

New Zealand shortfin eel

Anguilla australis

OTHER NAMES:

Tuna

THREAT RANKING

Not threatened

Sharing Pastoral Streams with Native Fish

New Zealand's long isolation has created a unique freshwater fish fauna with many species found nowhere else on earth. Our freshwater fish are taonga (treasures), and species such as tuna (eels) play an important role as mahinga kai, holding significant cultural, ecological and environmental value. In our streams, native fish rely on healthy, connected habitats that extend from shaded headwaters through to lowland waterways. This is important not only for species that live within pastoral environments, but also for those that need a clear pathway between freshwater and the sea to complete their life cycles. Farm waterways are a key part of this network, providing habitat for spawning, feeding and growth, as well as the connections between these areas. Understanding which fish live in your waterways is a rewarding first step toward sharing these spaces and supporting healthy, thriving fish communities.

Shortfin eels can survive for months without feeding. They do this by 'hibernating' and becoming inactive when waters fall below 10°C.

The New Zealand shortfin eel is one of three eel species found in New Zealand (alongside the native longfin eel and the self-introduced Australian longfin eel). The shortfin eel is smaller than both the New Zealand and Australian longfin eels, growing to around 1.1 m in length and 3 kg. Eels are easy to recognise, but there are several ways to tell the species apart.

In shortfin eels, the dorsal fin (back) and anal fin (underside) are nearly

aligned vertically, which helps distinguish them from longfin eels (Figure 1). In longfin eels, the dorsal fin starts well forward of the anal fin.

Another distinguishing feature is that the skin of shortfin eels does not wrinkle when they bend, which is a characteristic of longfin eels (Figure 2). These differences can be hard to spot when eels are in the water, especially as both species often live in the same habitats.



Figure 1: Comparison of fin location on the New Zealand longfin eel (top) and New Zealand shortfin eel (bottom), noting the larger difference in starting positions of the dorsal fin of the longfin eel.



Figure 2: Shortfin eel in a fyke net.



Figure 3: Migrant stage shortfin eel.

Lifecycle of the shortfin eel

Shortfin eels are catadromous, meaning they live most of their lives in freshwater but migrate to the ocean to spawn (Figure 4). Like other New Zealand eel species, they begin life in the subtropical Pacific Ocean, although their exact spawning location is still unknown.

Their larvae (called leptocephali) drift on ocean currents back to New Zealand. They then transform into transparent "glass eels," named for their see-through bodies. After entering freshwater, they develop into darker juvenile eels (elvers), which move into suitable habitats to feed and grow.

This growth phase can last for several decades before the eels mature and begin their migration back to the ocean to spawn. Before migrating, eels stop feeding and undergo physical changes to prepare for the sea: their head becomes more streamlined, their belly turns silvery, their eyes enlarge, and their pectoral fins become larger and darker (Figure 3).



Figure 4: Lifecycle of the New Zealand shortfin eel.

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Where do shortfin eels live?

Shortfin eels are native to New Zealand and are widespread throughout the country, occurring in rivers, lakes, and wetlands across both the North and South Islands, as well as Stewart Island and the Chatham Islands (Figure 5). Unlike the endemic longfin eel, shortfin eels also occur widely across the South Pacific.

Although shortfin eels are widespread, they do not penetrate as far inland or reach the same elevations as longfin eels. Juvenile shortfin eels (elvers) are strong climbers and can move upstream in most freshwater systems, including past steep waterfalls and other instream obstacles. However, as a species, they are more commonly associated with lowland and coastal habitats.

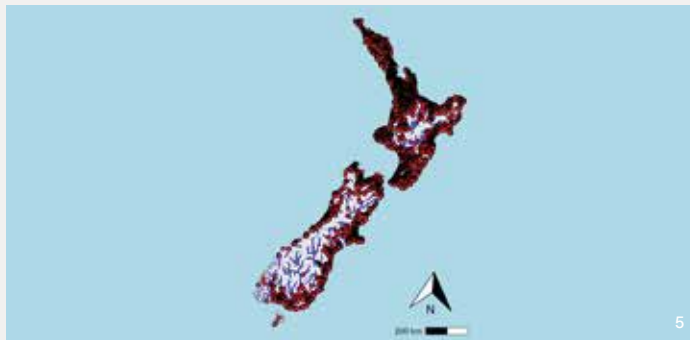


Figure 5: National distribution of the New Zealand shortfin eel. Data represent capture records held in the New Zealand Freshwater Fish Database (NZFFDB) April 2026.

What shortfin eels need in streams

Shortfin eels use a wide range of freshwater habitats across New Zealand, particularly in lowland areas. They are commonly found in rivers, lakes, wetlands, estuaries, and slow-flowing waterways. Shortfin eels are often the most abundant fish species in pastoral waterways due to their tolerance of habitat modification and reduced water quality.

They prefer habitats that provide plenty of cover, such as undercut banks, overhanging vegetation, tree roots, logs, debris dams, rocks, and boulders. Streams with a mix of these features offer better shelter, feeding opportunities, and overall habitat quality. Adult shortfin eels generally favour slower-moving water but are often found alongside longfin eels.

Shortfin eels are mostly active at night and hide during the day, so instream cover is essential for refuge, and for smaller individuals, protection from predators.

Shortfin eels are opportunistic feeders. Smaller eels feed mainly on aquatic insects and small fish, while larger eels consume a wider range of prey, including fish and large invertebrates such as kōura (freshwater crayfish). Flood events can also provide important feeding opportunities by washing terrestrial invertebrates into streams. Their diet is broadly similar to that of longfin eels.



Photo credits: Cindy Baker, Peter Williams, Dairy NZ

» Actions you can take to make your local stream a better place for eels

- Fence streams to exclude stock and reduce bank erosion and damage to streambeds.
- Plant and maintain native riparian vegetation to provide shade and keep stream temperatures cool. Riparian planting also stabilises banks, adds habitat complexity (such as roots and woody debris), and supplies organic matter. Shading can also reduce nuisance weed growth and the need for mechanical channel maintenance, which can disturb benthic habitats used by eels and other species.
- Retain logs, boulders and undercut banks as these provide important refuges for eels.
- Improve fish passage at instream structures such as culverts, weirs and floodgates. Ensure structures are correctly sized and installed so they do not create drops, barriers, excessive water velocities or scouring that restrict eel movements.

Refer to regional DairyNZ guidance & NZ Fish Passage Guidelines for more information