

# Iver Mud Wharves

## Supplementary Invasive Species Management Plan

2021 – 2026



THE IVERS  
PARISH COUNCIL

**Site Location:** Adj. A4007 Slough Road, Uxbridge, Bucks

**Grid Reference:** TQ08

**Area:** 0.1 hectares

**Owner:** Iver Parish Council

**Local Planning Authority:** Buckinghamshire Council

## 1.0 Site Location



- 1.1 The site sits to the south of the A4007 Slough Road just west of Uxbridge at the point the Colne Brook flows from the River Colne.
- 1.2 There has been some uncertainty about the extent of the parish council's ownership along the bank of the River Colne Brook. It appears evident that the river currently flows within a narrowed channel with wide shallow shelves forming a two stage channel. It is evident looking at historic mapping that the river bank alignment has changed periodically and the channel narrowed. It is unlikely that these changes will have been recorded on title maps.
- 1.3 Further information about the site, its history, geology and flora and fauna is provided in the Main Management Plan at **Appendix A – Site description, History, Geology and Flora and Fauna.**

## 2.0 Site Survey for Invasive Species

2.1 A site survey was completed by trained Groundwork South Staff walking transects across the site. Any invasive species found were recorded on The Colne Valley Fisheries Consultative Invasive Species Application (<https://cvfc.org.uk/nnis/>). The results from this survey can be found below. To gain a full understanding of the invasive species present in the area the following adjoining land was also surveyed.

- Colne Brook channel and bank downstream from the land owned by IPC to the M25.
- Initial island between the Colne Brook and Colne River as far as the southern edge of the land owned by IPC.

2.2 The site survey showed **Floating Pennywort** (*Hydrocotyle Ranunculoides*) to be present from where the Colne Brook splits from the River Colne down to the M25. **Orange Balsam** (*Impatiens capensis*) is present in small patches along the banks and within the channel itself. These patches are spread across the site. Although **Japanese Knotweed** (*Fallopia japonica*) was not found on the land owned by IPC it was found extensively on the land to the south. The closest patch was around 100m from IPC land.

## 2.3 Invasive Species Locations



  Mud Wharf

- Invasive species location
- Floating Pennywort bad
  - Floating Pennywort severe
  - Orange balsam Minor
  - Orange balsam bad
  - Orange balsam in channel minor
  - Orange balsam in channel bad
  - Japanese Knotweed minor
  - Japanese Knotweed bad
  - Japanese Knotweed severe

### 3.0 Invasive species management

3.1 **Floating Pennywort** is a non-native species from North and South America. It was brought to Britain in 1980s as a plant for tropical aquaria and garden ponds but escaped into the wild where it naturalised in 1990s. It spreads rapidly and is commonly found in south-east England and occasionally in north-west England and Wales. The species grows in shallow margins of slow flowing river systems and water bodies. The species can regrow from a single node and has a rapid growth rate, up to 20cm per day, forming dense mats of entwined vegetation, which dominate watercourses, obstruct boats, prevent angling, and outcompete native species. Further information about Floating Pennywort including: effect on Aquatic Environment, Legal responsibility and all possible control measures can be found in **Appendix A**.

### 3.2 Year 1 (2021 - 2022)

Floating Pennywort treatment should initially be undertaken using manual control methods, such as hand pulling. This will ensure that the species is thoroughly removed, with minimal disturbance to site ecology. The following techniques should be utilized to ensure effective control of the species:

- Anchor points for Floating Pennywort, such as trailing branches and debris dams should be removed from the channel to discourage the presence of the species.
- After enabling works are complete, Floating Pennywort should be removed using a drag fork/throw line from the bank or by operatives wading in the channel moving material to the edge to be removed.
- It is recommended that banks of native vegetation are picked through by hand in to remove any fragments of floating pennywort that may be present. This will minimize disturbance to other flora on site.
- Time must be taken to recheck areas to ensure all material has been removed.
- Utilizing a physical barrier downstream of each control area, such as a fallen tree or boom, is recommended to prevent the downstream spread of the species.
- As the channel is cleared, material should be piled on high ground away from the river and any other wetland features in order to prevent its spread. The material will compost over a number of weeks and will eventually break down to become inert.
- Coordinating removal with landowners upstream and downstream will reduce the speed of recolonization in subsequent years and will provide the most effective means of control. *Gerrards Cross and Uxbridge District Angling Club* undertake regular floating pennywort removal work at the site upstream (Uxbridge Moor).
- After the initial phase of removal work the channel should be checked monthly and regrowth regularly removed by hand to prevent re-establishment.

