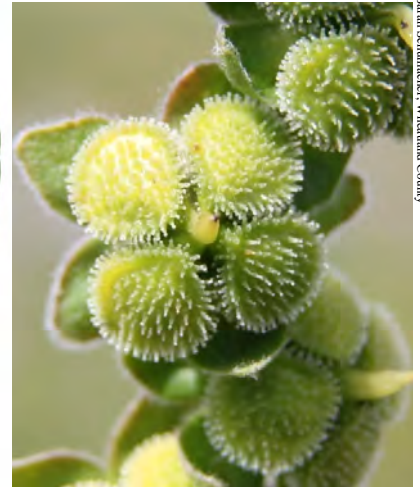
STEMS Up to 60cm tall, form large dense colonies.

ROOT Aggressive, rhizomatous, deep.

SEED/FRUIT Pods, up to 3500 seeds per plant, viable for several years.

HOUND'S TONGUE

Cynoglossum officinale Provincial Designation Noxious



All Sarah Schumacher, Wheatland County

Hound's Tongue is a member of the Boraginaceae (Borage) Family, it may have been introduced as a crop seed contaminant from Europe and Asia. It is tolerant of a wide range of conditions.

CONCERN Can establish rapidly and form dense monocultures in disturbed habitats, may be toxic to livestock.

LIFE CYCLE Biennial or short lived perennial.

CONTROL Spray rosettes, mow before flowering and seed set, use weed free hay sources. Biological control is available.

IDENTIFICATION

FLOWER Five petals, funnel shaped, small, reddish purple.

LEAVES Rosette leaves (form in first years growth) are up to 30cm long, velvety, lack teeth or lobes. Stem leaves alternate, and smaller toward the top of the plant, upper leaves clasping, lance or "Hound's Tongue" - like shape. Crushed leaves have a nut-like odor.

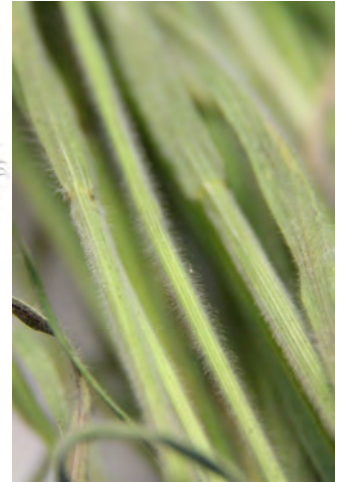
STEMS 60cm to 1.2m tall with branches near the top of the plant.

ROOT Taproot.

SEED/FRUIT Four bur-like nutlets are covered in hooks which can catch clothing and fur.

JAPANESE BROME

Bromus japonicus Provincial Designation Noxious



Japanese Brome is a member of the Poaceae (Grass) Family and is also known as Japanese Chess.

CONCERN This weed can reduce agricultural production and is a fire hazard in roadside ditches. Awns can irritate livestock mouths.

LIFE CYCLE Annual or winter annual.

SIMILAR SPECIES Downy Brome.

CONTROL Graze early or spray before flowering, hand pick.

IDENTIFICATION

FLOWER Panicles droop to one side, spikelet flattened, shorter awns than Downy Brome and not as drooping.

LEAVES Leaf blades are flat, 2 - 4 mm wide, covered with soft white hairs. Ligules are about 1.5mm long, membranous and hairy with ragged edges.

STEMS Covered with soft hairs, 30 to 60cm tall, bent at base and nodes are swollen.

ROOT Shallow fibrous roots.

SEED/FRUITS Aggressive seed producer. Awns are 8-10 mm long and straight to bent/twisted at maturity and tan colored (Downy Brome has a twisted awn and is reddish).

LEAFY SPURGE

Euphorbia esula Provincial Designation Noxious



All Sarah Schumacher, Wheatland County

Leafy Spurge is a member of the Euphorbiaceae (Spurge) family and was introduced from Eurasia likely as a seed contaminant. It is similar to ornamental varieties and is related to the Christmas Poinsettia. It is commonly found in pastureland, parks and river valleys.

