Giant Hogweed: istockphoto

Invasive Species Council of BC

FACTSHEET
MARCH 2017

Giant Hogweed *Heracleum mantegazzianum*

About Giant Hogweed

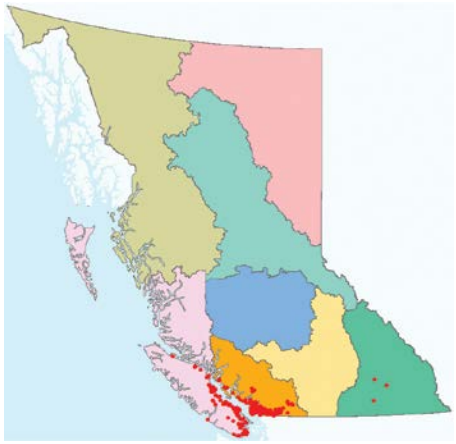
Giant hogweed is an invasive perennial herb from the carrot family *(Apiaceae)*. It was likely introduced to British Columbia, from Asia, as an ornamental plant. Since its introduction to British Columbia, it has escaped cultivation and is rapidly spreading throughout Vancouver Island, the Coast and Lower Mainland. It continues to be available as an ornamental plant, and has also been found as a contaminant of food produce in international trade. It is an undesirable invader due to its large size, prolific seed production and vigorous growth. It is also poses a health hazard to BC citizens—the leaves and stems contain a clear, watery, highly toxic sap that can cause hypersensitivity to sunlight resulting in burns, blisters, and scarring when coming into contact with skin. Proper personal protective equipment (coveralls, gloves, eye protection, etc) is recommended when handling this plant.

Legal Status

BC Weed Control Act Regulation listed noxious (Provincial).
Community Charter-Spheres of Concurrent Jurisdiction, Environment and Wildlife Regulation

Distribution

Currently distributed in the Lower Mainland, Fraser Valley, Gulf Islands, and central to southern Vancouver Island.

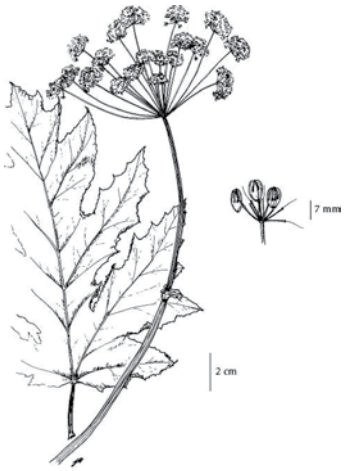


Giant Hogweed Distribution (2011)

Identification

Flowers: The flower head is a terminal umbel that measures up to 80 cm across. Eight additional satellite umbels exist above and below the main umbel. Flowers are white or pinkish and have petals that extend up to 12 mm.

Roots: Roots are branched; 40 cm to 60 cm deep and up to 15 cm across at the crown when mature. The crown persists approximately 10 cm below the soil surface.



Giant Hogweed
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Stems: Has a single green, hollow, stem that is 5 cm to 10 cm in diameter and 2 m to 5 m high. The stem is ridged with purple blotches and covered in stiff bristles.

Leaves: Dark green, coarsely toothed, deeply incised leaves. Leaves are alternate. The lower leaves are 3 m long and 1.7 m wide, pinnately lobed and coarsely toothed. Upper leaves on the flowering stem are progressively smaller. The upper leaf surface is smooth but the underside is covered in bristles.

Fruits: Green, elliptical-shaped fruits are about 4 mm to 10 mm in diameter and 6 mm to 8 mm wide. Seeds form in June and July turning dry and brown when ripe. Fruits have wings and swollen brown resin canals.

Similar Native Species: Giant hogweed 'look a-likes' include wild parsnip, Queen Anne's Lace and Angelica. However the native cow parsnip is most often mistaken for giant hogweed. Cow parsnip is the only member of the genus Heracleum native to North America. ***Important:*** The leaves and stems of cow parsnip also contain toxic sap that can cause hypersensitivity to sunlight resulting in burns, blisters, and scarring when coming into contact with skin.