### 3.3 Year 2-5 (2022-2026)

Once the initial biomass of Floating Pennywort has been reduced, the channel should be monitored and a monthly herbicide treatment\* should be used to control any patches of regrowth in subsequent years. If it is not possible to undertake monthly

- Regrowth of the species is likely to occur from March onwards, so an early herbicide treatment is essential to prevent it from reestablishing to the same extent as previous years. Taking action early, will reduce the intensity of control required later on in the season, as there will be less to remove,
- A specialist contractor should be procured to undertake this work, with a knowledge of the relevant techniques and licensing required to administer herbicide in a watercourse See **Appendix A**.
- Once the channel is clear, the provision of a permanent debris boom located at the head of Colne Brook should be considered. The boom would help to prevent the recolonization of the watercourse and will provide a singular point where pennywort can be caught and collected. Booms require regular monitoring and should only be deployed with the relevant permissions from the Environment Agency.
- All tools and PPE should be checked cleaned and dried before operatives arrive and leave the site. See **Appendix D** for more information on the Check, Clean and Dry procedure.

\* If it is not possible to undertake a monthly herbicide treatment monthly manual hand pulling should take place to prevent regrowth as set out above.

3.4 **Orange Balsam** Is a non-native species from North America. It was brought to Britain in the 19<sup>th</sup> Century but escaped into the wild where it has naturalised. It is not currently considered to be the same threat to native species as its cousin Himalayan balsam (*Impatiens glandulifera*). This is because Orange Balsam is a smaller plant that does not form large stands that outcompete other plant species in the way that Himalayan balsam does. However, in some areas substantial stands of Orange Balsam have been developing. Orange Balsam should be controlled now while its spread on site remains low before it is able to establish and form larger stands. Further information about Orange Balsam including: Legal responsibility and all possible control measures can be found in **Appendix B**.

### 3.5 Year 1 (2021 – 2022)

Orange Balsam treatment should initially be undertaken using manual control methods, such as hand pulling. This will ensure that the species is thoroughly removed, with minimal disturbance to site ecology. The following techniques should be utilised to ensure effective control of the species:

- Plants should be hand pulled in April ensuring all roots are removed and the plant is not just broken off at ground level. If the roots are not removed the plant will regrow from these roots. The work should be undertaken at this time of year to prevent the establishment of viable seeds which could further spread the plant.
- Once pulled plants should be placed in one pile in a shaded area away from wet features.
- A second round of germination can sometimes occur once plants have been pulled. The site should be checked regularly and any regrowth should be pulled.
- All tools and PPE should be checked cleaned and dried before operatives arrive and leave the site. See **Appendix D** for more information on the Check, Clean and Dry procedure.

### 3.6 Year 2-5 (2022 – 2026)

- The site should be checked and regrowth pulled and stacked in the same location on site until the presence of the species diminishes.
- All tools and PPE should be checked cleaned and dried before operatives arrive and leave the site. See **Appendix D** for more information on the Check, Clean and Dry procedure

3.7 **Japanese Knotweed** is a native plant species in Japan, China and Taiwan. It was introduced to the UK in the mid-19th 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, Japanese Knotweed has been spread across the United Kingdom through human transportation routes and watercourses moving fragments of the plant. Future Information about Japanese Knotweed can be found in **Appendix C**.

3.8 **\*No Japanese Knotweed was found on the land owned by the Ivers Parish Council. However a large amount was found on adjoining land. We would recommend the Ivers Parish Council find out the owners of this land(if not currently known) to raise concerns about the Japanese Knotweed. The information below sets out how Japanese Knotweed should be treated if it spreads to the parish owned land.**

### 3.9 **Year 1 (2021 -2022)**

**Japanese Knotweed** should be controlled using chemical treatment in the form of foliage spraying or steam injection. Chemical treatment should be used as it is a cost effective way to kill the plants Rhizome. Other methods such as manually cutting will only remove the foliage and not kill the rhizome. Chemical treatments will need to be repeated for a number of years to fully kill the plant. The following techniques should be utilised to ensure effective control of the species:

