

# Invasive plant species: Japanese Knotweed, Himalayan Balsam, Giant Hogweed and Skunk Cabbage

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## Summary

- It is important to be able to identify invasive species that occur within the local area.
- Be aware of where these species occur and their harmful effects.
- Prevent invasive species contamination by keeping farm machinery clean and avoid the import or export of contaminated soil.
- Avoid the spread of Invasive species to new areas.
- Monitor your farm regularly for the presence of invasive species.
- Act quickly to completely remove invasive species when they occur.

## Introduction

An Invasive species is usually a non native or introduced species that adversely affects habitats and threatens biodiversity. While all species compete to survive, invasive species appear to have specific traits that allow them to out-compete native species and become dominant.

Invasive species can be plants, animals or insects. This technical note concentrates on the following invasive species which are currently expanding their Scottish range.

- Japanese knotweed
- Giant Hogweed
- Himalayan Balsam
- Skunk Cabbage

## Key Recommendations

**Be aware:** It is important to be aware of invasive species: they cause loss of grazing, decline of biodiversity and can be extremely expensive to remove if not identified and treated quickly. Many invasive species are spreading rapidly across a geographical range; they are much more common in the countryside in recent years. All of the invasive species highlighted here lead to reduced biodiversity and loss of grazing however they can have a number of further effects: Some species cause physical harm particularly to children,

other species will prevent you getting planning permission and if invasive species are spreading from your land to your neighbours then you could find yourself being prosecuted. Managing invasive species is the responsibility of the owner/occupier of the site.

The Wildlife and Countryside Act 1981 (WCA) provides the primary controls on the release of non-native species into the wild in Great Britain and it is an offence under the act to 'plant' or 'otherwise cause to grow in the wild' a number of non-native plant species.

**Be aware** of invasive species that occur locally and learn to recognise them: notice where they are growing in relation to your ground. The first step is to prevent contamination of any ground that you manage.

**Prevent:** Good land management practices are essential to try to prevent invasive species contaminating the ground. To avoid the introduction of invasive species:

- Don't import contaminated soil/spoil
- Ensure machinery entering the farm is clean to avoid accidental cross contamination
- Avoid planting invasive species including within amenity areas such as gardens



**Rapid response:** Acting quickly is essential if any attempt at clearing is to be made. Once a species is widespread eradication is likely to be extremely expensive and very difficult over a long period of time. Often a species can be easily eradicated if it is noticed before it has had time to seed.

**Control and eradication:** This will depend on the individual invasive species so get a specialist company involved or read the eradication advice for the particular species you are controlling. Sometimes these species occur in a landscape scale, for example along a river bank or track so work with your neighbours if necessary to remove the seed source.

## Why Control Invasive Species

The first step to controlling invasive species is awareness. Be aware of the problems caused by invasive species and know how to identify them.

Invasive species commonly have the ability to reproduce quickly, grow rapidly, disperse easily, tolerate a wide range of environmental conditions and have an association with humans. They also tend to be very difficult to remove.

Invasive species out-compete native species for resources such as food, light and space. They often alter the environment by excreting chemical compounds which can make them unpalatable to grazing animals or suppress nearby plants.

The spread of Invasive species is often associated with human activity. Plants and seeds were originally brought into the country through the horticultural industry or accidentally with seeds and live material within the agricultural industry. They often spread through our road and water networks hitching a lift with vehicles or along waterways. They are also frequently spread during topsoil transport between construction sites.

Invasive species reduce biodiversity and reduce availability of grazing. Japanese knotweed in particular has roots that can work through concrete threatening buildings therefore you are unlikely to get building planning permission on land contaminated with it. Giant Hogweed causes serious allergic reactions in people who inadvertently touch the plant, particularly the unaware like children. Removal of non native invasive species once they have become established is often very expensive.

## Japanese Knotweed Identification and Control

Japanese Knotweed, *Fallopia Japonica*, is native to Japan and parts of East Asia. It was introduced to the UK in the 19th century as an ornamental plant, it escaped from gardens and became a highly invasive vigorous perennial that has been causing problems ever since.



Japanese knotweed flowers but does not set seed. It grows vigorously from a small fragment quickly spreading into adjoining ground through growth of the rhizomes (roots). It spreads to a new area when small fragments break from the parent plant and are carried away by water, soil removal or in treads of machine tyres to regrow in a new site. Japanese knotweed develops an extensive network of underground shoots called rhizomes which can grow to a depth of 3 m and reach 7m from the initial plant. These rhizomes can lie dormant for many years and start to regrow again years after treatment.

