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New Zealand fishes

A field guide to common species caught by bottom, midwater, and surface fishing

Cover photos:

Top – Kingfish (*Seriola lalandi*), Malcolm Francis.
Top left – Snapper (*Chrysophrys auratus*), Malcolm Francis.
Centre – Catch of hoki (*Macruronus novaezelandiae*), Neil Bagley (NIWA).
Bottom left – Jack mackerel (*Trachurus* sp.), Malcolm Francis.
Bottom – Orange roughy (*Hoplostethus atlanticus*), NIWA.

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New Zealand Aquatic Environment and Biodiversity Report No: 208

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Contents

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1. Contents page – link to each subheading, section, or index.
2. Section 2. Guide to families – link from each family image to the first species in the family in Section 3, Guide to species.
3. Indexes (all). Link from each page number listed to the species page in Section 3, Guide to species.

Links are indicated by a hand symbol when the mouse cursor is positioned over the line (Contents), image (Family guide) or page number (Indexes).

1 PURPOSE OF THE GUIDE

This single-volume guide describes over 400 of the more common marine fishes caught by bottom, midwater, and surface fishing methods in New Zealand seas. This revised and updated guide replaces the three-volume set of guides published in 2011 (McMillan et al. 2011a-c).

It is intended for field use particularly by fisheries observers, researchers, and fishers who may or may not have specialist knowledge about the taxonomy of fishes. Accurate and rapid identification of catches at sea is an important pre-requisite for obtaining good quality data about fish catches, for monitoring changes in fish abundance and enabling fisheries managers to make informed decisions about fishstock sustainability.

Technical terms are kept to a minimum, and identification features that can be readily observed on freshly caught specimens without dissection or microscopic examination are provided. Field guides are not a substitute for more comprehensive taxonomic guides where identification remains uncertain. The most comprehensive reference for identifying New Zealand fishes is the book "The Fishes of New Zealand", Roberts et al. (2015), see Key references at the end of Section 1 below.

2 ORGANISATION OF THE GUIDE

The guide covers 444 species from 152 families, including hagfishes, cartilaginous (chimaeras, sharks, skates, and rays) and bony teleost fishes. It includes species that are commonly caught and sold, i.e., "commercial", as well as those that are not, i.e., "non - commercial".

Taxonomic information, distribution and species codes were updated. Slight changes to the layout enabled the display of two species per page instead of one and resulted in a reduction of the guide from three to one volume.

There are four main sections.

1. **External features of fishes.** Illustrations of some of the essential technical terms used to identify fishes, including a glossary of technical terms used are provided as an introduction to the main identification sections.

2. **Guide to families.** Recognising the taxonomic family to which a species belongs is often the first step in identification. The taxonomic family guide provides distinguishing features for each of the families covered, and a small image of an example species from each family.

3. **Guide to species.** This section makes up most of the guide, and includes detailed information for each species. This includes an annotated colour image or line drawing of the fish to illustrate distinguishing features; a New Zealand distribution map; and text covering distinguishing features, colour, size, length measurement method, distribution, depth, similar species, and biology and ecology.

4. **Indexes** These are provided for: family scientific names, family common names, species scientific names, species common names Fisheries New Zealand (FishNZ) three-letter observer/research codes, and reporting codes.

3 METHODS USED FOR THE FAMILY AND SPECIES GUIDES

(a) Guide to families

Families are arranged in taxonomic order based on evolutionary complexity following Nelson (2006) "Fishes of the World". The first family listed is the hagfishes (Myxinidae), a group of primitive jaw-less fishes, and the last family is the sunfishes or molas (Molidae), whose members are thought to be highly evolved (derived) fishes with loss of the caudal fin and a unique oval body form. Family scientific names and most of the family common names were taken from Nelson (2006), but some family names were updated using Roberts et al. (2015). Families were numbered using the numbers in Nelson (2006) to aid locating the relevant part of the species guide. The text listing the distinguishing features for each family was adapted mainly from Carpenter & Niem (1998, 1999, 2001), Gomon et al. (2008), Nelson (2006), and Roberts et al. (2015). An example species image for each family is provided as a quick visual guide to general body shape.

(b) Guide to species

Species within each family are arranged alphabetically by scientific name, i.e., by genus name then by species name. Bottom and midwater trawl species were selected from records in the Fisheries New Zealand research trawl (trawl) database and the Observer database.

Selection of the surface species was based on lists of species given by Griggs et al. (2008) "Fish bycatch in New Zealand tuna longline fisheries in 2005–06", and Bagley et al. (2000) "Atlas of New Zealand fish and squid distributions from midwater trawls, tuna longline sets, and aerial sightings".

All known QMS fish species (February 2018) were included and the species image for each includes a QMS label in the top right corner. All protected species likely to be caught by bottom, midwater, or surface fishing were included and the species image for each includes a PROTECTED label in the top right corner.

An additional group of 54 species included were selected based on information provided in Roberts et al. (2015), e.g., individual species of the catshark *Apristurus* which were previously only identified to genus. Species were also added based on need, e.g., several abundant larger midwater fishes e.g., Dana lanternfish (*Diaphus danae*), were added because recent fisheries surveys required routine identification of these species.

The following is provided for each species:

1. **Species common name.** These were extracted from the FishNZ database of research species codes, and some additional names were taken from Roberts et al. (2015).
2. **Species scientific name.** Updated using Roberts et al. (2015) and Eschmeyer et al. (2018).
3. **Family scientific name.** Roberts et al. (2015) was the source of these names and checks were made using Eschmeyer et al. (2018). In a few cases the family name used in Roberts et al. (2015) was not confirmed in Eschmeyer et al. (2018) but was still used. Family name numbers were those of Nelson (2006) supplemented by 'a', 'b', etc where subfamilies listed by Nelson (2006) were elevated to family in the guide.
4. **Family common name**. Mostly from Nelson (2006), supplemented by Roberts et al. (2015).
5. **Maori names**. These were from Anon (1995) and Strickland (1990). Many species may have more than one name depending on the region because iwi (tribes) may use different names, and there may also be names for some young stages. No entry in this field indicates that we were unable to locate a Maori name.
6. **Other names**. Other common names used in New Zealand and overseas. No entry in this field indicates that we were unable to locate another relevant common name.
7. **FishNZ reporting code**. FishNZ supplied a list of three letter codes used in QMS reporting. In some cases, the codes differ for different form types, e.g., sand flounder catch would be recorded as SFL on the effort part of the return and FLA on the landing part.
8. **FishNZ observer/research code**. Three letter codes used by observers and for fisheries research surveys. These may differ from the QMS reporting codes; and may distinguish related species, e.g, BYS – alfonsino, and BYD – longfinned beryx, compared to the combined species QMS reporting code BYX.
9. **Species image**. Where possible a colour image of each species was used, annotated with the principal distinguishing features and a size scale. Many of these images were taken

specifically for this project during research surveys. Good specimens were selected from the catch, washed, fins and other structures pinned out on a polystyrene board, and painted with concentrated formalin. Images were captured using a digital SLR camera using photographic lights on a dove grey background. Some images were from specimens that were purchased or caught locally, and some photographs were kindly supplied by colleagues from the research community. The source of the non-NIWA images is indicated on the image and people are named in the Acknowledgments. In a few cases no suitable image could be obtained and a simple line drawing was prepared.

10. **Distinguishing features**. The main features that distinguish the species.

11. **Colour**. The colours of live or freshly caught fish.

12. **Size**. The approximate maximum length in centimetres was obtained from research length records and literature sources.

13. **Distribution – text**. Based on literature records of the species from New Zealand and overseas, with comments on the fisheries data records. "New Zealand" is used to cover the area shown in the distribution map. More detailed distribution information, e.g., inside or outside the NZ EEZ, is found in Roberts et al. (2015).

14. **Distribution – map**. Most of the maps were prepared using position data from research trawl survey and FishNZ observer longline records, and are therefore not verified with museum voucher specimens so caution is needed when interpreting the data. Location data from voucher collection specimens were provided by the Museum of New Zealand Te Papa Tongarewa (Te Papa) and were used to prepare the maps for 48 of the species added to the revised addition. The use of Te Papa data is stated in the "Distribution" text for the relevant species.

    For most species all records of that species caught by bottom and surface fishing methods were plotted. For species caught by trawling the start position data (latitude and longitude) of the tow was taken from the *trawl* database and plotted. For the tag database, which includes all fishing methods, the release and recapture sites for species identified and tagged was plotted. For longline fishing the start position of the longline set where the species was captured or observed was extracted from the observer tuna longline database (*l_line* and cod) and plotted. For aerial sightings the position where the species was observed and identified from the air was extracted from the aerial sightings database (*aer_sight*) and plotted.

    These maps are an indication of where the species was reported as caught or sighted in the past, and are not meant to be a definitive New Zealand distribution. Red dots show the capture location, and the EEZ boundary and 1000 m depth contour are also plotted. A map of all tow positions (all species) on the trawl database was plotted to show the coverage of records, Figure 1, and all observer longline records for all species on the *l_line* and cod databases is also shown, Figure 2. Plots of data from the tag and *aer_sight* databases were not included in Figures 1 and 2 because they represented relatively few data, the tag data is from all fishing methods (trawl, bottom longline, surface longline, etc), and aerial sightings data only applies to surface fishing in a few localities, i.e., Tasman Bay, and the west and northeast coasts of the North Island.

15. **Depth.** Commonly encountered depth range (m) from fisheries and literature records, rather than the extreme depth records.

16. **Length measurement method.** Preferred method for taking the length measurement. Each species has a preferred length measurement method and it is important to use the same measurement method each time a length sample is taken for that species. Fork length (FL, fish measurement code 1), ghost shark length (ghost shark and chimaeras, fish measurement code G), lower jaw fork length (swordfish and billfishes, fish measurement code J), pelvic length (rays and skates, fish measurement code 5), standard length (SL, fish measurement code 3), total length (TL, fish measurement code 2). See Glossary for a definition of each method.

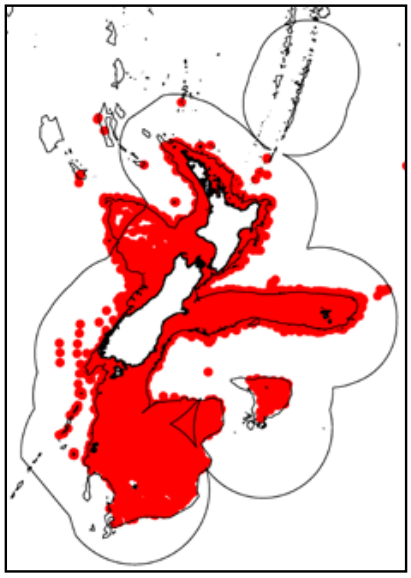

Figure 1: Distribution of all records for all species on the *trawl* database.

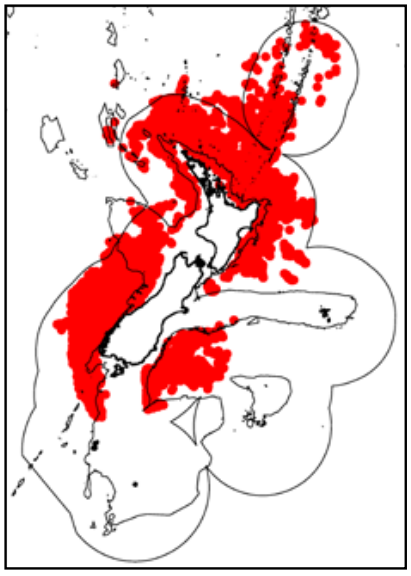

Figure 2: Distribution of all observer longline records for all species on the *l_line* and *cod* databases.

17. **Similar species.** The main distinguishing features of other similar species are provided to enable comparison with the subject species.

18. **Biology and ecology.** Data on mode of life such as spawning season, area, behaviour, and feeding where these are known. A colour bar beside the family name indicates where in the water column each species is thought to live. Some species can move within the water column at different times or life stage.

Yellow – Pelagic and midwater
Green – Midwater and demersal
Blue – Demersal and benthic

4 DATA STORAGE AND RETRIEVAL

The information for each species in this guide was stored in a relational database, the Taxonomic Attribute Database (TAD), developed and maintained by NIWA. Distribution maps, and images were stored in the NIWA Atlas database. Each species page with text, map and species image was produced using a report from the Publishing & Reporting System (PRS) developed and maintained by NIWA.

5 ACKNOWLEDGMENTS

Funding to produce this guide was provided by Fisheries New Zealand under research project ENV201501. Dr M. E. Livingston supervised the project and along with J. Clement, N. Long and A. McNabb, (FishNZ) provided advice on the requirements for the guide. NIWA funded the purchase of specialised photographic gear for specimen photography and funded time at sea for P. Marriott and P. McMillan to take specimen photographs. N. Bagley, W. Lyon, K. Michael, D. Stevens, M. Stevenson, and C. Sutton, (all NIWA) helped with obtaining specimens, photographing specimens, and supplying photographs. J. Barker (Te Papa) provided Te Papa location data for 48 species. Special thanks to C. Chin (NIWA) who kindly and efficiently loaded the map and species images to the NIWA Atlas database.

Image credits

Most of the photographs in this field guide were taken by NIWA staff, mostly by Peter Marriott. Other images were kindly supplied by New Zealand colleagues from Te Papa, and FishNZ, and by overseas colleagues. Credits for non-NIWA images are listed below and are marked on the image (Guide to species).

A Guide to families (ordered by family)

15. Rhincodontidae (whale sharks). Photo: Z. Wolf.
16. Odontaspididae (sand tiger sharks). Photo: A. Stewart, Te Papa.
17. Mitsukurinidae (goblin sharks). Photo: C. Struthers, Te Papa.
21. Cetorhinidae (basking sharks). Photo: S. Iglésias, MNHN.
91. Eurypharyngidae (gulpers or pelican eels). Photo: R. McPhee/M. McGrouther, NORFANZ.
199. Neoscopelidae (blackchins). Photo: R. McPhee/K. Parkinson, NORFANZ.
207. Regalacidae (oarfishes). Photo: A. Stewart, Te Papa.
236. Melanocetidae (black seadevils). Photo: R. McPhee/K. Parkinson, NORFANZ.
243. Gigantactinidae (whipnose anglers). Photo: R. McPhee/M. McGrouther, NORFANZ.
253. Exocoetidae (flyingfishes). Photo: C. Struthers, Te Papa.
256. Scomberesocidae (sauries). Photo: R. McPhee/K. Parkinson, NORFANZ.
361. Coryphaenidae (dolphinfishes). Photo: M. Naidanovici.
363. Echeneidae (remoras, sharksuckers). Photo: A. Stewart, Te Papa.
404. Aplodactylidae (marblefishes). Photo: M. Francis.
476. Xiphiidae (swordfishes). Photo: R. Williams, FishNZ.
477. Istiophoridae (billfishes). Photo: S. Hornby, FishNZ.
511. Molidae (molas). Photo: A. Knox, FishNZ.

B Guide to species (ordered by family number).

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16. Smalltooth sand tiger shark, *Odontaspis ferox*. Photo: A. Stewart, Te Papa.
17. Goblin shark, *Mitsukurina owstoni*. Photo: C. Struthers, Te Papa.
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20. Thresher shark, *Alopias vulpinus*. Photo: M. Francis.
21. Basking shark, *Cetorhinus maximus*. Photo: S. Iglésias, MNHN.
22. White pointer shark, *Carcharodon carcharias*. Photo: M. Francis.
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23. Roundfin catshark, *Apristurus ampliceps*. Photo: C. Struthers, Te Papa.
23. Garrick's catshark, *Apristurus garricki*. Photo: R. McPhee/K. Parkinson, NORFANZ.
23. Bulldog catshark, *Apristurus pinguis*. Photo: C. Roberts, Te Papa.
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199. Largescale blackchin, *Neoscopelus macrolepidotus*. Photo: R. McPhee/K. Parkinson, NORFANZ.
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215d. Kapala rattail, *Nezumia kapala*. Photo: R. McPhee/K. Parkinson, NORFANZ.
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223. Brown brotula, *Cataetyx* niki. Photo: Robin McPhee, Te Papa.
236. Humpback anglerfish, *Melanocetus johnsonii*. Photo: R. McPhee/K. Parkinson, NORFANZ.
243. Whipnose anglers, *Gigantactis*. Photo: R. McPhee/M. McGrouther, NORFANZ.
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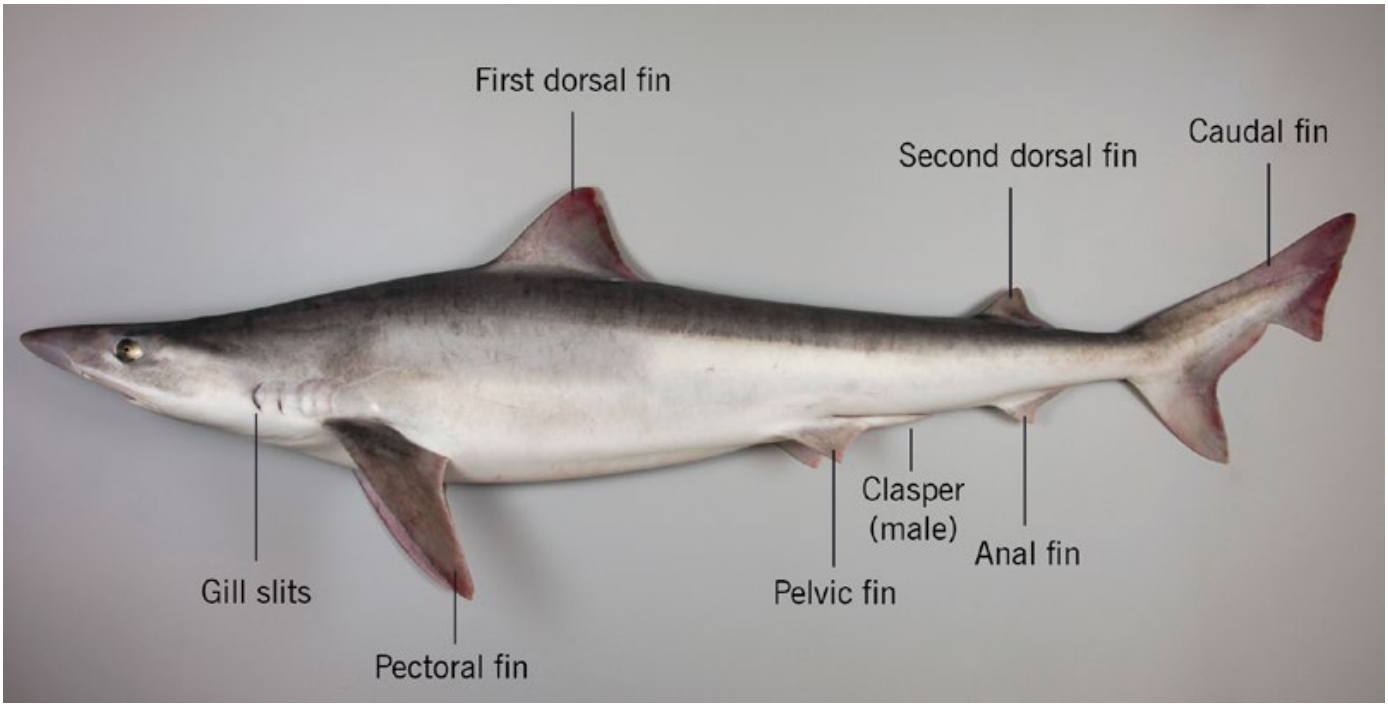
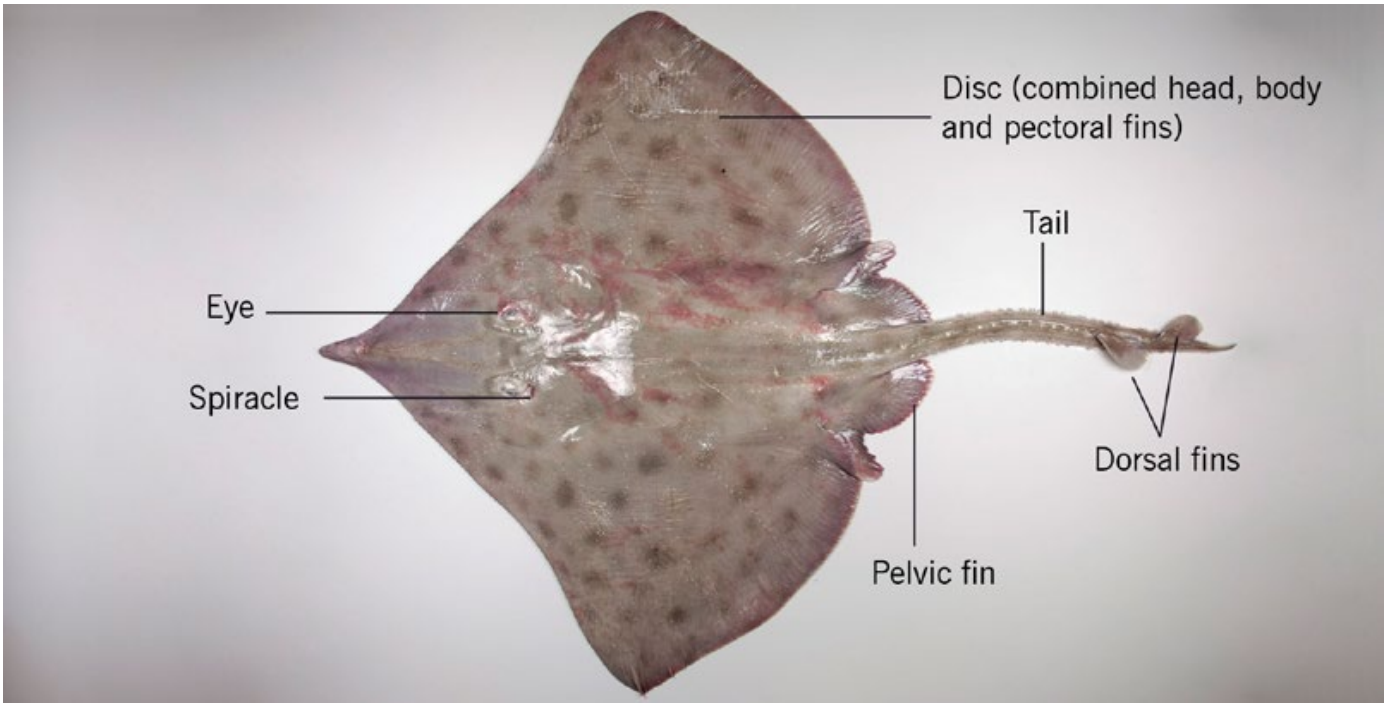
254. Garfish, *Hyporhamphus ihi*. Photo: C. Struthers, Te Papa.
256. Saury, *Scomberesox saurus*. Photo: R. McPhee/K. Parkinson, NORFANZ.
298. Orange bellowsfish, *Notopogon xenosoma*. Photo: C. Struthers, Te Papa.
304a. Sea perch, *Helicolenus percoides*. Photo: C. Struthers, Te Papa.
338. Pink maomao, *Caprodon longimanus*. Photo: M. Francis.
338. Giant grouper, *Epinephelus lanceolatus*. Photo: J.E. Randall.
338. Red banded perch, *Hypoplectrodes huntii*. Photo: M. Francis.
338. Red lined perch, *Lepidoperca tasmanica*. Photo: K. Grange.
341. Northern splendid perch, *Callanthias australis*. Photo: M. Francis.
361. Dolphinfish, *Coryphaena hippurus*. Photo: M. Naidanovici.
363. Common remora, *Remora remora*. Photo: A. Stewart, Te Papa.
364. Kingfish *Seriola lalandi*. Photo: C. Struthers, Te Papa.
367. Ray's bream, *Brama brama*. Photo: C. Reid, FishNZ.
367. Wingfish, *Pteraclis velifera*. Photo: A. Watson, FishNZ.
367. Flathead pomfret, *Taractes asper*. Photo: A. Knox, FishNZ.
367. Big-scale pomfret, *Taractichthys longipinnis*. Photo: A. Watson, FishNZ.
391c. Sweep, *Scorpis lineolata*. Photo: A. Stewart, Te Papa.
391c. Blue maomao *Scorpis* violacea. Photo: C. Struthers, Te Papa.
404. Marblefish, *Aplodactylus arctidens*. Photo: M. Francis.
405. Red moki, *Cheilodactylus spectabilis*. Photo: M. Francis.
405. King tarakihi, *Nemadactylus* sp. A. Photo: R. McPhee/K. Parkinson, NORFANZ.
406. Copper moki, *Latridopsis forsteri*. Photo: M. Francis.
406. Telescope fish, *Mendosoma lineatum*. Photo: M. Francis.
412. Red pigfish, *Bodianus unimaculatus*. Photo: M. Francis.
427. Maori chief, *Notothenia angustata*. Photo: C. Struthers, Te Papa.
427. Black cod, *Paranotothenia magellanica*. Photo: R. McPhee, Te Papa.
440. Estuary stargazer, *Leptoscopus macropygus*. Photo: A. Stewart, Te Papa.
472. Kermadec barracuda *Sphyraena* sp. A. Photo: C. Struthers, Te Papa.
473. Snake mackerel, *Gempylus serpens*. Photo: Observer Program, FishNZ.
473. Escolar, *Lepidocybium flavobrunneum*. Photo: S. Yeoman, FishNZ.
473. Black barracouta, *Nesiarchus nasutus*. Photo: R. Williams, FishNZ.
473. Longfin gemfish, *Rexea antefurcata*. Photo: R. McPhee/M. McGrouther, NORFANZ.
474. Scabbardfish, *Benthodesmus*. Photo: R. McPhee/M. McGrouther, NORFANZ.
475. Wahoo, *Acanthocybium solandri*. Photo: M. Naidanovici.
475. Butterfly tuna, *Gasterochisma melampus*. Photo: A. Watson, FishNZ.
475. Skipjack tuna *Katsuwonus pelamis*. Photo: C. Struthers, Te Papa.
475. Southern bluefin tuna, *Thunnus maccoyii*. Photo: A. Watson, FishNZ.
475. Bigeye tuna, *Thunnus obesus*. Photo: R. Coy, FishNZ.
476. Swordfish, *Xiphias gladius*. Photo: R. Williams, FishNZ.
477. Shortbill spearfish, *Tetrapturus angustirostris*. Photo: S. Hornby, FishNZ.
479. Ocean blue-eye, *Seriolella labyrinthica*, Photo: C. Struthers, Te Papa.
497. Speckled sole, *Peltorhamphus latus*. Photo: C. Struthers, Te Papa.
511. Bumphead sunfish, *Mola alexandrini*. Photo: A. Stewart, Te Papa.
511. Hoodwinker sunfish, *Mola tecta*. Photo: A. Knox, FishNZ.

