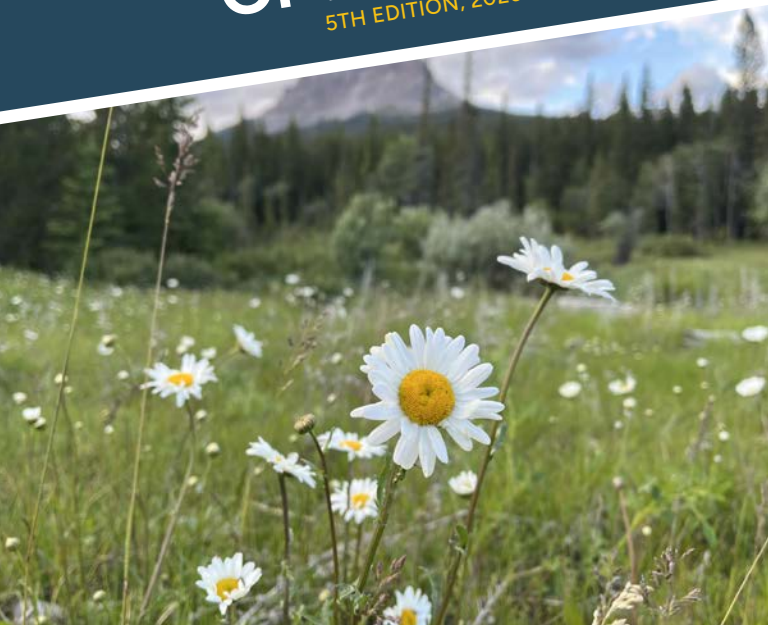
INVASIVE PLANTS OF ALBERTA

5TH EDITION, 2026



SALTCEDAR

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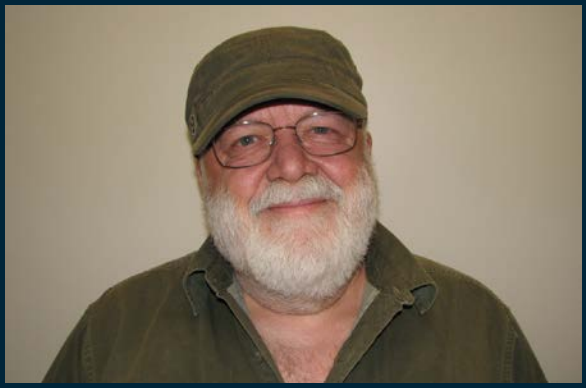

ACKNOWLEDGEMENTS

Ron Bartholow was the keen "Weed Man" of Wheatland County from 2001-2015. His efforts were instrumental in the production of this book. His passion, wit and knowledge will be fondly missed by all who knew him. Rest In Peace.

We sincerely recognize Wheatland County for developing the first three editions, which served as the foundation for all subsequent versions of the guide.

WHEATLAND COUNTY

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ORDERING INFORMATION

Contact communications@abinvasives.ca or visit abinvasives.ca for details on how to order print copies.

This Guide shall not be sold for profit.

SPOTTED KNAPWEED

INTRODUCTION

Invasive species such as invasive plants pose a major threat to Alberta's economy and environment. This *Invasive Plants of Alberta* guide is a field-friendly tool to assist with invasive plant identification through plant descriptions and habitat information for the 95 provincially regulated invasive plant species that are listed under the Alberta *Weed Control Act*, as well as select others that are currently unregulated but may require special management.

Invasive species are organisms that originate somewhere else (i.e., they are exotic) and cause harm in their new environment. Invasive species have the potential to dominate ecosystems through their various, often

aggressive, life strategies. These species are often well-adapted to access niches that were previously occupied by native species; thereby displacing the native species. Invasive species thrive in new environments because they are not kept in check by the habitat components that were present in their original habitat. These components include predators, parasites, other competitors for resources, soil and/or climactic conditions, etc. Not all exotic species become invasive outside of their native range but species that do can have serious impacts on our environment, economy, human and animal health.

Invasive species can drastically alter the natural ecosystems we strive to preserve by competing for limited resources, displacing native species and creating monocultures that provide little ecological value. Encroachment on existing niches by invasive plants can happen via a suite of different life strategies, such as high and/or rapid reproductive output, vegetative reproduction, early germination, allelopathy, etc. For example, there are many examples of very successful vegetative reproductive strategies found in invasive plants like purple loosestrife, where new plants can form vegetatively from a single root fragment, or like flowering rush, where creeping root systems create dense colonies. Invasive species can also reduce habitat and resources for wildlife, increase soil erosion and sedimentation into water systems and increase wildfire risk.

Once established, invasive plants require a significant amount of time, labour and money to manage, with some plants almost impossible to eradicate. Economic impacts from invasive plants are estimated to cost two billion dollars per year in Alberta. This includes economic losses for canola producers, beef cattle industry, crop and grass yields, and grazing potential for livestock. Although invasive plant management in the agricultural sector (e.g., pasture/rangelands, cultivation) accounts for the majority of the economic costs, other sectors, such as forestry, oil and

gas, municipalities, and conservation managers still incur a significant expense managing and controlling invasive plants.

Not only can invasive species impact our environment and economy, they can also harm humans, wildlife and livestock. Some plants are toxic to humans and livestock if consumed such as yellow starthistle or St John's-wort. Consumption may be less likely for an unfamiliar species; however, contact through removal or the identification process may cause injury. For example, the sap of giant hogweed can cause severe rashes, sensitivity to sunlight, blisters and even blindness.

LEAFY SPURGE

PREVENTING THE INTRODUCTION AND SPREAD OF INVASIVE SPECIES

Take action against invasive species in Alberta!

There are many ways to take action to help prevent the spread of invasive species in the province: Prevention is the most cost-effective method for avoiding the negative impacts of invasive species, as many invasive plants are very difficult to control once established.

WILDFLOWERS NOT WEEDS

Wildflowers are native plants that originated in Alberta alongside pollinators, birds, and wildlife, helping support healthy, resilient ecosystems.

Weeds, or invasive plants, however, are non-native species that spread aggressively, displace native vegetation, reduce biodiversity, and cause significant ecological and economic harm.

Looks can be deceiving. Many invasive plants are colourful and attractive, but they can quietly crowd out the diverse native wildflowers Alberta's ecosystems depend on. This loss affects biodiversity, including the more than 370 native bee species that rely on native plants for food. Not every pretty flower belongs here.

GROW ME INSTEAD

Make a difference in your community and commit to being plantwise! Learn how to prevent the spread of invasive plants from horticultural practices. Avoid pre-packaged wildflower mixes and choose suitable non-invasive alternatives for your garden bed or landscape to prevent future spread and serve to protect and preserve Alberta's natural environment. If you do come across an invasive plant, remove it before it flowers and properly dispose of it in your local landfill – never compost invasive plants!

PLAY CLEAN GO

Invasive species have many pathways of spread. For instance, weed seeds can be easily transferred to the soil from mud on boots or vehicles, some seeds even have special hooks to help them hitch a ride on clothing or pets. By learning how to inspect and clean your belongings and knowing the source of items purchased, we can begin to reduce the chance of inadvertently spreading species that could harm the areas we cherish. Whether walking, hiking, climbing, biking or riding your horse, it's important to make sure you don't accidently move invasive species from place to place. Come clean, leave clean, make sure to stay on designated trails and before leaving, inspect your belongings and remove any dirt, plants, seeds or bugs from yourself, your pets and your equipment.

WEED FREE FORAGE

Contaminated hay or straw is one way invasive plants are spread across the province, between provinces and around the world. The Alberta Certified Weed Free Forage program maintains the North American Invasive Species Management Association's international weed free forage standards which are designed to provide assurance to all participants that certified forage meets a minimum acceptable standard and limits the spread of invasive plant species through contaminated forage.

COMMON BURDOCK

EDDMapS

Early detection and rapid response is the key to preventing establishment of invasive species before it is too late. Report invasive species from the field using the power of your smartphone! The EDDMapS (Early Detection and Distribution Mapping System) app allows users to identify invasives species, view local and national distribution maps as well as track and report invasive species occurrences across Canada! Reports of invasive species, whether that be a plant, animal or even a disease, are uploaded, verified and sent to the local authority for follow-up.

EDDMapS
find • map • track

DON'T LET IT LOOSE!

Common aquarium, live food, and pond species can become invasive when released into the wild.

Releasing pond water, plants, fish, or other aquatic species—dead or alive—is illegal and can result in large fines or jail time.

Pour aquarium water onto dry land, and freeze plants before disposing of them in the garbage. Unwanted pets can be returned to pet stores, rehomed, or donated to schools and community organizations. After a pet passes, dispose of it in the garbage or bury it—never flush it.

CLEAN DRAIN DRY

Aquatic invasive species, such as zebra and quagga mussels and aquatic plants, can spread between waterbodies on boats, watercraft, and equipment that are not properly cleaned, drained, and dried.

Clean: Inspect and remove all plants, mud, and debris from watercraft, trailers, and gear at the access point. Rinse or pressure wash with hot water when possible, away from storm drains and waterways.

Drain: Empty all water from bait buckets, bilges, ballasts, live wells, coolers, and internal compartments before leaving the waterbody.

Dry: Allow all watercraft and equipment to dry completely between uses.

RUSSIAN KNAPWEED

CONTROLLING INVASIVE PLANTS

In order to effectively control invasive plant species, it is important to first understand how the plant reproduces, its life cycle and identification of plant at each stage in its life cycle. **Controlling invasive plant species infestations is a long-term commitment. One season or even several seasons of control is rarely adequate for many reasons, such as the plant's ecology or life strategies.**

Plant Reproductive Strategies

Most plants reproduce by seed, or vegetatively through various plant parts, such as creeping roots or both. Many plant species are able to reproduce using both strategies.

For plants that reproduce by seed alone, removal of the flower head and/or seeds is key to controlling it. To control invasive plants that reproduce vegetatively, removal of all parts of the plant (seeds, roots, stolons, etc.) is necessary.

Seed Bank

Sites where invasive plant species have been controlled must be monitored for years to control any new growth. Invasive plants that have gone to seed drop their seeds into the soil where the seeds remain as part of the 'seed bank' until the conditions are right for gemination. Some invasive plant species seeds are viable for only a couple of years, while others are viable for well over 100 years (e.g., common mullein).

FLOWERING RUSH

Plant Life Cycles

ANNUAL

Annual plants complete their entire life cycle, germination, growth, and reproduction, within a single year, typically reproducing by seed. They are classified as either summer or winter annuals.

Winter annuals germinate in the fall, overwinter, and resume growth in the spring, completing their life cycle before summer begins (e.g., downy brome). In contrast, summer annuals germinate in the spring and complete their life cycle by the end of the same growing season (e.g., Himalayan balsam).

BIENNIAL

Biennial plants complete their life cycle (germinate, grow, and reproduce) in two years. Most biennials produce a basal rosette (circle of leaves emanating from a central point, typically from a taproot) of leaves in the first year. In the second year, the plant sends up a flowering stalk, sets seed and dies. Examples of biennial invasive plant species include blueweed, common mullein, lesser burdock and black henbane.

PERENNIAL

Perennials plants live for three or more years and continue to grow and reproduce year after year. There are both simple perennials and creeping rooted perennials. Simple perennials feature tap roots and grow as individual plants (e.g., dandelion). Creeping rooted perennials feature many long horizontally oriented underground rhizomes radiating out from parent plants that are interconnected and capable of generating multiple new plant shoots (e.g., creeping bellflower).

Control Methods

There is no single best invasive species control method; invasive species managers that use a variety of control options often have the most success. One must consider the plant method of reproduction, life cycle, life cycle stage and the location of the invasive plant when implementing control. Effective control requires the development of a long-term plan utilizing several control options and monitoring for regrowth each year.

BIOLOGICAL CONTROL

Biological control, or biocontrol, is a method of introducing the natural predators of invasive plant species into the environment where they have become invasive to help restore ecological balance. Biocontrol does not usually eradicate the weed, but rather reduces its populations to manageable levels so that native and desirable vegetation can re-establish.

Insects are commonly used as biological control or 'biocontrol' agents due to their ability to establish and increase their population on their own once released at a site, making them a very low maintenance and cost-effective long-term option. Effective biocontrol agents die-back once the target plant has been eradicated Robust studies are conducted on all potential biocontrol agents prior to being released in Canada to ensure there are no impacts to non-target species. Therefore, biocontrol is safe to employ in your own management program. Please contact your local Agricultural Fieldman or the Alberta Invasive Species Council to find out how to order a biocontrol release for your invasive plant infestation.

The use of biocontrol can be effective for many invasive plant species, especially simple and creeping-rooted perennials, when used in conjunction with other control methods.

TARGETED GRAZING

Targeted grazing is a strategic tool that uses livestock to control invasive plants by focusing grazing pressure on specific species at the right time. By selecting appropriate animals (e.g., sheep, goats, or cattle) and grazing during vulnerable growth stages, targeted grazing can reduce plant vigour, limit flowering, and prevent seed production. **However, it is not effective for all species—some plants are unpalatable or toxic to livestock, and others may require different control methods.** It is most effective when applied intensively and repeatedly over multiple years, and often works best when combined with other control methods such as herbicides or mechanical treatments. While not a quick fix, targeted grazing can be a cost-effective and environmentally friendly approach that supports long-term vegetation management and restoration goals.

MECHANICAL CONTROL

HAND-PULLING/DIGGING

Hand-pulling is very effective in controlling invasive plants that reproduce only by seed. For creeping rooted perennials, hand-pulling will remove the seed source, but regrowth can occur from root fragments that remain in the soil. Hand-pulling is most useful on very small or new infestations and with consistent, repeated use. **Always wear gloves and wash hands to avoid skin irritation from any secretions exuded by the plant or physical injury from spines or thorns.** Many invasive plants can cause irritation or photosensitivity if in contact with skin or eyes. It is also important to properly dispose of invasive plants as flower heads, seeds, root fragments, and stolons may retain the ability to reproduce. This is also a reason to avoid composting invasive plants. Invasive plants should be double bagged and brought to the landfill – check with your local municipality for designated invasive plant disposal areas. Never compost invasive plants. Many invasive plant species that are hand pulled when the flower is in bloom will use remaining energy reserves to set seed. Always bag and landfill flowers of invasive plant species even when there is no indication of seed set at the time of pulling.

Hand-pulling can be effective for control of annuals, biennials, simple perennials.

MOWING

Timely, regular mowing can be effective in reducing seed formation if done regularly and with correct timing. Mowing should be done frequently and multiple times a season, ensuring it is done in the budding before flowering stage, as mowing past this stage may lead to seed spread (see hand pulling section above). It is also critical that all mowing equipment is thoroughly cleaned before being transported to avoid spreading the infestation.

Mowing may be effective for control of annuals, biennials, and perennials if carried out as described above, particularly

when completed at the appropriate plant growth stage and when combined with other control strategies. An integrated approach is particularly important for creeping perennials, as mowing alone may lead to increased root growth and spread of creeping perennial infestations.

CULTIVATION

Cultivation is the practice of disturbing the soil to control an infestation of weeds by destroying the roots. This control method is mainly used in agriculture, and more effective if repeated multiple times over a season or at least once a year for several years. This method requires accurate timing, because if it is timed improperly (e.g., when weeds are going to seed), it can effectively spread the infestation. This method is also not effective on invasive plant species that reproduce vegetatively via root fragments, as cultivation can multiply pieces and spread them further. Cultivation can be effective on infestations with shallow and non-reproductive root systems, and to inhibit seed production and growth prior to planting a crop. Always ensure equipment is cleaned thoroughly of soil, plant and root fragments to avoid spreading the infestation to other locations.

Cultivation can be effective for control of annuals and biennials in field crops prior to seed-set. Cultivation may lead to the increased spread of an infestation if dealing with species that reproduce by root, stem or leaf fragments. Cultivation should only be used in certain areas, such as crop fields. Cultivation may increase the risk of soil erosion by wind and water and should always be used with caution.

HERBICIDE

Herbicide can be an effective method of invasive plant control with proper use and timing (for example, during early active growth), especially when used in conjunction with other control methods. Different herbicides affect the plant's system in different ways depending on how they are applied and taken up by the plant. Herbicides also have varying degrees of mobility in soil, residual effects (how long they provide control for/remain in the environment), and efficacy on certain plants. The effectiveness of herbicide control is affected by application rate, mode of action of the herbicide (how it enters the plant tissues), and timing of treatment. Many herbicides cannot be used near an open waterbody and may require Alberta-specific applicator certification and permits. Approvals are required for herbicide use within 30 metres of a waterbody. **Always check product labels to ensure the herbicide is registered for use on the target plant in Canada by the Pest Management Regulatory Agency. Always read and follow label directions for optimal effectiveness and safe use.** Consult your local professional (Agricultural Fieldman or Certified Pesticide Dispenser) for more information.

Herbicides can be effective for control of annuals, biennials, and perennials when applied according to the label directions, particularly when applied at the appropriate plant growth stage and when combined with other control strategies.

It's important to note that there are exceptions to every rule. If you are interested in learning more about controlling invasive plant species, please reach out to your municipal Agricultural Fieldman, Weed Inspector in your town or city, or contact the Alberta Invasive Species Council.

Species Prevalence

Some invasive species are already present and widespread in Alberta (e.g., Canada thistle, ox-eye daisy, common tansy, etc.), while others have been reported in only a few locations or are not known to be present in Alberta. To provide a general idea of the spatial extent of invasive plant species in Alberta, each has been assigned into one of the following prevalence categories. Note that invasive species distributions will change over time and these categories were assigned to the best of our knowledge at the time of publishing (2026).