Giant Hogweed; B. Brown

Below are some characteristics that distinguish giant hogweed from cow parsnip:

	Cow Parsnip	*Giant Hogweed*
Leaves	» NOT shiny, broad and less serrated than giant hogweed » Leaves can be up to 76 cm wide	» Shiny and large, with leaf edges very coarse and serrated, like a jagged saw edge » Leaves can be up to 150 cm wide
Stem	» Flower and leaf stalks are usually green, but lower stems can also have purple marks, but NOT blotches, streaks or spots » Flower stalks and leaf stems are smooth and have very soft hairs » Stem diameter ranges from 2.5 cm to 5 cm » Mature stem height ranges from 1 m to 2 m	» Flower and leaf stalks have purple streaks, blotches, lines, and/or spots » Flower stalks and leaf stems contain stiff hairs with a bristly feel » Stem diameter ranges from 5 cm to 10 cm » Mature stem height ranges from 2 m to 5 m tall
Flowers	» Flower heads are much smaller than giant hogweed, with a diameter of only 20 cm » Has 15 to 30 ray flowers per stem	» Flower heads form a large umbrella shape, and grow up to 150 cm in diameter » Has more than 50 ray flowers per stem

Ecological Characteristics

Habitat: Prefers rich, damp soil but is able to establish in nutrient-poor habitats such as peaty meadows or acidic soils in forest clearings. It may colonize a wide variety of habitats, but is most common along roadsides, right-of-ways, ditch-lines, vacant lots, river and stream banks, wetlands, riparian areas, agricultural areas, wooded ravines, and other disturbed sites. Giant hogweed needs moist conditions much of the year but can tolerate moderate droughts.

Reproduction: Reproduces by seed only. Plants require 2 to 5 years from germination to develop a flowering stem. Seed production varies from 5,000 to 100,000 per plant with an average seed production of 20,000 per plant. Studies have shown seeds to remain viable for up to 15 years. Plants generally die after they set seed.

Hybridization: Studies in the United Kingdom show that common hogweed (*Heracleum sphondyliu*) can hybridize with giant hogweed. Hybridization between the two plants is relatively infrequent even where both species occur as hybrids are almost always sterile.

Dispersal: Long distance dispersal is typically a result of movement by water as the winged seeds can float for 3 days before they become water logged and sink. Short distance dispersal is commonly a result of wind. Humans can also disperse plants through horticultural activities, vehicles and movement of contaminated soil and aggregates.

Impact

Economic: Most of the economic impact is a result of management costs to control infestations. In Germany, annual management costs of giant hogweed are estimated at $17.5 million (CDN) with $1.5 million in associated health costs, $1.5 million in nature reserves, $3 million in road management, $3.5 million in municipal management and $8 million in district management.

Ecological: A highly competitive plant that can displace most other plant species due to vigorous early-season growth, tolerance of full shade and seasonal flooding. This can result in changed species composition and altered ecosystem functions. Relatively shallow roots do not hold the soil as well as a healthy complex of native species; consequently, infestations can result in increased erosion hazard on steep terrain or along stream banks, particularly when winter dieback exposes soil to erosive rains.

Social: Poses a health risk to BC citizens as its bristly hairs contain furanocoumarins and any contact of skin with the plant can result in phyto-photodermatitis. Symptoms range from painful watery blisters to full chemical burn and may result in recurrent dermatitis. The compounds contained in seed essential oils may pose a risk to the eyes, skin and respiratory system.

Note: *WorkSafe BC has issued a 'Toxic Plant Warning' for giant hogweed and requires all workers to wear heavy, water-resistant gloves and water-resistant coveralls or clothing that leaves no skin exposed when handling the plants.*

If sap contacts your skin, wash the affected area immediately with soap and cold water, and protect it from sunlight for at least 48 hours post-exposure, even if you don't show any symptoms. Severe cases may require hospitalization.

In addition to health risks, dense infestations can diminish the recreational value of the landscape. It also poses a risk associated with driving, as large stands can reduce driver visibility.

$17.5 billion

ESTIMATED ANNUAL CONTROL COST OF GIANT HOGWEED IN GERMANY

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. Important: Due to the toxic nature of this plant, please ensure the proper personal protective gear (water resistant gloves, boots, and coveralls and eye protection) is worn while managing this plant.

