

Aquatic pest plants pose a major threat to the quality of the Bay of Plenty region's wetlands, waterways and lakes. They often form dense beds of vegetation, impeding draining, encouraging stagnation and silting, damaging indigenous freshwater ecosystems, and making recreational activities, such as swimming and boating, difficult.

## Stop the Spread!

Even very small fragments of many aquatic plants can easily take root and grow into new plants. Such small fragments are often unwittingly transported from one body of water to another on boats, trailers, fishing equipment, excavators and other equipment. These fragments may also have the eggs of invasive pest fish attached which can hatch out and cause further environmental damage. Plants also often spread from ornamental ponds and aquaria. Once established, aquatic pests are difficult and costly to control, and even harder to eradicate. It is much better if we can prevent them from getting into our waterways in the first place.



### Boat owners and other water users

Always carefully clean boats and trailers as soon as they are taken out of the water. Ensure your propeller, anchor and chain, boat trailer and fishing gear are clean before launching.



### People with aquaria and ornamental garden ponds

Do not empty plants or animals from ornamental ponds or aquaria into wetlands, lakes or waterways. Dispose of plant material and gravel etc with household refuse or compost and tip water onto the garden well away from any water body.



### Earthmoving contractors and other machinery operators

Carefully clean any equipment that has been used on lake edges, rivers, drains or wetlands before leaving the site.





## Managing Aquatic Pest Plants in the Bay of Plenty

Different aquatic plant pests in the region warrant different levels of action. These are grouped into four categories which are described below. You can help by learning to identify these pests and what to do if you encounter them.






- Agency pests
- Exclusion and eradication pests
- Containment pests
- Restricted pests







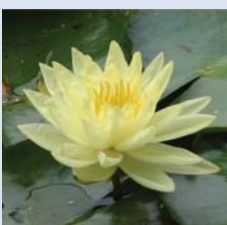

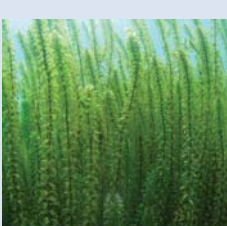
Large infestation of hornwort in Lake Rotoehu.

	Category description	Aquatic pest plant
<b>AGENCY PESTS</b>	<p>These are pests of a national significance that are managed by, or subject to, programmes co-ordinated by the Crown.</p>	 <p><b>Didymo</b> <i>Didymosphenia geminata</i></p> <p>A microscopic pest that can attach itself to stream, river and lake beds by stalks, and can form a thick brown layer that smothers rocks, submerged plants and other materials. It forms flowing 'rats tails' that can turn white at their ends and look similar to tissue paper.</p> <p><b>Risk areas:</b> Rivers, streams and rocky lake margins.</p>
	<p>They pose significant threats to the New Zealand environment, economy and way of life.</p>	 <p><b>Hydrilla</b> <i>Hydrilla verticillata</i></p> <p>A submerged, rooted annual or perennial aquatic plant which grows to water depths of up to 9 m. Hydrilla stems vary in length from a few centimetres to several metres and are either creeping or erect. The leaves occur in opposite pairs, or typically in whorls of four. Leaves are generally green, but often have small reddish-brown spots and stripes. The midrib is distinct and the margins are strongly serrate, with fine translucent teeth that are visible to the naked eye.</p> <p><b>Risk areas:</b> Lakes, rivers, and streams.</p>
	<p><b>If you see one of these pests please contact Ministry for Primary Industries or Bay of Plenty Regional Council immediately. Land occupiers have a legal obligation to report the presence of these plants to the authorities above.</b></p>	 <p><b>Salvinia</b> <i>Salvinia molesta</i></p> <p>An aquatic fern forming dense floating mats. Leaves 2-5 cm long by 2 cm wide, light or brownish green with a velvety appearance.</p> <p><b>Risk areas:</b> Drains, ponds, wetlands and slow-moving streams.</p>
	<p><b>These plants are also banned from sale, propagation and distribution in New Zealand under Section 52 and 53 of the Biosecurity Act, 1993.</b></p>	 <p><b>Water hyacinth</b> <i>Eichhornia crassipes</i></p> <p>A free-floating aquatic plant with long, purple, feathery roots. Leaves are bright green, smooth and thick to 8 cm wide with a bladder-like base. Spikes of purple flowers to 7cm in diameter.</p> <p><b>Risk areas:</b> Drains, ponds, wetlands and slow-moving streams.</p>