Not known to be present

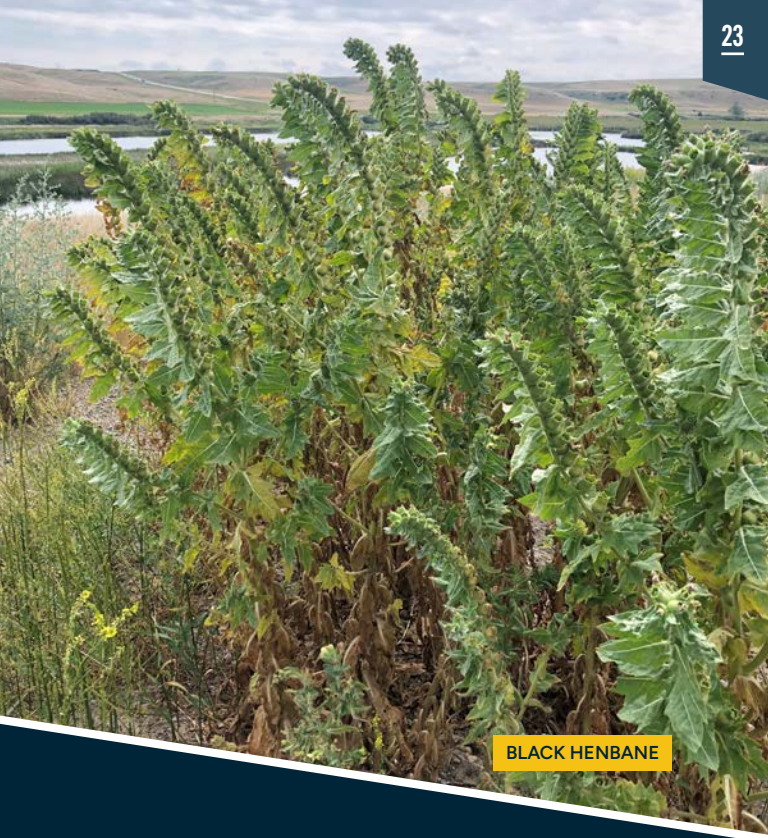
Regionally common

Isolated

Widespread

Super Widespread

FIELD SCABIOUS



BLACK HENBANE

HABITAT PREFERENCES

Some invasive species prefer specific habitat types and are more likely to be found in certain habitats than others. To provide a general idea of invasive species habitat preferences, each species has been assigned one or more habitat types that they are known to inhabit. Note these are general associations and some species will be found outside of the habitats indicated in the guide.

HABITAT ICON LEGENDS:

Disturbed areas
Includes roadsides, gravel pits, industrial areas, ditches, human or animal trails, waste areas

Crop and pasture land
Includes cropland, farmland, pastures

Grassland
Includes grasslands, parks, natural areas, open areas, rangeland

Forests
Includes forest open areas, forest edges, understory, parks

Aquatic areas
Includes waterbodies, streams, rivers, ponds, forest wet areas, open water, lakes, marshes, sloughs, irrigation canals, marshes, riparian areas

Urban areas
Includes ornamental beds, gardens, hedges, ornamental water features

SCENTLESS CHAMOMILE

THE ALBERTA WEED CONTROL ACT & REGULATION

Prohibited Noxious Weed

Means a plant designated in accordance with the *Weed Control Regulation* as a Prohibited Noxious weed and refers to the entire plant, including 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. Additionally, municipalities have the authority to elevate a species to Prohibited Noxious status within their jurisdiction through local bylaws.

Under the *Weed Control Act* a landowner has a responsibility to **destroy a prohibited noxious weed**.

Noxious Weed

Means a plant designated in accordance with the *Weed Control Regulation* as a Noxious Weed and refers to the entire plant including 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. Additionally, municipalities have the authority to elevate a species to Noxious status within their jurisdiction through local bylaws.

Under the *Weed Control Act* a landowner has a responsibility to **control a noxious weed**.

Weed Inspectors

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

2026 WEED CONTROL REGULATION UPDATES

The *Weed Control Regulation* is periodically updated to reflect current science, management realities, and emerging risks. The 2026 update includes revisions to the regulated species list based on formal risk assessments that consider multiple factors, including invasiveness, pathways of spread, available control tools, impacts to animal and human health, and the feasibility of long-term management.

As part of this update, several species were added to the regulated list, and some classifications were adjusted (e.g., from prohibited noxious to noxious) to better align with their distribution and management potential. Two species, creeping bellflower and perennial sowthistle, were removed from the provincial list due to their widespread distribution and the limited effectiveness of provincial regulation as a management tool.

Deregulation does not indicate that a species is no longer a concern. Many invasive plants remain harmful and should continue to be managed, and municipalities retain the authority to regulate species through local bylaws where appropriate.

The *Weed Control Act* and *Weed Control Regulation* are available online at the King's Printer website.

Contacts

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

- Alberta Invasive Species Council
  abinvasives.ca
- Your local county or municipal Agricultural Fieldman or Weed Inspector
  www.aaaf.ab.ca
- Aquatic Invasive Species 24/7 Hotline:
  1-855-336-BOAT (2628)
- Alberta Native Plant Council
  www.anpc.ab.ca
- Alberta Ag-Info Centre Phone:
  310-FARM (3276)

NODDING THISTLE

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Great Burdock

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


70

Lesser Burdock

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 on very short stalks, hooked bracts below the flower. Floral bracts are slightly woolly.


71

Woolly Burdock

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

Hawkweeds

About Invasive Hawkweeds in Alberta

Hawkweeds in Alberta fall into two groups: *Pilosella* (invasive) and *Hieracium* (both native and invasive). In the field, invasive *Pilosella* species can be identified by the type and density of hairs on leaves and stems, one of the most reliable visual features. *Pilosella* species typically form basal rosettes and have few, if any, well-developed stem leaves, in contrast to *Hieracium* species, which usually have well-developed leaves along the stem.

Pilosella species are listed as noxious, while invasive *Hieracium* species are prohibited noxious under Alberta's *Weed Control Regulation*. Alberta also has three native hawkweeds: white, woolly, and narrow-leaved hawkweed, all in the *Hieracium* genus as well.

Hawkweed Tip:

Hieracium → many well-developed stem leaves - no invasive species confirmed to be established

Pilosella → few or no stem leaves (often just 2–3 near the base), several species regionally common

If you're unsure about identification, contact the Alberta Invasive Species Council for support.

QUEENDEVIL HAWKWEED

Hawkweeds

92

Orange Hawkweed

Leaves are covered in long white hairs. Difficult to differentiate from meadow hawkweed prior to flowering. Stems have long white and long black hairs. **Orange, dandelion-like flower heads** arranged in compact, round-topped clusters. Stolons usually present.

90

Meadow Hawkweed

Leaves are covered in long white hairs. Difficult to differentiate from orange hawkweed prior to flowering. Stems have long white and long black hairs. **Yellow, dandelion-like flower** heads arranged in compact, flat clusters. Stolons may be present.

100

Yellowdevil Hawkweed

Leaves have short white hairs and star-shaped hairs creating a rough feel to the leaves. Stems have black hairs and small star-shaped hairs. Stolons usually not present.

Hawkweeds

Tall Hawkweed

Leaves are almost entirely hairless except for long white hairs on underside of leaf along midvein. Leaf margins may exhibit sparse long white hairs. Sparse simple hairs on the stem. Stem has a waxy feel. Stolons usually not present.

Queendevil Hawkweed

Basal leaves are long and narrow to oval or egg-shaped, with mostly smooth edges (sometimes very finely toothed), and usually narrow gradually where they attach to the stem. Upper surfaces are smooth and hairless, while **lower surfaces have variable amounts of star-shaped hairs** and longer simple hairs mostly concentrated along the mid-vein. Similar to Tall hawkweed but with **stolons**.

Mouse-Ear Hawkweed

Solitary flower heads with red stripes on underside of petals. Short leaves, long hairs on top of leaf and mat of hairs below. Stolons usually present.

Hawkweeds

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95 Smooth Hawkweed
Hieracium laevigatum

96 Spotted Hawkweed
Hieracium maculatum

98 Wall Hawkweed
Hieracium murorum

99 Whiplash Hawkweed
Pilosella flagellaris

Knapweeds

Black Knapweed

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

Brown Knapweed

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

Hybrid Knapweed

May have features of both Spotted Knapweed and Diffuse Knapweed.

Meadow Knapweed

May have features of both Black Knapweed and Brown Knapweed.

Diffuse Knapweed

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

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.

Knapweeds

Spotted Knapweed

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

Squarrose Knapweed

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.

Tyrol Knapweed

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

Bighead Knapweed

One large yellow flower head per branch tip. Bracts are fringed and thin with papery edges.

Thistles


151

Bull Thistle

Spine-tipped, narrow bracts, droplet-shaped flower head, branched stem, hairy leaves.



152

Canada Thistle

Prickly stems/leaves, bracts have weak spines, stem branched, flowers less than 2.5cm.


153

Marsh Thistle

Purple bracts spineless, long sticky hairs on stem and leaves, unbranched stem.

Thistles

154

Nodding Thistle

Large nodding flower head, dark green leaf with white midrib, spiny, fine woolly hairstip, long hairs above and below leaf, stolons present.

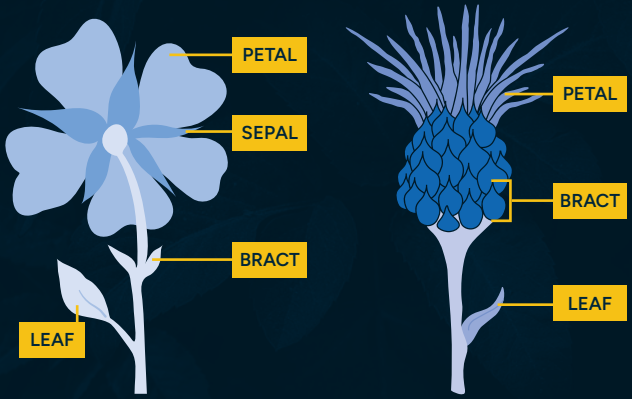
155

Plumeless Thistle

Smaller flower than nodding thistle, tall, branched, spiny, leaves winged or stalkless.

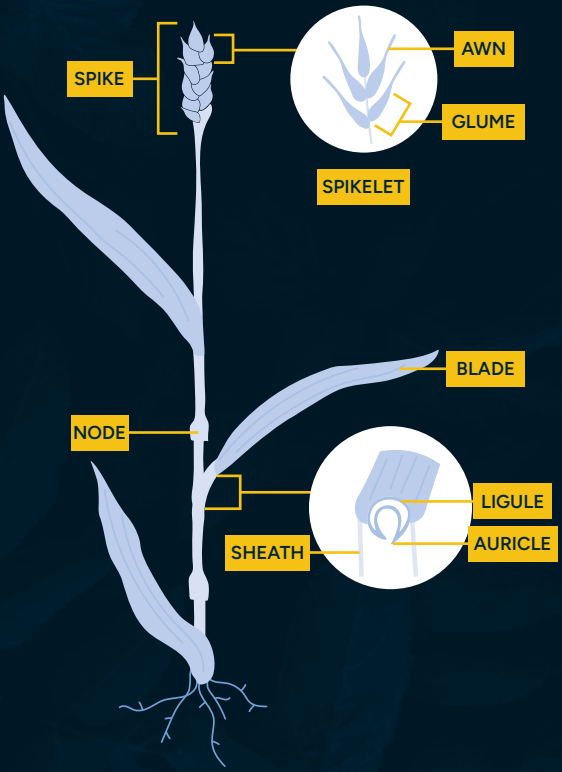
PLANT DIAGRAMS

FLOWER DIAGRAM



LEAF ARRANGEMENT

GRASS DIAGRAM



WEED CONTROL ACT DESIGNATION: **UNREGULATED**

Absinthe Wormwood *(Artemisia absinthium)*

Native to Europe and Asia, absinthe wormwood (absinthe, madderwort) is a perennial in the Asteraceae (Sunflower) family.

Identification

Yellow, **nodding, button-like flowers** with few to no petals arranged in loosely branched clusters on short stalks; bracts are oval, gray-green with silky hairs. Leaves are pinnate, deeply lobed; strong odour similar to sage. Stems are up to 60 cm tall, may be multiple stems per plant, sometimes woody near the base. **Leaves and stems are pale gray-green from dense cover of fine hairs**.

Habitat

Prefers dry to moist areas, loamy, gravel, clay or disturbed soils in full sun, but can tolerate some shade.

Control

Reproduces by seed. Hand-pulling, repeated cultivation or herbicide.

Similar Species

Non-native: African rue *(Peganum harmala)*
Native: Non-shrub, pinnate-leaved, native sage/wormwood species (*Artemisia* spp.). Absinthe wormwood is often taller with egg-shaped pinnate leaves.

African Rue *(Peganum harmala)*

Native to the desert areas of northern Africa and southern Asia, African rue is a bushy perennial in the Nitrariaceae (Nitre-bush) family. All parts of the plant are poisonous to humans and livestock.

Identification

White or **yellowish-white** flowers with 5 petals, found at the tip of stalks. Numerous stems, plants may grow 25-60 cm tall. **Leaves are finely divided** into many thin, thread-like segments, alternate, bright green, and about 4–8 cm long. Seeds are blackish-brown, triangular, about 2 mm, and the capsules are 3 chambered. Roots are deep and widely spreading.

Habitat

Inhabits arid and semi-arid environments, both hot and cold, and tolerates hard, sandy, and highly saline soils.

Control

Reproduces by seed and creeping roots. Aggressive, repeated hand-pulling small infestations may be effective. Mowing and burning are ineffective.

Similar Species

Non-native: Absinthe wormwood (*Artemisia absinthium*)
Native: None

Alkali Swainsonpea *(Sphaerophysa salsula)*

Native to Asia, alkali swainsonpea is a long-lived perennial from the Fabaceae (Pea) family.

Identification

Flowers are initially colored red to pinky-brown, drying to violet or purplish. Leaves are compound with 11–21 small oval leaflets covered in fine white hairs along the edges. Stems are upright to slightly spreading, branching, and typically growing 30–60 cm tall, rarely up to 130 cm. Branches have ridges along their length and may have few to many flat hairs. Mature plants may look herb-like or shrubby. Extensive, creeping roots capable of sprouting new plants.

Habitat

Prefers well-drained soils and can tolerate alkaline conditions.

Control

Reproduces by seed and creeping roots. Chemical control options are limited, mowing may prevent seed production.

Similar Species

Non-native: Alfalfa (*Medicago sativa*), sweetclovers (*Melilotus* spp.)
Native: Milk vetches (*Astragalus* ssp.), locoweeds (*Oxytropis* spp.)

Amaranth, Palmer *(Amaranthus palmeri)*

Native to northwestern Mexico and the southwestern United States, Palmer amaranth is an annual broadleaf species in the Amaranth (Pigweed) family, Palmer amaranth is now recognized as one of the most economically damaging herbicide-resistant weeds in agriculture.

Identification

Leaves are rounded in young plants and become **oval to diamond-shaped with pointed tips** as they mature, sometimes ending in a tiny spine. The **leaf stalk is longer than the leaf blade**. **Flowers are very small and form long, dense spikes** at the tips of stems. Plants are male or female; male spikes feel softer than the female's.

Habitat

Grows in many soil types and moisture conditions. It can grow in full sun to dense shade, but shaded plants may not produce seeds until they receive more direct light.

Control

Reproduces by seed. Hand-pulling female plants may reduce seed production, herbicide or mechanical control may be effective. Known herbicide resistance.

Similar Species

Non-native: Redroot pigweed (*Amaranthus retroflexus*), green pigweed (*Amaranthus powellii*) and tall waterhemp (*Amaranthus tuberculatus*) have leaf stalks shorter than their leaf blades.
Native: None.

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Autumn Olive *(Elaeagnus umbellata)*

Native to Asia, autumn olive (Japanese silverberry) is a perennial shrub in the Elaeagnaceae (Oleaster) family.

Identification

Flowers are white to light yellow and tube or bell-shaped with 4 sepals. Leaves alternately arranged on stem, silver-green colour, simple, wavy leaf edges, scales on the underside, thorns can grow to 2.5 cm long. Multiple stems, up to 6 m tall. Root woody and nitrogen-fixing. Fruit is small, fleshy, red, egg-shaped with scales; up to 200,000 seeds per year.

Habitat

Tolerant of a wide range of habitats.

Not known to be present

Control

Reproduces by seed, root-crown sprouting and suckering. Hand-pull seedlings.

Similar Species

Non-native: Russian olive *(Elaeagnus angustifolia)*
Native: Thorny buffaloberry *(Shepherdia argentea)*, wolf willow (silverberry) *(Elaeagnus commutata)*

Baby's Breath, Common *(Gypsophila paniculata)*

Native to Europe, common baby's breath (maiden's-breath) is a perennial in the Caryophyllaceae (Carnation) family. Buyer beware, this plant remains a common ornamental species in floral displays.

Identification

Numerous small white flowers with 5 petals, star-shaped, sweet scent. Leaves are opposite, narrow and 3-10 cm long, prominent midvein; mainly on upper parts of stems. Stems are bluish-green, up to 1 m tall with numerous branches; may tumble at maturity. Large woody root up to 4 m deep. Up to 14,000 seeds per plant.

Habitat

Prefers dry, coarse to sandy soils in full sun.

Regionally common

Control

Reproduces by seed. Hand-pulling, cultivation or herbicide.

Similar Species

Non-native: Perennial pepper-weed *(Lepidium latifolium)*, annual baby's breath *(Gypsophila elegans)*, pink baby's breath *(G. scorzonerifolia)*

Native: Native pepper-grass *(Lepidium* spp.*)* often smaller and have flowers with 4 petals

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Balsam, Himalayan *(Impatiens glandulifera)*

Native to India, Himalayan balsam (policeman's helmet, touch-me-not) is an annual in the Balsaminaceae (Impatiens) family.

Identification

Irregular, pea-like, pink-purple-white flowers have 5 petals. Leaves are simple, oblong, large with serrated edges; oppositely arranged on the stem in whorls of 3. Red to purple tinged stems are large, hollow, 4-sided (square), and grow up to 120 cm. Shallow and fibrous roots. Seed pods explode when ripe, shooting water-buoyant seeds up to 10 m away; up to 4,000 seeds.

Habitat

Thrives in nutrient rich soils. Tolerant of partial shade, but is frost and drought intolerant.