- Chemical Treatments should be undertaken between July – October when the plant is in the flowering period for maximum effect. All treatments should be undertaken by an operator with the appropriate NPTC pesticides certificate.
- Foliage Spraying is undertaken using a backpack sprayer to apply chemicals to the leaf surface. This method is especially effective for larger areas.
- Stem Injection applies a higher concentration of the chemical directly into the stem of the plant using a needle. This method has the advantage it is not weather dependent and it does not effect other plants around the treat area.
- In larger patches some steams may need to be cut to allow access for application of the chemical. Any stems which are cut to allow access for treatment should be pilled on a plastic sheet to prevent regrowth due to contact with the ground.
- Japanese Knotweed is highly invasive and can be spread by small fragments. After each area is treated all tools should be check and cleaned.
- All tools and PPE should be checked cleaned and dried before operatives arrive and leave the site. See **Appendix D** for more information on the Check, Clean and Dry procedure

### 3.9 **Year 2-5 (2022 – 2026)**

- The site should be checked for regrowth. It is possible regrowth will occur for a number of years. All regrowth should be treated by foliage spraying or steam injection. Treatment of regrowth can take place between July – October
- All tools and PPE should be checked cleaned and dried before operatives arrive and leave the site. See Appendix D for more information on the Check, Clean and Dry procedure

#### **4.0 Volunteer Support**

Volunteer support would be a vital part of the Floating Pennywort and Orange Balsam removal process as they are labour intensive tasks. Having volunteer support during removal will allow large amounts to be cleared and for extra checks to be undertaken which help to reduce regrowth rates. Longer term volunteers can help reduce the staff costs of future monitoring and removal.

#### **5.0 Colne Valley Regional Park Projects**

##### **The Lower Colne Floating Pennywort Project**

The Lower Colne Floating Pennywort Project has been active since 2018 and works to reduce the range and severity of Floating Pennywort across the Lower Colne Catchment. The project provides an action plan for the lower catchment, facilitates contractor led control work within the upper range of the species and volunteer led control work elsewhere in the catchment. In future it is likely that the project will be able to support Floating Pennywort control and survey work at Iver Mud Wharves. Iver Parish Council should continue to attend the Colne Valley Regional Park's annual Invasive Species Workshop in order to outline where support is required in future.

##### **Landscape Partnership Invasive Species Project**

The landscape partnership Invasive species project has been running since 2019. The project raises awareness of invasive species in the Colne Valley and provides advice to landowners and the public on effective control methods. The main focus of the project is on plant invasive species with a particular interest for Floating Pennywort and Himalayan Balsam two abundant species which are detrimental to the local river systems. Through volunteer sessions the project has been monitoring and removing invasive species from various rivers in the Colne Valley. The project is currently funded until the end of 2021, but is currently seeking funding to extend beyond this. It is likely in the future the project would be able to assist the parish to undertake monitoring and control on the site.

## 6.0 Schedule of Maintenance 2021 -2022

6.1 The schedule below provides a programme of maintenance activities for the invasive species onsite throughout Year 1. This aims to get the invasive species initially under control.

Pennywort Removal year 1	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Initial manual removal												
Monitoring and removal of regrowth												
Orange Balsam Removal Year 1	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Initial manual removal												
Monitoring and removal of regrowth												

Japanese Knotweed year 1	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Chemical treatment (one application)												



## 6.4 Invasive species Maintenance costs

### 6.5 Cost of invasive species maintenance on IPC land

Activity Year 1	Cost
Initial manual removal of Pennywort & Orange Balsam	£1749.00 +Vat
Pennywort & Orange Balsam monitoring and removal of regrowth	£2415.00 +Vat
Year 2	
Pennywort & Orange Balsam monitoring and removal of regrowth	£1707.50 +Vat*
Year 3	
Pennywort & Orange Balsam monitoring and removal of regrowth	£1353.75 +Vat*
Year 4	
Pennywort & Orange Balsam monitoring and removal of regrowth	£1082.40 +Vat*
Year 5	
Pennywort & Orange Balsam monitoring and removal of regrowth	£1082.40 +Vat*

\*Note the costs for year 2 onwards are estimates as it will depend on factors including: if volunteers are recruited in year one, if chemical or manual clearance is used and regrowth rates.

