



JEFFERSON COUNTY NOXIOUS WEED CONTROL BOARD

380 Jefferson Street, Port Townsend WA 98368

360 379-5610 Ext. 205

noxiousweeds@co.jefferson.wa.us

BEST MANAGEMENT PRACTICES **Giant hogweed (*Heracleum mantegazzianum*)** (Family—*Apiaceae*—Carrot or Parsley Family)

Legal Status in Jefferson County:

Class A Noxious Weed (non-native species designated for eradication by Washington State Law RCW 17.10). The State Weed Board and Jefferson County Noxious Weed Control Board require property owners to eradicate giant hogweed on private and public lands throughout the county. Eradication is legally defined as the elimination of a noxious weed within an area of infestation. (See WAC 16-750-003). State quarantine laws prohibit transporting, buying, selling or offering giant hogweed for sale or distributing plants, plant parts or seeds. It is also on the Federal Noxious Weed List.



Giant hogweed leaves

BACKGROUND INFORMATION

Impacts and History

- **Serious public health hazard.** Clear, watery sap in the leaves and stems contains a phototoxin that causes the skin to be hypersensitive to sunlight; burns and blisters can form. The sap contains glucosides called furanocoumarins that act as a phototoxin.
- **If sap gets on the skin, immediately wash with soap and water; keep exposed skin out of the sun and treat as you would a surface burn.**
- Symptoms of photosensitization include itchiness, redness, heat, swelling, and blistering that may last for many days, weeks, or even months.
- Watery blisters are very slow to heal and in severe cases may require medical treatment.
- Excessive pigmentation or hyper-pigmentation of the skin in the affected area may remain for a year or more, occasionally precipitating recurrent dermatitis.
- Children have been exposed when they play with the long, hollow stem as spyglasses, blowguns, swords, etc.

- By populating steep hillsides and stream banks, this species becomes an erosion hazard when it dies back in the winter, exposing the soil to Pacific Northwest winter rains. The relatively shallow roots do not hold the soil as well as a healthy complex of native trees, shrubs, forbs and grasses.
- Seeds landing on nearby water can float up to three days before becoming waterlogged and sinking, thereby allowing them to travel great distances, particularly during floods.
- Native to Caucasus Mountain region in southwest Asia, an area located between the Black and Caspian Seas. Introduced to the United Kingdom and Europe in the late nineteenth century and to the United States in the early twentieth century as a garden ornamental.
- The earliest documented record of this species in Washington was during the early 1950's.

Description

- Tall, robust perennial with large flat-topped, umbrella-shaped white flower clusters on top of stout, hollow stems 2 to 4 inches in diameter with dark reddish-purple raised blotches.
- Reaches a height of 10 to 15+ feet when in flower, and the flower head can be up to 2.5 feet in diameter across its flat top.
- Large compound leaves are deeply incised and 3 to 5 feet wide. Hairs on the underside of the leaf and along stem are stiff, dense and stubby (only about 0.25 mm long) and leaf stalks have clusters of short, coarse white hairs at the base.
- Seeds are borne in 3/8-inch, elliptic dry fruits with swollen brown resin canals; root stalks are large and tuberous.



Giant hogweed flowers

- Resembles the native plant cow parsnip (*Heracleum lanatum*, *H. maximum*), which rarely exceeds 6 feet in height, has a flower cluster only 8 to 12 inches wide and has leaves usually only up to one foot wide, and purple coloration that is not raised or bumpy like on giant hogweed. Seeds are narrower at base and wider at tip (hogweed seeds are elliptic). The hairs on the underside of this leaf are soft, wavy, shiny, and are about 1 mm long.

Habitat

- Found in ravines, parks, wooded open space areas between residential communities, roadside ditches, vacant lots, riparian areas and residential properties.
- Prefers moist soils, and will tolerate shallow seasonal inundation as well as permanently saturated wetlands.
- Grows in full shade to full sun but does best in partial shade.
- In Jefferson County, it is most commonly found in urban areas where it has escaped from garden cultivation.