Regionally common

Control

Reproduces by seed. Hand-pulling.

Similar Species

Non-native: None

Native: Purple monkeyflower *(Mimulus lewisii)*, Western touch-me-not *(Impatiens noli-tangere)*, which has orange flowers

Barberry, Common *(Berberis vulgaris)*

Native to Europe and Asia, common barberry is a deciduous shrub in the Berberidaceae (Barberry) family. It is an alternate host for stem rust fungus which affects wheat crops.

Identification

Yellow flowers occur in a hanging cluster, 10-20 stalked flowers. Leaves alternately arranged in clusters, spines may occur at leaf base, leaf margins with finely toothed edges, dull green colour, 2-5 cm long. Stems woody, 1-3 m tall, yellow-grey colour with **sharp spines** that occur in groups of 1-3. Creeping, woody root. Fruits are clusters of red berries; individual berries are 1 cm long with 1-3 black seeds per berry.

Habitat

Tolerant of a wide range of conditions.

Isolated

Control

Reproduces by seed, creeping roots and root fragments. Hand-pull and herbicide.

Similar Species

Non-native: Japanese barberry *(Berberis thunbergii)*
Native: None

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Bartsia, Red *(Odontites vulgaris)*

Native to Europe, red bartsia is an annual in the Orobanchaceae (Broomrape) family. It is unpalatable to livestock, and may be parasitic to other plant species.

Identification

Reddish-purple snapdragon-like, tube-shaped flower with fused sepals. Leaves are narrow, hairy with a toothed edge and oppositely arranged. Stem is erect, branching, 15-30 cm tall, and hairy. Taproot. Up to 1,400 seeds per plant.

Habitat

Thrives in a variety of soil types.

Not known to be present

Control

Reproduces by seed. Hand-pulling or cultivation before seed set.

Similar Species

None – unique in appearance

Bellflower, Creeping *(Campanula rapunculoides)*

Native to Europe, creeping bellflower (creeping campanula) is a creeping perennial in the Campanulaceae (Bellflower) family.

Identification

Purple-blue, bell-shaped flowers are nodding with 5 fused petals. Leaves are alternately arranged, heart-shaped, coarsely toothed with pointed tip; lower leaves with longer leaf stalk, upper leaves little to no leaf stalk. Stems unbranched, hairy, grow up to 100 cm tall. Thick creeping roots. Up to 15,000 seeds per plant.

Habitat

Prefers light sandy to medium loamy, well-drained soils that are pH neutral. It is a common lawn weed and is difficult to eradicate.

Widespread

Control

Reproduces by seed and creeping roots. Hand-pulling, digging, and smothering with tarps or cardboard.

Similar Species

Non-native: Globe bellflower *(Campanula glomerata)*
Native: Native harebells (*Campanula rotundifolia*) which are usually much shorter with smaller flowers and no creeping roots

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Bindweed, Field *(Convolvulus arvensis)*

Native to Africa, Asia and Europe, field bindweed (devil's vine, wild morning glory) is a perennial in the Convolvulaceae (Morning Glory) family. It is mildly toxic to livestock.

Identification

White to pinkish flowers are 2.5 cm in diameter, funnel-shaped with small bracts below the flowers; borne singly or in pairs. Leaves are alternate, arrowhead-shaped with few hairs or hairless. Stems up to 3 m long, trailing or climbing, often with a slight twist and numerous shoots. Deep taproot with extensive creeping roots. Up to 500 seeds per plant.

Habitat

Tolerates a wide range of conditions but is shade intolerant.

Regionally common

Control

Reproduces by seed and creeping roots. Hand-pull or herbicides before seed set.

Similar Species

Non-native: Wild buckwheat *(Fallopia convolvulus)* distinguished by a dry sheath around each stem node
Native: Hedge bindweed *(Calystegia sepium)* distinguished by 'larger flowers'

Blueweed *(Echium vulgare)*

Native to Europe, blueweed (viper's bugloss) is a biennial in the Boraginaceae (Borage) family.

Identification Numerous blue, purple or pink funnel-shaped flowers 1-2 cm long with 5 fused petals and short flower stems alternately arranged on stalks; 4 stamens protrude from flower centre. Basal rosette produced in first stage of growth, flowering stem in second. Leaves covered with stiff glandular hairs and dark flecks on the undersides. Basal leaves are narrow with leaf stalks; stem leaves alternate, smaller and stalkless. Stems up to 30-90 cm tall and covered in short, stiff glandular hairs; one to several stems per plant. Deep, black taproot with fibrous lateral roots. Up to 2,800 seeds per plant.

Habitat Prefers warm gravel or sand banks. Requires well drained soils and does not tolerate shade.

Regionally common

Control Reproduces by seed. Hand-pulling entire plant or removal of flowering stalk. Herbicide at the rosette stage.

Similar Species

Non-native: Paterson's curse *(Echium plantagineum)*, differentiated by the number of stamens, which is 2 for Paterson's curse and 4 for blueweed.
Native: None

Brome, Downy *(Bromus tectorum)*

Native to the Mediterranean, downy brome (cheatgrass, downy chess) is a winter annual in the Poaceae (Grass) family.

Identification

Flowering spike droops to one side, **reddish-purple at maturity**, 7-20 cm long; awns are reddish, twisted, long and covered with soft hairs. Leaf blades are long, 2-4 mm wide and covered with soft hairs; ligule is 1-3 mm long and toothed. Stems are covered in soft hairs and up to 5-60 cm tall dependent on moisture availability. Fibrous roots up to 1.5 m deep. Up to 5,000 seeds per plant.

Habitat

Prefers cool, semi-arid environments with coarse sandy or loamy soils on sunny, south/west facing slopes.

Control

Reproduces by seed. Hand-pulling, early spring grazing or herbicide.

Similar Species

Non-native: Japanese brome *(Bromus japonicus)*, field brome *(B. squarrosus)*

Native: May resemble native brome grasses before seed-set, which are perennial rather than annual.

Brome, Japanese *(Bromus japonicus)*

Native to central Europe, Pakistan and eastern Japan, Japanese brome (Japanese chess) is a winter annual in the Poaceae (Grass) family.

Identification

Flowering spike droops to one side, **brown and twisted at maturity**; awns are tan, long (shorter than downy brome). Leaf blades are flat, 2-4 mm wide and covered with soft white hairs; ligule is 1.5 mm long, hairy and toothed. Stems are covered in soft hairs, up to 90 cm tall and bent at the base with swollen nodes. Fibrous, shallow roots. **Flattened seeds.**

Habitat

Prefers semi-moist environments with sandy or clay soils and good litter cover; intolerant of alkaline soils.

Control

Reproduces by seed. Hand-pulling or herbicide.

Similar Species

Non-native: Downy brome *(Bromus tectorum)*, field brome *(B. squarrosus)*

Native: May resemble native brome grasses before seed-set, which are perennial rather than annual

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Buckthorn, Common *(Rhamnus cathartica)*

Native to Eurasia, common buckthorn is a deciduous shrub in the Rhamnaceae (Buckthorn) family.

Identification

Yellow to yellow-green flowers are small, inconspicuous with 4 petals. Male and female flowers on separate plants; male flowers are clustered in leaf axils and female flowers in clusters of 2-15. Leaves dull-to-dark green, glossy, oval-shaped with pointed tip, 3-4 deeply veined, mostly opposite, sometimes alternate near branch tips; **leaves remain green into late fall and winter**. Branches opposite or alternate and often **end in thorns**. Woody trunk up to 25 cm in diameter and up to 7 m tall, grey-brown bark, yellow beneath bark, rough texture. Woody root. Fruits round and black with 3-4 seeds.

Habitat

Tolerant of a wide range of conditions.

Control

Reproduces by seed, roots and cut stems will re-sprout. Repeated hand-pulling, prescribed burns or herbicide.

Similar Species

Non-native: None
Native: Chokecherry *(Prunus virginiana)*, alder species *(Alnus* spp.*)*

Burdock, Great *(Arctium lappa)*

Native to temperate areas of Eurasia, great burdock is a biennial in the Asteraceae (Sunflower) family.

Identification

Purple-pink, rarely white, flower head surrounded by **burrs** that occur in branched clusters at stem ends; **flower heads are more than 2.5 cm across**. Basal rosette produced in first year, flowering stem in second. Large leaves measuring 25-80 cm are alternately arranged, heart-shaped, woolly underneath; **lower leaf stalks are solid**. Stems are slightly grooved, sparsely hairy and up to 3 m tall. Fleshy, deep taproot. **Burr-like seed pods**; up to 16,000 seeds per plant.

Habitat

Prefers moist soil but grows in fertile or clay soils in full sun.

Control

Reproduces by seed. Hand-pull, digging or herbicide. Cut or dig mature plants before seed set.

Similar Species

Non-native: Lesser burdock *(Arctium minus)*, wooly burdock *(A. tomentosum)*

Native: Arrow-leaved coltsfoot *(Petasites sagittatus)* at small leaf stages

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Burdock, Lesser *(Arctium minus)*

Native to Eurasia, lesser burdock (common burdock) is a biennial in the Asteraceae (Sunflower) family. The prickly, hooked bracts were the inspiration for the invention of Velcro.

Identification

Purple-pink flower head surrounded by **burrs** that occur in branched clusters at stem ends; flower heads less than 2.5 cm across. Basal rosette produced in first stage of growth, flowering stem in second. Large leaves (but smaller than other burdocks) are alternately arranged, heart-shaped, woolly underneath; **lower leaf stalks are hollow**. Stems are hollow, slightly grooved with reddish tinge and up to 3 m tall. Fleshy, deep taproot. **Burr-like seed pods**; up to 16,000 per plant.

Habitat

Tolerates a range of soil conditions but prefers full sun to partial shade.

Control

Reproduces by seed. Hand-pulling, herbicide, digging or cultivating prior to seed set.

Similar Species

Non-native: Great burdock *(Arctium lappa)* and wooly burdock *(A. tomentosum)*. Leaves and burrs of lesser burdock are smaller than those of other invasive burdocks.
Native: None

Burdock, Woolly *(Arctium tomentosum)*

Native to Eurasia, woolly burdock is a biennial in the Asteraceae (Sunflower) family.

Identification

Purple-pink flower head surrounded by **burrs covered in cob web-like hairs** occur in branched cluster at stem ends; flower heads less than 2.5 cm across. Basal rosette produced in first stage of growth, flowering stem in second. Large leaves are alternately arranged, heart-shaped, woolly underneath; lower leaf stalks are both hollow and solid. Stems are hairy, slightly grooved with purplish tinge and up to 3 m tall. Fleshy, deep taproot. **Burr-like seed pods**; up to 16,000 seeds per plant.

Habitat

Tolerates a range of soil conditions but prefers moist, loamy soils with good drainage in full sun.

Regionally common

Control

Reproduces by seed. Herbicide, hand-pull or dig rosettes. Cut or dig mature plants before seed set.

Similar Species

Non-native: Great burdock *(Arctium lappa)* and lesser burdock *(A. minus)* **Native:** None

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Buttercup, Tall *(Ranunculus acris)*

Native to Europe, tall buttercup (meadow buttercup) is a perennial in the Ranunculaceae (Crowfoot) family. It contains a bitter oil that is toxic to livestock.

Identification Yellow flowers with 5 waxy, **almost lacquered**, petals sit on long branched stalks, 5 small, green sepals; flowers up to 3 cm. Lower leaves are jagged, long-stalked, deeply divided into 3-5 main segments; upper leaves are smaller, hairy, stalkless and divided into 3-4 narrow segments. Stems grow up to 1 m, smooth, hollow, sometimes hairy, leafy at base and branched above. Fibrous roots. Spherical, hooked seed pod cluster; up to 250 seeds per plant.

Habitat Prefers moist to well-drained humus soils but tolerates gravelly, coarse soils with sufficient moisture.

Control Reproduces by seed (mainly) and rhizomes. Cultivation and reseeding with an annual crop, mowing or hand-pulling before seed set, as long as it is timed properly to avoid spreading seed or herbicide.

Similar Species

Non-native: Sulfur cinquefoil *(Potentilla recta)*
Native: Yellow avens *(Geum aleppicum)*, native buttercup (*Ranunculus* spp.)

Chamomile, Scentless *(Tripleurospermum inodorum)*

Native to Eurasia, scentless chamomile (mayweed, false chamomile) is an annual, biennial or short-lived perennial in the Asteraceae (Sunflower) family.

Identification

Solitary daisy-like flowers have white petals surrounding a yellow centre at the branch ends. Basal rosette produced in first stage of growth, flowering stem in second. **Leaves alternate, very finely divided (carrot-like) and highly branched.** Stems are highly branched, slightly reddish and up to 1 m tall or as small as 5 cm. Fibrous roots.

Habitat

Adapted to heavy clay soils, but is tolerant of a wide range of conditions, including flooding and dry sites.

Control

Reproduces by seed. Hand-pulling or herbicide, cultivation of rosettes, mowing (may regrow from roots) or biocontrol agents (a seed-head feeding weevil, *Omphalapion hookeri*, and a gall midge, *Rhopalomyia tripleurospermi*).

Similar Species

Non-native: Ox-eye daisy *(Leucanthemum vulgare)* leaves differ **Native:** Aster (*Symphyotrichum* and *Eurybia* spp.)

WEED CONTROL ACT DESIGNATION: **UNREGULATED**

Chicory *(Cichorium intybus)*

Native to southern and central Europe, Africa, and parts of western Asia, chicory is in the Asteraceae (Aster) family and is a deep-tap rooted perennial that sometimes behaves as a biennial.

Identification

Bright blue (sometimes white), daisy-like flowers with squared, toothed petal tips, typically found in small clusters along the upper stems. Stems are upright, stiff, and branching. A low-growing rosette of dandelion-like leaves forms early, with leaves that are elongated, lobed, and slightly hairy; upper leaves are smaller, lack stalks, and clasp the stem. Plants can reach up to 2 m in height. Produces small, brown, ridged seeds contained in wedge-shaped structures.

Habitat

Favours lime-rich soils, but tolerates a wide range of conditions and is commonly found in disturbed sites such as fields, roadsides, fence lines, pastures, and neglected turf.

Control

Reproduces by seed. Herbicide, hand-pulling, removing as much of the taproot as possible.

Similar Species

Non-native: Prickly lettuce (*Lactuca serriola*), distinguished by yellow flowers

Native: Tall blue lettuce (*Lactuca biennis*), distinguished by smaller to less showy flowers and a less rigid stem

Cicer Milkvetch *(Astragalus cicer)*

Native to Europe, cicer milkvetch (chickpea milkvetch) is a perennial in the Fabaceae (Pea) family.

Identification

Spike-like clusters of 15-60 yellow to white pea-shaped flowers on a long smooth stalk; several dark green prongs at the tip end protrude from the hairy flower base. Leaves are pinnately compound with 10-13 pairs of oblong leaflets. Stems are hollow, fairly weak and often sprawl, creating dense tangled mats. Short, branched taproot. **Cluster of egg-shaped fruits are hairy and turns stiff and black at maturity.**

Habitat

Prefers disturbed, partly-shaded areas, moderately coarse or moist soils. Tolerates a wide range of moisture, soil types, pH and salt levels.

Regionally common

Control

Reproduces by seed and rhizomes. Repeated removal of top growth over the growing season.

Similar Species

Non-native: Crownvetch *(Securigera varia)*, tufted vetch *(Vicia cracca)* **Native:** Wild licorice *(Glycyrrhiza lepidota),* native milkvetch species *(Astragalus* spp.*)*

Cinquefoil, Sulphur *(Potentilla recta)*

Native to eastern Europe and the Mediterranean, sulphur cinquefoil is a long-lived perennial in the Rosaceae (Rose) family. It is unpalatable to livestock.

Identification

Pale yellow flowers have 5 petals with deeply notched tips around a yellow centre; 5 hairy sepals below. Leaves palmately compound with 5-7 toothed leaflets; **leaf underside is green**. Few basal leaves, most grow along stem; leaf stalk length and size decrease toward the top of the plant. One to several erect, branched stems, 30-60 cm tall; **stems have hairs perpendicular to stem and leafstalks**. Fibrous woody roots. Up to 1,400 seeds per season.

Habitat

Prefers semi-arid regions, but can tolerate a wide range of soil conditions and climates.

Control

Reproduces by seed. Hand-pulling, cultivation and herbicide.

Similar Species

Non-native: Tall buttercup *(Ranunculus acris)*
Native: Resembles several native cinquefoil species, particularly graceful cinquefoil (*Potentilla gracilis*), which has darker yellow flowers and silvery-white leaf undersides.

Clematis, Yellow *(Clematis tangutica)*

Native to Asia, yellow clematis (golden clematis, golden tiara, helios) is a perennial vine in the Ranunculaceae (Buttercup) family. Buyer beware, this plant may be available as an ornamental plant for purchase.

Identification

Lemon-yellow, nodding flowers with 4 long petals are bell-shaped; born either singly or in small groups of 2-3 on a short stalk. Compound leaves with 5-7 lance-shaped leaflets, 5-6 cm long; edges coarsely toothed and tips pointed, undersides slightly hairy. Several branching stems up to 3-4 m long; young stems are pliable, older stems become woody. Long taproot. Seed heads or **'puffballs'** are clusters of oval seeds with long silky tails.

Habitat

Tolerant of cold, drought and nutrient poor soil conditions but prefers full sun.

Regionally common

Control

Reproduces by seed and can regenerate from crown of the rootstock. Repeated hand-pulling before seed set.

Similar Species

Non-native: Clematis *(Clematis akebioides)*
Native: Purple clematis *(Clematis occidentalis)*, white clematis *(C. ligusticifolia)*

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Cockle, White *(Silene latifolia* subsp. *alba.)*

Native to Europe, white cockle (white campion, evening cockle) is a biennial or short-lived perennial in the Caryophyllaceae (Pink) family. Plants are either male or female, so not every plant produces seed.

