

PCA Guidance Note

Management of Giant Hogweed



November 2023



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WARNING:

The sap of giant hogweed contains a toxic chemical which sensitises the skin and leads to severe blistering when exposed to sunlight. THIS REACTION CAN RECUR FOR MANY YEARS. See Appendix 1 on avoiding health hazards and dealing with blistering and rash.

Background:

History and Identification

Giant hogweed, the scientific name for which is *Heracleum mantegazzianum* (Sommier & Levier) was introduced into Britain in 1893 as an ornamental plant. It escaped from cultivation and has spread throughout the Britain and colonised many areas of waste land, streams, river banks, roads and railways within and along which it is easily transported. It is a characteristic plant growing to 5m high and has very large umbels of white flowers. Aids to identification can be found at: [Giant Hogweed » NNSS \(nonnativespecies.org\)](https://www.nonnativespecies.org) <https://www.nonnativespecies.org/non-native-species/information-portal/view/1705>, Booy and Wade (2007) and Booy, Wade and Roy (2015).

In fact, there are probably at least two species of tall, large leaved hogweeds in Britain – *Heracleum mantegazzianum* (Sommier & Levier) and *Heracleum lehmannianum* (Bunge) – and possibly more (Denness, 2013). Jahodova and others (2007) considered that there are three species in Europe, *Heracleum mantegazzianum* (Sommier & Levier), *Heracleum sosnowskyi* (Manden), and *Heracleum persicum* (Desf. ex Fischer). This taxonomic uncertainty does not affect the advice given in this Guidance Note. It is worth noting that Schedule 9 of the Wildlife and Countryside Act (1981) (as amended) specifically refers to *Heracleum mantegazzianum*.



Legislation

In the UK, legislation concerning giant hogweed is provided by a number of instruments (Table 1). The primary aim of these instruments is to prevent the spread of giant hogweed. For further information, see also PCA Guidance Note on Legislation and policy for Invasive Non-native Plant Species, including Japanese knotweed.

Version History

Date Effective	Description of amendment	Author
April 2018	• Initial Document	
November 2023	• Minor changes to reflect updates to legislation • Updated References	Daniel Docking and members of the IWCG

Table 1. Summary of key legislative instruments relating to the management of giant hogweed.

Instrument	Relevant section	Summary of key aspects	Countries of UK covered
Wildlife and Countryside Act 1981 (as amended)	Section 9, Schedule 14.	It is illegal to plant or otherwise cause giant hogweed to grow in the wild in the UK.	England and Wales.
Wildlife and Natural Environment Act 2011	Section 14.	It is illegal to plant or otherwise cause giant hogweed to grow outside its native range in Scotland.	Scotland.
Wildlife Order 1985	Article 15.	It is illegal to plant or otherwise cause giant hogweed to grow in the wild in Northern Ireland.	Northern Ireland.
The Wildlife Act 1990	Section 14, Schedule 8.	It is illegal to plant or otherwise cause giant hogweed to grow in the wild in the Isle of Man.	Isle of Man.
Invasive Alien Species Regulation 2014 (EU) Species of Concern		Requires all EU Governments to protect native biodiversity/ecosystem services and minimize/mitigate human health or economic impacts of listed INNS via early detection, prevention and management.	EU.
Anti-social Behaviour, Crime and Policing Act 2014 and Community Protection Notices		Local councils and the police have the power to issue Community Protection Notices against "individuals who are acting unreasonably and who persistently or continually act in a way that has a detrimental effect on the quality of life of those in the locality", including for invasive non-native species like giant hogweed. A notice could require an individual or organisation to make reasonable efforts to make good the problems arising as a result of giant hogweed within a specified period of time and/or a requirement to take reasonable steps to prevent future occurrence of the problem. Breach of any requirement of a Community Protection Notice, without reasonable excuse, would be a criminal offence.	UK.
Environmental Protection Act 1990 / Environmental Protection (Duty of Care) Regulations 2014	Sections 33 and 34.	If taken away from the site of origin, giant hogweed and associated material, e.g. soil containing seeds, is classified as a Controlled Waste and must be disposed of at a landfill site that is authorised to accept it. Giant hogweed waste that is disposed of at a landfill site must be accompanied by appropriate waste transfer documentation.	UK.
Environmental Protection Act 1990	Section 79.	Gives local authorities the power to address 'statutory nuisances', especially those likely to prove prejudicial to public health. It is feasible that in some circumstances giant hogweed could be included as a statutory nuisance as a public health hazard, though the interpretation and application of this legislation may differ between individual local authorities.	UK.

