

New Zealand Pest Fish Species: Koi Carp and Gambusia – Fact Sheet

Linking lake restoration with end users for positive environmental outcomes



Pest Fish in New Zealand

New Zealand has a total of about 36 native freshwater fish species, and a further 22 (39% of all freshwater fish) have been introduced from overseas. Like all introduced species, they have some impact on New Zealand's native ecosystems, but some cause more problems than others.

Two of the most concerning species are koi carp (Figure 1) and gambusia (Figure 2). Koi carp originate from Asia and are an ornamental variant of the common or European carp. Unlike common carp, they are typically brightly orange coloured, often with irregular dark patches. While these fish resemble goldfish when small, they can grow to 70 cm in length and weigh up to 14 kg.

Gambusia (formerly known as mosquito fish) originate from the southern United States and superficially resemble the guppy. They are small (4-6 cm), give birth to live young and can breed several times a year. They are able to survive in a wide range of conditions and quickly reproduce to plague proportions.



Figure 1. Koi carp (*Cyprinus carpio*)



Figure 2. Gambusia (*Gambusia affinis*)



Figure 3. Spawning aggregation of koi carp on flooded Waikato farmland.

Ecological Impacts

Koi carp are the third most widely introduced species in the world. Their method of feeding stirs up sediment reducing water clarity, uproots aquatic plants, reduces native biodiversity and releases nutrients which can lead to algal blooms (Figure 3).

Gambusia are the most widely introduced fish species in the world. They become highly aggressive to other fish species when in large numbers. They also out-compete native fish species for food such as zooplankton and larger invertebrates.

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Distribution

Koi carp are now common throughout the lower Waikato and Waipa catchments (Figure 4), and have been deliberately and illegally spread into many ponds throughout the North Island. They prefer shallow ponds and can often be seen basking in the shallows during warmer months.

Gambusia are common throughout the North Island, especially in the Waikato and Auckland regions and can often be seen in shallow edge habitat away from fast flowing water.



Figure 4. Koi carp are common in the Auckland and Waikato regions.

Legal Definition of Koi Carp and Gambusia

To prevent the spread of koi carp and gambusia and help protect New Zealand's aquatic habitats, legal possession of these fish has been restricted.

Koi carp are classified as being:

- a 'noxious fish' under the Freshwater Fisheries Regulations (1983).
- an 'unwanted organism' under the Biosecurity Act (1993).

Gambusia have been declared:

- an 'unwanted organism' under the Biosecurity Act (1993).

Recreational fishing for these species is not restricted, however, it is illegal to return any captured 'unwanted organism' to the environment or to keep any live specimens. It is also illegal to release, spread, sell or breed 'unwanted organisms'. Koi carp and gambusia are also listed in several regional council pest management strategies.

You Can Help

Stop the spread of aquatic pests:

- Never transfer plants or fish from one waterway to another.
- Never release unwanted aquarium fish (including goldfish), other exotic organisms such as plants or invertebrates to waterways.
- Wash your boat and fishing gear carefully after you have taken it out of the water to remove any weed, juvenile fish or fish eggs.
- Always Check, Clean, Dry equipment and clothing between waterways.