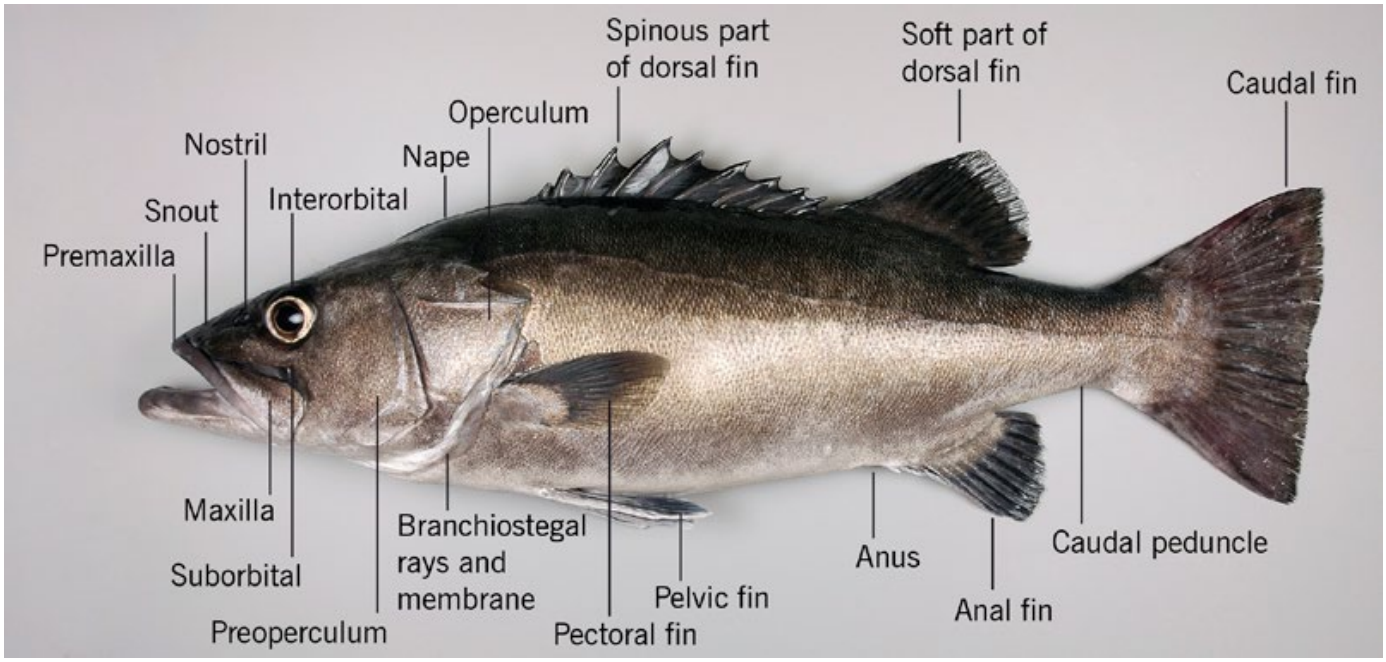
SECTION 1.
EXTERNAL FEATURES OF FISHES

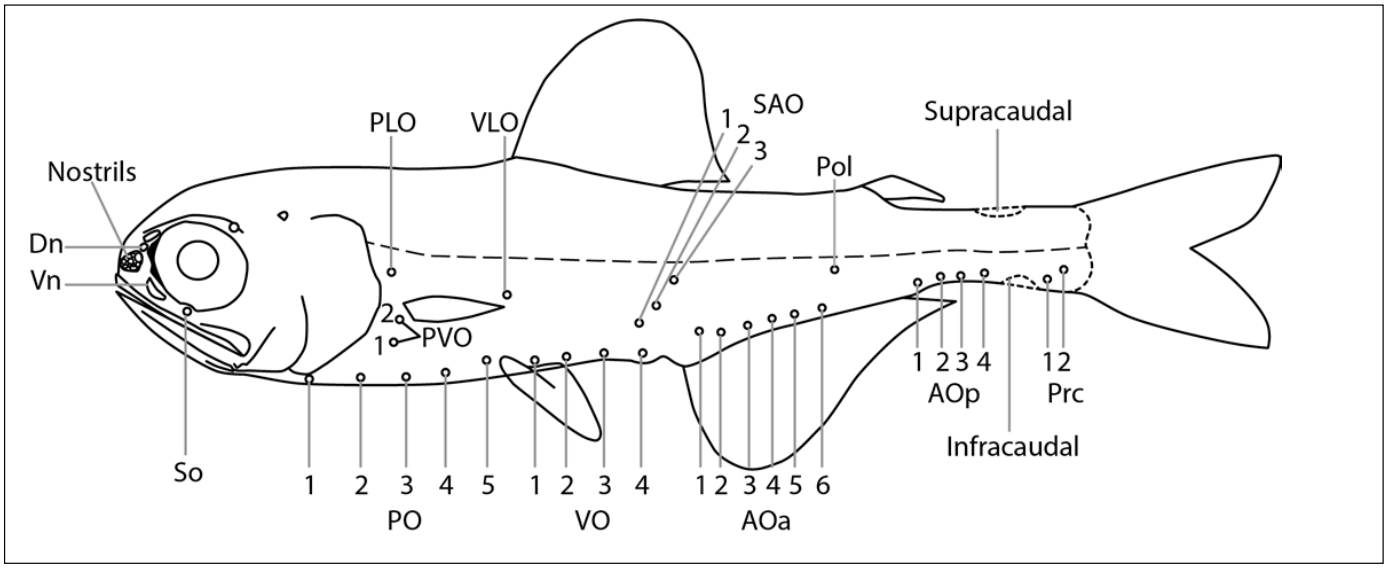
SECTION 1. EXTERNAL FEATURES OF FISHES

The four illustrations below are labelled to show the principal features of sharks, skates/rays, bony fishes, and lanternfishes, Family Myctophidae (200) that are used for identification.









Lanternfish light organ abbreviations and names arranged alphabetically by abbreviation:

AOa - anterior anal series, AOp - posterior anal series, Dn - dorsonasal, PLO - suprapectoral, PO - thoracic, Pol - postero-lateral, Prc - precaudal, PVO - subpectoral, SAO - supra-anal, So - suborbital, VLO - supraventral, Vn - ventro-nasal, VO - ventral.

GLOSSARY

Adapted from Gomon *et al*. (2008), May & Maxwell (1986), Paul (2000).

Abdomen. Belly region, containing stomach, intestines and reproductive organs (ovaries, testes).
Accessory lateral line. Another lateral line in addition to the main lateral line, usually above the main line, and usually only for part of its length.
Adipose eyelid. Soft, thick, transparent layer of tissue that partially covers the front and rear of the exposed part of the eye, streamlining the head contour.
Adipose fin. Small, soft fleshy fin lacking spines or rays, on the rear part of the body behind the soft dorsal and sometimes anal fins.
Alar thorns. Patches of thorns on the dorsal wings of mature male skates.
Anal fin. Median fin on the underside of the body usually between the anus and the caudal fin.
Anterior. Front or head end.
Anus. The rear opening of the intestine located on the underside of the body usually just in front of the anal fin in bony fishes.
Barbel. Fleshy filament lacking rays or spines, usually located on the head and often sensory. Mostly only one, but there may be several, e.g., hagfish.
Benthic. Found at the bottom of the sea.
Branchiostegal. Rays and membrane inside and below the gill opening in bony fishes, located on the throat and lower head.
Canine tooth. Pointed cone-like tooth used for penetrating or holding prey.
Cartilage. Firm elastic tissue. In comparison bone is hard and solid.
Caruncle. Fleshy outgrowth.
Caudal. Tail.
Caudal peduncle. The part of the body just in front of the caudal fin and behind the rear base of the anal fin. Often narrow and sometimes bearing lateral (sideways-projecting) keels.
Cephalic lobe. A flattened extension or appendage of the head.
Chimaera length. Also ghost shark length. The straight-line distance from the tip of the snout to the posterior end of the dorsal caudal fin, i.e., excludes the long tail filament found in many chimaeras and ghost sharks.

Clavus. Rudder-like fin on the rear margin of sunfishes (Family Molidae). Derived from rearward extensions of the dorsal and anal fins.
Coastal. Living only in the sea near land, usually over the continental shelf unless this is very wide. The term "inshore" is often applied to the inner part of the coastal zone.
Concave. Profile curved like the interior surface of a circle or sphere.
Conical. Cone shaped.
Continental shelf. Seafloor adjacent to the coast, usually from 0 to about 200 m depth, and of variable width.
Continental slope. Seafloor starting at the deep end of the continental shelf at about 200 m and extending down to about 2000 m depth.
Convex. Profile curved like the exterior surface of a circle or sphere.
Ctenoid scale. A scale with fine spines or teeth on the rear surface and/or margin.
Cusp. The point or projection on a tooth. Some shark species have a central large cusp and smaller cusps on each side, i.e., total of three cusps per tooth.
Cycloid scale. A scale that is smooth and lacking fine spines or teeth on the rear surface and/or margin.
Deciduous scale. Scale that is easily removed or rubbed off.
Demersal. Living on or near the seafloor.
Denticle. Small tooth or tooth-like projection, usually on the body surface. Most sharks have skin covered with denticles giving a rough texture.
Disc. The flattened body of skates and rays consisting of the head, trunk, and enlarged pectoral fins.
Disc width. The straight-line distance between the widest points on the disc of skates and rays, measured from wingtip to wingtip.
Dorsal. Upper side or surface.
Dusky. Slightly dark or greyish in colour.
Finlet. A small fin-like structure behind the dorsal and sometimes the anal fins.
Fork length (FL). The straight-line distance from the tip of the snout to the fork ("V") of the tail, usually measured for fishes that have a forked tail fin, such as trevally (*Pseudocaranx georgianus*).
Ghost shark length. The straight-line distance from the tip of the snout to the posterior end of the dorsal caudal fin lobe, i.e., excludes tail filament.
Gill raker. A bony tooth-like or brush-like projection on the gill arch, pointing into the throat cavity.
Gill slit. Gill opening, usually paired (one on each side of head) and positioned on the side or underside of the head.
Head length (HL). The straight-line distance from the tip of the snout to the rear (most posterior part) of the bony operculum (gill cover).
Infracaudal. On the ventral side of the caudal peduncle.
Interorbital width. The shortest distance between the eyes.
Iris. Usually circular, coloured membrane of the eye with a small circular opening (pupil) in the centre.
Isthmus. Fleshy (often scaled) part of the body on underside of the head that separates the right and left side gill chambers.
Lamina (plural laminae). Thin plate, scale, or layer, of bone or membrane.
Lateral line. A row of sensory pores or tubed (pored) scales in the skin, starting behind the head and running along the side of the body, often near the midline, usually finishing at or near the base of the caudal fin.
Lower jaw fork length (LJFL). The straight-line distance from the tip of the lower jaw to the fork of the caudal fin.
Maxilla. A bone in the upper jaw located behind and above the other upper jaw bone – the premaxilla. Often flattened and broad posteriorly.
Median fins. Unpaired fins located in the middle of the upper or lower surface of the body, i.e., dorsal (one or more), caudal, and anal fins. In contrast to (see also) paired fins.
Midwater. Any part of the water column between the surface and the seafloor.
Nape. Upper, posterior part of the head.
Nictitating membrane. Transparent moveable inner eyelid, found in some sharks.
Nostril. Small external opening for the nasal organs (smell, taste) on the head or upper body. Usually paired but sometimes single.
Oceanic. Living in the open ocean. "Offshore" is often a comparable term, but can also refer to outer shelf waters as well as oceanic waters.
Operculum. Large flat bony plate on the side and rear of the head just behind the preoperculum; together they form the gill cover.
Ossicles. Plate of bone-like material.
Paired fins. Fins that are paired and usually located on the sides of the body, i.e., pectoral and pelvic fins. In contrast to (see also) median fins.
Papilla. A small fleshy projection. Often found on the head, usually numerous and sensory.
Pectoral fin. Large paired fins on the side of the body just behind the gill opening(s). May be lost or reduced in some species.
Pelagic. Free swimming in the sea, and not usually associated with the seafloor. See also midwater.
Pelvic fin. Paired fins on the underside of the body and usually behind the pectoral fins. May be reduced and located on the throat in some species, e.g., ling (*Genypterus blacodes*). Alternatively called ventral fin.
Pelvic length. The straight-line distance from the tip of the snout to the rear edge of the pelvic fin. The preferred length measurement for skates and rays.
Photophore. Light-producing organ, usually seen as a small dark spot or spots (sometimes numerous) on the sides or underside of the body.
Pored scale. Also tubed scale. A lateral line scale that is associated with a sensory pore and has a hole or tube connecting the pore to the sea.
Posterior. Rear end.
Predorsal. The upper body just in front of the first dorsal fin.
Premaxilla. A bone in the upper jaw located in front of and below the other upper jaw bone – the maxilla. Often toothed.
Preoperculum. A flat bony plate on the side of the head in front of the operculum.
Proboscis. An elongated process on the head.
Pupil. Small circular opening in the centre of the eye iris.
Pyloric caeca (singular is caecum). Small tubes or sacs located at the rear end of the stomach and opening into the gut. Probably provide additional surface area for the digestion of food.
Rostrum (rostral). An extended, or projecting, snout.
Scute. Enlarged, thickened scale relative to other body or lateral line scales. Usually arranged in rows along the body. Can be armed with one or more spines, e.g., John dory (*Zeus faber*).
Snout. The head in front of the eyes.
Spinule. Small spine on the surface of some scales. May have distinctive shapes, e.g., spear-like, cone-like, can be very numerous, and are often arranged in rows.
Spiracle. An opening behind the eye in skates, rays, and some sharks, used for maintaining a flow of oxygenated water over the gills when the mouth is closed, e.g., when the fish is resting or slightly buried on the seafloor. See also nostril.
Standard length (SL). The straight-line distance from the tip of the snout to the rear end of the caudal skeleton (vertebra), usually measured for fishes that have a soft tail fin that is easily damaged, e.g., orange roughy (*Hoplostethus atlanticus*).
Striated. Covered in lines, ridges or furrows.
Suborbital ridge. The ridge below the eye running horizontally along the head, sometimes from the snout to near the rear of the lower head. May be armed with scutes or spines.
Supracaudal. On the dorsal side of the caudal peduncle.
Tail length. The straight-line distance from the anterior of anus or cloaca to the posterior margin of the caudal fin or tail tip.
Terminal. Located at the end, e.g., terminal mouth is located at the front of the head as opposed to a sub-terminal mouth which is behind (and below) the tip of the snout.
Total length (TL). The straight-line distance from the tip of the

snout to the tip of the tail, usually measured for fishes which have a robust tail fin lacking a deep fork, e.g., hapuku (*Polyprion oxygeneios*). Used for most sharks.
Tubed/tubular scale. Also pored scale. A lateral line scale that is associated with a sensory pore and has a hole or tube connecting the pore to the sea.
Tubercle. A projection on the surface of the skin, usually not sensory. See also papilla.
Vent. External opening of the gut, anus.
Ventral. Lower side or surface.
Vomerine teeth. Vomer is a bone on the midline of the roof of the mouth, often near the front, which may bear teeth.

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SECTION 2.
GUIDE TO FAMILIES

1. Myxinidae (hagfishes)

- elongate, eel-like body
- 1–16 small gill slits ventrally, behind level of head
- series of small slime pores from behind mouth to tail, low on each side of body
- skeleton cartilaginous
- jawless mouth, degenerate eyes, single nostril, 3 pairs of sensory barbels on snout, no paired fins, median fins without rays, no scales.

5. Callorhinchidae (elephant fishes)

- one gill opening
- large spine in front of first dorsal fin
- hoe-shaped proboscis-like snout.

6. Rhinochimaeridae (longnose chimaeras)

- one gill opening
- large spine in front of first dorsal fin
- long pointed snout.

7. Chimaeridae (shortnose chimaeras)

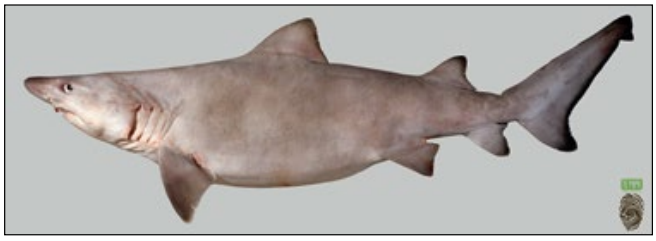
- one gill opening
- large spine in front of first dorsal fin
- short fleshy rounded snout.

15. Rhincodontidae (whale sharks)

- broad terminal mouth
- very long gill openings
- eyes lateral
- several raised ridges along body
- white spots and vertical stripes on body.

16. Odontaspididae (sand tiger sharks)

- 2 large dorsal fins without spines
- anal fin
- 5 long gill openings before pectoral fin
- teeth with long central and 1 or 2 lateral cusps.



17. Mitsukurinidae (goblin sharks)

- snout very long and flat
- protrusible jaws, teeth long and slender
- eyes small
- caudal fin with short ventral lobe and long upper lobe.

20. Alopiidae (thresher sharks)

- upper lobe of caudal fin may exceed body length (excluding tail)
- very small second dorsal fin.

21. Cetorhinidae (basking sharks)

- very large gill slits extend onto dorsal and ventral head
- hair-like gill rakers
- over 200 rows of very small teeth
- small second dorsal fin
- eyes small
- caudal fin nearly symmetrical, lateral keel on caudal peduncle.

22. Lamnidae (mackerel sharks, makos, white sharks, porbeagles)

- fifth gill slit in front of and goes below pectoral fin origin
- small second dorsal fin
- eyes lack nictitating membrane
- lateral keel on caudal peduncle.

23. Scyliorhinidae (cat sharks)

- fifth gill slit over or behind pectoral fin origin
- small multi-cuspid teeth
- anal fin and spiracle present
- caudal fin lacks keels or pits, caudal fin axis only slightly elevated.

25. Pseudotriakidae (false cat sharks)

- first dorsal fin low, long and keel-like
- nictitating eyelids rudimentary
- large spiracles
- many tooth rows, posterior teeth comb-like.

27. Triakidae (hound sharks, smoothhounds, topes)

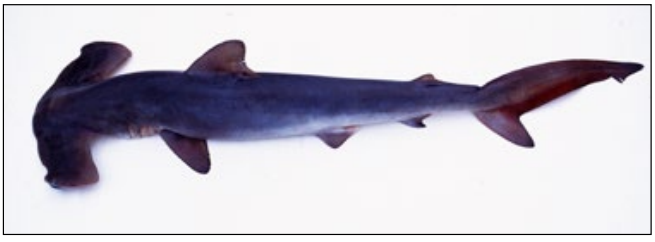
- fifth gill slit over or behind pectoral fin origin
- 2 dorsal fins lacking spines
- anal fin present
- rear of first dorsal fin anterior to pelvic fin origin
- second dorsal fin smaller than first
- no keel on side of caudal fin
- no precaudal pit.

29. Carcharhinidae (requiem sharks)

- fifth gill slit over or behind pectoral fin origin
- 2 dorsal fins lacking spines
- anal fin, precaudal pit present
- nictitating membrane on eye
- teeth blade-like (small to large)
- caudal fin with short lower lobe.

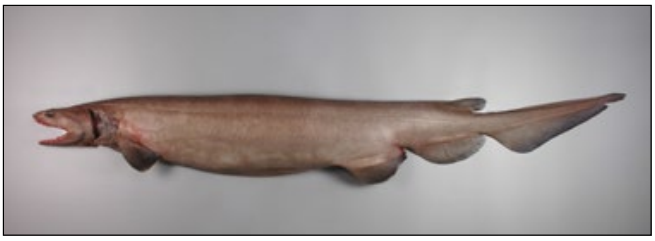
30. Sphyrnidae (hammerhead sharks)

- anterior of head flattened and wide, hammer-shaped with eyes and nostrils at outer edges.



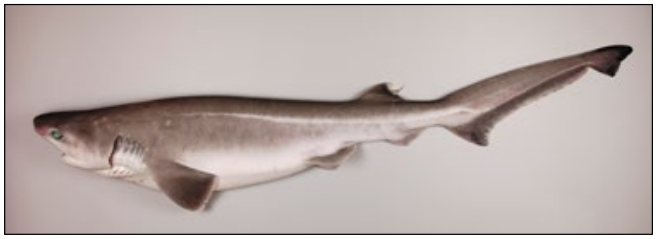
31. Chlamydoselachidae (frill sharks)

- 6 gill openings
- margin of first gill continuous across throat
- mouth terminal
- teeth alike on upper and lower jaws with three long cusps
- body very long.



32. Hexanchidae (cow sharks, sixgill, and sevengill sharks)

- 6 or 7 pairs of long gill slits
- first pair of gill slits not connected across throat
- 1 dorsal fin
- teeth of upper and lower jaws unlike at sides of mouth
- lower jaw teeth very large, broad, and comb-like.



34. Squalidae (dogfish sharks)

- 5 gill slits all anterior to pectoral fins
- spiracles always present
- eyes without nictitating eyelids
- 2 dorsal fins with spines
- no anal fin.

35. Centrophoridae (gulper sharks)

- both dorsal fins with grooved spines
- no anal fin
- teeth on lower jaw larger than those on upper jaw
- precaudal pits and lateral keels absent on caudal peduncle.

36. Etmopteridae (lantern sharks)

- both dorsal fins with grooved spines
- no anal fin
- caudal fin with sub-terminal notch.

37. Somniosidae (sleeper sharks)

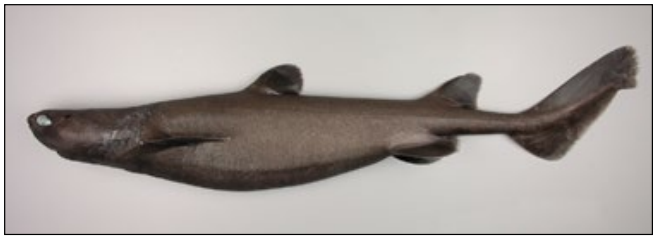
- dorsal fins with small or deeply buried spines or no spines
- no anal fin
- upper jaw teeth slender, dagger-like, lower jaw teeth blade-like.

38. Oxynotidae (rough sharks)

- body high, laterally compressed, triangular in cross section
- dorsal fins very high, each with large spine
- no anal fin
- skin very rough.

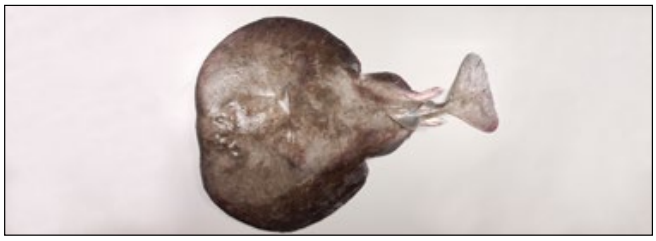
39. Dalatiidae (kitefin sharks)

- dorsal fins without spines
- no anal fin
- luminous organs present as black dots mainly on ventral surface.



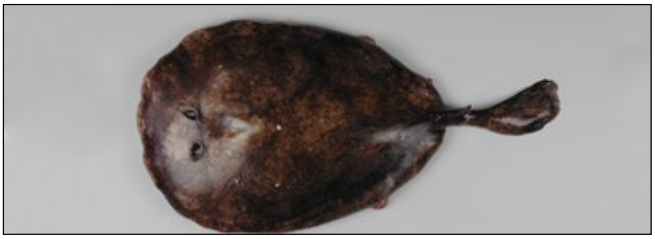
42. Torpedinidae (electric rays)

- large elliptical disc and stout shark-like tail
- body naked above and below without dermal denticles or thorns
- mouth broadly arched and wide
- first dorsal fin originates far behind anterior half of total length.



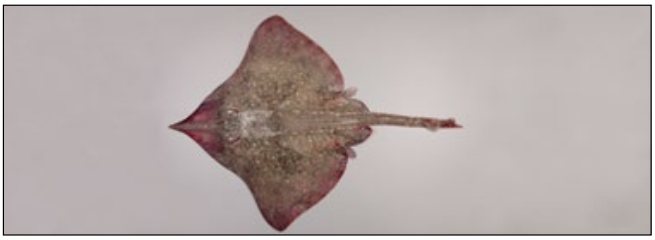
43b. Narkidae (numbfishes, sleeper rays)

- oval body, naked above and below without dermal denticles or thorns
- mouth transverse and straight
- first dorsal fin originates behind anterior half of total length.



48a. Rajidae (hardnose skates)

- snout supported by rostral cartilage
- broad disc with narrow slender tail
- sharp hooked denticles or thorns on dorsal surface
- no barbed sting on tail
- 5 small ventral gill openings
- 2 small dorsal fins present.



48b. Arhynchobatidae (softnose skates)

- snout supported by soft slender rostral cartilage
- large broad flat disc with narrow slender tail
- denticles or thorns on dorsal surface
- no barbed sting on tail
- 5 small ventral gill openings
- 2 small dorsal fins.

55. Dasyatidae (stingrays)

- large oval, circular or rhomboidal disc
- tail usually longer than disc
- 1–4 prominent barbed stings on dorsal tail
- no dorsal or caudal fins.

58. Myliobatidae (devil rays, eagle rays, manta rays)

- large rhomboidal wing-like disc
- slender whip-like tail
- barbed sting (or vestigial) on dorsal tail
- one dorsal fin on tail base
- caudal fin absent.

72. Halosauridae (halosaurs)

- snout projecting in front of mouth
- long anal fin along ventral tail
- no caudal fin
- short-based dorsal fin lacking spines in front of origin of anal fin
- lateral line closer to ventral than dorsal profile of body.

73. Notacanthidae (spiny eels)

- dorsal fin series of short sharp spines
- lateral line closer to dorsal than ventral profile of body.

80. Synaphobranchidae (cutthroat eels)

- gill openings low on body, below pectoral fins (when present)
- gill openings sometimes united in a ventral slit.

81. Ophichthidae (snake eels and worm eels)

- slender elongated body and pointed snout
- pectoral fin present
- caudal fin usually absent
- tip of tail hard and pointed
- posterior nostril near or piercing upper lip
- teeth sharp, mouth large, scales absent.

85. Nemichthyidae (snipe eels)

- elongated thread-like body
- jaws form long diverging beak covered with tiny teeth
- mature males lose beak and have rounded head
- pectoral fins present (small)
- gill openings small, below base of pectoral fin
- anus under or just behind pectoral fins
- scales and pelvic fins absent.

86. Congridae (conger eels)

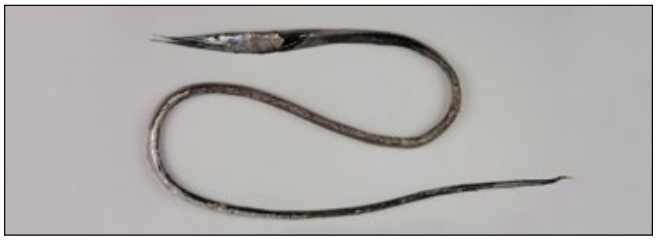
- eye large
- dorsal fin begins over or slightly behind pectoral fins, closer to pectoral fins than to anus
- pectoral fins present
- prominent lateral line
- small teeth usually in bands in jaws and on roof of mouth.

87. Nettastomatidae (duckbill eels)

- very slender body and long snout
- very small teeth in many rows
- no pectoral or pelvic fins
- posterior nostril above and behind eye or down near upper lip
- scales absent.

88. Serrivomeridae (sawtooth eels)

- long, slender jaws
- body silvery-black
- row of saw-like teeth on roof of mouth
- gill opening connected ventrally
- pectoral fins present (small)
- scales and pelvic fins absent.



91. Eurypharyngidae (gulpers or pelican eels)

- very large mouth
- numerous tiny teeth in jaws
- small eyes close to snout tip
- pectoral fin small, just behind gill opening
- scales absent.

95. Engraulidae (anchovies)

- snout projects beyond tip of lower jaw
- lower jaw long, slender, under-slung
- short, single dorsal fin near midpoint of body
- no dorsal adipose fin.

97. Clupeidae (herrings)

- terminal mouth
- series of scutes along abdomen (belly)
- 1 dorsal fin
- scales cycloid
- no lateral line.

99. Gonorynchidae (sandfishes)

- body and head covered with spiny scales
- snout with median scaleless barbel
- pectoral and pelvic fins with fleshy axillary process
- no pored scales on lateral line.

166. Argentinidae (silversides)

- pointed snout
- large eyes
- short-based dorsal fin near mid-point of body
- small adipose fin over anal fin base
- silver longitudinal band on side of body.

168b. Bathylagidae (deepsea smelts)

- 1 small dorsal fin about mid-body
- small adipose fin above anal fin
- gill membrane united, attached at isthmus
- pectoral fins low on body, upper rays below ventral margin of eye.

169. Platytroctidae (tubeshoulders)

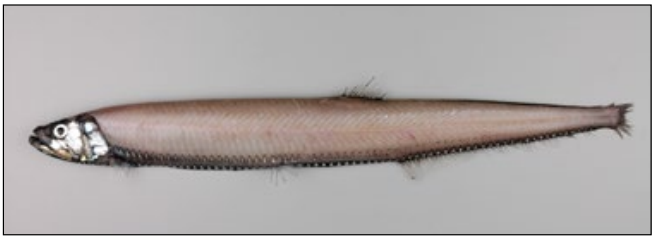
- tube on shoulder near lateral line connected to sac of luminous fluid
- body scaled but head scaleless
- light organs usually present.

171. Alepocephalidae (slickheads)

- dorsal and anal fins on posterior third of body
- adipose fin absent
- pelvic fins abdominal
- head scaleless.

178. Diplophidae (diplophids)

- 2 rows of photophores along lower body
- photophores on isthmus (throat)
- anal fin origin behind dorsal fin origin and below or behind posterior end of dorsal fin
- 46–68 anal fin rays
- no adipose fin, single dorsal fin about mid-body, small pectoral and pelvic fins.



179. Gonostomatidae (bristlemouths)

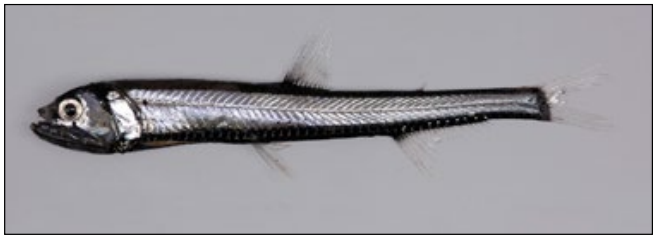
- long thin body
- rows of photophores on lower body
- no photophores on isthmus (throat)
- anal fin origin below or near dorsal fin origin
- anal fin with 16–31 rays.

