

Floating Pennywort

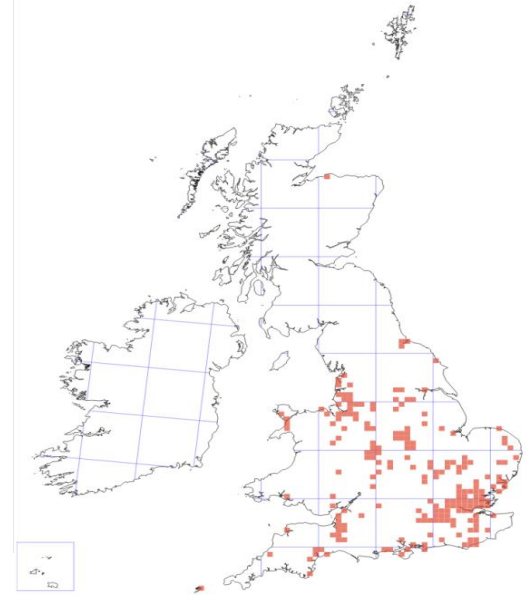
Hydrocotyle ranunculoides

Invasive Species Identification and Control Guide

Species Description

Floating Pennywort is a native species of 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. See distribution map on the right.

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.



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.

Affect on River Users

Floating Pennywort is not only detrimental to the aquatic environment but also prevents people from enjoying their local rivers, lakes and canals. The presence of the species can prevent recreational activities such as fishing and can obstruct the navigation of watercourses by boat users. Additionally the plant accumulates at control structures along river system such as sluice gates and weirs blocking them and reducing efficiency of the control structures. Furthermore, pennywort can spoil the aesthetics of the water body as well as reducing the diversity of wildlife found, reducing enjoyment of the waterbody.



Report Sightings

All sighting of Floating Pennywort 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

Responsibilities

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.

Key Identification Features



Stem

Hollow, sappy, fleshy and brittle stems can support the leaves above water level. Green to red colour.



Roots

Fine white roots up to 1.2m into the water.

Leaves

Deeply lobed leaves up to 7cm in diameter that float or stand above the water. Plant floating or rooted along the water body.

Preventing the Spread of Floating Pennywort

Floating Pennywort spreads through natural pathways such flowing rivers, as well as through human transportation such as boats and footwear. To reduce the spread of the invasive species annual control programmes (see page 3) and good biosecurity control are essential.

Biosecurity is extremely important to prevent cross contamination of water bodies especially as the species has the ability to regrow from a single node. Any equipment used when working with Floating Pennywort needs to be checked and any plant material located removed and dispose of responsibly, followed by sterilising and drying the equipment before the next usage.

CHECK → **CLEAN** → **DRY**

Control Measures:

An annual control programme is crucial for preventing the spread of Floating Pennywort to new sites in the Colne Valley. The best annual control methods will depend on your site and severity of the species in that particular area. The methods of control that can be used are summarised below. If you require bespoke advice for a particular site please contact our Landscape Partnership Team.

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Photos
 Left: Removal using long reach excavator
 Right: Removal using truxor boat (source EA)



Mechanical Control:

Large populations are best controlled using mechanical methods such as **weed cutting boats, truxors** and **long reach excavators**. Long reach excavators are suitable for water courses with clear, accessible riverbanks, whereas cutting boats or truxors are suitable where river bank access is limited. Mechanical methods offer short term reduction in biomass which helps to reduce daily growth/spread rate. The most effective period to remove is Autumn to Spring time, before the peak growth season begins. Make sure to place a temporary surface boom downstream of your work area whilst works take place to prevent spread downstream. A contractor is best placed to undertake this work for you and will advise you on the **permissions** required to work at a particular site and how best to dispose of plant material.