CONCERN The milky sap from the plant is an irritant to most livestock and may cause severe skin rashes or irritation in humans.

SIMILAR SPECIES Looks similar to Yellow Toadflax before flowering.

LIFE CYCLE Creeping Perennial.

CONTROL Herbicide control and targeted grazing (i.e. sheep) can be effective. Biological control agents are available.

IDENTIFICATION

FLOWER Yellowish green flowers in small clusters, inconspicuous, small, lacks petals or sepals, 2 showy heart-shaped yellow leafy bracts below.

LEAVES Alternate, narrow, 2-10cm long. Stems and leaves contain a white milky sap (similar to Dandelions).

STEMS Up to 90cm tall, pale green, smooth, milky sap, whorled directly below flower head.

ROOT Deeply rooted, spreads by brownish rhizomes with pink buds.

SEED/FRUIT Oblong, grayish to purple, 3 seeded capsule.

LESSER BURDOCK

Arctium minus Provincial Designation Noxious



Lesser Burdock is a member of the Asteraceae (Sunflower) family and was introduced from Europe. Often known as Common Burdock. It can be found in disturbed areas.

CONCERN Seed pods (“burs”) can stick to clothing and animals.

SIMILAR SPECIES Great Burdock, Woolly Burdock.

LIFE CYCLE Biennial; basal leaves in the first year of growth, flowers in the second.

CONTROL Control with herbicide or by hand pulling in rosette stage (first years growth) before bolting and flowering.

IDENTIFICATION

FLOWER Clusters of purple-pink flowers, flowers have hooked bracts (similar to Velcro) which are slightly woolly.

LEAVES Large, heart shaped, woolly underneath, reduced in size upwards, alternately arranged on the stem.

STEMS 1-3m tall, stems are thick and hollow, branched, reddish tinge, may be grooved or angular.

ROOT Taproot; large and fleshy.

SEED/FRUITS Large seed pods with hooks attach themselves to clothing and fur, a mature plant can produce up to 18,000 seeds, viable for up to 3 years.

OXEYE DAISY

Leucanthemum vulgare Provincial Designation Noxious



Alli Sarah Schumacher, Wheeland County

Oxeye Daisy is a member of the Asteraceae (Sunflower) family and was introduced from Europe as an ornamental. It is often found growing as an ornamental, along roadways and cut blocks.

CONCERN Can outcompete native vegetation and pasture species.

SIMILAR SPECIES Scentsless Chamomile, Shasta Daisy (ornamental variety).

LIFE CYCLE Perennial.

CONTROL Herbicide before flowering, mowing or deadhead (pull the flower off) to prevent seed set, don't share daisies with your friends and neighbors! Be wary of wildflower seed mixes.

IDENTIFICATION

FLOWER 2 - 5cm diameter flower head per, one flower per stem, white outer petals (ray florets) and a yellow center (disk florets). May have an unpleasant odour.

LEAVES Variable, alternate. Basal and lower stem leaves have long narrow stalks, rounded teeth, spoon shaped. Upper stem leaves are smaller towards the top, no stalk, and are toothed.

STEMS 10-80cm tall, simple or once branched, smooth, grooved, hairless, numerous from base.

ROOT Shallow, branched rhizomes (slightly creeping).

SEED/FRUIT Numerous, small, black with ribs. May produce up to 26,000 seeds, long term viability.

PERENNIAL SOW THISTLE

Sonchus arvensis Provincial Designation Noxious



Perennial Sow Thistle is a member of the Asteraceae (Sunflower) family and was introduced from Europe and Asia. Other names include Creeping Sow Thistle, Field Milk Thistle, and Marsh Sow Thistle.

CONCERN It is tolerant of a wide range of habitats and can become a serious problem in riparian and wetland habitats.

LIFE CYCLE Creeping perennial.

CONTROL Herbicide, repeated mowing can control seed production.

IDENTIFICATION

FLOWER Yellow flowers (Dandelion-like), grouped in loose clusters at the ends of stems. The green bracts of the flower heads are often covered with

sticky hairs. One plant may have up to 20 flower heads.

