

Environmental Standard Operating Procedure

ESOP Name	Floating Pennywort Control and Eradication
ESOP Number	16
Revision Date	09/06/2023
Related ESOPs	2 Biosecurity 15 Herbicide application



Aim

The Broads' waterways contain unique and important water plant communities which could be lost or severely degraded by a serious infestation of floating pennywort. Floating pennywort also has serious implications for local flood risk and recreational use of the Broads.

This standard procedure aims to provide a best practice framework for the eradication or control floating pennywort, and prevention of further spread.

Standard Methodology

- Survey and monitoring work to be undertaken all year round and any areas of floating pennywort found should be removed by hand-pulling or mechanical removal with an excavator.
- Early growth can be sprayed with Glyphosate, in line with Environment Agency approval via an AquaHerb01 Agreement (see ESOP 16 *Herbicide Application*).

Procedure

Pre-works

- Survey to be undertaken and location information for any new clumps of pennywort must be logged and passed on the responsible Ecologist for collation.

Operational

- If hand-pulling, the whole plant is to be removed - leaves, stems and root.
- No roots to be left in the bank. If resistance is felt when gently pulling stop and feel down the stem until the roots can be gently teased out of the bank or freed from the obstruction.
- Avoid fragments floating away by using hand-held nets or netting the whole channel downstream.
- Mechanical excavators to dig down into the bank material to remove fixed roots.
- Do not leave removed material on the bankside if there is a risk of flooding. Preferably dig a pit and completely bury the material but if this is not practical then material should be double bagged and removed to a biosecure site for composting or incineration.
- Ensure that all equipment and PPE is cleaned in line with the 'Check, Clean, Dry' biosecurity protocol to avoid spreading between sites

Consultation

- The Ecologist responsible for invasive species management in the Broads must be made aware of any new patches of floating pennywort found so these can be logged and shared with the wider Floating Pennywort Working Group for the Broads and the Norfolk Non-Native Species Initiative – records to be sent to liam.smith2@norfolk.gov.uk as of December 2021.
- IDB must be informed if working in or near watercourses connecting to an IDB drain.
- Environment Agency consent must be obtained via an AquaHerb01 Agreement before herbicide may be used to treat the plants. If herbicide is to be applied in or near a protected site (SAC, SPA, SSSI) Natural England Protected Sites Consent must be obtained.
- Environment Agency Flood Risk Assessment Permit may be required if working within 9m of a main river or 16m of a flood defence (where works are impacting the nature of the bank).

Risk Assessment

Hazard	Initial Risk			Controls / Safeguards / Precautions	Revised Risk		
	S	L	R		S	L	R
Spreading fragments of the plant within or beyond the site	4	4	C	No works to be undertaken during high flow/flood events. Nets should be used to stop fragments drifting downstream from the work site.	4	2	B
Removal of native plant species	3	4	C	Training on plant identification and ID sheets to be distributed to operatives.	3	2	A
Chemical drift to non-target plants	4	5	C	Avoid spraying in windy conditions.	4	1	A
Chemical spillage	4	2	B	All operators must hold the correct level of spraying qualification. Herbicide should be mixed at suitable sites away from the application area, with appropriate COSHH compliant equipment.	4	1	A

Matrix

		LIKELIHOOD				
		Very unlikely	Unlikely	Moderately likely	Likely	Very likely
SEVERITY		1	2	3	4	5
Low (minimal, short-term disturbance levels and negligible damage to native habitats.)	1	A	A	A	A	A
Medium (moderate, short-term disturbance levels, some damage to native habitats/species. Regenerates quickly.)	2	A	A	A	B	B
High (high disturbance levels over a longer period and displacement of species. Damage to native habitats. Significant time to regenerate)	3	A	B	B	C	C
Very High (Long-term disturbance with displacement/death of species. Significant damage to native habitats that takes a significant time to regenerate.)	4	B	B	C	C	C

RISK	
A	OK. Work to provisions in risk assessment
B	Proceed with caution. Dynamically review risks.
C	Cancel task. Approach project in a different way.