Identification White to pale pink flowers with 5 notched petals arranged in numerous clusters; only open at night. Tubular, bulbous, purple-green sepals surround flower base; male sepals have 10 veins and female sepals have 20 veins, often redder, inflating as it ripens. Basal rosette produced in first stage of growth, flowering stem in second. Leaves opposite, hairy, oblong or lance-shaped with pointed tips. Stems are hairy, erect or laterally spreading, grow 120 cm tall and swell at the nodes. **No part of the plant is sticky.** Deep taproot and lateral roots. Seed pods are smooth, bulb-like and hairless, 10-15 mm long; up to 25,000 seeds per plant.

Habitat Prefers full sun and rich, well-drained soils.

Control

Reproduces by seed. Repeated mowing will reduce seed production; do not cultivate. Herbicide can be effective.

Similar Species

Non-native: Bladder campion *(Silene vulgaris)* not hairy or sticky, night-flowering catchfly *(S. noctiflora)* hairy, upper stems sticky
Native: Silene species (*Silene* spp.)

Crupina, Common *(Crupina vulgaris)*

Native to the Mediterranean, common crupina (bearded creeper) is a winter annual in the Asteraceae (Sunflower) family.

Identification

Pink to purple flowers with 1-7 scale-like bracts. Rosette and stem leaves pinnately lobed, alternate with short stiff spines and smaller toward top of the plant. Stem is rigid, covered with short stiff spines and heavily branched in the upper portion; grows to 1 m. Shallow taproot.

Habitat

Prefers well-drained soils, but tolerant of a wide range of soil and climatic conditions.

Control

Reproduces by seed. Repeated hand-pulling or herbicide.

Similar Species

None - unique in appearance

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Daisy, Ox-eye *(Leucanthemum vulgare,* formerly *Chrysanthemum leucanthemum)*

Native to Europe, ox-eye daisy is a perennial in the Asteraceae (Sunflower) family. Buyer beware, this plant is often a contaminant in wildflower seed mixes.

Identification

Solitary daisy-like flowers have 20-30 white petals slightly notched at tips surrounding a yellow centre at the branch ends. **Lower leaves are spoon-shaped with lobed or toothed edges and long leaf stalks; upper leaves are alternate, narrow and clasp the stem.** Stems are smooth, often grooved, sometimes branch and up to 1 m. Creeping roots. Up to 26,000 seeds per plant.

Habitat

Tolerates a variety of habitats including those with poor soil conditions, but prefers nutrient poor soils.

Control

Reproduces by seed and creeping roots. Repeated mowing, hand-pulling, herbicide or grazing may reduce seed production.

Similar Species

Non-native: Scentless chamomile *(Tripleurospermum inodorum)* leaf arrangement and shape differs, shasta daisy *(Leucanthemum x superbum)* **Native:** None

Dame's Rocket *(Hesperis matronalis)*

Native to Europe, dame's rocket (dame's violet) is a biennial or short-lived perennial in the Brassicaceae (Mustard) family. Buyer beware, this plant remains a common ornamental species and is frequently found in "wildflower" seed mixes.

Identification

Pink-purple-white flowers with 4 petals borne in loose clusters at tops of stems. Basal rosette produced in first stage of growth, flowering stem in second. Leaves are lance-shaped, alternate with small hairs on both sides and toothed edges. Stems are often branched and up to 1 m tall. Shallow, slender root. Thin, long seed pods are 5-10 cm and hold tiny black seeds; up to 20,000 seeds per plant.

Habitat

Prefers moist habitats and rich, humus soils. It is tolerant of partial shade.

Control

Reproduces by seed. Repeated hand-pulling before seed set.

Similar Species

Non-native: Garden phlox *(Phlox paniculata)*
Native: Common fireweed *(Epilobium angustifolium)*

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Dyer's Woad *(Isatis tinctoria)*

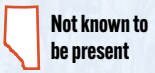
Native to Russia, dyer's woad (woad) is a winter annual, biennial or short-lived perennial in the Brassicaceae (Mustard) family.

Identification

Clusters of small, 4-petaled yellow flowers form a dense, flat-topped flower head. Basal rosette produced in first stage of growth, flowering stem in second. Leaves bluish-green with **white midrib and powdery white film on upper leaf surface**. Rosette leaves with long slender stalks, wide near the tip, covered with soft hairs; upper stem leaves alternate, lance-shaped, clasping and hairless. Stem is erect, somewhat woody and heavily branched in the upper portion; grows to 120 cm. Fleshy taproot with lateral roots. Hanging fruit pods are purple-brown, tear drop shaped and hold 1-2 brown-yellow, cylindrical seeds; up to 10,000 seeds per year.

Habitat

Prefers well drained soils. Unlike other mustards it does not require disturbance to become established.



Control

Reproduces by seed and roots. Hand-pulling before seed set.

Similar Species

Non-native: None **Native:** Native mustards (*Draba* spp.)

Eurasian Water Milfoil *(Myriophyllum spicatum)*

Native to Eurasia and Africa, Eurasian water milfoil is an aquatic perennial in the Haloragaceae (Water Milfoil) family.

Identification

Clusters of small, 4-petaled yellow flowers attach directly to a pinkish flowering spikelet growing 5-20 cm above water surface. Leaves rarely extend above water surface and are red to green, occur in whorls of 3-4 around the stem with **more than 12 pairs of fine, closely spaced leaflets**. Pink to reddish stem is slender, branching, leafless towards the base; can extend up to 10 m. Underground runners with roots found at base and along stem; can re-root from stem fragments. Fruit capsule is hard, floating, segmented and holds 4 seeds.

Habitat

Grows submersed in fresh, still or flowing waters up to 10 m deep. Tolerant of a variety of water conditions.

Not known to be present

Control

Reproduces by seed and root or stem fragments. Hand-pulling and herbicide.

Similar Species

Non-native: Variable-leaf water milfoil *(Myriophyllum heterophyllum)* **Native:** Northern water milfoil *(Myriophyllum sibiricum)* has less than 12 pairs of leaflets

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Flowering Rush *(Butomus umbellatus)*

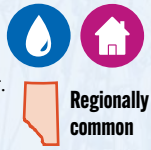
Native to Europe, Africa and Asia, flowering rush (grassy rush, water gladiolus) is an aquatic perennial and the only member of the Butomaceae family.

Identification

Umbrella-shaped clusters of pink to white flowers with 3 petals and 3 purple-brown bracts at the end of stems. Erect or floating leaves are sword-shaped, triangular in cross-section with twisted tips and originate from the base of the plant; base is red-tinged. Stem is leafless with a round cross-section. Creeping roots can form small bulb-like projections that break-off and can start new infestations. Fruit is brown to black, beaked and inflated; Canadian populations have not been known to produce viable seeds.

Habitat

Can grow completely submerged in depths of 3-6 m or partially submerged in freshwater.



Control

Reproduces by root fragments. Hand-pulling, digging and herbicide.

Similar Species

Non-native: None
Native: Native: Cattails, rushes, sedges and bur-reeds

Garlic Mustard *(Alliaria petiolata)*

Native to Europe and Asia, garlic mustard (poorman's mustard, garlicwort, hedge garlic) is a biennial in the Brassicaceae (Mustard) family.

Identification

White 4-petaled flowers with yellow centres form clusters at the end of stems. Basal rosette produced in first stage of growth, flowering stem in second. Leaves alternate, heart-to-spade-shaped with toothed edges, becoming smaller upwards on the stem; **garlic odor when crushed**. Stems usually with 1-2 branches per plant and grow up to 1.5 m, upper stems have little to no branching. **White, slender taproot with crook or s-bend just below ground level.** Long, narrow fruit pods, up to 6 cm long; up to 850 seeds per plant.

Habitat

Prefers rich, moist, forest soils with dense shade but can tolerate full sun.

Control

Reproduces by seed. Hand-pulling and digging.

Similar Species

Non-native: None **Native:** Canada violet *(Viola canadensis)*

Goatgrass, Jointed *(Aegilops cylindrica)*

Native to Asia, jointed goatgrass (jointgrass) is a winter annual in the Poaceae (Grass) family. Similarities to wheat make it difficult to control in cereal crops.

Identification

Spike is cylindrical with jointed seed heads (spikes) clustered in narrow spikelets; each spikelet contains up to 5 flowers and is 1 cm long. Lower spikelets lack an awn at the tip and upper spikelets have long, narrow awns. Leaf blades narrow, 2-5 mm wide and covered with evenly spaced hairs at a 90° angle on the leaf edge; sheath open, with hairy auricles. Stem is branched up to 80 cm tall. Fibrous root system. Seeds are red to brown, grooved and up to 9 mm long.

Habitat

Prefers sites that are dry and open.

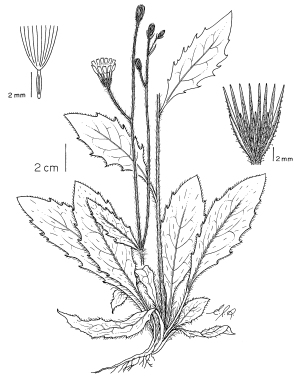
Not known to be present

Control

Reproduces by seed. Mechanical removal before flowering.

Similar Species

Non-native: Other invasive grasses, wheat (introduced agronomic) **Native:** Native wheatgrasses



Hawkweed, Common *(Hieracium lachenalii)*

Native to Europe, common hawkweed is a perennial in the Asteraceae (Sunflower) family. It is part of a group of closely related yellow-flowered hawkweed species, which are difficult to tell apart.

Identification Yellow, dandelion-like flowers in small clusters of **4–12 per plant with star-shaped and gland-tipped hairs. Leaves are grey-green with noticeable teeth**, with several along the stem becoming smaller upward. Stems are erect and often solitary, with glandular and a few star-shaped hairs, growing 20–80 cm tall and **lacking stolons**.

Habitat Prefers dry to moderately moist places such as roadsides, gravel riverbeds, forest openings and other disturbed areas in lowland and mountainous regions.

Control Reproduces by seed and creeping roots. Hand-pull or herbicide prior to flowering. Applying treatment to plants while they are flowering can promote seed production.

Similar Species **Non-native:** Other invasive hawkweeds (*Pilosella* spp.) can be distinguished based on characteristics of stem and leaf hairs. **Native and invasive:** *Hieracium* species, distinguished by leafy stems with well-developed stem leaves, unlike the mostly basal leaves of *Pilosella* species.

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Hawkweed, European *(Hieracium sabaudum)*

Native to Europe, European hawkweed is a perennial in the Asteraceae (Sunflower) family. It is part of a group of closely related yellow-flowered hawkweed species, which are difficult to tell apart.

Identification Yellow, dandelion-like flower heads in small clusters of 3–12 per plant with bracts covered in dark, long hairs. Leaves are long and narrow with smooth edges, many found along the stem and crowded near the base, becoming smaller upward, with coarse hairs underneath. Stems are thick and upright, 40–130 cm tall, with many long, firm hairs, especially on the lower stem.

Habitat Prefers high-elevation areas such as mountain grasslands, rocky slopes, and other open, exposed sites with little to no canopy cover.

Control Reproduces by seed and creeping roots. Hand-pull or herbicide prior to flowering. Applying treatment to plants while they are flowering can promote seed production.

Similar Species **Non-native:** Other invasive hawkweeds (*Pilosella* spp.) can be distinguished based on characteristics of stem and leaf hairs. **Native and invasive:** *Hieracium* species, distinguished by leafy stems with well-developed stem leaves, unlike the mostly basal leaves of *Pilosella* species.

Hawkweed, Kingdevil *(Pilosella floribunda)*

Native to Europe, kingdevil hawkweed is a perennial in the Asteraceae (Sunflower) family. It is part of a group of closely related yellow-flowered hawkweed species, which are difficult to tell apart.

Identification

15–25 yellow flower heads in a loose cluster with the outer bracts hairy, **may have red stripes underneath**. Basal leaves are long and narrow to oval or egg-shaped. Upper leaf surface mostly hairless or with a few long simple hairs; **lower surface and midrib have dense short, simple hairs. Lower stem with dense simple hairs; stolons leafy and typically present**. Grow to 15-50 cm tall.

Habitat

Prefers high-elevation areas such as mountain grasslands, rocky slopes, and other open, exposed sites with little to no canopy cover.

Not known to be present

Control

Reproduces by seed and creeping roots. Hand-pull or herbicide prior to flowering. Applying treatment to plants while they are flowering can promote seed production.

Similar Species

Non-native: Other invasive hawkweeds (*Pilosella* spp.) can be distinguished based on characteristics of stem and leaf hairs.
Native and invasive: *Hieracium* species, distinguished by leafy stems with well-developed stem leaves, unlike the mostly basal leaves of *Pilosella* species.

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Hawkweed, Meadow *(Pilosella caespitosa,* formerly *Hieracium caespitosum)*

Native to Europe, meadow hawkweed is a perennial in the Asteraceae (Sunflower) family. It is part of a group of closely related yellow-flowered hawkweed species, which are difficult to tell apart.

Identification Yellow, dandelion-like flowers in loose clusters of **20-50 per plant**. Leaves are hairy, narrow, lance-shaped, dark green upper, light green underside; leaf edges entire or minutely toothed. **Basal leaves covered in long, white hairs; shorter star-shaped hairs on underside only**. Stems erect, solitary with simple, glandular and star-shaped hairs and grow 20-70 cm tall. Rhizomes have fibrous roots, short stolons. Seeds are dandelion-like and readily wind-dispersed.

Habitat Prefers moist, well-drained soils, low in organic matter.

Control Reproduces by seed and creeping roots. Handpull or herbicide prior to flowering. Applying treatment to plants while they are flowering can promote seed production.

Regionally common

Similar Species **Non-native:** Other invasive hawkweeds (*Pilosella* spp.), many of which also have yellow flowers and orange hawkweed prior to flowering.
Native and invasive: *Hieracium* species, which include both native and invasive hawkweeds, are distinguished by their leafy stems with well-developed stem leaves, compared to the mainly basal leaves of invasive *Pilosella* species.

Hawkweed, Mouse-Ear *(Pilosella officinarum,* formerly *Hieracium pilosella)*

Native to Europe, mouse-ear hawkweed is a perennial in the Asteraceae (Sunflower) family. It is part of a group of closely related yellow-flowered hawkweed species, which are difficult to tell apart.

Identification Yellow, dandelion-like flowers are **solitary on the end of each stem** (unlike meadow hawkweed); flowers will sometimes have red stripes underneath, bracts covered in star-shaped hairs. Basal rosette leaves are hairy, narrow, lance-shaped, **dark green above, light green below**. Leaf underside appears white due to dense hairs. Stems erect, leafless and covered with bristly hairs; up to 30 cm tall (shorter than other hawkweeds). Rhizomes have fibrous roots, mat-forming stolons. Seeds are dandelion-like and readily wind-dispersed.

Habitat Prefers well-drained, coarse textured soils.

Control Reproduces by seed and creeping roots. Handpull or herbicide prior to flowering. Applying treatment to plants while they are flowering can promote seed production.

Similar Species **Non-native:** Other invasive hawkweeds (*Pilosella* spp.), many of which also have yellow flowers. Mouse-ear hawkweed can be distinguished by having a single flower (or occasionally two) at the end of the stem.
Native and invasive: *Hieracium* species (both native and invasive), which are distinguished by their leafy stems with well-developed stem leaves, unlike the mostly basal leaves of *Pilosella* species.

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Hawkweed, Orange *(Pilosella aurantiaca,* formerly *Hieracium aurantiacum)*

Native to Europe, orange hawkweed (devil's paintbrush) is a perennial in the Asteraceae (Sunflower).

Identification

Compact, umbrella-like clusters of r**ed-orange dandelion-like flowers on the end of each stem**; bracts covered in coarse black hairs. Basal rosettes have hairy, narrow, club-shaped leaves with numerous hairs on upper and lower leaf. Leaf edges may be entire or slightly toothed. Stems are erect and solitary with bristly hairs and few to no leaves; up to 60 cm tall. Rhizomes have fibrous roots, mat-forming stolons. Seeds are dandelion-like; up to 1,500 seeds per plant.

Habitat

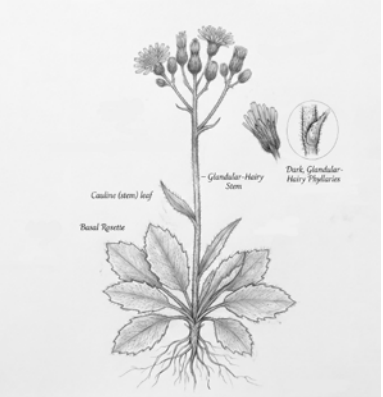
Prefers well-drained, coarse textured soils.

Control

Reproduces by seed and creeping roots. Handpull or herbicide prior to flowering. Applying treatment to plants while they are flowering can promote seed production.

Similar Species

Non-native: Other invasive hawkweeds, *Pilosella* spp. (all have yellow flowers), especially meadow hawkweed. **Native and invasive:** *Hieracium* species, which include both native and invasive hawkweeds, are distinguished by their leafy stems with well-developed stem leaves. **Native:** mountain dandelion (*Agoseris aurantiaca*).



Hawkweed, Polar *(Hieracium atratum)*

Native to Europe, polar hawkweed is a perennial in the Asteraceae (Sunflower) family. It is part of a group of closely related yellow-flowered hawkweed species, which are difficult to tell apart.

Identification

Yellow, dandelion-like flower heads in loose clusters of 2–10 per plant, with **bracts covered in dark, often sticky hairs** with a few star-shaped hairs. Leaves are narrow with a few coarse, outward-pointing teeth, mostly at the base, with only 2–4 smaller leaves along the stem, and **simple hairs on upper and finer on lower surfaces**. Stems are upright, branching near the top, 20–40 cm tall, **without stolons**.

Habitat

Prefers high-elevation areas such as mountain grasslands, rocky slopes, and other open, exposed sites with little to no canopy cover.

Control

Reproduces by seed and creeping roots. Hand-pull or herbicide prior to flowering. Applying treatment to plants while they are flowering can promote seed production.