180. Sternoptychidae (marine hatchetfishes)

- deep-bodied with prominent row of photophores low on sides
- groups of photophores in cluster-like organs
- eye diameter greater than snout length
- dorsal fin small and about mid-body
- long-based low adipose fin
- scales thin and weakly attached.

181. Phosichthyidae (lightfishes)

- 2 rows of photophores on ventral body from head to about anal fin origin
- 1 row of photophores extends back to tail
- dorsal fin small and about mid-body.



182. Stomiidae (barbeled dragonfishes)

- elongated body
- prominent slender teeth in large jaws
- no fully formed gill rakers on first gill arch
- long tentacle-like luring device (barbel) on chin
- postorbital photophore present
- rows of small photophores running along lower body, one row lateral, another ventral.

184. Paraulopidae (cucumber fishes)

- large iridescent eye
- large mouth with fine teeth
- high short-based first dorsal fin
- small adipose fin.

191. Notosudidae (waryfishes)

- eyes large and egg-shaped (not round)
- long snout
- large jaws with 1 or 2 rows of small conical teeth
- rounded body in cross-section
- large body scales weakly attached
- dorsal fin about mid-body.
- small adipose fin.

192. Ipnopidae (deepsea tripod fishes)

- eyes usually either minute and lateral or flat and dorsal
- mouth large with upper jaw extending far behind eye, minute teeth
- dorsal fin short-based and high near mid-body
- pelvic fins on anterior half of body.

193. Scopelarchidae (pearleyes)

- large tubular eyes directed upwards
- mouth large with upper jaw back to or beyond rear edge of eye
- lower jaw teeth in 2 rows with inner series long depressible canines
- dorsal fin short-based, low, near mid-body
- lateral line present with large scales pierced by large central pore.

194. Evermannellidae (sabretooth fishes)

- eyes normal or large, tubular, and directed upward
- mouth very large with upper jaw back beyond eye
- some lower teeth very large fangs
- dorsal fin short-based, at or before mid-body
- lateral line poorly developed in adults
- no body scales.

195. Alepisauridae (lancetfishes)

- long, slender, scaleless body
- high sail-like dorsal fin extending along most of body
- mouth large with prominent dagger-like teeth on roof of mouth
- small adipose fin near tail.

196. Paralepididae (barracudinas)

- long slender body
- long head, large eyes
- large mouth with fang-like teeth in lower jaw
- 2 small dorsal fins, first with rays near middle of body, adipose second fin near tail
- small pectoral and pelvic fins.

197. Bathysauridae (deepsea lizardfishes)

- head flattened
- upper jaw long, reaches back past rear of eye
- teeth in both jaws large, hooked, in broad bands, extend outside mouth
- scales along lateral line enlarged.

199. Neoscopelidae (blackchins)

- eye diameter less than or equal to snout length
- origin of anal fin far behind rear of dorsal fin
- dorsal adipose fin
- photophores on body in horizontal rows and on tongue in Neoscopelus.

200. Myctophidae (lanternfishes)

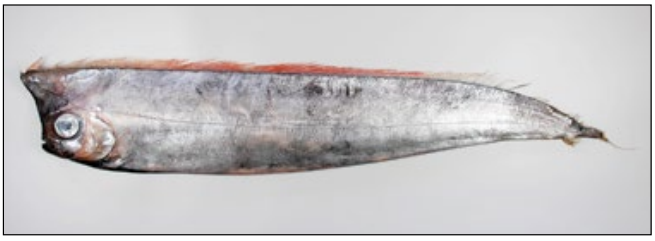
- eye diameter greater than snout length
- jaws extend to or far behind posterior margin of eye
- origin of anal fin under middle of dorsal fin to slightly behind
- 1 dorsal adipose fin
- all species with groups of photophores on head and body.

202. Lampridae (opahs)

- body oval or elliptical
- brightly coloured pink, blue, or purple sometimes with white spots, jaws and fins bright red.

204. Lophotidae (crestfishes)

- long laterally flattened body
- front of head rising steeply vertically or obliquely forward
- 1 dorsal fin with high short-based crest at front of head, then back at uniform height to tail fin
- anal fin small
- body with small cycloid scales.



206. Trachipteridae (dealfishes)

- anterior dorsal fin with 4–8 long flexible spines just above eye
- anal fin absent
- skin usually covered with bony raised tubercles
- scales absent except for lateral line.

207. Regalecidae (oarfishes)

- very long ribbon-like body
- first 8–10 dorsal fin rays very long
- anal fin absent
- pelvic fins with 1 stout ray
- scales absent except for tubular lateral line scales
- body brilliant silver
- long dorsal and pelvic fin rays crimson-red.

212. Muraenolepididae (eel cods, moray cods)

- chin barbel present
- caudal fin continuous with anal and second dorsal fins
- 2 dorsal fins, first very short with 1 or 2 rays (second ray long)
- gill opening only extends up to level with pectoral fin base
- no pyloric caeca.

214. Euclichthyidae (Eucla cod)

- 2 dorsal fins nearly joined, first high and short-based, second long-based back to base of caudal fin
- anal fin long with tall anterior lobe
- separate caudal fin
- no chin barbel
- pelvic fins under head, with 4 long rays.

215a. Bathygadidae (codhead rattails)

- mouth large, wide, terminal, lacks protruding snout
- chin barbel absent in Bathygadus, present in Gadomus
- teeth small, in bands
- outer gill rakers >20, long, slender
- 2 dorsal fins, first short-based, second long.

215b. Macrouroididae (balloonhead rattails)

- very large soft head
- eyes very small
- mouth small, underslung
- 1 long, low dorsal fin
- no chin barbel
- pelvic fin small, 5–6 rays.

215c. Trachyrincidae (rough rattails)

- mouth large, wide, under snout
- long pointed snout
- small teeth in bands in both jaws
- 2 dorsal fins, first short-based second long
- longitudinal rows of thorn-like scutes on body at base of dorsal and anal fins
- may have small chin barbel.

215d. Macrouridae (rattails)

- long tapered tail
- chin barbel usually present
- 2 dorsal fins first short-based, front 2 rays spinous, second long-based
- exposed part of body scales usually covered with spinules.

216. Moridae (morid cods)

- no spines in fins
- 2 or 3 dorsal fins, first short, second (and third if present) long
- caudal fin separated from dorsal and anal fins
- chin with or without barbel.

217. Melanonidae (pelagic cods)

- no chin barbel
- long body and short head
- body scales small, don't extend onto bases of anal and dorsal fins
- 1 long-based dorsal fin raised at anterior end,
- long-based anal fin
- very slender caudal peduncle.

218. Merlucciidae (hakes)

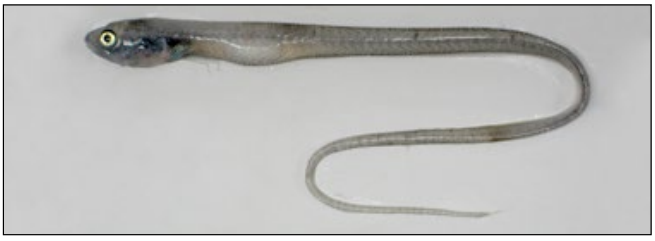
- 2 dorsal fins
- no chin barbel
- large terminal mouth with long teeth.

220. Gadidae (true cods)

- 3 dorsal fins
- 2 anal fins.

221. Carapidae (pearlfishes)

- small, eel-like, translucent body
- lacks scales
- anus near throat in front of anal fin origin
- dorsal, caudal, and anal fins continuous.



222. Ophidiidae (cusk-eels)

- anterior nostril midway between upper lip and posterior nostril
- usually well-developed spine on operculum
- 0–2 pelvic rays
- anus usually posterior to tip of pectoral fins.

223. Bythitidae (viviparous brotulas)

- anterior nostril immediately above upper lip
- well developed spine on operculum
- 0–2 pelvic rays.

232. Chaunacidae (coffinfishes)

- skin very loose and densely covered with small spine-like scales
- mouth large and oblique to nearly vertical
- gill openings very small
- angling apparatus near tip of snout
- pectoral fins narrow and paddle-like.

236. Melanocetidae (black seadevils, humpback anglerfishes)

- globular body (females)
- large mouth, many long fang-like teeth
- no dorsal head spines
- smooth naked skin
- long-based soft dorsal fin, 12–17 rays
- very short anal fin with 4 rays
- males much smaller, elongate, and free-living.

237. Himantolophidae (prickly anglerfishes, footballfishes)

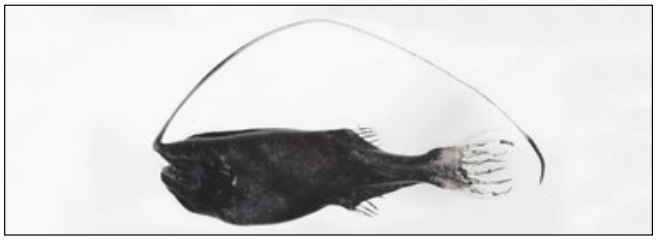
- large females have large bony plates bearing an erect spine embedded in the skin
- robust projected lower jaw
- large bioluminescent esca with tentacles at tip of illicium
- males much smaller and free-living.

242. Ceratiidae (seadevils)

- females have 2–3 club-shaped light organs (caruncles) on dorsal midline ahead of soft dorsal fin
- no spines above and behind eyes
- bony support for illicium emerging from head above eyes
- skin covered with small close-set denticles and sandpaper-like
- soft dorsal and anal fins short-based and opposite each other
- males parasitic on females.

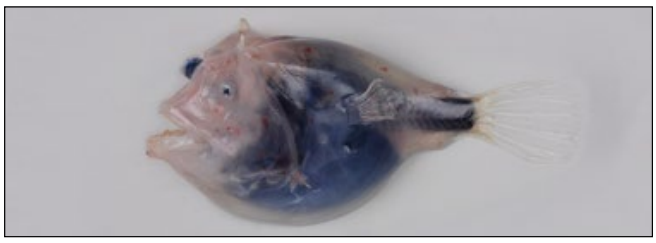
243. Gigantactinidae (whipnose or slender anglerfishes)

- females have long streamlined body
- small head
- long slender caudal peduncle
- very long illicium, length 1–4 times SL
- males free-living.



244. Linophrynidae (leftvents)

- females have soft dorsal and anal fins with 3 rays (rarely 2 or 4)
- illicium short, less than head length with large terminal bioluminescent organ (esca)
- adult males smaller, parasitic on females.



245. Mugilidae (mullets)

- head broad, flattened dorsally
- eyes partly covered by adipose eyelid
- 2 well separated short dorsal fins
- lateral line absent
- flanks of body silvery.

253. Exocoetidae (flyingfishes)

- wing-like pectoral fins
- enlarged pelvic fins in some species
- long silvery body with flattened sides
- small mouth
- lateral line runs along lower body
- short-based dorsal and anal fins posteriorly on body
- lower lobe of caudal fin longer than upper.

254. Hemiramphidae (halfbeaks)

- very long lower jaw
- short triangular upper jaw.

256. Scomberesocidae (sauries)

- long cigar-shaped body
- short-based dorsal and anal fins posteriorly on body, each followed by a series of detached finlets
- adults of local species have elongated bill-like upper and lower jaws.

267. Melamphaidae (bigscale fishes)

- large head with prominent but soft bony ridges and deep mucous-filled cavities
- body covered with thin medium to large weakly attached scales
- teeth very small, one dorsal fin centrally on back.

276. Anoplogastridae (fangtooths)

- blackish, deep body
- large mouth and very large fang-like teeth
- 1 dorsal fin of uniform height opposite short-based anal fin
- small, prickly scales embedded in skin
- lateral line an open groove, bridged at intervals by scales.

277. Diretmidae (spinyfins, discfishes)

- eyes very large, diameter much longer than snout length
- jaws don't reach back beyond eye
- scales present on dorsal and anal fin rays
- no lateral line
- enlarged mid-ventral scutes present.

280. Trachichthyidae (roughies)

- head with mucus-filled cavities separated by spinous ridges and covered with membranous skin
- 1 dorsal fin
- row of scutes along mid-ventral belly between pelvic and anal fins.

281. Berycidae (alfonsinos)

- large, deep mucus cavities on top of head separated by thin ridges and covered by skin
- cheeks and operculum scaled
- eye diameter very large, greater than snout length
- large oblique mouth, jaws not extending back beyond eye
- 1 dorsal fin.

283. Cyttidae (lookdown dories)

- body very deep and laterally compressed (thin)
- no large thick scales carrying a spine along bases of dorsal and anal fins
- dorsal fin with 8–10 spines
- sides of body bright silver.

284. Oreosomatidae (oreos)

- body deep and laterally compressed
- no large spiny scales present along bases of dorsal and anal fins or along ventral midline in adults
- dorsal fin with 5–8 spines
- body dull grey brown or black.

286. Zeniontidae (armoreye dories)

- pectoral fin rays 12–18
- scales on most of body rounded to squarish.

288. Zeidae (dories)

- body very deep and laterally compressed
- large, thick scales carrying a spine present along bases of dorsal and anal fins.

295. Syngnathidae (pipefishes and seahorses)

- tubular body encased in bony armour with segemented rings and lengthwise ridges
- snout tube-like and tipped with small mouth.

298. Macroramphosidae (snipefishes, bellowsfishes)

- body laterally compressed
- head long, snout long and tubular
- second spine in first dorsal fin greatly enlarged with posterior edge serrated
- body covered with small distinct scales
- 2 series of bony plates embedded in skin on back between head and dorsal fin.

304a. Sebastidae (seaperches)

- eye large
- strong spines and ridges on head
- suborbital ridge with or without spines
- dorsal fin spines 12–13
- dorsal fin rays 8–9 or 11–13.

304d. Scorpaenidae (scorpionfishes, lionfishes)

- eye large
- strong spines and ridges on head
- dorsal fin spines 12–13
- anal fin spines 2–3.

309. Congiopodidae (pigfishes)

- snout relatively long with small terminal mouth
- leathery body skin without scales
- dorsal fins joined and long.

310. Triglidae (gurnards, searobins)

- large bony head with paired forward projections on snout
- no scales on head
- pectoral fins large with 2–3 lower rays free
- trunk and tail covered with scales of various sizes
- lateral line distinct.

314. Hoplichthyidae (ghost flatheads)

- body mostly scaleless
- row of spiny scutes along lateral line covering much of back and upper half of sides.

325. Psychrolutidae (toadfishes)

- body tadpole-shaped
- skin smooth and loose, covering body, dorsal, and anal fins.

337. Polyprionidae (wreckfishes)

- operculum with horizontal ridge on upper rear ending in short spine
- dorsal fin with 11–12 strong spines and usually 11–12 soft rays
- base of soft dorsal fin half the length of spinous dorsal fin base.

338. Serranidae (sea basses)

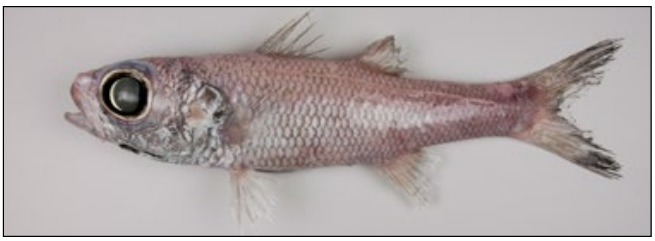
- operculum with 2–3 (usually 3) flat spines
- lower rear margin of pre-operculum serrated
- mouth large and terminal, maxilla exposed when mouth closed.

341. Callanthiidae (Splendid perches)

- lateral line arched sharply upward behind head, follows dorsal profile of body just below dorsal fin base and along upper caudal peduncle
- dorsal and anal fins with spines and rays progressively increasing in length posteriorly.

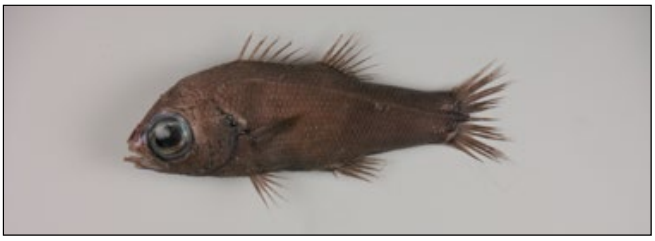
353. Epigonidae (deepwater cardinalfishes)

- eye large
- mouth large and oblique, maxilla narrow and does not reach back beyond middle of eye
- 2 dorsal fins first with spines, second with 1 spine and 8–11 soft rays
- lateral line complete, extends onto caudal fin.



353a. Howellidae (pelagic basslets)

- 2 separate, short-based dorsal fins, first with 7–8 spines, second with 1 spine and 8–10 soft rays
- anal fin with 1–3 spines and 6–8 soft rays
- scales on body and most of head.



361. Coryphaenidae (dolphinfishes)

- 1 dorsal fin with origin on top of head, extends back nearly full length of body
- anal fin extends about half length of body
- no spines in dorsal and anal fins
- caudal fin deeply forked
- blunt, steep forehead in adult males
- brilliant, iridescent and variable body colours.

363. Echeneidae (remoras, sharksuckers)

- sucking disc on top of head and nape
- body long, head flattened
- lower jaw projected past upper jaw
- scales small
- dorsal and anal fins lack spines.

364. Carangidae (jacks, trevallies)

- 2 dorsal fins, first with spines, second with 1 spine and numerous soft rays
- scales small and sometimes difficult to see
- lateral line arched above pectoral fins and straight posteriorly
- scutes present on lateral line in some.

367. Bramidae (pomfrets)

- angle of jaw steep (not horizontal)
- 1 dorsal fin
- caudal fin of adults strongly forked
- maxilla scaled
- snout, lower jaw, opercular, and pre-opercular margins lack scales.

368. Caristiidae (manefishes)

- body deep
- dorsal fin high, long-based
- no anal fin spines
- pelvic fins long with 1 spine and 5 soft rays
- skin extends onto bases of dorsal and anal fins.

369. Emmelichthyidae (bonnetmouths, rovers)

- cigar-shaped body
- mouth small
- upper jaw highly protrusible
- maxilla wide posteriorly and scaled.

378. Sparidae (seabreams, porgies)

- upper jaw never reaches back beyond middle of eye
- hind tip of premaxilla overlaps maxilla
- jaw teeth prominent, with either conical or flattened and often rounded forms
- pelvic fin with axillary scale at base.

382. Mullidae (goatfishes)

- 2 long barbels under lower jaw
- 2 widely separated short-based dorsal fins.

389. Arripidae (kahawai, Australian salmon)

- head conical
- maxilla reaching back to below centre of eye
- dorsal fin usually with 9 spines, spinous dorsal fin higher than soft rayed portion (15–18 rays).

391a. Girellidae (nibblers)

- body deep, laterally compressed
- mouth terminal with beak-like snout
- dorsal fin continuous with 11–16 spines and 10–17 soft rays
- interorbital space without scales.

391c. Scorpididae (sweeps, halfmoons)

- jaws lack canine teeth
- dorsal fin continuous
- soft-rayed dorsal and anal fins covered with scales.

396. Pentacerotidae (boarfishes, armorheads)

- deep-bodied
- head encased in rough striated bone.

404. Aplodactylidae (marblefishes)

- long dorsal fin with deep notch that separates spinous and soft-rayed parts
- short triangular anal fin
- large rounded pectoral fin
- scales small, embedded in skin, extend onto cheeks and gill plate
- scales form sheath at base of spinous dorsal fin.

405. Cheilodactylidae (moki, tarakihi)

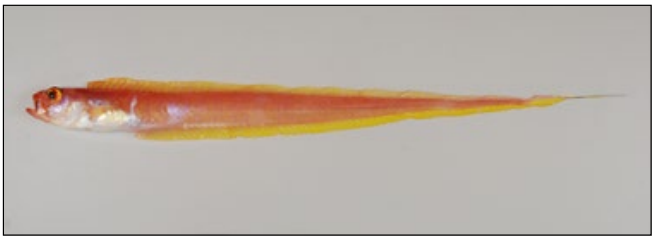
- lower 4–7 pectoral fin rays unbranched, thickened and some elongated
- mouth small, terminal to slightly inferior, with thick lips in adults
- anal fin soft rays 7–17.

406. Latridae (trumpeters)

- lower pectoral fin rays normal, i.e., not elongated
- small body scales
- caudal fin forked
- anal fin soft rays 17–37.

407. Cepolidae (bandfishes)

- long tapered body and tail
- continuous, long dorsal and anal fins
- large oblique mouth
- lateral line runs immediately below dorsal fin base.



411. Pomacentridae (damselfishes)

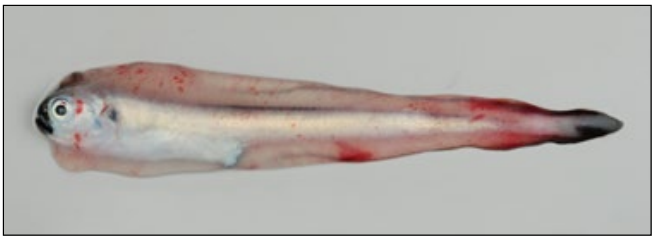
- often brightly coloured but juveniles and adults may have different colouration
- body deep and covered with large scales, smaller scales on most membranes of unpaired fins
- lateral line stops below posterior dorsal fin
- small mouth does not reach back to front of eye
- dorsal fin long-based with soft part taller than spinous part.

412. Labridae (wrasses)

- mouth terminal with prominent lips
- mouth protrusible
- teeth usually separate with canine-like front 1 or 2 pairs often enlarged and directed forward
- 1 long-based dorsal fin
- scales cycloid.

416. Zoarcidae (eelpouts)

- 1 dorsal fin
- dorsal, caudal, and anal fins confluent
- no spines in fins
- spines on head or gill plate
- pelvic fin reduced or absent
- 1 nostril
- scales absent or minute and embedded in skin.

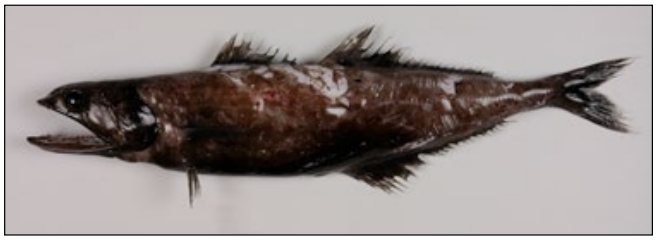


427. Nototheniidae (ice cods, cod icefishes)

- body scaled
- gill membranes form a fold across isthmus
- spinous dorsal fin with 3–11 spines
- 1–3 lateral lines.

432. Chiasmodontidae (swallowers)

- top of head (cranium) rough and pitted by sensory pores
- mouth large with non-protractile jaws that reach back past rear of eye
- 2 separate dorsal fins, spinous part short, soft part and anal fin long
- gut highly distensible and able to hold large prey
- no scales but juveniles have spines on skin.



435. Pinguipedidae (sandperches)

- curved canine-like teeth in outer row at front of jaws
- long dorsal fin with soft higher than spinous part.

439. Percophidae (opalfishes)

- 2 separate dorsal fins, first with 2–6 spines and second with 13–23 soft rays
- pelvic fin in front of pectoral fin and with wide space between fin base.

440. Leptoscopidae (southern sandfishes, stargazers)

- long body, broad blunt head
- small eyes on top of head
- wide mouth, jaws fringed by cirri
- 1 long-based dorsal fin, slightly longer anal fin
- large scales, single lateral line.

443. Uranoscopidae (armourhead stargazers)

- head flattened above and encased in sculptured bones
- eyes on or near top of head
- almost vertical mouth
- first gill arch with teeth rather than gill rakers
- pelvic fins close together.

453. Callionymidae (dragonets)

- barbed spine on cheek
- small protrusible mouth directed forward and down
- small gill opening
- eyes dorsal on head
- no scales
- 2 separate dorsal fins, first short, second with much longer base, anal fin length similar to soft dorsal fin.

472. Sphyraenidae (barracudas)

- long body, pointed head
- long, pointed, canine teeth
- 2 short-based, widely separated dorsal fins.

473. Gempylidae (snake mackerels, gemfishes)

- 2 separate dorsal fins with spinous part longer than soft second part (exclude finlets)
- 2 nostrils on each side of head
- pelvic fins small and often reduced to 1 spine with a few or no soft rays.

474. Trichiuridae (cutlassfishes, scabbardfishes)

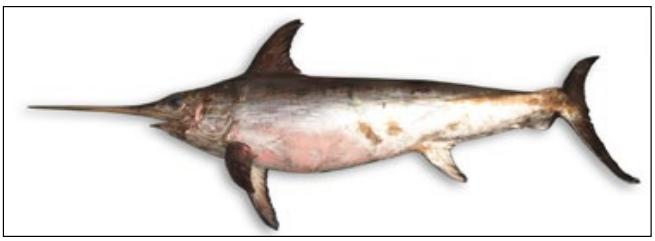
- 2 continuous dorsal fins or separated by shallow notch, spinous first shorter than soft second part
- 1 nostril on each side of head
- body very long, laterally compressed
- caudal fin absent or small forked fin
- pelvic fin reduced to scale-like spine or completely absent.

475. Scombridae (mackerels, tunas)

- finlets present behind dorsal and anal fins
- caudal fin deeply forked
- at least 2 keels on each side of caudal peduncle in many species.

476. Xiphiidae (swordfishes)

- upper jaw forms long bill, flattened in cross-section
- 2 widely separate dorsal fins in adults
- branchiostegal/gill membranes separated at centre of throat into left and right parts
- large keel present on each side of caudal peduncle
- large, deep notch on both upper and lower profiles of caudal peduncle
- pelvic fins absent
- jaws toothless.



477. Istiophoridae (billfishes)

- snout forms long bill, rounded in cross section
- first dorsal fin very long-based, second dorsal fin short-based
- branchiostegal/gill membranes from left and right joined at centre of throat
- 2 keels on each side of caudal peduncle in adults
- pelvic fins medium to long, fold into ventral groove
- jaws with small teeth.

479. Centrolophidae (warehous, medusafishes)

- lower jaw often shorter than upper, tucks inside it when closed
- very small teeth in jaws, in single series, no teeth on roof of mouth
- dorsal fin long
- no scales on head
- head with small pores that may extend back onto trunk.

480. Nomeidae (cubeheads, driftfishes)

- 2 dorsal fins, first high with long slender spines, folding into groove along the back
- scales thin and deciduous
- numerous pores on snout, head, and back.

482. Tetragonuridae (squaretails)

- very long rounded body
- caudal peduncle long, almost square in cross section with 2 scaly lateral keels on each side
- teeth in lower jaw large, flat with curved tips, lower jaw recessed within upper.

494. Bothidae (lefteye flounders)

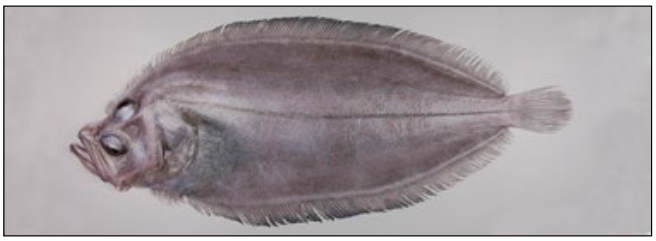
- eyes on left side of head
- dorsal fin origin above or ahead of anterior margin of upper eye
- caudal fin not attached to dorsal and anal fins
- lateral line on eyed side with high arch over pectoral fin.

497. Rhombosoleidae (southern righteye flounders)

- eyes on right side of head
- mouth and teeth small
- dorsal fin origin anterior to posterior margin of upper eye
- caudal fin not attached to dorsal and anal fins
- lateral line on both sides of body.

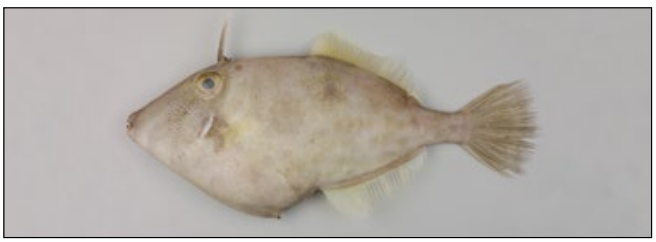
498. Achiropsettidae (finless flounders)

- eyes on left side of head
- pectoral fin very small (juveniles) or absent (adults)
- lateral line on eyed side and straight.



506. Monacanthidae (leatherjackets, filefishes)

- first dorsal fin is strong spine which can be locked upright
- leather-like skin
- pelvic fins reduced to bony knob on ventral body.



509. Tetraodontidae (puffers)

- body inflatable and naked or with short prickles
- 2 fused teeth in upper and lower jaws
- 1 dorsal fin with soft rays
- most have lethal toxin associated with internal organs and skin.

