

Japanese knotweed

Management – Environmental guidance



Record it



Map it



Schedule it



Treat it



Leave it

Introduction

Japanese knotweed is an invasive non-native species that is found throughout the British Isles having first been introduced during the 1800s.

Japanese knotweed can spread underground by direct growth of rhizomes (roots) and above ground by movement of plant fragments to new locations; it only rarely spreads by seed. New plants can start growing from pieces of rhizome as small as 1 cm in length.

The rapid growth rate of above ground stems, up to 2m in 30 days, and ability to grow through many substrates including tarmac and concrete mean it can pose safety and operational issues for the railway by blocking signals, sightlines and positions of safety. Moreover, Network Rail neighbours are increasingly having issues when attempting to sell property within a certain distance of knotweed on Network Rail land.

Law

Both the *Wildlife & Countryside Act 1981* (for England and Wales) and the *Wildlife & Natural Environment (Scotland) Act 2011* make it an offence to plant knotweed or otherwise cause it to grow in the wild.

There is legislation that covers the extent of the rail network that can require knotweed to be controlled, managed and in certain cases remediated (also known as eradication). (*Wildlife & Natural Environment (Scotland) Act 2011* and the *Infrastructure Act 2015*). These pieces of legislation can, if there is no action, enable others to carry out the work and recoup costs. We discharge our obligations under the legislation by complying with the requirements in our own controls. These are described in the following section.

Network Rail Standards

Prompt action to deal with knotweed is necessary where it affects safe operation of the railway. It may also be necessary where lineside neighbours are affected. All management of Japanese knotweed must comply with relevant legislation. *NR/L2/OTK/5201 Lineside vegetation management manual*, as the governing standard, requires that knotweed should be managed, including relevant details entered into Ellipse.

Other Codes of Practice

Due to the concerns around knotweed growth, mortgage lenders may require certain guarantees around the treatment of knotweed; Network Rail is unable to provide insurance-backed guarantees but if treatment, training and management plans align with industry good practice, future management of knotweed by Network Rail should prevent conflict. The Property Care Association Code of Practice '[Management of Japanese Knotweed](#)' provides further background information on knotweed, details specific knotweed training & accreditation and lays out report content and makes recommendations regarding, for example, surveying, reporting, management plans and waste management.

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How to deal with it

Recording & mapping

Once identified as being present at a location obtain an accurate GPS reference using apps like EcoReporter or PhotoReporter. A robust way to assist with the subsequent management is to accurately record the extent of above ground knotweed on a GIS map-based system; a 7m buffer can be added to approximate the extent of the underground rhizome system. Validated locations can be uploaded in to the Hazard Directory.

Response

Protocols below can be used as a guide when completing work arising identification forms (WAIFs) or when updating existing work orders; the work required is based on where the knotweed is found. If the knotweed site can be assigned to more than one 'descriptor' more than one activity may be required to manage it effectively.

Protocol: Safety critical issues

Definition: Where knotweed affects safe operation of the railway

- Safe operation of the railway is paramount and may require the removal of above ground Japanese knotweed growth (stems and leaves) by cutting and laying the stems on site.
- Once sufficient leaf area has regrown, treat immediately with herbicides.
- Clean boots and tools; full containment of washings is needed and avoid disposal of dirty water until its checked for knotweed fragments.

Protocol: Site working issues

Definition: Where knotweed creates biosecurity issues on site.

- Biosecurity is a particular concern when undertaking ground disturbance in or within 7m of identified knotweed stands.
- Knotweed-specific site hygiene measures should be followed by staff and contractors to reduce the risk of accidental knotweed spread.
- Herbicide treatment cycle to begin at least 3 years in advance of ground disturbance.
- Clean boots and tools; full containment of washings is needed and avoid disposal of dirty water until its checked for knotweed fragments.

Protocol: Lineside community issues

Definition: Where 'railway' knotweed affects lineside residents

- Compliance with UK legislation and litigation risk means that lineside complaints should be dealt with as quickly as possible.
- Where knotweed growth is visible on both sides of the fence, work with the third party to develop an optimal management plan (e.g. Chapter 8 of [PCA Knotweed Code of Practice](#).)
- Only use herbicides containing the active ingredient glyphosate. Do not treat with herbicide products containing other active ingredients and/or cut and lay in these situations.
- Clean boots and tools; full containment of washings is needed and avoid disposal of dirty water until its checked for knotweed fragments.



