

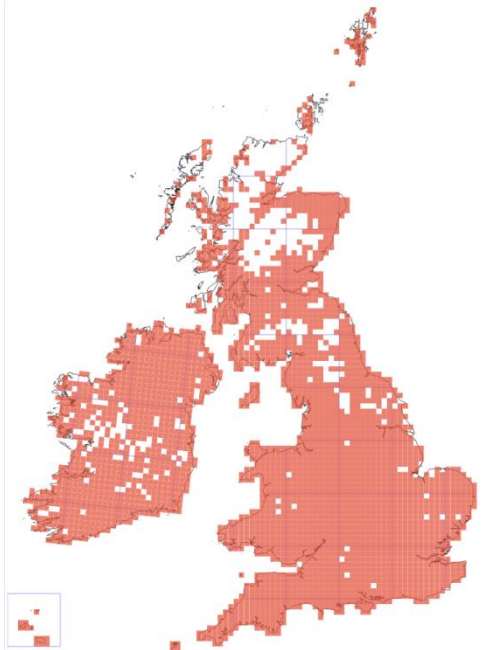
# Japanese Knotweed

*Fallopia japonica*

## Invasive Species Identification and Control Guide

### Species Description

Japanese Knotweed is a native plant species in Japan, China and Taiwan. It was introduced to the UK in the mid 19<sup>th</sup> century for ornamental purposes but escaped from gardens and became naturalised as early as 1886. Japanese Knotweed is a tall herbaceous perennial with bamboo like stem, which grows in dense thickets commonly found in disturbed areas such as urban environments, riverbanks and transportations routes. In the UK only the male sterile clone of Japanese Knotweed and female plants are present so it can only spread through vegetation growth from discarded fragments of the stem and rhizome (underground root like stems); although the species can hybridise with other species of Fallopia. The species is widely distributed across the UK as illustrated on the right, with the highest abundance in urban areas and in south west of the UK.



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### Affect on Aquatic Environment and River Users

Japanese Knotweed has been spread across the United Kingdom through human transportation routes and watercourses moving fragments of the plant. The spread of the species has detrimental affects on the riparian and aquatic environment:

- The species has a high economic impact as has a potential to damage property and devalue land and costly management..
- Large dense populations reduce available light and space on the riverbank, outcompeting native plant species to produce a less diverse plant community and degrading the habitat.
- In autumn the plants die leaving hollow stems and bare riverbanks which increases riverbank erosion. The resulting siltation of the river bed loses vital fish spawning and aquatic invertebrate habitats.

The species also negatively affects river users ability to access and enjoy the watercourses as mass populations spoil the aesthetics of the riverbank and reduce the diversity of wildlife found.

### Preventing the Spread of Japanese Knotweed

In the United Kingdom Japanese Knotweed can only spread through vegetation growth from discarded pieces of stem and rhizome to establish at new locations. The main pathways for the spread of the species are through watercourses and human movement via footwear and incorrect disposal methods. To reduce its invasive spread annual control programmes and good biosecurity control are essential. Biosecurity is extremely important to reduce the spread of the species. Any equipment used when working with Japanese Knotweed must be checked and any plant material disposed of correctly, followed by sterilising and drying before next use of the equipment.

**CHECK** → **CLEAN** → **DRY**



## Report Sightings

All sightings of Japanese Knotweed should be reported to help direct control action to prevent their spread. Please report to non-native species recording database in the Colne Valley: [cvfc.org.uk/nnis](http://cvfc.org.uk/nnis)

## Responsibilities

**Legal responsibility** – Japanese Knotweed is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and the updated EU Invasive Alien Species Regulations 2017, making it an offence to plant it or cause it to grow in the wild. Under the Environment Protection Act 1990 the species is classified as a controlled waste.

**Riparian Landowners** – have an obligation to control Japanese Knotweed populations on their land and help prevent the spread of the non-native invasive species.

**Environment Agency (EA)** - The EA is under no obligation to remove Japanese Knotweed on land outside of their ownership.

## Key Identification Features



### Flowers

Clusters of small tiny white creamy flowers. Appear in late summer at the tips of most stems.



### Rhizome

Small white shoots extending from dark core rhizome with a bright orange/yellow interior, can extend >7meters and >3meters from parent plant.



### Stem

Thick bamboo like stem with regular nodes which branch off and have red/purple speckles.



### Leaves

Young leaves are red and heart shaped. Older leaves are large green with more rounded/oval with serrate edges, up 15cm long. Leaf form in a zig zag pattern.



