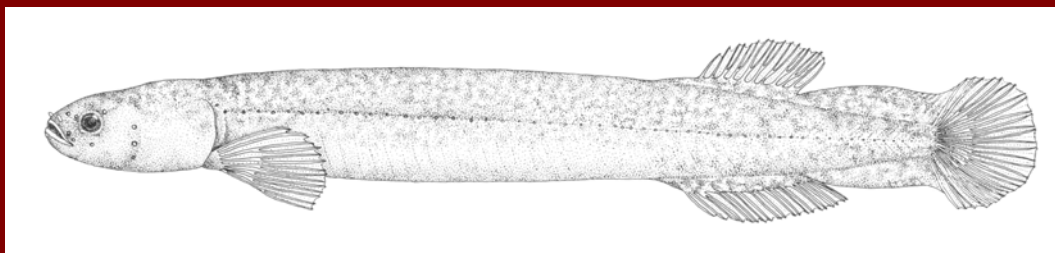


Black mudfish - *Neochanna diversus*



Figure 6 black mudfish



Black mudfish were discovered in the 1940s and are found in peat swamps throughout the northern half of the North Island. Their distribution has undoubtedly suffered greatly from the destruction of appropriate habitat as wetlands have been drained for pastoral agriculture. In the Waikato Region, at least 75% of wetlands have now been drained and the species is mostly confined to large protected areas such as the Wangamarino wetland and the Kopouatai Peat Dome. Remnant populations still exist in farm drains and small swampy streams but the long-term survival of these seems doubtful.



As with other mudfish species, preferring habitats that dry out over summer effectively eliminates competition with other fishes that cannot survive such conditions.

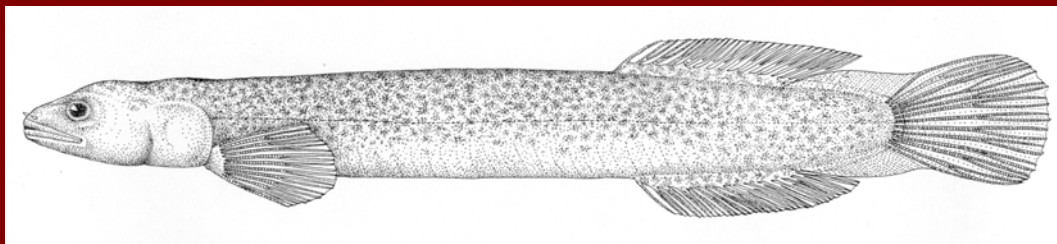
Black mudfish reach a maximum size of around 160 mm total length and probably live for up to ten years.

Northland mudfish – *Neochanna heleioides*



Barry O'Brien

Figure 7 Northland mudfish



The Northland mudfish was discovered in 1998 and is one of our rarest native freshwater fishes. Its distribution overlaps with that of the black mudfish and is restricted to just a few small wetland sites on the Kerikeri volcanic plateau. Its habitat requirements are the same as those of the black mudfish, preferring clean-water wetlands on acid soils. All known habitats of the Northland mudfish are quite restricted in area and threatened by development of adjacent land. At the most



extensive site at Kerikeri, fish survive in holes left by the gum-digging activities of the early 20th century.

Urgent conservation management of this species' remaining habitat is required to maintain appropriate water levels at each site, and restrict nutrient inputs that may cause these wetlands to gradually become more eutrophic.

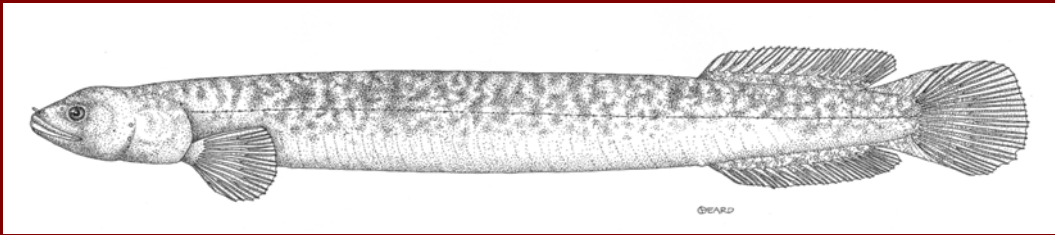
Almost nothing is known of the biology of this species.