A. Prevention

- Do not purchase, trade, or grow giant hogweed. Instead, grow regional native plants as they are naturally adapted to the local environment and are non-invasive. For non-invasive alternatives, see ISCBC's Grow Me Instead booklet (bcinvasives.ca).
- Maintain or establish healthy plant communities that are resistant to invasion by invasive plants.
- Avoid unloading, parking, or storing equipment and vehicles in infested areas.
- Remove plants, plant parts, and seeds from personal gear, clothing, pets, vehicles, and equipment before leaving the infested area.
- Wash vehicles, including tires and undercarriage, and equipment at designated cleaning sites before leaving infested areas.
- Ensure soil, gravel, and other fill material are not contaminated with hogweed material before moving. If possible, leave all contaminated materials on site during construction activities and follow up with a treatment program; OR carefully transfer contaminated material to a suitable location where it can be treated.

B. Mechanical Control

Digging is most effective on small infestations that have immature (1-2 years post germination) plants. Digging is not recommended for mature plants as the taproot can exceed 1 m in depth. If the tap root is not removed in its entirety, there is possibility that the plant will re-grow. Annually remove the first 8-12 cm of the central root.

Mowing is an effective method for reducing seed production in small infestations. Mowing is timely as multiple application throughout the growing season are required—top growth of the plant should be mowed every 2 weeks to exhaust the plants root reserves and prevent seed production. Extreme caution must be taken while mowing to ensure that the plants sap does not splash or spray on the operator-wearing proper personal protective gear is recommended.

Cutting (flower heads) is an effective method for reducing seed production in small infestations however, removal of the flower heads (umbel) is difficult due to the size and height of the plant. There is also an increased risk of exposure to the plants toxic sap. Removing flower heads must be repeated over the growing season as new umbels can form on lower branches. All removed flower heads should be placed in plastic bags and disposed of (see disposal section) as flowers can still go to seed even after removal from the plant.

C. Biological Control

There are no biocontrol agents available for giant hogweed in British Columbia.

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.

- Effective herbicides include glyphosate and triclopyr. Foliar herbicide applications are most effective in spring on actively growing plants, followed with a subsequent summer application for late sprouts.
- Stem injections or "cut stem and inject" methods are effective after heavy sap flow in the spring but are currently not a registered application technique.

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. www.env.gov.bc.ca/epd/ipmp/

Giant Hogweed; IPCMV

Giant Hogweed; IPCMV

Disposal

Note: *Disposal of invasive plants varies by regions within BC. If you would like specific information on how to dispose of your invasive plants, please contact your local government/ regional district.*

- Chemically treated giant hogweed stems can be left on site to compost.
- Manually removed plants, plant parts and seeds must be bagged or tarped before transporting to a designated disposal site (e.g. landfill or transfer station).
- 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. All cut plant parts should undergo deep burial (at least 5 m deep) at a landfill.
- Burning or composting at home is not recommended as extreme temperatures are required to completely desiccate the plant.

Reporting

- **Report infestations toll free: 1-888-933-3722**
- **Report Online Using Report A Weed:** www.for.gov.bc.ca/HRA/plants/raw.htm

References/Links

Aggressive Ornamentals – Giant Hogweed. BC Ministry of Agriculture. www.agf.gov.bc.ca/cropprot/gianthogweed.htm

BC Ministry of Forests, Lands, and Natural Resource Operations, Invasive Alien Plant Program (IAPP). www.for.gov.bc.ca/hra/Plants/application.htm • E-Flora BC, an Electronic Atlas of the Plants of BC. www.eflora.bc.ca/

CABI. Giant Hogweed Fact Sheet. http://www.cabi.org/isc/datasheet/26911

Field Guide to Noxious Weeds and Other Selected Invasive Plants of British Columbia. BC Ministry of Agriculture. www.agf.gov.bc.ca/cropprot/weedguid/ghogweed.htm

King Country Noxious Weed Control Program: Best Management Practices for Giant Hogweed. King County, Washington. http://your.kingcounty.gov/dnrp/library/water-and-land/weeds/ BMPs/hogweed-control.pdf

National Invasive Species Working Group. National Factsheet: Giant Hogweed. http://www.richmond.ca/__shared/assets/Giant_Hogweed_National_Fact_Sheet30921.pdf

Ontario Invasive Plant Council. Giant Hogweed. Best Management Practices in Ontario. file:///C:/Users/User6/Downloads/OIPC_BMP_Hogweed_FINAL.pdf

Toxic Plant Warning for Giant Hogweed. WorkSafeBC. http://worksafebc.com/publications/health_and Safety/bulletins/toxic_plants/assets/pdf/tp0602.pdf

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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.

ADDITIONAL CONTACT INFO