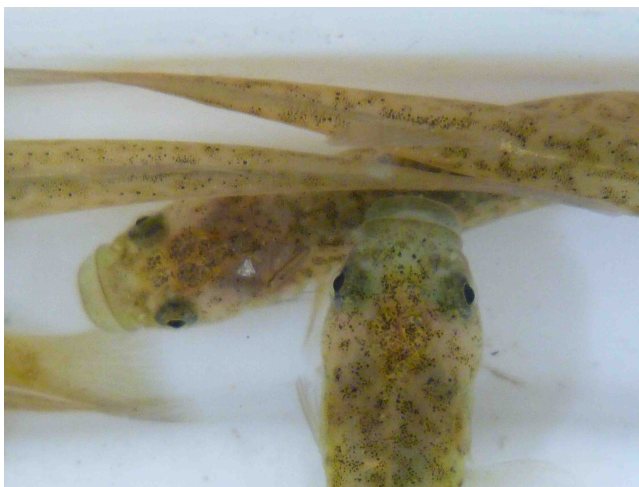


Lowland Longjaw Galaxias

Galaxias cobitinis

River bed burrower



Lowland longjaw galaxias. Daniel Jack, DOC

Quickfacts

One of the rarest freshwater fish in New Zealand.

Burrows into stream cobbles when river dries.

Known from few sites in Otago and the Mackenzie Basin.

Eaten by trout and threatened by habitat changes.

Wet and dry

The lowland longjaw galaxias *Galaxias cobitinis* is one of New Zealand's rarest fish. It is a small endemic freshwater fish that occupies only 13.7 hectare of cool water in the Kauru and Kakanui Rivers south of Oamaru and in a few cool-water springs in the Mackenzie Basin. The water flow in some of these sites varies greatly and at times its habitat can become completely dry during summer, and the fish then burrow deep into the damp gravel on the river bed to escape drying out. However, increasing amounts of sediment being washed into creeks from farmland which can 'glue' the gravels together, making it impossible for the fish to burrow. Trout invade when there is sufficient water in that part of the river and love to feed on juvenile lowland longjaw galaxias and can decimate the lowland longjaw population in those parts of the river. Invasion of their aquatic habitat by exotic waterweeds is also becoming a concern as they take over the shallow margins of the river forcing the lowland longjaw galaxias into deeper water where predatory trout lurk and their matted roots further bind river gravels together. Removing gravel, constructing small water storage dams and channels and extracting water for irrigation are also threats to this species.





The lowland longjaw galaxias is one of a group of 'new' species that were discovered during a genetic investigation of fish in several southern South Island rivers that were previously all thought to be the common Canterbury galaxias *Galaxias vulgaris* (though some scientists had long thought that some of these fish were different). This study found the galaxiids in Otago and the Mackenzie Basin were a group of closely-related fish populations that differ from the Canterbury galaxias in their genetic composition, and in that they are non-migratory and body shape. This group of species (some of which still lack a scientific name) are often referred to as the 'Otago non-migratory galaxiids'. Later studies showed that that changes long ago to physical features such as ice-age lakes and the gradually uplift and downcutting (erosion) of rivers was the cause of such a diversity of freshwater fish evolving in Otago and the lower South Island. The lowland longjaw galaxias is thought to have evolved from populations of upland longjaw galaxias that were marooned in lowland cool water springs once the climate warmed and the ice retreated after one of the earlier ice ages. The lowland longjaw galaxias are most closely related to the larger upland longjaw galaxias *Galaxias prognathus*, which occupies many of the large braided rivers draining the eastern side of the Southern Alps. The two species differ in the more spines (rays) in its tail fin and the anal fin starts behind the front of the dorsal fin in the upland longjaw galaxias.

The 80 mm long lowland longjaw galaxias gets its name for its long lower jaw that projects beyond its upper lip. Fisheries managers sometimes refer to them semi-jokingly by the abbreviation 'jaws'. Collectively, galaxiids are much better known as kōkopu, native trout or as whitebait, which are migrating juvenile galaxiids, and are named for the galaxy-like spotting over their scale-less bodies (this pattern varies between and within species – some are spotted, some are banded). The lowland longjaw galaxias is a 'pencil' galaxias (because of its very thin body) and is one of 13 species that are non-migratory – they lay their eggs and the juveniles live in the same places as inhabited by the adult fish and do not go to sea for part of their juvenile life-cycle.

What next?

Several tools have been developed and utilised to stop the decline of this fascinating little fish. Installation of weirs into small waterways have acted as a barrier stopping trout from colonising the upper reaches of streams. Also, using electric-fishing to remove trout from small streams during the vulnerable life-stages of the lowland longjaw galaxias has helped reduce predation. Riparian fencing and stream bank rehabilitation enhance the habitat for this species.

The Department of Conservation transferred lowland longjaw galaxias into the Waianakarua River in East Otago in 2009, but recent investigations suggests it was unsuccessful.

More information

Website: New Zealand native fish – lowland longjaw galaxias *Galaxia cobitinis*. [Link](#)

Website: NIWA – Lowland Longjaw Galaxias. [Link](#)

Website: International Union for the Conservation of Nature - *Galaxias cobitinis*. [Link](#)

Factsheet: Galaxiids – Otago's unique freshwater fish. Department of Conservation, Dunedin. [PDF](#)

News article: NZ's rarest fish being given a fresh-water start. By David Bruce. Otago Daily Times, 4 December 2009. [Link](#)

Technical report: Gravel burrowing ability in *Galaxias cobitinis*. By N.R. Dunn and L.K. O'Brien. Research and Development Series 236. Department of Conservation, Wellington, 2006. [PDF](#)

Strategic plan: New Zealand non-migratory galaxiid fish recovery plan 2003-13. Threatened Species Recovery Plan No. 53. Department of Conservation, Wellington. 2004. [PDF](#)

Technical report: Habitat use by non-migratory Otago galaxiids and implications for water management. By C.F. Baker, I.G. Jowett, R.M. Allibone. Science for Conservation 221. Department of Conservation, Wellington. 2003. [PDF](#)

Scientific paper: A new longjaw galaxias species (Teleostei: Galaxiidae) from the Kauru River, North Otago, New Zealand. By R.M. McDowall and J.M. Waters. New Zealand journal of Zoology, Vol. 29, pages 41-52, 2002. [PDF](#)

Photos



Lowland longjaw galaxias habitat, Fraser River, Twizel. Daniel Jack, DOC



Lowland longjaw galaxias habitat, Edward Stream, Mackenzie Basin. Daniel Jack, DOC



Drying lowland longjaw habitat, Kauru River, Otago. Daniel Jack, DOC



Captured adult lowland longjaw galaxias. Daniel Jack, DOC



DOC staff using electric fishing gear. Daniel Jack, DOC

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