Spring



Summer



Winter



## Control Measures:

Japanese Knotweed is extremely difficult to remove as it has an extensive underground rhizome network and is able to regrow from fragments >1gram of stem or rhizome thus material must be correctly disposed of to prevent reintroduction. Under the Environment Protection Act 1990 Japanese Knotweed is classified as 'controlled waste' requiring correct disposal with a permit to remove the collected vegetation off site. A control programme can successfully eradicate the population over five years. Re-establishment is possible from plants located upstream, so a landscape scale co-ordinated approach to management is beneficial for long term success. Mechanical control has limited long term benefit and can risk re-establishment so the most effective and recommended control measure is through chemical use. The methods are summarised below. Further information is available on the government website (<https://www.gov.uk/guidance/prevent-japanese-knotweed-from-spreading>) If you require bespoke advice for a particular site please contact our Landscape Partnership Team.

Chloe Crompton: Email: [chloe.crompton@groundwork.org.uk](mailto:chloe.crompton@groundwork.org.uk) T: 01895 833375M: 0773 6133057



## Mechanical Control:

Mechanical control such as digging, ploughing and cutting has limited long term success as the species can regrow from stems or rhizomes. **Do not flail, pull or mow** this plant as this will spread fragments and increase your population. To cut populations use a simple blade so no additional fragments are created and cut from July-October. Leave to dry away from the ground or on top of a sheet and ensure dried material is burnt. Japanese Knotweed is a hazardous waste and legally requires a permit to be moved off site. You must dispose of chemicals through a registered waste carrier to a permitted waste disposal facility and receive a receipt of the removal. Alternatively you can wrap and bury the material on site at least 5 meters deep with permission and direction from the Environment Agency (03708 506 506). Ensure material is disposed of correctly and follow strict biosecurity methods:- check, clean, and dry all equipment used.

Japanese Knotweed new shoots appear in March, followed by shoot extension and leaf expansion from early May onwards. The male plants in the UK are sterile clones so the populations cannot produce from seed therefore the control methods can be completed throughout the growth season but it is best earlier in the season when there is less biomass so reducing the risk of spread the plant.

Method	Pros	Cons
<b>Cutting</b>	<ul style="list-style-type: none"> <li>Cheaper option if material is left on site to dry then burn.</li> <li>Sensitive to surrounding wildlife, minimal affect to native species.</li> </ul>	<ul style="list-style-type: none"> <li>High risk of re-establishment and spreading species.</li> <li>Time consuming.</li> <li>Not suitable for composting or natural decomposition.</li> </ul>
<b>Digging / Ploughing</b>	<ul style="list-style-type: none"> <li>Lower likelihood of regrowth.</li> <li>Sensitive to surrounding wildlife, minimal affect to native species.</li> </ul>	<ul style="list-style-type: none"> <li>High risk of re-establishment and spreading species.</li> <li>Time consuming.</li> <li>Not suitable for composting or natural decomposition.</li> </ul>

## Chemical Control:

Herbicide treatments can work well for large populations of Japanese Knotweed. The recommended **herbicide** is **glyphosate** via foliar spray for large dense swards, ensure to spray both the top and underside of the leaves to improve control. Alternatively application via stem injection is recommended for small infestations, mixed swards and individual plants. The plants should be treated from July to October when the plant canopy is established, recommended months are July to October. Herbicides must not be used in areas with sensitive habitats or species for e.g. water voles.

**Chemical control near water requires an Aqherb01 licence and agreement must be obtained from the local Environment Agency office before application of herbicides in, on or near water. Check your contractor has these documents before work begins.**

Method	Pros	Cons
<b>Foliar Spray</b>	<ul style="list-style-type: none"> <li>Allows for treatment of large areas in a short length of time.</li> </ul>	<ul style="list-style-type: none"> <li>Not always suitable for sensitive habitats.</li> <li>Several applications needed in each year for success.</li> <li>Aqherb01 licence required.</li> <li><a href="https://www.gov.uk/government/publications/application-to-use-herbicides-in-or-near-water">https://www.gov.uk/government/publications/application-to-use-herbicides-in-or-near-water</a>.</li> </ul>
<b>Stem Injection</b>	<ul style="list-style-type: none"> <li>Directly targets individual plant.</li> <li>Less invasive and disruptive to surrounding wildlife.</li> </ul>	<ul style="list-style-type: none"> <li>Requires cutting the stem before applying herbicide.</li> <li>Time consuming.</li> <li>Can be expensive.</li> <li>Aqherb01 licence required.</li> <li><a href="https://www.gov.uk/government/publications/application-to-use-herbicides-in-or-near-water">https://www.gov.uk/government/publications/application-to-use-herbicides-in-or-near-water</a>.</li> </ul>



## Biological Control

The Centre for Agriculture and Bioscience International (CABI) is currently investigating an effective biological control method. The control is a psyllid, *Aphalara itadori*, from Asia, which is a true knotweed specialist that sucks the sap from the plant. DEFRA and the Welsh Government approved release at control sites across the UK, for continued investigation to identify suitability. For further information please see CABI's Japanese Knotweed Alliance Website: <http://www.cabi.org/japaneseknotweedalliance/>