



RIVER & STREAM HEALTH



USEFUL INFORMATION

What is Tasman District Council doing about improving the health of our rivers?

- Compliance monitoring of works in streams
- Education
- Identifying barriers to fish migration and prioritising their removal
- Ecological restoration in Council reserves.

For a full report on fish surveys carried out by Council, DoC and Fish and Game see the website: www.tasman.govt.nz click on "Environment" pages, then click "Water" then "Stream Life"

or use the following link: <http://www.tasman.govt.nz/index.php?Streamandriverlife>

What can you do about it?

- Report to Council any work in waterways i.e. removing native vegetation or straightening streams, which can release excessive fine sediment into the stream. Report to 24 hour pollution hotline: 03 543 8400
- Get involved in your local Stream Care Group.

State of stream life and habitat in Tasman

Since 2006 Tasman District Council has monitored the state of fish and invertebrates in smaller streams to determine the condition of the stream ecosystem.

How are the fish in our streams?

Short-fin eel, inanga (the most common of the whitebait) and common bully often do well in small farmland streams with poor water quality, higher sediment load, mild cattle disturbance in streams and pasture grasses dominating the streamside corridor. However, even these hardy fish have been found in much fewer numbers in streams or drainage ditches that are dug out regularly and, for inanga and common bully, streams with excessive aquatic plant growth. Not only do these situations reduce the quality of the habitat, it can cause lower dissolved oxygen if the ditch is over-deepened in places creating a place for organic matter to accumulate.

Other fish species such as giant kokopu, banded kokopu, koaro, short-jaw kokopu and red-fin bully have been found to be much more sensitive to disturbance. Their numbers decline dramatically when trees or scrub along the streamside have been removed, the channel straightened, heavy fine sediments have been discharged or disturbance by machinery or larger farm animals has occurred. Consequently these species are not as common as they once were. Long-fin eel, a species recognized as 'in decline' nationally is

present in reasonable numbers in Tasman and is the most widespread of any freshwater fish species in the district. Giant kokopu are very rare in the region due to their preference for deeper, slow-flowing streams associated with lowland wetlands and the high percentage loss of these wetlands.

Trout are the most significant freshwater sport fishery in the region. In the Motueka River, one of New Zealand's best and most studied trout fisheries, numbers have rebounded since the mid 1990s but are highly vulnerable to large floods (a one-in-50 year flood killed at least 60 percent of adult trout in April 2005). The management of the Trout fishery is most often complementary to the native fishery and, for the great majority of waterways in the region, trout predation on native species is not a significant issue.

Access to 100s of kilometers of waterway by migratory fish is hampered by structures in waterways such as culverts (particularly overhanging at the downstream end), weirs, dams, and tidal flap gates. Water takes are also known to dry up a significant area of streams in summer.



Damsilfly



Longfin eel (tuna)

How are the invertebrates in our streams?

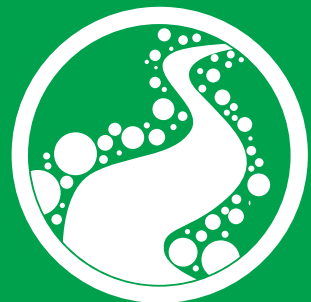
- Invertebrate communities are healthy in most of the monitor sites
- In the upper Motueka River invertebrate communities are impoverished because of high concentrations of nickel and chromium caused by natural weathering of ultra-mafic rock in this area
- Invertebrate health is typically lower at sites draining lowland intensively farmed pasture or

urban areas than at sites draining hill country or mountains. Such streams include Motupipi River, Watercress Creek, lower Reservoir Creek (in urban Richmond), Little Sydney. These sites were also identified as having poor water quality.

- Trends for the Buller River near Murchison and the lower Motueka River there has been a decrease in the percentage of sensitive species (i.e. mayflies, stoneflies or caddisflies).

How are the fish in our streams?

- Tasman streams are home to 20 species of native fish, about half of which are migratory
- Tasman streams are also home to seven species of introduced fish such as brown trout
- Small populations of pest fish exist in Tasman including Perch, Rudd, Tench and Gambusia (Mosquito fish)
- Almost every waterbody in Tasman contains fish
- Shortfin eels (tuna) are one of the most commonly observed fish, particularly in modified farm streams with limited streamside trees. Longfin eel (tuna) are the next most common
- Inanga (a species most common in the whitebait catch) are common in small streams within 5km of the coast
- Brown trout are plentiful in our larger rivers (particularly the Motueka, Buller and their tributaries) and inland streams.



What habitats do our fish like?

Fish like variety in their habitat, ie:

- variety of depth zones
- variety of substrate in the bed – woody debris, some boulders, cobbles and some gravel
- variety of width
- variety in the meander pattern
- trees shading the water
- places to hide under, such as overhanging banks or pieces of wood.



Pasture site

This habitat variety is not always found in Tasman streams. The two photos below show the difference in stream habitat on adjacent stream reaches. The pasture site (bottom, left) is much narrower, and has comparatively little in-stream cover (like "hidey holes") and depth variability. There is little shade provided in the pasture stream and consequently the stream gets warmer. Insects and other invertebrate life in this stream show a lower diversity (especially mayflies, stoneflies and caddisflies) as opposed to the photo lower right that offers shade and lots of habitat variety.



Unmodified stream

What level of habitat modification can fish stand?

Different fish have very different levels of tolerance. Eels, particularly the short-fins, are common in pastoral streams even without riparian protection, but less common in highly disturbed streams that are regularly 'cleaned' of weed and straightened. Sensitive native fish (banded, short jaw, giant kokopu and koaro) favour streams with the least disturbance. They prefer sites that provide in-stream and overhead cover and natural meanders. Stream-sides covered with gorse result in increased fish diversity and numbers.

Inanga and eel (tuna) have reasonable tolerance to fair water quality. Trout need the best water quality – clear and lots of oxygen.

Community restoration projects such as stream-side plantings and fish passage barrier removal in Reservoir Creek (an urban creek in Richmond) have led to an increase in diversity and number of fish species. Migrating Whitebait (galaxiids) were recorded for the first time in the mid reaches of Reservoir creek following the removal of an unused weir.



Reservoir creek weir