



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.

water caltrop (*Trapa natans*)

Water caltrop is a floating aquatic annual herb with long submerged stems anchored in mud, and floating rosettes of leaves. Native to the temperate zone of Europe, northern Africa and Asia, it is a weed in Canada and north-eastern USA. It is not known to be present in Australia, but might be smuggled into the country as a crop plant.

Management Plan for water caltrop

Outcomes

- Maintain waterways free of blockages and keep streams and wetlands free of major weed threats.

Objectives

- Prevent incursion and establishment of water caltrop in Australia.
- Destroy any detected water caltrop plants.

Best Practice Implementation

- Any infestation of water caltrop discovered to be treated as an incursion and destroyed.
- Sale and movement of water caltrop to be prevented.
- Regional landscape boards and Green Adelaide to monitor waterways and wetlands for presence of aquatic weeds.

Regional Implementation

Refer to regional management plans for further details.

| 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, water caltrop 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 any incursions are destroyed. Land owners are required to destroy any water caltrop plants growing on their properties.

Water caltrop 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, sale or road transport 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 water caltrop 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 water caltrop. 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 water caltrop 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 | | | | | | | | | |

Review

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

Weed Risk

Invasiveness

Water caltrop reproduces annually by seed, which is dispersed by birds and animals and in flowing water. The floating rosettes can also break away from the parent plant and drift in the water to form new colonies.

Impacts

Under appropriate conditions water caltrop forms dense mats over open water, excluding native aquatic plants. It greatly lowers light levels underwater, further affecting aquatic flora and fauna. The mats can impede boat movement and swimmers.

The sharp spiny fruit resembling three-cornered jacks are a hazard for humans and animals.

Potential distribution

Water caltrop can grow in static or slow-moving water up to 5 metres deep. It could be expected to survive in freshwater ponds, lakes and streams in the southern part of South Australia.

Feasibility of Containment

Control costs

As the foliage is above water level, water caltrop can be controlled by herbicides such as glyphosate and diquat. However, control would be labour-intensive and may be limited by risks of off-target damage to native species.

Persistence

Control actions may need to be followed up for several years because the seeds remain viable for about 12 years in mud or soil, and regrowth from rhizomes is a possibility.

Current distribution

Water caltrop is not known to be present anywhere in 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 70 | very high 0 | contain spread, alert |

Considerations

Risk assessment indicates containment as a management action. However, since water caltrop is absent from Australia, containment is best implemented by preventing its entry or establishment.

The Australian Weeds Committee (since replaced by the National Environment and Invasives Committee) agreed at meeting no. 6, April 2003, to revise their Tier 1 and Tier 2 aquatic weed lists, adding water caltrop to Tier 1. Uniform national proclamation is necessary to ensure that these species never become established in Australia. South Australia

consequently agreed to proclaim these species under the same legislative provisions as the original Tier 1 species, with prohibition on sale and enforced destruction if found.

Water caltrop has been cultivated since prehistoric times in Europe, and is still a crop in India and China. It is now endangered in much of its original European range. There may be only one species but

There is no evidence that water caltrop is available in cultivation in Australia, although it is an alternative backyard crop in other countries and has been promoted in a classic Australian permaculture text in the 1970s and even on some current gardening websites in this country. Due to its medium weed risk, absence from the State and very high feasibility of control, water caltrop is regarded as a State Alert Weed and a high priority surveillance target to increase the likelihood of early detection.

Synonymy

Trapa natans L., Sp. Pl. 1: 120-121 (1753).

Taxonomic synonyms:

- Trapa acornis* Nakano, Bot. Mag. (Tokyo) 77: 165 (1964).
- Trapa arcuata* S.H. Li & Y.L. Chang, Fl. Pl. Herb. Chin. Bor.-Orient. 6: 291 (1977)
- Trapa bicornis* Osbeck, Dagb. Ostind. Resa 191 (1757)
- Trapa chinensis* Lour., Fl. Cochinch. 1: 86 (1790)
- Trapa cochinchinensis* Lour., Fl. Cochinch. 1: 108 (1790)
- Trapa jeholensis* Nakai, J. Jap. Bot. 18(8): 437 (1942).
- Trapa manshurica* Flerow, Izv. Glavn. Bot. Sada S.S.S.R. 24: 39 (1925)
- Trapa pseudoincisa* Nakai, J. Jap. Bot. 18(8): 436 (1942).
- Trapa quadricornis* Stokes, Bot. Mat. Med. 1: 229 (1812)
- Trapa quadrispinosa* Roxb., Hort. Bengal. 11 (1814)
- Trapa sibirica* Flerow, Izv. Glavn. Bot. Sada RSFSR 24: 32 (1925).
- Trapa tuberculifera* V.N. Vassil., Fl. URSS 15: 692 (1949).

Other common names include buffalo nut, bull nut, horn nut, Jesuit nut, wassernuss, waternoot, ou ling, ling jiao, paniphal, saligot, singhara, floating water chestnut and European water chestnut. *Trapa natans* 'Su Zhou' is a named cultivar.

Hon David Speirs MP
Minister for Environment and Water

Date: 28 March 2021