



Government
of South Australia

Declared Plant Policy

This policy relates to natural resources management under section 9(1)(d) of the Landscape South Australia Act 2019 (the Act), enabling co-ordinated implementation and promotion of sound management programs and practices for the use, development or protection of natural resources of the State. Specifically, this policy provides guidance on the use and management of natural resources relating to the prevention or control of impacts caused by pest species of plants that may have an adverse effect on the environment, primary production or the community, as per object s7(1)(f) of the Act.

giant arrowhead (*Sagittaria calycina*)

Giant arrowhead is not known to occur in South Australia, but is established in New South Wales and Victoria, especially in the Murrumbidgee Irrigation Area. It closely resembles arrowhead or sagittaria, *Sagittaria platyphylla*, which is naturalised in South Australia, and is the subject of a separate policy.

Management Plan for Giant Arrowhead

Outcomes

- Maintain waterways free of blockages by water weeds.
- Maintain wetlands free of major weed threats.

Objectives

- Prevent introduction of giant arrowhead to waterways and wetlands.
- Destroy any infestations as they occur.

Best Practice Implementation

- Any infestation of giant arrowhead discovered to be treated as an incursion and destroyed.
- To prevent introduction or spread, any sale and movement to be prohibited.
- Regional landscape boards and Green Adelaide to inspect waterways, wetlands and drainage channels for the presence of aquatic weeds.

Regional Implementation

Refer to regional management plans for further details.

giant arrowhead policy

Region	Actions
Alinytjara Wilurara	Prevent entry or sale; destroy if detected
Eyre Peninsula	Prevent entry or sale; destroy if detected
Green Adelaide	Prevent entry or sale; destroy if detected
Hills and Fleurieu	Prevent entry or sale; destroy if detected
Kangaroo Island	Prevent entry or sale; destroy if detected
Limestone Coast	Prevent entry or sale; destroy if detected
Murraylands and Riverland	Prevent entry or sale; destroy if detected
Northern and Yorke	Prevent entry or sale; destroy if detected
South Australian Arid Lands	Prevent entry or sale; destroy if detected

Declaration

To implement this policy, giant arrowhead is declared under the *Landscape South Australia Act 2019* throughout the whole of the State of South Australia. Its entry to South Australia, movement or transport on a public road by itself or as a contaminant, or sale by itself or as a contaminant are prohibited. Notification of infestations is necessary to ensure these are destroyed. Land owners are required to destroy any giant arrowhead plants growing on their land. Landscape boards and Green Adelaide are required to destroy plants on road reserves in their regions, and may recover costs from the adjoining land owners.

Giant arrowhead is declared in category 1 under the Act, for the purpose of setting maximum penalties and for other purposes. Any permit to allow its entry, road transport or sale can only be issued by the Chief Executive of the Department for Environment and Water or their delegate pursuant to section 197.

Under the *Landscape South Australia (General) Regulations 2020*, Regulation 27 specifies the conditions under which a person is exempt from the operation of section 186 and may transport wool, grain or other produce or goods carrying giant arrowhead on public roads or bring them into the State. Regulation 28 specifies conditions under which a person is exempt from the operation of section 188(2) and may sell wool, grain or other produce or goods carrying giant arrowhead. Note that certain produce or goods may be excluded from these general movement and sale exemptions by Gazettal Notice of the Chief Executive, DEW.

The following sections of the Act apply to giant arrowhead throughout each of the regions noted below:

Sections of Act	Region								
	AW	EP	GA	HF	KI	LC	MR	NY	SAAL
186(1) Prohibiting entry to area	X	X	X	X	X	X	X	X	X
186(2) Prohibiting movement on public roads	X	X	X	X	X	X	X	X	X
188(1) Prohibiting sale of the plant	X	X	X	X	X	X	X	X	X
188(2) Prohibiting sale of contaminated goods	X	X	X	X	X	X	X	X	X
190 Requiring notification of presence	X	X	X	X	X	X	X	X	X
192(1) Land owners to destroy the plant on their properties	X	X	X	X	X	X	X	X	X
192(2) Land owners to control the plant on their properties									
194 Recovery of control costs on adjoining road reserves	X	X	X	X	X	X	X	X	X

Review

This policy is to be reviewed by 2025 or in the event of giant arrowhead being found established in South Australia.