### 6.6 Cost of Invasive species maintenance on adjoining land.

Activity Year 1	Cost
Initial manual removal of Pennywort & Orange Balsam	£3198.00 + Vat
Pennywort & Orange Balsam monitoring and removal of regrowth	£2898.00 + Vat
Japanese Knotweed Treatment (cost for one treatment)	£600.00 + Vat
Year 2	
Pennywort & Orange Balsam monitoring and removal of regrowth	£4332.00 +Vat*
Japanese Knotweed Treatment (cost for one treatment)	£600.00 + Vat*
Year 3	
Pennywort & Orange Balsam monitoring and removal of regrowth	£2166.00 + Vat*
Japanese Knotweed Treatment (cost for one treatment)	£600.00 + Vat*
Year 4	
Pennywort & Orange Balsam monitoring and removal of regrowth	£1624.50 +Vat*
Japanese Knotweed Treatment (cost for one treatment)	£350.00 + Vat*
Year 5	
Pennywort & Orange Balsam monitoring and removal of regrowth	£1624.50+Vat*
Japanese Knotweed Treatment (cost for one treatment)	£350.00 + Vat*

\*Note the costs for year 2 onwards are estimates as it will depend on factors including: if volunteers are recruited in year one, if chemical or manual clearance is used and regrowth rates.

## **Appendix A – Floating Pennywort Additional Information**

**Affect on Aquatic Environment** - Floating Pennywort grows quickly to form dense mats of vegetation, covering the surface of a water body. This results in native aquatic habitats becoming degraded in the following ways.

- Dense rafts of pennywort reduce light levels and take up space, which results in a reduction in the diversity of native plant species.
- Large volumes of pennywort can reduce oxygen levels, negatively affecting fish, plants and riverfly species that require good water quality to survive.
- The species can also negatively affect water quality as it decomposes at the end of the growth season. As the growth proliferates throughout spring and summer, the river becomes choked and slow flowing, leading to increased levels of siltation in sensitive habitats, such as fish spawning areas.

**Legal responsibility** - Floating Pennywort is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and the EU Invasive Alien Species Regulations 2015, making it, an offence to plant it or cause it to grow in the wild.

Riparian Landowners - are under no obligation to remove Floating Pennywort if it cannot be shown that they are responsible for planting it and/or causing it to grow in the wild. However, it is an offence to allow it to spread from your land so managing populations is necessary.

Environment Agency (EA) - The EA is under no obligation to remove Floating Pennywort, but they do have discretion to do so. This discretion can be exercised via statutory powers under s165 of the Water Resources Act to carry out flood risk management works.

**Control Measures** – Three possible control measures are available for the removal of Pennywort.

**Manual Treatment(hand pulling)** is undertaken using rakes and hand picking floating pennywort from the river channel. Removed plants can be left on site to decompose, make sure to identify a location away from the riverbank and footpaths to prevent recolonization. To ensure this is an effective method of control time must be taken to check areas for small bits of pennywort which have broken off and around plants as these can regrow. This method is good for small areas and when trying to minimize the impact on the local environment.

**Herbicides treatment** can work well but the decomposition of plant material may take as long as six weeks in slow flowing water bodies. The recommended herbicide is glyphosate via foliar spraying with an adhesive agent that is also suitable for use near to water environments. Treatment every 2 to 4 weeks is needed throughout the growing

season as the plant is slow to decompose.

Vegetation treated in flood risk areas should be removed after two or three weeks where possible. Chemical control near water requires an Aqherb01 license and an agreement must be obtained from the local Environment Agency office before application of herbicides in, on or near water.

**Mechanical Treatment** would not be a suitable method to use due to the narrowness of the channel making it unsuitable for a weed butting boat and the damage a tracked excavator would have on the banks.

## **Appendix B – Orange Balsam Additional Information**

Orange Balsam regrows annually from the seeds which are viable for 2 years therefore any control efforts must be carried out before the seed pods are produced for maximum effect. The species has the ability to regrow from the lowest node in the same season therefore control efforts need to remove the plant and root system or ensure to cut below the lowest node. A control programme can eradicate the population over two – three years. However the site would need to be monitored after this period to prevent repopulation. Orange Balsam starts to germinate Feb – March, with seed being produced between August - October.

### **Affect on Aquatic Environment**

The long term affect of Orange Balsam is much less documented than the Himalayan Balsam. Currently it is clear it has a lower impact than Himalayan Balsam due to it being a smaller plant usually growing in a small clump.