Reproduction and Spread

- Plants take two, three or even four years from germination to first flower. Some plants die after flowering; others are short-lived perennials and flower for several years.
- In the Pacific Northwest, plants sprout in the early spring (or late winter in mild years) from seed and perennating buds formed on the crown and tuberous root stalk.
- By mid-April, mature plants are 3 to 4 feet tall and up to 3 feet wide. Seedlings are 1 to 1.5 feet tall with leaves that are much more palmate than the mature plant.
- The mature plants start to bolt in May, sending a thick hollow stem up to a height of 10 to 15 feet; flowering starts mid May to mid June and lasts for several weeks.
- Green fruits form by late June/early July; these turn dry and brown when they ripen.
- From late August through September the plants become senescent, dying back to the roots. The dried stalk and bare flower stems will persist through the fall and winter.
- Winged seeds are dispersed by water or soil movement.

Local Distribution

Several giant hogweed sites have been found in Jefferson County—in Port Townsend, Port Hadlock and on Highway 101. Most of them are in residential garden settings or in parks, are being controlled and are almost eliminated. One very large site near Discovery Bay was discovered in 2012, is being controlled and will eventually be eliminated.

CONTROL INFORMATION

Integrated Pest Management

- The preferred approach for weed control is Integrated Pest Management (IPM). IPM involves selecting from a range of possible control methods to match the management requirements of each specific site. The goal is to maximize effective control and to minimize negative environmental, economic and social impacts.
- Use a multifaceted and adaptive approach. Select control methods which reflect the available time, funding, and labor of the participants, the land use goals, and the values of the community and landowners. Management will require dedication over a number of years, and should allow for flexibility in method as appropriate.

Planning Considerations

- **Avoid all skin contact with the plant sap because it can cause burns, blisters and scarring.**
- Protect skin from contact by wearing personal protective equipment (PPE) such as gloves, long sleeves, long pants, and eye protection.
- Survey area for weeds, set priorities and select best control method(s) for the site conditions.
- Small infestations can be effectively hand-pulled or dug. Isolated plants should be carefully removed in order to stop them from infesting a larger area.
- For larger infestations, the strategy will depend on the land use of the site. Specific suggestions are given in a later section.

- Control practices in critical areas should be selected to minimize soil disturbance or efforts should be taken to mitigate or reduce impacts of disturbance. Any disturbed areas need to be stabilized to control erosion and sediment deposition. Minimizing disturbance also avoids creating more opportunities for germination of giant hogweed and other weeds.
- If the control site requires extensive clearing or grading, or is located near a shoreline, steep slope, stream, or wetland, contact the Jefferson County Department of Community Development to find out whether or not a permit may be necessary.
- Because giant hogweed is a state-listed noxious weed, control (both manual and chemical) in critical areas is allowed as long as the landowner consults with the Jefferson County Noxious Weed Control Board and follows their guidelines.

Early Detection and Prevention

- Giant hogweed is easy to survey for because of its large size, even in the vegetative stage. Plus, dried flower stalks at established infestations may be visible throughout the winter and into the next growing season.
- Survey for hogweed in unmaintained urban open space areas and vacant lots, especially ravines and areas near known infestations.
- Dig isolated plants and return the following year to check for new seedlings and plants resprouting from root fragments.
- Carefully examine plants sold as cow parsnip; giant hogweed is sometimes misidentified and sold by nurseries and at local plant sales.

Manual

- **Always wear the PPE mentioned above to avoid contact with hogweed sap.**
- Young plants can be effectively pulled, especially from moist soils. The stems of young hogweed plants are not woody and will break easily; pull them gently to ensure full root removal. The use of a trowel or other small hand tool may help to ease them out of the soil.
- When removing a mature plant, use a shovel to dig the root out, going at least 6 inches deep.
- It is usually not necessary to remove every bit of the root, so just focus on the central core. This can be helpful on steep slopes and ravines, where extensive soil disturbance can destabilize the slope.
- Return to the same location in the following spring and summer to remove plants coming up from seeds already in the soil and continue to monitor the area for at least three years.

Mechanical

- Mowing will **not** eradicate giant hogweed effectively and serves only to stimulate budding on the perennating rootstock. Plants are able to re-sprout and flower again in the same season when mowed.
- However, mowing may be an effective technique to use on dense carpets of seedlings after the mature plants have been removed. It would eliminate some percentage of the tiny plants in a less labor-intensive manner than hand-pulling. The area should then be monitored for plants strong enough to resprout, and then these should be removed completely.