LEAVES Alternate, prickles on the edges, may be lobed, a milky sap flows from the stem when the flower is picked or stem damaged.

STEMS 30cm - 1.5m tall, upright, hollow, branched at the top portion of the plant, milky sap.

ROOT Creeping rhizomatous root. Up to 3m deep, fragile, new plants can grow from small segments of root.

SEED/FRUITS Small seed, wings (pappus), dispersed by wind. Can produce up to 13,000 seeds, 3-6 year viability.

SCENTLESS CHAMOMILE

Tripleurospermum perforatum Provincial Designation Noxious



All Sarah Schumacher, Westland County

Scentless Chamomile is a member of the Asteraceae (Sunflower Family) it was introduced from Eurasia and is also known as Mayweed and False Chamomile. Unlike other chamomile species, this plant does not have a sweet smell.

CONCERN Often found in moist areas, but is tolerant of a wide range of conditions.

SIMILAR SPECIES Ox Eye Daisy.

LIFE CYCLE Annual, biennial, or short lived perennial.

CONTROL Hand pick before flowering, cultivation of rosettes, mowing (may re-grow from roots), or herbicide use before flowering. Biological agents are available.

IDENTIFICATION

FLOWER Daisy-like, occur at the end of the stem, yellow centre (disk florets), and white petals (ray florets). Sometimes the petals point downwards like a badminton birdie.

LEAVES Alternate, fern-like leaves are highly branched, glossy and scentless.

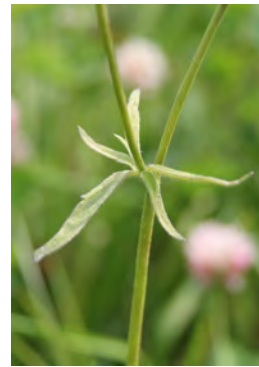
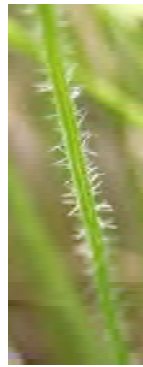
STEMS Branched, and can be up to 1m tall or as small as 5cm.

ROOT Fibrous roots.

SEED/FRUIT Very prolific seed producer.

TALL BUTTERCUP

Ranunculus acris Provincial Designation Noxious



Tall Buttercup is a member of the Ranunculaceae (Crowfoot) family, it was introduced from Europe, and is often found in moist pastures.

CONCERN Contains a bitter, irritating oil called protoanemonin that is toxic to livestock, is a symptom of overgrazed pastures.

SIMILAR SPECIES Sulfur Cinquefoil, looks similar to native buttercup and cinquefoil species.

LIFE CYCLE Creeping perennial.

CONTROL Herbicide control can be effective, maintain pasture health to prevent establishment.

IDENTIFICATION

FLOWER Glossy yellow flowers in clusters, up to 3cm in diameter with greenish center, 5 petals, 10-14mm long.

LEAVES Hairy, leaves are deeply lobed (nearly to the base) into three to five segments with each segment lobed again. Leaves decrease in size toward the top of the plant, uppermost leaves have three to four narrow segments.

STEMS Up to 100cm tall, branched in the upper part of the plant, sometimes hairy.

ROOT Hairy, fibrous, rhizomatous.

SEED/FRUIT Small, black-brown, each plant produces about 250 seeds, the seed clusters have a hook which can catch fur and clothing.

WHITE COCKLE

Silene latifolia ssp alba. Provincial Designation Noxious



White Cockle is a member of the Caryophyllaceae (Pink) family, it was introduced from Eurasia, other names include White Champion, and Champion.

CONCERN Often found in tame pasture, hayland and croplands causing economic losses.

LIFE CYCLE Annual, biennial, short lived perennial.

CONTROL Hand pick, bale hay or mow before flowering, herbicide control.

IDENTIFICATION

FLOWER White, fragrant, male flowers have a 5-10 veined calyx, female flowers have 20 veins (found on different plants),

which may be green or redish-brown, flowers are hairy and sometimes slightly sticky.

