

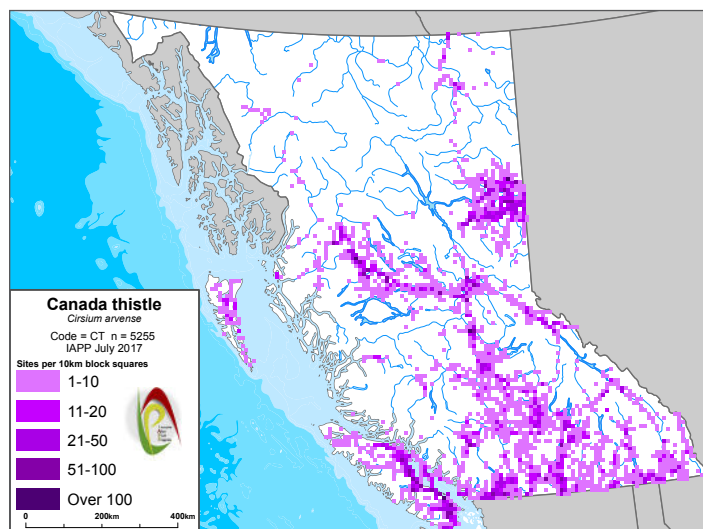
Canada Thistle *Cirsium arvense*

About Canada Thistle

Despite its common name, this invasive thistle is not native to Canada, but actually native throughout Europe and Northern Asia. It was likely one of the first weeds introduced by North American settlers in the 1600s as a contaminant in seeds. It grows in circular patches by spreading vegetatively through roots and once established, it spreads quickly replacing native plant.

Legal Status

Invasive Plants Regulation, Forest and Range Practices Act;
Noxious Weed (Provincial), Weed Control Act.



Distribution

Canada thistle is widespread in all areas of BC. It is commonly found on roadsides, cultivated fields and pastures, logged forests, and other disturbed areas. It is considered to be a major concern in the Peace River, Omineca, and Skeena areas.

Identification

Flowers: Flower heads are white to purple, about 1 cm in diameter, borne on clusters of 1-5 at branch tips, and have a sweet vanilla scent. Flower bracts are spineless.

Stems: Mature plants range from 0.3-2.0 m in height.

Leaves: 5-17 cm long, narrow, and alternate on the stem with crinkled, deeply lobed, and spiny edges. Base leaves are stalkless and clasping, or extended down the stem.

Fruits: One-seeded, pale yellow (straw) or light brown in colour; straight or slightly curved.

Similar Native Species: Wavy leaf thistle (*Cirsium undulatum*). See non-native species for distinguishing characteristics of Canada thistle.

Similar Non- Native Species:

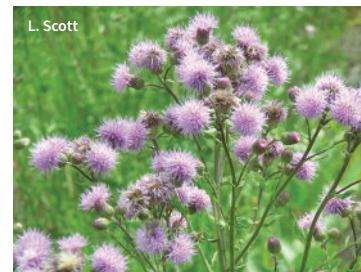
(i) Bull thistle (*Cirsium vulgare*); (ii) Scotch thistle (*Onopordum acanthium*); (iii) plumeless thistle (*Carduus acanthoides*); (iv) musk thistle (*Carduus nutans*); and (v) marsh thistle (*Cirsium palustre*). Canada thistle can be differentiated from all similar species by the lack of spines on the main stem, small flowers, and height (less than 2 m tall).

Ecological Characteristics

Habitat: Canada thistle is found in almost every plant community over a wide range of elevations where there is soil disturbance or bare ground including roadsides, railway embankments, lawns, gardens, cultivated and noncultivated fields, margins of forests, meadows, wetlands, and native plant communities. Best adapted to rich, heavy loam, clay loam, and sandy loam. Grows poorly in shaded conditions. Can tolerate saline, wet, or dry soils, but does not tolerate waterlogged or poorly aerated soils.

Reproduction: Perennial that reproduces by seed and vegetatively through creeping, horizontal roots, the fragments of which are capable of forming new plants. Seed viability may be low; mature seeds germinate most readily in mid-spring. Non-germinated seeds may remain dormant for up to 3 years.