The Invasive Alien Species (Enforcement and Permitting) Order 2019	Schedule 2, and Table 1 of Schedule 1.	It is an offence to import, transport, purchase, sell, cultivate or otherwise cause to grow in the wild Himalayan Balsam without a licence or permit. Schedule 2 contains the list of plants covered by the Order. Table 1 of Schedule 1 contains a list of provisions.	England and Wales.
Regulatory Position Statement 178		Outlines requirements which will allow the disposal of invasive non-native plant material, and the substrate in which it is rooted, without the need for a permit.	England.
Treatment and disposal of invasive non-native plants in Wales: RD 58		Outlines requirements which will allow the disposal of invasive non-native plant material, and the substrate in which it is rooted, without the need for a permit.	Wales.
Town and Country Planning Act 1990 and Town and Country Planning Act (Scotland) 1992	Section 215 of the England and Wales Act and Section 63 of the Scottish Act.	Although these Acts do not make specific reference to specific weeds, they provide local authorities with power to serve notices on owners or occupiers of land to control weeds that may be harming the amenity of the surrounding area. If the owners and occupiers fail to remedy the situation, they may be liable to a fine or have to repay the costs of action taken by the local authority to control the weeds.	UK.
Common Law		There is provision within Common Law to take civil action against neighbouring landowners where the spread of giant hogweed is considered to be a private or public nuisance.	UK.

Table correct up to November 2023

Life cycle

The flowers of a single umbel can produce 30,000 to 50,000 viable seeds. In a natural state, the plant is biennial, growing from seed in the first year and typically taking between 2-5 years to reach flowering and then dying. However, if the plant is cut down before it produces seed, given sufficient time left that season, it will flower again and set seed. If it is too late in the season to flower, it will survive into the subsequent season(s), flowering and seeding in the following season.

Giant hogweed relies solely on seeds for reproduction and spread. It does not reproduce by vegetative means, e.g. from fragments of root or stem. A single plant germinating from a single seed could start a significant invasion.

Seed Bank and Dispersal

After falling from the parent plant, the seeds accumulate and mature in the soil. The majority (95%) are concentrated in the top 5 cm of the soil. These seeds constitute the seed bank. Under a dense stand there can be around 6,000-7,000 live seeds per m² on average (and possibly up to 12,000 seeds per m²). In general, within the first year and after vernalisation (cold shock during winter), approx. 20-30% of these seeds will survive and germinate. About 8% of seeds are found to survive in the soil for more than one year and around 5% survive for two years after falling from the parent plant. This indicates that the seed bank is active for at least at least five years, assuming no more seeds are allowed to fall from plants in subsequent years. However in dense well-established stands, new seedlings may be found for up to 10 years or more after control measures commence.

The primary pathways for dispersal are by wind (as the seeds fall from the parent plant), dispersal along water-courses and accidental transportation by humans, including along roads and railways.

Impacts:

Giant hogweed can form dense colonies which suppress the growth of native plants, including grasses, displacing species and negatively impacting ecologically sensitive and vulnerable habitats.

When these seeds fall into water they are dispersed downstream and washed up along the bank, often on scoured bare sediment, allowing the plant to spread rapidly. Stands of giant hogweed, with its tall and stout stems (alive or dead), impede the flow of water when the watercourse is in flood condition. When natural die-back occurs during the winter, this leaves the banks of streams and rivers bare of vegetation. These are then liable to erosion or to recolonisation by seeds of giant hogweed washed downstream onto the bare ground.

