Invasive Species Council of BC

FACTSHEET
MARCH 2017

Scotch Thistle *Onopordum acanthium*

About Scotch Thistle

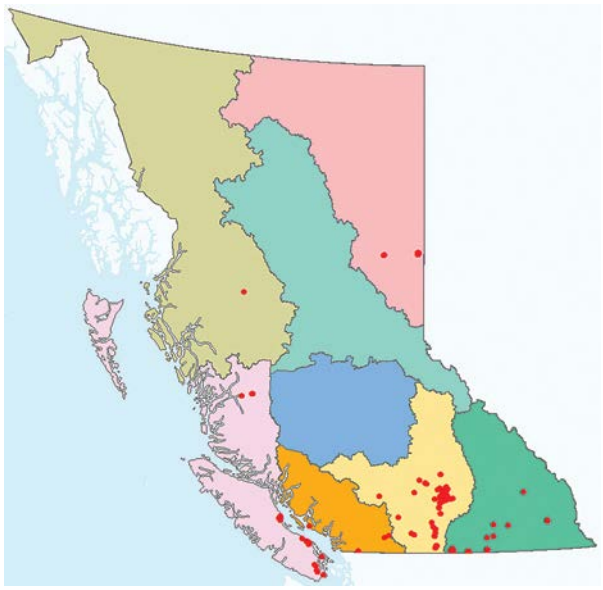
Scotch thistle is the only member of this genus in BC. This forb is considered either as a biennial or a perennial. It is among the most vigourously growing and tallest thistles in BC. Its tall growth, woolly appearance and spiny wings on the stem are key identifying features.

Legal Status

Invasive Plants Regulation, *Forest and Range Practices Act;* Noxious Weed (Regional), *BC Weed Control Act;* Regional Noxious North Okanagan, District of Central Okanagan Bylaw No. 179; Regional District of Okanagan-Similkameen Bylaw No. 2393.

Distribution

In BC, it has been confirmed across the southeast and south-central part of the province, including southeastern Vancouver Island, the Lower Mainland, and the Okanagan. It has been collected as far north as Vernon. It is also reported from a few locations beyond the confirmed range in the Kootenays (Castlegar, Trail, Nelson, and Slocan areas).



Scotch Thistle Distribution (2011)

Identification

Flowers: Flowers are numerous and violet to reddish, 2.5-5.0 cm in diameter with spine-tipped bracts. Heads are disc shaped, with few to many located at the ends of branches.

Stems: Stems are branched and numerous, with broad spiny wings and woolly hairs giving the plant a silvery appearance. Mature plants can reach 1.5-3.0 metres tall.

Leaves: Leaves are very large, irregularly lobed, and arranged alternately along the stem. Leaves have sharp yellow spikes and woolly hairs, and rosette leaves can be as long as 60 cm and 30 cm wide. Basal leaves are lacking.

Fruits: Fruits are a wrinkled, one-seeded achene, brown to grayish black in colour and tipped with slender bristled pappus.

Similar Native Species: None

Similar Non-Native Species: Bull thistle *(Cirsium vulgare)*. Scotch thistle differs from bull thistle as it has larger yet fewer flowerheads, lacks basal leaves and has dense woolly hairs on its leaves; giving it a silvery appearance. In comparison, bull thistle has basal leaves and leaves that are smooth to sparsely woolly below; giving a green appearance.

Scotch Thistle; R. Mueller


Scotch Thistle; L. Scott

SEEDS CAN REMAIN VIABLE IN SOIL FOR UP TO

39 years

Ecological Characteristics

Habitat: Scotch thistle grows at low elevations along roadsides and disturbed areas, and can also grow in irrigation ditches, disturbed habitats, and on rangelands.

Reproduction: A biennial that produces a large, ground-level rosette the first year and a tall, spiny plant the second year. Flowering occurs from mid-June to September, depending on location. Reproduces only by seeds which can remain viable for up to 39 years. Seeds contain a water-soluble germination inhibitor, giving plants success in moist areas. Although Scotch thistle prefers moist soils, it can also spread to drier disturbed sites.