LEAVES Opposite, oblong, sometimes covered with slightly sticky hairs, prominent centre line. Lower leaves stalked, upper leaves stalkless.

STEMS Hairy, slightly sticky, 20-120cm tall, branched, swollen nodes.

ROOT Deep tap root.

SEED/FRUITS Aggressive seed producer (up to 25,000), seeds are small, kidney shaped, grey and bumpy. Fruit has 10 teeth. Viable for up to 20 years.

WOOLLY BURDOCK

Arctium tomentosum Provincial Designation Noxious



Woolly Burdock is a member of the Asteraceae (Sunflower) family and was introduced from Eurasia as a herbal plant. It can be found in disturbed areas.

CONCERN Seed pods (“burs”) can stick to clothing and animals.

SIMILAR SPECIES Great Burdock, Lesser Burdock.

LIFE CYCLE Biennial; basal leaves in the first year of growth, flowers in the second.

CONTROL Control by cutting at root line in the rosette stage before bolting and flowering or deadheading.

IDENTIFICATION

FLOWER Clusters of purple-pink flowers, flowers have hooked bracts (similar to Velcro). Floral bracts are very woolly.

LEAVES Large, heart shaped, woolly underneath, reduced in size upwards, alternately arranged on the stem.

STEMS Plant can be as large as 3m tall, stems are thick, hollow and hairy.

ROOT Taproot.

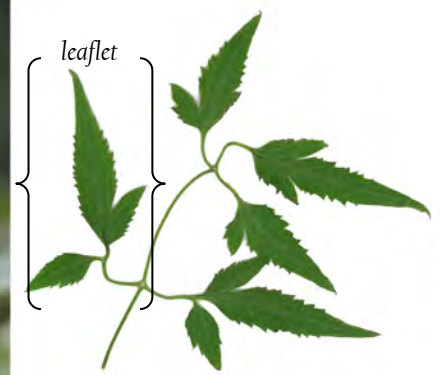
SEED/FRUITS Large seed pods with hooks attach themselves to clothing and fur, a mature plant can produce from 6,000 to 16,000 seeds.

YELLOW CLEMATIS

Clematis tangutica Provincial Designation Noxious



Sarah Schumacher, Wheatland County



Ron Bartholow, Wheatland County

Yellow Clematis is a member of the Ranunculaceae (Buttercup/Crowfoot) family and was introduced as an ornamental from Asia. It is also known as Golden Clematis, Virgins Bower or Helios. It is often found in urban areas growing on fences, parks, railway lines, and roadside ditches.

CONCERN Very aggressive and is tolerant of a wide range of conditions. Potential Fire hazard. Buyer be aware - may available as an ornamental plant.

LIFE CYCLE Perennial vine. It reproduces both by seed and creeping roots.

CONTROL Repeated hand pulling, or herbicide before flowering.

IDENTIFICATION

FLOWER Yellow, 4 petals, nodding, bell shaped. Flowers occur at the ends of stems or in leaf axils.

LEAVES Opposite, finely toothed margin, 5-7 leaflets, may be lobed, leaf tips are pointed and edges are coarsely toothed, slightly hairy on the underside. Deciduous.

STEMS Branched, 3 to 4 m long, leaves will grow on new and old woody stems.

ROOT Creeping root.

SEED/FRUITS Numerous seeds, long silky tail (5-6cm long), showy seed head.

YELLOW TOADFLAX

Linaria vulgaris Provincial Designation Noxious



* leaflets in between the main leaves and the stem

Yellow Toadflax is a member of the Scrophulariaceae (Figwort/Snapdragon) family and was introduced from Europe as an ornamental and is often called “butter and eggs” or snapdragon. It is found in roadside ditches and rangelands.

CONCERN The ability of this plant to form large colonies allows it to out compete other vegetation. Tolerant of a wide range of conditions up to the NWT.

SIMILAR SPECIES Dalmatian Toadflax, and Leafy Spurge before flowering.

LIFE CYCLE Perennial.

