Aquatic pests in ornamental ponds

Aquatic pests pose a major threat to the quality of the Bay of Plenty region's wetlands, lakes and waterways. If you have an ornamental pond, or are thinking about getting one, then it is important you're aware of how you can help to stop the spread and establishment of aquatic pests. There may be unwanted pests in your pond and if these escape or are released into natural waterways they could have devastating effects. If you're planning to construct a pond, you can help by learning which species to use and which to avoid.

Aquatic weeds cause serious problems by impeding drainage, encouraging stagnation and silting, damaging indigenous freshwater ecosystems, and restricting recreational activities, such as swimming and boating. Pest fish can prey on and out-compete our native plants and animals, and they decrease water quality by stirring up bottom sediment. 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.

Major aquatic pests

Aquatic pests, introduced to New Zealand for the aquarium and ornamental pond trade, are invading our waterways. Learn how to identify these and what you can do if you find you have them.

Plant pests

The following plants are containment pests or restricted pests – they are already established in some parts of the Bay of Plenty region, but we want to minimise their effects and prevent further spread.

Lagarosiphon
Lagarosiphon major

This rooted submerged aquatic grows rapidly to form dense beds of vegetation. It can smother, exclude and replace native vegetation, reduce the availability of oxygen to fish, and impede fish access to spawning areas. It spreads easily by stem fragmentation.

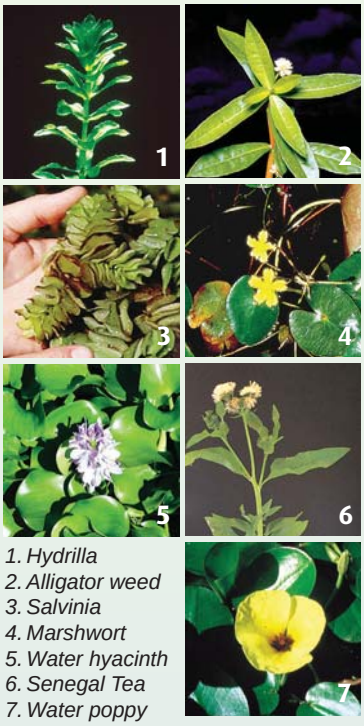
Identification: Stems grow up to 5 m long. Leaves are arranged in a spiral up the stems, are strongly curved and are about 16 mm long and 2 mm wide. Flowers are small and inconspicuous.

Egeria
Egeria densa

This oxygen weed can form a monoculture of dense vegetation mats, which can block lakes and waterways, causing flooding and affecting recreational users. It displaces native aquatic plants and animals, and spreads easily by stem fragmentation.

Identification: Roots are branched and threadlike. Stems are much-branched and flexible. Leaves are dark green, lance shaped, 15-40 mm long and 2-5 mm wide, and arranged in whorls of four and five. Flowers may appear on or above the water surface in mid-summer and autumn and have three white petals and yellow anthers.

Other plant pests to watch out for:



1. Hydrilla
2. Alligator weed
3. Salvinia
4. Marshwort
5. Water hyacinth
6. Senegal Tea
7. Water poppy

These plants are Agency pests (pests of National significance) and/or pests we want to eradicate or exclude from our region – if you see them please contact the Bay of Plenty Regional Council on 0800 884 880.

1. Mexican water lily
2. Parrots feather
3. Yellow flag Iris

These plants are Containment and Restricted pests - we want to minimise their effects and prevent their further spread. If you see them please dispose of them. If you require advice on how to do this please contact the Bay of Plenty Regional Council on 0800 884 880

Hornwort
Ceratophyllum demersum

Hornwort is currently considered New Zealand's worst submerged weed. It spreads rapidly, grows in a wide range of water bodies, to deeper depths than other weeds, and outcompetes and smothers all other aquatic plants. It can be a serious aesthetic nuisance and a recreational hazard.

Identification: Can form a dense subsurface canopy. Stems are dark green with narrow, bright green leaves that are finely divided and have minute teeth (which make the plant feel rough to touch). It lacks roots but has modified leaves that anchor the plant to bottom sediments, up to 16 m deep.

Elodea
Elodea Canadensis

Also known as American or Canadian pond weed this oxygen weed can form dense mono-specific stands up to 10 m tall. It is a wholly submerged, dark green oxygen weed.

Identification: Leaves are green, arranged around the stem in whorls of 3 (rarely 4 or 5) with a distinct gap between the whorls. Leaf shape is variable but usually elongated, egg shaped, pointed at the ends and can appear finely serrated. Flowers are small and inconspicuous on thin white stalks.

Fish pests

Koi carp
Cyprinus carpio

Koi carp are an ornamental race of the common carp, which were most likely brought into New Zealand in a delivery of goldfish in the 1960s.

They have significant negative impacts on aquatic habitats by:

- destroying native plants and fish habitat
- eating insects, eggs, and juvenile fish of native species
- reducing water quality by stirring up sediments and can increase the risk of toxic algal blooms

People who possess or rear this species are liable to a fine of $5,000. Releasing, spreading, selling or breeding them can lead to fines of up to $100,000 or five years imprisonment.

Identification:

Colour: Highly variable, often with irregular blotching of black, red, gold, orange or pearly white.

Size: Commonly grow to over 5 kgs and over 60 cm long.