Method	Pros	Cons
Weed cutting boat	<ul style="list-style-type: none"> - Excellent for quickly resolving a choked channel as can remove large quantity on mass. - Can access areas where banks are tree lined. 	<ul style="list-style-type: none"> - Cannot be used in shallow or narrow channels. - Requires good site access in order to launch boat. - Not suitable during bird nesting season. - Should be used in conjunction with other methods to ensure complete eradication.
Truxor	<ul style="list-style-type: none"> - Great for quickly resolving a choked channel as can remove large quantity on mass. - Can access areas where banks are tree lined. - Can be used in shallow areas as it is a tracked vehicle. 	<ul style="list-style-type: none"> - Cannot be used in fast flowing conditions. - Requires good site access in order to launch boat. - Not suitable during bird nesting season. - Should be used in conjunction with other methods to ensure complete eradication.
Long reach excavator	<ul style="list-style-type: none"> - Great for quickly resolving a choked channel as can remove large quantity on mass. 	<ul style="list-style-type: none"> - Requires unimpeded bankside access. - Requires proper site access. - Not suitable if sensitive species and habitats present on river e.g. water voles. - Not suitable during bird nesting season. - Should be used in conjunction with other methods to ensure complete eradication.

Chemical Control:

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 **glyphosphate** via foliar spraying with an adhesive agent that is also suitable for use near to water environments. Regular treatment every 2 to 4 weeks is needed throughout the growing season as the plant is slow to decompose after treatment. Herbicides must not be used in areas with sensitive habitats or species e.g. water voles. Environment Agency herbicides approval team can also provide management advice.

Vegetation treated in flood risk areas should be removed after two or three weeks where possible. **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.**

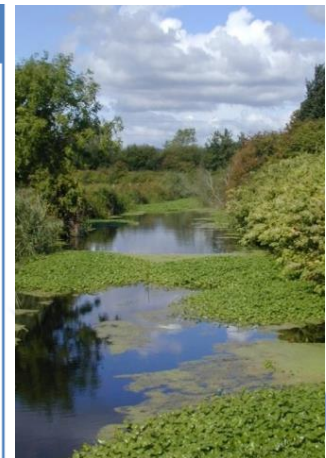
Pros	Cons
<ul style="list-style-type: none"> - Less invasive and disruptive to surrounding wildlife. - Allows for treatment of large areas in a short length of time. 	<ul style="list-style-type: none"> - Not always suitable for sensitive habitats e.g. if you have an infestation in a reed bed, the whole area should not be sprayed. - Material is left to decompose in channel so best used after Floating Pennywort has died back. - Should be used in conjunction with other methods to ensure complete eradication. - Aqherb01 licence required http://www.gov.uk/government/publications/application-to-use-herbicides-in-or-near-water

Hand Pulling

Hand pulling is an effective method for small populations of Floating Pennywort, populations located in sensitive areas including protected sites and possible nesting habitats. Volunteer groups are great way to engage with local community and remove the species at a minimal cost.

The practical activity can take place from May – October. While hand pulling ensure measures are taken to prevent fragments wash downstream. Removed plants can be left on site to decompose, make sure to identify a location away from the riverbank and foot paths to prevent recolonization. Ensure strict biosecurity controls and check, clean, and dry all equipment used. Hand pulling is best used in combination with other methods to ensure complete eradication.

Pros	Cons
<ul style="list-style-type: none"> - Very good for selective picking in sensitive areas. - Easy to pull & remove whole plant & roots. - Sensitive to surrounding wildlife, minimal affect to native species. - Can be undertaken by anyone. 	<ul style="list-style-type: none"> - Physically demanding. - Time consuming. - Labour intensive.



Biological Control

Currently there is no effective biological control method although The Centre for Agriculture and Bioscience International (CABI) is investigating a potential biological control, a south American weevil, *Lissonotus elongatus* (see photo on the bottom right). A comprehensive scientific dossier (Pest Risk Assessment) has been submitted to the UK regulators who will now carefully consider it's suitability for release. If approved this could be used as an effective biological control measure in the future.