Northland mudfish reach a maximum size of at least 135 mm total length and probably live for about eight years.

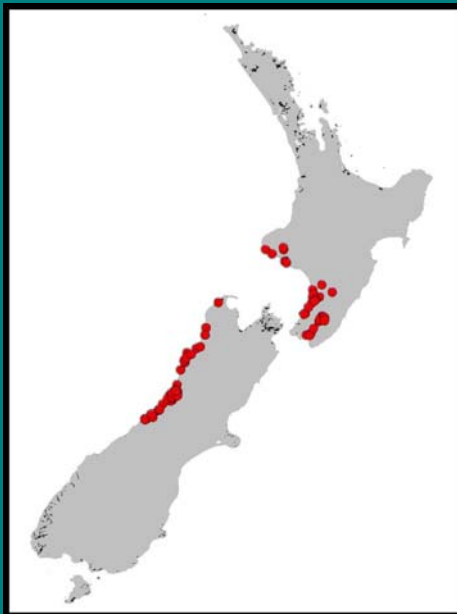
Brown mudfish – *Neochanna apoda*



Figure 8 brown mudfish



The brown mudfish was the first mudfish to be discovered in New Zealand and was formally described in the 1860s. It is found in both the North and South Islands in a surprisingly wide range of habitats compared to the other mudfish species. Suitable habitats range from Pakihi peat swamps of the West Coast to forest pools, swampy lake margins, and even spring-fed streams. The brown mudfish is the most eel-like of the four species, with the dorsal and anal fins being almost confluent with the caudal fin.



The brown mudfish is the largest mudfish species in New Zealand reaching a maximum length of up to 175 mm. Fry spawned in autumn or early winter grow rapidly to about 70 mm by their first aestivation the following summer.

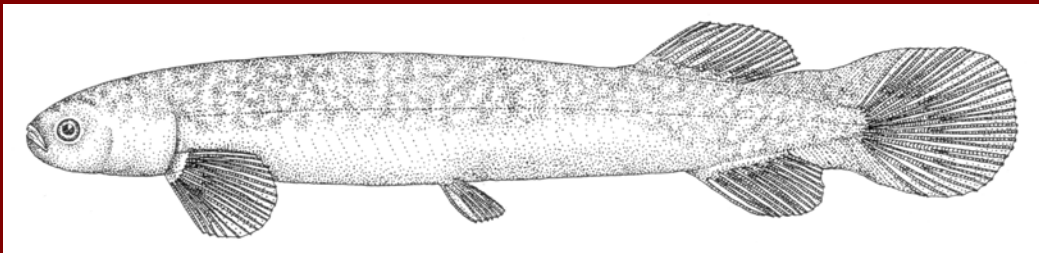
Although locally abundant at some sites, it is now quite rare in some parts of its former range.

The brown mudfish is well known for its ability to aestivate. It is often encountered at considerable depths when digging farm drains in swampy ground.

Canterbury mudfish – *Neochanna burrowsius*



Figure 9 Canterbury mudfish



The Canterbury mudfish was formally described in the 1920s but has only recently been classified as a true mudfish species. Its distribution is restricted to northern and central Canterbury and, like the other mudfish species, is threatened by the destruction of suitable habitat. Until discovery of the Northland species, it was regarded as possibly our rarest native fish. Unlike the other species that prefer still water, the Canterbury mudfish is usually found in slow flowing, overgrown, swampy streams of the Canterbury Plains.



Like the other mudfishes, they can aestivate during the regular summer droughts that afflict the region. They have been reported to construct small flask shaped burrows to retain water over these dry periods.

Although they can tolerate low oxygen concentrations in water, like other mudfish species they do so by gulping air at the surface, which they hold against their gills to extract oxygen.

Canterbury mudfish grow to around 165 mm and probably live for five to six years.

This species is easily distinguished from the other New Zealand species by having small pelvic fins.