

Best Practice Management Guidelines

Giant Hogweed

Heracleum mantegazzianum



1. Aim of this advice

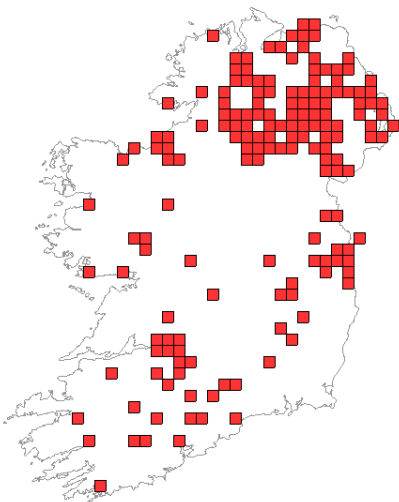
This document provides best practice management guidance on the control of Giant Hogweed (*Heracleum mantegazzianum*) on the island of Ireland.

2. Introduction

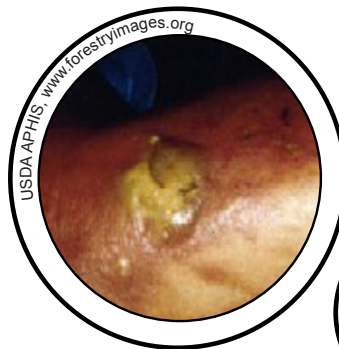
Giant Hogweed is a tall (usually 3 - 5m), biennial or perennial herbaceous plant with white flowers, which looks like very large cow parsley, with pale, swollen rootstock. It produces 20-50,000 viable seeds a year, which are penny sized and paper thin. Seeds are dispersed over short distances by wind but considerably longer distances by rivers and streams. The seeds, which readily germinate, can also be transported in soil adhering to shoes, machinery and other contaminated objects.

Giant Hogweed was introduced from the Caucasus to gardens as a curiosity in the 19th century. It was deliberately planted by rivers and ponds. It was recorded growing in the wild shortly after introduction. It is invasive in suitable habitats, such as river and stream banks, railway lines, disused waste land and other damp places and has spread rapidly, despite being the subject of on-going widespread control measures. Giant Hogweed is now found commonly throughout Northern Ireland and in scattered locations in the Republic of Ireland.

Before considering which management options to use, it is extremely important that everyone using an infested site is fully aware of the serious threat posed to human health by Giant Hogweed. It is advisable to fence off stands of Giant Hogweed, including a 4m buffer zone and put up warning notices.



Distribution of Giant Hogweed in Ireland. Source of data: National Biodiversity Network; accessed 07 April 2008.



WARNING
Giant Hogweed sap contains a chemical which sensitises human skin and leads to severe blistering when exposed to sunlight. Blisters can take up to 24hrs to appear.

THIS REACTION CAN RECUR FOR MANY YEARS



3. Impacts

The plant's very large leaves mean that it shades out less vigorous native plants in its immediate vicinity, with the resultant loss of dependant insects and other animals. As a consequence of out-competing native riverside plants, banks can be left bare in the winter and susceptible to erosion during spates and floods.

Giant Hogweed sap contains a chemical, which in the presence of sunlight causes a nasty and potentially dangerous skin reaction in almost everyone who comes into contact with it, resulting in burning, itching and blistering. The lesions are slow to heal and any consequent scarring may persist for at least 6 years. The reaction can occur by individuals accidentally brushing past leaves and can be especially acute in children. For this reason it is considered to be a serious and significant danger to public health.

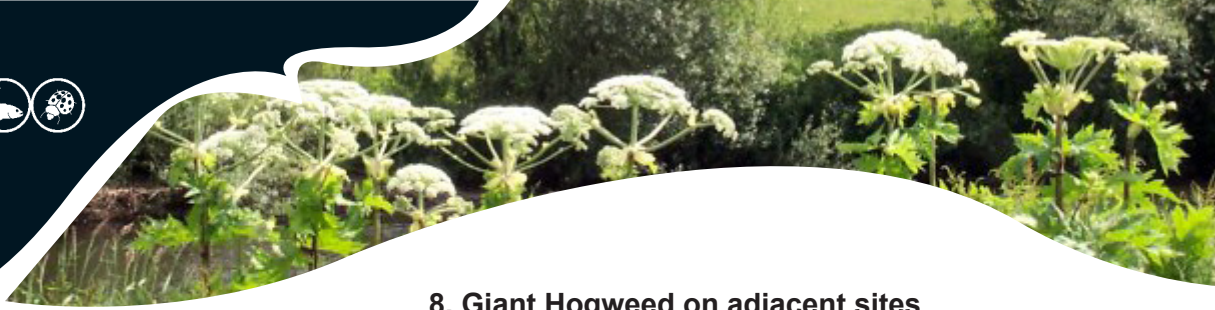
Giant Hogweed is now a feature in many important Irish angling catchments, e.g. the Mulkear River. Giant Hogweed has become so widespread that it has restricted amenity and recreational activities in Ireland, with resultant economic impacts. As a consequence, the Office of Public Works commenced a successful four-year control/eradication programme in the Mulkear River catchment. This was the first serious Irish attempt to control Giant Hogweed infestation at the catchment scale.

