We need your help

The Tweed Invasives Project has only succeeded through the contributions of everyone living and working on the river. We are extremely grateful to everyone who gives time or money towards controlling these plants. However, we need to sustain this effort for many years to come if we are to continue to be successful.

Monitoring and reporting INNS

The Tweed Biosecurity Plan (2011-2016) outlines how INNS are currently monitored throughout the Tweed catchment. It also sets out a reporting system whereby reported sightings will be verified by trained Tweed Foundation, River Tweed Commission or Tweed Forum personnel, with a sighting of a national or local high priority species verified within 48 hours. If confirmed, this sighting will initiate the appropriate national or local high priority response. All verified sightings will also be entered onto the Tweed Forum or Tweed Foundation Geographic Information System that record INNS distributions within the Tweed catchment.

The Tweed Forum accepts no responsibility for any loss, damage or injury arising from the interpretation or use of information, or reliance upon views contained within.

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This leaflet gives guidance on how to identify and control the most damaging invasive non-native species (INNS) in the Tweed catchment, particularly Giant Hogweed, Japanese Knotweed and Himalayan Balsam. INNS have been described as the biggest threat to our native biodiversity after climate change. They can outcompete and dominate native vegetation, exacerbate bank erosion and, in the case of Giant Hogweed, represent a serious health hazard.

The Tweed Invasives Project has been delivering comprehensive control of Giant Hogweed and Japanese Knotweed across the Tweed catchment since 2003, as well as Himalayan Balsam control on the River Till. It is now widely recognised as one of the longest, and most successful, catchment-based control programmes of its kind in the UK. The Project uses spraying (with certified herbicides) to ensure that these damaging invasive species are prevented from flowering or spreading each year. For plants such as Giant Hogweed, with a long seed-life, this is vital in ensuring the eventual eradication of the species from the Tweed catchment. The Project is a close collaboration between Tweed Forum staff and local landowners, farmers, ghillies, fishermen and volunteers and this is a key factor in the success and longevity of our work.

**Japanese Knotweed**  
(*Fallopia japonica*)

**Identification:**

**Spring**
- Red, succulent shoots appear early

**Summer/Autumn**
- The stems are green with red flecks and can grow up to 3m (9-10 feet)
- Shield-shaped leaves with flat base, up to 12cm (5 inches) long grow alternately up the hollow stems
- Creamy flower clusters are produced in the late summer

**Autumn/Winter**
- Plants die back after the first heavy frost, leaving tall, hollow, tan coloured stems
- Early autumn, before the first frost, is the best time to spray

**Identification:**

Distinguished from Japanese Knotweed due to its larger size (grows 2-4m tall), with the leaves also much larger (up to 40cm) as well as having a heart-shaped (not straight) base and a wavy margin.

**Giant Knotweed**  
(*Fallopia sachalinensis*)

**Identification:**

**Spring**
- Dark green, spiky leaves start growing very early in March/April, reaching a height of 30-50cm (12-15 inches)

**Summer**
- The large hollow stems are ribbed and green in colour with red-purple blotches
- The large, white flower-heads can be up to 50cm (15 inches) across

**Autumn/Winter**
- Some immature plants may die back but many will keep some colour in their leaves throughout the winter
- Mature, flowering plants will die, leaving seed-heads with up to 50,000 seeds

**Himalayan Knotweed**

**Identification:**

Distinguished from Japanese Knotweed due to its longer, more pointed, leaves.

**Health Hazards**

The stems, leaves and sap of Giant Hogweed contain a substance which reacts when exposed to sunlight and can result in serious blistering up to 48 hours after contact, even through light summer clothing. All blistering should be treated as a burn. In severe cases medical advice should be sought as untreated blistering can lead to permanent skin damage such as discolouration, sensitivity to sunlight or recurrent dermatitis.

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Giant Hogweed

Identification (continued)

**Spring/Summer**
- Purplish-pink to light pink flowers, carried on long succulent pinkish-red stems
- Lance-shaped serrated-edged green leaves with a red midrib, up to 150mm long
- Leaves and side branches originate from stem joints
- The stem is sappy and brittle

**Autumn/Winter**
- The white, brown or black seeds are produced from July to October and are 4-7mm in diameter
- There are between 4 and 16 seeds per seedpod
- In autumn the plants die back, leaving the banks bare of vegetation and therefore liable to erosion

Health Hazards caused by Giant Hogweed:
- Examples of blistering caused by Giant Hogweed:
- Finger
- Wrist
- Child’s elbow
- Legs

How to prevent the spread of invasive plants

There are several ways in which the spread of invasives can be prevented, these include:
- Starting control work as soon as possible, before plants become established
- Where invasives are already established along watercourses, ensure work is carried out from upstream to downstream (so as not to transport invasive plants upstream)
- Ensure that no seeds or plant segments are removed from infested areas
- Do not dispose of cut stems, or spread soil containing seeds or roots of invasive species; just a few seeds or root segments can be sufficient for full plant growth
- Tweed Forum is available to answer your queries on invasive plants, contact us on 01896 849723

Himalayan Balsam (Impatiens glandulifera anum)

Identification

**Spring**

**Summer**

**Himalayan Balsam**

Controlling invasive plants

Non-Chemical Control

Non-chemical control of Japanese Knotweed is virtually useless as a means of eradicating the plant, though it can limit further growth. Grazing will limit growth and spread, however, the plant will often persist in small pockets where animals can’t gain access, making eradication very unlikely. Cutting and digging may also limit the growth and spread of Japanese Knotweed but due to the plant’s ability to re-grow from very small segments of either root or stem (even sections that appear dead) this is not advised. Indeed, the cutting and subsequent disposal of Japanese Knotweed (e.g. strimming waste transported to dumps/compost heaps or the movement of soil contaminated with root sections) is one of the chief methods by which this invasive plant has spread and it is now illegal under current legislation. Any soil or plant material taken away from a site containing Japanese Knotweed must be taken by a licensed waste carrier and go to a suitably authorised landfill site.

