Ymddiriedolaeth Natur Gogledd Cymru
North Wales Wildlife Trust

Stori Brymbo Invasive Non-Native Species Management Plan



Created for Stori Brymbo by Charlie Richards

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Introduction

This document is will evaluate the invasive non-native species (INNS) at Stori Brymbo and recommend effective best practice management to control and reduce their abundance. This document will also note best practice to prevent the spread of INNS and how the site can be protected for new or returning INNS. The document covers INNS currently known at the site, other INNS may be present and the document will be updated as necessary.

Invasive Species

Invasive Non-Native Species (INNS) are considered to be the second principle threat to global biodiversity (Mack et al. 2000; Bremmer and Park, 2007; Ficetola et al. 2007), adversely affecting the ability of ecosystem functionality (D'Antonio and Vitousek, 1992; Vitousek et al. 1996; Mack et al. 2000), as well as having a negative impact on the health and wellbeing of society (Lee, 2002; Simberloff et al. 2012). The trust aims to remove this species across North Wales to increase biodiversity and put nature into recovery.

Site Maps



Map showing location of Japanese Knotweed and Cotoneaster on The Lodge Valley Park site



Map showing location of Japanese Knotweed on the Solar Farm site

Japanese Knotweed (*Reynoutria japonica*)

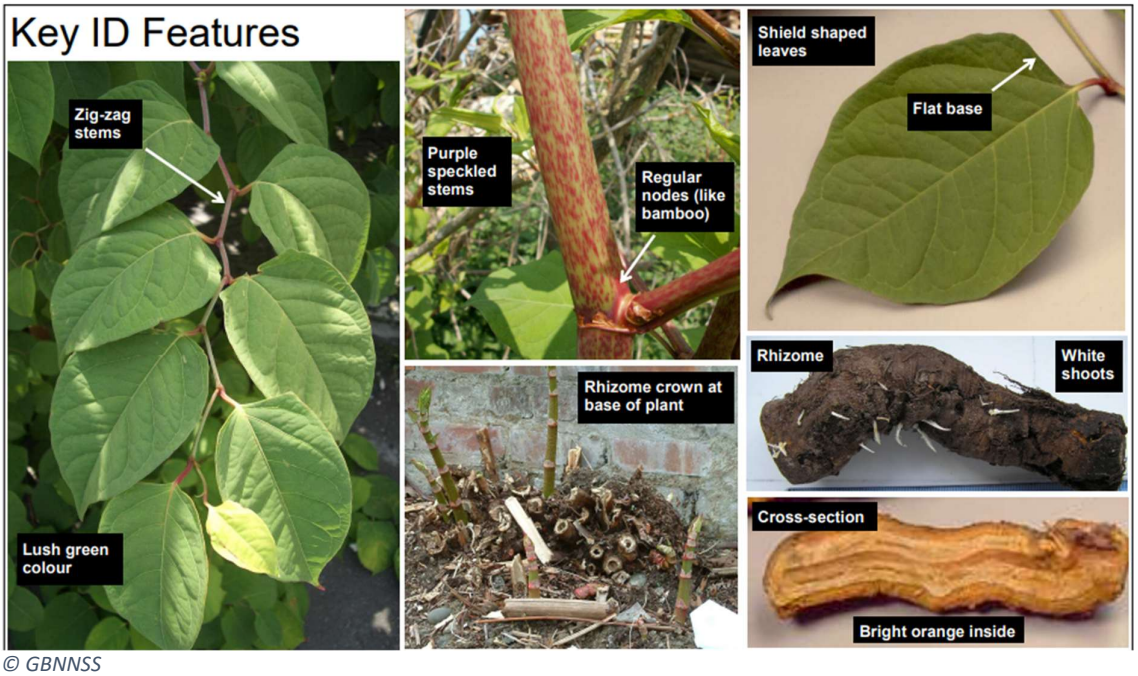
Japanese Knotweed is a perennial plant originated from East Asia. It is often found in riparian zones, brownfield sites and along railway tracks. It can be dispersed via rhizome fragments typically through disturbance of contaminated soil. Japanese Knotweed forms dense stands that outcompete native plant species for light and nutrients. Stems can penetrate through cracks in asphalt, foundations and other infrastructure. Large infestations can block waterways by trapping debris, contributing to increased flood risk. Once established, Japanese knotweed can take several years of continuous annual treatment to eradicate due to its extensive root system.