Giant hogweed is a serious threat to human health. All parts of the plant contain varying amounts of furanocoumarins, which can produce phyto-photodermatitis (sensitive reaction to light) on contact with exposed human skin. This results in a red rash and blistering within 24-48 hours of contact, which can be serious. The skin discolours and turns red to dark purple, lasting for several months, and may persist for at least 5 years. Contact with the eyes can cause temporary blindness. In some cases, photosensitivity in the skin following contact can be long-lasting. Some individuals have been affected for life. Points to note with regard to the skin reaction:

- Contact with the cut material in sunlight produces a reaction in almost everyone but the degree of symptoms will vary between individuals. Children are known to be particularly sensitive.
- Victims are unaware of the damage being done, as touching the plant is painless and there is no sensation of irritation.
- The cut material or sap on the skin remains active for several hours after cutting.
- The highest concentration of furanocoumarin is in the leaves and the lowest in the stems with the root being intermediate.

As a result of the risk to health and the density of stems, stands of giant hogweed present access issues, for example to rivers by anglers and for staff needing to undertake river management. In addition to limiting recreation etc., this can have a negative effect on the local economy, e.g. bed and breakfast and associated businesses.

Giant Hogweed Management Plan:

The aims of a Giant Hogweed Management Plan should be clearly stated and will usually include killing the existing plants and eradicating the remaining seed bank. A number of methods are available to achieve both ends. The method(s) chosen depend on a number of factors, including the resources available, e.g. staff and money, and the target date for control. The existing plants can be killed relatively quickly using a herbicide application or by cutting the taproot (see below for further details). The seed bank can also be dealt with quickly by excavating and disposing of the affected soil, but this is expensive financially and environmentally unfriendly. Using a herbicide approach can be highly effective but would take several years.

Alternative aims for such a Plan could be to prevent an area currently free from giant hogweed remaining so or to limit the spread of plant from a known infestation.

Aims should be:

- closely linked to the associated costs and/or the budget available for implementing the Plan;
- realistic with regards to time scale;
- measurable to determine the degree of progress and/or success.

When a plan is implemented on an existing infestation, it is important not to stop/delay works prematurely, or undertake works outside of the recommended treatment season. This is because the plant will recover and often within a short period of time return to the initial state.

Figure 1 provides an example of the stages that could be usefully included in a Giant Hogweed Management Plan.

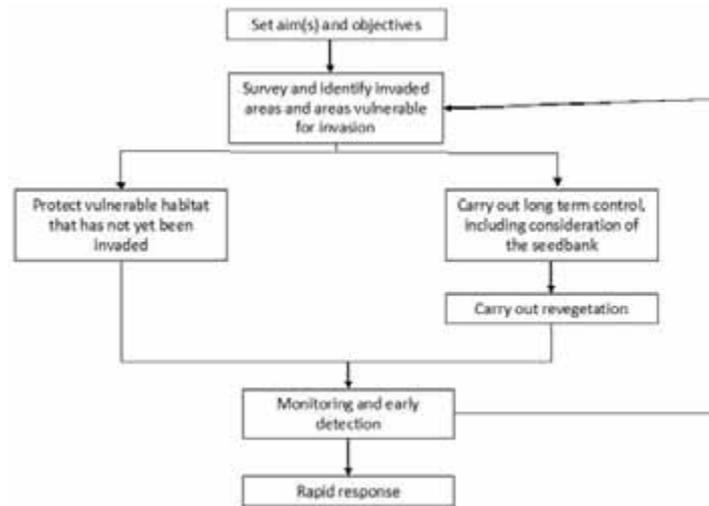


Figure 1. The stages to consider including in a Giant Hogweed Management Plan (adapted from Booy and Wade (2007).

The project area within which control is proposed or from which it is planned to exclude the plant should be carefully selected or defined and documented in plan/map.

Advice on surveying for giant hogweed is provided in Booy and Wade (2007).

