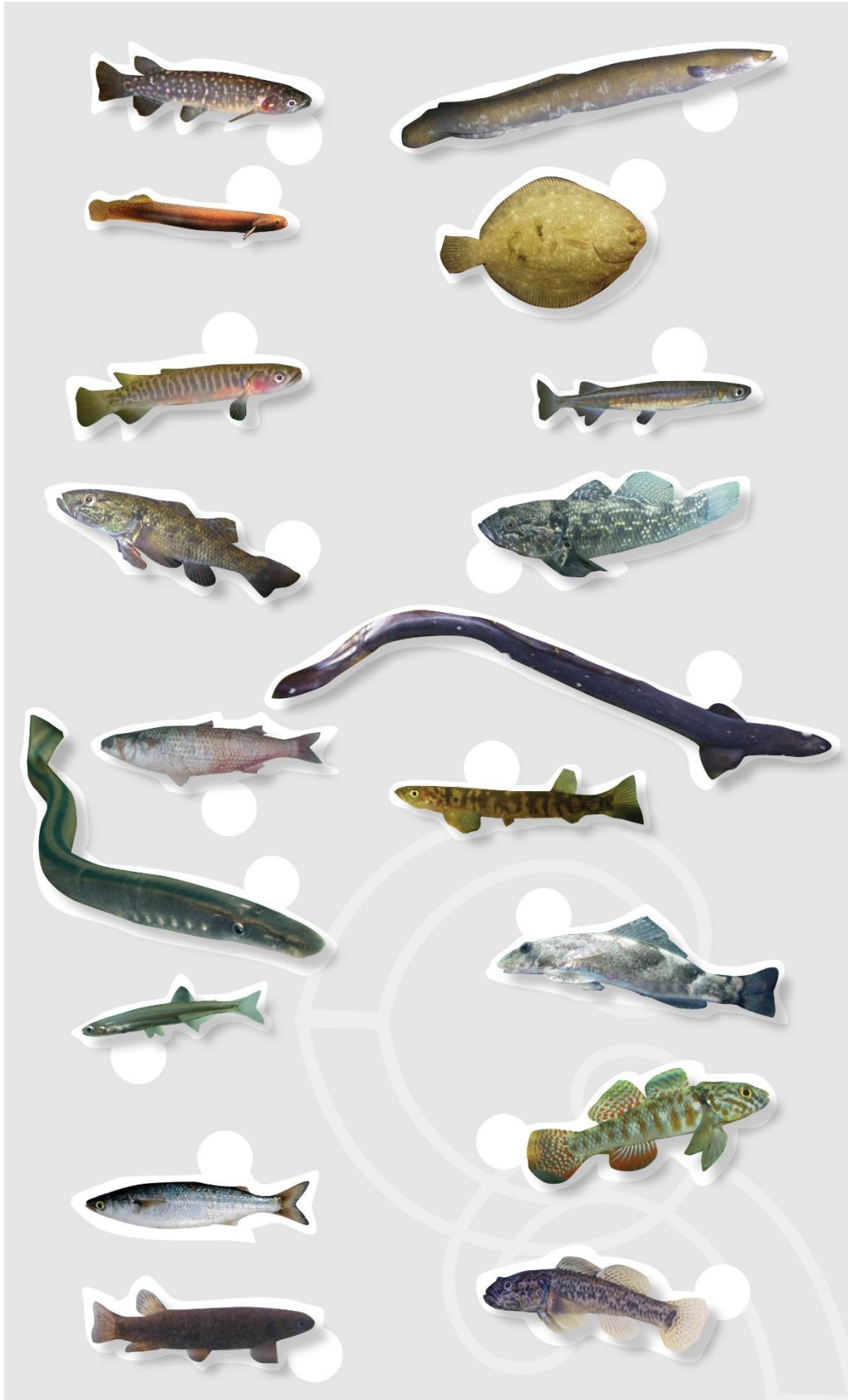




Native Fish Identification Challenge

Can you match the image of each native fish to its correct name? Write the corresponding number beside each image.



