CONTROLLING FLOATING PENNYWORT IN A SAFE AND SUSTAINABLE WAY

Locations
Argentina, Paraguay, United Kingdom

Dates
01/04/2017 - 31/12/2022

Summary
Floating pennywort is an invasive aquatic plant capable of covering water bodies in the UK, threatening delicate habitats, native plants, fish and insect communities. Also a problem across much of Northern Europe, this plant has a rapid growth rate and can regenerate from small fragments. Management is mainly limited to mechanical clearance which is expensive, labour intensive and often ineffective. Through comprehensive specificity testing, this project aims to identify the safest and most effective biocontrol agent to keep the plant in check in the invasive range.

The problem
Floating pennywort, Hydrocotyle ranunculoides, is a strong contender for the title of worst aquatic weed in the UK. Originating from Central and South America, the
The project sought to identify the safest and most effective natural enemies (insects, pathogens) of floating pennywort in the native range and test their potential as biocontrol agents.

To do this, CABI undertook exploratory surveys to Argentina, with support from collaborators, exported the most promising agents to the UK and undertook comprehensive testing (host specificity testing) against an approved list of non-target plants (to ensure they didn’t attack related species and important native or commercial species).

The Defra-funded research began in 2011 and after a decade of safety testing and research, a South American beetle has finally been approved for release in England to act as a natural pest control.

The weevil, *Listronotus elongatus*, is a floating pennywort specialist, evolved to only feed and develop on floating pennywort in its centre of origin and is the fourth weed biological control solution approved for release in the UK.

CABI scientists and South American collaborators undertook surveys in the native range and identified a number of very promising insects and fungi associated with floating pennywort – the weevil, *Listronotus elongatus*, was prioritized. The adults feed on the leaves of floating pennywort and lay their eggs in the petioles of the plant. Their larvae then mine the stems and stolons of the plant and in doing so, reduce the vigour and growth of the plant, reducing biomass and spread, allowing native species to compete more effectively.
In consultation with a Steering Committee, a comprehensive test plant list was developed and approved for the UK, with pertinence to our European neighbours. Authorization to export the *Listronotus* weevil from Argentina was successfully obtained in 2014 and specificity testing against the carefully selected list of non-target species was the focus of five years of research. Other agents with potential were also assessed in parallel but were not deemed suitably specific.

A comprehensive scientific dossier (Pest Risk Assessment) was submitted to the UK regulators and underwent peer review, public and stakeholder consultation. The weevil was subsequently given ministerial approval for release in 2021 and a coordinated release strategy will begin during the summer of 2022 to trial the weevil at selected sites in England to try to establish populations. Preliminary overwintering trials are underway to assess behaviour and persistence in the field.

CABI will be working in partnership with stakeholders and environmental groups to deliver this next exciting phase of the project and has received funding from a range of stakeholders (including Defra, Natural England, Affinity Water/Colne Valley Fisheries Consultative, with other parties in consultation) to support the labour-intensive weevil rearing and plant maintenance and to facilitate additional research, field trials and monitoring across the country.

In addition to the research work, it is vitally important to continue raising awareness of non-native species and their deleterious impact across Europe so that the public, their elected representatives and government agencies are aware of the risks posed and the potential solutions that are available to tackle these growing problems.

For further information on CABI’s work with Floating pennywort, please visit CABI’s dedicated [Floating pennywort page](https://www.cabi.org/what-we-do/cabi-projects/).

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**Partners**
Fundación para el Estudio de Especies Invasivas (FuEDEI), Paraguayan Research Institute (Fundación Moisés Bertoni) (Previous)

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