Declared Plant Policy
under the Natural Resources Management Act 2004

giant arrowhead (Sagittaria calycina)

Giant arrowhead is not known to occur in SA, but is established in NSW 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.

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.
- NRM authorities to inspect waterways, wetlands and drainage channels for the presence of water weeds.

Regional Implementation

Refer to regional management plans for further details.

<table>
<thead>
<tr>
<th>NRM Region</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelaide and Mount Lofty Ranges</td>
<td>prevent entry or sale; destroy if detected</td>
</tr>
<tr>
<td>Alinytjara Wilurara</td>
<td>prevent entry or sale; destroy if detected</td>
</tr>
<tr>
<td>Eyre Peninsula</td>
<td>prevent entry or sale; destroy if detected</td>
</tr>
<tr>
<td>Kangaroo Island</td>
<td>prevent entry or sale; destroy if detected</td>
</tr>
<tr>
<td>Northern and Yorke</td>
<td>prevent entry or sale; destroy if detected</td>
</tr>
<tr>
<td>South Australian Arid Lands</td>
<td>prevent entry or sale; destroy if detected</td>
</tr>
<tr>
<td>South Australian Murray Darling Basin</td>
<td>prevent entry or sale; destroy if detected</td>
</tr>
<tr>
<td>South East</td>
<td>prevent entry or sale; destroy if detected</td>
</tr>
</tbody>
</table>
giant arrowhead policy

Declaration

To implement this policy, giant arrowhead is declared under the *Natural Resources Management Act, 2004* throughout the whole of the State of South Australia. The movement or transport of the plant on a public road by itself or as a contaminant, its entry to South Australia, or the 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. NRM authorities are required to destroy plants on road reserves, 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 movement or sale can only be issued by the Chief Officer pursuant to section 188. Under the *Natural Resources Management (General) Regulations 2005*, the transport or movement of grain for milling or wool for cleaning is exempt from the operation of sections 175 and the sale of wool or grain is exempt from section 177(2) if at the time of the sale the person believes on reasonable grounds that the purchaser will remove the plant from the wool or grain before any re-sale.

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

<table>
<thead>
<tr>
<th>Sections of Act</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>175(1) Prohibiting entry to area</td>
<td>X X X X X X X X</td>
</tr>
<tr>
<td>175(2) Prohibiting movement on public roads</td>
<td>X X X X X X X X</td>
</tr>
<tr>
<td>177(1) Prohibiting sale of the plant</td>
<td>X X X X X X X X</td>
</tr>
<tr>
<td>177(2) Prohibiting sale of contaminated goods</td>
<td>X X X X X X X X</td>
</tr>
<tr>
<td>180 Requiring notification of infestations</td>
<td>X X X X X X X X</td>
</tr>
<tr>
<td>182(1) Landowners to destroy the plant on their properties</td>
<td>X X X X X X X X</td>
</tr>
<tr>
<td>182(2) Landowners to control the plant on their properties</td>
<td>X X X X X X X X</td>
</tr>
<tr>
<td>185 Recovery of control costs on adjoining road reserves</td>
<td>X X X X X X X X</td>
</tr>
</tbody>
</table>

Review

This policy is to be reviewed by 2020 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.
giant arrowhead policy

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:

<table>
<thead>
<tr>
<th>Land use</th>
<th>Weed Risk</th>
<th>Feasibility of control</th>
<th>Response at State Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic</td>
<td>medium 42</td>
<td>very high 0</td>
<td>contain spread alert</td>
</tr>
</tbody>
</table>

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 SA, 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
giant arrowhead policy

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


Nomenclatural synonyms:


Taxonomic synonyms:


Misapplied name:

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

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

Hon Ian Hunter MP  
Minister for Sustainability, Environment and Conservation  

Date: 28 July 2014