

invasive aquatic weeds

on the
South Coast

WATER WEEDS

Many aquatic weeds are natives of the Americas. They are extremely invasive especially in still or slow-moving, warm water and in the presence of elevated nutrient levels. These are likely to occur in water bodies on farming land or close to residential areas. They all have similar negative effects, preventing access to water bodies, interfering with pumps and irrigation, smothering native aquatic plants and animals, and adding organic matter to the water.



Water hyacinth (*Eichhornia crassipes*)

Water hyacinth (*Eichhornia crassipes*) is a floating plant which **forms long runners, along which new plants develop**. Young plants consist of a rosette of fleshy, glossy leaves with inflated, spongy leaf stalks. Spikes of 6-petalled mauve flowers are held above the leaves. The upper petal has a yellow spot. After flowering the stem bends till the fruiting capsule is held below the water, where seeds are released.

Water hyacinth is a **Class 2 or 3 noxious weed** along the south coast and is one of the world's worst weeds, choking water bodies in much of the tropical and warm temperate parts of the globe.



Salvinia (*Salvinia molesta*)

Salvinia (*Salvinia molesta*) is a floating fern. Young leaves are flat and almost circular with a rough upper surface and trailing dark roots. **As the plants become more crowded the leaves fold**. Salvinia is another serious aquatic weed and there have been many outbreaks on the south coast, mostly as a result of dumping.

Salvinia is a **Class 2 noxious weed** and is on the WoNS (Weeds of National Significance) list in Australia because of its invasive potential.



noxious weed

look-alikes

Native plants, *Villarsia exaltata* and *V. reniformis* have similar leaves to water hyacinth but they lack the inflated base and flowers are yellow. Blue pickerel weed (*Pontederia cordata*) is an exotic sold for planting around pond edges. It does not float. No other water plants look very like salvinia, but there are native floating ferns, *Azolla* species, which blanket the water surface in a similar manner. Their leaves may be green or reddish brown.





Alligator weed

S Navie

Some aquatic weeds are very similar to native aquatic plants and identification may require specialist knowledge. Many are notifiable weeds (listed as Class 1 or 2 noxious weeds in NSW). Many aquatic plants, introduced into Australia as ornamentals, have been sold for use around water features or in aquariums. They can be spread by dumping or by water birds if planted in the open air. It is illegal to sell or cultivate any of the weeds described on this page.



Senegal tea plant

S Navie

Alligator weed (*Alternanthera philoxeroides*)

Alligator weed (*Alternanthera philoxeroides*) is an erect or sprawling perennial herb with hollow stems and opposite, stalkless leaves. Tiny white, papery flowers are in 1-2cm diameter globular heads held on a 2-9cm long stalk in the leaf axils. Seed is rarely produced in Australia but stem segments are dispersed in floods, by birds, boats or vehicles. It is usually rooted in mud with the leaves emergent on the water surface, or it may be free-floating, or grow on dry land near water. **Alligator weed is a Class 2 noxious weed.** It is another serious global weed, not yet well established in Australia, though on the WoNS (Weeds of National Significance) list because of its invasive potential. Infestations are mainly close to Sydney and Melbourne, as it has sometimes been planted by Asian immigrants as a green vegetable.



Alligator weed

R Shepherd

Senegal tea plant (*Gymnocoronis spilanthoides*)

Senegal tea plant (*Gymnocoronis spilanthoides*) is a perennial herbaceous plant in the daisy family which forms a rounded clump, or as it spreads, a tangled sprawling mass. The hollow stems are erect initially but become creeping, especially when spreading over the water surface. Leaves are opposite, elongated, with toothed edges, and hairless. Heads of small, white to mauve, fluffy flowers are held in short-branched terminal clusters.



Senegal tea plant

S Navie

It has been widely grown as an ornamental and has occurred as isolated outbreaks from south-east Queensland to Dapto. **Senegal tea plant is a Class 1 noxious weed** and is on the Australian Alert List for weeds which are not yet well established and have the potential to become very much worse weeds here.

Senegal tea plant could be confused with two other weedy members of the daisy family, Crofton weed (*Ageratina adenophora*) and mistflower (*Ageratina riparia*). Both are white-flowered and often grow near water but neither are aquatic plants and they do not have hollow stems.

look-alikes

There are various native and introduced species of *Alternanthera*, but only one is aquatic. Lesser joyweed (*A. denticulata*) is a native small erect or trailing herb with narrow leaves (to 8mm wide) and small stalkless clusters of white flowers in the leaf axils. It usually germinates around the edge of shrinking water bodies, sometimes in large numbers, but due to its small size it does not occupy much ground. Water primrose (*Ludwigia peploides*) is another aquatic native with long stems which may be erect or trailing over the water surface. Its leaves are alternately arranged on the stems, not in opposite pairs, and it has large yellow 4-petalled flowers.



Lesser joyweed

J Miles



Native water primrose

J Miles



Crofton weed

J Miles

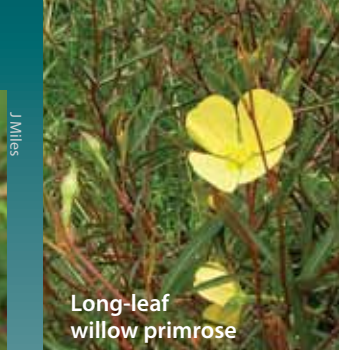


Mistflower

J Miles



Ludwigia



Long-leaf willow primrose



Long-leaf willow primrose seed pod



Sagittaria fruits



Sagittaria

Ludwigia

Ludwigia or Peruvian primrose (*Ludwigia peruviana*) is an erect perennial herb or soft-stemmed shrub to 3 metres high, which grows on the edges of water bodies or floats on the surface. Large hairy leaves are alternately arranged on the stems. Flowers are large (2-4cm across) and 4 or 5-petalled, held singly in the upper leaf axils. The fruit is an elongated hairy capsule topped by reddish floral remains. It may be deciduous in winter in cooler climates.