Distinguishing features: Resemble large goldfish except have two pairs of whisker-like feelers (barbels) at the corners of their mouth.

Habitat: Occasionally found in fishponds on private property. Prefer warm enclosed waters or slow flowing rivers and canals. Tolerant of low oxygen levels, high turbidity and poor water quality and can also create this type of aquatic environment.

Brown bullhead catfish
Ameiurus nebulosus

Brown Bullhead catfish, or catfish as they are commonly known, were introduced into New Zealand in 1877. They are now established in several regions of the North Island. Only one confirmed South Island location exists. They can build up to large numbers and their range is steadily increasing. Catfish stir up sediment and prey on and outcompete invertebrates, small native fish, fish eggs and Koura (native freshwater crayfish).

Identification:

Colour: Dark brown to olive green, with paler sides and belly.

Size: Can grow to 50 cm long, although more commonly observed around 10-35 cm.

Distinguishing features: Eight distinctive barbels (feelers) around their mouth. Relatively small eyes and smooth skin. Leading edges of dorsal and pectoral fins have a sharp toxic spine.

Habitat: Prefer warm enclosed waters or slow flowing rivers and canals. Tolerant of low oxygen levels, high turbidity and poor water quality. Extremely robust and can survive for long periods out of water.

Rudd
Scardinius erythrophthamlus

Rudd were illegally imported into New Zealand in 1967, presumably to start a recreational fishery. Often referred to as the 'possum of the waterways', Rudd feed voraciously on aquatic plants and zooplankton (tiny aquatic animals). They compete with native species for food, damage native fish habitat and have the potential to negatively impact water quality by stirring up bottom sediments. They are very productive and females can produce up to 50,000 eggs per kilo of body weight.

It is an offence to be in possession of this species and those caught doing so are liable to a fine of $5,000. Releasing, spreading, selling or breeding them can lead to fines of up to $100,000 or five years imprisonment.

Identification:

Colour: Olive backed, sliver green sides, silvery white belly and bright orange fins.

Size: Stocky, deep-bodied. Grow to about 25 cm and weigh about 500 g.

Distinguishing features: Similar appearance to goldfish, but dorsal fins are missing stout spines on the front edge. Similar to perch, but have darker backs than bellies and fins are usually a bright red-orange.

Habitat: Prefer ponds, lakes and slow flowing streams.

Tench
Tinca tinca

Tench were introduced into New Zealand in 1867. High densities of Tench can reduce lake water clarity by disturbing sediments, and increasing nutrient recycling, especially in shallow lakes. This can lead to a reduction in habitat for native species and poor water quality.

Tench are considered a serious threat to indigenous biodiversity and it is an offence to be in possession of them. Those caught doing so are liable to a fine of $5,000. Releasing, spreading, selling or breeding them can lead to fines of up to $100,000 or five years imprisonment.

Identification:

Colour: Varies from olive green to almost grey.

Size: Can weigh up to seven kgs, but usually around 1.5 kg. Approximately 35 cm in length.

Distinguishing features: Their most distinctive feature is their bright orange eyes. They have fleshy, down turned mouths with a small barbell (feeler) on each side.

Habitat: Prefer still or gently flowing waters.

Other fish pests to watch out for:

Perch

Perch are an exclusion pest fish – they are not currently found in the Bay of Plenty region and we want to keep it that way. If you see one please contact the Bay of Plenty Regional Council on 0800 884 880 immediately.

Gambusia

Gambusia are a restricted pest - we want to minimise their effects and prevent their further spread.

What can you do

Do not release plants and fish into waterways!

- Plant material and gravel etc should be disposed of with the household refuse or composted and water tipped onto the garden, well away from any water body.
- It is illegal to release any aquatic life into a water body where it doesn't already exist. People caught releasing any species, without the appropriate permit, are liable to a fine of $5000 under the Conservation Act 1987.
- Do not release, spread, sell or breed Koi Carp, Catfish, Rudd or Gambusia. This is illegal under Section 52 and 53 of the Biosecurity Act 1993 and can result in fines of $100,000 or five years imprisonment.
- Identify what plant and fish species you have. If you suspect you may have unwanted aquatic pests in your pond contact a Bay of Plenty Regional Council biosecurity officer on 0800 884 880.
- Check out http://www.boprc.govt.nz/environment/pests/ for further information on pests in our Region and to read the Regional Pest Management Plan for the Bay of Plenty 2011-2016.

If you are putting in a pond

- Use locally sourced native species. Source fish and plants from reputable outlets rather than from the wild or from friends.
- Avoid non-native plants unless you are sure they are not weeds which can spread and cause water quality problems.
- You can find information about which species to plant at http://www.niwa.co.nz/sites/default/files/import/attachments/aquarium_low_risk.pdf
- Dispose of aquarium contents appropriately - never dump aquarium plants into your pond – many are invasive and will quickly take over. Compost waterweed and return fish to pet shops for re-homing.
- Plant a buffer of native vegetation of at least 3 metres around all or most of the pond margin.
- Choose a location that is not prone to flooding or overflowing into nearby lakes, streams, or other waterways.

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Salvinia *(Salvinia molesta)*

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Lagarosiphon *(Lagarosiphon major)* © Rohan Wells

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Elodea canadensis *(Elodea canadensis)*
Mexican waterlily *(Nymphaea mexicana)*

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