Best practice for the management of Japanese Knotweed includes spraying or stem injecting the plant with glyphosate. Full PPE is required when working with glyphosate and the operator must hold the correct licenses for the method and site. Spraying and stem injection should occur during September/ October but before the first frost, during this time the plant absorbs nutrients back into the rhizome. Application during this process increases the amount of herbicide reaching the rhizome. Spraying should be undertaken with a

dilution of 2% (i.e 20ml of glyphosate per litre) and should be performed during good weather, avoiding rain or wind. Stem injection should use neat glyphosate, injecting 3-5ml into each cane between the second and third node. Both these methods should be completed once a year until the plant dies back, being wary that the plant may go dormant for several years so the site should be monitored. It is estimated that these processes take 5 consecutive years to eradicate but can be longer.

Alternative methods for management include RootWave or Root Reset. RootWave involves electrifying the plant with 5000 volts, the natural resistance in the plant fibres convert the energy into heat and boils the plant from the inside. This method requires PPE including rubber boots and must hold the correct license to operate the machinery. RootWave cannot be applied during rainfall, near metal structures such as underground cables and cannot be used within 5m of water. NWWT has not used this method to treat Japanese knotweed yet so number of applications and efficacy cannot be vouched for.

Root Reset uses CleaRoot granulate, an organic substance that fertilizes the soil and increases the population of certain microbes. An airtight membrane is placed over the area to create an anerobic environment in the soil. As a result, the microbe population feeds on any organic life in the ground including the rhizome of Japanese knotweed. After approximately 12 months if the anaerobic environment is maintained (i.e the membrane isn't damaged) you are left with a "clean slate" that can be revegetated with local native plants. This process uses large machinery such as rotavators and tractors to remove and obstructions to the membrane so is only effective on large areas of Japanese knotweed with appropriate access.



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Cotoneaster



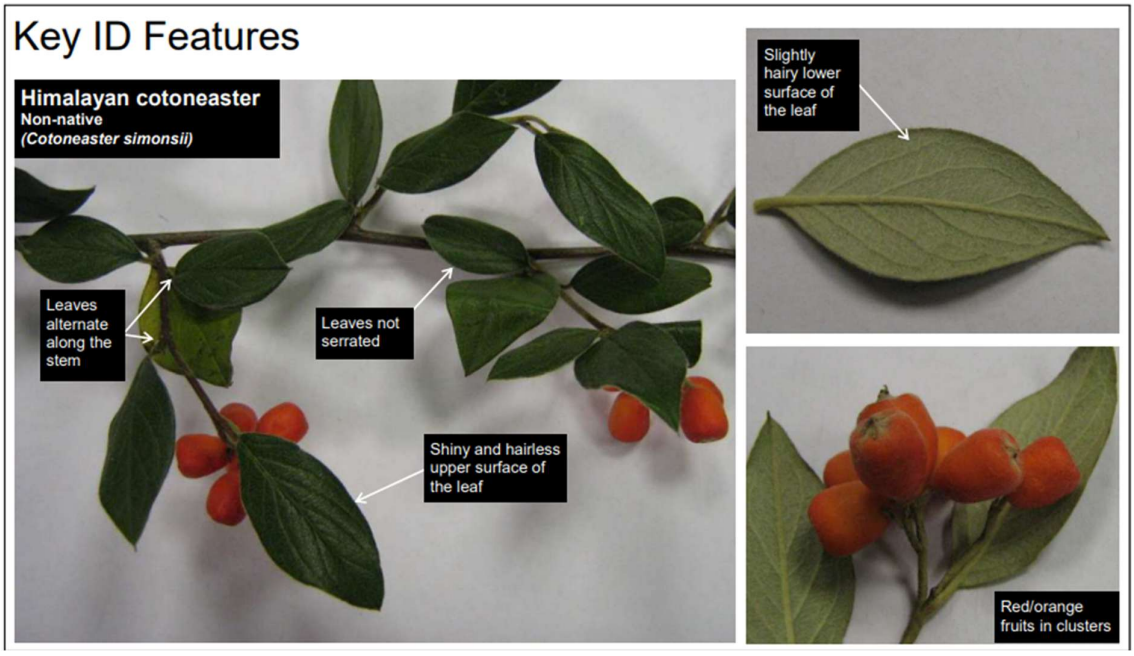
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Cotoneaster is a genus of shrubs including several invasive species such as *C. horizontalis, C. simonsii* and *C. fridigus*. Most invasive cotoneasters originate from east Asia and produce shiny leaves which are slightly hairy on the underside only. Cotoneasters have been cultivated in the UK since 1824 and over 100 species are now recognized. The genus also has one native species, *C. cambricus* which is found in small numbers in North Wales.

Cotoneaster species are listed under Schedule 9 to the Wildlife and Countryside Act 1981 with respect to England and Wales. As such, it is an offence to plant or otherwise cause these species to grow in the wild.