510. Diodontidae (porcupinefishes)

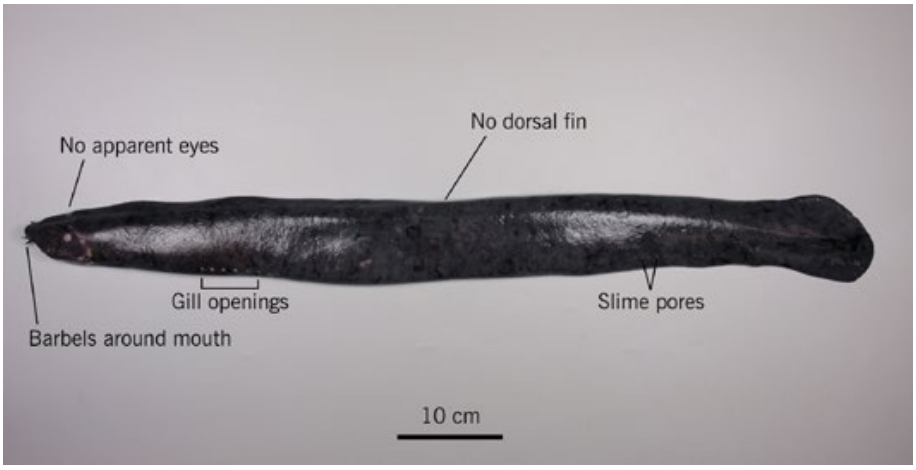
- body inflatable and covered with large spines
- strong beak-like teeth fused with no gap between left and right halves, in both jaws.

511. Molidae (sunfishes, molas)

- no caudal peduncle, caudal fin lost
- posterior end of body a leathery flap or pseudo-caudal (clavus)
- 1 short-based, high, dorsal fin located on rear of body and opposite similar shaped anal fin
- 2 fused teeth in both jaws
- 1 gill opening in front of pectoral fin.

SECTION 3.
GUIDE TO SPECIES

Hagfish *Eptatretus cirrhatus*



Family: 1. Myxinidae (Hagfishes)
Maori names: Napia, pia, tuare, tuere
Other names: Common hagfish
FishNZ reporting code: HAG
FishNZ research/observer code: HAG

Distinguishing features: No dorsal fin, no externally obvious eyes (eyespots present), barbels around the mouth. 6 to 8 pairs of external gill openings on the side of the body. Dark brown to purple-brown body with narrow white rings around slime pores.

Colour: Dark brown to purple-brown. Some of the slime pores with narrow white rims.

Size: To 97 cm TL.

Length measurement method: Total length

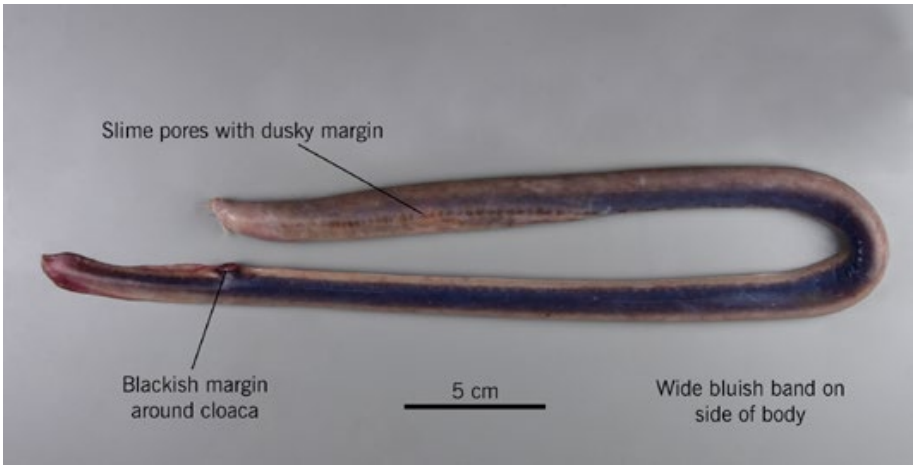
Distribution: Widespread in New Zealand on the shelf and upper slope. A similar species occurs in southern and eastern Australia.

Depth: 1 to 920 m.

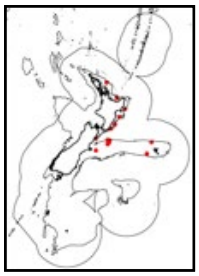
Similar species: Cryptic hagfish (*Eptatretus cryptus*) is uniform brown, and lacks narrow white rims around the slime pores. Giant hagfish (*Eptatretus goliath*) reaches over 100 cm TL, is dark brown with a few dark blotches on body, and lacks narrow white rims around slime pores. Mottled hagfish (*Eptatretus poicilus*) has whitish or greyish patches on brown body and head and is only known from top of the North Island. Species of *Nemamyxine* and *Neomyxine* have a single pair of gill openings.

Biology & ecology: Benthic to demersal. Appears to feed on carrion and will take a baited hook. Has a simple elongated gut and is probably capable of ingesting large amounts of food in a relatively short time.

Blueband hagfish *Neomyxine caesiovitta*



Family: 1 Myxinidae (Hagfishes)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: NCV



Distinguishing features: Wide bluish band along side of body. Cloaca and caudal finfold with blackish margin. Slime pores often with dusky margin. Single pair of ventral gill openings, left side gill opening larger than right. No dorsal fin, no externally obvious eyes, three pairs of barbels around the mouth, posterior pair largest.

Colour: Wide bluish band along side of body. Dorsal and ventral surface of body and head pale creamy or pinkish. Cloaca and caudal finfold with blackish margin.

Size: To about 65 cm TL.

Length measurement method: Total length

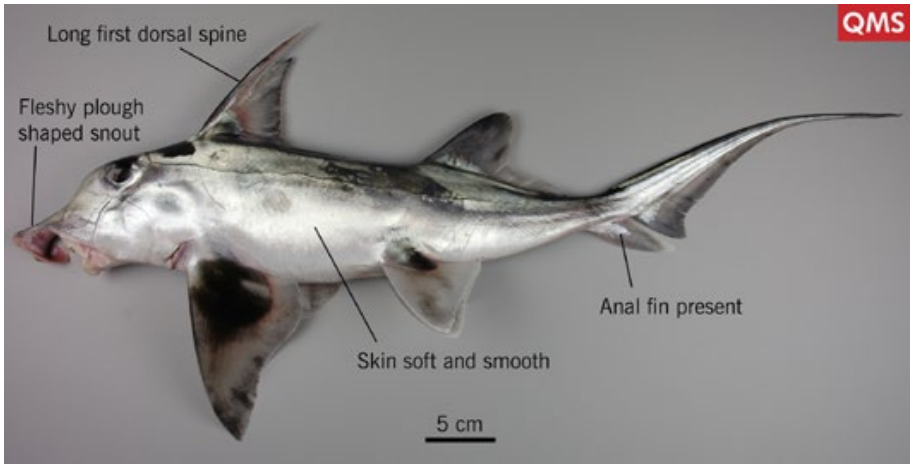
Distribution: Known only from New Zealand with records from east coasts of North and South Islands to about Banks Peninsula, and Chatham Rise. Data plotted on the map includes only data from Te Papa and does not include any fisheries records.

Depth: 100 to 1200 m.

Similar species: Slender hagfish (*Neomyxine biniplicata*) has pinkish-grey body and whitish margin of cloaca and caudal finfold, and slime glands are visible under the skin.

Biology & ecology: Demersal.

Elephantfish *Callorhinchus milii*



Family: 5. Callorhinchidae (Elephant fishes, ploughnose chimaeras)

Maori names: Reperepe

Other names:

FishNZ reporting code: ELE

FishNZ research/observer code: ELE

Distinguishing features: Fleshy plough-shaped snout, long spine in front of first dorsal fin (none on second dorsal), anal fin present, skin soft and smooth.

Colour: Silver with a metallic sheen on back; black saddles and patches on nape, back, and fin bases.

Size: To 100 cm FL.

Length measurement method: Fork length

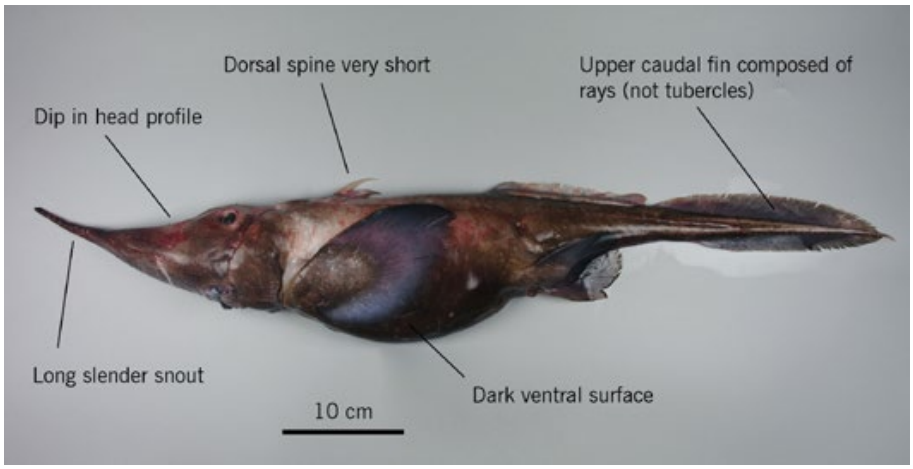
Distribution: Eastern Bay of Plenty to Stewart Island shelf. Southeast Australia.

Depth: A few to 150 m.

Similar species: Ghost sharks and chimaeras lack the fleshy plough-shaped snout.

Biology & ecology: Demersal. Most common around South Island. Make inshore spawning migrations in spring-summer.

Smallspine spookfish *Harriotta haeckeli*



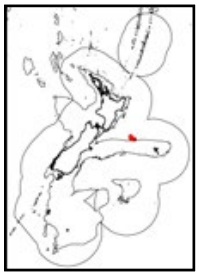
Family: 6. Rhinochimaeridae (Longnose chimaeras)

Maori names:

Other names: Smallspine spookshark

FishNZ reporting code: UNI

FishNZ research/observer code: HHA



Distinguishing features: Long slender snout that is often upturned, head profile dips gently in front of eye, first dorsal fin spine very short, upper caudal fin not composed of fleshy tubercles (males), ventral surface of head and body (especially belly) darker than dorsal surface.

Colour: Pale brown above, darker brown below, particularly on belly. Some individuals dark brown above and blackish below.

Size: To about 70 cm ghost shark length (excluding tail filament), or 74 cm TL.

Length measurement method: Ghost shark length (G)

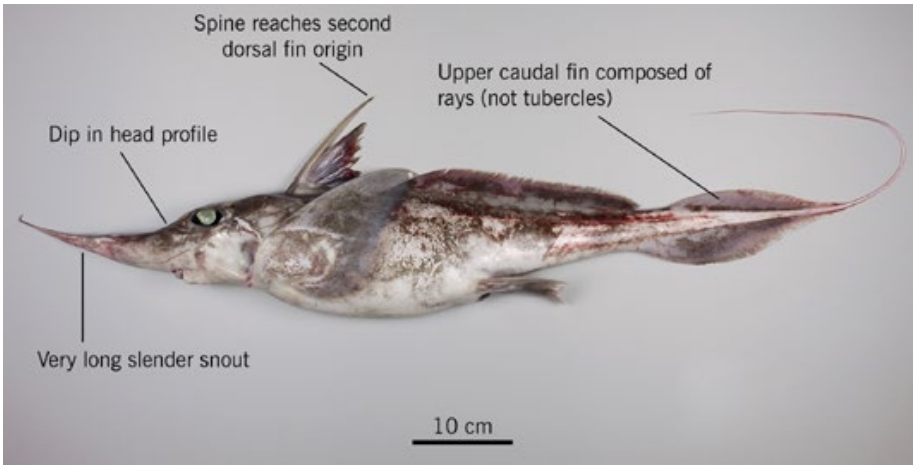
Distribution: Lower North Island to Bounty Trough in New Zealand. North Atlantic, and Indian oceans including southeast Australia

Depth: 1400 to 2600 m.

Similar species: Pacific spookfish (*Rhinochimaera pacifica*) has a much longer snout, flatter head profile, longer dorsal spine and has tubercles (males) instead of rays on the upper caudal fin lobe. Longnose spookfish (*Harriotta raleighana*) has a long first dorsal fin spine that reaches origin of second dorsal fin, and occurs shallower than about 1500 m.

Biology & ecology: Probably demersal on the lower continental slope.

Longnose spookfish *Harriotta raleighana*



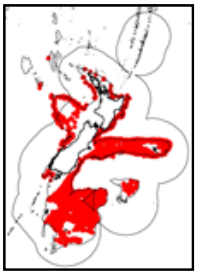
Family: 6. Rhinochimaeridae (Longnose chimaeras)

Maori names:

Other names: Longnose chimaera

FishNZ reporting code: LCH

FishNZ research/observer code: LCH



Distinguishing features: Very long slender snout, often upturned; head profile dips sharply from forehead to snout, first dorsal fin spine long, reaching origin of second dorsal fin, upper caudal fin composed of rays, not fleshy tubercles.

Colour: Dark brown above (except where skin abraded), pale below.

Size: To about 85 cm ghost shark length (excl. tail filament) or 120 cm TL.

Length measurement method: Ghost shark length (G)

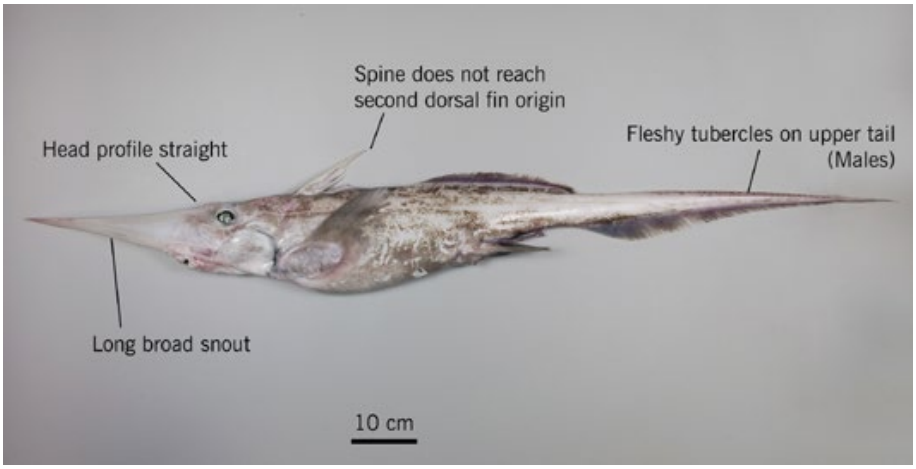
Distribution: Widespread in New Zealand from top of North Island to Campbell Plateau. Widespread patchy distribution in Atlantic, Pacific, and west Indian Oceans.

Depth: 400 to 1300 m.

Similar species: Pacific spookfish (*Rhinochimaera pacifica*) has longer snout, flatter head profile, relatively short dorsal spine length and has tubercles (males) instead of rays on upper caudal fin lobe. Smallspine spookfish (*Harriotta haekeli*) has short first dorsal fin spine not reaching origin of second dorsal fin, upturned snout, and occurs deeper than about 1500 m.

Biology & ecology: Demersal.

Pacific spookfish *Rhinochimaera pacifica*



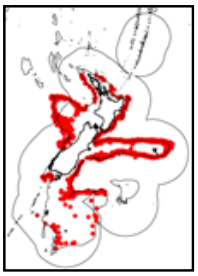
Family: 6. Rhinochimaeridae (Longnose chimaeras)

Maori names:

Other names: Widenose chimaera

FishNZ reporting code: RCH

FishNZ research/observer code: RCH



Distinguishing features: Long broad robust snout; head profile straight from forehead to snout, first dorsal fin spine not reaching origin of second dorsal fin, upper caudal fin composed of fleshy tubercles (males).

Colour: Brown to brownish-grey (except where skin abraded), tooth plates black.

Size: To about 160 cm ghost shark length (end of tail in this species), or 165 cm TL.

Length measurement method: Ghost shark length (G)

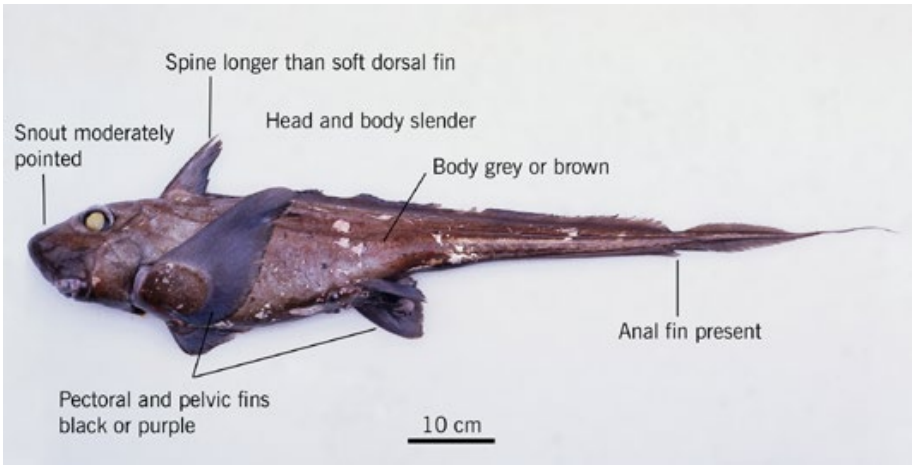
Distribution: North Cape to Campbell Plateau in New Zealand. Scattered distribution in Pacific and Indian Oceans.

Depth: 400 to 1300 m.

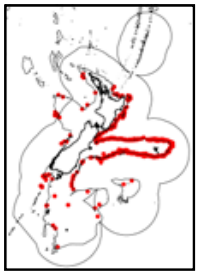
Similar species: Longnose spookfish (*Harriotta raleighana*) has slender snout shape, rounded head profile, long dorsal spine, and lacks upper caudal fin tubercles (males).

Biology & ecology: Demersal.

Brown chimaera *Chimaera carophila*



Family: 7. Chimaeridae (Shortnose chimaeras)
Maori names:
Other names:
FishNZ reporting code: CHP
FishNZ research/observer code: CHP



Distinguishing features: Anal fin present, head slender, snout pointed, body tapers gradually, first dorsal fin spine longer than soft dorsal fin (height).

Colour: Body grey to dark brown sometimes with slight iridescence, pectoral and pelvic fins blackish or purplish, black ring around eye.

Size: To about 90 cm ghost shark length (excl. tail filament) or 105 cm TL.

Length measurement method: Ghost shark length (G)

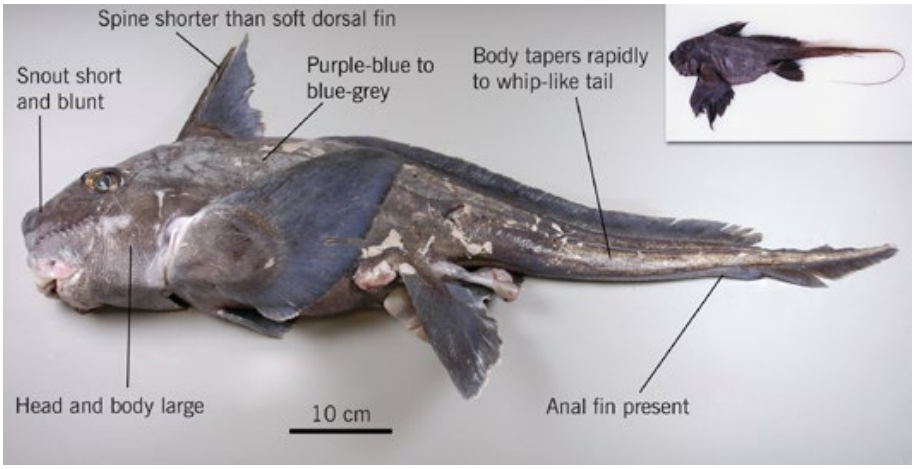
Distribution: North Cape to Campbell Plateau. Known only from the New Zealand region.

Depth: 800 to 1500 m.

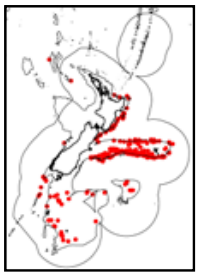
Similar species: *Hydrolagus* species lack an anal fin. Other *Chimaera* species have different combinations of body and snout shape, colour, and first dorsal spine length relative to dorsal fin

Biology & ecology: Demersal. Uncommon.

Giant chimaera *Chimaera lignaria*



Family: 7. Chimaeridae (Shortnose chimaeras)
Maori names:
Other names: Purple chimaera
FishNZ reporting code: CHG
FishNZ research/observer code: CHG



Distinguishing features: Anal fin present, head large in adults, snout short and blunt, body tapers rapidly to whip-like tail, dorsal fin spine shorter than soft dorsal fin height.

Colour: Body purple-blue to blue-greyish with darker purple-bluish fins, whitish around mouth and gill slit; in small fish (inset), posterior half of second dorsal fin and anal and tail fins are white.

Size: To about 100 cm ghost shark length (excl. tail filament) or 140 cm TL.

Length measurement method: Ghost shark length (G)

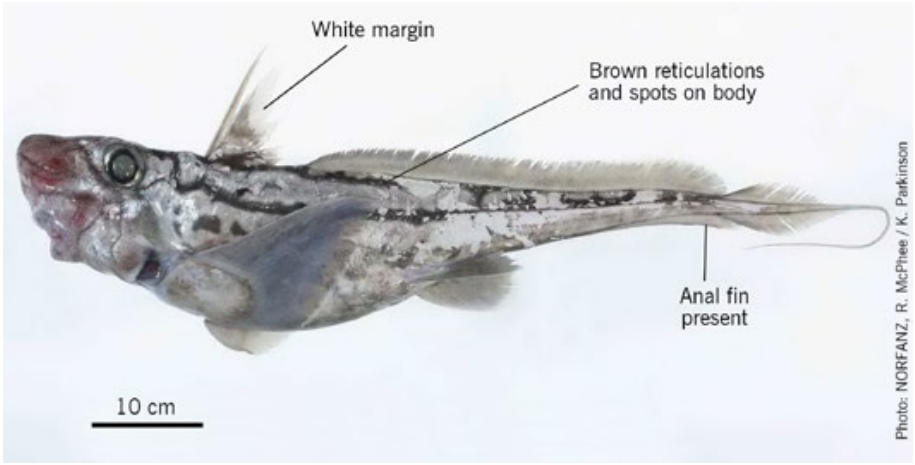
Distribution: Throughout New Zealand region from Norfolk Ridge to Campbell Plateau. Southern Australia.

Depth: 600 m to over 1500 m.

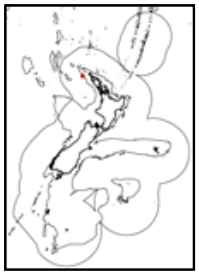
Similar species: *Hydrolagus* species lack an anal fin. Other *Chimaera* species have different combinations of body and snout shape, colour, and spine length relative to dorsal fin height.

Biology & ecology: Demersal. Uncommon.

Leopard chimaera *Chimaera panthera*



Family: 7. Chimaeridae (Shortnose chimaeras)
Maori names:
Other names:
FishNZ reporting code: CHI
FishNZ research/observer code: CPN



Distinguishing features: Anal fin present, body and fins covered with chocolate brown reticulations and spots, white margin on first dorsal fin, pelvic fins bluntly pointed.

Colour: Grey with chocolate brown reticulations and spots covering body and fins (faint), white margin on first dorsal fin. The leopard pattern possibly appears and then strengthens as the chimaera grows, as specimens that may be juveniles of this species are uniformly black.

Size: To about 100 cm ghost shark length (excluding tail filament) or 129 cm TL.

Length measurement method: Ghost shark length (G)

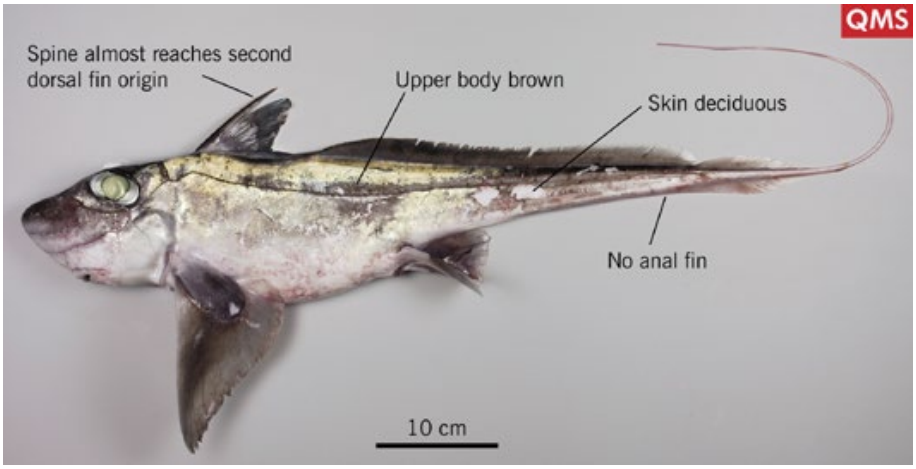
Distribution: Northern New Zealand including Lord Howe Rise, West Norfolk Ridge, Colville Ridge and Ritchie Banks.

Depth: 320 to 1020 m.

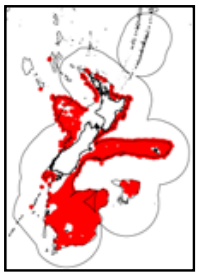
Similar species: *Hydrolagus* species lack an anal fin. Other species lack the distinctive colour pattern of spots and reticulations.

Biology & ecology: Demersal on the continental slope.

Pale ghost shark *Hydrolagus bemisi*



Family: 7. Chimaeridae (Shortnose chimaeras)
Maori names:
Other names: Brown ghostshark
FishNZ reporting code: GSP
FishNZ research/observer code: GSP



Distinguishing features: Anal fin absent, upper body brown with no distinct white spots and horizontal lines, first dorsal fin spine long almost reaching second dorsal fin origin, skin deciduous and usually torn in trawl-caught fish giving patchy appearance.

Colour: Upper body iridescent golden brown, lighter in small fish; pale below. Skin soft and usually torn in trawl-caught fish giving patchy appearance

Size: To about 70 cm ghost shark length (excl. tail filament) or 90 cm TL.

Length measurement method: Ghost shark length (G)

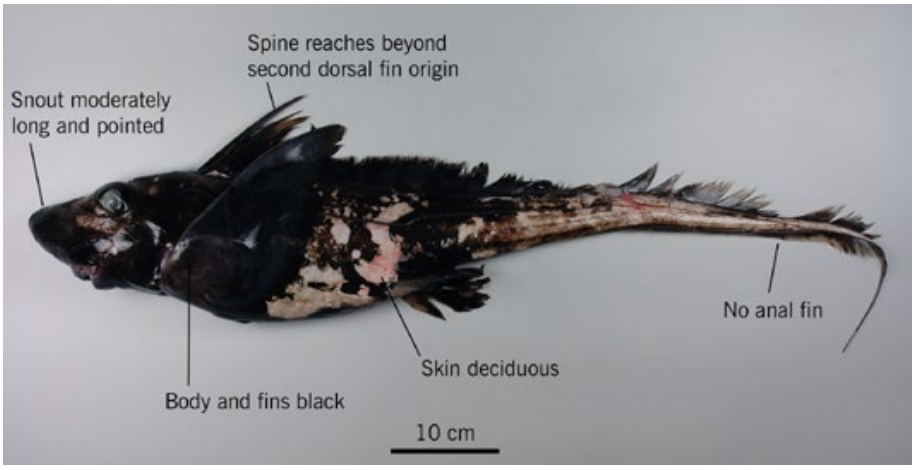
Distribution: West Norfolk Ridge to Campbell Plateau, including Chatham Rise and Bounty Plateau. Known only from New Zealand.

Depth: 400 to 1100 m.

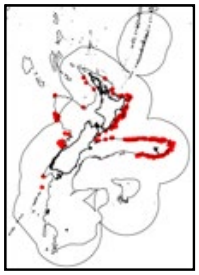
Similar species: *Chimaera* species have an anal fin. Other *Hydrolagus* species have different combinations of body colour, spine length relative to inter-dorsal space, snout shape, and skin fragility.

Biology & ecology: Demersal.

Black ghost shark *Hydrolagus homonycteris*



Family: 7. Chimaeridae (Shortnose chimaeras)
Maori names:
Other names: Little black ghostshark
FishNZ reporting code: HYD
FishNZ research/observer code: HYB



Distinguishing features: Anal fin absent, body and fins black, first dorsal fin spine reaches beyond origin of second dorsal fin when spine is depressed, tip of pelvic fin rounded, snout moderately long and pointed (more so in juveniles), skin deciduous giving patchy appearance.

