

Another native fish found in the region is the brown mudfish. It can survive out of water during droughts. Mudfish live in swamps, drains and forest pools that may dry up in summer. These fish were first discovered curled up in the mud when people dug up wet areas for drainage and cultivation. When the water disappears, they can be found underneath logs and other debris, or they burrow into holes where tree roots have rotted. They can breathe through their skins and survive in damp places (without any surface water) for weeks, even months. You can find brown mudfish in the Mangarakau wetlands on the West Coast.



Bluegill bully live in the swift, fast-flowing parts of rivers.

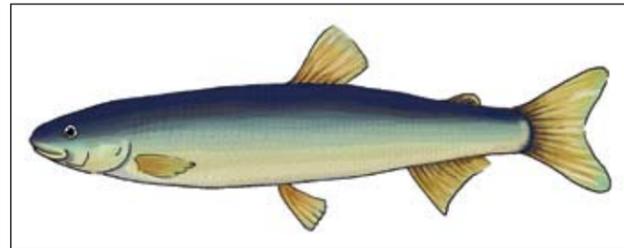
No more extinctions, please!

The grayling is a native fish species reported as “very scarce” in the Maitai River in 1878 by J Rutland. The grayling was last recorded on the West Coast of the South Island in the 1920s. It became extinct nation-wide, probably in the 1930s, for reasons we don’t understand. It was larger than most of our other native fish, growing to about 40 centimetres long but we know very little else about its life story.

Our other native freshwater fish have survived – so far. They face many pressures from activities like deforestation (the removal of native bush), wetland drainage, construction of culverts and weirs in rivers, pollution, extraction of river water for irrigation, and the introduction of exotic fish species. Some native fish have been reasonably resistant to these pressures, while others are now regarded as threatened.

The following five species found in the Tasman District are classified as nationally “threatened” by the Department of Conservation:

- giant kokopu
- shortjaw kokopu
- dwarf galaxias
- northern flathead galaxias
- brown mudfish
- longfin eel.



A drawing of the extinct New Zealand grayling

A nationwide reduction in natural habitat is responsible for the decline of our threatened native fish. Fortunately, the region has plenty of suitable places where the shortjaw kokopu prefers to live - in Abel Tasman National Park, Golden Bay and the West Coast. Dwarf galaxias also thrives in a few parts of the region, such as in the upper reaches of the Motueka River tributaries and the Matakaitaki River while the northern galaxias can be found in the upper Buller and Motueka River catchments.

The giant kokopu and brown mudfish are both lowland species and a lot of their habitat has already been lost. Giant kokopu can still be found in the Moutere Ecological District, the Aorere River catchment and the West Coast. We can protect them further by limiting modifications to lowland rivers, streams and wetlands. We can also help by restoring wetlands and increasing streamside plantings beside our lowland streams.

To find out more about our native fish, visit our website at www.tasman.govt.nz/environment/water/river and stream life or the National Institute of Water and Atmospheric Research website at www.niwa.cri.nz.

What fish where? Native freshwater fish of our region



Our rivers, lakes and wetlands are home to 20 species of native fish, which makes the freshwater fishery of the region one of the most diverse in New Zealand – and the Tasman District Council wants to help keep it that way.

Our native fish are among the hidden treasures of New Zealand's animal life because they are seldom seen and we know very little about many of them. The more we do find out, the more we and other interested New Zealanders are realising that these animals are a fascinating and intriguing part of our heritage.

Is fish migration important?

Yes 15 of our 20 native species need to migrate between freshwater and the sea during their lives and their survival depends on it. This characteristic makes them unusual as a group, worldwide – a bit like the way New Zealand's native birds are regarded as unusual because so many of them are flightless. Migration between freshwater and the sea is not unique to New Zealand freshwater fish, but its unusual as a life strategy that's widespread for so many species when compared to fish that live on other continents around the world.

To witness the well known 'whitebait run' is to see the young (juveniles) of five species swim upstream from the sea where they will spend their adult lives in our rivers. The whitebait life cycle shown on the next page is typical of many native freshwater fish species found in the region.

Some native fish have different life cycles from whitebait species that also involve migration between freshwater and the sea. Adult freshwater eels (known as "tuna" to Maori) swim downstream to the sea to spawn (lay their eggs) towards the end of their lives: and longfin eels can live for up to 60 to 80 years! We're not sure where these spawning grounds are, but the eels are believed to travel north into the subtropical Pacific Ocean to somewhere between Tonga and New Caledonia. The elvers (juvenile eels) return to New Zealand's rivers one to two years after they hatch in the sea. Smelt and lamprey are different again. They spend most of their adult lives at sea and migrate up rivers where they lay their eggs.



Inanga is one of five native freshwater fish species whose juveniles migrate upstream as part of the whitebait run.