1. Yellow-eyed mullet | Aua
2. Shortfin eel | Tuna matamoe
3. Longfin eel | Tuna kuuwharuwharu
4. Lamprey | Piharau
5. Torrentfish | Panoko
6. Giant kōkopu | Kookopu taiwhara
7. Kōaro Kooaro
8. Banded kōkopu | Kooriwhariwha
9. Whitebait | Inanga
10. Short-jawed kōkopu | Kookopu kauae-poto
11. Black mudfish | Hauhau
12. Giant bully | Kookopu
13. Common bully | Toitoi
14. Redfin bully | Titikura
15. Cran's bully | Koopuutea
16. Grey mullet | Kanae
17. Common smelt | Poorehe
18. Black flounder | Paatiki mohoa

Māori native fish names can differ from region to region.

Photos: Lamprey, Giant kokopu, Banded kokopu, Whitebait, Common bully. Photos: Stephen Moore, Landcare Research. Shortfin eel, Longfin eel, Torrent fish, Kōaro, Shortjawed kōkopu, Giant bully, Redfin bully, Grey mullet, Common smelt, Black flounder. Photos: Peter Hamill, Marlborough District Council. Black Mudfish. Photo: Rod Morris. Australian longfin eel. Photo: NIWA. Yellow-eyed mullet. Photo: Malcolm Francis, NIWA

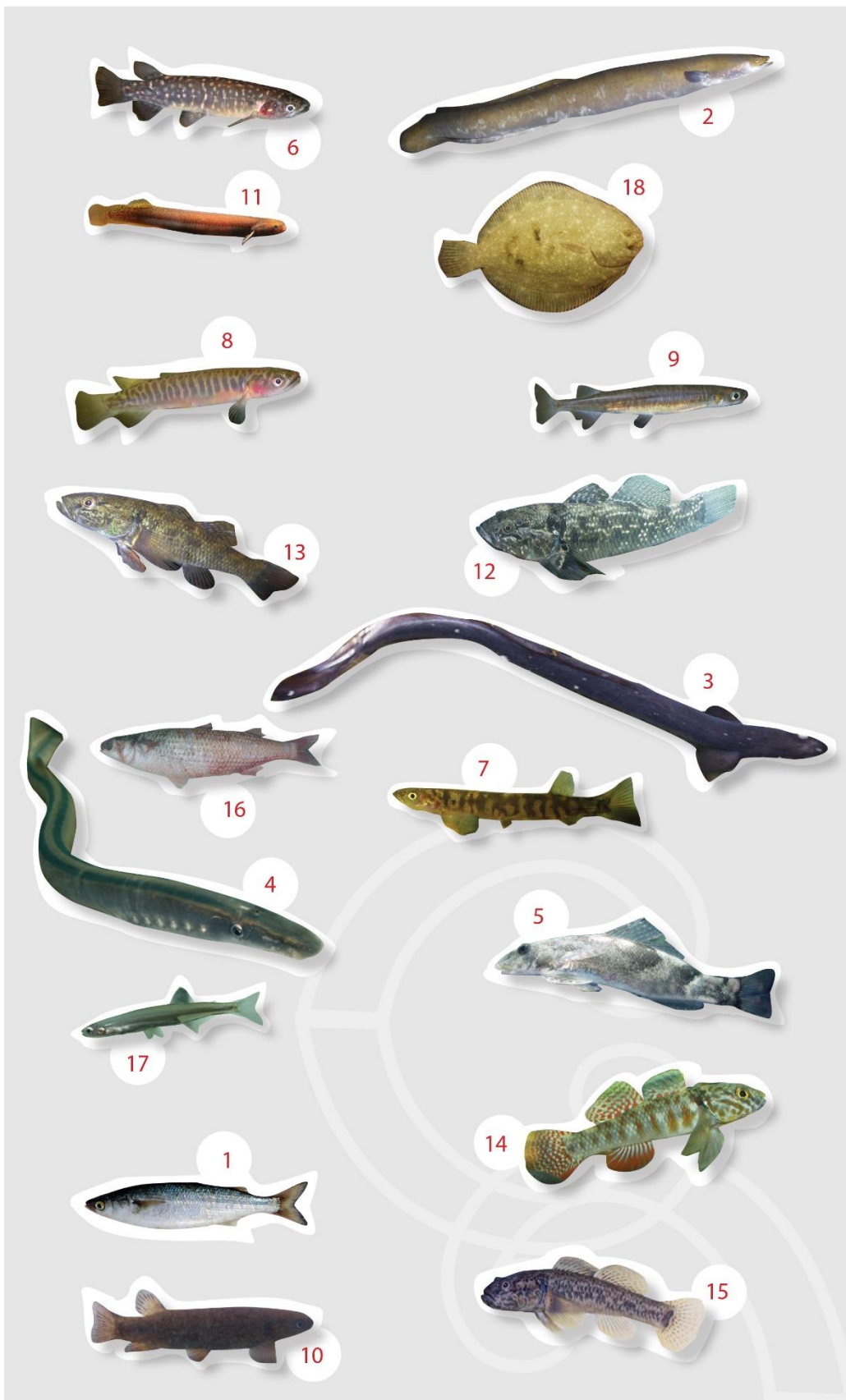
Taken from 'Waikato River Restoration: A Bi-lingual Guide' published by NZ Landcare Trust, 2014.