Cotoneaster outcompetes native species and carpets areas. The plant produces many large red berries that attract birds allowing the plant to spread rapidly through seed dispersal. Cotoneaster negatively impact limestone grasslands particularly as they prevent the growth of rare species such hoary rock-rose (*Cistus criticus*) and dark red helleborine (*Epilates atrorubens*).

Best practice for the management of cotoneaster species is to hand pull if the plants are small enough. Larger plants can be treated with glyphosate via spraying, weed wiping or stump treatment. Full PPE is required when working with glyphosate and the operator must hold the correct licenses for the method and site. Foliar spraying can take place successfully year-round, but March – October is recommended during the active growing season prior to seed production. Treatment of *C. horizontalis* should not take place much beyond September when it starts to lose its leaves. Stump treatment is best carried out in late summer or autumn for the most effective translocation of the herbicide to below-ground tissue. Several treatments may be necessary to successfully kill the plant.



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Biosecurity

Biosecurity is a set of simple actions that are intended to minimise the introduction and spread of INNS and diseases. This includes checking, cleaning, and drying all equipment and clothing that may have come into contact with INNS. By proactively preventing the introduction of INNS via biosecurity in the first place, we can save the countless resources it requires to manage them. We recommend several techniques to ensure biosecurity measures are in place, not all may be viable due to site specific or budget restraints but should be considered for the future.

We would recommend that INNS are monitored and recorded by staff members on apps/websites such as Cofnod and INNS Mapper to ensure spread hasn't occurred, further areas with INNS can be cordoned to prevent disruption of spreadable material. Areas where heavy machinery or vehicles may disturb INNS are specifically of concern. For the public signage and/or leaflets can be used to inform visitors of INNS and biosecurity and used to encourage visitors to arrive on site and leave with clean footwear. If possible, the site can also install boot brushes at each of the entrances to further encourage good biosecurity or limit the number of entrances. Free online training can be found here: Check Clean Dry » NNSS Alternatively contact Charlie Richards Charlie.richards@northwaleswildlifetrust.org.uk for information on INNS and biosecurity training days.



Example of Biosecurity Sign/ Boot Brush by entrance © NWWT

Invasive species	Location (map ref)	Identification source	Mitigation measures	Monitoring approach
Japanese knotweed	1. Track leading into Wonder Bank area 2. West fence line of Wonder Bank site 3. Bank off Kent Road, Lodge and reed bed area of LVP 4. Railway line track near to Sunken Bridge in LVP	Enfys ecology report and site visit by NWWT	1. Treatment by NWWT using RootReset method 2. Treatment by NWWT using RootReset method 3. Injection treatment by NWWT (Sept 2025 onwards) 4. Injection treatment by NWWT (Sept 2025 onwards)	NWWT to monitor site Gareth Venn (Ranger) to report any new species identified on BHT sites. Monitor April/May for signs of new growth with guidance from NWWT if necessary.
Cotoneaster	1. Track through 5 bar gate on LVP 2. Track leading from Lodge entrance up to crossroads next to reed bed in LVP	Ecology surveys by Enfys Site visits by ranger	Scheduled volunteer days to remove. If further works required to treat larger specimens NWWT to be contacted.	Sites to be monitored by Gareth Venn (ranger)

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Actions taken to date:

Invasive species	Actions taken	Date
Japanese knotweed	Site visit by NWWT to Wonder Bank site to assess JK and potential treatments. NWWT propose use of RootReset as experimental treatment for JK at Wonder Bank as well as injecting smaller patches of knotweed. NWWT contacted as new growth had been observed in area treated next to foot path near to Sunken Bridge in LVP Site visit by NWWT to observe new growth at Sunken Bridge area. NWWT advise area should be cordoned off to prevent spread of JK as next to public foot path – NWWT agree to carry out this work and to treat JK by injection in Sept. 2025 Also bank off Kent Road in Lodge visited and JK identified as well as in reed bed area inside LVP. NWWT agree to treat this area of JK by injection Sept. 2025 JK identified on land to rear of Lodge Community Centre adjacent to LVP. NWWT and BHT agreed to contact landowners and NWWT offered to put in place management plan to treat this area.	March 2025 March 2025 1st May 2025 9th May 2025

	Following site visit NWWT develop a management plan of invasive species on BHT sites Soilwise carried out experimental treatment of JK at 2 Wonder Bank sites. One area of JK left untreated as baseline area to observe. Sites to be visited regularly over 12 month period to monitor progress of treatment. Other areas of JK on Wonder Bank to be sprayed by NWWT. Spraying of JK by NWWT on Lodge Valley, Wonder Bank and Lodge	27th May 2025 14th July 2025 22nd October 2025
Cotoneaster	Identified through ecology reports by Enfys Site management plans drafted for BHT sites guided by NWWT	