Similar Species

Non-native: Other invasive hawkweeds (*Pilosella* spp.) can be distinguished based on characteristics of stem and leaf hairs.
Native and invasive: *Hieracium* species, distinguished by leafy stems with well-developed stem leaves, unlike the mostly basal leaves of *Pilosella* species.

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Hawkweed, Queendevil *(Pilosella praealta)*

Native to Europe, Queendevil hawkweed is a perennial in the Asteraceae (Sunflower) family. It is part of a group of closely related yellow-flowered hawkweed species, which are difficult to tell apart.

Identification **15–30** yellow flower heads, bases of bracts typically have grey, brown, or clear gland-tipped hairs. Basal leaves are long and narrow to oval or egg-shaped, with mostly smooth edges. Upper surfaces are smooth and hairless, while **lower surfaces have variable amounts of star-shaped hairs** and longer simple hairs mostly concentrated along the mid-vein. Stems are upright and sometimes branch near the top with sparse simple hairs. Plants are typically 25–80 cm tall. Has **leafy stolons** (runners).

Habitat Prefers high-elevation areas such as mountain grasslands, rocky slopes, and other open, exposed sites with little to no canopy cover.

Control Reproduces by seed and creeping roots. Hand-pull or herbicide prior to flowering. Applying treatment to plants while they are flowering can promote seed production.

Similar Species

Non-native: Other invasive hawkweeds (*Pilosella* spp.) can be distinguished based on characteristics of stem and leaf hairs.
Native and invasive: *Hieracium* species, distinguished by leafy stems with well-developed stem leaves, unlike the mostly basal leaves of *Pilosella* species.

Hawkweed, Smooth *(Hieracium laevigatum)*

Native to Europe, smooth hawkweed is a perennial in the Asteraceae (Sunflower) family. It is part of a group of closely related yellow-flowered hawkweed species, which are difficult to tell apart.

Identification

Yellow, dandelion-like flower heads in clusters of 10–25 per plant, lacking hairs. Leaves are broad with coarse teeth, stem leaves becoming smaller upward. Stems with many star-shaped and dark hairs, are upright, 40–110 cm tall.

Habitat Prefers high-elevation areas such as mountain grasslands, rocky slopes, and other open, exposed sites with little to no canopy cover.

Control Reproduces by seed and creeping roots. Hand-pull or herbicide prior to flowering. Applying treatment to plants while they are flowering can promote seed production.

Similar Species

Non-native: Other invasive hawkweeds, *Pilosella* spp. can be distinguished based on characteristics of stem and leaf hairs. **Native and invasive:** *Hieracium* species, distinguished by leafy stems with well-developed stem leaves, unlike the mostly basal leaves of *Pilosella* species.

BC Ministry of Forests,
Key to Identification of Invasive and Native Hawkweeds in the Pacific Northwest

BC Ministry of Forests,
Key to Identification of Invasive and Native Hawkweeds in the Pacific Northwest

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Hawkweed, Spotted *(Hieracium maculatum)*

Native to Europe, spotted hawkweed is a perennial in the Asteraceae (Sunflower) family. It is part of a group of closely related yellow-flowered hawkweed species, which are difficult to tell apart.

Identification

Yellow, dandelion-like flower heads in loose clusters of 2–10 per plant, with bracts covered in dark and sometimes sticky hairs. Leaves have coarse, sharp teeth and **often show purple spots on the upper surface**. Stems are upright, 20–80 cm tall, and branch near the top.

Habitat

Prefers high-elevation areas such as mountain grasslands, rocky slopes, and other open, exposed sites with little to no canopy cover.

Regionally common

Control

Reproduces by seed and creeping roots. Hand-pull or herbicide prior to flowering. Applying treatment to plants while they are flowering can promote seed production.

Similar Species

Non-native: Other invasive hawkweeds, *Pilosella* spp. can be distinguished based on characteristics of stem and leaf hairs.
Native and invasive: *Hieracium* species, distinguished by leafy stems with well-developed stem leaves, unlike the mostly basal leaves of *Pilosella* species.

Hawkweed, Tall *(Pilosella piloselloides,* formerly *Hieracium piloselloides)*

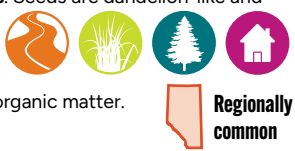
Native to Europe, tall hawkweed is a perennial in the Asteraceae (Sunflower) family. It is part of a group of closely related yellow-flowered hawkweed species, which are difficult to tell apart.

Identification

Yellow ray flowers in open, round-topped clusters of 11-20 at the top of the stem. **Leaves almost entirely hairless except for long, white hairs on the underside of leaf midvein. Leaf edges may have long, white hairs.** Few if any stem leaves. **Stem is waxy with long white, and sparse black hairs.** Plants 40 – 90 cm tall. Fibrous and creeping roots and **no stolons**. Seeds are dandelion-like and are readily wind-dispersed.

Habitat

Prefers well drained, coarse textured soils, moderately low in organic matter.



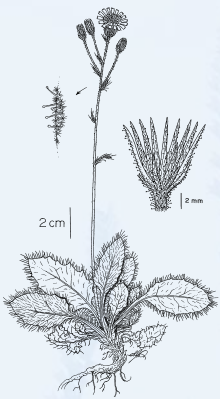
Regionally common

Control

Reproduces by seed and creeping roots. Handpull or herbicide prior to flowering. Applying treatment to plants while they are flowering can promote seed production.

Similar Species

Non-native: Other invasive hawkweeds (*Pilosella* spp.); tall hawkweed is distinguished by characteristics of leaf hairs and may be confused with queendevil hawkweed, which has stolons (absent in tall hawkweed). **Native and invasive:** *Hieracium* species, distinguished by leafy stems with well-developed stem leaves, unlike the mostly basal leaves of *Pilosella* species.



Hawkweed, Wall *(Hieracium murorum)*

Native to Europe, wall hawkweed is a perennial in the Asteraceae (Sunflower) family. It is part of a group of closely related yellow-flowered hawkweed species, which are difficult to tell apart.

Identification

Yellow, dandelion-like flower heads in clusters of 4–15 per plant, densely covered in star-shaped and dark hairs. Leaves are mostly smooth or slightly toothed, with broad, rounded to heart-shaped basal leaves that do not narrow at the base. Leaves hairless or sparsely hairy on top with a few star-shaped hairs underneath. Stems are upright, 20–80 cm tall, usually leafless or with only 1–2 small leaves near the base.

Habitat

Prefers high-elevation areas such as mountain grasslands, rocky slopes, and other open, exposed sites with little to no canopy cover.

Control

Reproduces by seed and creeping roots. Hand-pull or herbicide prior to flowering. Applying treatment to plants while they are flowering can promote seed production.

Similar Species

Non-native: Other invasive hawkweeds (*Pilosella* spp.), can be distinguished based on characteristics of stem and leaf hairs.
Native and invasive: *Hieracium* species, distinguished by leafy stems with well-developed stem leaves, unlike the mostly basal leaves of *Pilosella* species.

Hawkweed, Whiplash *(Pilosella flagellaris)*

Native to Europe, Whiplash hawkweed is a perennial in the Asteraceae (Sunflower) family. It is part of a group of closely related yellow-flowered hawkweed species, which are difficult to tell apart.

Identification Typically has 2–6 yellow flower heads, petals may have red-orange stripes underneath, outer bracts covered in star-shaped, dark gland-tipped, and long hairs. Basal leaves are long and narrow to spoon shaped, rounded at the tip and narrow at the base, typically with smooth edges. Upper surface with few to many long, simple hairs; lower surface with dense star-shaped and long, simple hairs. Stems may branch once or twice along their length, 6–20 cm tall with leafy stolons.

Habitat Prefers high-elevation areas such as mountain grasslands, rocky slopes, and other open, exposed sites with little to no canopy cover.

Not known to be present

Control Reproduces by seed and creeping roots. Handpull or herbicide prior to flowering. Applying treatment to plants while they are flowering can promote seed production.

Similar Species

Non-native: Other invasive hawkweeds, *Pilosella* spp. can be distinguished based on characteristics of stem and leaf hairs.
Native and invasive: *Hieracium* species, distinguished by leafy stems with well-developed stem leaves, unlike the mostly basal leaves of *Pilosella* species.

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Hawkweed, Yellowdevil *(Pilosella glomerata,* formerly *Hieracium glomeratum)*

Native to Europe, yellowdevil hawkweed is part of the 'Meadow Hawkweed Complex' (Subgenus *Pilosella*). It is a perennial in the Asteraceae (Sunflower) family. It is part of a group of closely related yellow-flowered hawkweed species, which are difficult to tell apart.

Identification Yellow ray flowers in open, round-topped clusters of 15-25 at the top of the stem. **Leaves appear hairless, but have short, white and star shaped hairs creating a rough feel to the leaves.** Basal leaves broadly lance-shaped, few if any stem leaves. **Stems,** 25-90 cm tall, **have black hairs and small star-shaped hairs.** Fibrous and creeping roots. Seeds are dandelion-like and are readily wind-dispersed.

Habitat Preference for well-drained soils, low in organic matter, typically shade intolerant.

Control Reproduces by seed and creeping roots. Handpull or herbicide prior to flowering. Applying treatment to plants while they are flowering can promote seed production.

Similar Species

Non-native: Other invasive hawkweeds (*Pilosella* spp.), can be distinguished based on characteristics of stem and leaf hairs.
Native and invasive: *Hieracium* species, distinguished by leafy stems with well-developed stem leaves, unlike the mostly basal leaves of *Pilosella* species.

Henbane, Black *(Hyoscyamus niger)*

Native to the Mediterranean, black henbane (stinking nightshade) is a biennial in the Solanaceae (Nightshade) family. All parts of the plant are toxic to humans and wildlife.

Identification **Yellow to cream coloured flowers are bell-shaped with 5 lobes, many purple veins, and a dark purple centre**; multiple flowers per stem. Flowers and leaves have a rotting garbage-like odour. Basal rosette produced in first stage of growth, flowering stem in second. Leaves are alternate, large, slightly sticky, up to 45cm long, stalkless with variably lobed edges. Stems are branched or unbranched, robust and up to 1 m tall. The entire plant is covered with hairs. Thick, fleshy taproot. **Bell-shaped, yellow to cream coloured papery seed capsules with triangular edges usually aligned on one side of the stem**; up to half a million seeds per season.

Habitat Requires well drained soil but tolerant to a wide range of soil textures and pH. It does not tolerate shade.

Regionally common

Control Reproduces by seed. Hand-pulling, mowing, herbicide or cultivating rosettes or cut stem at the base of the plant before seed set.

Similar Species

None – unique in appearance

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Hoary Alyssum *(Berteroa incana)*

Native to Europe, hoary alyssum (hoary false madwort) is an annual, biennial or short-lived perennial in the Brassicaceae (Mustard) family.

Identification Clusters of small, white flowers with yellow centre and 4 deep-notched petals (appear as 8 petals) along stem axis. Basal rosette produced in first stage of growth, flowering stem in second. Leaves alternate, greyish green with **star-shaped hairs**. Rosette leaves long with slender stalks; stem leaves face upward, pressed to the stem; stalkless ascending. Purplish stems are erect, branched, grow to 90 cm tall and covered with star-shaped hairs. Long, slender taproot. Flattened, oval fruit pod with style at the pod tip; up to 2,500 seeds per plant.

Habitat Prefers dry, sandy and gravel, nutrient poor soils with full sun. Adapted to cold winters and hot, dry summers.

Control Reproduces by seed. Hand-pulling, digging and herbicide.

Similar Species

Non-native: Broad-leaved pepper-grass *(Lepidium latifolium)*, stinkweed *(Thlaspi arvense)*, hoary cress (*Lepidium* spp.) **Native:** Chickweed (*Stellaria* spp.), northern bedstraw *(Galium boreale)*

Hoary Cress *(Lepidium appelianum* (globe-podded)*, Lepidium draba* (heart-podded)*, Lepidium chalepense* (lens-podded)*)*

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Native to western Asia, hoary cress (whitetop, peppergrass, pepperweed) is a perennial in the Brassicaceae (Mustard) family. There are 3 similar species listed under the *Weed Control Act* which can be differentiated by the **shape of the seed pod**.

Identification

Clusters of white flowers with 4 petals create a flat-topped umbel appearance. Leaves blue-green to gray-green, alternate, covered with soft white hairs, and lance-to-arrowhead-shaped; upper leaves clasp the stem, lower leaves stalked. Stems up to 60 cm tall, one to several stems per plant. Extensive, deep, creeping roots. Seeds develop in pods; **the pod shape distinguishes the species of hoary cress (see above)**. Up to 3,500 seeds.

Habitat

Requires full sun and moderately moist to slightly dry soils, but will tolerate alkaline soils.

Control

Reproduces by seed and creeping roots. Mowing, cultivation, herbicide.

Similar Species

Non-native: Other pepper-grass species (*Lepidium* spp.)
Native: Common yarrow *(Achillea millefolium)*

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Hogweed, Giant *(Heracleum mantegazzianum)*

Native to Asia, giant hogweed (giant cow parsnip) is a biennial in the Apiaceae (Carrot) family. **Use extreme caution as this plant contains sap that is highly toxic and can cause severe rashes, blisters, blindness and scarring.** Often confused with the native lookalike cow parsnip (which has green stems, smaller height and leaves are not as deeply lobed).

Identification

Large umbrella-shaped flower head with small, hairy, 5-petaled, white to pinkish flowers. Basal rosette produced in first stage of growth, flowering stem in second. Leaves alternate, **deeply lobed**, up to 100 cm wide with toothed edges and coarse white hairs on the underside; lower leaves compound with 3 leaflets. Stems are hollow, erect, **grows up to 6 m tall**, covered with coarse hairs and **red to purple spots**; leaf stems have similar spots. Stem and leaf stalks covered with blisters containing **clear, harmful sap**. The sap from both species can cause severe dermatitis. Large, deep taproot. Flat, oval fruit capsule holds 1 flat seed with 2 wings; up to 120,000 seeds per plant.

Habitat

Prefers disturbed, moist to wet soils with high organic content and partial to full sun.

Not known to be present

Control

Reproduces by seed and root buds. Remove seedlings early, deadheading flowers and stump treatment. Herbicide options exist.

Similar Species

Non-native: None

Native: cow parsnip *(Heracleum maximum)*, water hemlock *(Cicuta maculata)*, angelica (*Angelica* spp.)

Hound's Tongue *(Cynoglossum officinale)*

Native to Europe and Asia, hound's tongue is a biennial in the Boraginaceae (Borage) family. It contains toxic properties that cause liver failure in animals.

Identification

Reddish-purple flowers are small, funnel-shaped with 5 fused petals and hang in small clusters from leaf axils. Basal rosette produced in first stage of growth, flowering stem in second. Leaves are oblong, distinctly veiny, up to 30 cm long, hairy on both surfaces and shaped like a **dog's tongue**. Stems grow to 1.5 m tall, hairy and usually branched near top of plant. Deep, woody taproot. Seeds are contained in **prickly 3-4 lobed, bur-like pods**.

Habitat

Prefers drier, well-drained sites, but is tolerant of alkaline soils.

Control

Reproduces by seed. Mechanical control before seed, biocontrol (hound's tongue root weevil, Mogulones cruciger) or herbicide.

Similar Species

Non-native: Chinese hound's tongue *(Cynoglossum amabile)*, differentiated by blue flowers

Native: Some native Symphyotrichum/Eurybia species may have similar veined leaves prior to flowering

Iris, Pale Yellow *(Iris pseudacorus)*

Native to Europe, pale yellow iris (yellow flag iris) is a perennial in the Iridaceae (Iris) family. Buyer beware, this plant may still be sold as an ornamental.

Identification

Large pale yellow to white flowers with 3 downward and 3 upward pointing petals, some petals with brown to purple veins. Leaves are long, sword-like with pointed tip and **a distinct raised midrib that is slightly off-centre**; emerge from the ground in a fan-like arrangement. Stems 90-150 cm tall; can be round or flattened. Thick and tuberous root system that spreads by rhizomes and creeping roots. Seed pods are large, three-sided, floating and 2-10 cm long.

Habitat

Prefers full sun to partial shade, but can tolerate a range of soil acidity, water depths and salinity.

Control

Reproduces by seed, rhizomes and creeping roots. Digging.

Similar Species

Non-native: Other iris species (*Iris* spp.)
Native: Western blue flag iris *(Iris missouriensis)*

Jimsonweed *(Datura stramonium)*

Origin is uncertain but sub-tropical, jimsonweed (devil's trumpet, devil's cucumber, stinkwort, hell's bells) is an annual in the Solanaceae (Nightshade) family. **All parts of the plant are toxic to humans and livestock.**

Identification

White to pale purple **trumpet-shaped flowers** are 5-10 cm with 5 pointed lobes sit singly on short stems. Leaves are alternate with unevenly toothed edges, pointed tips, dark green on the upper surface; long leaf stems up to 12 cm. Flowers and leaves have a strong foul odor. Green to **reddish-purple stems** are erect, hollow, extensively branched, 2 m tall. Stout taproot with shallow, branched lateral roots. Fruit is **oval shaped, covered with prominent spines**; up to 1,500 seeds per plant.

Habitat

Prefers moist, nutrient-rich soils and plenty of rain but can survive on less.

Control

Reproduces by seed. Hand-pulling and herbicide if removed prior to seed set and sites revisited.

Similar Species

Other jimsonweed (*Datura* spp.) species

Knapweed, Bighead *(Centaurea macrocephala)*

Native to Asia, bighead knapweed (Armenian basketflower, golden thistle) is a perennial in the Asteraceae (Sunflower) family.

Identification

One large yellow flower head per branch tip, 6 cm in diameter. Bracts are fringed and thin with papery edges. Leaves are alternate along entire stem, broad, hairy, lance-shaped with pointed tips; leaf edges are slightly undulate to smooth. Stems are several and erect, unbranched or sparingly branched, growing 50-170 cm tall and covered with long, soft and slightly cob-webby hairs. Woody taproot.

Habitat

Prefers moist well-drained soils with full sun and is drought and frost tolerant.