MARKING SHEET

Native Fish Identification Challenge

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Freshwater Fish in Southland

Migratory galaxias

The whitebait species



Inanga



Banded kōkopu



Koaro



Shortjaw kōkopu

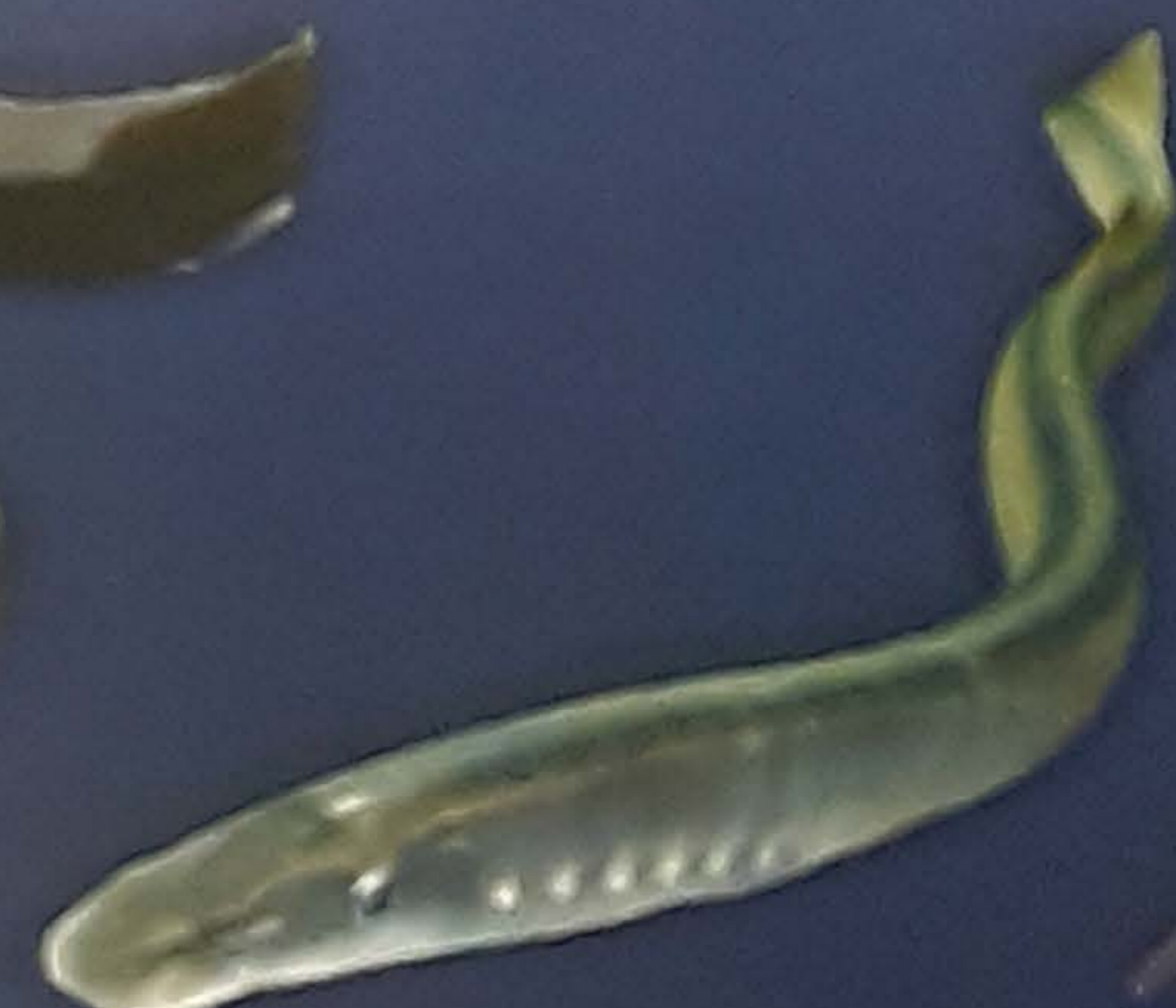


Giant kōkopu (taiwharu)

Eels (tuna) and lamprey (kanakana)



Longfin eel (tuna)



Lamprey (kanakana)



Shortfin eel (tuna)

Torrentfish (piripiripohatu)



Common smelt (paraki/ngaiore)



The 'bullies'



Upland bully



Bluegill bully



Giant bully (kōkopu/hawai)



Common bully



Redfin bully

Non-migratory galaxias



Alpine galaxias



Gollum galaxias



Southern flathead galaxias

Black flounder



Pressures on our fish

Many pressures affect Southland's freshwater fish. These can include:

- Poor water quality – high levels of sediment and nutrients and reduced clarity can stress fish or be toxic and can reduce spawning success
- Over fishing – which can deplete breeding stock
- Water quantity – low flows and taking too much water can stress or kill fish
- Habitat removal/destruction – reduces the area that fish can live in
- Wetland removal and drainage – reduces the area that fish can live in
- Dams/obstacles, like hanging culverts – prevent fish from migrating, which is an important part of their life cycle

What can you do?

- Improve water quality and stream environments by planting and fencing riparian margins
- Obey fishing laws and only take what you need
- Respect wet areas as important habitat for fish
- Remove obstacles like hanging culverts or dams, or provide fish passage over these barriers

Fish not to scale

TE AO MARAMA INC.

environment SOUTHLAND
Te Taiāpunga

New Zealand's Fresh Water Fish

The best way to discover the native fish living in your stream is to use a spotlight or a strong torch at night

Smelt

(Adult length 60 - 120 mm)



Non-migratory galaxiids

(Adult length 90 - 150 mm)