- Mulching or covering can be used after plants have been mowed or weed-whacked, to prevent re-infestation.
- To mulch an area, first cover the ground with overlapping sections of cardboard, then top with 6 to 8 inches of mulch.
- Because mulching will smother all plants in the area, it should only be used where few or no other desirable species are growing.
- Weed whackers should not be used in controlling mature hogweed plants because this can spray the phototoxic sap around, exposing the operator to potential injury.

Biological

Biological control is the deliberate introduction of insects, mammals or other organisms that adversely affect the target weed species.

- Cattle and pigs are cited as possible biocontrol agents. Both eat giant hogweed without apparent harm. Trampling also damages the plant. There are no biocontrol insects available for giant hogweed at this time.

Chemical

- Effective chemical control of biennial and perennial weeds can be achieved only with *translocated* herbicides (ones that move through the plant and kill the roots).
- If desirable grasses or other monocots (sedges, rushes or cattails) are present, use a selective herbicide (one that affects only broadleaved plants), or carefully spot-spray only the giant hogweed.
- Or herbicide can be injected into the stem—call the Weed Board for more information.
- Herbicides are most effective on actively growing plants in warm, dry weather.
- Herbicides should only be applied at the rates and for the site conditions and/or land usage specified on the label. **Follow all label directions.**
- Treated areas should not be mowed or cut until after the herbicide has had a chance to work. This can be as long as 2-3 weeks.
- It is important to establish new vegetation after treating an area. Follow the label for the timing because some herbicides stay active longer than others.

For questions about herbicide use, and specific herbicide recommendations, contact the Jefferson County Noxious Weed Control Program at 360-379-0470 ext 205, or noxiousweeds@co.jefferson.wa.us.

SUMMARY OF BEST MANAGEMENT PRACTICES

Small Infestations in Desirable Vegetation

- Seedlings and small plants can be handpulled or dug. This is easiest when the ground is moist and soft.
- Mature plants can be removed manually if at least the first 4-6 inches of the central root is dug out.
- OR apply appropriate herbicide.
- Monitor site throughout growing season and remove any new plants.

Large Infestations\Monocultures

- If enough labor is available, even large infestations can be controlled manually – see guidelines above.
- Mowing is not effective for controlling mature giant hogweed. Mowing can stimulate plant growth and will require multiple cuttings per growing season.
- Mowing can be effective in controlling seedlings, repeat visits are necessary to check for any seedlings that may have survived.
- Large infestations can be controlled using an appropriate herbicide.
- Covering and\or mulching can help prevent regrowth (See the Mechanical section of this BMP)

Riparian and Aquatic Area Control

- Focus on manual removal for small infestations if possible.
- If manual control is not feasible, spot spray using an appropriate herbicide.
- Cutting will not control giant hogweed but it can serve in the interim until more effective control measures can be utilized.
- When large areas of weeds are removed, the cleared area needs to be replanted with native or non-invasive vegetation and stabilized against erosion.
- **Any herbicide application over or near water can be done only by a specially-licensed applicator using an approved aquatic formulation, and may require a permit from the Washington State Department of Ecology.**

Road Right-of-Way Control

- Pull or dig small infestations.
- If manual control is not feasible, spot spray using an appropriate herbicide.
- If bare spots are left, replant with low-growing native plants.
- If plants are about to flower, they can be cut down until a more effective control strategy can be used.

REFERENCES

- Oregon State University, 2006 **Pacific Northwest Weed Management Handbook**.
- King County Noxious Weed Control Program—Best Management Practices—Giant Hogweed
- Rees, N.E., P. Quimby Jr., G. Piper, E. Coombs, C. Turner, N. Spencer and L.Knutson, editors. 1996. **Biological Control of Weeds in the West**. Western Society of Weed Science.
- Washington State Noxious Weed Control Board. Written Findings on giant hogweed- http://www.nwcb.wa.gov/weed_info/Heracleum_mantegazzianum.html accessed December 13 2006.
- Wisconsin Department of Natural Resources. Giant Hogweed (*Heracleum mantegazzianum*) <http://dnr.wi.gov/invasives/fact/hogweed.htm> , accessed April 16 2006.

This project has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement PO-00J08601 to Jefferson County Department of Community Development for the Watershed Stewardship Resource Center (now known as Square One). The contents of this document do not necessarily reflect the views and policies of the Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

