

Sagittaria

Sagittaria platyphylla



Native to North America, sagittaria is an aquatic perennial introduced to Australia as an aquarium plant. In the wild, it invades and degrades natural wetlands. Large infestations can block irrigation channels, choke wetlands and can impact on recreation activities. Sagittaria is listed as Weed of National Significance.

The first infestation of sagittaria was found in Brisbane in 1959, then Victoria in 1962. It is now widely distributed in the Murray Irrigation District, Sydney and Newcastle, Melbourne, Perth, Canberra and Adelaide.

Legal requirements

Sagittaria is a category 3 restricted invasive plant under the *Biosecurity Act 2014*. It must not be given away, sold, or released into the environment. The Act requires everyone to take all reasonable and practical steps to minimise the risks associated with invasive plants under their control. This is called a general biosecurity obligation (GBO). This fact sheet gives examples of how you can meet your GBO.



At a local level, each local government must have a biosecurity plan that covers invasive plants in its area. This plan may include actions to be taken on certain species. Some of these actions may be required under local laws. Contact your local government for more information.

Description

Sagittaria is an aquatic perennial that grows up to 1.5 m high. It has three morphological growth forms: submerged rosette, broad-leaved emergent and narrow-leaved emergent. These forms play an important role in the life cycle allowing the species to adapt to varying environmental conditions.

The leaves have an oval/linear shape with pointed tips, up to 25 cm long and 10 cm wide at the top of each leaf stalk. It also has narrow strap-like submerged leaves up to 50 cm long. Stems are triangular in cross section. The submerged form has ribbon shaped leaves, 1–2 cm across and up to 50 cm long.

Flowers appear in whorls or coils, male flowers are 3 cm across with three white petals and yellow centers. Female flowers have no petals, resembling flattened green berries. Flowers appear below the height of the leaves.

Seeds occur in clusters, consisting of flattened and winged segments, 0.15–0.3 cm long and one seed in each segment.

Fruit consists of a mass of numerous one-seeded fruitlets, arranged in a small rounded cluster, 5–15 mm wide.

Life cycle

Sagittaria can reproduce via several methods. It is a prolific seeder, with each plant having the ability to produce hundreds of thousand seeds. Seed production occurs from September to May. Germination can occur anytime the conditions are favourable. It can reproduce vegetatively by stem or root fragment. It can also reproduce from underground stem fragments and tubers.

Flowers mostly during summer and autumn.

Methods of spread

Sagittaria is spread through cultivation and sale as an aquarium or ornamental water plant, and through dumping of aquarium contents into waterways.

It can also spread by broken stems, leaf fragments and seed. Seeds can spread by water, boats and in soil on vehicle tyres, animals and birds.

Habitat and distribution

Sagittaria is found in South East Queensland, Rockhampton and around Cairns.

It can found in waterways, irrigation channels, drains, creeks, rivers, lagoons, dams and wetlands. Establishment is favoured by slow moving or static shallow water.

Sagittaria has the potential to become more widespread in Queensland.

Control

Managing sagittaria

The GBO requires a person to take reasonable and practical steps to minimise the risks posed by sagittaria. This fact sheet provides information and some options for controlling sagittaria.

Sagittaria can be difficult to manage due to limited control options and also due to herbicide resistance, aquatic nature and persistent seed bank. Control is best carried out when water levels are low. Appropriate hygiene and containment measures need to be applied to prevent further spread downstream.

Manual control

Seedlings and smaller plants can be hand pulled, dug out by hand or removal with machinery. Bag and dispose of the plant and any fragments at the local council tip, but never place in green waste.

Mechanical control

Place all removed plant material in sealed plastic bag, leave in sunlight to decompose, then dispose of at council-approved landfill tip. Alternatively, leave material in sun to dry, then burn.

Do not leave broken plant pieces in growth area.

Herbicide control

Herbicide control, such as foliar spray can be effective on larger infestations of sagittaria.

There is no herbicide registered for the control of sagittaria in Queensland; however, off-label use permits PER80934 allow for the use of various herbicides for the control of environmental weeds in artificial ponds, irrigation and natural waterways.

See Table 1 for treatment options allowed by the permit.

Prior to using the herbicides listed under permit PER80934 or surfactant under permit PER81236, you must read or have read to you and understand the conditions of the permits. To obtain a copy of this permit visit apvma.gov.au.

Herbicide options available for the control of sagittaria in Queensland are shown in Table 1.

Biological control

There are currently no biological agents available for sagittaria, however research is underway to identify potential agents.

