

EMERGING AQUATIC WEEDS IN VICTORIA

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Water is critical resource to Victorian agriculture and natural ecosystems and waterway management is recognised as a key catchment management program. Aquatic weeds are a distinct component of the plants that have been introduced into Australia. Rivers, lakes, irrigation canals and estuaries are sensitive aquatic environments. Exotic aquatic plants are a critical issue in waterway management because of their impact on water quality, water delivery and natural ecosystems. Some exotic aquatic weeds are emerging in Victoria. They are potential threat to Victoria's wetlands and irrigation systems. They can compete aggressively with native plants and crops. Only four aquatic weeds have been declared as prohibited or restricted for the whole Australia and Victoria. These are Alligator weed (*Alternanthera philoxeroides*) Salvinia (*Salvinia molesta*), Water hyacinth (*Eichhornia crassipes*) and Lagarosiphon (*Lagarosiphon major*). There are plenty of aquatic weeds have been declared as noxious in different states. Victoria has the lowest number of noxious weeds in the list. Recent observations and reports proved that some aquatic weeds are emerging at alarming rate but aquatic weeds have received little attention in Victoria. The major aquatics that have already become established in some Victorian waterway pose the threat of invasion.

Fanwort (*Cabomba caroliniana*) has already become established at a few locations in Victoria. Cabomba is an aquatic perennial plant considered to be native to both north and South America. It was introduced into Australia from the USA as an aquarium plant and was first recognised as naturalised in 1981. Dumping of unwanted plants into local waterways and deliberate seeding of areas to allow wild cultivation for the aquarium trade. Bioclimatic modelling indicates that cabomba can successfully established and survive in Victoria. It has the potential to be a very damaging environmental weed. It has identified as a weed of national significance by the National Weeds Strategy in Australia. Cabomba is a submerged herb, which reproduces vegetatively from stem fragments. All parts of the plant grow under water except for a few floating leaves and emergent flowers in season. Cabomba generally grows in water 1 to 3 m's deep with the roots attached to mud or silt. Cabomba has is very difficult to control and no effective method has been established. A number of large large infestations have been recorded including a farm dam near Dollar in South Gippsland (1989), Lake Benalla (1990) and a heavy infestation in Lake Nagambie (1996).

Arrowhead (*Sagittaria graminea*) is an aggressive plant, which rapidly spreads in natural waterways and irrigation supply channels and drains where it causes disruption to the flow of water. A native of North America, arrowhead has been introduced to many countries as an ornamental aquatic. It is an attractive, emergent; erect and perennial plant that has become widely dispersed throughout the irrigation areas of southeastern Australia particularly in the irrigation areas of northern Victoria. Arrowhead is a rhizomatous plant growing up to 150cm tall. It has triangular stems in cross section up to 75 cm long and emergent leaves up to 35 cm long. This plant has the ability to spread rapidly forming dense clumps, which may cause a slowing down of water to an unacceptable rate. The rapid spread is due to the fact that arrowhead has several methods of reproduction. Not only does it reproduce by the germination of seeds as most plant does but also has several methods of vegetative reproduction (rhizomes, bulbs etc.).

Yellow Waterlily (*Nymphaea mexicana*) an exotic emerging aquatic perennial plant with floating leaves and bright yellow emergent flowers. Immigrants for its attractiveness and adaptability introduced this plant. Yellow waterlily is increasing an alarming rate in Lake Nagambie and surrounding areas as well as Lake Benalla. Once established it can block waterways and is difficult to eradicate. New growth of this plant is mainly initiated vegetatively. Stolons are produced during spring to autumn specially following flooding. Stolons produce new plants at the nodes. These plants may become detached when small and establish elsewhere.

Leafy Elodea (*Egeria densa*) originated in South America. Elodea is submerged; much branched perennial aquatic species. It was introduced to Australia by the aquarium industry. Now heavy infestation of elodea has been found in Merri Creek and Lilydale Lake in Melbourne. Usually elodea firmly rooted in the bottom mud but occasionally found as a free-floating mat. Although leafy elodea reproduces only by asexual methods in Australia, overseas the plant usually over winters as seeds as well as dormant or semi dormant shoots. Human dispersal in the aquarium trade is the most common means of spread. Because of its extremely dense growth below the water surface, leafy elodea can seriously retard water flow, interfering with irrigation projects, hydroelectric out put and urban water supplies. It may also retard river traffic and interfere with recreational activities such as boating, swimming and fishing.