CONTROL Long term, herbicide (mid August), and repeated cultivation.

IDENTIFICATION

FLOWER Yellow, snapdragon-like flowers

with orange throat, 2.5 - 3cm long with downward spur/ tail (2.5 cm long), on short stalks in dense clusters at top of stem. Has a pleasant, sweet smell.

LEAVES Numerous, alternate, pale green to gray-green, 2 to 10cm long and narrow, smooth edges and slightly rubbery to touch. Smaller leaves are present in the axis of the stem and main leaf (not present on Leafy Spurge).

STEMS 15cm to 1m tall, not usually branched, but can have multiple stems.

ROOT Creeping rhizomes, can reproduce by root fragment.

SEED/FRUIT 2 compartment capsule, seeds are dark brown to black, less than 4cm in diameter, oval, flattened, with a papery circular wing.

GLOSSARY

Adventitious Roots Roots appearing in an unusual or unexpected place on a plant.

Alternate Referring to a leaf or bud arrangement in which there is one bud or one leaf at a node.

Annual A plant that lives one year or less. A winter annual germinates late one growing season and produces seed and dies during the next growing season.

Basal Refers to the base of the plant.

Biennial A plant that lives for two growing seasons, normally producing a basal rosette the first year and the flower and fruit the second year.

Bract A small leaf-like structure surrounding or enclosing the flower, usually below the petals.

Capsule Dry fruit with more than one seed.

Clasping Partly surrounding the stem.

Fibrous Roots Root system with many, fine, diffuse roots.

Flower Head A cluster of individual flowers in one compact unit, usually referring to compound flower of the Sunflower Family members.

Inflorescence One or more flowers which comprise the flowering part of the plant.

Lobed Divided less than one-half the distance to the base or mid-vein, usually rounded or obtuse.

Midrib The central axis or vein of the leaf blade or leaflet.

Noxious Weeds Invasive plant which a landowner has a legal responsibility to control, based on the Alberta Weed Act

Nutlet Hard, small, one-seeded fruit, usually referring to fruits of the Boraginaceae members.

Opposite Term applied to leaves or buds occurring in pairs at a node.

Palmate Leaflets, lobes, or veins which arise from the same point at the tip of the stalk.

Perennial Plants which live two or more years.

Pinnate Leaflets or lobes developing from several different points on the main leaf axis.

Plume A hair-like or featherlike structure, often on a seed.

Rhizomatous Having rhizomes.

Rhizome A horizontal stem growing beneath the ground which can develop roots or sprouts at the joints.

Rosette A cluster of leaves radiating out from the base of the plant.

Sepal One of the outermost flower structures, usually enclosing the other flower parts in the bud.

Spur Any long, narrow (sometimes tubular) extension of a petal.

Stolon A horizontal stem growing above the ground, which can develop roots or sprouts at the joints.

Taproot The primary descending root along the vertical axis of the plant which is larger than the branching roots.

RESOURCES

FOR MORE INFORMATION CONTACT YOUR LOCAL
COUNTY, AGRICULTURAL FIELDMAN, MUNICIPAL
WEED INSPECTOR OR BYLAW OFFICER

ALBERTA INVASIVE SPECIES COUNCIL
www.abinvasives.ca

BOOK: WEEDS OF CANADA
France Royer and Richard Dickinson, Lone Pine Publishing

BOOK: WEEDS OF NORTH AMERICA
France Royer and Richard Dickinson, Published by the University of Chicago Press

BOOK: WEEDS OF THE PRAIRIES
Alberta Agriculture and Forestry

BOOK: WEED SEEDLING GUIDE (2ND EDITION)
Alberta Agriculture and Forestry

ALBERTA ENVIRONMENT AND PARKS
Report Invasive Species to 1-855-336-BOAT (2628) or visit esrd.alberta.ca

ASSOCIATION OF ALBERTA AGRICULTURE FIELDMEN
www.aaaf.ab.ca
Download the AAAF Weed ID App for Apple or Android devices