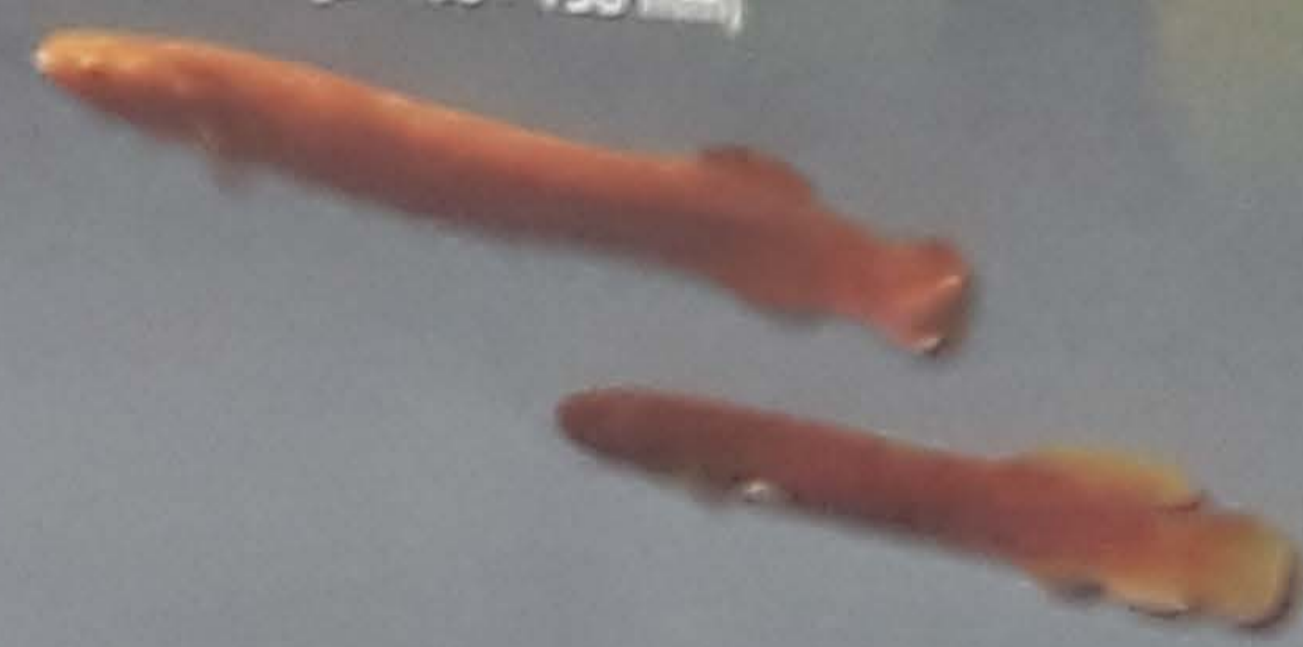
Migratory galaxiids

(Adult length up to 260 mm)



Mudfish

(Adult length 100 - 150 mm)



Torrentfish

(Adult length approx. 100 mm)