Isolated

Control

Reproduces by seed and dividing the crown. Hand-pulling, mowing or cultivation before seed set.

Similar Species

None – unique in appearance

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Knapweed, Black *(Centaurea nigra)*

Native to Europe, black knapweed is a perennial in the Asteraceae (Sunflower) family.

Identification

One pink to purple flower head per branch tip, 3 cm in diameter. **Comb-like bracts are black in the centre with long fringes.** Basal leaves stalked, stem leaves stalkless and decreasing in size upwards, **leaf edges are slightly toothed or smooth**. Hairy stems branch mid-plant and 20-150 cm tall. Woody taproot.

Habitat

Tolerant to a wide range of conditions.

Control

Reproduces by seed and regenerate from roots. Hand-pull, mechanical control or herbicide before seed set.

Similar Species

Non-native: Other knapweed species (*Centaurea* spp.)
Native: None

Knapweed, Brown *(Centaurea jacea)*

Native to Europe and Asia, brown knapweed is a perennial in the Asteraceae (Sunflower) family.

Identification

One pink-purple-white flower head per branch tip, 2.5 cm in diameter. **Bracts overlapping, brown and irregularly torn.** Basal leaves up to 15 cm long, tapering at both ends. **Stem leaves lance-shaped, edges are shallowly-lobed and stalkless.** Stems branching and 30-150 cm tall. Woody taproot.

Habitat

Prefers cool, moist habitats.

Not known to be present

Control

Reproduces by seed. Hand-pull, mechanical control or herbicide before seed set.

Similar Species

Non-native: Other knapweed species. Meadow knapweed is a hybrid of black and brown knapweeds.
Native: None

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Knapweed, Diffuse *(Centaurea diffusa)*

Native to Eurasia, diffuse knapweed is an annual, biennial or short-lived perennial in the Asteraceae (Sunflower) family.

Identification

One pink to white flower head per branch tip, 1.5 cm in diameter. **Bracts are stiff, cream-yellow-light brown with sharp rigid spines.** Basal rosette produced in first stage of growth, flowering stem in second. Rosettes have finely divided leaves with small hairs; mature leaves divided into linear segments, alternate, broadly lance-shaped, grayish-green, covered in woolly hairs. **Plants may be shorter than other knapweeds, stems stiff, prickly and grey-green in colour.** Stems grow to 60 cm tall and highly branched; skeletons may tumble. Deep taproot. Up to 18,000 seeds per plant.

Habitat

Thrives in semi-arid and arid environments with light, porous soils such as gravelly loam, and loamy sands. It is not tolerant of moist soils, flooding or shade.

Regionally common

Control

Reproduces by seed. Repeated hand-pulling and removal of all plant parts over several years on small infestations, biocontrol (the seed head weevil, *Larinus minutus*, and the root weevil, *Cyphocleonus achates*) or herbicide.

Similar Species

Non-native: Spotted knapweed *(Centaurea stoebe)*, hybrid knapweed *(Centaurea × psammogena)*

Native: None

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Knapweed, Hybrid *(Centaurea × psammogena)*

As a hybrid cross between spotted knapweed and diffuse knapweed, hybrid knapweed is a biennial or short-lived perennial in the Asteraceae (Sunflower) family.

Identification

One purple to white flower head per branch tip. Bracts have a dark tip (similar to spotted knapweed) and long bristles on the edges (similar to diffuse knapweed). Basal rosette produced in first stage of growth, flowering stem in second. Leaves finely divided, covered with fine hairs. Stems grow to 20-80 cm tall, heavily branched. Woody taproot.

Habitat

Thrives in sandy, coarse, well-drained soils in full sun.

Not known to be present

Control

Reproduces by seed. Hand-pulling before seed set.

Similar Species

Non-native: Other knapweed species (*Centaurea* spp.)
Native: None

Knapweed, Meadow *(Centaurea × gerstlaueri)*

Native to Eurasia, as a hybrid cross between brown and black knapweed, meadow knapweed is a perennial in the Asteraceae (Sunflower) family.

Identification One pink to purple flower head at the ends of upper branches. Comb-like bracts below flowers are overlapping, **fringes on bracts are as long or longer than the width of the bract. Can resemble either brown or black knapweed with light or dark brown to black bracts, but has a distinctive cooper-gold sheen on bracts when in bloom**. Basal leaves stalked, up to 15 cm long, stem leaves stalkless. Leaf edges are slightly toothed or irregularly pinnately lobed. Stems branch mid-plant and are 30-150 cm tall; several stems. Deep taproot.

Habitat Prefers habitats with sufficient moisture.

Control Reproduces by seed. Hand-pull, mechanical control before seed set.

Similar Species

Non-native: Other knapweed species especially brown knapweed or black knapweed, distinguished by differences in the bracts. May also be confused with Canada thistle *(Cirsium arvense)*.

Native: None

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Knapweed, Russian *(Rhaponticum repens)*

Native to Eurasia, Russian knapweed is a perennial in the Asteraceae (Sunflower) family. It is classified under its own genus compared to other knapweeds. It can cause chewing disease in horses.

Identification One purple to pink flower head per branch tip, 1-2 cm in diameter. **Bracts are rounded with papery edges and no noticeable fringes or spines.** Lower leaves up to 15 cm and deeply lobed; upper leaves are sometimes toothed, narrow, unlobed and significantly shorter. Young plants are covered in cobwebby hairs. Stems branching and up to 1 m tall. Creeping roots with black or dark brown scales; colony forming. Up to 1,200 seeds per plant.

Habitat Thrives in a wide range of soil conditions, but does very well in clay soil. It is intolerant of shade, prolonged drought, and wet sites.

Control Reproduces by seed. Hand-pull, mechanical control or herbicide before seed set.

Similar Species

Non-native: Other knapweed species (*Centaurea* spp.)
Native: None

Knapweed, Spotted *(Centaurea stoebe* subsp. *australis)*

Native to Europe, spotted knapweed is a perennial in the Asteraceae (Sunflower) family.

Identification

One pink to purple flower head per branch tip, 4 cm in diameter. **Bracts have distinctive dark fringed edges, giving a 'spotted' appearance.** Rosette leaves are deeply lobed, **grayish green**, up to 15 cm long. Stem leaves are alternate and finely divided into linear segments. Stems up to 120 cm tall, highly branched. Strong taproot. Up to 140,000 seeds per plant.

Habitat

Well-drained, light to coarse-textured soils in full sun.

Widespread

Control

Reproduces by seed. Hand-pull, mechanical control, biocontrol (the seed-head weevil, *Larinus minutus*, and the root-mining weevil, *Cyphocleonus achates*) or herbicide before seed set.

Similar Species

Non-native: Other knapweed species (*Centaurea* spp.)
Native: None

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Knapweed, Squarrose *(Centaurea virgata* subsp. *squarrosa)*

Native to the eastern Mediterranean and Asia, squarrose knapweed is a perennial in the Asteraceae (Sunflower) family.

Identification One pink to pale purple flower head per branch tip, 1 cm in diameter, up to 100 flower heads per plant; **smaller than other knapweeds. Bracts are strongly curved backward at tip** and longer than spines at sides, pale green to tan coloured, sometimes purple-tinged; 4-6 pairs of lateral spines. Basal and lower leaves are deeply divided, minutely resin-gland-dotted and green-grey colour; leaves decrease in size moving up the stem and appear bract-like or lack stalks. Stems are rough, covered in fine hairs with resin dots, highly branched and grow up to 50 cm. Strong taproot.

Habitat Prefers coarse, well drained soils on sites with cold winters and dry, hot summers. It is tolerant of alkaline soils and summer drought.

Control Reproduces by seed. Hand-pulling and mechanical control before seed set.

Similar Species

Non-native: Other knapweed species (*Centaurea* spp.), Canada thistle *(Cirsium arvense)*
Native: None

Knapweed, Tyrol *(Centaurea nigrescens)*

Native to western Asia and southwestern Europe, Tyrol knapweed is a perennial in the Asteraceae (Sunflower) family.

Identification

One pink to purple flower head per branch tip, 3 cm in diameter; outer ring of individual flowers are longer than inner individual flowers. **Bracts are long, slender with dark brown triangular fringed tips.** Basal leaves oblong to lance-shaped; upper leaves smaller with few lobes; **larger leaves than most knapweed species**. Stem single to branched, rough, covered with fine cobwebby hairs and grow up to 150 cm. Woody taproot.

Habitat

Prefers sandy, loamy or coarse, well drained soils.

Control

Reproduces by seed. Hand-pull or mechanical control before seed set.

Similar Species

Non-native: Other knapweed species (*Centaurea* spp.)
Native: Wild bergamot *(Monarda fistulosa)*

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Knotweed, Giant *(Reynoutria sachalinensis)*

Native to northern Japan, giant knotweed is a perennial in the Polygonaceae (Buckwheat/Smartweed) family. This plant is the largest of the knotweeds and root growth can damage infrastructure.

Identification

Small greenish-white flowers occur in showy branched clusters. Leaves are **heart shaped at the base** and 20-40 cm long, **generally 2x the size of other knotweed leaves**; underside hairy. **Bamboo-like stems** are hollow and smooth with swollen nodes, 3.5 m or taller, base surrounded by a membranous sheath and can grow 4-5 cm per day. Creeping roots.

Habitat

Tolerant of a wide range of habitats but requires moisture. It can withstand temperatures of –40°C.

Not known to be present

Control

Reproduces by seeds and creeping roots. Cutting and herbicide.

Similar Species

Non-native: Other knotweed species (*Fallopia* and *Persicaria* spp.) **Native:** None

Knotweed, Himalayan *(Persicaria wallichii* formerly *Polygonum polystachyum)*

Native to Asia, Himalayan knotweed (Kasmir plume, bell-shaped knotweed) is a perennial in the Polygonaceae (Buckwheat) family.

Identification

Small **pink** to white flowers occurs in loose clusters on reddish stalks. Leaves are broadly **lance-shaped with long pointed tips** and hairs on the edges and underside. Bamboo-like stems are hollow, **slightly hairy**, reddish, branched in the upper half with swollen nodes, up to 3 m tall. Creeping roots. Papery fringed fruit capsule holds smooth, shiny, black seeds.

Habitat

Prefers full sun and moist soils (loamy, silty or sandy).

Not known to be present

Control

Reproduces by seed and creeping roots. Repeated grazing and digging over several growing seasons but requires removal of all fragments or herbicide.

Similar Species

Non-native: Other knotweed species (*Fallopia* spp.)
Native: None

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Knotweed, Hybrid *(Reynoutria × bohemica)*

As a hybrid cross between Japanese knotweed and giant knotweed, hybrid knotweed (Bohemian knotweed) **may have characteristics of both** and can hybridize with either. It is a perennial in the Polygonaceae (Buckwheat/Smartweed) family.

Identification

Small, creamy to greenish-white flowers occur in showy plume-like, branched clusters. Leaves are alternate, variably oval-shaped, 5-30 cm long; underside hairy. **Bamboo-like stems** are hollow and smooth with swollen notes, 2.5-3 m tall, base surrounded by a membranous sheath. Creeping roots. Fruits are white and heart-shaped.

Habitat

Requires sufficient moisture and tolerant to a variety of soil conditions.

Control

Reproduces by seeds and creeping roots. Cutting and herbicide.

Similar Species

Non-native: Other knotweed species (*Fallopia* and *Persicaria* spp.) **Native:** None

Knotweed, Japanese *(Reynoutria japonica)*

Native to Asia, Japanese knotweed is a perennial in the Polygonaceae (Buckwheat/Smartweed) family. Root growth can damage infrastructure.

Identification

Small creamy white to greenish-white flowers are small occur in showy plume-like branched clusters. Leaves alternate, stalked, ovate with **a truncated base**, 3-10 cm long with pointed tips. **Bamboo-like stems** are hollow and smooth with swollen nodes, 1-3 m tall, base surrounded by a membranous sheath. Robust creeping root system; can reproduce from a single fragment. White fruit with small, black seeds within; up to 200,000 seeds per plant.

Habitat

Prefers open areas but can grow in shade and requires sufficient moisture.

Control

Reproduces by seeds and creeping roots. Hand-pulling, grazing, mowing, cutting and herbicide.

Similar Species

Non-native: Other knotweed species (*Fallopia* and *Persicaria* spp.)
Native: None

WEED CONTROL ACT DESIGNATION: **UNREGULATED**

Kochia *(Bassia scoparia)*

Native to Europe and Asia, kochia is an annual forb in the Amaranthaceae (Amaranth) family. Herbicide resistance makes it difficult to control.

Identification

Small clusters of very small green flowers about 3mm across in short, dense spikes. Stems are erect, green to reddish tinged, with many **branches curving upwards to create a bushy to pyramid shape from 6 inches to 6 feet in height**. These bushes **can form tumbleweeds**, spreading their seeds far distances. Leaves are alternate, simple and linear to narrowly oval, 1.5-6 cm long, surfaces are hairless to sparsely hairy, undersides hairy **with 1-5 prominent veins**. Deep taproots.

Habitat

Prefers arid and semi-arid regions, but tolerant of a wide range of habitats, including saline soils.

Regionally common

Control

Reproduces by seed. Hand pulling or mowing before seed set, planting competitive crops, or herbicide. Some herbicide resistance.

Similar Species

Non-native: Five-hooked bassia (*Bassia hyssopifolia*) have a long-hooked structure on each sepal (not known to be present in Alberta

Native: None

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Loosestrife, Purple *(Lythrum salicaria)*

Native to Europe, Asia and Africa, purple loosestrife is a perennial in the Lythraceae (Loosestrife) family.

Identification Pink to purple **flowers with 5-7 petals** are clustered on a tall, vertical spike extending 5-90 cm; one or more flowering spikes per plant. Leaves are clasping, lance-shaped with notched base and smooth edges; slightly hairy, **occurring opposite or whorled on the stem**. Stems up to 2.5 m tall, **mostly square** and woody. Extensive root system of creeping roots and taproot, clump forming. Seed pods are small brown capsules; up to 2-3 million seeds per plant, viable up to 20 years.

Habitat Thrives in areas with moist, nutrient-rich soils, but has low nutrient requirements and can tolerate shallow flooding and partial shade.

Control Reproduces by seed and creeping roots. Repeated hand-pulling, biocontrol (two defoliators, *Galerucella calmariensis* and *G. pusilla*, and one root-mining weevil, *Hylobius transversovittatus*), or herbicide.

Similar Species

Non-native: Dame's rocket *(Hesperis matronalis),* European wand loosestrife *(Lythrum virgatum)*
Native: Common fireweed *(Chamerion angustifolium)*, dwarf fireweed *(Epilobium latifolium)*

Medusahead *(Taeniatherum caput-medusae)*

Native to the Mediterranean, medusahead is a winter annual in the Poaceae (Grass) family.

Identification

Flowering spikes are 1-5 cm and occur in pairs. Bracts at the spike base have long, stiff and finely barbed awns up to 7 cm long. Awns are straight when green, becoming twisted after drying. Leaf blades are narrow, sometimes hairy and 3-6 cm long; short auricles and membranous ligule are present. Stems are hairy, decumbent to erect and grow up to 50 cm tall. Deep fibrous root system. Seeds are gold to brown, will twist as they mature and produce up to 7 seeds per spike.

Habitat

Prefers climates with mild to cold winters and hot summers, and fine textured or clay soils.

Control

Reproduces by seed. Hand-pulling, mowing, early grazing and cultivation.

Similar Species

Non-native: None
Native: Squirrel tail *(Elymus elymoides)*, fox tail barley *(Hordeum jubatum)*

Mullein, Common *(Verbascum thapsus)*

Native to Europe, common mullein (candlestick plant, velvet dock or cowboy toilet paper (not advised!)) is a biennial in the Scrophulariaceae (Figwort/Snapdragon) family. It has been used as a piscicide to control fish.

Identification

Small, yellow 5-petaled flowers arranged on tall spikes. Basal rosette produced in first stage of growth, flowering stem in second. Large leaves are soft and felt-like on upper and lower surfaces, alternately arranged on the stem; basal and rosette leaves larger. Stems can become woody and grow up to 2.5 m tall. Deep taproot. Tiny seeds found within hairy capsules arranged densely along the top of the flowering stalk; up to 300,000 seeds per plant.

Habitat

Prefers well-drained, sandy or gravelly soils, but is intolerant of shades.

Control

Reproduces by seed. Hand-pulling entire plant before seed set or herbicide in rosette stage.

Regionally common

Similar Species

Non-native: Moth mullein *(Verbascum blattaria)*
Native: None

Nutsedge, Yellow *(Cyperus esculentus)*

Native to sub-tropical North America, yellow nutsedge is a perennial in the Cyperaceae (Sedge) family.

Identification

Umbrella-shaped clusters of straw-coloured or golden-yellow flower heads. Narrow leaves are alternate, mostly basal, grass-like, waxy, prominent midrib, 20–90 cm long and bright green to yellow-green colour. Stems are unbranched, triangular in cross section and up to 75 cm tall. Fibrous roots with woody, brown striped tubers; one tuber can produce hundreds of shoots per growing season. Up to 90,000 seeds per plant.

Habitat

Prefers wet habitats and can become troublesome in low-lying irrigated soils that remain wet.

Not known to be present

Control

Reproduces by seed and tubers that form on short rhizomes. Hand-pulling and herbicide.

Similar Species

Non-native: None
Native: Native sedges (*Carex* spp.)

Pepper-Grass, Broad-Leaved *(Lepidium latifolium)*

Native to Europe and West Asia, broad-leaved pepper-grass (perennial pepperweed, tall whitetop, giant whiteweed, ironweed) is a creeping perennial in the Brassicaeae (Mustard) family.

Identification

Small, white flowers with 4 petals, < 1 cm wide occur on rounded clusters at the branch ends. Leaves are bright-to-gray-green, alternate, taper to a pointed tip with **prominent whitish midvein**. Basal leaves are waxy up to 30 cm long with long stalks; stem leaves are smaller with shorter stalks. Stems up to 1.5 m tall, branched. Deep spreading roots account for up to 40% of the plant's biomass. Seed pods are flat, rounded, 2-3 mm long; many pods per plant and 2 seeds per pod.

