

Giant hogweed

Heracleum mantegazzianum Sommier & Levier

Synonyms: None

Other common names: None

Family: Apiaceae

Description

Giant hogweed is biennial or perennial herb, growing 10 to 15 feet tall. Stems are hollow, from two to four inches in diameter with dark reddish-purple spots and bristles. Large compound leaves are 3 to 5 feet in width. The inflorescence is a broad flat-topped umbel composed of many small white to light pinkish flowers. Inflorescences can reach a diameter of 2 ½ feet. The plant produces flat, 3/8-inch long, oval-shaped dry fruits. Most plants die after flowering, others flower for several years (Noxious Weed Control Program 2003).



It closely resembles cow parsnip, *Heracleum lanatum*, a plant native to the Pacific Northwest to Alaska, which rarely exceeds 6 feet in height, has a flower cluster only 8 to 12 inches wide and has palmately lobed leaves (Hultén 1968).

Ecological Impact

Impact on community composition, structure, and interactions: Giant hogweed forms a dense canopy, outcompeting and displacing native riparian species. The plant produces a watery sap that contains toxins causing severe dermatitis. Dermal injury to birds and animals has been reported. The flowers of giant hogweed are insect-pollinated (Noxious Weed Control Program 2003, Pysek and Pysek 1995). This plant produces coumarins which have antifungal and antimicrobial properties. Hybrids

between *H. mantegazzianum* and *H. sphondylium* occur where the two grow in the same location. Numerous phytophagous animals and parasites are recorded for giant hogweed (Stewart and Grase 1984, Tiley et al. 1996).

Impact on ecosystem process: Giant hogweed results in a reduction of native species and an increase in soil erosion along stream banks in winter (Noxious Weed Control Program 2003, Tiley and Philp 1992, Wright 1984). The availability of nutrients increases in areas infested by giant hogweed due to the large amount of easily decomposed biomass (Pysek and Pysek 1995).

Biology and Invasive Potential

Reproductive potential: Giant hogweed reproduces by seed (Noxious Weed Control Program 2003). The number of seeds produced per plant varied from 27,000 (Pysek 1991) to 50,000 seeds on a vigorous plant (Tiley et al. 1996).

Role of disturbance in establishment: Giant hogweed is generally an early colonizer of open ruderal communities, disturbed habitats, or bare ground. It can also invade closed communities such as grasslands (Tiley et al. 1996).

Potential for long-distance dispersal: The majority of seeds fall near the parent plant. Wind disperse seeds a short distance (Clegg and Grace 1974, Tiley et al. 1996). The fruits float in water for up to three days and can be transported 10 km in water courses (Clegg and Grace 1974).

Potential to be spread by human activity: It has escaped from gardens and naturalizes readily in Europe and North America. Though giant hogweed is prohibited; however, it is sometimes misidentified and sold by nurseries. Dispersal is also facilitated by the use of seed heads for use in flower arrangements and it is spread in topsoil and along right-of-ways (Clegg and Grace 1974, Noxious Weed Control Program 2003, Tiley et al. 1996).

Germination requirements: Seeds germinate well in the surface organic layer. Sufficient soil depth is necessary to allow tap-root development. Seed longevity can be greater than seven years (Noxious Weed Control Program 2003).

Growth requirements: Giant hogweed occurs most frequently on sandy and silty substrates. It is tolerant of saturated and winter flooding, but once established also thrives on drier, well-drained sites. Reported pH ranging from 3.1 to 8.5. (Clegg and Grace 1974, Tiley et al. 1996). This species requires moisture for establishment (Tiley et al. 1996).

Congeneric weeds: *Heracleum sphondylium* is another introduced species, but it is not listed as an invasive (USDA 2002).

Listing: Giant hogweed is currently on the United States Federal noxious weed list. This plant is considered noxious in 12 states of the United States, including Oregon and Washington (USDA 2002).

Distribution and abundance

Native and current distribution: Giant hogweed is native to the Caucasus Mountains and southwestern Asia. It has been naturalized throughout central Russia and Europe. It was introduced to Australia, New Zealand, Canada, and the United States (Tiley et al. 1996, USDA, ARS 2005). Giant hogweed

establishes along river banks, streams, and damp places. Additionally, it is common along roadsides and waste areas. It is considered an invasive wetland weed in Washington (Noxious Weed Control Program 2003, Tiley et al. 1996). It is not known in Alaska.

Management

Control of giant hogweed can include mechanical, chemical, and biological methods. Plants must be dug out entirely or the roots cut at least 3-4 inches below ground level. Cutting plant stems is ineffective. Herbicides have been used on this plant with variable effectiveness. Grazing by domestic herbivores in springtime may be effective. A coordinated control program is required over the whole infestation and surrounding areas, since fresh seed supplies continue to spread from uncontrolled plants. A minimum of 5 years of an intensive control is required to control giant hogweed (Wright 1984, Tiley and Philp 1992).

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