Colour: Body and fins black.

Size: To about 90 cm ghost shark length (excl. tail filament) or 110 cm TL.

Length measurement method: Ghost shark length (G)

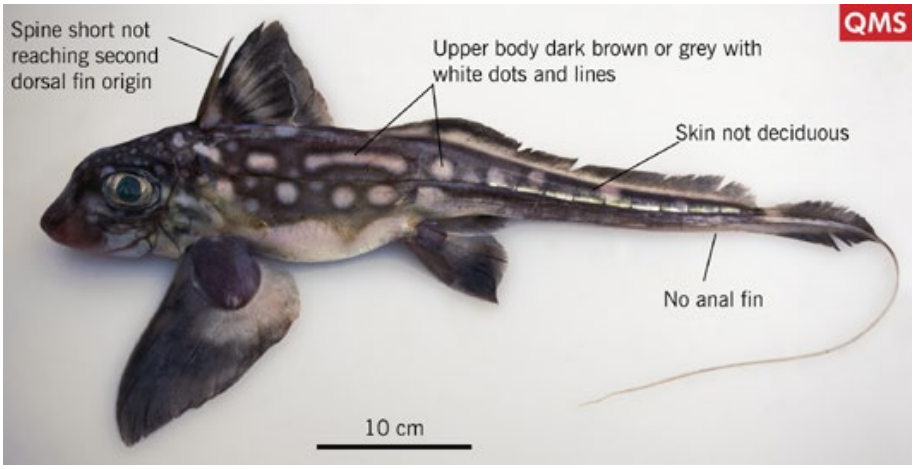
Distribution: North Cape to Campbell Plateau. Southern Australia.

Depth: 900 m to 1500 m.

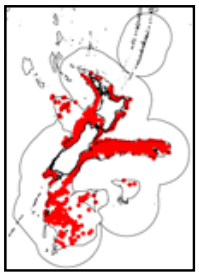
Similar species: *Chimaera* species have an anal fin. The giant black ghost shark (*Hydrolagus* cf. *affinis*), HGB, is larger, exceeds 100 cm ghost shark length, has brownish-black head and body, first dorsal fin spine just reaches origin of second dorsal fin when spine is depressed, and pelvic fin is triangular. Other *Hydrolagus* species have a more pointed pelvic fin, and different combinations of body colour, spine length relative to inter-dorsal space, snout shape and skin fragility.

Biology & ecology: Demersal. Uncommon.

Dark ghost shark (ghost shark) *Hydrolagus novaezealandiae*



Family: 7. Chimaeridae (Shortnose chimaeras)
Maori names:
Other names: Mottled ghostshark
FishNZ reporting code: GSH
FishNZ research/observer code: GSH



Distinguishing features: Anal fin absent, upper body dark brown to grey with white spots and horizontal lines, first dorsal fin spine short reaching about 70% of distance to second dorsal fin origin, skin not deciduous and usually intact in trawl-caught fish.

Colour: Upper body dark brown to grey with white spots and horizontal lines (small fish with fewer spots and more lines), lighter below.

Size: To about 65 cm ghost shark length (excl. tail filament) or 80 cm TL.

Length measurement method: Ghost shark length (G)

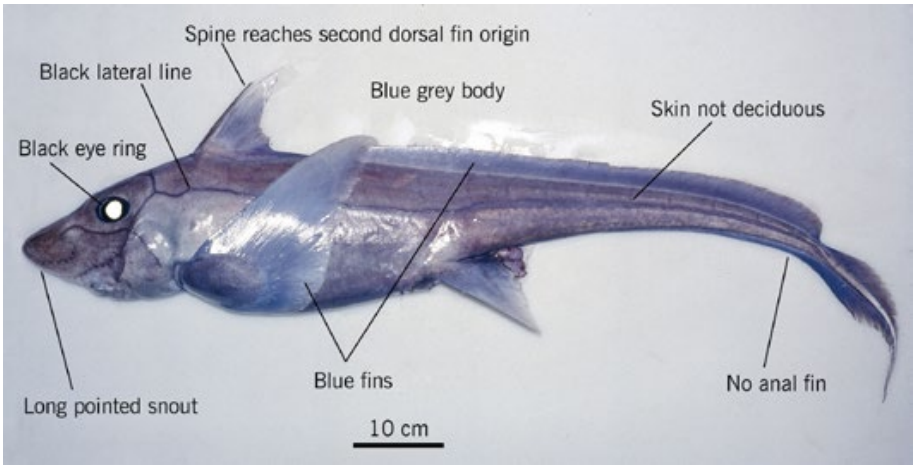
Distribution: North Cape to Campbell Plateau, including Challenger Plateau, Chatham Rise and Bounty Plateau. Known only from New Zealand. Some older fisheries records confused dark and pale ghost shark (*Hydrolagus bemisi*).

Depth: 100 to 600 m.

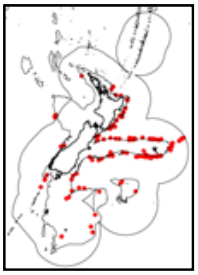
Similar species: *Chimaera* species have an anal fin. Other *Hydrolagus* species have different combinations of body colour, spine length relative to inter-dorsal space, snout shape, and skin fragility.

Biology & ecology: Demersal.

Pointynose blue ghost shark *Hydrolagus trolli*



Family: 7. Chimaeridae (Shortnose chimaeras)
Maori names:
Other names: Purple ghostshark
FishNZ reporting code: HYP
FishNZ research/observer code: HYP



Distinguishing features: Anal fin absent, long pointed snout, body bluish-grey with prominent black lateral line, fins blue, black ring around eye. Fin spine reaches origin of second dorsal fin, skin not deciduous.

Colour: Body bluish-grey with prominent black lateral line, blue fins, black ring around eye, ventral snout paler than rest of head and body.

Size: To about 100 cm ghost shark length (excl. tail filament), or 120 cm TL.

Length measurement method: Ghost shark length (G)

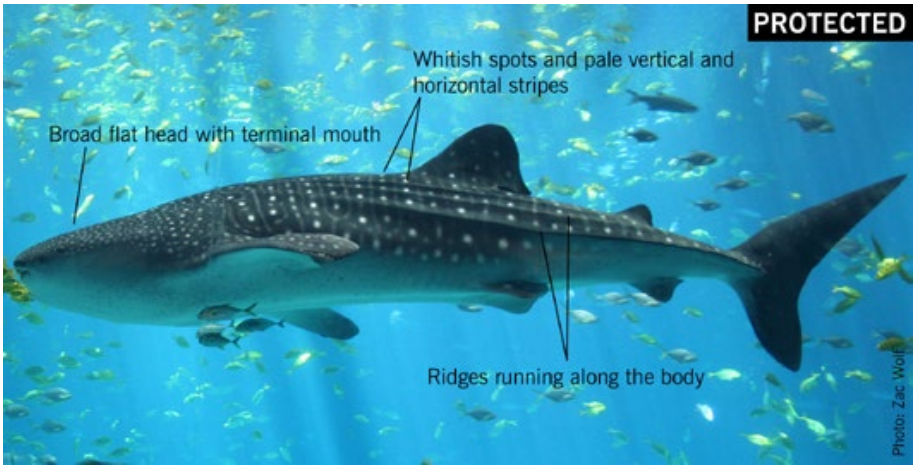
Distribution: West Norfolk Ridge to Campbell Plateau including Chatham Rise in New Zealand region. New Caledonia. May be more widespread.

Depth: 600 m to over 1700 m.

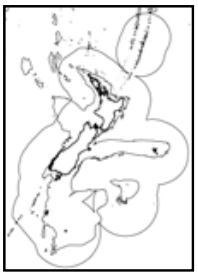
Similar species: *Chimaera* species have an anal fin. Giant black ghost shark (*Hydrolagus* cf. *affinis*), HYG, is more brownish, and ventral snout is much darker than rest of body and head. Other *Hydrolagus* species have different combinations of body colour, spine length relative to inter-dorsal space, snout shape, and skin fragility.

Biology & ecology: Demersal. Uncommon.

Whale shark *Rhincodon typus*



Family: 15. Rhincodontidae (Whale sharks)
Maori names:
Other names:
FishNZ reporting code: WSH
FishNZ research/observer code: WSH



Distinguishing features: Broad flat head, large terminal mouth, body with checkerboard pattern of light spots and stripes on a dark background. Prominent ridges running along the body.

Colour: Body greyish, bluish, or brownish above, white below. Upper body with checkerboard pattern of whitish spots between pale vertical and horizontal stripes.

Size: To at least 1500 cm TL.

Length measurement method: Total length

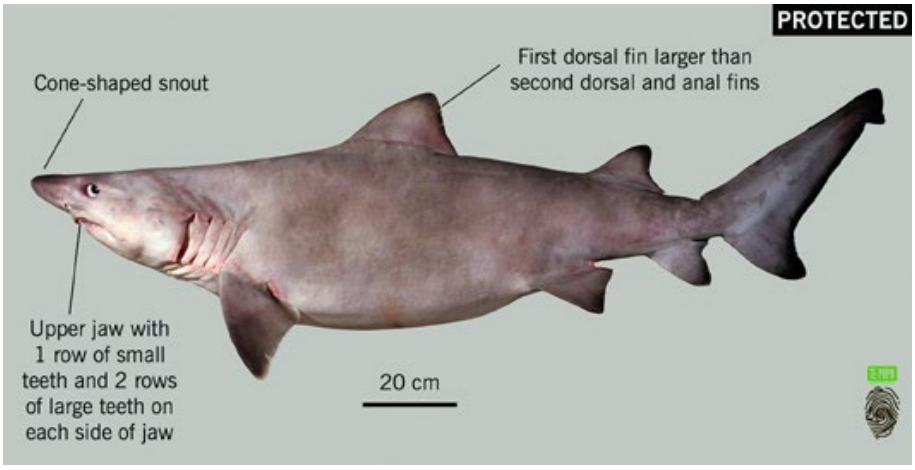
Distribution: Northeast coast North Island from Three Kings Islands to Bay of Plenty (from photos and videos) in New Zealand. Cosmopolitan in tropical and warm temperate seas.

Depth: 0 to 1000 m.

Similar species: Basking shark (*Cetorhinus maximus*) has a dark grey-brown upper body without whitish spots, and lacks ridges running along the body.

Biology & ecology: Live in surface waters near the coast and in the open ocean. Suction filter feeder of plankton. Undergo migrations thought to be related to local productivity events and known to regularly dive to about 1000 m. Probably long-lived.

Smalltooth sand tiger shark *Odontaspis ferox*



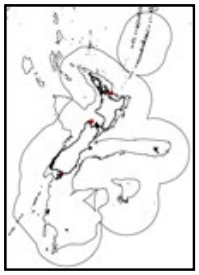
Family: 16. Odontaspididae (Sand tiger sharks)

Maori names:

Other names: Sandtiger shark

FishNZ reporting code: ODO

FishNZ research/observer code: ODO



Distinguishing features: Snout long and cone-shaped. Upper jaw with 1 row of small teeth and 2 rows of large teeth on each side of centre of jaw. Teeth with prominent long central cusp, flanked on both sides with 2 or more small cusps. First dorsal larger than second dorsal and anal fins. Origin of first dorsal fin about over the free rear ends of the pectoral fin.

Colour: Body greyish-brown above, paler below. Sometimes dark reddish spots scattered on body. Tips of some fins dark in juveniles.

Size: To 450 cm TL.

Length measurement method: Total length

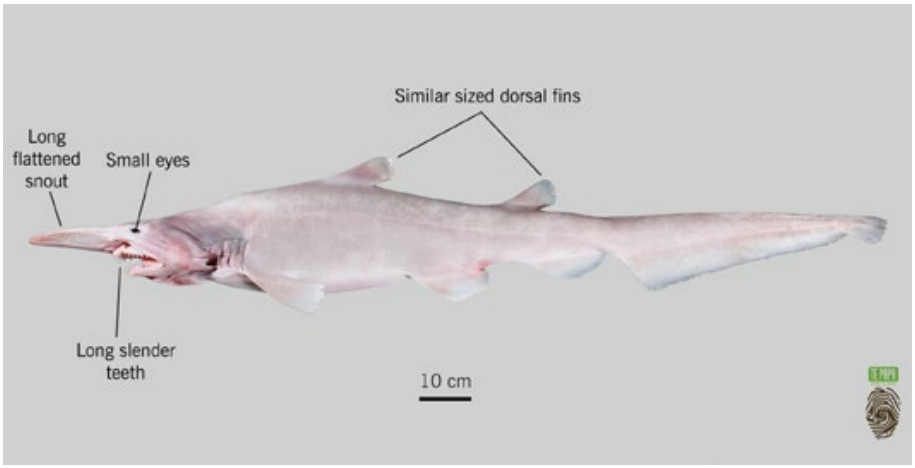
Distribution: Kermadec Islands, Bay of Plenty, Hawkes Bay, and New Plymouth in New Zealand. Cosmopolitan from a few scattered localities in tropical and warm temperate seas.

Depth: 13 to 880 m.

Similar species: Sharpnose sevengill (*Heptranchias perlo*), sixgill (*Hexanchus griseus*), and broadnose sevengill (*Notorynchus cepedianus*) sharks all have only 1 dorsal fin, and 6 or 7 gill slits.

Biology & ecology: Demersal. Usually found on the outer continental shelf and upper continental slope, but occasionally found in shallow water and may make vertical migrations into surface waters of the open ocean.

Goblin shark *Mitsukurina owstoni*



Family: 17. Mitsukurinidae (Goblin sharks)

Maori names:

Other names:

FishNZ reporting code: OSD

FishNZ research/observer code: GOB

Distinguishing features: Snout long, flattened and blade-like, jaws highly protrusible, teeth long, slender, and awl-like, eyes small, dorsal fins small, rounded and similar in size, tail asymmetric with long upper lobe and short lower lobe.

Colour: Pale grey, but may have a pinkish tinge owing to blood vessels being visible through the skin.

Size: 620 cm TL.

Length measurement method: Total length

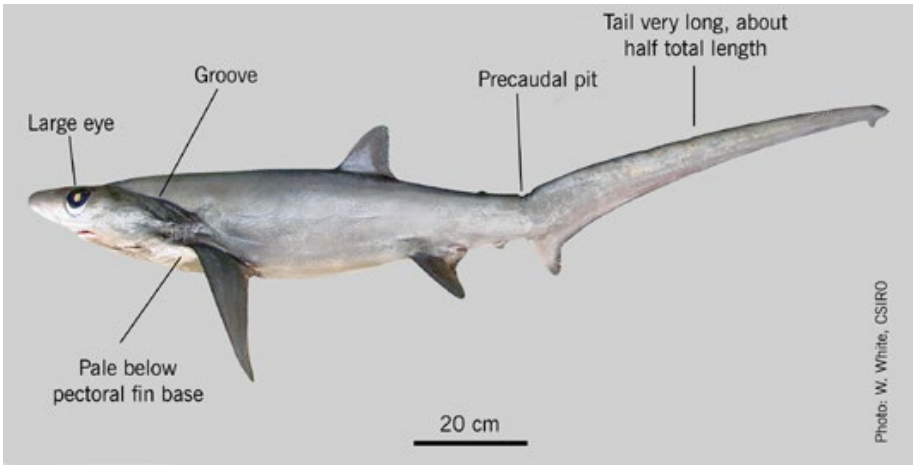
Distribution: Recorded from East Cape to Kaikoura, and Challenger Plateau in New Zealand. Widespread in North Atlantic and Pacific Oceans, southern Africa.

Depth: 100 to 1300 m.

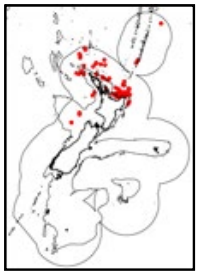
Similar species: No other species has the distinctive long snout and long teeth.

Biology & ecology: Poorly known. Possibly demersal. Rare.

Bigeye thresher shark *Alopias superciliosus*



Family: 20. Alopiidae (Thresher sharks)
Maori names:
Other names:
FishNZ reporting code: BET
FishNZ research/observer code: BET



Distinguishing features: Tail very long, about half total length. Eyes large, extending on to top of head. V-shaped groove running from behind eyes to above gills. Pale ventral marking does not extend above pectoral fin base. Second dorsal and anal fins tiny. Precaudal pit present.

Colour: Purplish grey above with a metallic sheen extending down the body to below pectoral fin base. Creamy white below.

Size: To 458 cm TL.

Length measurement method: Total length

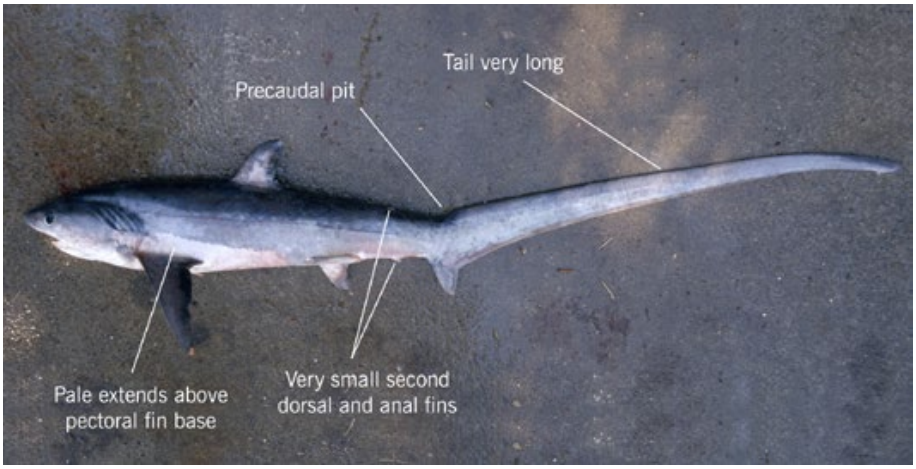
Distribution: Central and northern New Zealand. Worldwide in tropical to warm temperate waters.

Depth: A few to 550 m.

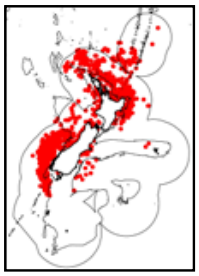
Similar species: Thresher shark (*Alopias vulpinus*) has smaller eyes not extending on to top of head, pale ventral marking extending up to above pectoral fin base, and lacks a V-shaped groove on head in smaller specimens.

Biology & ecology: Pelagic in open ocean and over continental shelf, sometimes occurs close inshore. Inhabits deep water during day and migrates to near surface at night.

Thresher shark *Alopias vulpinus*



Family: 20. Alopiidae (Thresher sharks)
Maori names: Mango-ripi
Other names:
FishNZ reporting code: THR
FishNZ research/observer code: THR



Distinguishing features: Tail very long, about half of total length. Top of eye not extending on to top of head. Pale ventral colour extending above pectoral fin base. Second dorsal and anal fins very small. Precaudal pit present.

Colour: Blue-grey above, with metallic purple sheen when alive; white below.

Size: To 640 cm TL.

Length measurement method: Total length

Distribution: Kermadec Islands to Snares Shelf, and possibly to Auckland Islands. Worldwide in tropical and temperate seas.

Depth: A few to 400 m.

Similar species: Bigeye thresher (*Alopias superciliosus*) has very large eyes that extend on to top of head, a deep V-shaped groove running from between eyes back above gill slits, and pale ventral colour does not extend above pectoral fin base.

Biology & ecology: Pelagic over continental shelf and in open ocean. Inhabits deep water during day and migrates to near the surface at night.

Basking shark *Cetorhinus maximus*

PROTECTED

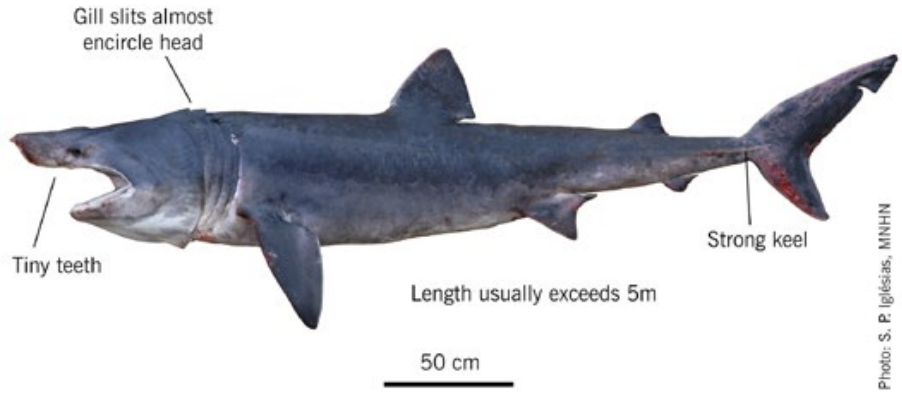


Photo: S. P. Iglésias, MNHN

Family: 21. Cetorhinidae (Basking sharks)
Maori names: Reremai
Other names:
FishNZ reporting code: BSK
FishNZ research/observer code: BSK

Distinguishing features: Very large (usually longer than 5 m) with long gill slits that almost encircle the head, tiny teeth, strong lateral keel on caudal peduncle. Juvenile with pointed snout that becomes less prominent with increased size of individual.

Colour: Dark grey-brown above, sometimes with lighter patches, fading to paler brown below.

Size: To 1220 cm TL.

Length measurement method: Total length

Distribution: Widespread in New Zealand, mostly from 39 to 51 S. North and South Atlantic and Pacific Oceans.

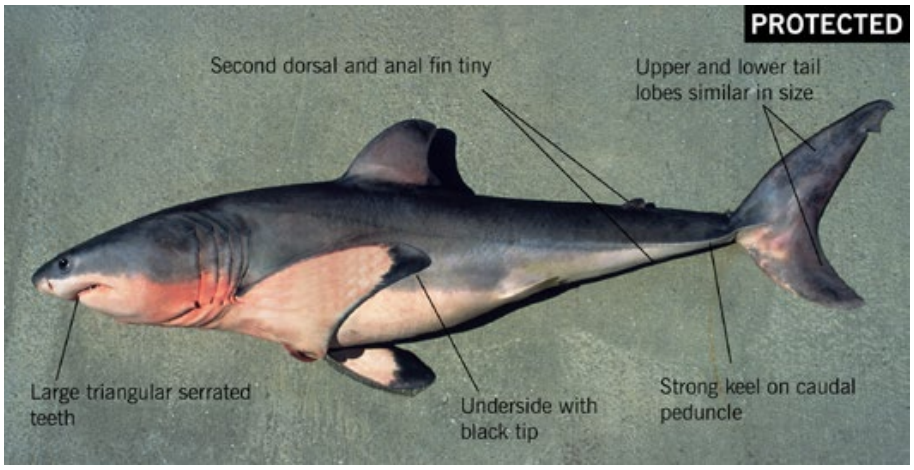
Depth: A few to 1000 m.

Similar species: Whale shark (*Rhincodon typus*) has a broad flat head, large terminal mouth, ridges running along the body, and a checkerboard pattern of light spots and stripes on a dark background.

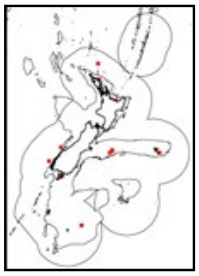
Biology & ecology: Pelagic.

White pointer shark (great white) *Carcharodon carcharias*

PROTECTED



Family: 22. Lamnidae (Mackerel sharks)
Maori names:
Other names:
FishNZ reporting code: WPS
FishNZ research/observer code: WPS



Distinguishing features: Large triangular serrated teeth, strong keel on the caudal peduncle, similar-sized upper and lower tail lobes, underside of pectoral fins with black tips, tiny second dorsal and anal fins.

Colour: Grey, coppery-brown or black above, abrupt change to white below.

Size: To 640 cm TL.

Length measurement method: Total length

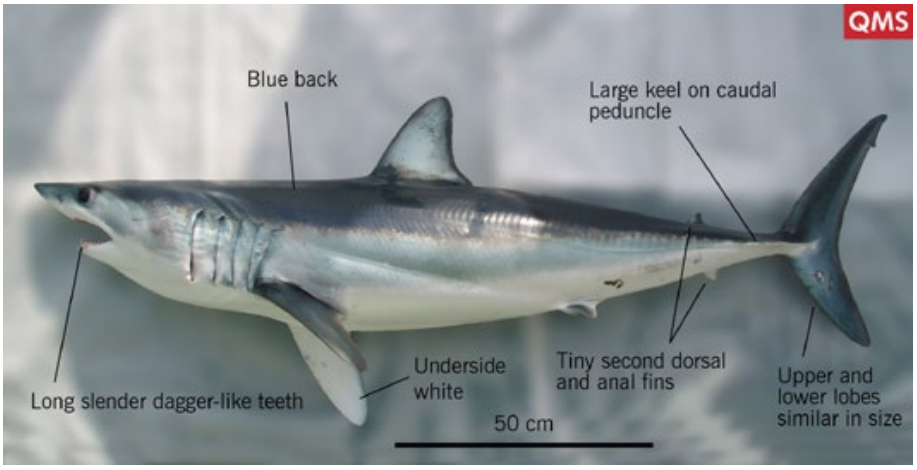
Distribution: Throughout New Zealand. Worldwide mainly in temperate waters, but also frequently found in tropical and subantarctic waters.

Depth: A few to 1200 m.

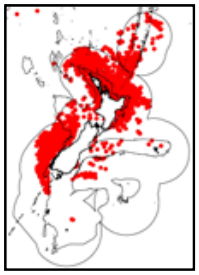
Similar species: Mako shark (*Isurus oxyrinchus*) has a blue back, long slender dagger-like teeth, and white underside of pectoral fins. Porbeagle shark (*Lamna nasus*) has a white patch at rear base of first dorsal fin, and teeth have a small lateral cusp on each side.

Biology & ecology: Mainly found inshore over inner continental shelf, but also pelagic as it migrates thousands of kilometres through open ocean and makes deep dives to at least 1000 m.

Mako shark *Isurus oxyrinchus*



Family: 22. Lamnidae (Mackerel sharks)
Maori names: Mako
Other names: Shortfin mako
FishNZ reporting code: MAK
FishNZ research/observer code: MAK



Distinguishing features: Strong keel on the caudal peduncle, long slender dagger-like teeth, similar-sized upper and lower tail lobes, blue back, white undersides of pectoral fins, tiny second dorsal and anal fins.

Colour: Back indigo-blue, belly white.

Size: To 585 cm TL.

Length measurement method: Total length

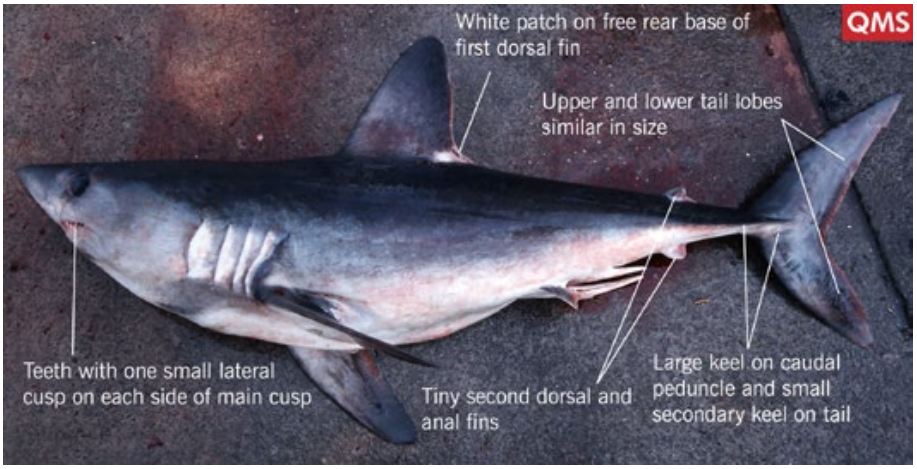
Distribution: Widespread in New Zealand from Kermadec Islands to Snares Shelf, and possibly to Auckland Islands. Worldwide in tropical and temperate seas.

Depth: A few to 500 m.

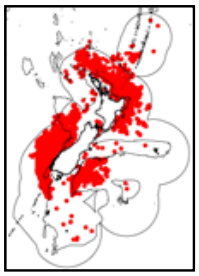
Similar species: Porbeagle shark (*Lamna nasus*) has a white patch on the free rear base of first dorsal fin, a secondary caudal keel, and lateral tooth cusps. White pointer shark (*Carcharodon carcharias*) has large triangular serrated teeth, and underside of pectoral fins are white with black tips.