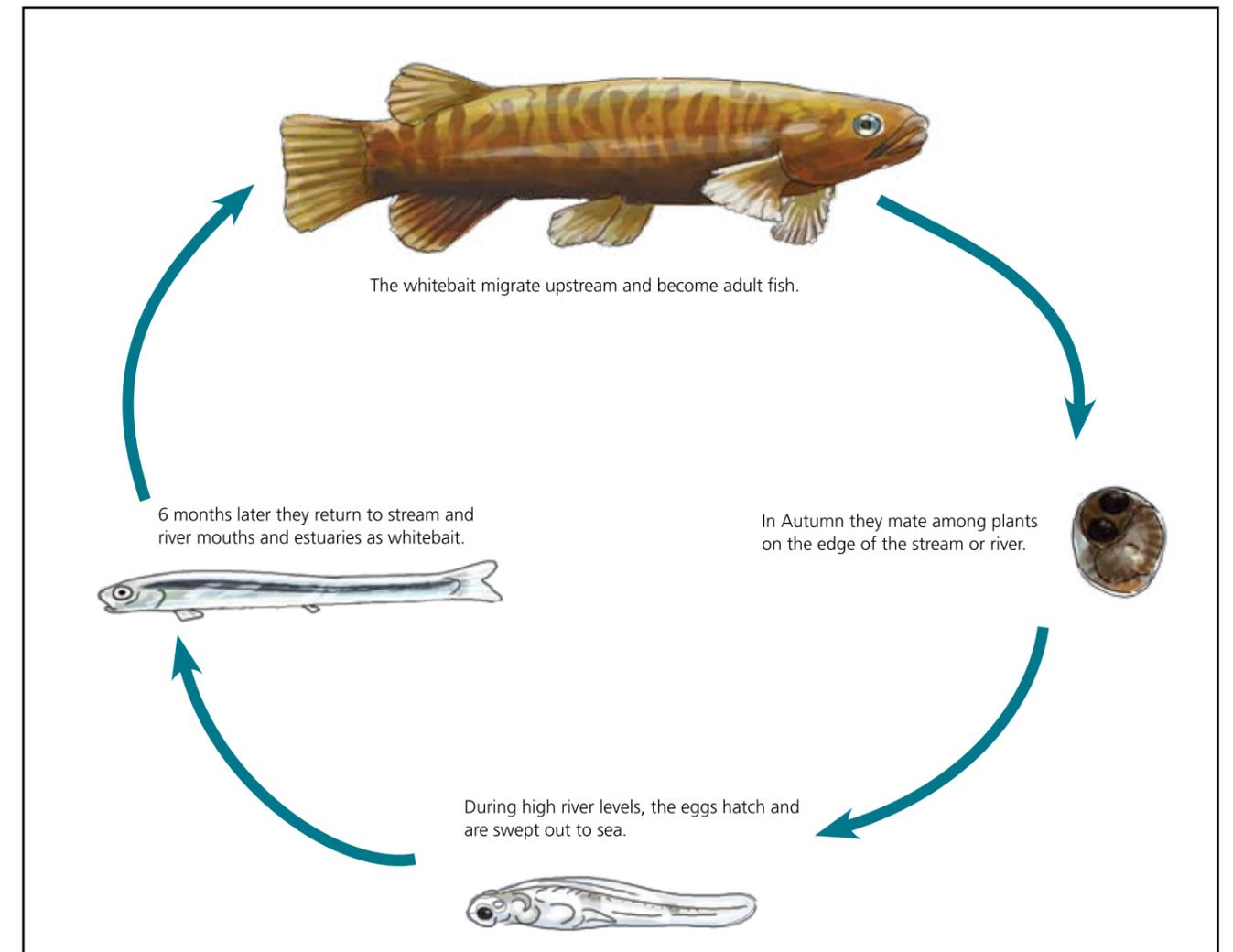
They can't jump but they can climb, cling and burrow

Migrating native fish don't move upstream by jumping over low barriers like trout and salmon. Some have a more effective alternative – they can climb! Koaro have climbing perfected. They can get over waterfalls and are found in good numbers above some of the highest obstacles in the region's rivers, such the Slate River gorge, a steep tributary of the Aorere River in Golden Bay.

Koaro usually leave the main areas of water flow and use surface water tension on wet rocks to stay attached and slither their way upwards with surprising ease. People with aquariums know, or soon find out, that koaro can easily scale the glass walls, and without a secure top on the aquarium will soon become dehydrated and die on the floor outside. Other native fish with reasonable climbing ability are shortjaw and banded kōkopu.



Koaro uses its pelvic fins like broad, flat arms to help cling to steep surfaces.



Typical life cycle for native fish in the whitebait run

Not all native fish are such good climbers. Inanga, whose juveniles make up to 95% of the whitebait catch, have trouble getting over barriers with a vertical drop of more than 30 centimetres. This means that poorly installed culverts, weirs or fords can restrict passage and reduce the amount of habitat available to them – therefore, limiting their numbers. Other poor climbers include giant kōkopu, torrentfish, most species of bullies, smelt and lamprey.

Some native fish have an amazing ability to live in fast-flowing rivers and streams, and there are plenty of these rivers in the region. Bluegill bullies and torrentfish live in the swift white rapids of stony rivers and streams, where even humans would find it hard to stand. They stick to the bottom by clinging onto the gravel with their fins.



Fish passes like this rock ramp in Reservoir Creek below Templemore Pond (Richmond) help native freshwater fish swim upstream past perched obstacles.