

Environmental Standard Operating Procedure

ESOP Name	Australian swamp stonecrop control
ESOP Number	21
Revision Date	22/02/2024
Related ESOPs	2 Biosecurity 15 Herbicide application



Aim

Australian swamp stonecrop *Crassula helmsii* is an invasive non-native species capable of spreading rapidly within waterbodies and marshes. During control works it is important to ensure that colonisation to new areas is prevented and that no damage to species of conservation value occurs.

This standard procedure aims to prevent Australian Swamp Stonecrop becoming dominant, out-competing native plants and prevent it spreading to new areas.

Standard Methodology

- Glyphosate used on its own, will control the spread of the invasive but will not eradicate it
- Various control methods as follows:

- Shade – covering with light excluding material
- Burial method
- Excavation & removal from site or burial.
- Flooding with salt water
- Hot foam treatment
- Treatment with glyphosate over the growing season (3-4 treatments)
- Choose the appropriate method based on the site and where the plant is growing (terrestrial, emergent, submerged). The shade/burial methods are the most effective and should always be considered first. It is likely a combination of methods will be most appropriate.

Procedure

Pre-works

- Carry out a survey to identify if any species of conservation concern are growing in with the invasive species.
- Consider use of silt screens to isolate areas where *Crassula* is present in connected water bodies (ditches), to prevent spread via flowing water.

Operational

- The delivery will vary according to the method adopted:
- **Shade method:**
 - cover all growth for 6 months with an opaque material e.g. thick carpet or black polythene;
 - ensure the material is anchored appropriately with weights or pinned around the edge;
- **Burial method:**
 - cover all growth with an opaque material and cover with spoil to depth of at least 20cm.
- **Excavation** of small infestations is possible, as the plant is shallow rooted, with burial on a drier part of the site.
- **Treatment with glyphosate:**
 - Treat regularly with Glyphosate between March and October
 - Where rare/protected species occur, spot treat with herbicide (See ESOP 16)

- When Crassula occurs underwater use the shade method, or if possible lower water levels, allow to dry out, treat with glyphosate, cover with black polythene and bury.
- Ensure that all equipment and PPE is cleaned, checked and dried to avoid spreading between sites. Crassula is capable of re-growing from tiny fragments (c. 5mm) and is very easily spread between sites.

Consultation

- If glyphosate is being used in or near water, an AquaHerb01 agreement must have been secured from the Environment Agency.
- Natural England assent must be in place before works can be undertaken on protected sites.

Risk Assessment

Hazard	Initial Risk			Controls / Safeguards / Precautions	Revised Risk		
	S	L	R		S	L	R
Small fragments colonising new areas	4	4	C	All equipment and clothing (including footwear) to be thoroughly checked and cleaned before leaving site. Clothing and equipment should be completely dried before being used on other sites. Use a fine mesh screens to prevent fragments escaping the works area when working in or near water.	4	1	B
Affecting non-target species when applying herbicide	4	3	B	Pre-works survey for rare or endangered plants species and exclusion zones marked around these plants/review control options.	4	1	B

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.