

Exotic Fish

in New Zealand



New Zealand has around 21 introduced freshwater fish species with established wild populations. Some, such as trout, were deliberately released to support recreational fisheries, while others were introduced for ornamental purposes or have spread accidentally. Many of these species are now widespread and can have significant impacts on native fish, water quality, and instream habitat. Below are some of the most commonly encountered introduced species in farm and lowland waterways.

Koi/amur carp

Cyprinus rubrofuscus

Koi/amur carp were originally introduced to New Zealand as ornamental fish for ponds before establishing wild populations throughout the North Island. They are a colourful variety of the common carp, with large scales and patches of orange, black, and white, and can grow to over 70 cm. Koi/amur carp are most often found in slow-flowing lowland rivers, drains, lakes, and wetlands, where they are highly tolerant of poor water quality. They feed by sucking up sediment from the streambed and spitting it back out, which stirs up sediment, increases turbidity, and reduces water clarity. Over time, this contributes to habitat loss for native plants, fish, and invertebrates. They are classified as a noxious species and are a major driver of habitat decline in many lowland systems, particularly in the Waikato.



Goldfish

Carassius auratus

Goldfish were first brought to New Zealand in the 1860s and are now widespread across both islands, with higher populations in the North Island. Unlike the brightly coloured varieties found in aquariums, wild goldfish lack the vivid colours and feathery fins. They are typically olive-bronze to gold, with a deep-bodied shape similar to koi/amur carp but smaller, and they lack barbels around the mouth. Goldfish are most common in lakes, ponds, and slow-flowing lowland waterways. Like koi, they disturb sediments while feeding, which reduces water clarity and degrades habitat. They are often found alongside other introduced species in modified lowland systems.

Exotic Fish

in New Zealand

Perch

Perca fluviatilis

Perch were brought to New Zealand from Australia in 1868 to establish sports fisheries, having originally come from their native range in Europe. They have since continued to be illegally released into many lakes and ponds. Perch are easy to recognise, with dark vertical stripes along the sides of their body, sharp spines on the first dorsal fin, and bright orange edges on the lower fins. They are most commonly found in lakes, reservoirs, and wetlands, as well as slow-flowing rivers, often in areas with cover such as submerged vegetation or woody debris. Perch are aggressive predators that feed on native fish, juvenile eels, and invertebrates, and they can have significant impacts on small-bodied native species, especially in lake environments. High densities of perch can also contribute to algal blooms by overgrazing zooplankton.



Rudd

Scardinius erythrophthalmus

Rudd were illegally imported to New Zealand in the 1960s and have since been widely released and established in many waterways. Young rudd are silver-bodied, while adults develop an orange-red colour, often with a darker back. Rudd are typically found in lakes, ponds, and slow-flowing lowland streams with plenty of aquatic plants. They graze heavily on native aquatic vegetation, which reduces habitat quality for native fish and invertebrates, and they can also contribute to declines in water clarity. Rudd are classified as a noxious species outside the Auckland/Waikato sports fishery area.

Exotic Fish

in New Zealand

Gambusia

Gambusia affinis

Gambusia were first released into the Auckland Botanical Gardens in 1930 and are now widely distributed across the North Island. They were originally introduced to control mosquito larvae in ponds, which is why they are commonly known as mosquitofish. Their ability to eat large numbers of larvae has made them one of the most widespread fish in the world today. Gambusia are small, grey-brown fish that rarely exceed 5 cm in length, with females noticeably larger than males. They typically live for about one year but can spawn multiple times and give birth to live young, allowing populations to grow rapidly. In New Zealand, gambusia live in the shallow margins of slow-flowing waterways such as ponds, wetlands, and streams. Despite their small size, gambusia are aggressive and are known to nip the fins of native fish, harass spawning tīnanga, and outcompete native species for food. They are classified as an unwanted organism under the Biosecurity Act.



Brown bullhead catfish

Ameiurus nebulosus

Brown bullhead catfish were first introduced to New Zealand in 1877 and are now widespread throughout the North Island, with scattered populations in the South Island. They are dark brown or olive, with a flattened head, broad mouth, and distinctive whisker-like barbels. Catfish are nocturnal bottom-dwellers found in lakes, slow-flowing rivers, and drains, often in muddy or weedy areas. They feed on a wide range of invertebrates, native fish, and kōura (freshwater crayfish), and can reach high densities in degraded systems. Their spread, particularly into new catchments such as the Rotorua lakes in 2016, is a growing concern for native fish and mahinga kai values.

Exotic Fish

in New Zealand



Brown trout

Salmo trutta

Brown trout are a sports fish first introduced to New Zealand in the 1860s from British stock via Tasmania. They have since become the most widespread and common introduced fish in the country and are found in most New Zealand waters, except for the upper North Island where warmer waters limit successful spawning. Brown trout live in rivers, lakes, and some coastal areas where sea-run fish occur. Their appearance varies with life history. Sea-run and lake fish are typically silvery with faint spots, while river fish are usually darker with more prominent spots. Unlike rainbow trout, the adipose fin of the brown trout has reddish-orange edges. Brown trout are highly effective predators on native fish and invertebrates, and are a leading cause of the decline and local loss of non-migratory galaxiids in many South Island streams. Brown trout are managed as a sports fish under the Conservation Act by Fish & Game New Zealand.



Rainbow trout

Oncorhynchus mykiss

Rainbow trout are a sports fish first introduced to New Zealand in the 1880s from North America. They were initially harder to establish than brown trout, but now form self-sustaining populations and support some of the country's most popular trout fisheries, particularly in the central North Island and along the eastern side of the Southern Alps. Their appearance varies with life history. Sea-run and lake fish are silvery with small black spots concentrated on the back, while river fish are usually darker with a distinctive pink band running along the side, which becomes more prominent during spawning. Unlike brown trout, rainbow trout have dark spots on their tail fin, which is a useful feature for telling the two species apart. Rainbow trout are active predators that feed on aquatic insects, small fish, and kōura, and can have significant impacts on native galaxiids, particularly non-migratory species in South Island streams. Like brown trout, they are managed under the Conservation Act by Fish & Game New Zealand.

Photo credits: Cindy Baker, Tracey Edwards, Peter Williams, Fern Kumeroa, Stuart Moore