The three stages for a control programme are:

- prevention of any further seed production by removing flower or seed heads taking precautions to prevent any seed being shed onto the ground
- killing the growing plants using one of the methods described below with follow up monitoring in the same growing season to deal with any regrowth (post-cutting) or plants missed in the initial treatment
- physically remove the seed bank or undertake annual treatment of seedlings growing from the seed bank until it is completely destroyed.

Figure 2 illustrates the decision-making process that should be undertaken in selecting the appropriate control action. Table 2 summarises the main features of the different control measures.

Figure 2. Decision tree to help select appropriate control options (Source: Booy and Wade, 2007)

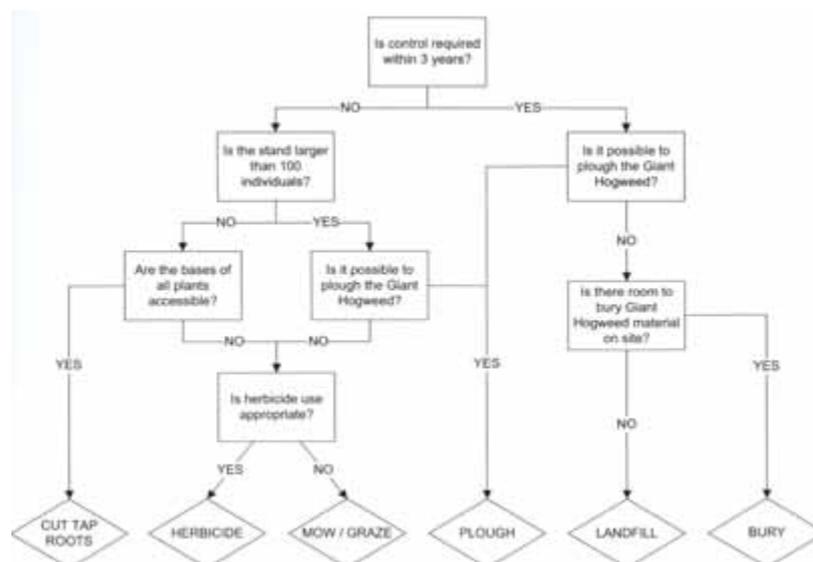


Table 2. Summary of the main features of the different control measures available for giant hogweed (adapted from Booy and Wade (2007)) * = Risk of spreading seeds on footwear.

Control method	Use	Positives	Negatives	Eradication timescale	Cost relative to effort
Seed head removal	Stopping further contribution to seed bank.	Helps prevent new growth.	Does not control adult plants.*	Minimum of 3-5 years however large infestations can be considerably longer.	Moderate.
Taproot cutting	Small stands or where sensitive removal is needed.	Immediately kills adult plants.	Does not control the seed bank.*	Kills adults plants immediately upon correct implementation. Follow-up treatment for seed bank for a minimum of 3-5 years but potentially longer for large infestations.	High.
Hand-pulling	Small stands in sensitive area(s) where seed bank is being controlled.	Prevents damage to other species and/or habitats.	Labour intensive and risk of contact with sap – safety measures essential. Best suited to young plants.*	Minimum of 3-5 years however large infestations can be considerably longer.	High.
Mowing	Large stands where herbicide applications are inappropriate.	Avoids herbicide use.	Not an immediate kill. Does not achieve immediate control of seed bank. Risk of indirect burns/ blistering through sap on machinery.*	Minimum of 3-5 years however large infestations can be considerably longer.	Moderate.
Grazing	Farm land and others where livestock can gain long term access.	Avoids herbicide use.	Livestock need managing. * Biosecurity control for livestock can be complicated, and could result in seed disturbance / movement.	Minimum of 3-5 years however large infestations can be considerably longer.	Moderate.
Ploughing	Very large stands in non-sensitive area(s).	Immediate kills adult plants and achieves burial of some or all of seed bank.	High level of disturbance. Restricted suitability to large areas.*	Immediate kill. Minimum of 3-5 years spot treatment however large infestations can be considerably longer.	Moderate.
Herbicide treatment (Triclopyr + aminopyralid – field of use may be restricted, read product label for details)	Individual plants to large stands.	Immediate kills adult plants.	Use restricted in some areas. Does not remove seed bank, but may reduce seedling growth.*	Minimum of 3-5 years however large infestations can be considerably longer.	Moderate.
Herbicide treatment (Glyphosate)	Individual plants to large stands.	Immediate kills adult plants.	Use restricted in some areas. Does not remove seed bank.*	Minimum of 3-5 years however large infestations can be considerably longer.	Moderate.
Excavation and disposal to landfill	Small to medium sized stands on non-sensitive area(s).	Immediate kills adult plants and removal of seed bank.	High level of disturbance. Expensive.	Immediate.	Very high.