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Activity definitions

Cut and lay stems on site – the only acceptable way to carry this out is by using a sharp bladed hand tool (NOT any mechanical or motor-manual means) to cut stems at just above ground level (leaving at least one node intact) and lay on site in a position that does not affect safe access or impede inspections of the infrastructure. It may be necessary to secure stems to prevent spread on site or disturbance by wind or turbulence. It is possible to remove knotweed from site, but it has to be treated as Controlled waste and disposed of through an approved (licensed) waste carrier.

Allow sufficient leaf area to regrow – herbicides require actively growing plant material to be present in order to be taken up by the plant and a large leaf area increases the area to which herbicide can be applied.

Treat immediately – due to the potential growth rate of knotweed, especially freshly cut plants, apply herbicide as soon as the size / leaf area is ideal.

Treatment cycle to begin before end of current growing season – set up a treatment cycle in Ellipse for the management of the knotweed on Network Rail land and take in to account any agreements to enable third party knotweed to be treated; approaches from third parties after 30th September should be added to the next season's treatment cycle and the third party notified.

Treatment cycle to begin at least 3 years prior to ground disturbance – control of knotweed can take in excess of 3 years and if track (or other) operations are planned within 7 metres of a stand of knotweed any ballast contaminated by live knotweed may not be removed from site. Proactively beginning treatment in advance of works reduces the risk of costly delays or waste removal.

Contact adjacent land owner – proactive approach to agree joint approach to treat knotweed.

Clean boots and tools – before leaving the Japanese knotweed site, make sure that there are no pieces of knotweed on boots, clothing, tools and vehicles wheels to reduce risk of further spread. Full containment of any washings is required and it may be necessary to sieve water prior to disposal to remove any fragments of knotweed stem and rhizome.

Pesticide application – advice

BASIS – before application of chemicals, obtain advice on active ingredients, dosage and application methods from a BASIS registered specialist (most suppliers/distributors have suitably qualified staff)

Glyphosate – spraying with glyphosate before July will cause dieback of the above ground growth but later spraying is recommended for long-term effect due to movement of the chemical to the roots

Application on private property – if chemicals are to be applied on private property, the owners' consent must be obtained, and the type of chemical used must be suitable for use in that situation; e.g. residual formulations are only suitable for use on Network Rail land, not residential property



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Treatment cycle

Treat with herbicides according to the label instructions and in the active growing season only; mid-April to mid-October. In the first instance, use herbicide products that have a residual effect upon above ground knotweed growth throughout the growing season. Ensure late season follow-up treatment with glyphosate-based herbicide to minimise above ground knotweed growth in subsequent years. Treatment cycle to continue **annually, without a break**, until there is no knotweed growth at the location for two growing seasons – at this point it is likely the plant has been killed or put into an herbicide-induced dormancy. Interim visits may be required to check on treatment efficacy. All spray records are to be retained.

- **1st visit** – use herbicide products containing the active ingredients 2,4-D amine, triclopyr and/or fluroxypyr;
- **2nd visit (late season – July to October)** – treatment with glyphosate-based herbicide.

In or within a given distance of watercourses (including drains and ditches)

- **Scotland** – control of invasive non-native species of plants on land within 1 metre of a surface water can be done without the need to contact Scottish Environment Protection Agency. Consultation with or approval from NatureScot may be required in certain areas and you may need to inform or notify other water users.
- **Wales** – In or with 5 metres of a watercourse, within a designated site or within 500m of a water abstraction point, seek approval from Natural Resources Wales using application form AQherb01.
- **England** – In or within 1m of a watercourse seek approval from Environment Agency using application form AQherb01.

Contaminated land

Once the treatment cycle is complete, the record within the Hazard Directory and/or GIS mapping system can be changed from a knotweed record to a contaminated land record. This is to avoid risk of ground disturbance triggering new growth from dormant plant material or contaminated soils being moved elsewhere.

Who to contact for more information

Lineside neighbours (to raise an enquiry about Japanese knotweed treatment):

Network Rail National Helpline: 03457 11 41 41

Website: <https://www.networkrail.co.uk/communities/contact-us/>

Railway personnel (for policy and strategy information):

Contact the relevant Senior Asset Engineer responsible for Lineside and Off Track activities