Chemical Control

Chemical control, through herbicide spraying, is the only sure means of killing Japanese Knotweed and the most efficient means of killing Giant Hogweed, although it should be undertaken with great care, ensuring that only the target species are sprayed and that all safety guidelines are followed. Glyphosate-based herbicides are safe and the only type allowed for use next to watercourses. These work by being absorbed through the plant’s growing leaves before being transported down to the roots, blocking the plant’s vital enzyme systems, thus killing the plants from the roots up. Glyphosate is non-specific so it also kills most other types of plants and therefore should be used carefully and sparingly on the target species only. Glyphosate comes under many names but Roundup Pro-biactive is widely acknowledged to be the most effective product.

A license is required from SEPA/the Environment Agency if spraying is to be carried out near water. At the moment, Tweed Forum apply for a blanket license on behalf of everyone in the Tweed catchment. However, individuals need to be certified in spraying (PA1 and PA6W). Tweed Forum can offer advice and funding toward training costs for individuals undertaking spraying on their own land, call us on 01896 849723.
Glyphosate application

The best results are obtained by applying the glyphosate to new growth points on the plant as these areas will transport the chemical to the roots most effectively. Glyphosate herbicides may be applied using a weed-wiper that smears the herbicide directly onto the target plants, thus avoiding spray-drift and the killing of non-target species. This can be done similarly using a mixture of normally diluted herbicide and wall paper paste and then simply brushed onto the leaves. However, spraying is the easiest and most common means of herbicide application though care should be taken to avoid spray-drift and drips which will kill non-target plants (e.g. lawns). After treatment, plants may take 2-6 weeks to show any visible signs of die-back therefore re-spraying should not be considered before 6 weeks.

For Japanese Knotweed, a direct injection of glyphosate into cut stems is currently the best treatment, however it is exceedingly resilient to both cutting and chemical treatment. Once a stand of Japanese Knotweed has become established it is very difficult to kill, therefore a strategy of continued management and treatment is required.

Control of Giant Hogweed is best achieved through the application of glyphosate to plants that have grown to about 60cm (2ft) high. Giant Hogweed seeds germinate at different times, so it is essential that the site is revisited a few weeks later to ensure that a second application of glyphosate is not needed.

Key Points

1. If you are spraying on property that is not your own or are contracted to spray, then certification is required - this is not required for domestic use in gardens. Please contact Tweed Forum if you are interested in going on the certification course as there may be funding available to pay for this.

2. Always ensure that you comply with all the product label instructions. Do not be tempted to use stronger dilutions than recommended as this can lead to environmental pollution/chemical hazards - it also wastes valuable herbicide.

3. Always check the weather before applying herbicides. As glyphosate is best applied to dry leaves and can be washed off by rain, a minimum dry spell of at least 6 hours post-spraying is required (a longer spell is preferable).

4. Act responsibly. Always discard empty packaging responsibly and where possible avoid carrying and/ or diluting more herbicide than you require for the job in hand.

Health and safety reminder

When carrying out activities near rivers, streams or other water bodies, extra precautions should always be taken, for example:

- Avoid steep, wet or unstable banks
- Avoid rivers and streams during flood periods
- Watch out for hidden hazards on the banks and in the water's margins, such as fallen branches, uneven ground and holes
- Wear the appropriate protective clothing
- Avoid going to remote areas on your own and carry a basic first aid kit
- Make sure you wash your hands before eating, drinking or smoking

Other Invasives:

**Snowberry**
- A garden plant that can now be found along hedgerows, river banks and woodland margins
- A shrub that produces distinctive juicy, white berries

**Monkey Flower**
- Two species and their hybrids have been reported from a number of locations in Tweed catchment.
- Favours damp gravel based locations.

**Australian Swamp Stonecrop**
- Can be found in a range of habitats from damp areas to deeper pools, prefers still-water, and can grow in shade and sunlight
- Chokes water courses, out-competes native plants and is not edible to native wildlife

**Curly Waterweed**
- Fully aquatic plant, living wholly submerged, it is capable of forming very dense infestations in suitable habitats and occupying the full water column in waters up to 6m deep

**Skunk Cabbage**
- Favours wet woodland, where it grows on bare or partly-vegetated nutrient-rich mud
- Yellow flowers are produced in spring, resembling those of wild arum (lords-and-ladies) but much larger. They emit a strong odour like that of skunk. The plant has a basal rosette of leathery leaves, up to about 1m long

**Nuttall’s Water-weed**
- Has recently been recorded in two Tweed subcatchments.
- Fully aquatic plant, living wholly submerged

**Goldenrod**
- In gardens. Please contact Tweed Forum if you are interested in going on the certification course as there may be funding available to pay for this.

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