Further information

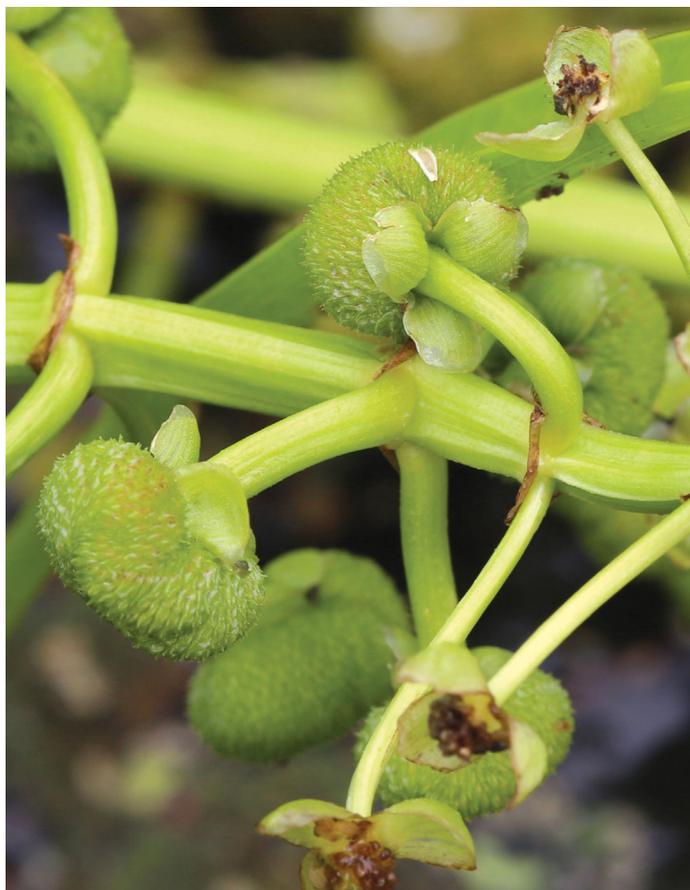
Further information is available from your local government office, or by contacting Biosecurity Queensland on 13 25 23 or visit biosecurity.qld.gov.au.

Table 1. Herbicides for the control of sagittaria

Situation	Herbicide	Rate	Registration status	Comments
Artificial ponds, irrigation and natural waterways	Glyphosate 360 g/L	10 L/100 L water	APVMA permit PER80934 (permit expires 30/09/2025)	<ul style="list-style-type: none"> • Apply as a spot spray application using a hand gun or knapsack. • DO NOT apply more than four applications per year to the same water body. Minimum retreatment interval of two months. • DO NOT exceed a maximum of 40 L of product per hectare. • More than one application may be necessary, particularly for regrowth: e.g. spray in November, January, March and May. • DO NOT broadcast spray over the water. • Follow all label critical comments for use in aquatic areas, to ensure minimisation of spray entering water. • Direct spray onto weed mats in infested areas. • Spray from boat towards the river bank to minimise off target damage and pollution of waters. • DO NOT apply to bodies of water where arrowhead infestations do not exist. • DO NOT use additional surfactant/ wetting agent, unless it is approved for use in aquatic situations. • Use a coarse spray (large spray droplets) or foam jet to minimise spray drift when using a handgun or knapsack sprayer. • Ensure entire leaf area is covered and avoid excessive leaf run-off. • DO NOT spray submerged weeds. Also avoid submerging treated weeds as this may wash the herbicide off the leaves. • When the total surface of an impoundment requires treatment, herbicide application in strips may void sudden impact on water quality and habitat (as indicated on the label). • Follow all relevant critical comments in the Aquatic Areas section of the product label.

APVMA off-label permit PER80934. It is a requirement of a permit that all persons using the products covered by this off-label permit comply with the details and conditions listed in the permit.

Read the label carefully before use. Always use the herbicide in accordance with the directions on the label.



This fact sheet is developed with funding support from the Land Protection Fund.

Fact sheets are available from Department of Agriculture and Fisheries (DAF) service centres and our Customer Service Centre (telephone 13 25 23). Check our website at biosecurity.qld.gov.au to ensure you have the latest version of this fact sheet. The control methods referred to in this fact sheet should be used in accordance with the restrictions (federal and state legislation, and local government laws) directly or indirectly related to each control method. These restrictions may prevent the use of one or more of the methods referred to, depending on individual circumstances. While every care is taken to ensure the accuracy of this information, DAF does not invite reliance upon it, nor accept responsibility for any loss or damage caused by actions based on it.