Control Methods:

Removal of seed heads

Seed heads should be individually bagged and then cut. Immature seeds can ripen even after being cut and hence all seed heads should be disposed of as controlled waste (see PCA Guidance Note – Legislation and policy for Invasive Non-native Plant Species including Japanese knotweed).

Bagged seed heads should be either disposed of at an appropriate landfill site or incinerated to ash (assuming necessary permits have been obtained).

Taproot cutting

Very effective control is achievable through cutting the taproot which extends deep into the ground immediately below the stem and is similar to long parsnip. A sharp spade inserted into the ground at an angle to cut through the taproot at least 15 cm below ground level is usually sufficient to cut the taproot. Once cut, the remains of the taproot should be carefully dug out and disposed of or left to dry out. If left in the ground it could generate new growth.

This method is best suited to small stands as it is labour intensive, unsuitable for smaller plants and does not deal with the seed bank. Long term management needs to be provided to deal with the latter.

Hand pulling

Hand pulling should only be undertaken when the operator is wearing full protective clothing to prevent skin contamination by the sap. See Appendix 1 for advice on suitable protective clothing. Hand pulling is only suitable for removing seedlings and small plants and realistically is limited to small areas/infestations. It should not be used for large plants as it is likely to just break the stem leaving the taproot undamaged and still in the ground. It is also potentially hazardous.

Mowing

Repeated mowing depletes the energy reserves in the taproot and it eventually dies. This approach will take several years and should only be used where long-term treatment is acceptable. Once cut, giant hogweed quickly re-grows and can produce low growing flowers and seed heads unless such regrowth is dealt with. Checking the site at least twice post-initial mowing is essential.

Power equipment, such as trimmers, strimmers or weed whackers, should never be used on giant hogweed as they can result in the airborne spray of pulverised plant material. If the use of such equipment is unavoidable, extra care will have to be taken to ensure all skin is thoroughly covered (Appendix 1) and that equipment is properly cleaned after use.

When using tractor-mounted equipment, such as a flail mower, machine operators should take stringent precautions. Airborne sap can be produced and sap can be spread onto machinery, which could subsequently come into contact with the skin of a person not directly involved in the mowing. Other personnel and the general public should be kept away from the site during mowing.

Mowing before flowering will, at best, produce only temporary control and ensures that the plant regrows in the following season. Cutting after flowering has no benefit once the seeds have been formed, except the benefit of clearing away the dying vegetation.

Grazing

Livestock, including cattle, sheep, pigs and goats, will eat young giant hogweed, depleting the energy resources in the roots until the plants die. However, apart from grazing by pigs, the roots are left undamaged and grazing is needed for up to 5 years and considerably more for larger infestations, to achieve control. In order to minimise any risk to the livestock, it is advisable to use animals with the most pigmentation in their skin – i.e. dark coloured animals – and/or those with more hair.

Grazing could be of particular relevance in rural situations where there is no urgency to remove the giant hogweed straightaway and the area concerned is relatively large.

Ploughing

Deep ploughing or tilling is a highly effective form of giant hogweed control. This technique both cuts through the taproot, killing the plant, and turns the soil over, helping to bury the seeds at a depth which inhibits growth.