PLAY.CLEAN.GO.
www.playcleango.org

INVASIVE.ORG
www.invasive.org

CENTRE FOR INVASIVE SPECIES & ECOSYSTEM HEALTH
www.bugwood.org
Wiki.bugwood.org

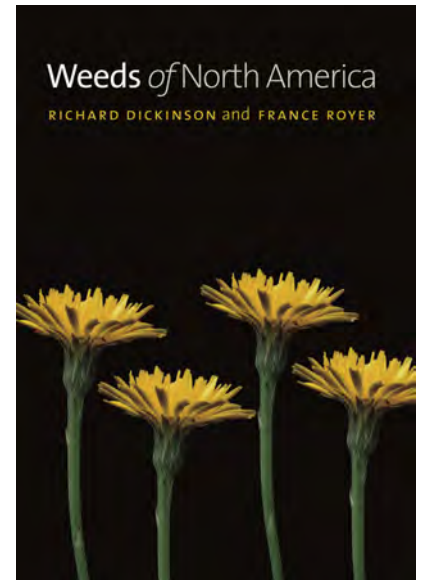
USDA NATIONAL INVASIVE SPECIES INFORMATION CENTRE
www.invasivespeciesinfo.gov

RESOURCES

WEEDS OF NORTH AMERICA

Encyclopedic in scope, the book is the first to cover North American weeds at every stage of growth. The book is organized by plant family, and more than five hundred species are featured. Each receives a two-page spread with images and text identification keys. Species are arranged within family alphabetically by scientific name, and entries include vital information on seed viability and germination requirements.

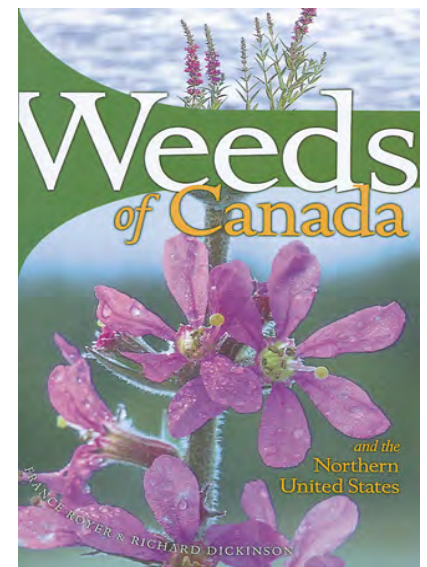
Authors: France Royer and Richard Dickinson
Published by the University of Chicago Press
*Can be purchased at bookstores and online



WEEDS OF CANADA AND THE NORTHERN UNITED STATES

This impressive, richly illustrated field guide identifies more than 150 noxious weeds and another 100 related species. Colour photographs show the weeds at five critical stages. Information on weed legislation by province and state is also listed. A first of its kind, this book is an extraordinary resource for a multitude of users, whether farmer, landscaper, weed specialist or gardener.

Authors Royer and Richard Dickinson
Published by Lone Pine Publishing
*Can be purchased at bookstores and online

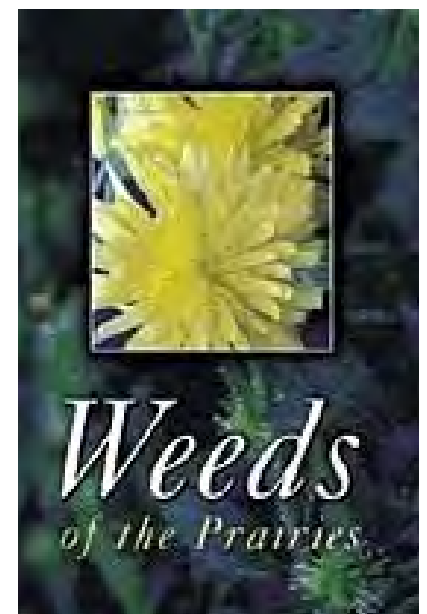


WEEDS OF THE PRAIRIES

This book is a comprehensive field guide to the common weeds across the Canadian prairie provinces. With 112 weeds detailed, this book gives you full color photos of the weeds at different growth stages. Weeds are color-coded by flower color for easy reference, and the full index lets you find the species you want by common, scientific or family name. Charts on life cycle and habitat provide valuable information while the maps help you see how widespread these weeds are. An opening section on weed identification gives tips on what to look for. And the handy coil binding lets you open the book out flat, so you can work with it in the field.