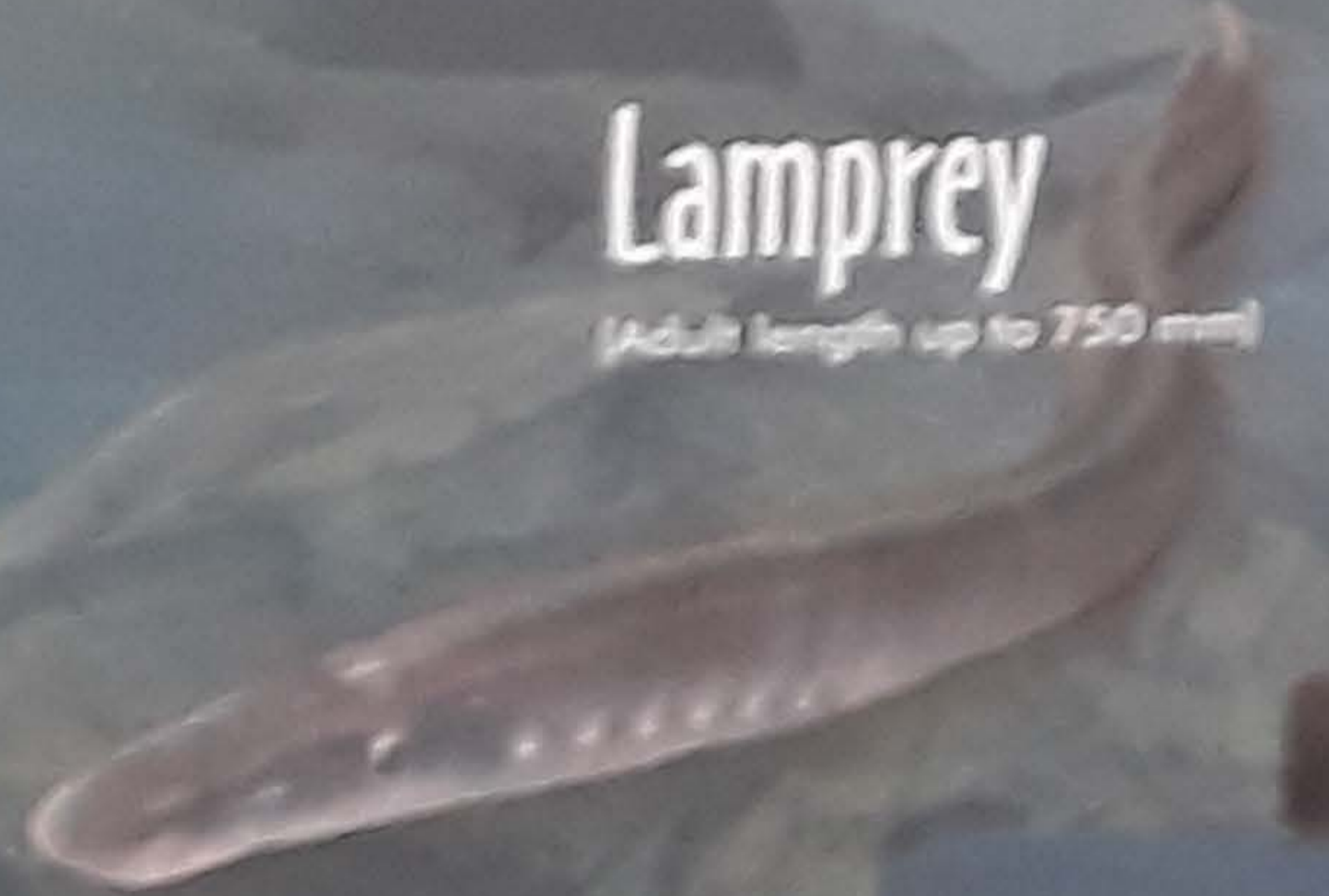
Bullies

(Adult length 60 - 240 mm)



Lamprey

(Adult length up to 750 mm)



Non-migratory galaxiids



Giant kokopu

(Adult length 200 - 580 mm)

Bullies

There are seven species of bullies in New Zealand, found throughout the country in a range of habitats. These include the gentle flows of slow moving streams and lakes preferred by the common bully, the small bluegill bully, the bluegill bully favoured by the tararua bully and the widely flowing gravelly streams preferred by the bluegill bully. Even though bullies are well camouflaged against sand and rocks, they are often seen darting in the shallows during the day. Redfin bully males are arguably the most spectacularly coloured native fish, with fins of bright orange-red. Bullies are distinguished from other bullies by having diagonal cheek stripes.

Eels

There are three types of eel in New Zealand - the shortfin eel, the longfin eel (found nowhere else in the world) and the Australian longfin eel. There are fewer eels today than there used to be because of commercial fishing and the loss of wetlands. Young eels migrate from the sea up into freshwater streams to find suitable adult habitat where they may live for more than 80 years before migrating back to sea to spawn. Eels are secretive, mainly nocturnal and prefer habitats with plenty of cover.

Lamprey

These fish look like slender eels with a sucker like mouth instead of jaws. They spend most of their adult lives at sea but come into freshwater to spawn in small bush streams. The juveniles live in burrows in sandy river edges and migrate out to sea after four or five years. Maori consider lamprey or piharau to be a delicacy.

