Torrentfish

Cheimarrichthys fosteri

OTHER NAMES
Panoko

THREAT RANKING
At Risk: Naturally Uncommon

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 some species 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.

Torrentfish are so distinct, they are the only freshwater member of their family.

Torrentfish are a distinctive native fish found in New Zealand, well adapted to life in fast-flowing rivers and streams. They are named for their preference for swift rapids in stony habitats.

Adult torrentfish are easy to recognise, with bold stripes along the sides of their body. They have several specialised features that allow them to live in fast water, including a flattened head, large pectoral (side) fins for holding position in fast water, raised eyes, and a downward-facing mouth adapted for feeding on insects along the riverbed (Figure 1).

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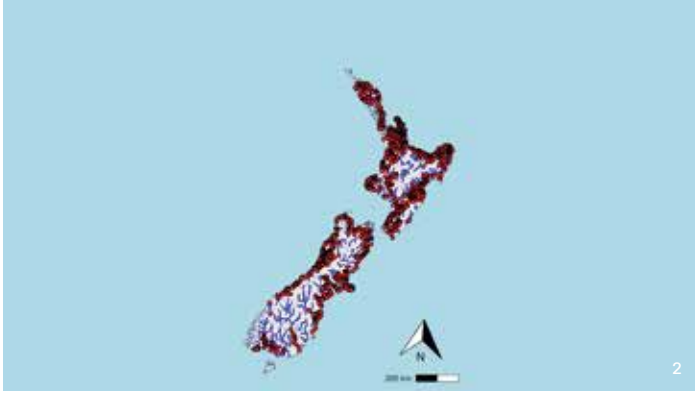
Figure 1: Torrentfish showing key features for life in fast-flowing water, including a flattened head, raised eyes, and large pectoral fins.

Where do torrentfish live?

Torrentfish are endemic to New Zealand and are widespread throughout the country, occurring in rivers and streams across both the North and South Islands, but are absent from Fiordland as well as Stewart Island and the Chatham Islands (Figure 2).

Figure 2: National distribution of the torrentfish. Data represent records held in the New Zealand Freshwater Fish Database (NZFFDB) April 2026.



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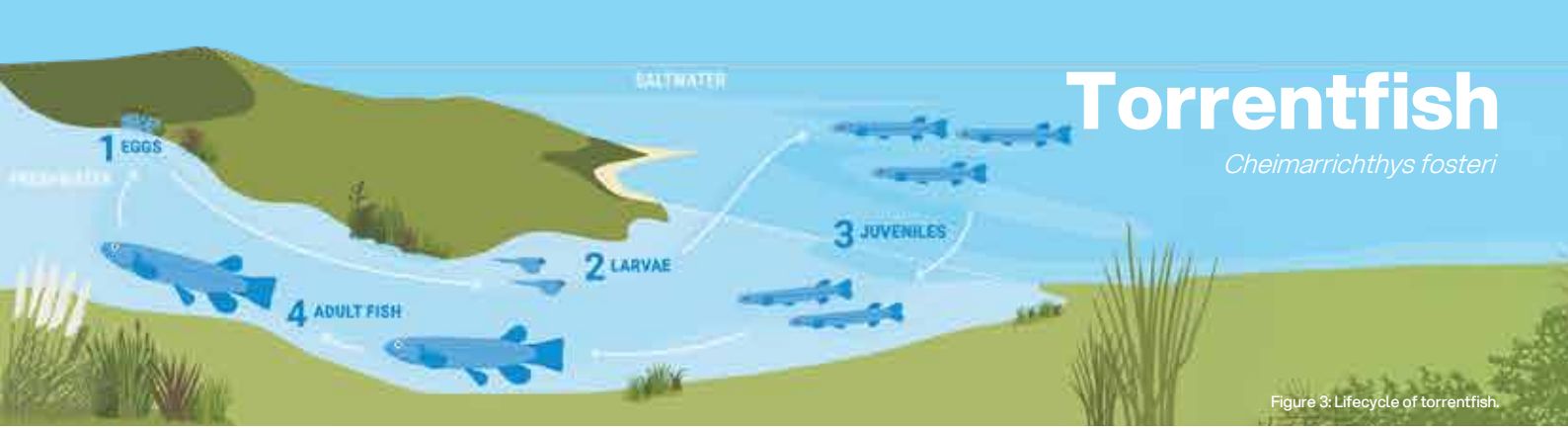

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Figure 3: Lifecycle of torrentfish.

Lifecycle of the torrentfish

Torrentfish are amphidromous, meaning their larvae are washed out to sea soon after hatching and return to freshwater a few months later as juveniles (Figure 3). As obligatory migrants, movement between freshwater and the sea is essential for completing their lifecycle. Juveniles return at around 2 cm in length and may spend several weeks in estuaries before moving further upstream, making clear fish passage critical for this species.

Once back in freshwater, torrentfish move upstream into suitable habitats, typically occupying lower and mid reaches rather than headwaters. Larger individuals are generally found further inland, with females growing larger and occurring upstream, while males tend to remain smaller and closer to the coast.

Spawning behaviour is not well understood, but it is thought to occur in freshwater. Females may move downstream to spawn with males, indicating movement of adult fish within catchments before and after reproduction.

What torrentfish need in streams

Torrentfish are habitat specialists that prefer fast flowing areas of rivers and streams, typically where coarse gravel or cobble substrates are present. However, they can also occur over sandy substrates where water velocities are high, such as in parts of the Waikato River.

Torrentfish habitats are usually open and lack instream cover. They rely on their streamlined bodies and large pectoral fins to hold position on the streambed and avoid being swept away by strong currents. Because of their preference for fast water, torrentfish are not commonly found in lowland pastoral streams.

They utilise stable substrates such as gravel and cobbles for refuge, feeding, and likely spawning. Clean, well oxygenated water is important for maintaining these habitats and supporting the conditions needed for their survival.

Torrentfish are mostly active at night and remain hidden during the day. Their raised eyes and downward facing mouth are adaptations for feeding in fast flowing habitats. They feed mainly on aquatic insects living on the riverbed but will also feed on drifting invertebrates.

Photo credit: Cindy Baker, Stuart Moore, DairyNZ

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

- 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.
- Retain logs, boulders and undercut banks as these provide important habitat for aquatic insects and refuge for fish species.
- 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 juvenile and adult torrentfish movements.

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

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