Habitat

Thrives in moist sandy soils and tolerant to saline soils.

Regionally common

Control

Reproduces by seed and creeping roots. Hand-pulling, digging and herbicide.

Similar Species

Non-native: Hoary cress (*Lepidium appelianum* (globe-podded), *L. draba* (heart-podded), *L. chalepense* (lens-podded))
Native: Native pepper-grass (*Lepidium* spp.) distinguished by smaller size

Persian Darnel *(Lolium persicum)*

Native to central Asia, Persian darnel is an annual or winter annual in the Poa (Grass) family. It is easily misidentified as a grain or cereal crop.

Identification Spike is straight, 10-20 cm long; each flattened spikelet is 1-2 cm long spaced their own length apart. Seed heads consist of alternating spikelets, each containing 5-7 seeds. Leaves are flat, 6-15 cm long by 2-8 mm wide, dark green; auricles may be absent or measure up to 2 mm and truncated ligules are 0.5-2 mm. Upper leaf is slightly rough and undersides are smooth. Stem is erect, branching, 20-70 cm tall with 3-4 nodes and rough below flower head with **red tinge at stem base**. Fibrous root system.

Habitat
Prefers relatively dry soil.

Regionally common

Control Reproduces by seed. Since seedlings emerge early, a primary shallow tilling in early spring will promote the weed's germination, then a shallow tilling of weed seedlings once most have emerged but could delay crop planting. Herbicides are most effective if applied when the weeds have 1 – 4 leaves.

Similar Species
Non-native: Downy brome *(Bromus tectorum)*, perennial ryegrass *(Lolium perenne)* **Native:** Native grasses

WEED CONTROL ACT DESIGNATION: **UNREGULATED**

Phragmities, Invasive *(Phragmites australis* ssp. *australis)*

Native to Europe, invasive Phragmites is a tall, aquatic or semi-aquatic perennial in the Poaceae (Grass) family.

Identification

Flowers first appear dark purple, turning tan/brown as they develop, large, feathery plumes that droop, 15-50 cm long. **Leaves are blue-green**, alternate and 25-50 cm long without hairs. Stems are tall, **up to 6 m, hollow with many nodes**. Roots are extensive and primarily responsible for reproduction.

Habitat

Prefers still or slow-moving waters, typically up to 1 m deep, but tolerates a wide range of conditions.

Control

Reproduces primarily by creeping roots. Mechanically remove/damage all roots, hand-pulling, herbicide, fire, flooding may be effective.

Similar Species

Non-native: Canary reedgrass (*Phalaris arundinacea*) (native and introduced forms) is much shorter (1.5 m) with compact and narrow (sike-like) flower/seed heads.

Native: Native phragmites (*Phragmites australis* ssp. *americanus*) can be distinguished by its less aggressive growth habits, intense red-purple coloring in the lower stems, sparse seed head, black spots may be found in the fall, and the leaves do not persist after winter.

Puncturevine *(Tribulus terrestris)*

Native to the Mediterranean and Africa, puncturevine is an annual in the Zygophyllaceae (Caltrop) family. The sharp spines can cause foot and digestive tract injuries in grazing animals, and the plant contains poisons that can harm humans.

Identification

Single yellow flowers with 5 petals, 4-10 mm wide sit on short stalks between each pair of leaves. Opposite leaves are hairy and pinnately compound with 8-16 leaflets. Reddish stems are branched from the root, hairy and usually lie along the ground; can be 10 cm to over 1 m long. Woody taproot up to 2.5 m deep. Fruit is a woody, hard pod that splits into 4-5 nutlets; up to 500 seeds/nutlets. **Nutlets resemble bull heads with 2-4 sharp spines up to 10 mm long.**

Habitat

Tolerant of a wide range of habitats but prefers dry, loose, sandy soils.

Control

Reproduces by seed. Hand-pulling and shallow cultivation.

Not known to be present

Similar Species

Non-native: Leaves similar to cicer milkvetch *(Astragalus cicer)* before flowering

Native: None

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Queen Anne's Lace *(Daucus carota)*

Native to Eurasia, queen Anne's lace is a biennial in the Apiaceae (Carrot) family.

Identification

Clusters of white umbel shaped flower heads are 5-10 cm on long hairy stalks; **long, 3-pronged, finger-like bracts** surround flower head base. **At maturity, bracts curl up encompassing seeds in nest-like shape**. Basal rosette produced in first stage of growth, flowering stem in second. Leaves pinnately compound, finely divided (carrot-like). Lower leaves stalked; upper leaves stalkless. Stems are erect, smooth with minimal branching, up to 1 m tall and covered with stiff, white hairs.

Habitat

Tolerant of a variety of soil types in full sun.

Control

Reproduces by seed. Hand-pulling before seed set for small infestations, mowing multiple times a season for several years, or herbicide.

Similar Species

Non-native: Wild caraway *(Carum carvi)*
Native: Species in the Apiaceae (Carrot) family, common yarrow *(Achillea millefolium)*

Ragwort, Tansy *(Jacobaea vulgaris)*

Native to Eurasia, tansy ragwort (stinking Willie) is a biennial or short-lived perennial in the Asteraceae (Sunflower) family. It is toxic to livestock and humans.

Identification

Flat-topped clusters of yellow daisy-like flowers with 13 ray petals surround a yellow centre on stem ends. Black-tipped bracts below the flower in a single row visible before bloom. Basal rosette produced in first stage of growth, flowering stem in second. Rosettes with 10-20 leaves with web-like hairs; stem leaves alternate, decreasing in size upwards. Leaves deeply indented with blunt-toothed lobes giving a ruffled appearance; leaf underside is somewhat hairy. Several or solitary stems, may be branched and up to 180 cm. Stems and leaf stalks often purplish with cobwebby hairs. Deep taproot. Up to 150,000 seeds per plant.

Habitat

Prefers dry areas with full sun to partial shade and well drained soils.

Control

Reproduces by seed. Hand-pulling and herbicide.

Similar Species

Non-native: Common groundsel *(Senecio vulgaris)*
Native: Ragwort and groundsel species (*Senecio* spp.)

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Rush Skeletonweed *(Chondrilla juncea)*

Native to the Mediterranean, Asia and North Africa, rush skeletonweed (nakedweed, devils' grass) is a short-lived perennial in the Asteraceae (Sunflower) family.

Identification

Single or clusters of 2-5 yellow flowers are scattered on stems and branch tips. Rosette leaves deeply toothed but wither as stem bolts, stem leaves are narrow; produce milky sap when damaged. Mass of wiry stems can grow up to 1.2 m tall; **covered with downward bent, bristly hairs on the lower 10-15 cm of stem**. Slender taproot up to 2 m deep. Up to 20,000 seeds per plant.

Habitat

Thrives in coarse and well-drained soils and areas of full sun without an extended summer drought.

Not known to be present

Control

Reproduces by seed. Hand-pulling, grazing and herbicide.

Similar Species

Non-native: None
Native: Wire lettuce *(Stephanomeria pauciflora)*

Russian Olive *(Elaeagnus angustifolia)*

Native to southern Europe, Russian olive is a deciduous shrub/tree in the Eleagnaceae (Oleaster) family.

Identification

Small creamy-yellow flowers occur in clusters. Leaves are 2-10 cm long, alternate, egg to lance-shaped, **silvery-green** with smooth edges on current year twigs. Branches flexible and **thorny**. Stems, buds and leaves are densely covered with silvery to rusty scales. Bark is thin and brown, developing shallow cracks, then peeling in long strips; up to 9-15 m tall with a dense, rounded crown. Fruits are a silvery, oval-shaped, 1-2 cm long, enclosing a single 6-13 mm seed.

Habitat

Prefers well-drained soils in full sun to part shade. Tolerant to wide variety of soils and wind, heat and saline conditions. Thrives in southeastern parts of the province.

Control

Reproduces by seed. Mechanical control (cutting, mowing) alone will enable resprouting, however when combined with herbicides can be effective.

Similar Species

Non-native: Autumn olive *(Elaeagnus umbellata)*
Native: Silverberry *(Elaeagnus commutata)*

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Saltcedar/Tamarisk *(Tamarix* spp.*)*

Native to Asia, saltcedar/tamarisk is a deciduous shrub or small tree in the Tamaricaceae (Tamarisk) family. There are three species listed in Alberta: Chinese tamarisk *(Tamarix chinensis)*, smallflower tamarisk *(T. parviflora)* and saltcedar *(T. ramosissima)*. Buyer beware, this plant may still be sold as an ornamental under the common names, pink cascade and summer glow.

Identification

Flowers are small, pink to white, with 4-5 petals borne in finger-like clusters. Leaves are alternate, small, overlapping, and appear **scale-like; resembles cedar foliage**. Leaves turn yellow-orange in autumn. Stems up to 8 m tall, highly branched with smooth, dark brown to reddish brown bark. Deep taproot and roots that can form from non-root tissue.

Habitat

Tolerant of many habitat types but is shade intolerant and prefers fine-textured soils.

Control

Reproduces by seed and creeping roots. Repeated hand-pulling and cutting.

Similar Species

None – unique in appearance

Saltlover *(Halogeton glomeratus)*

Native to Eurasia, saltlover (halogeton, barila) is a summer or winter annual in the Chenopdiaceae (Goosefoot) family. It is highly poisonous to livestock.

Identification

Two types of flowers with 5 sepals - smaller flowers have toothed sepals and larger flowers are 2-3 mm wide – both occur in leaf axils, are light yellow-green with a pink centre. Leaves are alternate, simple, small, fleshy, tubular, blue-green with **a small bristle at the end of each leaf**. Red stems turn yellow-white at maturity and 8-30 cm tall, succulent and branched from the base. Taproot up to 0.5 m deep. Up to 50,000 seeds per plant.

Habitat

Tolerant of semi-arid environments, saline and alkaline soils.

Isolated

Control

Reproduces by seed. Mechanical and herbicide control.

Similar Species

Non-native: Kochia *(Bassia scoparia)* before flowering, Russian thistle *(Salsola pestifera)*
Native: None

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Scabious, Field *(Knautia arvensis)*

Native to Europe, field scabious (blue buttons, bachelor's buttons) is a long-lived perennial in the Dipsacaceae (Teasel) family.

Identification

One pink-blue-purple flower head per branch tip, 4 cm in diameter; ring of narrow green bracts below flower head. Leaves are hairy and highly variable in the degree of the lobes. Lower leaves are up to 25 cm long but become smaller higher on plant; stem leaves are opposite and attach directly to stem. Stems up to 1.5 m, hairy with one or several branching stems. Deep taproot. Seed head is dome-like and covered in bristly hairs.

Habitat

Prefers nutrient-rich and moderately dry soils but can also establish in gravelly soils.

Regionally common

Control

Reproduces by seed. Herbicide, cultivation or mechanical removal of the seed heads/top growth.

Similar Species

Non-native: Pincushion flower *(Scabiosa columbaria)*
Native: None

Sow Thistle, Perennial *(Sonchus arvensis)*

Native to Europe and Asia, perennial sow thistle (creeping sow thistle, field milk thistle, marsh sow thistle) is a perennial in the Asteraceae (Sunflower) family.

Identification

Yellow dandelion-like flowers in loose clusters at the ends of stems; bracts are often covered with sticky hairs. **Leaves are alternate, weakly prickled edges with variable shape.** Stems 30-150 cm tall, upright, hollow, branched at the top portion of the plant; **contain a milky sap**. Creeping roots up to 3 m deep and fragile. Small, dandelion-like seeds with wings; up to 13,000 seeds per plant.

Habitat

Adapted to a wide range of conditions but does best in moist, fertile soils with full sunlight.

Widespread

Control

Reproduces by seed and creeping roots. Hand-pulling, cultivation or mowing with regular repetition or herbicide.

Similar Species

Non-native: Annual sow thistle *(Sonchus oleraceus)*, narrow leaved hawksbeard *(Crepis tectorum)* **Native:** None

WEED CONTROL ACT DESIGNATION: **UNREGULATED**

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Spurge, Leafy *(Euphorbia virgata* formerly *Euphorbia esula)*

Native to Asia and Europe, leafy spurge is a perennial in the Euphorbiaceae (Spurge) family. It is toxic to humans, livestock and wildlife when consumed or when milky sap contacts skin.

Identification Clusters of small, yellowish-green flowers lack petals and sepals and are supported by 2 heart-shaped, leafy bracts. Leaves are alternate, oblong, narrow, waxy and attached directly to the stem. **Leaves and stems contain a white milky sap.** Stems up to 90 cm tall, smooth and arranged in clumps. Deep and extensive creeping roots with pink buds on lateral roots. Small seeds grow in pods on top of bracts which explode upon maturity to launch seeds up to 5 m; up to 130,000 seeds per plant.

Habitat Tolerates a wide variety of conditions but prefers warm climates and full sun.

Control Reproduces by seed and creeping roots. Targeted grazing by sheep and goats, biocontrol (leafy spurge beetles, *Aphthona* spp.) or herbicide, especially when used together.

Similar Species

Non-native: Yellow toadflax *(Linaria vulgaris)* before flowering, but no milky sap; cypress spurge *(Euphorbia cyparissias)* **Native:** None

St John's-Wort, Common *(Hypericum perforatum)*

Native to Eurasia and North Africa, common St John's-wort is a perennial in the Clusiaceae (St John's-wort) family. It has been widely cultivated as a medicinal plant and may be toxic to livestock.

Identification Numerous yellow 5-petaled flowers up to 2.5 cm in diameter form flat-topped clusters; **distinctive black glands along petal edges**. Leaves are opposite, oval-shaped to 2.5 cm long, lack stalks, darker green above with tiny transparent dots on the leaf surface. Stems 30-90 cm tall, erect, green to reddish with black dots, branching near the top. Extensive taproot and lateral roots. Three-pointed capsule 5 mm long and contain numerous rust-coloured seeds; up to 35,000 seeds per year.

Habitat Prefers well-drained, coarse textured soils and temperate climates, but can tolerate a wide variety of conditions.

Control Reproduces by seed and creeping roots. Herbicide, mechanical and re-seeding with perennial grasses or legumes.

Similar Species

Non-native: Tansy ragwort *(Jacobaea vulgaris)*
Native: Western St John's-wort (*Hypericum scouleri* subsp. *nortoniae*)

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Starthistle, Yellow *(Centaurea solstitialis)*

Native to the Mediterranean and North Africa, yellow starthistle (yellow cockspur, golden starthistle) is a winter annual in the Asteraceae (Sunflower) family. It can cause chewing disease in horses.

Identification

One yellow flower head per branch tip. Sharp straw-coloured spines up to 2 cm long radiate from the individual bracts. Lower leaves deeply lobed, upper leaves smaller towards the top of the plant and covered with cottony hairs. Rigid stems up to 2 m tall, branched, covered with hairs. Taproot up to 1 m deep. Up to 150,000 seeds per plant.

Habitat

Shade intolerant, but can thrive in periods of drought, rocky, shallow soils and areas of full sun.

Not known to be present

Control

Reproduces by seed. Hand-pulling, cultivation, mowing or herbicide before seed set.

Similar Species

Non-native: Bighead knapweed *(Centaurea macrocephala)*, Maltese starthistle *(Centaurea melitensis)* **Native:** None

Swallowwort, Black *(Vincetoxicum nigrum)*

Native to northern and southwestern Europe, black swallowwort is a perennial in the Apocynaceae (Dogbane) family. Also known as black dog-strangling vine.

Identification **Dark purple flowers** in clusters of 6-10 on short stems. **Leaves are oval, shiny, dark green**, 7.5-10 cm with smooth margins on short leaf stalks. Stems are green, unbranching vines that may be erect or twisting, contains clear sap, and grow 0.6-2 m long. Extensive rhizomatous roots.

Habitat Found in many soil types and moisture conditions, including full sun to dense shade. Grows by climbing other vegetation and creating tangled thickets.

Not known to be present

Control Reproduces by seed and roots. Hand-pulling may be effective for small populations, watch for resprouting. Mowing may prevent seed production.

Similar Species

Non-native: Pale swallowwort (*Vincetoxicum rossicum*) has lighter green and looser-looking flowers

Native: Purple clematis (*Clematis occidentalis*) has large, showy purple flowers

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

WEED CONTROL ACT DESIGNATION: **PROHIBITED N OXIOUS**

Swallowwort, Pale/European *(Vincetoxicum rossicum)*

Native to northern and southwestern Europe, pale/European swallowwort is a perennial in the Apocynaceae (Dogbane) family. Also known as pale dog-strangling vine.

Identification **Pale pink to maroon or reddish-brown flowers** form loose clusters of 6-10 on short stems. Leaves are oval, shiny, dark green, 7.5-10 cm with smooth margins on short leaf stalks. Stems are green, unbranching vines that may be erect or twisting, contains clear sap, and grow 0.6-2 m. Extensive rhizomatous roots.

Habitat Adapted to many soil types and moisture conditions. Grows by climbing other vegetation and creating tangled thickets.

Not known to be present

Control Reproduces by seed and roots. Hand-pulling may be effective for small populations, watch for resprouting. Mowing may prevent seed production.

Similar Species

Non-native: Black swallowwort (*Vincetoxicum nigrum*) has dark purple and tighter-looking flowers

Native: Purple clematis (*Clematis occidentalis*) has large, showy purple flowers

Tansy, Common *(Tanacetum vulgare)*

Native to Europe, common tansy is a perennial in the Asteraceae (Sunflower) family. It is mildly toxic to humans and wildlife if consumed.

Identification

Yellow-orange, **button-like flower** heads form flat-topped, dense clusters of 20-100 at stem ends. Leaves are alternate, deeply divided into leaflets with toothed edges (fern-like) and has a strong odour. Stems often purplish-red, woody and grow up to 180 cm tall. Woody, creeping roots. Up to 50,000 seeds per plant.

Habitat

Prefers well-drained soils and full sun.

Control

Reproduces by seed and creeping roots. Cutting, mowing and herbicide.

