

BULL THISTLE

Cirsium vulgare (Savi) Tenore

Family: Asteraceae (Sunflower).

Other Scientific Names: None.

Other Common Names: Common thistle, spear thistle, fuller's thistle.

Legal Status: Not categorized.



Identification

Growth form: Biennial forb.

Flower: Flowers are 4–5 cm wide and clustered at the ends

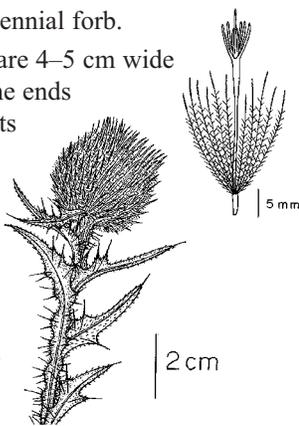
of branches. The flower bracts are somewhat tapered and covered with spines (Whitson et al. 1996).

Flowers are pinkish to dark purple, rarely white.

Seed/Fruit: Shiny light-brown seeds are capped with a circle of plume-like white hairs.

Leaves: The alternate, deeply lobed leaves have stout spines at the lobes and tips. The bases of the leaves clasp the stems with distinctive spiny wings.

Stems: The stems are erect and branched, with the branches spreading upward. Plants range from 0.3 to 2.0 m tall (Douglas et al. 1998).



Roots: A short, fleshy taproot with several primary roots extending from the root crown. Each bears a number of smaller lateral roots.

Seedlings: Seed leaves (cotyledons) are round to spatulate, and smooth. First true leaves are oval to spatulate with spines and a rough, bumpy surface (Carey et al. 1993). First-year plants form a rosette.

Similar Species

Exotics: Bull thistle is similar to other thistles (*Carduus*, *Cirsium*, and *Onopordum* genera) but can be distinguished by flower size, bracts, and leaf surfaces.

Natives: Several species of *Cirsium* are native to BC, but the wavy-leaved thistle (*Cirsium undulatum*) is most similar to bull thistle. Unlike bull thistle, wavy-leaved thistle has densely woolly and wingless stems (Frankton and Mulligan 1970).

Impacts

Agricultural: Heavy infestations can exclude livestock from areas. Additionally, the presence of bull thistle in hay decreases forage value and lowers market price (Zimmerman 1997). It is an aggressive weed but will not survive where cultivation has cut back its stem and destroyed its root system (FEIS 1996).

Ecological: Bull thistle is often a transient species, appearing in recent clear-cuts or disturbed areas and becoming a dominant species for several years (Rees et al. 1996).

Human: Reported to cause hay fever in some individuals (FEIS 1996).

Habitat and Ecology

General requirements: Bull thistle grows in dry to moist habitats that include roadsides, cultivated fields, pastures, and logged forestland and disturbed habitats associated with soil disturbance (Powell et al. 1994). It grows on a wide range of soil types, ranging from gravelly to clay-textured. Bull thistle is generally

intolerant to shade and is nearly absent if light is reduced to less than 40% of full sunlight (FEIS 1996).

Distribution: Common throughout eastern Canada and the US. It is widespread and locally abundant in all areas of BC (Powell et al. 1994) and is present in all agricultural reporting regions.

Historical: Introduced from Eurasia as a seed contaminant.

Life cycle: Biennial, forming a rosette in the first year and bolting in the second year (Frankton and Mulligan 1970).

Mode of reproduction: By seed.

Seed production: Mature plants can produce up to 4,000 seeds/plant (Zimmerman 1997).

Seed bank: Seeds are highly viable and usually germinate rapidly whenever conditions are favourable in spring and autumn (FEIS 1996). Seeds that are buried to 12 cm may remain viable for up to 3 years (Zimmerman 1997).

Dispersal: Seeds have a pappus and can be windblown for long distances, but Zimmerman (1997) found that 65% of the seeds land within 2 m of the parent plant.

Hybridization: No information available.

Management

Biocontrol: *Urophora stylata* (seedhead fly), released in BC, can reduce seed production up to 80% in some areas (Zimmerman 1997).

Mechanical: Cutting and mowing topgrowth or cutting the taproot just below the root crown before seed-set will eliminate annual seed production. Repeated applications of the treatment may be necessary. Cutting and mowing treatments are most effective before the plant has bolted.

Fire: No information available.

Herbicides: Picloram, dicamba, glyphosate, and 2,4-D all provide effective management. Herbicides should be applied in the rosette stage or after mowing as the plant becomes more tolerant of herbicides once the flower stalk is produced (FEIS 1996). Consult the most recent edition of BC Ministry of Agriculture, Food and Fisheries Crop Production Guides for specific recommendations. **Before applying herbicides, read**

the label for full use and precautionary instructions.

Cultural/Preventive: Minimize disturbance and establish stands of perennial grasses or forbs.

Integrated Management Summary

A combination of prevention, cultural control, and chemical control is probably the best strategy for bull thistle. Reduce disturbances and reseed areas already disturbed. Use biocontrol agents if they are available. Do not use chemical management if biocontrol agents have been released unless the agent has not established.

References

Calweed Database. 1997. *California Noxious Weed Management Projects Inventory*. Natural Resource Projects Inventory, Information Center for the Environment, University of California, Davis. <http://endeavor.des.ucdavis.edu/weeds/> [6 Jan 99].

Carey, J. B., J. J. Kells, and Karen A. Renner. 1993. Common weed seedlings of Michigan. Department of Crop and Soil Sciences, Michigan State University Extension. Bulletin E-1363. <http://www.msue.msu.edu/msue/iac/e1363/e1363.htm> [27 Oct 99].

Douglas, G. W., G. B. Straley, D. Meidinger, and J. Pojar, eds. 1998. *Illustrated Flora of British Columbia*. Vol. 1: *Gymnosperms and Dicotyledons (Aceraceae through Asteraceae)*. Province of British Columbia. FEIS—Fire Effects Information System. 1996. Prescribed Fire and Fire Effects Research Work Unit, Rocky Mountain Research Station (producer), US Forest Service. <http://www.fs.fed.us/database/feis/> [12 Mar 98].

Frankton, C., and G. A. Mulligan. 1970. *Weeds of Canada*. Publication 948. Ottawa: Canada Department of Agriculture.

Powell, G. W., A. Sturko, B. M. Wikeem, and P. Harris. 1994. *Field Guide to the Biological Management of Weeds in British Columbia*. Land Management Handbook No. 27. BC Ministry of Forests.

Rees, N. E., P. C. Quimby, Jr., G. L. Piper, E. M. Coombs, C. E. Turner, N. R. Spencer, and L. V. Knutson (eds.). 1996. *Biological Management of Weeds in the West*. Western Society of Weed Science, in cooperation with USDA Agricultural Research Service, Montana Department of Agriculture, and Montana State University.

Whitson, T. D. (ed.), L. C. Burrill, S. A. Dewey, D. W. Cudney, B. E. Nelson, R. D. Lee, R. Parker. 1996. Bull thistle. *Weeds of the West*. Western Society of Weed Science, in cooperation with the Western United States Land Grant Universities Cooperative Extension Services, Newark, CA.

Zimmerman, J. A. C. 1997. Ecology and distribution of *Cirsium vulgare* (Savi) Theore, Asteraceae. USGS Colorado Plateau Field Station, Southwest Exotic Plant Mapping Program.

http://www.usgs.nau.edu/swemp/Info_pages/plants/Cirsium/cvulgare.htm [29 Jan 99].



