

Redfin bully

Gobiomorphus huttoni

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.

Male redfin bullies are the most colourful freshwater fish in New Zealand, with bright red markings on their fins, body and cheeks.

Redfin bullies are one of New Zealand's migratory bully species. Adults typically grow between 20 and 100 mm in length, although some individuals can reach up to 120 mm.

Male redfin bullies are easy to recognise by their bright red fins, for which they are named. Females lack this distinct colouration and are

brown rather than red (Figure 1).

Up close, both males and females can be distinguished from other bully species by the diagonal stripes on their cheeks (Figure 2). These cheek stripes are present even in juvenile fish.



Figure 1: Male redfin bully (left) showing distinctive red fins, while females (right) remain brown.



Figure 2: Redfin bully showing distinctive diagonal stripes on the cheeks, present in both males and females.

Where do redfin bullies live?

Redfin bullies are endemic to New Zealand and are widespread throughout the country, occurring in rivers and streams across both the North and South Islands, as well as Stewart Island and the Chatham Islands (Figure 3).

They are the strongest climbers of the bully species. As juveniles, they can move inland and climb obstacles if a wetted margin is present, with populations recorded above waterfalls up to 5 m high. However, barriers such as tidegates, dams, or perched or undercut culverts where water is not connected to the streambed can still prevent their movement.

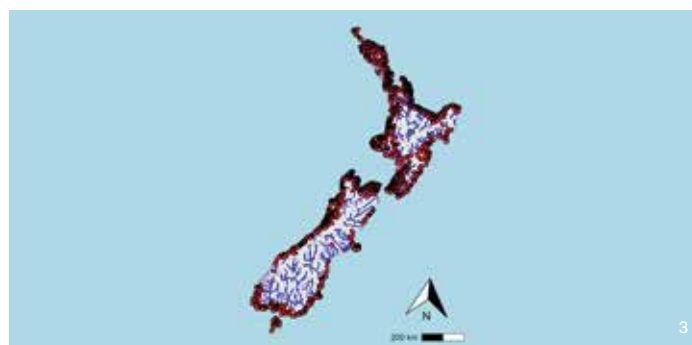


Figure 3: National distribution of the redfin bully. Data represent records held in the New Zealand Freshwater Fish Database (NZFFDB) April 2026.

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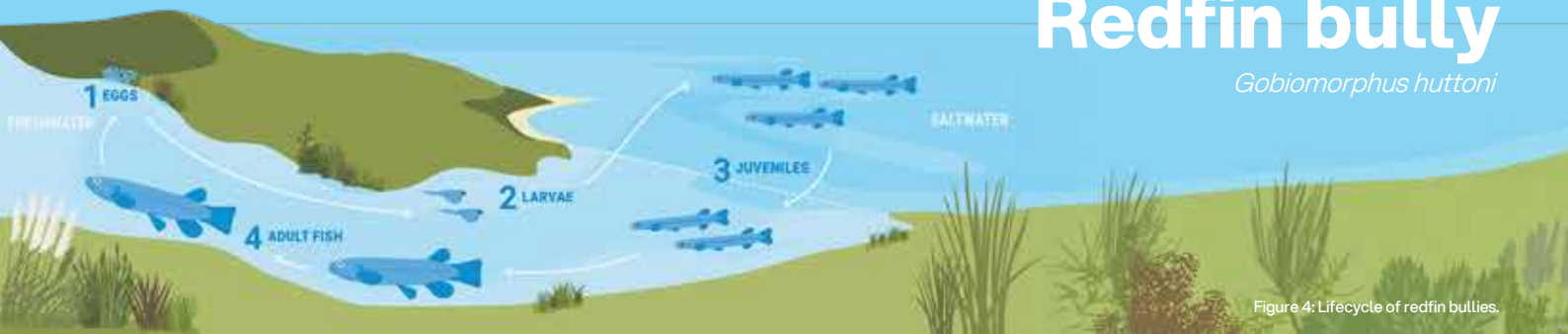


Figure 4: Lifecycle of redfin bullies.

Lifecycle of the redfin bully

Redfin bullies are amphidromous, meaning their larvae are washed out to sea soon after hatching and spend several months growing in the marine environment before returning to freshwater as juveniles (Figure 4). As obligatory migrants, movement between freshwater and the sea is essential for completing their lifecycle.

They are most commonly found in rivers close to the coast, where

access between freshwater and the sea supports this lifecycle.

Once back in freshwater, juveniles migrate upstream into suitable habitats, where they grow to adulthood. Like other bully species, males establish and defend a nesting site under a rock, where females lay their eggs. The male then guards the eggs until they hatch, after which larvae are carried out to sea to begin the cycle again.

What redfin bullies need in streams

Redfin bullies are habitat specialists, preferring streams with moderate flow and riffle habitats with coarse substrates such as gravel and cobbles. They are particularly associated with native forest catchments but can also be found in pastoral streams where riparian shade and instream habitat are intact.

They rely on natural streambed features such as stones, cobbles and boulders, using the spaces between them for shelter and breeding (Figure 5). Clean water and intact substrates are important for

maintaining these interstitial spaces. Fine sediment can fill the spaces between these substrates, reducing shelter and breeding habitat, while habitat disturbance or substrate removal can reduce the availability of suitable habitat.

Redfin bullies feed mainly on aquatic invertebrates such as mayflies and caddisflies, as well as small crustaceans. Many of these prey species are sensitive to pollution and changes in water quality, so maintaining healthy waterways is important for ensuring a reliable food supply.



Figure 5: Male redfin bully resting among cobbles.
Photo credit: Brian Smith, Michele Melchior, Rochelle Petrie

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

- 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 redfin bully movements.

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