Similar Species

Non-native: Tansy ragwort *(Jacobaea vulgaris)*
Native: Dune tansy *(Tanacetum bipinnatum)*

COMMON TEASEL

CUT-LEAF TEASEL

WEED CONTROL ACT DESIGNATION: **UNREGULATED**

Teasel, Common *(Dipsacus fullonum)*

Teasel, Cut-Leaf *(Dipsacus laciniatus)*

Native to Eurasia and northern Africa, common teasel and cut leaf teasel are biennials to short-lived perennial forb in the Caprifoliaceae (Honeysuckle) family.

Identification

Common teasel has light purple to lavender flowers, while **cut-leaf teasel has white flowers**, both forming dense bands around oval, spiny flower heads that bloom from early to late summer. The flower heads are surrounded by stiff, spiny bracts that curve upward (common teasel) and downward for cut-leaf.

Leaves differ: common teasel has long, narrow leaves with smooth or slightly wavy edges, while cut-leaf teasel leaves are deeply cut, lobed, and jagged.

Both species have **opposite leaves that join to form a water-holding cup**; stems are tall, stiff, ridged, and **covered in small prickles**, often branching near the top. Plants form a low rosette in the first year, followed by a tall flowering stalk in the second year (2–2.5 m tall). Produces many small seeds that persist into winter.

Habitat

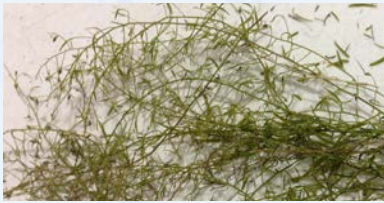
Often found along field edges, in roadside ditches, and in disturbed areas such as waste ground and pastures.

Control

Reproduces by seed. Herbicide or hand-pull, removing as much of the taproot as possible.

Similar Species

None – unique in appearance



WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Thesium, Field *(Thesium ramosum)*

Native to China and central Europe, thesium is a perennial in the Santalaceae (Sandalwood) family.

Identification

Tiny, white to greenish-white flowers with **5 triangular petals surrounding 5 yellow stamens** and 1 anther, 4-5 mm in diameter. **Leaves very narrow**, 3-4 cm long, 4 mm wide, pale green, lance- to sickle-shaped, smooth edges. Stems are erect or ascending, highly branched, 20-25 cm tall. Thick taproot with some branching. **Inconspicuous unless in bloom.**

Habitat

Commonly found in open habitats. Tolerates a range of conditions.

Control

Reproduces by seed. Hand-pulling and removing all parts of the root on small infestations with monitoring for regrowth.

Similar Species

Non-native: Other agricultural weeds in the Santalaceae family

Native: Northern bedstraw *(Galium boreale)*

Thistle, Bull *(Cirsium vulgare)*

Native to Eurasia, bull thistle is a biennial in the Asteraceae (Sunflower) family.

Identification

Pink to purple **droplet-shaped flower head**, up to 5 cm in diameter. **Bracts are narrow with spined tips around entire base.** Basal rosette produced in first stage of growth, flowering stem in second. Large rosette, leaves are wrinkled, **coarse hairs on upper side and soft hairs on underside**, deeply lobed and up to 30 cm long with 1 cm spine on each tip. **Stem up to 1.5 m tall** and branched. Short fleshy taproot.

Habitat

Thrives in full sun and can tolerate a wide range of conditions.

Regionally common

Control

Reproduces by seed. Long-term commitment required for control. Hand-pulling, digging, mowing, grazing and herbicide.

Similar Species

Non-native: Canada thistle *(Cirsium arvense)* with smooth upper leaves and smaller flowers and other thistle species (*Carduus* and *Cirsium* spp.)
Native: Native thistle species (*Cirsium* spp.)

WEED CONTROL ACT DESIGNATION: **UNREGULATED**

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Thistle, Canada *(Cirsium arvense)*

Native to northern Europe, Canada thistle is a perennial in the Asteraceae (Sunflower) family.

Identification

Clusters of purple-pink-white flowers, 1.5-2 cm in diameter form on branch ends. Bracts have weak prickles (no spines). Leaves alternate, lobed, lance-shaped, edges wavy, spine-tipped and stalkless. Stems are prickly, erect, 30-120 cm tall, branched and slightly hairy. White horizontal and vertical creeping roots can spread up to 4.5 m horizontally and 6 m deep.

Habitat

Thrives in a variety of soil types and drought resistant.

Control

Reproduces by seed and creeping roots. Mowing, grazing and herbicide.

Similar Species

Non-native: Plumeless thistle *(Carduus acanthoides)*, marsh thistle *(Cirsium palustre)*, purple-flowered knapweeds (*Centaurea* spp.) **Native:** Native thistle species (*Cirsium* spp.)

Thistle, Marsh *(Cirsium palustre)*

Native to Europe, marsh thistle is a biennial in the Asteraceae (Sunflower) family. It has been known to hybridize with Canada thistle.

Identification

Few to many purple flower heads in dense clusters at branch tips; bracts spineless. Basal rosette produced in first stage of growth, flowering stem in second. Lobed leaves are 15-20 cm long and covered with long, sticky hairs, woody veins on the underside. Leaves are larger and stemless toward the base. **Reddish stems are slender with spiny wings, lower stems primarily unbranched, branched at top, thick and covered in long sticky hairs, up to 1-3 m tall.** Fibrous roots. Up to 2,000 seeds per plant.

Habitat

Prefers moist clay, open, undisturbed habitat, and can be a problem in cut blocks.

Control

Reproduces by seed. Repeated mechanical control in first year (rosette stage) or before seed set.

Similar Species

Non-native: Canada thistle *(Cirsium arvense),* plumeless thistle *(Carduus acanthoides)*
Native: Native thistle species (*Cirsium* spp.)

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Thistle, Nodding *(Carduus nutans)*

Native to Europe, nodding thistle (musk thistle) is a biennial in the Asteraceae (Sunflower) family.

Identification

Large, nodding, purple flower with large thorny bracts; up to 8 cm in diameter. Basal rosette produced in first stage of growth, flowering stem in second. Clasping leaves, alternately arranged on the stem with deeply lobed, wavy edges, spines along the edge, hairy, sometimes pinkish and up to 25 cm long with a prominent midrib. Spiny stem is hairy and 20-250 cm tall. Fleshy taproot. Each flower head may produce hundreds of seeds.

Habitat

Intolerant of excessively wet, dry or shady conditions.

Control

Reproduces by seed. Hand-pulling, mowing and herbicide before seed set.

Similar Species

Non-native: Plumeless thistle *(Carduus acanthoides)*, marsh thistle *(Cirsium palustre)*
Native: Native thistle species (*Cirsium* spp.)

Thistle, Plumeless *(Carduus acanthoides)*

Native to southern Europe and western Asia, plumeless thistle (bristly thistle, spiny plumeless thistle) is a biennial or sometimes winter annual in the Asteraceae (Sunflower) family.

Identification

Purple flower head mostly solitary at stem and branch tip with spine tipped bracts, **flower head less than 2 cm**. Basal rosette produced in first stage of growth, flowering stem in second. Clasping leaves are alternate, hairy and lobed with spines along edges and at leaf tip. Stem is covered in winged ridges, **2-5 mm spines along the stem right to flower base**, up to 2 m tall. Large, fleshy taproot.

Habitat

Prefers sandy-loam soils with early season precipitation.

Control

Reproduces by seed. Hand-pulling and herbicide before seed set.

Similar Species

Non-native: Marsh thistle *(Cirsium palustre)*, Canada thistle *(C. arvense)*, nodding thistle *(Carduus nutans)*
Native: Native thistle species (*Cirsium* spp.)

WEED CONTROL ACT DESIGNATION: **NOXIOUS**

Toadflax, Dalmatian *(Linaria dalmatica)*

Native to Europe, dalmatian toadflax is a short-lived perennial in the Scrophulariaceae (Figwort/Snapdragon) family. It is unpalatable or mildly toxic to livestock.

Identification

Snapdragon-like, yellow flowers with darker yellow spot on the lower lip and long spur extending from the flower base. Leaves are waxy, pale-to-bluish green, oval to **heart-shaped**, alternate with a pointed tip and **clasp the stem**. Stems to 120 cm tall, robust and waxy. Deep, woody taproot with horizontal roots and buds that form new stems. Tiny brown-black seeds form in a two oval capsules; up to 500,000 seeds per plant.

Habitat

Prefers full sun and coarse textured, well-drained soils that are pH neutral to slightly alkaline. Primarily found low-mid elevations that are sheltered and/or have southern exposures.

Control

Reproduces by seed and creeping roots. Repeated hand-pulling, biocontrol (the dalmatian toadflax stem-boring weevil, *Mecinus janthiniformis*) or herbicide.

Similar Species

Non-native: Yellow toadflax *(Linaria vulgaris)* leaf shape differs **Native:** None

Toadflax, Yellow *(Linaria vulgaris)*

Native to Europe, yellow toadflax (common toadflax, butter-and-eggs) is a perennial in the Scrophulariaceae (Figwort/Snapdragon) family.

Identification

Snapdragon-like, yellow to pale yellow flowers with orange spot on lower lip and long spur extending from the flower base. Leaves are narrow, pale-to-grey green, linear to **lance-shaped**, alternate and **attach directly to stem but not clasp**. Stems to 100 cm tall, erect and usually unbranched. Extensive, creeping root system. Up to 5,000 seeds per plant stem.

Habitat

Prefers sandy-gravelly soils but is tolerant of a wide range of growing conditions.

Control

Reproduces by seed and creeping roots. Repeated hand-pulling or herbicide.

Similar Species

Non-native: Dalmatian toadflax *(Linaria dalmatica)* leaf shape differs, may resemble leafy spurge *(Euphorbia esula)* before flowering, but no milky sap **Native:** None

WEED CONTROL ACT DESIGNATION: **PROHIBITED NOXIOUS**

Ventenata *(Ventenata dubia)*

Native to southern Europe, northern Africa, and western Asia, Ventenata is a winter annual grass in the Poaceae (Grass) family.

Identification

Spike is pyramid-shaped, 15-20 cm long with 2-5 branches. Each spikelet has 2-3 florets, which have a short, straight awn, while **upper florets have a 90° bend to the twisted awns** that help drive it into the ground upon maturity. The plant becomes straw coloured when mature. Stems are long, thin, and wiry. Leaves are hairless, located primarily on the lower half of the plant. On seedlings, leaves are narrow and may appear rolled in.

Habitat

Typically grows in clay and clay-loam soils that are shallow and rocky.

Control

Reproduces by seed. Herbicide, hand-pulling or mowing before seed set, planting competitive crops or vegetation.

Similar Species

Non-native: Downy brome (*Bromus tectorum*) and Japanese brome (*Bromus japonicus*)
Native: Annual hairgrass (*Deschampsia danthonioides*) has smaller, rounder seeds, and ricegrass (*Eriocoma hymenoides*) has longer spikes

Waterhemp, Tall *(Amaranthus tuberculatus)*

Native to the eastern United States, tall waterhemp is an annual herbaceous plant in the Amaranth (Pigweed) family. Herbicide resistance makes it difficult to control.

Identification

Flowers form a long (10-20 cm long), spiky cluster that can vary in colour from green to red. Only female plants produce seeds. **Stems are smooth and hairless, growing up to 3 m in height. Leaves are narrow and hairless**, 2-10 cm long and 1-3 cm wide, with upper leaves reduced. Mature leaves have wavy-like margins, lack a notched tip, and leaf stalks are shorter than the leaf blade. Seeds are small, 0.8-1.3 mm long, oval-shaped, and dark reddish brown in colour.

Habitat

Well-adapted to grow under variable conditions, including areas prone to drought and moist to wet conditions.

Not known to be present

Control

Reproduces by seed. Herbicide, hand-pulling or mowing before seed set, planting competitive crops or vegetation, or herbicide.

Similar Species

Non-native: Redroot pigweed (*Amaranthus retroflexus*), green pigweed (*Amaranthus powellii*) and Palmer amaranth (*Amaranthus palmeri*). Tall waterhemp has narrower leaves without a notched tip, and the leaf stalks are shorter than the leaf blades.
Native: None

WEED CONTROL ACT DESIGNATION: **UNREGULATED**

Wild Caraway *(Carum carvi)*

Native to Eurasia, wild caraway (caraway, meridian fennel) is a biennial in the Apiaceae (Carrot) family.

Identification

Several clusters of white to pale pink **umbel shaped flower heads** on long stalks. Basal rosette produced in first stage of growth, flowering stem in second. Leaves are alternate, compound and **finely divided** (similar to carrot leaves); basal and lower leaves stalked. Stems are usually single, glossy, branched in the upper plant and grow to 90 cm tall; may be several stems per plant. Narrow parsnip-like taproot. Fruit is crescent-shaped with ridges and 2 mm long.

Habitat

Prefers full sun and tolerates a wide range of soil types, pH and climates, but intolerant to complete shade.

Regionally common

Control

Reproduces by seed. Herbicide, repeated hand-pulling or cultivation before seed set.

Similar Species

Non-native: Queen Anne's lace *(Daucus carota)* finger-like bracts and hairy stems, wild parsnip *(Pastinaca sativa)*
Native: Common yarrow *(Achillea millefolium)*




Wild Parsnip *(Pastinaca sativa)*

Native to Europe and Asia, wild parsnip is a member of the Apiaceae (Carrot) family. It is a biennial or short-lived perennial. Wild parsnip is a root vegetable but has escaped cultivation and spread throughout much of the temperate world. Toxic to livestock. Contact with plant not recommended due to potential skin irritation.

Identification The flowers are yellowish-green and grow in a flat-topped cluster about 10–20 cm wide. Each cluster has 6–25 stems that spread out from one point, with small flowers at the ends. Leaves are alternate, and pinnately compound, and up to 15 cm long. Leaves become progressively reduced in size and presence up the stems. Leaf stalks are grooved and clasp the stem. **Stems grow up to 2 m high**, are grooved, hollow, with sparse hairs.

Habitat Does best in rich, calcareous, and alkaline soils and in mesic to dry soils, but tolerates wet soil. Prefers partial to full sun.

Regionally common

Control Reproduces by seed and occasionally from root fragments left in the soil. Hand-pulling, herbicide, digging or cultivating prior to seed set.

Similar Species

Non-native: Giant hogweed *(Heracleum mantegazzianum)* grows much taller, up to 5.5 m tall. Poison hemlock (*Conium maculatum*), Hemlock species (*Cicuta*), these have white flowers.
Native: Cow parsnip (*Heracleum maximum*) has white flowers. Similar flowers to Heart-leaved Alexander (*Zizia aptera*) with different leaves, *Angelica* spp.

YELLOW TOADFLAX

GLOSSARY

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. There are both winter and summer annuals. A winter annual is a plant that germinates in the fall, overwinters, and regenerates the following spring from its taproot to complete its life cycle before summer begins. A summer annual is a plant that germinates in the spring and completes its life cycle by the end of summer in the same calendar year.

Auricle: Small ear-like projection from the base of a leaf that wraps around the stem.

Awn: Hair or bristle-like appendage in some cereal and other grasses.

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.

Biocontrol: A method of introducing the natural predators of weeds into the environment where they have become invasive while establishing without such pressures, to restore ecological balance.

Bract: Modified leaf or leaf-like structure at the base of the flower, usually below the petals or flower cluster.

Capsule: Dry fruit chamber that holds 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. Also referred to as an inflorescence.

Gland: A plant structure which secretes one or more viscous products.

Leaflet: Each of the leaf-like structures that together make up a compound leaf.

Ligule: The thin membranous appendage at the junction of the leaf and the leafstalk.

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.

Node: Part of a plant stem from which one or more leaves emerge, often forming a slight swelling or knob.

Nutlet: Hard, small, one-seeded fruit, usually referring to fruits of the Boraginaceae members. Used for only a few descriptions.

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, which gives them a hand-like appearance.

Perennial: Plants that live three or more years. There are both simple perennials and creeping rooted perennials. Simple perennials feature tap roots and grow as individual plants. Creeping rooted perennials feature many long horizontally oriented underground rhizomes radiating out from parent plants, interconnected and capable of generating multiple new plant shoots.

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

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

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.

Sheath: A protective covering at the base of the leaf stem that partly surrounds the stem.

Spike: An unbranched flower head that bears stemless flowers; stemless flowers are attached directly without stalks. Common for grasses.

Spikelet: The basic unit of a grass flower.

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

Stamen: The male fertilizing organ of a flower, comprising the anther and filament.

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.

Tuber: Specialized underground part of a stem or creeping root from which new plants arise.

Umbel: A flower head comprised of several individual flowers, in which the flowers' stems arise from a common point, ascend in all directions, and form a relatively level topped flower cluster (upside down umbrella).

Whorl: Arrangement of three or more similar structures (petals, stamens, bracts, leaves, etc.) radiating from a common point.

Thumbnails of Other Common Weeds

Bachelor Buttons
Centaurea cyanus

Birdvetch
Vicia cracca

Black Medic
Medicago lupulina

Bluebur
Lappula squarrosa

Caragana
Caragana arborescens

Dandelion
Taraxacum officinale

Flixweed
Descurainia sophia

Goatsbeard
Tragopogon pratensis

Lambsquarters
Chenopodium album

Pineappleweed
Matricaria discoidea

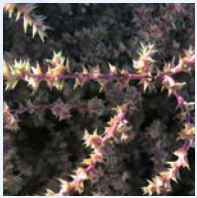
Plantain
Plantago major

Prostrate Knotweed
Polygonum aviculare

Thumbnails of Other Common Weeds

Quackgrass
Elymus repens

Round Leaved Mallow
Malva pusilla



Russian Thistle
Salsola tragus

Shepherd's Purse
Capsella bursa-pastoris

Stinkweed
Thlaspi arvense

Yellow Sweet Clover
Melilotus officinalis

PURPLE LOOSESTRIFE

CREDITS

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RESOURCES/REFERENCES

For more information contact your local county, Agricultural Fieldman, municipal Weed Inspector, Bylaw Officer or refer to the following books and websites below:

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