Dispersal: Scotch thistle can produce 70-100 flowering heads, each with 100-140 seeds. The seeds require moisture to germinate, and can remain viable for upwards of 39 years in soil until suitable conditions are met. Transport of seeds is mainly by wind, but seeds can also attach to clothing or animal fur, or by transport in hay, water, or machinery.

Impact

Economic: Scotch thistle can compete with desirable native forage species and forms dense stands that block livestock passage. Infested campsites and trails may become inaccessible when dense stands are formed, and access to stream banks and fishing areas can be reduced.

Ecological: Can compete with desirable plant seedlings in nutrient-deficient soils, and thrive in overgrazed pastures and rangeland. Scotch thistle can reduce wildlife habitats and forage availability.

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 treatment, and monitoring.

A. Prevention

- Monitor for Scotch thistle in disturbed areas with high soil moisture, but also in overgrazed rangelands, construction areas, and roadsides.
- Destroy single plants or new infestations early, before seeds are produced.
- Maintain a strong, competitive perennial plant cover.
- Rehabilitate disturbed areas with perennial grasses to reduce potential infestations.
- 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. Do not compost plants.

B. Mechanical control

- Use mechanical and physical control before Scotch thistles goes to seed.
- Hand pulling can be effective for managing small infestations; protective clothing is required as this species has strong spines.
- Mowing or hand-cutting are usually most effective in combination with other methods. Plants can regrow from severed roots, and cut stems may still produce viable seed. Because Scotch thistle can produce seed even after being mowed, mowing alone is not recommended.

» Effective management has included taproot cutting to 2.5-5.0 cm belowground, followed by a chemical control.

C. Biological Control

» There are no biocontrol agents available for Scotch thistle.

» Sheep, goats, and horses have grazed on Scotch thistle in early stages of infestation.

D. 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.

» Herbicides should be applied in spring before the plant bolts or in the autumn to rosettes.

» Effective herbicides include picloram, dicamba, 2,4-D, aminopyralid and clopyralid.

» Some effective combinations have been picloram plus 2,4-D or dicamba plus 2,4-D or aminopyrlaid plus 2,4-D or clopyralid plus 2,4-D.

» After bolting begins, the use of metsulfuron-methyl has been found effective.

Application of herbicides on Crown land must be carried out following a confirmed Pest Management Plan (*Integrated Pest Management Act*) and under the supervision of a certified applicator. *www.env.gov.bc.ca/epd/epdpa/ipmp/index.html*

Disposal

Note: *Disposal of invasive plants varies by region. Contact your local government for specific information on how to dispose of your invasive plants.*

» Tarp and bag removed plants, plant parts and seeds before transporting to a designated disposal site (e.g. landfill or transfer station).

» Chemically treated plants can be left on site to compost

» It is recommended that transfer stations provide disposal bins intended solely for invasive plants. This will ensure the plant matter within the container is transported in a sealed unit and properly disposed of at the landfill.

» Burning and composting at home is not recommended as extreme temperatures are required.

Common Names

Cotton thistle, winged thistle

References/Links

A Weed Report (Weed Control in Natural Areas in the Western United States). http://wric.ucdavis.edu/information/natural%20areas/wr_O/Onopordum.pdf

BC Laws. http://www.bclaws.ca/

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Guide to Weeds in British Columbia. Province of BC and Open Learning Agency: Scotch Thistle. University of Nevada Cooperative Extension. https://www.unce.unr.edu/publications/files/nr/2002/FS0257.pdf

Ministry of Forest Lands and Natural Resource Operations, Biocontrol matrix. https://www.for.gov.bc.ca/hra/Plants/biocontrol/Agent-Plant_Matrix.htm#M

Regional District of Central Okanagan. http://www.regionaldistrict.com/

Regional District of the Okanagan Similkameen. http://www.rdos.bc.ca/

Scotch Thistle; S. Dewey

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ADDITIONAL CONTACT INFO