EXCLUSION AND ERADICATION PEST PLANTS

Category description	Aquatic pest plant
<p>These are pests we want to prevent from entering the region, or eradicate from the region.</p> <p>Land owners and occupiers are legally obliged to notify Bay of Plenty Regional Council of any occurrence of these plants on their property.</p> <p>Bay of Plenty Regional Council leads the control of these pests if found, with an aim to eradicate them. Council will undertake and fund monitoring, surveillance and control of any infestation of these plants.</p> <p><b>These plants are banned from sale, propagation and distribution in New Zealand under Section 52 and 53 of the Biosecurity Act, 1993.</b></p>	 <p><b>Alligator weed</b> <i>Alternanthera philoxeroides</i></p> <p>An aquatic perennial which can also grow in pastures and crops. It has long, creeping, hollow, green or red tinged stems and waxy green leaves. The flowers are white and clover-like.</p> <p><b>Risk areas:</b> Moist banks, swampy places, damp pasture, cropping land, drains, ponds, lakes, rivers, streams.</p>
	 <p><b>Marshwort</b> <i>Nymphoides geminata</i></p> <p>A bottom-rooted, aquatic perennial with long, branched stems and heart-shaped leaves up to 8 cm across. Flowers are bright yellow with a fringe around the petals.</p> <p><b>Risk areas:</b> Still waters of swamps, ponds and lakes to fastflowing, freshwater streams.</p>
	 <p><b>Senegal tea</b> <i>Gymnocoronis spilanthoides</i></p> <p>A semi-aquatic herb up to 1.5 m tall. Leaves are shiny, dark green with serrated edges. Mature stems are six-sided and hollow between the nodes. Flowers are white, 15-22 mm in diameter.</p> <p><b>Risk areas:</b> Wet marshy soils, water margins, drains.</p>
	 <p><b>Spartina</b> <i>Spartina spp.</i></p> <p>A robust, erect, rhizomatous grass that grows up to 1 m tall with an extensive root system. Leaf blade grows up to 60 cm long and 15 mm wide.</p> <p><b>Risk areas:</b> Saline wetlands, coastal drains, estuaries.</p>
	 <p><b>Water poppy</b> <i>Hydrocleys nymphoides</i></p> <p>An aquatic perennial with long, creeping stems. The leaves are thick and shiny, 7 cm long and 6 cm wide, with an inflated, buoyant mid-rib. Flowers are pale yellow and poppy-shaped.</p> <p><b>Risk areas:</b> Ponds, streams, farm dams and lake margins.</p>

For further information and advice, contact Bay of Plenty Regional Council - 0800 884 880  
or Ministry for Primary Industries - 0800 00 83 33

	Category description	Aquatic pest plant
CONTAINMENT PESTS	<p>These are pests that we want to minimise the effects of and prevent their further spread. Land owners, occupiers and agencies are bound under statutory obligations and laws to take responsibility for controlling these pests on their property.</p> <p>The Bay of Plenty Regional Council will assist by providing advice on how to control and dispose of these pests, coordinating and supporting approved programmes (such as Biodiversity Programme, Care Group or Community Control Programme).</p> <p><b>These plants are banned from sale, propagation and distribution in New Zealand under Section 52 and 53 of the Biosecurity Act, 1993.</b></p>	 <p><b>Egeria</b> <i>Egeria densa</i></p> <p>A bottom-rooted, vigorous aquatic perennial. One of the oxygen weeds, denser and broader than Elodea and Lagarosiphon, with distinctive white flowers produced at the water surface in summer.</p> <p><b>Risk areas:</b> Still waters of swamps, ponds and lakes.</p>
	 <p><b>Hornwort</b> <i>Ceratophyllum demersum</i></p> <p>A submerged freshwater weed. The narrow, bright green leaves are finely divided. Modified leaves anchor the plant in bottom sediments up to 16 m deep.</p> <p><b>Risk area:</b> Ponds, marshes and quiet streams.</p>	
	 <p><b>Lagarosiphon</b> <i>Lagarosiphon major</i></p> <p>Wholly submerged, vigorous freshwater perennial up to 4 m tall, growing to depths of 6 m. One of the oxygen weeds.</p> <p><b>Risk areas:</b> Clear, still or slow-moving, low fertility freshwater ponds, lakes, streams and rivers.</p>	
	 <p><b>Yellow flag iris</b> <i>Iris pseudacorus</i></p> <p>A branched, perennial herb with a strong, rhizome root system and slightly compressed stems 60-150 cm tall. The leaves are 50-90 cm long, 10-30 mm wide and have a conspicuous mid-rib. The large, yellow flowers are 7-10 cm in diameter.</p> <p><b>Risk areas:</b> Along streams, rivers, drains, swampy ground, ponds.</p>	
RESTRICTED PESTS	<p>These are pests we want to reduce the further spread of and will support community and occupier efforts to control in places where they are a problem.</p> <p>Land owners, occupiers and agencies are not required to control these pests on their properties but are encouraged to do so. Assistance may be available and where they are a problem the Regional Council will support community and land owner efforts.</p> <p><b>These plants are banned from sale, propagation and distribution in New Zealand under Section 52 and 53 of the Biosecurity Act, 1993.</b></p>	 <p><b>Mexican waterlily</b> <i>Nymphaea mexicana</i></p> <p>An aquatic plant with vertical underwater rhizomes and round heart shaped leaves (up to 25 cm diameter) that float on long stalks. As the leaves mature they develop brown blotches on the upper surface and become mainly purple beneath. Fleshy stolons bear banana-shaped tubers. Flowers are star-shaped and pale yellow with many veined petals.</p> <p><b>Risk area:</b> Ponds, lakes and waterways.</p>
	 <p><b>Parrot's feather</b> <i>Myriophyllum aquaticum</i></p> <p>This perennial, freshwater plant, forms dense sprawling mats in still or slow-flowing water. It has light green or reddish stems that grow up to 4 m long. Fibrous roots are produced at each node. Foliage is blue-green, with leaves arranged in whorls of five or six. These are divided into many feathery leaflets. Flowers are small and inconspicuous.</p> <p><b>Risk areas:</b> Ponds, dams, ditches, drains, streams.</p>	
	 <p><b>Elodea</b> <i>Elodea canadensis</i></p> <p>Wholly submerged, dark green, aquatic perennial. One of the oxygen weeds, often forming tall dense masses in freshwater to 10 m deep.</p> <p><b>Risk area:</b> Ponds, lakes, drains and slow mowing streams.</p>	

IMAGES:  
 © Helton, Texas Parks & Wildlife Dept. - **Salvinia** (*Salvinia molesta*)  
 © Randy Wells (NIWA) - **Egeria** (*Egeria densa*), **Hornwort** (*Ceratophyllum demersum*), **Lagarosiphon** (*Lagarosiphon major*)  
 © Trevor James - **Elodea canadensis** (*Elodea canadensis*), **Mexican waterlily** (*Nymphaea mexicana*)