4. Legal status - Northern Ireland

Giant Hogweed is listed on Schedule 9 of the Wildlife (Northern Ireland) Order 1985 and it is therefore an offence to plant or cause it to grow in the wild. This also includes seeds and it is therefore an offence to move contaminated soil material to new sites. Contact the NIEA waste management unit (028 9056 9353) for information on how to dispose of this waste safely.

5. Legal status - Republic of Ireland

At present there are no specific legislative provisions that directly govern Giant Hogweed in the Republic of Ireland. However, the Wildlife (Amendment) Act 2000 states that anyone who plants or otherwise causes to grow in a wild state in any place in the State any species of (exotic) flora, or the flowers, roots, seeds or spores of (exotic) flora shall be guilty of an offence.



6. Managing Giant Hogweed

To reduce costs and additional effort it is important to prevent Giant Hogweed from spreading around a site contaminating unaffected areas. This is best achieved by:

- Production of a detailed Giant Hogweed management plan.
- Ensuring that all relevant staff are briefed and aware of Giant Hogweed issues, the management plan, potential threat to human health and their responsibilities.

For sites that do not have Giant Hogweed present, efforts should be put in place to prevent the species arrival. The 4 most common ways a site can become infected are:

- Importation of infected soil.
- Contamination on vehicles and equipment.
- Colonisation from upstream areas washing seeds downstream.
- Illegal dumping of contaminated soil.

7. Eradication and control

The application of herbicides over several years, prior to seed set, has been proven effective for both control and eradication. It is important to remember that the seeds of this plant can remain viable for 7 years (possibly up to 15) although most will become unviable after just 2 years. Once a plant has produced seed, it should be assumed that the seeds will be present in the surrounding area for at least this length of time. Control measures will only affect those plants which have already germinated and viable seed may continue to germinate each year until the seed bank is exhausted. Eradication, as opposed to temporary control will therefore require regular annual checks to ensure that any germinating plants are controlled before they can seed.

8. Giant Hogweed on adjacent sites

It is particularly important to consider Giant Hogweed in the wider environment around a particular site. If this species is growing on an adjacent site, or upstream of a site on a riverbank, then no matter how good on-site control is, recolonisation is likely. Thus, an understanding of the wider catchment context is necessary to determine if eradication or control efforts are likely to be successful. In some situations, eradication of all Giant Hogweed on site might not be possible due to the likelihood of re-colonisation, but infested areas accessed by staff or public should receive control measures. Work in partnership with neighbouring landowners to tackle Giant Hogweed.

For all sites, the following steps may be useful to ensure success and prevent spread:

1. Find out how much Giant Hogweed there is on the property and map it. Include a buffer of 4m around plants to incorporate seeds in soil.
2. Ensure that everyone working on the site is aware of and adheres to good site hygiene, such as:
 - Marking out of contaminated areas,
 - Ensuring that vehicles with caterpillar tracks do not work within contaminated areas, and
 - Treating contaminated soils carefully.
 - Ensure that soil from within 4m of the plants is not transferred to other areas.
 - Limit use of tracked machinery at infested sites.
 - Cleaning contaminated machinery and equipment.
3. Attempt to establish the length of time Giant Hogweed has been on site. Long-standing infestations over many years will have larger seed banks.
4. Write a management plan to guide your work and make sure all staff working in the area are aware of it and Giant Hogweed.
5. Follow-up work will be necessary to ensure that regrowth and seedlings are not missed.



9. Treatment options

9.1. Spraying

Spraying with an appropriate herbicide is the most effective treatment option available, although it can take several years to eradicate the species completely. The soil beneath an established stand of Giant Hogweed will contain a large number of seeds that will continue to produce new plants. Herbicides can be used to achieve short-term control of the plant.