Japanese knotweed grows extremely densely and shades out native plants. It makes a very poor habitat for insects, birds and mammals. It devalues the natural landscape and spreads quickly along river banks increasing the risk of riverbank erosion and creates a potential flood hazard when dead stems choke water courses

Japanese knotweed will grow through drains, stone walls, buildings and even inside cavity walls. It is not covered by building insurance. You may also be prosecuted if it spreads to your neighbours land from yours. Do not build on land infested with it or you may find the knotweed comes up through the building: covering up this plant does not kill it.



### Japanese Knotweed along a public footpath and through a deer fence

Identification – The plant starts to grow in the spring with red/purple shoots appearing between March and April. It grows large heart shaped green leaves with hollow bamboo like stems which can be up to 2m tall. The flowers appear in late summer and are



clusters of creamy white. In can produce dense clumps of growth turning red/orange before dying back in the winter.



**Heart shaped leaves**

into the plant above the root crown dramatically increases the translocating ability of the herbicide throughout the plants' structure

Burning does not kill Japanese knotweed and may indeed cause it to grow more vigorously, although it may remove some of the top growth

Avoid mechanical cutting as in many cases this can increase the spread of the plant and does not kill it.

If you remove soil from an area contaminated with Japanese knotweed the soil must be disposed of correctly through a licensed waste disposal site. The soil or plant is classified as 'special waste' and would need to be disposed of in a landfill licensed to accept special waste. In addition, it would have to be consigned and managed in accordance with the Special Waste Regulations 1996 (as amended).

## Giant Hogweed Identification and Control

Giant Hogweed *Heracleum Mantegazzianum* is a relative of our Common Hogweed but grows much bigger and is toxic. It is native to southern Russia and central Asia. It arrived in Britain in the 19th century brought in as an ornamental plant for the Horticultural Industry. The plant is a biennial growing a rosette of leaves in the first year and flowering in the second year before dying.

Identification –It has a thick bristly green stems which are hollow and between 3 and 8cm in width and often spotted. The leaves are very large and lobed with jagged edges. The flowers are white and borne in huge clusters up to 60cm across. This giant plant grows to more than 3m tall and can be over 1m across.

Giant Hogweed is a public health hazard; it is a very invasive and potentially harmful plant. Chemicals in the sap cause photosensitivity when in contact with skin which causes a burn like reaction with blistering and black scarring which can last several years. Hospital treatment is often necessary so this is a dangerous plant to come into contact with, particularly for the unwary like children who should be kept away from it.

Giant Hogweed spreads by seed particularly in water but can also be spread via contaminated soils. It out competes native vegetation reducing biodiversity and when it dies down in winter it exposes river banks to damage by flooding.

Control can be either physical or chemical. If attempting physical control ensure that all exposed skin is covered including the face and eyes to prevent exposure to the sap. Cutting after flowering has no benefit and even before flowering is limited as the plant will flower again the following year. The whole plant can be removed by digging as long as it is cut below ground level to ensure damage to the root system. Chemical control is by Glyphosate applied as a spot treatment. Re-establishment of vegetation quickly will help to prevent further plants growing. Seeds will last about 7 years but possibly up to 15 therefore control may need to be continued for the whole of this period to exhaust the seedbank.



**Leaves with stout stems**



**Japanese knotweed flowers**

The method of control is normally by spraying a pesticide such as glyphosate, ensure spraying takes place in late summer after flowering so that the chemical translocates to the roots. This method of control may take 3 or 4 years to eradicate the plant.

Japanese Knotweed is bamboo-like with a hollow stem. Stem injection applications involve delivering herbicide directly into the hollow stem of the plant. Injections are made in the lower part of the stem, with each stem being marked to ensure complete coverage of an area. Delivering the herbicide directly



**Giant Hogweed in winter.**

## Himalayan Balsam Identification and Control

Himalayan Balsam, *Impatiens glandulifera* is a large annual plant native to the Himalayas. The plant was introduced to the UK in the early 1940's by the horticultural industry. The plant likes to grow on river banks where it easily establishes, forms large patches and spreads quickly by seed. The flowers each produce up to 800 viable seeds which explode from the seed when ripe. These seeds are easily carried by water to new sites



Identification – Himalayan Balsam grows up to 3m in height and is thought to be the tallest annual plant in the UK. The leaves are serrated and oval shaped, often edged in red. The stem will be hollow, jointed and hairless. The flowers are pink and hooded with the shape often described as like a “policeman’s helmet”.