Biology & ecology: Pelagic over continental shelf and in the open ocean. Migrates between New Zealand and tropical South Pacific islands.

Porbeagle shark *Lamna nasus*



Family: 22. Lamnidae (Mackerel sharks)
Maori names:
Other names:
FishNZ reporting code: POS
FishNZ research/observer code: POS



Distinguishing features: White patch on free rear base of first dorsal fin, strong keel on caudal peduncle and small secondary keel on tail below, small lateral cusp on either side of main tooth cusp, similar-sized upper and lower tail lobes, tiny second dorsal and anal fins.

Colour: Blue-grey above, whitish below. Distinctive white patch on free rear base of first dorsal fin.

Size: To about 255 cm TL.

Length measurement method: Total length

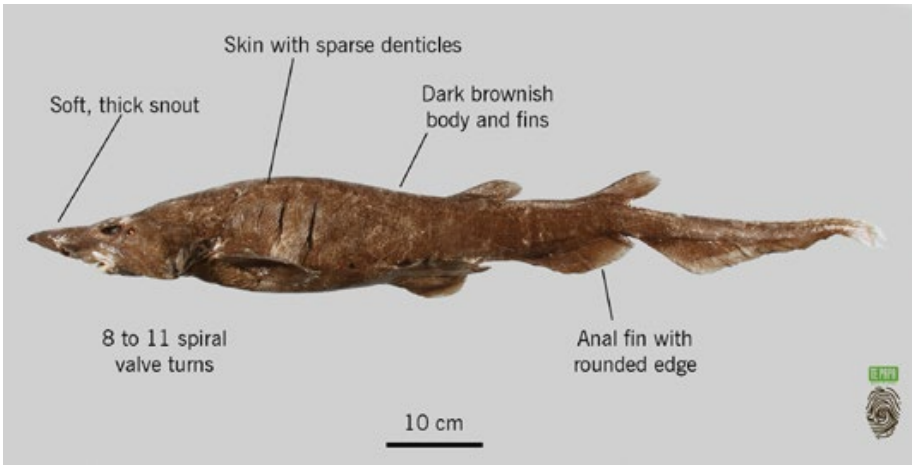
Distribution: Widespread in New Zealand. Widespread in temperate North and South Atlantic Oceans and in southern hemisphere.

Depth: A few to 370 m.

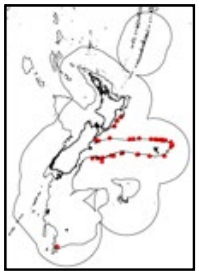
Similar species: Mako shark (*Isurus oxyrinchus*) lacks white patch on free rear base of first dorsal fin, secondary caudal keel, and lateral tooth cusps. White pointer shark (*Carcharodon carcharias*) lacks white patch on free rear base of first dorsal fin, and has large triangular serrated teeth.

Biology & ecology: Pelagic in open ocean, and over continental shelf. Most abundant oceanic shark in cool temperate and subantarctic waters.

Roundfin catshark *Apristurus ampliceps*



Family: 23 Scyliorhinidae (Cat sharks)
Maori names:
Other names: Naked catshark
FishNZ reporting code: APR
FishNZ research/observer code: AAM



Distinguishing features: Soft, thick snout without a sharply defined edge. Short anal fin with rounded (not straight) edge. Dark brownish body and fins. Skin with sparse denticles. 8 to 11 spiral valve turns. Anterior labial furrow (base of jaws) shorter than posterior furrow length.

Colour: Uniformly dark brownish body and fins.

Size: To about 90 cm TL.

Length measurement method: Total length

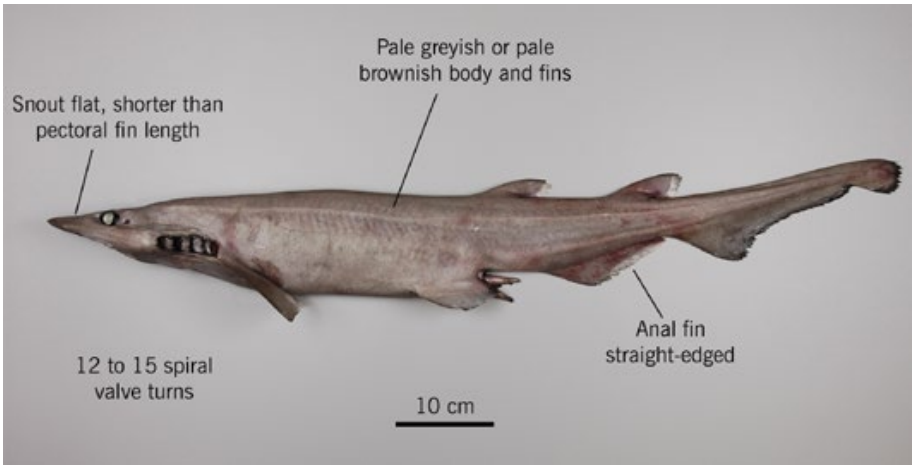
Distribution: New Zealand and southern Australia. Data plotted on map includes only Te Papa specimens and does not include any fisheries records.

Depth: 800 to 1500 m.

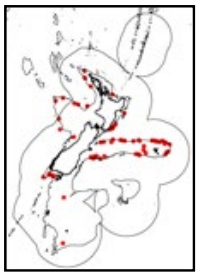
Similar species: Bulldog catshark (*Apristurus pinguis*) has skin densely covered with denticles. Fleshynose catshark (*Apristurus melanoasper*) has a straight-edged anal fin (not rounded) and 19 to 23 spiral valve turns.

Biology & ecology: Presumed to be demersal.

New Zealand catshark *Apristurus exsanguis*



Family: 23 Scyliorhinidae (Cat sharks)
Maori names:
Other names:
FishNZ reporting code: APR
FishNZ research/observer code: AEX



Distinguishing features: Flat snout with sharply defined edge. Anal fin with straight ventral edge. Pale greyish or pale brownish body and fins. Skin smooth, covered with small denticles. 12 to 15 spiral valve turns. Anterior labial furrow (base of jaws) longer or about equal to posterior furrow length.

Colour: Uniformly greyish or pale brownish body and fins.

Size: To about 91 cm TL.

Length measurement method: Total length

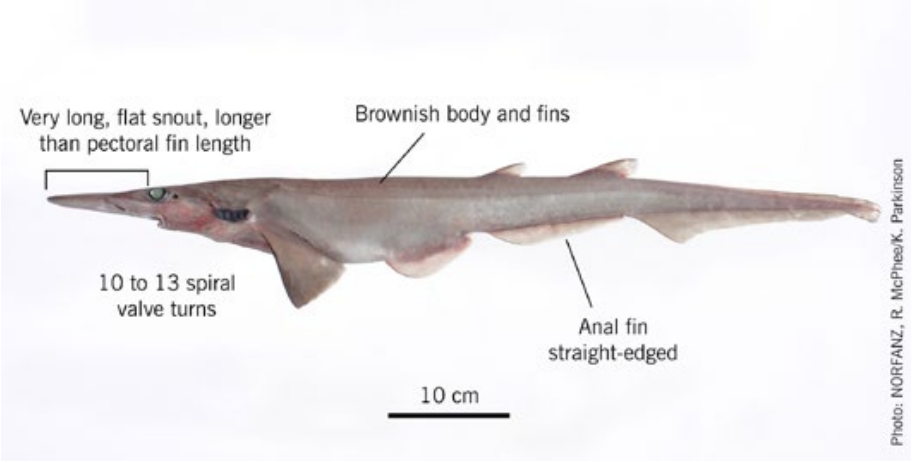
Distribution: Known only from New Zealand, widespread. Data plotted on map includes only Te Papa specimens and does not include any fisheries records.

Depth: 400 to 1200 m.

Similar species: Freckled catshark (*Apristurus cf sinensis*) is dark brownish and has 20 to 25 spiral valve turns. Fleshynose catshark (*Apristurus melanoasper*) has a thicker and less hard-edged snout, is dark brownish, and has 19 to 23 spiral valve turns.

Biology & ecology: Presumed to be demersal.

Garrick's catshark *Apristurus garricki*



Family: 23 Scyliorhinidae (Cat sharks)
Maori names:
Other names:
FishNZ reporting code: APR
FishNZ research/observer code: AGK

Distinguishing features: Very long and flat snout with sharply defined edge, snout length about same or greater than pectoral fin length. Anal fin with straight ventral edge. Brownish body and fins. Skin covered with small denticles. 10 to 13 spiral valve turns. Anterior labial furrow (base of jaws) longer or about equal to posterior furrow length.

Colour: Brownish body, paler ventrally. Fins brownish.

Size: To about 85 cm TL.

Length measurement method: Total length

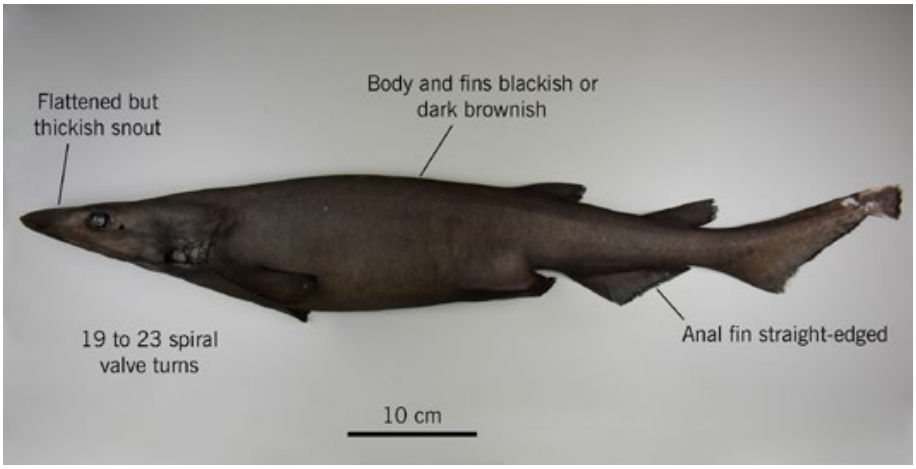
Distribution: Known only from central and northern New Zealand. Data plotted on map includes only Te Papa speciemns and does not include any fisheries records.

Depth: 550 to 1200 m.

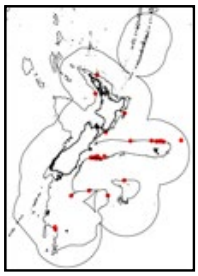
Similar species: New Zealand catshark (*Apristurus exsanguis*) has a shorter (less than pectoral fin length), thicker snout and 12 to 15 spiral valve turns. Freckled catshark (*A. cf. sinensis*) has shorter, thicker snout and 20 to 25 spiral valve turns.

Biology & ecology: Presumed to be demersal.

Fleshynose catshark *Apristurus melanoasper*



Family: 23 Scyliorhinidae (Cat sharks)
Maori names:
Other names:
FishNZ reporting code: APR
FishNZ research/observer code: AML



Distinguishing features: Soft snout with a poorly defined edge. Anal fin with straight ventral edge. Body and fins blackish or dark brownish. Skin with dense covering of denticles. 19 to 23 spiral valve turns. Anterior labial furrow (base of jaws) longer or about equal to posterior furrow length.

Colour: Body and fins uniformly blackish or dark brownish.

Size: To about 90 cm TL.

Length measurement method: Total length

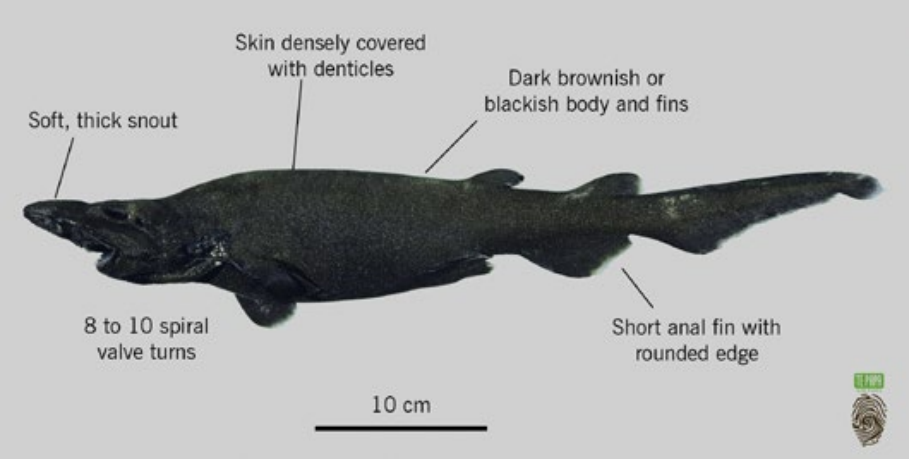
Distribution: Widespread in New Zealand. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Also known from North Atlantic, eastern South Atlantic, Indian Oceans and Australia.

Depth: 750 to 1300 m.

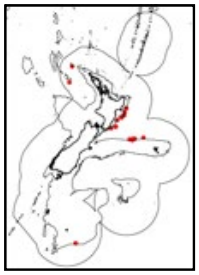
Similar species: Roundfin catshark (*Apristurus ampliceps*) has a rounded anal fin and the skin has a sparse covering of denticles. Bulldog catshark (*Apristurus pinguis*) has a rounded anal fin and 8 to 11 spiral valve turns.

Biology & ecology: Presumed to be demersal.

Bulldog catshark *Apristurus pinguis*



Family: 23 Scyliorhinidae (Cat sharks)
Maori names:
Other names:
FishNZ reporting code: APR
FishNZ research/observer code: APN



Distinguishing features: Soft, thick snout without a sharply defined edge. Short anal fin with rounded (not straight) edge. Dark brownish or blackish body and fins. Skin covered with small denticles. 8 to 11 spiral valve turns. Anterior labial furrow (base of jaws) shorter than posterior furrow length.

Colour: Body and fins uniformly brownish or blackish.

Size: To about 84 cm TL.

Length measurement method: Total length

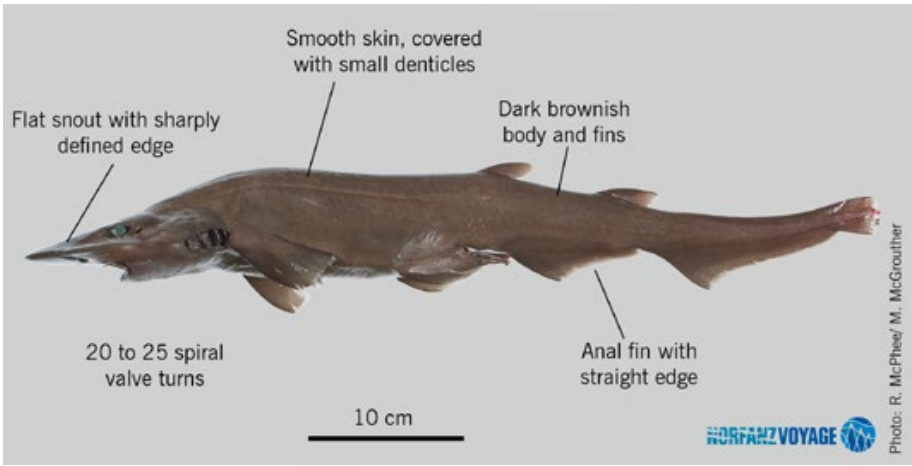
Distribution: Appears to be mainly from central and north New Zealand. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Also known from west Pacific from southern Japan to New Zealand, and east Indian Ocean.

Depth: 950 to 1800 m.

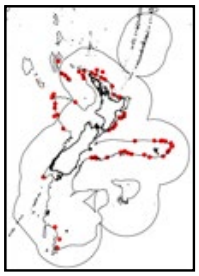
Similar species: Roundfin catshark (*Apristurus ampliceps*) has a sparse covering of denticles. Fleshynose catshark (*Apristurus melanoasper*) has a straight-edged anal fin (not rounded) and 19 to 23 spiral valve turns.

Biology & ecology: Presumed to be demersal.

Freckled catshark *Apristurus* cf. *sinensis*



Family: 23 Scyliorhinidae (Cat sharks)
Maori names:
Other names:
FishNZ reporting code: APR
FishNZ research/observer code: ASI



Distinguishing features: Flat snout with sharply defined edge. Anal fin with straight ventral edge. Dark brownish body and fins. Skin smooth, covered with small denticles. 20 to 25 spiral valve turns. Anterior labial furrow (base of jaws) longer or about equal to posterior furrow length.

Colour: Uniformly dark brownish body and fins.

Size: To about 95 cm TL.

Length measurement method: Total length

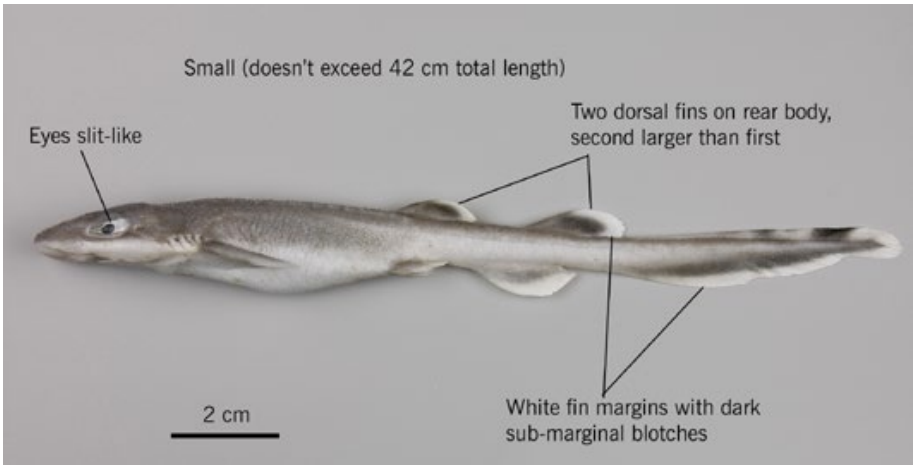
Distribution: Probably widespread in New Zealand. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Also known from Madagascar, New Caledonia, southeast, and southwest Australia.

Depth: 600 to 1350 m.

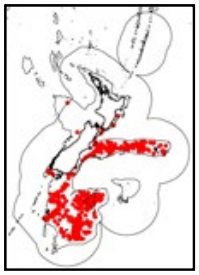
Similar species: New Zealand catshark (*Apristurus exsanguis*) is greyish or pale brownish and has 12 to 15 spiral valve turns. Fleshynose catshark (*Apristurus melanoasper*) has a thicker and less hard-edged snout and has 19 to 23 spiral valve turns.

Biology & ecology: Presumed to be demersal.

Dawson's cat shark *Bythaelurus dawsoni*



Family: 23. Scyliorhinidae (Cat sharks)
Maori names:
Other names:
FishNZ reporting code: DCS
FishNZ research/observer code: DCS



Distinguishing features: Small (doesn't exceed 42 cm TL), two dorsal fins set well back on body, second larger than first, eyes slit-like, white edges and dark sub-marginal blotches on fins.

Colour: Grey or brownish-grey above, usually with a row of small white spots along the ridge on the back; fins with white edges and dark sub-marginal blotches.

Size: To 42 cm TL.

Length measurement method: Total length

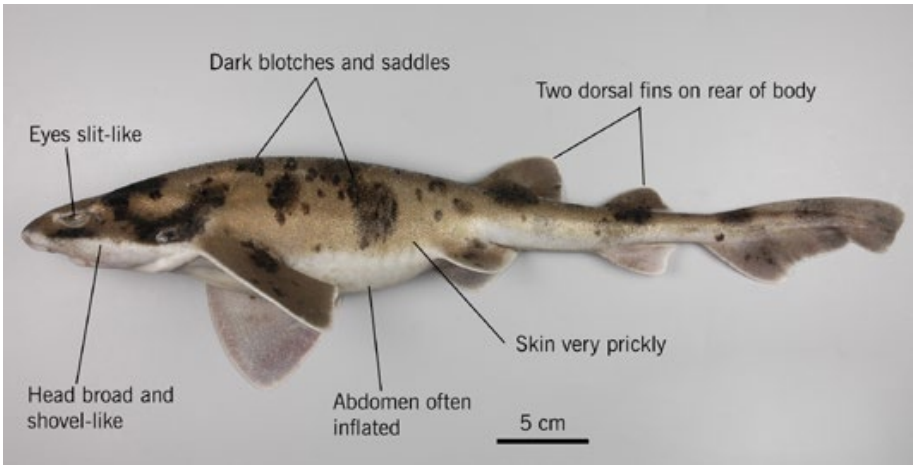
Distribution: Lower North Island to the Campbell Plateau and Bounty Plateau. Known only from New Zealand.

Depth: 250 to 800 m.

Similar species: Carpet shark (*Cephaloscyllium isabella*) has dark blotchy body and fin markings and is larger.

Biology & ecology: Demersal. Apparently uncommon, but probably not retained well by trawl gear because of its small size.

Carpet shark *Cephaloscyllium isabella*



Family: 23. Scyliorhinidae (Cat sharks)
Maori names:
Other names:
FishNZ reporting code: CAR
FishNZ research/observer code: CAR

Distinguishing features: Dark blotches and saddles on back and sides, two dorsal fins set well back on body, skin very prickly, abdomen often inflated with water or air, eyes slit-like, head broad and shovel-like.

Colour: Golden-brown above with dark brown to black saddles and blotches on the back and sides; white or cream below.

Size: To at least 100 cm TL. Reported to exceed 150 cm but this is doubtful.

Length measurement method: Total length

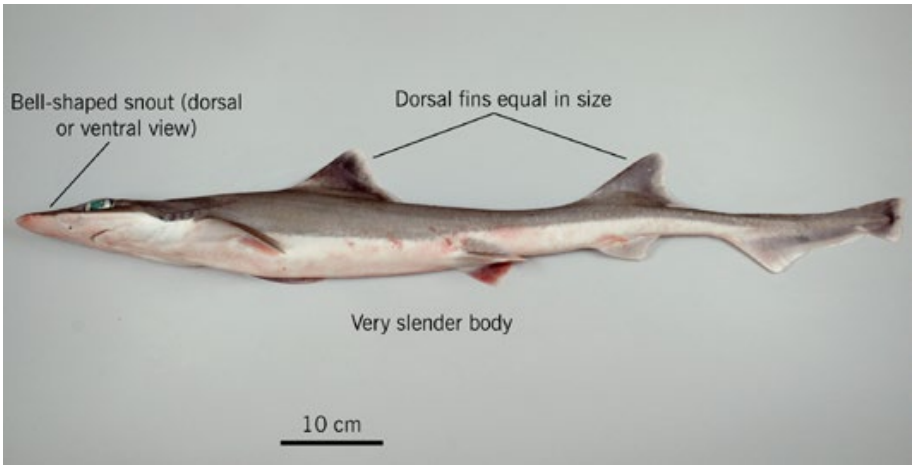
Distribution: Cape Reinga to Snares Islands, Chatham Rise and Chatham Islands. Known only from New Zealand. Fisheries records from the Campbell Plateau are erroneous.

Depth: A few to 500 m.

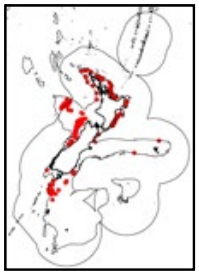
Similar species: A rare banded carpet shark (*Cephaloscyllium* cf. *variegatum)* recorded from northern North Island has dark saddle marks on the dorsal head and body. Dawson's catshark (*Bythaelurus dawsoni*) lacks dark blotchy body and fin markings and is smaller.

Biology & ecology: Demersal. Common on the shelf on both soft sediment and rocky reef habitat.

Slender smooth-hound *Gollum attenuatus*



Family: 25. Pseudotriakidae (False cat sharks)
Maori names:
Other names:
FishNZ reporting code: SSH
FishNZ research/observer code: SSH



Distinguishing features: Very slender body with bell-shaped snout (viewed from above) and two equal-sized dorsal fins.

Colour: Brownish-grey above, white below with a sharp boundary between the two. Fins with broad, light grey or white trailing edges. A line of small white dots runs along the posterior lateral line.

Size: To 110 cm TL.

Length measurement method: Total length

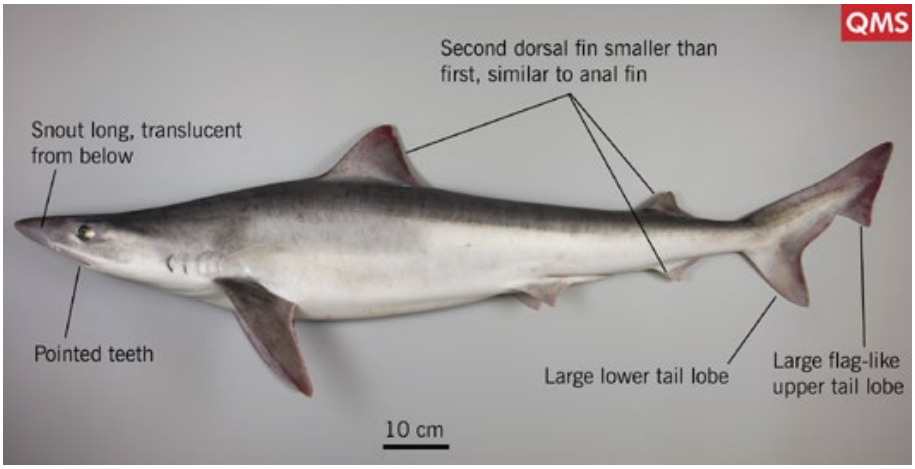
Distribution: Kermadec Ridge to the Snares Shelf in New Zealand. Also Lord Howe Rise and Norfolk Ridge.

Depth: 200 to 600 m.

Similar species: Rig (*Mustelus lenticulatus*) has a stouter body with many white spots over the upper body, and a cone-shaped snout.

Biology & ecology: Demersal.

School shark *Galeorhinus galeus*



Family: 27. Triakidae (Hound sharks)
Maori names: Kapeta, mangoo, manga
Other names: Grey boy, tope
FishNZ reporting code: SCH
FishNZ research/observer code: SCH

Distinguishing features: Large flag-like tip on upper tail lobe, large lower tail lobe, second dorsal fin much smaller than first and about same size as anal fin, snout long and translucent when viewed from below, and pointed erect teeth.

Colour: Grey above, white below.

Size: To 175 cm TL.

Length measurement method: Total length

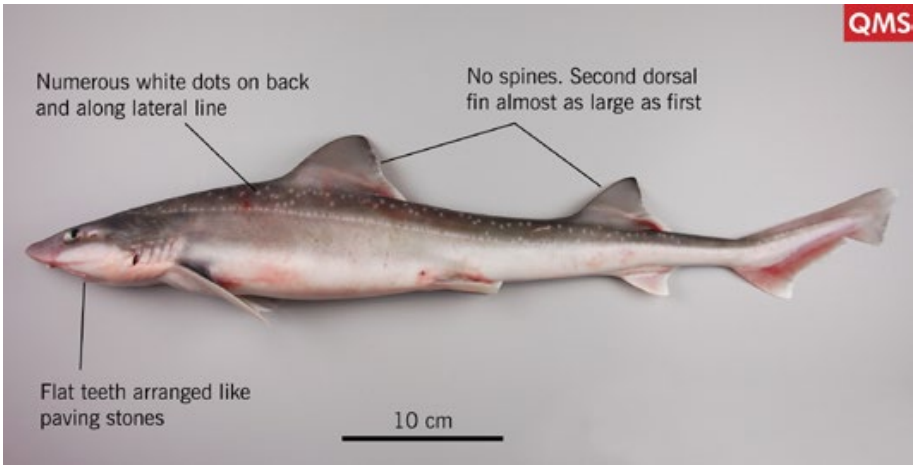
Distribution: Widespread in New Zealand from Three Kings Islands to Campbell Island and Chatham Islands, and oceanic waters of the EEZ. Widespread but patchy distribution in northeast and southern Atlantic Ocean, off South Africa, northeast Pacific, Peru, Chile, and Australia.

Depth: A few to 1100 m.

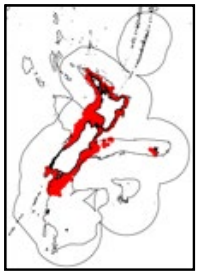
Similar species: Bronze whaler shark (*Carcharhinus brachyurus*) is stouter, has longer pectoral fins, and a long upper tail lobe with a small flag-like tip. Rig (*Mustelus lenticulatus*) has small white spots on the upper body and flat teeth.

Biology & ecology: Demersal, and pelagic. Makes large scale movements around New Zealand and between New Zealand and southern Australia.

Rig *Mustelus lenticulatus*



Family: 27. Triakidae (Hound sharks)
Maori names: Pioke
Other names: Spotted dogfish
FishNZ reporting code: SPO
FishNZ research/observer code: SPO



Distinguishing features: Numerous small white dots on upper body and along lateral line, teeth flattened and arranged in a crushing paving stone pattern, second dorsal fin almost as large as first.