It is well established around Sydney and the central coast, and has been recorded in the Illawarra.

Long-leaf willow primrose (*Ludwigia longifolia*) is an erect annual herb to 3 metres high. It has narrower, hairless leaves, similar but smaller flowers, and the fruits are hairless, 10-35mm long and 4-sided.

It is an occasional garden escape, especially around Sydney, but could occur anywhere. **Both ludwigias are Class 4 noxious weeds around Sydney** and cannot legally be sold in NSW.

Sagittaria (*Sagittaria platyphylla*)

Sagittaria or arrowhead (*Sagittaria platyphylla*) is a perennial herbaceous plant which forms large clumps in shallow water. There are two different types of leaves, strap-like submerged leaves and large, erect arrowhead shaped emergent leaves on 3-sided stalks. The 3-petalled flowers are white, with a yellow centre and about 30mm across. **Seed is contained in rough-textured 3-lobed capsules** and is probably spread by birds, as well as in floods and in mud on boats or vehicles. Clumps also expand by rhizomes (runners buried in the mud). Rhizomes and tubers may also be spread in floods.

It is well established in the Illawarra, but less common in the south of the region, though spreading on the Brogo Dam margins in Bega Valley.

It is a nuisance in inland irrigation areas where it chokes irrigation ditches, and it is a **Class 4 noxious weed in these areas and Class 5 on the coast**.

noxious weed

look-alikes

The native water primrose (*Ludwigia peploides* subsp. *montevidensis*) has very similar flowers to the weedy Ludwigia species but they are always 5-petalled, and the fruits are cylindrical with 10 ribs, not 4-angled. It is usually prostrate, with long stems trailing over the water surface but can also be erect. Stems are hairy but leaves are hairless, unlike Peruvian primrose in which all parts are hairy and long-leaf willow primrose in which all parts are hairless. The wide-branching form of Peruvian primrose and the large leaves give it a slight look of lantana, but lantana has clusters of small tubular flowers, smelly leaves and does not grow in water.

A native aquatic herb, water plantain (*Alisma plantago-aquatica*) is quite similar to sagittaria, but its flowers are much smaller (10mm across) and carried in larger numbers in large, widely branching heads above the leaves. In the photo comparing two leaves below, sagittaria is on the left and water plantain on the right. The fruits of water plantain are much smaller than those of sagittaria and are ribbed, not warty in texture (below right).



Native water primrose



Sagittaria leaf



Water plantain

Control of aquatic weeds is problematic. Mechanical controls are expensive and not always effective as most aquatic weeds will regrow from broken-off fragments. Few herbicides are registered for use over water and their use may have consequences for wildlife. Prevention is better than cure. Do not dump unwanted aquarium plants, and be very careful what you plant around outdoor water bodies. Try to obtain appropriate local natives.

for more information please contact:

Illawarra District Noxious Weeds Authority	(02) 4233 1129
Shoalhaven City Council	(02) 4429 3111
Eurobodalla Shire Council	(02) 4474 1000
Bega Valley Shire Council	(02) 6499 2222



Dense waterweed (*Egeria densa*)

Dense waterweed (*Egeria densa*) grows fully submerged in the water, although the white, 3-petaled flowers are held above the water surface on slender thread-like stems. The plant is rooted in the mud and has stems to about 1.5 metres long, which are ringed by close-packed whorls of 3-8 leaves.

It has been commonly sold as an aquarium plant but this is no longer legal in NSW. However, some confusion is created by the use of the common name "leafy elodea" for this plant, linking it with Canadian pondweed (*Elodea canadensis*), which can still legally be sold. It would be preferable to use native water plants instead of introduced ones, as all introduced water plants carry some risk of becoming weedy.

noxious weed



Parrot's feather (*Myriophyllum aquaticum*)

Parrot's feather (*Myriophyllum aquaticum*) is a submerged or floating water plant with feathery blue-green leaves and inconspicuous flowers which are produced singly in the leaf axils. It may also grow on mud around the edge of water bodies, or persist on mud as ponds shrink during drought (below right) and the upper stems may emerge vertically above the water surface for about 10 cm as well.

It has been sold as an ornamental plant for ponds and is widely naturalised in the Illawarra and Shoalhaven. It is less common in the far south but there is a large infestation at Bermagui.

This plant is an environmental weed. It can still be sold legally, but it would be preferable to use native members of the water milfoil (*Myriophyllum*) group instead.



look-alikes

Canadian pondweed (*Elodea canadensis*) looks quite similar to dense waterweed, but it does not produce showy white flowers, and its leaves are in whorls of 3 (rarely 4). It is also a weed, and quite widely naturalised on the south coast. It is a major weed of irrigation areas, but is not listed as noxious in NSW.



Canadian pondweed



Native water milfoil

Native water milfoils (*Myriophyllum* species) could be confused with parrot's feather but none of the natives have the blue-green leaves of parrot's feather and most are smaller. The photo above shows parrot's feather on the right and a native water milfoil at left. Both can grow either submerged or on mud. Native water milfoils tend to have feathery submerged leaves (left) and narrow cylindrical emergent leaves at the stem tips, which are held above the water surface, with flowers in the leaf axils (right).

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Another native water milfoil