Himalayan Balsam grows in dense clumps smothering native plants and reducing biodiversity. Although each flower produces a large quantity of nectar overall the quantity is less than an area of native species. The plant grows along watercourses often taking over large areas. As the plant is an annual it dies down in winter leaving patches of very bare exposed banking which can then be

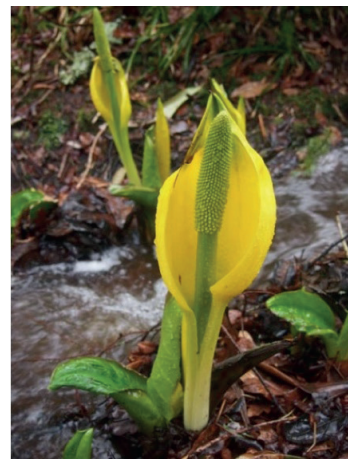
damaged by winter flood water. Himalayan Balsam is thought to excrete toxins that have a negative impact on neighbouring plants and allows the Balsam to expand.

Control is usually by chemical means with spraying of Glyphosate shown to be an effective control. Other methods include injecting the stem with a glyphosate based chemical straight after cutting although this method is time consuming. Repeated treatment over several years is normally needed to remove the plant along with constant monitoring to ensure it does not return.

## Skunk Cabbage Identification and Control

American Skunk cabbage, *Lysichiton americanus*, was introduced to the UK around 1947 when gardeners first started planting it around ponds and waterways where it very soon escaped along the watercourse.

Identification - This plant produces ornamental large yellow flowers in the spring which emit a strong odour likened to a skunk or rotting flesh. The plant has a basal rosette of large leathery leaves which can grow up to 1m in length and increase through the season. Its normal habitat is wet woodland where it grows in the mud. It is a long lived perennial with thick rhizomes (roots).



The plant spreads mechanically when pieces break off and are carried by water to a new area where they easily regrow. It can also spread by seed which are transported long distances along watercourses. It was banned from sale in 2017



**Skunk cabbage spreading down a watercourse and the leaves which can grow in excess of 1m long shown here with boots for scale.**

Skunk cabbage reduces biodiversity by outcompeting native plants through shading. It also blocks drains and watercourses due to the very large rhizomes.



**Skunk cabbage invading a wet woodland, note figure for scale.**

Control is difficult as skunk cabbage often grows in shallow water. Glyphosate has been used to treat it with some success. Other methods involved digging the plant out by hand paying particular attention to removing or destroying the base plates where the leaves emerge.

## Invasive Species and the Law

The Wildlife and Countryside Act 1981 ((as amended by the Wildlife and Natural Environment (Scotland) Act 2012).) provides the primary controls on the release of non-native species into the wild in Great Britain and it is an offence under the act to 'plant' or 'otherwise cause to grow in the wild' a number of non-native plant species

The summary points of this code are as follows:

- It is an offence to plant in the wild any plant out with its native range
- It is an offence to "cause to grow" in the wild any plant outside its native range.

"Cause to grow" means that the plant becomes present as a direct result of someone's actions. Examples of these actions include

- Management that encourages the spread of the plant.
- Planting a non native in the garden with the result it spreads to the wild.
- Inappropriate disposal of plant material which leads of plant growth. This includes moving soil that may contain invasive plants and causing these to become established in a new location.

The 1981 act also provides relevant bodies such as SNH and SEPA with mechanisms for control of invasive species which sets out what must be done, by whom and when. This is known as a Species Control Agreement (SCA). There is no penalty for non compliance with the SCA although further action in the form of a Species Control Order (SCO) can be made in urgent cases where the owner has failed to comply with an SCA. It is an offence to disobey a SCO.

## Chemical Control

Anyone applying chemicals (including Glyphosate) on land used for a commercial purpose (ie farms and crofts) is required to have a 'certificate of competence'. Spraying close to (within 1m), or on a water course, requires additional certification. Spraying should therefore only be carried out by appropriately trained personnel Prior to any treatment with herbicide in or near water or surface water drains, SEPA would expect submission of a "Non-Aerial Herbicide Use in or Near Water" application form, providing details of the method to be employed. Forms are available from SEPA and should be submitted at least 3 weeks before spraying.

Consultation and consent from SEPA (as detailed in the Control of Pesticides Regulations 1986 (as amended)) is required where aerial application of herbicides is adjacent to or within 250 metres of water and in all other cases where water is likely to be affected.

## Further Information

Contact your local Scottish Natural Heritage office or email [non\\_native\\_species@snh.gov.uk](mailto:non_native_species@snh.gov.uk)

Sepa <https://www.sepa.org.uk/environment/biodiversity/invasive-non-native-species/>

Scottish Government information on Species Control Agreements and Species Control Orders <http://www.gov.scot/Resource/0039/00398608.pdf>

<http://www.invasivespeciesscotland.org.uk/>

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