Colour: Greyish-brown to coppery-brown above with numerous small white dots on upper body and along lateral line, white below.

Size: To 150 cm TL.

Length measurement method: Total length

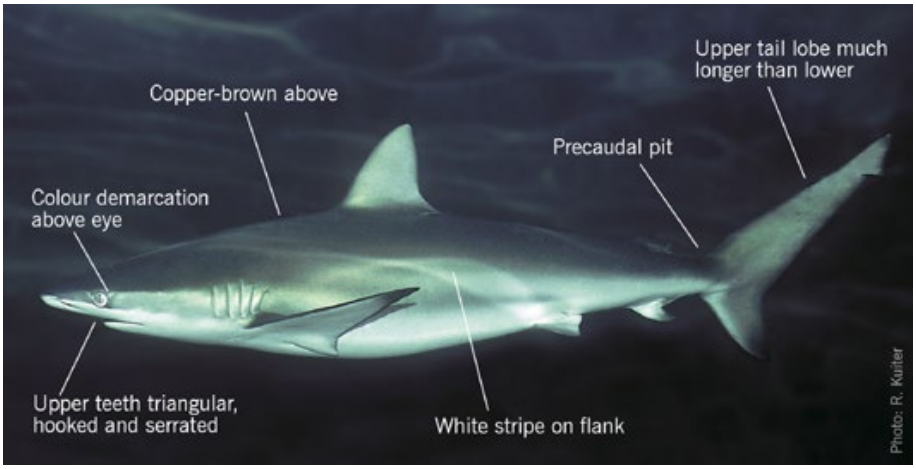
Distribution: Three Kings Islands to Snares Islands, Mernoo Bank on the Chatham Rise, and the Chatham Islands. Known only from New Zealand.

Depth: A few to 400 m.

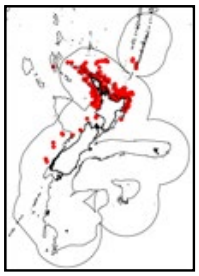
Similar species: Other New Zealand sharks lack the combination of small dense white spots on the upper body, and no spines in the dorsal fins. Kermadec smooth-hound (*Mustelus* sp. A), known only from the Kermadec Ridge has small, inconspicuous white spots on upper body, and a slender caudal peduncle.

Biology & ecology: Demersal, ranging from estuaries to the upper continental slope. Common in shallow coastal waters in spring-summer during their inshore pupping migration.

Bronze whaler shark *Carcharhinus brachyurus*



Family: 29. Carcharhinidae (Requiem sharks)
Maori names: Toiki, matawhaa, mau ngengero, tuatini
Other names:
FishNZ reporting code: BWH
FishNZ research/observer code: BWH



Distinguishing features: Upper tail lobe much longer than lower lobe, upper teeth triangular and hook-shaped with fine serrations, body coppery-brown above with a strong colour demarcation above eye, oblique white stripe on side, precaudal pit.

Colour: Body coppery-brown above with a strong colour demarcation above eye, oblique white stripe on side, creamy yellow belly.

Size: To at least 335 cm TL.

Length measurement method: Total length

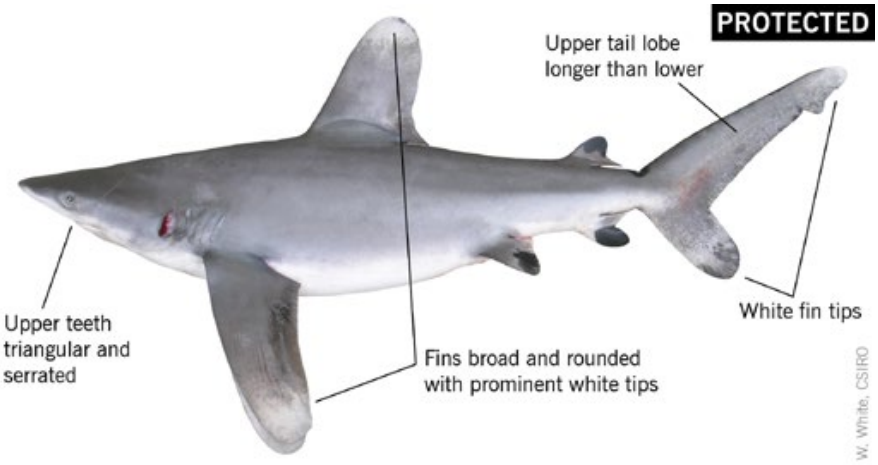
Distribution: Three Kings Islands to Tasman Bay and the Marlborough Sounds in New Zealand. Fisheries records from west coast South Island were probably school shark (*Galeorhinus galeus*). Occurs worldwide in warm temperate waters, except northwest Atlantic and northern Indian Oceans.

Depth: A few to 100 m.

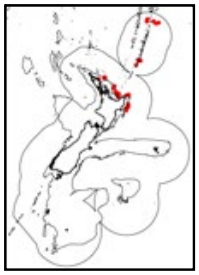
Similar species: Blue shark (*Prionace glauca)* has blue back and sides, lacks white stripe on flank, and has a more slender body. School shark (*Galeorhinus galeus*) has smaller upper tail lobe with large flag-like tip, and longer more slender body. Difficult to distinguish from several closely related whaler sharks occasionally seen around northern North Island and Kermadec Islands.

Biology & ecology: Pelagic. Enters very shallow inshore waters northern North Island in summer and autumn.

Oceanic whitetip shark *Carcharhinus longimanus*



Family: 29. Carcharhinidae (Requiem sharks)
Maori names:
Other names:
FishNZ reporting code: OSD
FishNZ research/observer code: OWS



Distinguishing features: First dorsal, pectoral, and caudal fins broad and rounded. First dorsal, pectoral, pelvic and caudal fins with prominent white tips (absent in sharks smaller than about 130 cm TL). Upper tail lobe much longer than lower lobe, and precaudal pit present. Upper teeth triangular and serrated.

Colour: Bronze-grey above, pale below, with white tips to most fins. Specimens shorter than about 130 cm TL lack white fin tips and instead have black fin tips and black dorsal saddles.

Size: To at least 300 cm TL.

Length measurement method: Total length

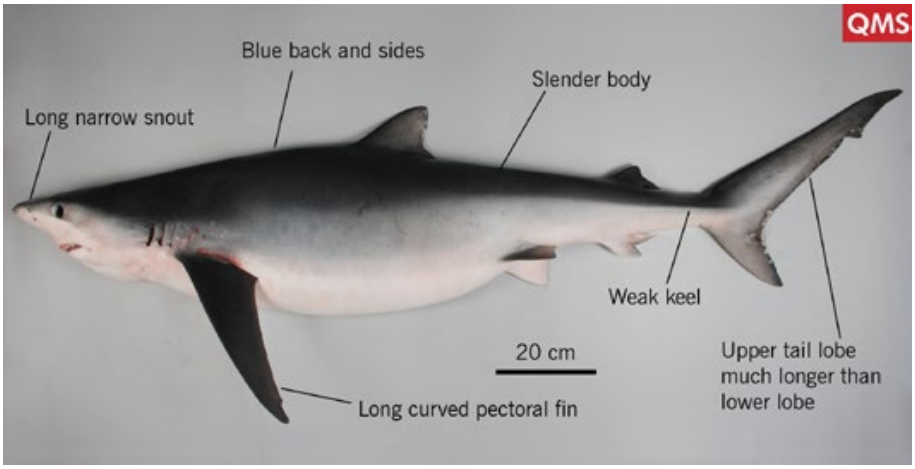
Distribution: Kermadec Ridge and northeast coast of North Island to Mahia Peninsula in New Zealand. Worldwide in tropical to warm temperate seas.

Depth: A few to 150 m.

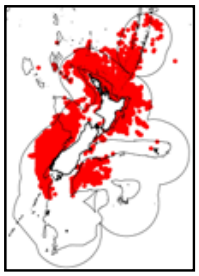
Similar species: Bronze whaler shark (*Carcharhinus brachyurus*) has pointed dorsal and pectoral fins, lacks white fin tips, and upper teeth are lower.

Biology & ecology: Pelagic in the open ocean, rarely over the continental shelf.

Blue shark *Prionace glauca*



Family: 29. Carcharhinidae (Requiem sharks)
Maori names: Mango-pounamu, poutini
Other names:
FishNZ reporting code: BWS
FishNZ research/observer code: BWS



Distinguishing features: Slender body, long narrow snout, long curved pectoral fins, blue back and sides, upper tail lobe much longer than lower lobe, and weak lateral keel on tail.

Colour: Back dark blue, grading to bright blue on the sides; belly white.

Size: To 380 cm TL.

Length measurement method: Total length

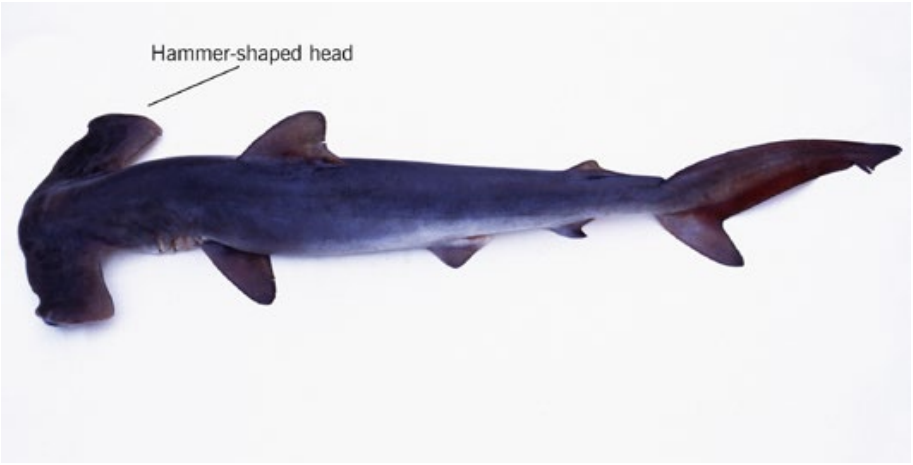
Distribution: Widespread in New Zealand south to about 49 S. Worldwide in tropical and temperate seas.

Depth: A few to 1000 m.

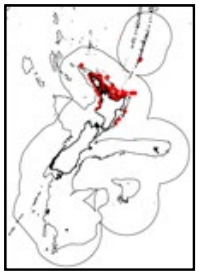
Similar species: Mako shark (*Isurus oxyrinchus*) and porbeagle shark (*Lamna nasus*) have much stouter bodies, shorter conical snouts, and upper and lower lobes of the tail are almost equal in size. Bronze whaler shark (*Carcharhinus brachyurus*) has coppery-brown body with strong colour demarcation above the eye, white stripe on flank, and lacks lateral keel on tail.

Biology & ecology: Pelagic over the continental shelf and in the open ocean. The most abundant and migratory of the oceanic sharks.

Hammerhead shark *Sphyrna zygaena*



Family: 30. Sphyrnidae (Hammerhead sharks)
Maori names: Mango-pare
Other names: Smooth hammerhead shark
FishNZ reporting code: HHS
FishNZ research/observer code: HHS



Distinguishing features: Hammer-shaped head. Lacks a median notch on the front (leading) edge of the head.

Colour: Dark brownish-grey above, white below.

Size: To 396 cm TL.

Length measurement method: Total length

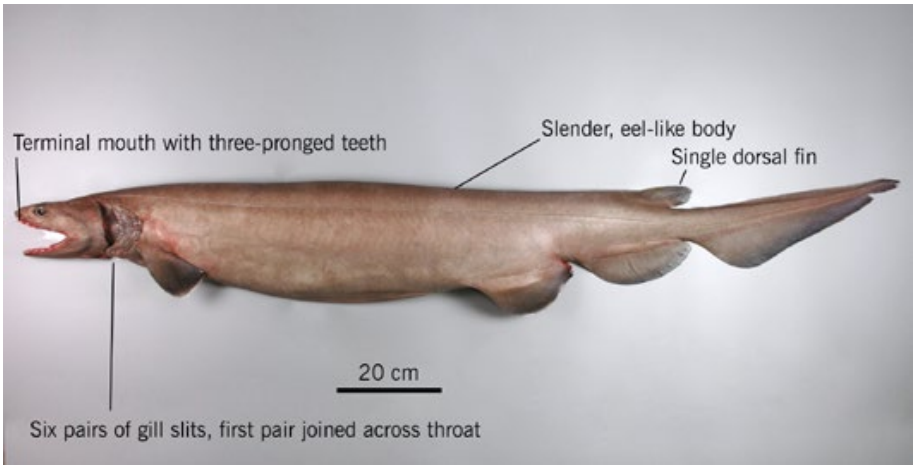
Distribution: Northern New Zealand from Northland to Cook Strait. Worldwide in tropical and temperate Atlantic, Indian, and Pacific Oceans and Mediterranean Sea.

Depth: A few to 200 m.

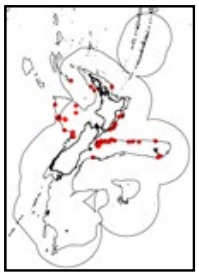
Similar species: No other species of hammerhead shark are confirmed from New Zealand.

Biology & ecology: Demersal and pelagic on the inner continental shelf. Juveniles use large muddy harbours and bays as nursery grounds. Adults are generally solitary, but juveniles may form loose schools.

Frill shark *Chlamydoselachus anguineus*



Family: 31. Chlamydoselachidae (Frill sharks)
Maori names:
Other names:
FishNZ reporting code: FRS
FishNZ research/observer code: FRS



Distinguishing features: Slender eel-like body. Six paired gill slits, the first pair frilled, and extended below to join across the throat. Terminal mouth, with prominent three-pronged teeth in upper and lower jaws. Single dorsal fin and large anal fin near the tail.

Colour: Chocolate brown, sometimes greyish, occasionally slightly paler below.

Size: To about 200 cm TL.

Length measurement method: Total length

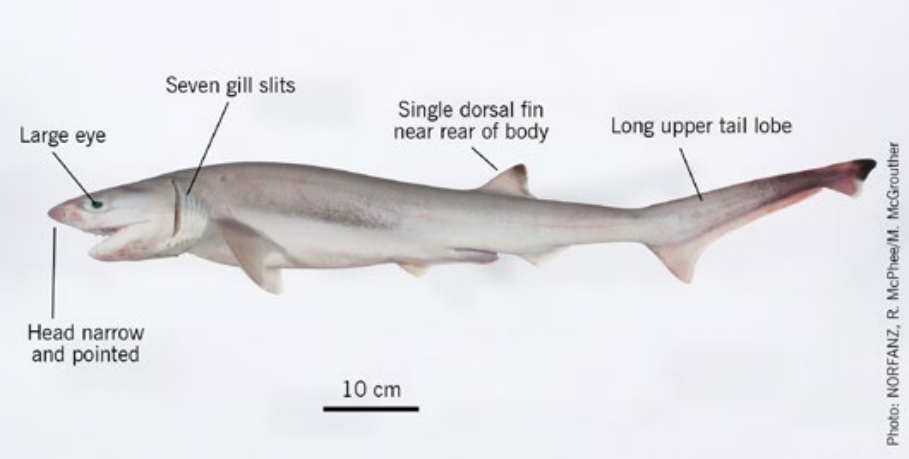
Distribution: Widespread but uncommon, with most records from central and northern New Zealand. Widespread but patchy records from Atlantic, off southern Africa, east, central and west Pacific Ocean.

Depth: 700 to 1500 m.

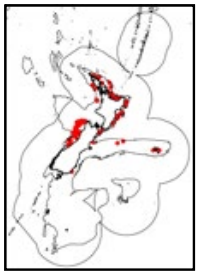
Similar species: Distinctive slender eel-like body, with no similar species.

Biology & ecology: Demersal. Usually taken on or near the seafloor also known from midwater and near the surface.

Sharpnose sevengill shark *Heptranchias perlo*



Family: 32. Hexanchidae (Cow sharks)
Maori names:
Other names: Sharpnose sevengill
FishNZ reporting code: HEP
FishNZ research/observer code: HEP



Distinguishing features: Seven gill slits, single dorsal fin set well back on body, upper tail lobe much longer than lower lobe, eye large, head narrow and pointed.

Colour: Body greyish above, paler to whitish below, dorsal and caudal fins tipped with black.

Size: To 150 cm TL.

Length measurement method: Total length

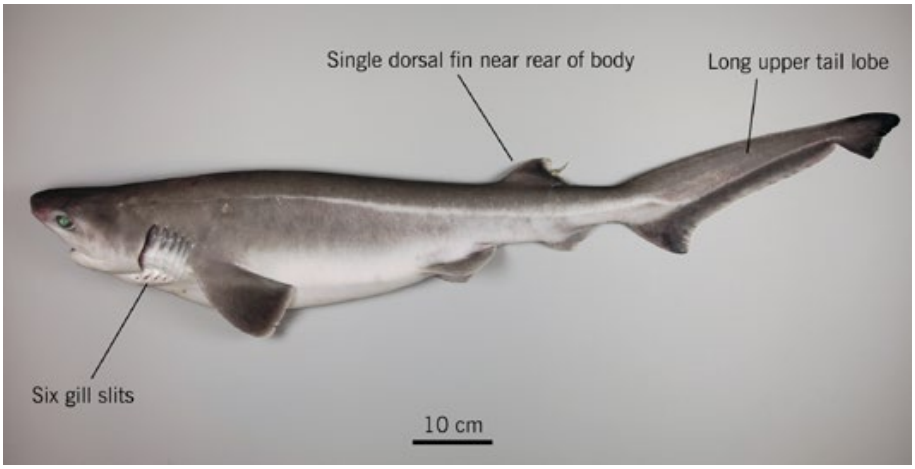
Distribution: Mainly off northern and central New Zealand. Worldwide in tropical and temperate waters except for mid-ocean islands in Atlantic, Indian, and Pacific Oceans.

Depth: 100 to 600 m.

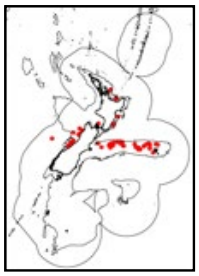
Similar species: Broadnose sevengill shark (*Notorynchus cepedianus*) is stouter, with a small eye, broad rounded snout, and small dark and light spots on dorsal head and body.

Biology & ecology: Demersal, but midwater at times.

Sixgill shark *Hexanchus griseus*



Family: 32. Hexanchidae (Cow sharks)
Maori names:
Other names:
FishNZ reporting code: HEX
FishNZ research/observer code: HEX



Distinguishing features: Six gill slits, single dorsal fin set well back on body, upper tail lobe much longer than lower lobe.

Colour: Grey to brown above with a light streak along lateral line, trailing edges of fins white, whitish below.

Size: To 600 cm TL.

Length measurement method: Total length

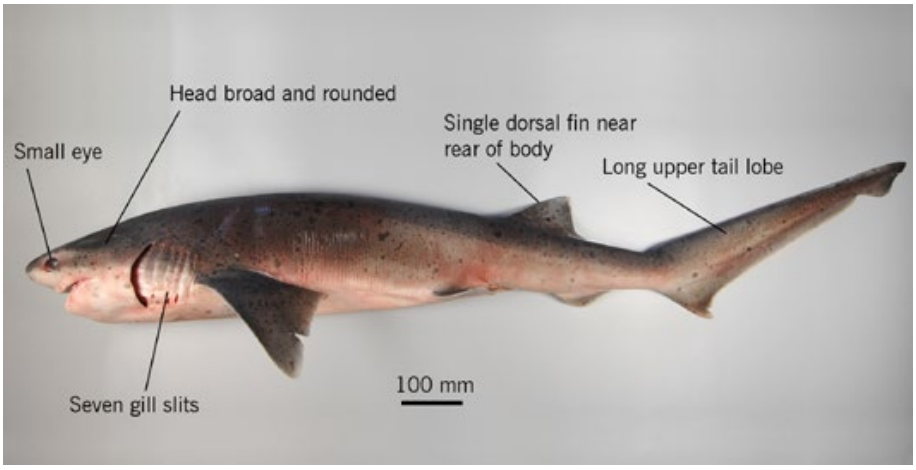
Distribution: Kermadec to Auckland Islands in New Zealand. Worldwide in tropical and temperate seas.

Depth: 50 to about 700 m.

Similar species: The only other New Zealand six-gilled shark, the frill shark (*Chlamydoselachus anguineus*), has a very slender eel-like body.

Biology & ecology: Demersal. Juveniles usually in shallower water than adults. Rare.

Broadnose sevengill shark *Notorynchus cepedianus*



Family: 32. Hexanchidae (Cow sharks)
Maori names:
Other names: Broadsnout sevengill
FishNZ reporting code: SEV
FishNZ research/observer code: SEV

Distinguishing features: Seven gill slits, single dorsal fin set well back on body, upper tail lobe much longer than lower lobe, eye small, head broad and rounded.

Colour: Grey or brown above, speckled with small black and white spots, white below.

Size: To about 300 cm TL.

Length measurement method: Total length

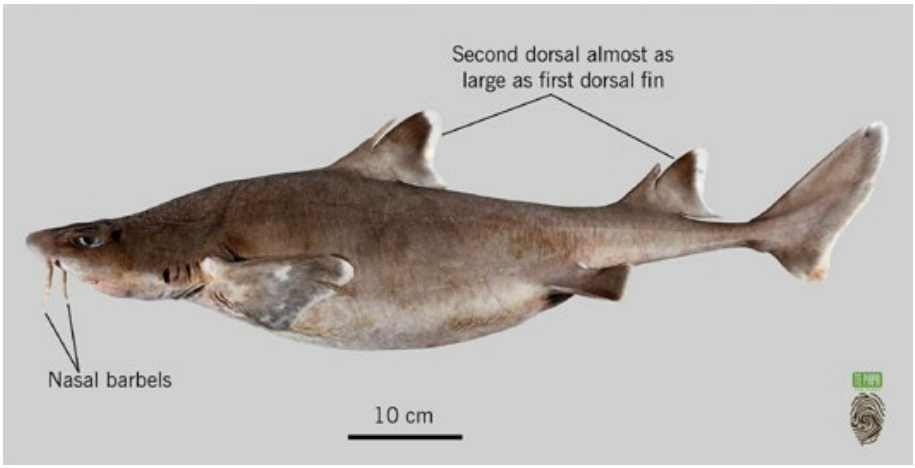
Distribution: Widespread in New Zealand. Worldwide in temperate coastal seas.

Depth: A few to 200 m.

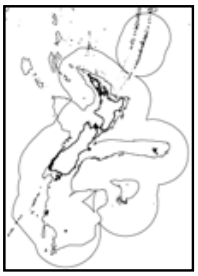
Similar species: Sharpnose sevengill shark (*Heptranchias perlo*) has a large eye, narrow pointed snout, and no spots.

Biology & ecology: Demersal and midwater.

Southern mandarin dogfish *Cirrhigaleus australis*



Family: 34. Squalidae (Dogfish sharks)
Maori names:
Other names: Mandarin shark
FishNZ reporting code: OSD
FishNZ research/observer code: MSH



Distinguishing features: Anal fin absent, anterior nasal flaps greatly elongated into barbels, long spine in front of each dorsal fin. Second almost as large as first dorsal fin.

Colour: Grey above, pale below.

Size: To at least 123 cm TL.

Length measurement method: Total length

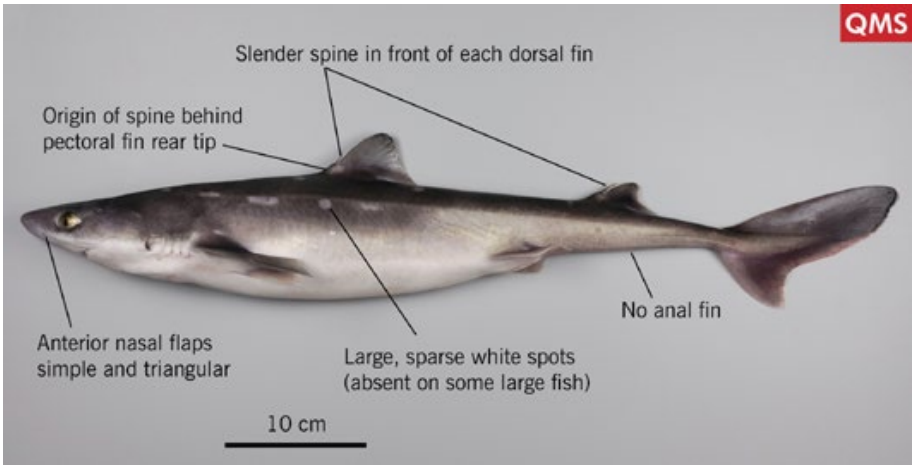
Distribution: Northern New Zealand from West Norfolk and Kermadec Ridges to Kaikoura. Also southeast Australia.

Depth: 90 to 1100 m.

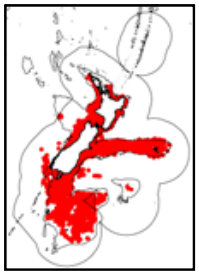
Similar species: None. No other New Zealand shark has long nasal barbels.

Biology & ecology: Demersal.

Spiny dogfish *Squalus acanthias*



Family: 34. Squalidae (Dogfish sharks)
Maori names: Kaaraerae, koinga, mangohapu
Other names:
FishNZ reporting code: SPD
FishNZ research/observer code: SPD



Distinguishing features: Anal fin absent. Slender spine in front of each dorsal fin; anterior spine much shorter than both the first dorsal fin and the second dorsal spine; origin of first dorsal fin spine well behind free rear tip of pectoral fin. Large and sparse white spots usually present (may be absent in large individuals). Anterior nasal flaps simple and triangular.

Colour: Brownish-grey above with large, sparse white spots on anterior upper body (sometimes absent in large fish), white below.

Size: To about 110 cm TL.

Length measurement method: Total length

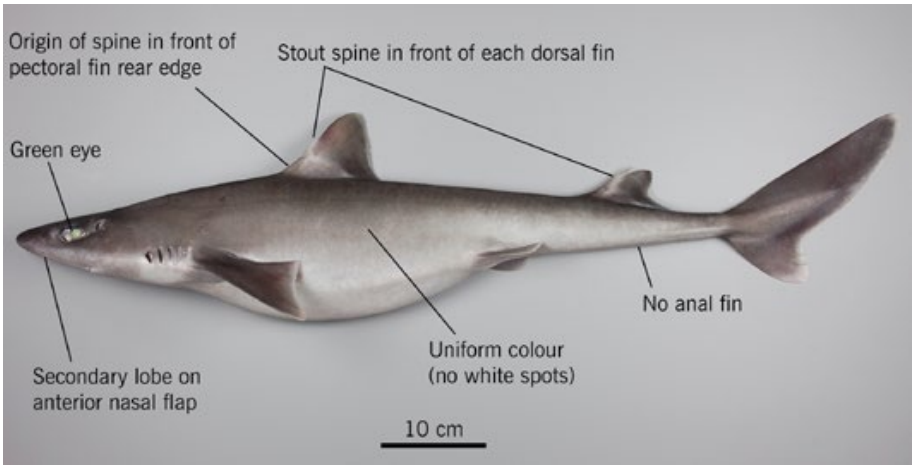
Distribution: Widespread in New Zealand from North Cape to Campbell Plateau, most abundant around South Island and on Chatham Rise. Worldwide in temperate seas except North Pacific Ocean.

Depth: A few to 700 m.

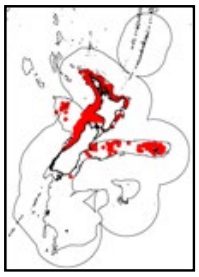
Similar species: Northern spiny dogfish (*Squalus griffini*) has a large green eye, and lacks white spots.

Biology & ecology: Demersal and midwater.

Northern spiny dogfish *Squalus griffini*



Family: 34 Squalidae (Dogfish sharks)
Maori names: Koinga, oke, okeoke
Other names: Green-eyed dogfish
FishNZ reporting code: NSD
FishNZ research/observer code: NSD



Distinguishing features: Anal fin absent. Stout spine in front of each dorsal fin; anterior spine much shorter than both the first dorsal fin and the second dorsal spine; origin of first dorsal fin spine in front of free rear tip of pectoral fin. Anterior nasal flaps with secondary lobe. Eyes green.

Colour: Brownish-grey or grey above, pale below, caudal fin with broad pale posterior margin and lower lobe in all but largest adults. Eyes green.

Size: To 110 cm TL.