The only herbicide known to control Giant Hogweed and with the necessary approval for use in or near water is glyphosate. Glyphosate is sold under a number of brand names. The plants can be sprayed with glyphosate when growing actively but still less than about 1 m high (usually in April and May). In order to be effective, spraying must be carried out before the plant flowers and sets seed, otherwise there will be thousands of additional seeds on the ground ready to grow at some point in the future. As Giant Hogweed seeds can remain in the soil for several years, a long-term strategy involving treatment with herbicide will be required.

Long-lance sprayers may assist in accurate application of glyphosate to plants growing in inaccessible sites along river banks. Glyphosate can be applied as a spot treatment to individual plants, using hand-held equipment, or as an overall spray using machine-mounted spray booms. In the latter instance, total weed control of all vegetation will occur and it may be necessary to reseed the treated area with grass and other native plants. Establishing a good sward of grasses soon after treatment of the weed will help to reduce the rate of re-colonisation of the area by seeds of Giant Hogweed.

It is essential that any herbicide treatment is carried out by an experienced, competent and qualified operator, complying with any approval advice provided by the relevant licensing authority and all health and safety considerations. Efforts should be made to minimise damage to non target species.

9.2. Mechanical control

Hand cutting of Giant Hogweed should never be undertaken unless the operator is wearing full protective clothing to prevent skin contamination by the sap. Machine operators should take similar precautions as the sap can be spread onto machinery and subsequently come into contact with skin. Cut material can remain active for many hours. Cutting before flowering will, at best, produce only temporary control as the plant can regrow the following season. Cutting after flowering has no benefit once the seeds have been formed, except to clear away the dying vegetation. Seed heads should be bagged before cutting to reduce dispersal during control.

Small infestations can be controlled by digging out the whole plant. This should be done in April or May, cutting the plant at a 45 degree angle below ground to ensure damage to the rootstock and to prevent regrowth from the base. It is possible that large infestations may be controlled by deep cultivation (ploughing) although this is generally impractical on river banks, where most large stands occur. Regular cattle grazing can also afford a measure of control.



10. Giant Hogweed Management Plan Template

Use this template to help formulate your own management plan outlining how you are going to proceed and what you will need.

Site Name: _____

Site Manager/Owner: _____

Site details

Address:	
Telephone:	
Email:	
Agencies/persons involved:	
Date:	

Date of introduction:	
Total site area:	
Total area colonised:	
Previous site management:	

Designation	On site	Near site	None present
Details: Establish if there is a requirement to apply for a license/notify before proceeding with plan.			

Actions and resources

Management options	Responsibility	Date to undertake

Resources needed	Responsibility	Date to undertake

Monitoring and evaluation

Name of person/s	Date to undertake	Report to	Additional treatments date (if required)



11. Summary of actions needed for effective management

1. Confirm Giant Hogweed identification.
2. Carry out a survey and produce a distribution map indicating the location across the site. Include a 4m radius from the above ground growth in maps to identify area of potential seed fall. Include all rivers and streams in maps.
3. Consider surrounding properties and potential for reintroduction. Talk to adjacent land owners and make them aware of the issues and what you plan to do. Identify potential contamination routes to your site and mitigate against these. You may be unable to prevent reintroduction from upstream without the help of other landowners.
4. Decide should the programme aim for continuous control on a yearly basis or eradication from the site. Base your decision on an understanding of the biology, size of infestation, potential for reintroduction and other relevant sensitivities in the area.
5. Consider if you can successfully and safely carry out the work or if professional practitioners, with relevant training and certificates should undertake the work. Remember relevant health and safety legislation and procedures when working near water and always make sure staff and public are aware of the health risks posed by Giant Hogweed.
6. Identify if sufficient resources are/will be available to complete the work within the planned timescale. If work will take more than 1 year to complete, ensure you have sufficient funds to complete the work.
7. Ensure disposal options for plant material are in place prior to work commencing.
8. Develop and produce a site specific control/management plan. Use the template provided in this document to guide you.
9. Monitor for regrowth and/or reintroduction during site visits. If applicable, ensure new members of staff are aware of your Giant Hogweed plan and report sightings.

12. Giant Hogweed spraying times

Glyphosate	J	F	M	A	M	J	J	A	S	O	N	D
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- Optimum treatment time.
- Suboptimum treatment time but can be effective.

Please consider sharing your experience and management plan details with others. The Invasive Species Ireland website will feature case studies to help guide others undertaking similar work.

The Invasive Species Ireland Project is undertaken, in partnership, by
EnviroCentre and Quercus.



www.envirocentre.co.uk



www.quercus.ac.uk

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Ireland Environment Agency.



www.ni-environment.gov.uk



www.npws.ie

For more information on the Invasive Species Ireland Project please see the
website at www.invasivespeciesireland.com