It is unlikely that a single treatment using ploughing will eradicate the plant and hence it needs to be repeated. Other control measures, such as herbicidal control, will probably need to be integrated into the Giant Hogweed Management Plan.

Herbicidal control

Herbicides are effective at killing giant hogweed and often just one application achieves this. Nevertheless, re-application in the same season should be planned in order to treat new plants that typically grow to replace the dead plants. Two herbicide types are available for use on giant hogweed: glyphosate (various products) and aminopyralid + triclopyr (e.g. Icade or Garlon) (Table 3). That said, it is important to recognise there are several limitations for the use of aminopyralid + triclopyr. It is only approved for use on amenity grasslands in industrial areas and is not approved for use in gardens or near water (“Do not apply directly to, or allow spray drift to come into contact with, agricultural or horticultural crops, amenity plantings, gardens, ponds, lakes or watercourses” – Product Label). Also, giant hogweed has been shown to be only moderately susceptible to aminopyralid + triclopyr. The only herbicides that are known to control giant hogweed and which are approved for use in or near water are glyphosate-based.

Table 3. Summary of herbicides available for use on giant hogweed (named examples given above)

Herbicide (dosage)	Persistence in soil (months)	Approved for use near water	When to apply	Selectivity	Human toxicity	Time taken to achieve control
Glyphosate e.g. Roundup Proactive (4-5 l. per ha)	0	Yes.	March - June.	Non-selective.	Low.	Minimum 3 years repeated application.*
Triclopyr + aminopyralid e.g. Icade or Garlon (4 l per ha pa)	1.5	No.	March - June.	Selective for broadleaved species.	Medium-Low.	Minimum 3-5 years repeated application.*

(* = Plants should be killed with a single application, but the seedling growth from the seed bank will occur for some years thereafter)

Herbicide 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 (see Re-vegetation below). Where herbicide treatment is required later in the season and plants are tall or where accessibility is problematic, e.g. river banks, a long lance sprayer is useful. Indeed, in most circumstances, a long lance should be utilised to ensure a safe distance is maintained between the operator and the plants. Weedwiping removes the risk of damaging surrounding vegetation but is only feasible for a small number of plants and at an early stage in growth.

Herbicide application is best undertaken when the plants have grown to about 50 cm in height with full leaves to receive the chemical, which is usually about mid-late April (or March if there is an early spring). The site should be monitored in May-early June to check for new plants or any plants that have been missed. Repeat treatment, either spot or blanket spraying, should be undertaken. Be aware that aminopyralid + triclopyr is only approved for one application per year on giant hogweed and so, if follow-up spot treatments are required, it is best to use glyphosate for this purpose.

Herbicide application will not kill seed in the seed bank and monitoring and herbicide applications must be repeated annually over 3-5 years to eradicate new plants growing in subsequent years. Numbers of plants will decrease significantly from one year to the next (see Seed Bank and Dispersal section above). This should be sustained until there is at least one clear year with no new giant hogweed plants.

Giant hogweed may occur in large dense infestations. In such situations, it may be necessary for two or more visits to be made to permit operator access to these areas. The first spray will be to all accessible areas and the subsequent sprays to the inner areas, where initially access may not have been possible or safe for the operatives to work in.

Stem injection is an option for giant hogweed with a glyphosate product carrying a suitable label recommendation but, since giant hogweed is easily and safely killed using conventional spraying technology and stem injection runs a risk of the bio hazardous sap being sprayed back at the operative during this process, this should only be conducted where a specific risk assessment has been carried out and where knapsack spot treatment cannot be used. (Note: Client specification of stem injection would not normally be sufficient justification for choosing this method if there is a safer alternative). In addition to this, the resultant seedling growth would be too small to stem inject, so if knapsack spraying is not permitted, alternative methods may need to be selected (see above).

After the control of the majority of the site, assuming that the area is to remain green, it should be re-vegetated as soon as feasible (see below).