Mudfish

Mudfish look like a cigar-shaped stocky eel with slippery skin. There are five species of mudfish - black and brown mudfish, Canterbury mudfish, Chatham Island mudfish and Northland mudfish. They usually live in weedy drains and around the edge of wetlands but they love small pools in wetland forests most of all. When the water dries, mudfish survive by hiding away underneath logs, in hollows or under debris and emerge when rain falls. They are all threatened by loss of habitat as wetlands are drained.

Non-migratory galaxiids

There are 12 species of galaxiid fish, which unlike the whitebait species do not migrate as part of their life cycle. These fish are not well known and as we look more closely, more species are being discovered, although they are very difficult to tell apart.

Some of these species are only found in one or two river systems and are therefore threatened. Even small changes to these rivers such as taking out too much water for other uses or introducing an exotic fish could cause them to become extinct.

The 12 species which make up the group are the round head galaxias, lowland longjaw galaxias, flathead galaxias, dwarf galaxias, Eddon's galaxias, dwarf orange, alpine galaxias, upland longjaw galaxias, dusky galaxias, gollum galaxias, bignose galaxias and Canterbury galaxias.

Smelt

Whitebaiters call smelt 'cucumber fish' because they smell like cucumber. The small shimmering silver fish occur in large shoals in estuaries, lowland rivers and some lakes. There are two species of smelt in New Zealand - the common smelt which is found throughout the country and Stokell's smelt which is found only in Canterbury.

Torrentfish

This aptly named fish is found amongst swiftly tumbling waters and is related to the blue cod. Like the whitebait family, the larvae get washed out to sea and the juveniles return to freshwater in spring and summer. Torrentfish are relatively common and most adults grow to about 10 cm.

Whitebait - migratory galaxiids

The small fish caught each spring by whitebaiters all around the country are actually the juveniles of five of the more than 20 species of fish known as galaxiids. They are called because of the patterns of their skin which resemble a galaxy of stars. Inanga is the most common species. Those that escape the whitebait net grow into silvery, slender adults (about 1 cm long). They spawn in streamside vegetation - even long reed beds are suitable. Like other members of the whitebait family they have gold flecked skin but no scales.

Kaiti are the second most common species in the whitebait fishery. They are spectacular climbers and use their flattened fins to scramble up waterfalls in order to reach shady forest streams. Juvenile banded kokopu also migrate upstream as whitebait and are often called golden hair by whitebaiters. The adult fish have gold stripes along the body and can grow up to 26 cm long.

The shortfin eel is the king of the water world - secretive, nocturnal and threatened. It climbs up streams in search of sandy places with lots of cover such as logs, large boulders and undercut banks. The fish grows to 1.2 m long. The largest catch is the giant kokopu. This is the largest of the migratory fish. The largest adult fish can grow to 30 cm (the largest known was 38 cm and 2.8 kg) and are golden-brown with black and white patterns. This threatened native fish is secretive and lives in plenty of cover in side water, sheltering gently flowing overgrown streams and swampy lagoons.

New Zealand has about 40 native freshwater fish species but many are nocturnal and secretive, so they are not well known. About half of our native fish spend some part of their lives at sea and they need easy access between freshwater and the sea. These species are often affected by dams and badly made or maintained culverts, which can stop them from migrating.

Unfortunately, native fish habitat (the places they like to live) is disappearing as wetlands are drained and streamside vegetation is removed, so there are fewer places for them to live when they do make it upstream.

The best way to discover which native fish live in your stream is to use a spotlight or a strong torch at night.

For further reading see:
The Reed Field Guide to New Zealand
Freshwater Fishes by R.M. McDowall

This poster prepared for the
NZ Limnological Society Inc.
courtesy of Environment Waikato



Photographs provided by
I. Allison, S. Moore, A. Hutchinson, Taranaki Regional Council, Landcare Research