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YOUR ALERT TO NEW AND EMERGING THREATS.

1. *Growing habit on water* ***2.*** *Close-up of flower cluster* ***3.*** *Floating stem covered with white, spongy material.* ***4.*** *Infestation*

AQUATIC

Water mimosa (*Neptunia oleracea*)

Introduced | Class 1

Water mimosa is a long-lived aquatic plant that is cultivated as a vegetable throughout south-eastern Asia, particularly in Thailand and Indo-China. This species has a pan-tropical distribution, and is regarded as being native to tropical Asia, Africa and Central and South America. In Australia, it has the potential to spread from cultivation and become naturalised in water bodies, slow-moving waterways, wetlands, and other damp sites.

Distribution

Water mimosa has been used by some south-east Asian communities as a vegetable and is occasionally sold in local markets in the Brisbane area. Two collections of Water mimosa were made from farm dams in south-eastern Queensland in 2006, one from the Logan area and the other from the Boonah district. It has since been recorded at 15 sites in the Logan City area, but all of these known populations have been controlled.

Description

This long-lived aquatic plant grows in shallow water and has stems that usually float on the water surface. It has a thick taproot that becomes woody with age and produces stems up to 1.5 m long which may become detached. The older floating stems develop a thick spongy covering which aids with flotation and they also produce roots at their joints. The alternately arranged leaves are compound and very similar to those of sensitive plant. They have 2-4 pairs of branchlets, with each branchlet bearing 8-20 pairs of small leaflets (5-18 mm long and 1.5-3.5 mm wide).

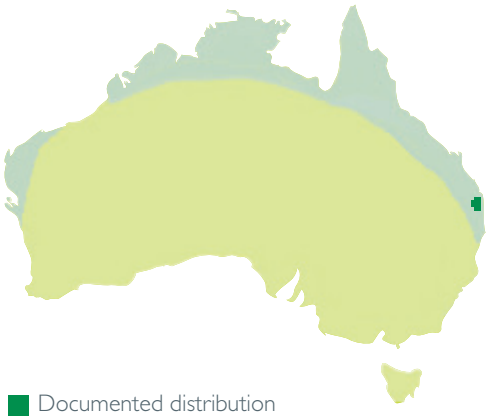
The small almost rounded flower clusters are borne on slender stalks 5-20 cm long that are produced in the leaf forks. These bright yellow clusters contain 30-50 small densely clustered, stalkless, flowers. Each flower has five tiny green sepals (2-3 mm long) and five inconspicuous petals (3-4 mm long). The uppermost flowers in each cluster have ten small stamens (6-9 mm long) along with the female flower parts (i.e. they produce fruit), while the lower flowers are sterile. These sterile flowers have ten narrow yellow petal-like structures (7-16 mm long and 0.5-1 mm wide), which are actually derived from the stamens. The flattened fruit are oblong in shape and relatively broad (19-28 mm long and 8-10 mm wide). Each fruit contains 4-8 brown seeds (4-5 mm long and 2.5-3.5 mm wide).

Quick Facts

- A long-lived aquatic plant growing across the water surface.
- Compound leaves with numerous leaflets which are sensitive to touch
- Floating stems that become covered in a thick, white, spongy material.
- Bright yellow flowers borne in rounded clusters.

Habitat

Water mimosa grows on the banks or margins of water bodies and then spreads out over the water surface. It prefers lakes, farm dams, ponds and swamps but will also grow along slow-moving waterways. It is usually found growing in sunny locations in water less than 1 m deep.



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1. *Thick stems and leaves* **2.** *Close-up of stem showing spongy material and roots*

Reproduction and Dispersal

This species grows from seeds, but also reproduces via stem fragments that produce roots at their joints. When grown as a vegetable, it is primarily propagated by stem cuttings. In Queensland, Water mimosa is most commonly introduced to new water bodies through deliberate cultivation. However, seeds and stem fragments may be spread from these areas during floods. Seeds may also be dispersed in mud attached to machinery or vehicles.

Why is it an Emerging Threat?

While this species has yet to become fully established in Australia, it poses a potential threat to Queensland's waterways and wetlands. Because Water mimosa can form rafts of dense interwoven stems on the water surface, it can replace native water plants and cause the death of submerged plants and fish. It also has the potential to restrict water flow in creeks and channels, reduce water quality, and increase water loss through evapotranspiration.

Control Methods

Small infestations can be removed manually, taking care to ensure that no stem and root material remains in the substrate. Once collected, all plant material should be removed from the site and disposed of in a sanitary manner. Prevent further spread of the weed to other areas of the water body by avoiding fragmentation of stem material which usually results from the use of mechanical equipment. This should be repeated on a regular basis until regrowth ceases.

In the case of larger infestations, or where access is more difficult, the use of herbicides may be necessary. While there are no herbicides currently registered for the control of Water mimosa within Australia, the control of environmental weeds such as *Neptunia oleracea* in non-crop situations is allowed in Queensland via off-label permit 11463 (http://permits.apvma.gov.au/PER11463.PDF). Under this permit, the use of aquatically registered formulations of Glyphosate 360 (e.g. Round-up Biactive and Weedmaster Duo) is permitted for the spot spraying of perennial weeds in aquatic and wetland areas. For control within other state boundaries, see the relevant permits or government legislation.

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Look a-likes

Water mimosa is usually easily distinguished from closely-related species by the fact that it grows out over the water surface and its floating stems are covered in a thick, white, spongy material. However, another introduced species known as Dead and awake (*Neptunia plena*) has these same characters and has been recorded in Queensland and the Northern Territory. Dead and awake is also a Class 1 declared plant in Queensland, it has been recorded from two sites in the Cairns area and from Pallara, near Acacia Ridge in the southern suburbs of Brisbane.

These two plants are extremely similar, but can be distinguished by the following differences:

- Water mimosa (*Neptunia oleracea*) has less than 20 pairs of leaflets on each leaf branchlet and its fruit contain 4-8 seeds.
- Dead and awake (*Neptunia plena*) often has more than 20 pairs of leaflets on each leaf branchlet and its fruit contain 8-20 seeds.

Other similar plants may be found growing near the water's edge, including Common sensitive plant (*Mimosa pudica*) and Native sensitive plant (*Neptunia gracilis*). The appearance of these common species is outlined below.

	Stem	Flower	Fruit
Native sensitive plant (*Neptunia gracilis*)	 Leaf and smooth stem	 Yellow flower cluster	 Smooth fruit
Common sensitive plant (*Mimosa pudica*)	 Leaf and hairy/prickly stem	 Pink flower cluster	 Segmented and prickly fruit

This information has been developed with the assistance of Dr Sheldon Navie. Photographs are also courtesy of Shaun Winterton and Biosecurity Queensland

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