

Īnanga

Galaxias maculatus

OTHER COMMON NAMES

Whitebait

THREAT RANKING

Threatened: Nationally Vulnerable

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 that constitute our whitebait 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 connectivity 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.

Īnanga are the main species making up New Zealand's whitebait runs

Īnanga are one of five migratory galaxiid species found in New Zealand, alongside banded kōkopu, giant kōkopu, shortjaw kōkopu, and kōaro. Together (and with common smelt in some regions), their juveniles make up the whitebait catch.

Īnanga are the smallest of the migratory galaxiids, typically growing to 80–100 mm and rarely exceeding 150 mm in length. As adults they are

long and slender, with a silver belly and speckled olive-coloured backs. They are often confused with the common smelt, as they look and behave similarly. However, Īnanga lack scales, and do not have an adipose fin close to their tail (Figure 1). As such, the dorsal (back) fin of smelt is noticeably further forward of the anal (underside) fin compared to Īnanga (Figure 1).



Figure 1: Comparison between Īnanga (left) and common smelt (right).



Figure 2: Juvenile Īnanga (whitebait).

Where do Īnanga live?

Īnanga are native to New Zealand and are widespread throughout the country, occurring in rivers, streams, and lakes across both the North and South Islands, as well as Stewart Island and the Chatham Islands (Figure 3). They are also found in Australia, Chile, Argentina, and the Falkland Islands.

Īnanga are a lowland coastal species, most commonly found in the lower reaches of rivers, wetlands, estuaries, and adjacent waterways, particularly in pastoral catchments. Īnanga have no climbing ability so their distribution is restricted by waterfalls and steep, high-gradient streams. As a result, access to suitable habitat can be easily blocked by instream structures such as dams or perched culverts that sit above the water surface.

Figure 3: National distribution of Īnanga. Data represent records held in the New Zealand Freshwater Fish Database (NZFFDB) April 2026.

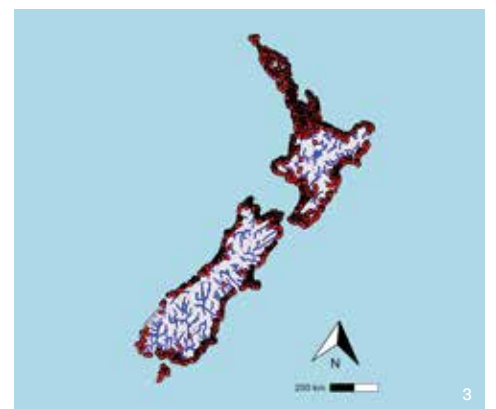




Figure 4: Lifecycle of īnanga.

Lifecycle of īnanga

īnanga are amphidromous in a broad sense but differ from other migratory galaxiids in how they spawn. Adults migrate to the lower reaches of rivers, where spawning occurs during the highest spring tides, just after a full or new moon. Adults move into flooded stream margins, generally at the saltwater wedge where freshwater meets the tide, and lay their eggs in streamside vegetation. The eggs develop out of the water and hatching is triggered by the next series of spring tides.

After hatching, larvae are carried out to sea before returning a few months later as juveniles, known as “whitebait” (Figure 4). Juveniles initially occupy estuaries and lower river reaches before moving upstream into suitable adult habitat.

īnanga are short-lived and effectively annual, with most individuals dying after spawning in their first year.

What īnanga need in streams

īnanga are considered habitat generalists, occurring in a wide range of environments including pastoral streams, forested waterways, and both fast- and slow-flowing habitats across a broad temperature range. However, they show a strong preference for low-velocity habitats such as stream margins, backwaters, and pools adjacent to runs, where flow is gentle and food is readily available.

They rely on edge habitats that provide cover, such as overhanging riparian vegetation, tree roots, woody debris, and other complex structures along stream margins. These habitats offer shelter from predators and provide habitat for aquatic invertebrates, increasing food availability.

īnanga are mostly active during the day and are often seen feeding in shoals. This daytime behaviour contrasts with other migratory galaxiids, which tend to be more solitary and active at night.

īnanga feed mainly on tiny aquatic and terrestrial invertebrates, which they capture by drift feeding in slow-moving water. Overhanging vegetation is particularly important, as it supplies a steady source of insects falling into the stream.

Unlike many native fish, īnanga tolerate moderately elevated suspended sediment levels and are often abundant in lowland pastoral waterways. However, maintaining complex instream habitat and riparian cover helps improve feeding opportunities and resilience in modified environments.



Photo credit: Stephen Moore, Ashley Webby, Rachel Crawford, DairyNZ

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

- Fence streams to exclude stock and reduce bank erosion and damage to streambeds. Stock can also damage spawning vegetation used by īnanga.
- 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 refuges for īnanga.
- 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 īnanga movements.

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