Weed Risk

Invasiveness

Giant arrowhead spreads by seeds and vegetative fragments, which may be carried in flood water or on birds.

Impacts

Giant arrowhead is an occasional problem in other States, obstructing drainage channels and competing with rice in the Murrumbidgee Irrigation Area. Its full potential in South Australian wetlands is unclear.

It competes with more desirable plant growth and interferes with flood irrigation and channel drainage schemes. Its rate of spread, difficulty of control and the potential to dominate an aquatic plant community makes it a greater threat to irrigation than most other weeds. It also has the ability to invade wetlands and permanently alter their biology.

Potential distribution

Giant arrowhead may invade wetlands, header, lateral and drainage channels on the flood irrigated areas adjoining the River Murray, as well as dam spillways, ponds and water courses throughout the State.

Feasibility of Containment

Control costs

Giant arrowhead can be recognised by its leaves, which are distinctly arrowhead-shaped with three pointed lobes unlike the narrow leaves of sagittaria.

Control is difficult as infestations would occur in water or areas of deep mud. This restricts access with herbicide application equipment. Herbicide use would also be complicated by the close proximity of infestations to water resources used for irrigation, human and livestock consumption and to plants susceptible to off-target damage.

Persistence

The rhizomes of giant arrowhead enable it to persist invisibly under water or in temporarily dried-out wetlands. It is only noticeable when in active growth or flowering.

Current distribution

Not present in South Australia.

State Level Risk Assessment

Assessment using the Biosecurity SA Weed Risk Management System gave the following comparative weed risk and feasibility of containment scores by land use:

Land use	Weed Risk	Feasibility of control	Response at State Level
Aquatic	medium 42	very high 0	contain spread alert

Considerations

Giant arrowhead was introduced from the Americas. First naturalised in the Murrumbidgee Irrigation Area in 1962 where it is a problem in irrigation channels. It may be in cultivation in this State, but it is not common or widely available. Because it grows anchored in mud, it would have no appeal for use in aquarium tanks and is not sufficiently attractive to be popular for outdoor ornamental ponds. Prohibiting its sale it does not significantly inconvenience the nursery trade.

Risk assessment indicates containment as a management action; since the species is absent from South Australia, containment is best implemented by preventing its entry to the State or establishment. Due to its medium weed risk, absence from the State and very high feasibility of control, giant arrowhead is regarded as a State Alert Weed and a high priority surveillance target to increase the likelihood of early the detection of any incursion.

Synonymy

Sagittaria calycina Engelm., Rep. U.S. Mex. Bound. 2(1): 212 (1858).

Nomenclatural synonyms:

Lophiocarpus calycinus (Engelm.) Micheli, Monogr. Phan. [A.DC. & C.DC.] 3: 61 (1881).

Lophotocarpus calycinus (Engelm.) J.G.Sm., Mem. Torrey Club 5: 25 (1894).

Taxonomic synonyms:

Lophotocarpus californicus J.G. Sm., Missouri Bot. Gard. Rep. 11: 146. 1899.

Lophotocarpus depauperatus Engelm. ex J.G. Sm., Missouri Bot. Gard. Rep. 11: 148 (1899).

Lophotocarpus fluitans (Engelm.) J.G.Sm. Missouri Bot. Gard. Rep. 11: 145 (1899).

Misapplied name:

Sagittaria montevidensis Cham. & Schltdl., Linnaea 2: 156 (1827).

Other common names include arrowhead, hooded arrowhead, long-lobed arrowhead, spongy arrowhead and Mississippi arrowhead.

Hon David Speirs MP
Minister for Environment and Water

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