Alberta Agriculture Agdex 640-4 \$25.00

Copies of this book may be purchased at <http://www.agric.gov.ab.ca/> or Calling 1-800-292-5697 (toll-free in Canada) or (780) 427-0391



RESOURCES

WEED SEEDLING GUIDE (2ND EDITION)

Early identification of grass and broad-leaved weeds saves time and money. The second edition of this convenient, pocket-size booklet helps producers and others correctly identify weed seedlings. Proper identification allows you to take the appropriate measures to deal with weeds. This coil-bound publication features information on 62 broad-leaved weeds and 10 grasses. The weeds are organized by cotyledon (seed-leaf) shape to make identification easier, and the book has seed-leaf shape drawings and full-color weed seedling images, a table of commonly confused weeds and a helpful glossary of terms. 90 pages.

Agdex 640-9 \$10.00

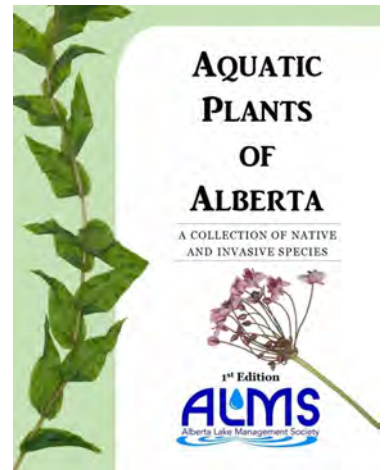
Copies of this book may be purchased by calling 780-427-0391 or at <http://www.agric.gov.ab.ca/>



AQUATIC PLANTS OF ALBERTA

The purpose of this guide is to use the specimens collected by ALMS in order to highlight the often overlooked biodiversity which exists in Alberta's aquatic plant community and to assist individuals in distinguishing between invasive species and their similar-looking native counterparts. To view an interactive online copy of the book visit <http://alms.ca/plant-id-book/> The interactive book plug-in is designed for desktop users, so if you're on a mobile device download the PDF version.

Waterproof, coil-bound, hard-copies of the book can be ordered for 25\$ plus 5\$ shipping and handling from <http://alms.ca/plant-id-book/>



ALBERTA INVASIVE SPECIES COUNCIL

<https://www.abinvasives.ca/fact-sheets>

Fact Sheets provide detailed information about individual invasive species including plants, animals, insects and aquatic organisms. The fact sheets contain information on impacts, origin, habitat, regulatory status, identification, prevention and control options.



OTHER WEEDS OF CONCERN

Whiplash Hawkweed	<i>Hieracium flagellare</i>
Kingdevil Hawkweed	<i>Hieracium floribundum</i>
Yellowdevil Hawkweed	<i>Hieracium glomeratum</i>
Smooth Hawkweed	<i>Hieracium laevigatum</i>
Common Hawkweed	<i>Hieracium lachenalii</i>
Spotted Hawkweed	<i>Hieracium maculatum</i>
Wall Hawkweed	<i>Hieracium murorum</i>
Tall Hawkweed Noxious	<i>Hieracium piloselloides</i>
Queendevil Hawkweed	<i>Hieracium praealtum</i>

European Hawkweed	<i>Hieracium sabaudum</i>
Showy Hawkweed	<i>Hieracium vulgatum</i>
African Rue	Zygophyllaceae
Alkali swainsonpea	<i>Sphaerophysa salsula</i>
Pale/European Swallow-wort	<i>Vincetoxicum rossicum</i>
Black Swallow-wort	<i>Vincetoxicum nigrum</i>
Queen Anne's Lace	<i>Daucus carota L.</i>
European Field Pansy	<i>Viola arvensis</i>
Persian Darnel	<i>Lolium persicum</i>



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For more information contact

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