Dispersal: Plants are male or female (dioecious) and grow in circular patches that are often one clone and sex. Canada thistle develops seed sparingly and may produce 1,000 to 1,500 seeds per flowering shoot. Dispersed primarily by wind, seeds can also be dispersed by water, animals, clothing, equipment, and vehicles. Generally, vegetative reproduction from its root system contributes to local spread and seed to long distance dispersal.



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Impacts

Economic: Plants can crowd out forage grasses in pastures and rangelands, reducing yields and productivity.

Ecological: Single plants can spread rapidly (up to 5.5 m per season) and form dense patches, particularly in riparian areas, thus out-competing native plants.

Integrated Pest Management

IPM is a decision-making process that includes identification and inventory of invasive plant populations, assessment of the risks that they pose, development of well-informed control options that may include a number of methods, site treatments, and monitoring.

Prevention

- » Monitor for Canada thistle in both disturbed and undisturbed areas.
- » Ensure soil, gravel, and other fill material are not contaminated.
- » Avoid unloading, parking, or storing equipment and vehicles in infested areas.
- » Minimize soil disturbance during activities and re-vegetate exposed soil as soon as possible.
- » Remove plants, plant parts, and seeds from personal gear, clothing, pets, vehicles, and equipment. Wash vehicles, including tires and undercarriage, and equipment at designated cleaning sites before leaving infested areas.
- » Bag or tarp plants, plant parts, and seeds before transporting to a designated disposal site (e.g. landfill).
- » Take special care when controlling Canada thistle near streams, or ditch lines, to prevent the movement of plant parts downstream.
- » Maintain or establish healthy plant communities that are resistant to invasion by invasive plants.

Mechanical Control

- » Mowing is most effective when completed at the bud stage.
- » Regular cutting or tillage can help wear down plant reserves, reduce plant growth, and reduce populations, but is not likely to kill the plant.
- » Disposal: If plants are cut prior to flowering, the plant material can be left on the site to decompose. If plants are cut post flowering, all plant parts, including flower heads, should be bagged and deeply buried at a landfill. Care should be taken to ensure that plant parts are not distributed during transport.

Biocontrol

- » A seed weevil (*Larinus planus*), stem gall fly (*Urophora cardui*), leaf-eating beetle (*Altica carduorum*), and stem and root mining weevil (*Hadroplontus litura*) have been released. *L. planus* is showing particular promise in suppressing Canada thistle.



Thank you to the BC Ministry of Environment and the BC Ministry of Transportation and Infrastructure for providing project funding, and to those who advised the development of these management recommendations

Chemical Control

Herbicide recommendations and use must first consider site characteristics and be prescribed based on site goals and objectives. Herbicide labels and other sources of information must be reviewed before selecting and applying herbicides.

- » 2,4-D is effective when used in the spring on new germinants, and will achieve suppression of mature plants with repeated treatments.
- » Picloram and glyphosate give good control when applied in the fall after the first hard frost.
- » Spring applications of aminopyralid or clopyralid give good control and suppression of top growth.
- » Applications of metsulfuron-methyl give good control up to the early bud stage.
- » Application of pesticides on Crown land must be carried out following a confirmed Pest Management Plan (Integrated Pest Management Act) and under the supervision of a certified pesticide applicator. <https://www2.gov.bc.ca/gov/content/environment/pesticides-pest-management>



References/Links

- » A Guide to Weeds in British Columbia. Canada thistle. https://www.for.gov.bc.ca/hra/plants/weedsbc/canada_thistle.pdf
- » BC Ministry of Forests, Lands, and Natural Resource Operations, Invasive Alien Plant Program (IAPP). www.for.gov.bc.ca/hra/Plants/application.htm
- » Biological Control Agent Matrix: Canada Thistle. www.for.gov.bc.ca/hfp/publications/00199/canada.htm
- » E-Flora BC, an Electronic Atlas of the Plants of BC. www.eflora.bc.ca/
- » Field Guide to Noxious Weeds and Other Selected Invasive Plants of British Columbia. BC Ministry of Agriculture. https://bcinvasives.ca/documents/Field_Guide_to_Noxious_Weeds_Final_WEB_09-25-2014.pdf
- » King Country Noxious Weed Control Program Weed Alert: Canada Thistle. King County, Washington. https://your.king-county.gov/dnrp/library/water-and-land/weeds/Brochures/CanadaThistle_factsheet.pdf