Excavation

Where immediate eradication is required, for example on a site that is shortly to be developed, the most appropriate solution is likely to be excavation. This kills and or removes the taproots and, if carried out carefully, can remove the seed bank as well.

The area over which excavation will need to take place will be governed by:

- the distance of spread of giant hogweed from the edge of a stand, which is minimally 4 m and could be up to 10 m or beyond depending on how exposed the plants are to wind or being blown across solid surfaces, such as a car park or snow;
- the depth of the seeds in the soil - current advice suggests a depth of 0.5 m will remove the seed bank and would also remove all of the taproot.

The excavated material can either be spread or stockpiled on the site or taken off site for disposal at a landfill site.

Stockpiling is appropriate where giant hogweed must be removed from a particular area of the site but can be relocated to another part of the site for further treatment. The relocated hogweed material should be cordoned off from the rest of the site and the giant hogweed allowed to grow/regrow with follow-up treatments to kill it.

The excavated material must be managed in accordance with the Environmental Protection Act (Table 1) and particular care must be taken not to inadvertently spread material on or off site, the latter constituting an offence under the legislation of the countries of the UK (Table 1). An experienced clerk of works should supervise the excavation and disposal, ensuring that the work is undertaken under controlled conditions and that appropriate health and safety measures are implemented.

Biological control

Considerable research has been undertaken to find an acceptable biological agent to control giant hogweed. Despite the identification of candidate agents, none has so far been found to be suitable.

Disposal of plant material:

When it has been necessary to cut the giant hogweed, leaving cut material in situ can expose the public and animals to risk of contact with the plant. Therefore, collection and disposal are necessary. Disposal is also essential for flowering or seed heads that have been bagged up and removed. Care needs to be taken in deciding on the most appropriate means of disposing of plant material. There are two main considerations: avoiding spreading the seeds and health hazards to the public.

The two options are burning/incineration and disposal to landfill. Composting should not be used, as it is not known if giant hogweed seeds are killed by the composting process.

Burning and incineration

Taking due precautions to avoid skin contact with the plant and sap, cut material should be gathered up and either allowed to dry on site or taken off site to dry out. In either case, measures should be undertaken to ensure that seeds do not fall or are otherwise spread from the material. To prevent skin contact with the cut material, both for the public and on- and off-site personnel, the location for drying out the material should be carefully chosen and suitably isolated. Care must be taken to wash down trailers, cutting tools and any other materials that will have come into contact with the giant hogweed.

Once dried, the material should be burnt to ash, preferably in an incinerator on-site to avoid the inadvertent spread of seeds.

Disposal to landfill

Regardless of whether the cut material contains seeds or not, the landfill site to which the material is to be taken should be informed of the nature of the waste ahead of it being removed from the site. This may affect the landfill site costs. The material will normally be classified as 'controlled waste', but you should consult with the landfill operator.

Re-vegetation:

Bare ground is often left post-giant hogweed control. This is typically in patches, but can extend over significant areas or stretches (for example, along a river bank). This exposes the soil to erosion, e.g. overwinter, and to re-invasion by giant hogweed and/or other undesirable plant species. The re-vegetation of such bare areas provides an opportunity to re-establish biodiverse habitat. 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.

The nature of the re-vegetation will depend on the short, medium and long term objectives (e.g. rapid soil stabilisation along a river bank or reinstating an area of playing field), as well as the treatment undertaken of the giant hogweed (e.g. replacing soil removed in excavating an infestation or restriction to grass species due to residual herbicide in the soil if a residual product was used).

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Appendix 1.



Health hazards associated with Giant Hogweed: how to avoid them and treatments in case of injury (Source: The Knotweed Company Ltd)

When working in the vicinity of giant hogweed it is vital to recognise the health risks and take appropriate action to prevent exposure to the chemicals in the plant. Known as furanocoumarins, they occur in sap and most other parts of the plant.

