

# GIANT HOGWEED (*Heracleum mantegazzianum*)



## Species Identification

- Height:** 200 - 500cm tall  
**Stem:** Coarsely ridged, hairy/bristly stem up to 10cm wide at base with purple blotches  
**Leaf:** Deeply divided, light green spiky leaves <3m in length  
**Flower:** Clustered white florets forming a large umbel flower head <50cm across  
**Fruit:** Green oval fruit forms in July, turning dry and brown from late August to October.

## Ecology

### Habitat Description:

Giant hogweed commonly occurs along watercourses, in wet meadows and on waste ground

### Reproduction & Life Cycle:

Giant hogweed is a tap-rooted, biennial plant. From seed Giant hogweed produces a rosette of leaves in March which can persist for 3-5 years. At maturity (two years plus) the plant flowers from mid June to late July. The plant can postpone maturity until sufficient energy reserves are stored. If it is cut before it seeds it can continue growing for one or more subsequent years. Seeds are released from late August to October, after which the plant dies. Between 30 - 50,000 seeds can be produced by a single plant, normally as a result of fertilisation between two plants. An overlap however in the male and female phases of the plant makes self-fertilisation possible. Seeds can lay dormant in the upper layers of soil (usually above 5cm depth) for <7 years (rarely 15). The majority germinate during autumn/winter when weather is cold and wet.

### Dispersal and Spread:

Giant hogweed depends entirely on seed dispersal to spread. The majority of seeds fall within 4m of a parent plant (60-90%) resulting in densely populated localised and prolific patches. Seed dispersal is often exacerbated by other natural and human mechanisms:-

- **Wetlands:** Flowing water can spread Giant Hogweed seed, where it colonises bare and floodplain sediments downstream of the parent plant. Distance of dispersal can be increased by flood events. Some Sewage Treatment Works have also been the source of Hogweed seed.
- **Transport Margins:** Seeds produced by populations growing alongside roadside margins can be transported long distances by vehicle tyres
- **Public site or grazing land:** Seeds can be unintentionally transported by livestock / humans or when flowers are taken for aesthetic value. Some are planted deliberately in exotic gardens.
- **Wind:** Localised dispersal is frequently aided by wind, especially during the winter months.

## Impact

**Native Habitats:** Giant hogweed can form dense colonies of <20 mature individuals/10m<sup>2</sup>. Its height and large leaf area forms a dense canopy out-competing natural, native vegetation. Overwinter die-back of Giant Hogweed along riverbanks exposes bare earth resulting in an increased risk of bank erosion.

**Human Health Effects:** Giant hogweed represents a serious health hazard for humans. When the clear sap comes into contact with human skin in combination with ultraviolet radiation it can cause severe skin burns. Blisters occur within 24-48 hours after exposure and dense pigmentation of the affected area occurs approximately one week later. The skin reaction may remain sensitive to ultraviolet light for years.

**Economic and Societal Effects:** Large costs are associated with the control and monitoring of Giant hogweed due to its high risk to human health. Secondary costs are associated with reductions in tourism and leisure activities when Rights of Way become inaccessible, or when angling/canoeing sites become devalued due to a reduction in access. There are negative impacts on riparian habitat diversity and subsequently healthy fish stocks. Dense infestations can invade farm and forestry land, making it less viable. Grazing can help control Giant hogweed, with no known adverse effects on livestock, although cases of photosensitisation due to ingestion of furocoumarins have been reported. Giant hogweed provides an alternative host for fungi (*Sclerotinia* sp.) which causes diseases of a wide range of arable and horticultural crops.

## Management Approaches

### Prevention Methods - Early detection and rapid response

1. Map the distribution of all extant populations
2. Identify areas that are characterised by high sunlight, no active land use, human changes to the vegetation cover and good water and nutrient supply that are more likely to be colonised by seeds, prioritising areas that are:
  - Non protected areas within wind dispersal distance of existing stand
  - Within downstream flood zone of invaded watercourses
  - Within 2km of invaded patch along unprotected transport corridor
  - Adjacent to gardens with cultivated giant hogweed
3. Use GIS to map 'at risk' areas utilising land use spatial layers to improve predictability
4. Implement a management plan to prevent further spread of the plant including:
  - Prohibiting sowing or planting of giant hogweed in gardens, parks and open landscapes
  - Avoiding unintentional seed transport e.g. transferring soil material around invaded sites
  - Managing extant stands along waterways and transport corridors to prevent dispersal
  - Afforesting exposed 'at risk' areas with low economic value to inhibit invasion
  - Monitoring 'at risk' sites to enable fast eradication if invasion occurs

### Eradication, Control and monitoring effects

Management of sites invaded by Giant hogweed usually requires repeated and correct application of control methods in order to obtain satisfactory control. A number of different methods are recognised as effective however their application will often be relevant to characteristics and economic limitations of each site. In all cases, control efforts should be started early in the growing season and continue for several years until the soil seed bank is depleted and the root system has died.

Method	Description	Time of Year	Limitations
Root cutting	Cut the root at least 10-25cm below the soil level using a spade. Leave cut plants to dry out ensuring large piles do not smother natural vegetation creating suitable conditions for the colonisation of seeds	Early spring and repeated in mid summer	Labour intensive but can be implemented on smaller stands <200 individuals
Cutting	Cut flowering plants at mid-flowering stage to prevent production of new seeds,	Repeated 2-3 times during growing season	Labour intensive
Mechanical mowing	Flail mowing / strimming during the growing season to prevent plants from setting seed	Repeated 2-3 times a year during the growing season	Plants rapidly recover with basal re-growth so repeated mowing is required to hinder the re-sprouting plants from storing nutrients in the root to re-flower and seed
Grazing	Grazing of sheep and cattle removes the vegetation preventing regeneration and depleting energy resources stored in the root.	Begin early in growing season. Allow time for livestock to become used to hogweed.	A mixed sward is desired and therefore a mechanical cut prior to grazing is required to allow other plants to establish. Grazing animals are 'at risk' to poisoning and is exacerbated in animals with no pigmentation of bare skin.
Herbicides	Glyphosate + Topfilm are the only pesticides approved for use ON or near water. Triclopyr can be used but is not approved for use near water as it is toxic to fish and can take up to 10 days to break down.	Early spring when plants measure 20-50cm in height Repeated in May on newly germinated plants.	Glyphosate requires a license from the Environment Agency. It eradicates non-target species including grasses. There is no longer any herbicide legally approved for use IN water. Use by water or in fallow fields is also restricted. Pollution to groundwater also needs to be considered in all cases.

### References

CEH (2004) Information Sheet 4: Giant hogweed. Available online at <http://www.capm.org.uk>;

Department of Agriculture and Rural Development. Countryside management publications: Giant hogweed. Available online at [www.dardni.gov.uk/ruralni/giant\\_hogweed.pdf](http://www.dardni.gov.uk/ruralni/giant_hogweed.pdf)

Environment Agency/JACOBS. Jan 2012. East Worthing FAS - Teville Stream Restoration Giant Hogweed Management Plan.

DEFRA (2011) Invasive weeds: Guidance for the control of invasive weeds in or near fresh water: Giant hogweed. Available online at: <http://adlib.eversite.co.uk/adlib/defra/content.aspx?doc=58937&id=58954>;

NNSS (2011) Giant hogweed. Available online from: <http://www.nonnativespecies.org>.