**Legal responsibility** – Orange Balsam is a non native but is not listed on Schedule 9 of the Wildlife and Countryside Act 1981(as amended) or the updated EU Invasive Alien Species Regulations 2017.

**Riparian Landowners** – have no obligation to control Orange Balsam on their land.

**Environment Agency (EA)** - The EA is under no obligation to remove Orange Balsam.

### **Control Methods**

**Manual (hand pulling)** is an easy activity as the species has a shallow root system which is easily removed with a gentle tug, no skill or expertise is required. Care should be taken to ensure the plant does not break when being pulled and all roots are removed, or regrowth could occur. Volunteer groups are great way to engage with local community and remove the small populations of the species at a minimal cost. Ensure strict biosecurity methods; check, clean, and dry all equipment used.

### **Chemical**

Herbicide treatments can be used for large populations of Orange Balsam. The plants should be treated in spring when germinating seedlings are established but before they flower, recommended months are late April to July. Herbicides must not be used in areas with sensitive habitats or species

**Chemical control near water requires an Aqherb01 licence and an 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.**

## Appendix C – Japanese Knotweed additional information

Japanese Knotweed is an invasive plant which spreads via rhizomes and can reach up to 7m from parent plants. It can also spread via fragments of stem or the crown. The plant can easily be spread even by the smallest of pieces. For this reason it is vital any tools used are cleaned thoroughly to prevent spread to other sites. 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.

### Effect on the aquatic environment

The spread of the species has detrimental effects 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 riverbed loses vital fish spawning and aquatic invertebrate habitats.
- The species also negatively affects river user's ability to access and enjoy the watercourses as mass populations spoil the aesthetics of the riverbank and reduce the diversity of wildlife found. abundance in urban areas and in south west of the UK

**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.

### Control Measures

Two suitable methods of control are mechanical and chemical. Mechanical control has limited long term benefit and can risk re-establishment so the most effective and recommended control measure is through the use of a herbicide chemical.

**Mechanical** 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.

#### **Chemical**

Herbicide treatments can work well for large populations of Japanese Knotweed. The recommended herbicide is glyphosate. Application can either be via spraying of the foliage spraying or stem injection.

**Leaf application** of herbicides, also known as foliage spraying, is the ideal solution for treating large and small areas. The herbicide can be applied quickly and will be absorbed by the leaves down into the rhizomes from where it will destroy the plant. Herbicide spray treatment is a sure and economically viable method of eliminating Japanese Knotweed but it may take a while. The herbicide is usually rain fast within 10 mins. Spray herbicide treatments normally take between 2 and 5 years to complete, but can take longer if the infestation is mature and well established.

**Stem injection** is an alternative to foliage spraying, which can affect other nearby plants. By injecting a concentrated dose of Glyphosate Herbicide into each individual cane using equipment specifically designed for the treatment and eradication of Japanese Knotweed.

This method of direct injection of herbicide is highly effective as it is absorbed throughout the rhizome and deep into the plant's root system, helping to completely eradicate the troublesome plant. Stem injection is far less risky to both to the environment and neighboring plants.

Work should be completed between July and October when the plants canopy is established.

## Appendix D – Biosecurity and prevention

Invasive species can spread accidentally through natural transport routes such as rivers, wind, animal migration as well as through human transportation such as boats and footwear, therefore it is important to follow good biosecurity controls to reduce the risk of introducing or spreading invasive non-native species (and other harmful organisms such as diseases) in the wild it.

They can be small and hard to spot so are easily spread on damp equipment and clothing. You can help to protect the environment and activities you enjoy by keeping your kit free of invasive plants and animals using simple method **Check, Clean and Dry**:

1. **Check** your equipment, boat, and clothing after leaving the water for mud, aquatic animals or plant material. Remove anything you find and leave it at the site.
2. **Clean** everything thoroughly as soon as you can, paying attention to areas that are damp or hard to access. Use hot water if possible.
3. **Dry** everything for as long as you can before using elsewhere as some invasive plants and animals can survive for over two weeks in damp conditions.

To find out more check out the check clean and dry campaign here <http://www.nonnativespecies.org//checkcleandry/index.cfm?>

Help stop the spread of invasive species on our land and in our water!

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