Health risks

Giant hogweed is highly toxic and great care should be taken to avoid any contact between it and the naked skin. The plant exudes a clear, watery sap which causes photosensitising effects in human skin. This sap is also present on the tiny hairs that cover both the leaves and the stems of the plant. The sap, in combination with ultraviolet radiation, causes burning in as little as 15 minutes after contact, with a sensitivity peak between 30 minutes and 2 hours. The stronger the sunlight at the time of and after contact, the greater the reaction. There are also reports that the sap could be carcinogenic, i.e. causes cancer, and could also cause malformations in the growing embryo in pregnant women.

The effects of hogweed sap on the skin do not become apparent until 20-24 hours following initial contact. Contact itself is painless and free of irritation, so it is easy to become exposed to giant hogweed sap and remain completely unaware of the fact until it is too late. When the effects do reveal themselves, they appear as flushing or reddening of the skin, often along with the appearance of watery blisters. The reaction of the skin will vary from individual to individual depending upon their sensitivity. An inflammatory reaction will occur after about 3 days, followed by a darkening of the skin about a week later, which can last for months. The affected skin may remain highly sensitive to ultraviolet light for years, and even for life. Moisture and heat enhance the skin reaction.

Recommendations

Full personal protective equipment (PPE) should be worn at all times. Minimal protective clothing should consist of coveralls with hood, rubber gloves with long sleeves, goggles or face visor and rubber boots/wellingtons. Sap can seep through cotton and linen fibres, and such materials can be penetrated by the plant hairs, so coveralls and footwear should be made of synthetic, water-resistant fibres.

Lone working around giant hogweed during the growing season is not advised, particularly if carrying heavy equipment such as knapsack sprayers. If an operative were to slip whilst carrying such equipment and fall into the leaves of giant hogweed plants, it would be difficult for them to extricate themselves without exposing some part of the skin to the hogweed hairs or sap, even if wearing full PPE. Therefore, a second operative should always be present in case such an eventuality occurs, so that they can assist the first operative in disentangling themselves as quickly as possible and so reduce the period of exposure. If contact was to have taken place, the second operative can assist in washing down the affected area(s).

If cutting the plant, long-handled loppers should be used to keep the cut clean and controllable whilst maintaining a safe distance from the leaves and other parts of the plant. Cutting the plant can result in hogweed sap spurting from the cut stem, so great care should be taken to ensure this sap does not come into contact with unprotected skin.

A container of fresh water should be kept in the vicinity of the work area, as well as soap and a towel. This will enable clothing, eyes or skin to be washed quickly in the case of an emergency.

Giant hogweed sap that comes into contact with clothing or gloves can be transferred to another surface via touch. Care should be taken not to scratch or otherwise touch bare skin with gloves exposed to hogweed sap during or following the works unless these gloves have been thoroughly washed prior to contact.

Giant hogweed sap remaining on any clothing with which it comes into contact can create a transfer risk sometime after the works. Following such works, all clothing should be removed with care and either be washed thoroughly or disposed of. Refuse sacks should be carried for containing or disposing of contaminated clothing.

Power equipment, such as trimmers, strimmers or weed whackers, should not be used on giant hogweed as they can result in the airborne spray of pulverised plant material. If the use of such equipment is unavoidable, a full risk assessment will need to be in place and extra care will have to be taken to ensure all skin is thoroughly covered. A full face shield with appropriate inbuilt respiratory protection should also be worn to prevent the risk of inhalation of giant hogweed material.

What to do if you are exposed to giant hogweed sap?

Where skin has come into contact the plant or sap, the following measures should be taken:

- Wash the skin carefully with soap and water as soon as possible following contact.
- Keep the area away from sunlight for at least 48 hours (this includes sunlight on dull, overcast days).
- Seek medical assistance – treatment with topical steroids early in the reaction can reduce the severity and ease discomfort.
- In the following months, sun-cream should be used for the sensitive areas.



The information contained in this booklet is given in good faith and is believed to be correct. However, it must be stressed that of necessity it is of a general nature. The precise condition may alter in each individual case and the Association is therefore unable to accept responsibility for any loss howsoever arising from the use of the information contained therein.



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