Length measurement method: Total length

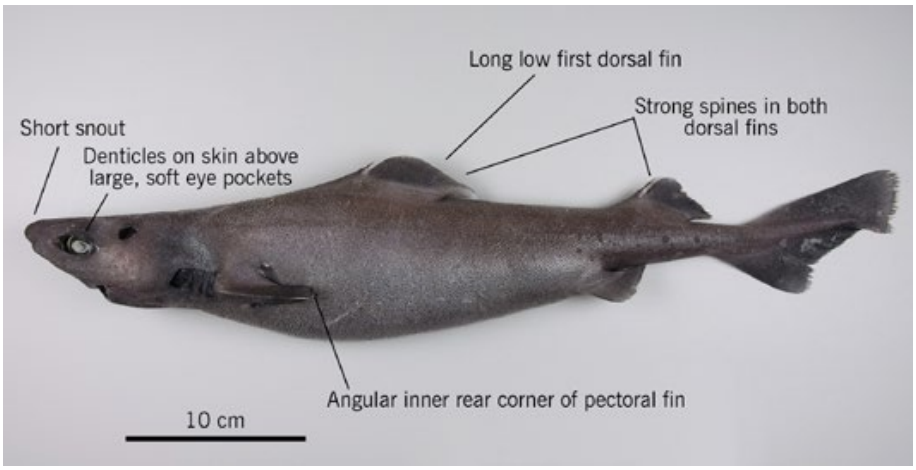
Distribution: Widespread off northern and central New Zealand, most common off the west coast of North and South Islands and near Chatham Islands. Also southern Norfolk and Kermadec Ridges, Wanganella Bank, and Louisville Seamount Chain. Found only in New Zealand.

Depth: 15 to 660 m.

Similar species: Spiny dogfish (*Squalus acanthias*) has white spots on upper body, first dorsal fin further back and behind free rear tip of pectoral fin, lacks a secondary lobe on the nasal flap, and has slender dorsal fin spines. Two rare unspotted species are found on the Kermadec Ridge (*Squalus raoulensis*) and northern New Zealand (*Squalus* sp. A).

Biology & ecology: Demersal and midwater.

Leafscale gulper shark *Centrophorus squamosus*



Family: 35. Centrophoridae (Gulper sharks)
Maori names:
Other names:
FishNZ reporting code: CSQ
FishNZ research/observer code: CSQ

Distinguishing features: Moderate sized, with short snout, long low first dorsal fin and triangular second dorsal, strong fin spines in both dorsal fins. Large area of denticle-covered skin on top of head over large soft eye pockets. Rough skin with leaf-shaped denticles, and inner rear corner of pectoral fin angular or pointed (not rounded) but elongated.

Colour: Adults pale brownish, small specimens darker, uniformly greyish-brown.

Size: To about 160 cm TL.

Length measurement method: Total length

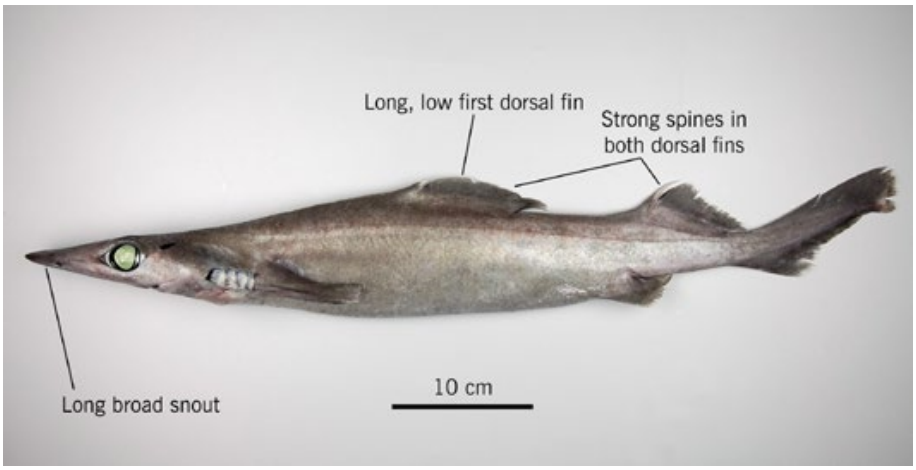
Distribution: Widespread in New Zealand from Norfolk Ridge to Campbell Plateau. East Atlantic, west Indian, and west Pacific Oceans.

Depth: 500 to 1200 m.

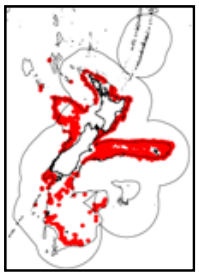
Similar species: Plunket's shark (*Scymnodon plunketi*) has a rounded inner rear corner of the pectoral fin, and is much darker, blackish-brown. Other deepwater sharks lack the pointed inner rear corner of the pectoral fin.

Biology & ecology: Mostly demersal but occasionally caught in midwater.

Shovelnose dogfish *Deania calcea*



Family: 35. Centrophoridae (Gulper sharks)
Maori names:
Other names: Brier shark (Aus.)
FishNZ reporting code: SND
FishNZ research/observer code: SND



Distinguishing features: Long slender body with long flattened snout. Strong fin spines in both dorsal fins. First dorsal fin length from before spine to free rear tip longer than second dorsal fin length. Interdorsal distance from free rear tip of first to before spine of second dorsal fin shorter than first dorsal fin length.

Colour: Body uniform grey-brown with slightly darker fins.

Size: To 120 cm TL.

Length measurement method: Total length

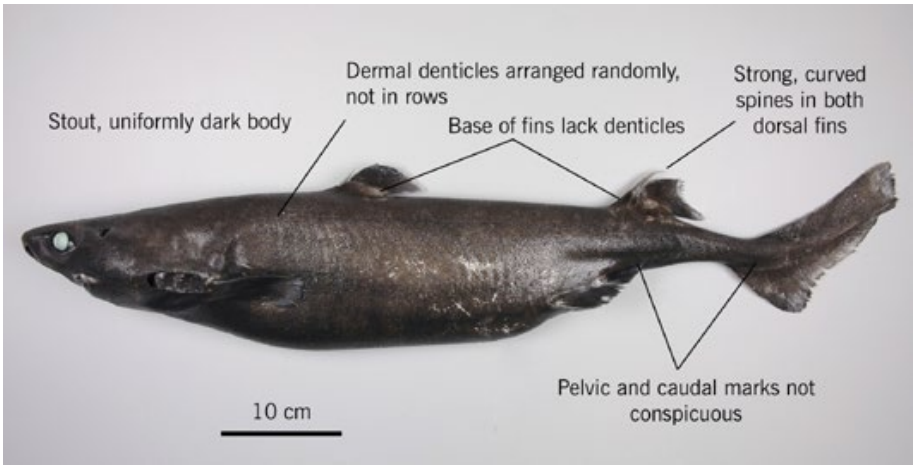
Distribution: Widespread in New Zealand from Norfolk Ridge to Campbell Plateau. East Atlantic, east and west Pacific Oceans.

Depth: 400 to 1300 m.

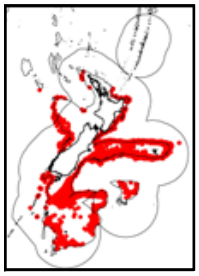
Similar species: Longsnout dogfish (*Deania quadrispinosa*, DEQ) has first dorsal fin length (before spine to free rear tip) about same as second dorsal fin length, and interdorsal distance is longer than first dorsal fin length. Rough shovelnose dogfish (*Deania histricosa*, SNR) has interdorsal distance shorter than first dorsal fin length, large rough denticles on side of body and is blackish-brown.

Biology & ecology: Demersal, but may feed in midwater.

Baxter's dogfish *Etmopterus granulosus*



Family: 36. Etmopteridae (Lantern sharks)
Maori names:
Other names: Southern lanternshark, giant lanternshark
FishNZ reporting code: ETB
FishNZ research/observer code: ETB



Distinguishing features: Bases of first and second dorsal fins naked (no denticles). Strong spines in both dorsal fins, second spine strongly curved near tip. Stout-bodied, uniformly dark, and with randomly spaced dermal denticles giving a slightly roughened skin.

Colour: Dark brown to blackish, belly darker. Darker but inconspicuous pelvic and caudal fin marks (photophores).

Size: To 96 cm TL.

Length measurement method: Total length

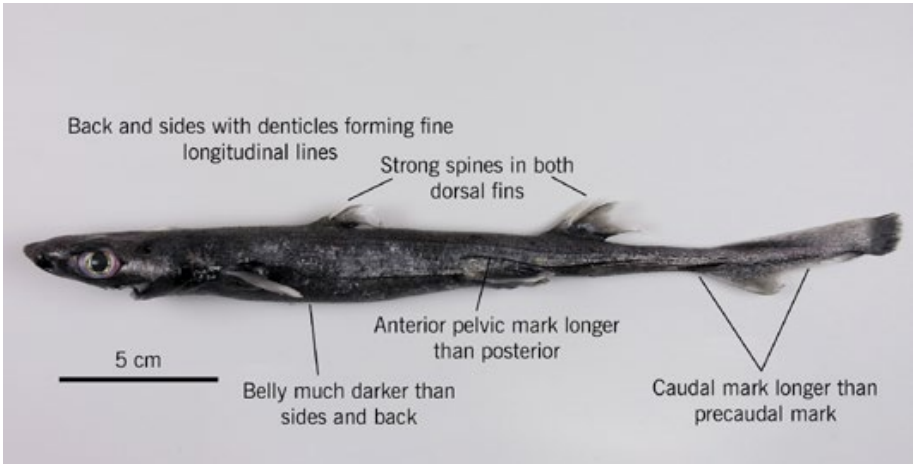
Distribution: Widespread in New Zealand from Norfolk Ridge to Campbell Plateau. Widespread in southern hemisphere from southern Africa to South America.

Depth: 500 to 1500 m

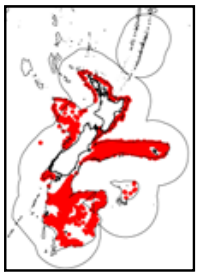
Similar species: Shortspine lanternshark (*Etmoperus unicolor*) has bases of first and second dorsal fins covered with denticles, and curved spine in second dorsal fin is shorter than fin base length. Blue-eye lanternshark (*E. viator*) has bases of first and second dorsal fins covered (can be sparse) with denticles, has pale blue tissue around eyes and upper and lower gill openings, and is small (to 58 cm TL).

Biology & ecology: Demersal, but may feed in midwater at times.

Lucifer dogfish *Etmopterus lucifer*



Family: 36. Etmopteridae (Lantern sharks)
Maori names:
Other names: Blackbelly lanternshark (Aus)
FishNZ reporting code: ETL
FishNZ research/observer code: ETL



Distinguishing features: Small and slender, pale dorsal and lateral body with fine dark longitudinal lines, darker ventrally. Strong spines in both dorsal fins. Anterior branch of pelvic flank mark longer than posterior branch, and thick part (centre) of pelvic mark below second dorsal fin base.

Colour: Silvery-grey to pale brown above, darker below. Dermal denticles on flank and back arranged in regular rows from snout to tail, giving a fine-striped appearance. Dark pelvic and caudal flank marks (light organs).

Size: To about 49 cm TL.

Length measurement method: Total length

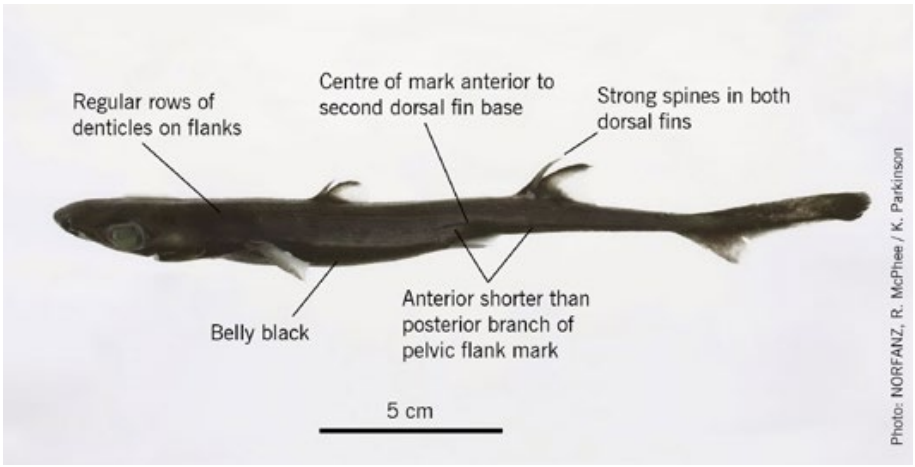
Distribution: Widespread in New Zealand from 32 to 52 S. West Pacific Ocean (Japan to New Zealand).

Depth: 400 to 1000 m.

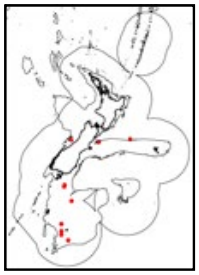
Similar species: Moller's lanternshark (*Etmopterus molleri*) has anterior branch of pelvic flank mark shorter than posterior branch, and thick part (centre) of pelvic mark is anterior to second dorsal fin base.

Biology & ecology: Demersal, sometimes in midwater.

Moller's lanternshark *Etmopterus molleri*



Family: 36. Etmopteridae (Lantern sharks)
Maori names:
Other names: Blackbelly dogfish
FishNZ reporting code: EMO
FishNZ research/observer code: EMO



Distinguishing features: Small and slender, paler on dorsal and sides of body with fine dark longitudinal lines. Strong spines in both dorsal fins. Anterior branch of pelvic flank mark shorter than posterior branch, and thick part (centre) of pelvic flank mark anterior to second dorsal fin base.

Colour: Light brown above, dark brown flanks, black belly. Dark pelvic and caudal marks (light organs).

Size: 46 cm TL.

Length measurement method: Total length

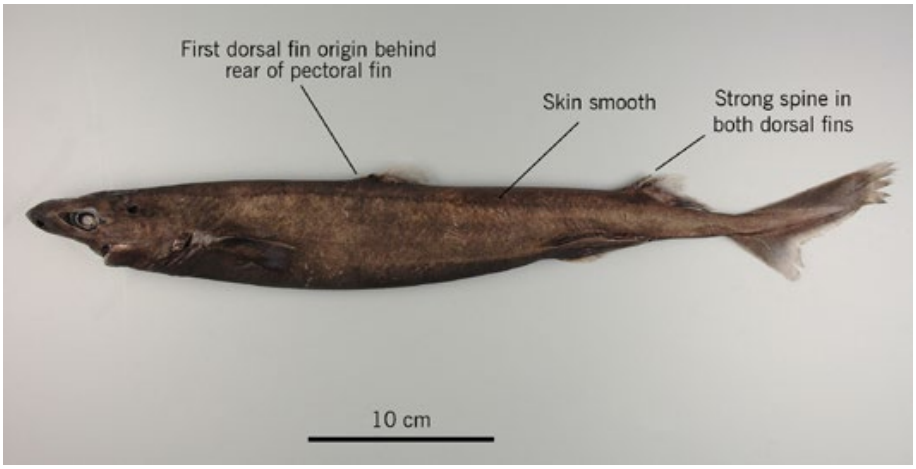
Distribution: Recorded from north of about Cook Strait in New Zealand. Older fisheries records from New Zealand are unreliable. East Australia.

Depth: 220 to 850 m.

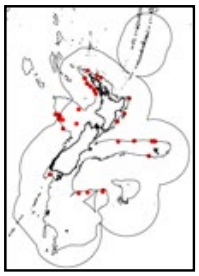
Similar species: Lucifer dogfish (*Etmopterus lucifer*) has anterior branch of pelvic flank mark longer than posterior branch and thick (centre) of pelvic mark below base of second dorsal fin.

Biology & ecology: Demersal and midwater.

Smooth lanternshark *Etmopterus pusillus*



Family: 36. Etmopteridae (Lantern sharks)
Maori names:
Other names: Slender lanternshark (Aus.)
FishNZ reporting code: ETP
FishNZ research/observer code: ETP



Distinguishing features: Dermal denticles of skin barely visible, smooth, and not arranged in rows. Strong spines in both dorsal fins. Elongated rear lower part of second dorsal fin. Uniform mid to dark brown, small, firm and round-bodied. Small rectangular first dorsal fin, originates a short distance (at least one eye width) behind rear edge of pectoral fin.

Colour: Uniformly mid to dark brown, belly darker, inconspicuous pelvic and tail marks (photophores).

Size: To 47 cm TL.

Length measurement method: Total length

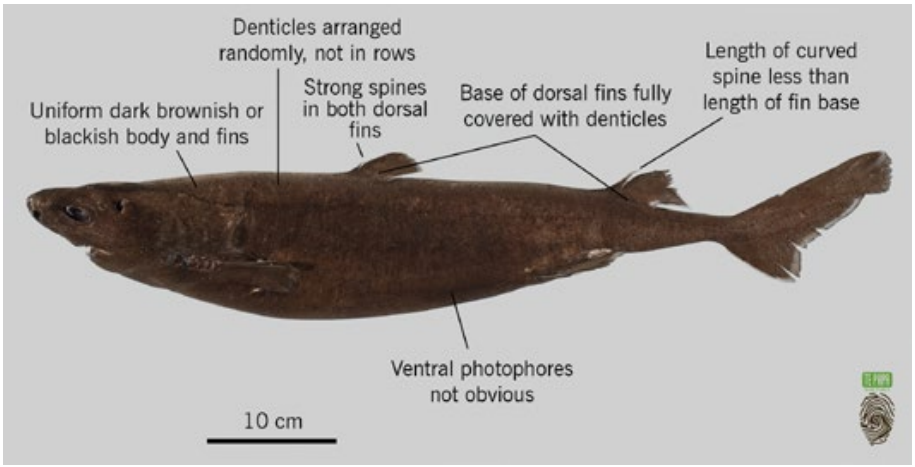
Distribution: Central and northern New Zealand. Fisheries records from Chatham Rise and Campbell Plateau are probably erroneous. Worldwide including Atlantic and Pacific Oceans, widespread in southern hemisphere.

Depth: To about 2000 m.

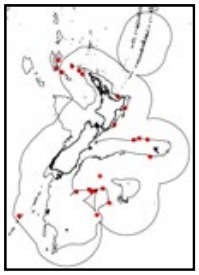
Similar species: Other small lanternsharks known from New Zealand lack the combination of smooth skin, uniform mid to dark brown colour, and pointed rear lower part of the second dorsal fin.

Biology & ecology: Demersal and midwater.

Shortspine lanternshark *Etmopterus unicolor*



Family: 36 Etmopteridae (Lantern sharks)
Maori names:
Other names:
FishNZ reporting code: OSD
FishNZ research/observer code: ETU



Distinguishing features: Bases of first and second dorsal fins covered with denticles. Stout-bodied, uniformly dark brownish or blackish body and fins. Both dorsal fins small with curved spines. Second dorsal fin spine less than length of fin base (from before spine).

Colour: Uniformly dark brownish or blackish body and fins. Photophore pattern on body not obvious.

Size: To about 79 cm TL.

Length measurement method: Total length

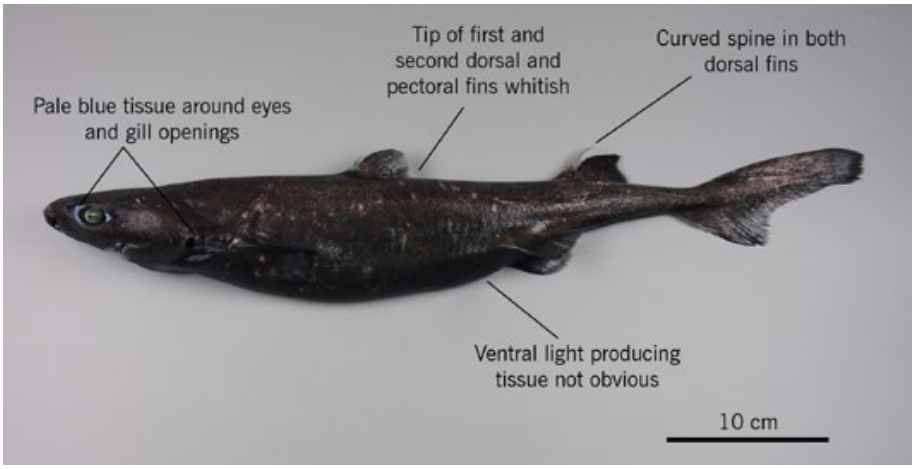
Distribution: Widespread but patchy in New Zealand. Data plotted on the map includes only data from Te Papa and does not include any fisheries records. This or a closely related species also occurs off southern Australia, southern Africa, and Japan.

Depth: About 550 to 1550 m.

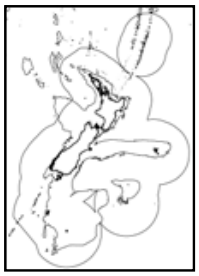
Similar species: Baxter's dogfish (*Etmopterus granulosus*) has naked areas (no denticles) at the bases of the first and second dorsal fins and the large curved spine of the second dorsal fin is usually longer than the length of the fin base (from before spine).

Biology & ecology: Probably demersal.

Blue-eye lanternshark *Etmopterus viator*



Family: 36 Etmopteridae (Lantern sharks)
Maori names:
Other names: Slate lanternshark
FishNZ reporting code: OSD
FishNZ research/observer code: EVI



Distinguishing features: Small, stout-bodied, uniformly brownish-black body, skin sparsely covered with denticles including bases of first and second dorsal fins. Both dorsal fins with curved spines. Second dorsal fin spine slightly curved at tip and longer (than first spine) but less than length of fin base (from before spine). Pale bluish tissue around the eye. Rear ends of pectoral, first, and second dorsal fins whitish.

Colour: Uniformly brownish-black body with no obvious photophore markings. Pale bluish tissue around the eye. Tips of pectoral, first, and second dorsal fins whitish.

Size: To about 58 cm TL.

Length measurement method: Total length

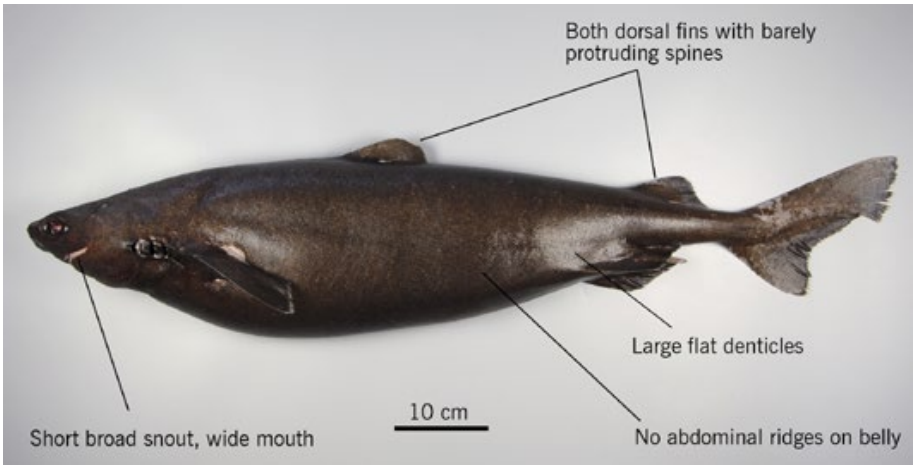
Distribution: Known from deep water (greater than about 800 m) on the Chatham Rise New Zealand, but probably widespread. Widely distributed in the cool-temperate southern hemisphere (including Kerguelen Plateau, southern Africa, Macquarie Ridge).

Depth: About 800 to 1800 m.

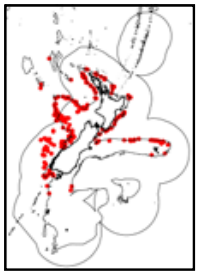
Similar species: Baxter's dogfish (*Etmopterus granulosus*) lacks white tipped dorsal and pectoral fins and has naked areas (no denticles) at the bases of the first and second dorsal fins and the large curved spine of the second dorsal fin is usually longer than the length of the fin base (from before spine).

Biology & ecology: Probably demersal.

Portuguese dogfish *Centroscymnus coelolepis*



Family: 37. Somniosidae (Sleeper sharks)
Maori names:
Other names:
FishNZ reporting code: CYL
FishNZ research/observer code: CYL



Distinguishing features: No strong abdominal ridges. Large, flat, and smooth dermal denticles, overlapping in medium to large fish. Two dorsal fins equal in size and shape, each with a barely protruding spine. Moderate-sized with a short broad snout and wide mouth.

Colour: Uniformly dark golden-brown, smaller fish darker, more blackish.

Size: To about 120 cm TL.

Length measurement method: Total length

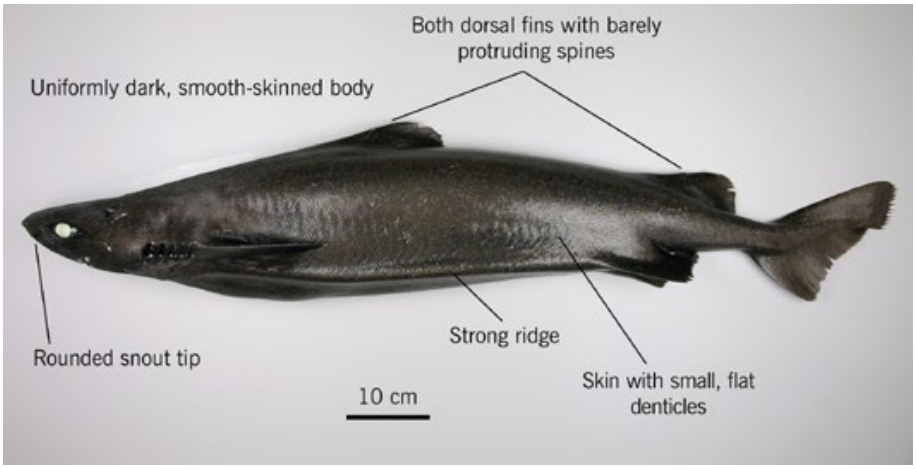
Distribution: Widespread in central and northern New Zealand. Fisheries records from the lower South Island are uncertain. Widespread in Atlantic, west Indian, and west Pacific Oceans.

Depth: 900 to 1200 m.

Similar species: Seal shark (*Dalatias licha*) lacks dorsal fin spines, has small dermal denticles, and a very short snout. Owston's dogfish (*Centroscymnus owstonii*) has distinct abdominal ridges, and small dermal denticles. Plunket's shark (*Scymnodon plunketi*) has a body which tapers much more rapidly from behind pectoral fin, small rough dermal denticles, and a first dorsal fin which extends forward as a ridge to above rear edge of pectoral fin.

Biology & ecology: Demersal and midwater.

Owston's dogfish *Centroscymnus owstonii*



Family: 37. Somniosidae (Sleeper sharks)
Maori names:
Other names:
FishNZ reporting code: CYO
FishNZ research/observer code: CYO

Distinguishing features: Strong abdominal ridges between pectoral and pelvic fin bases. Small, smooth dermal denticles. Snout length about equal to mouth width, snout rounded to slightly pointed. Barely protruding spines in both dorsal fins. Teeth near centre of lower jaw distinctly oblique. Second dorsal fin base longer than space between it and upper caudal fin origin.

Colour: Uniformly dark brown to black.

Size: To about 120 cm TL.

Length measurement method: Total length

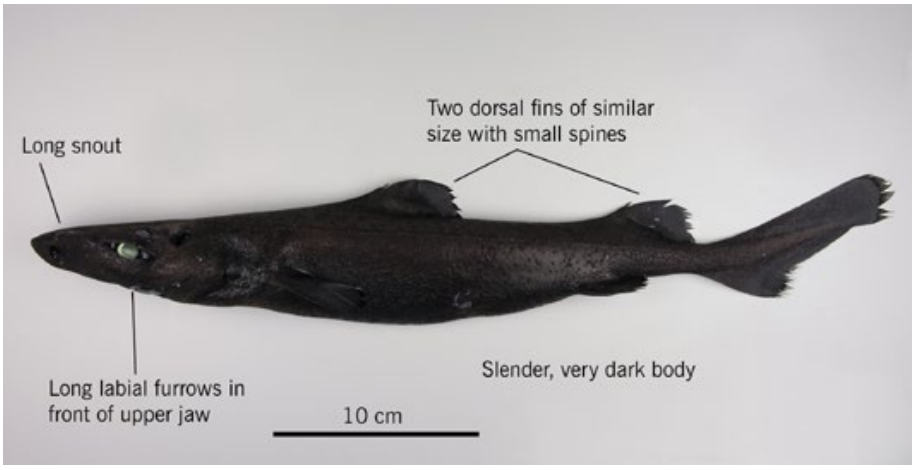
Distribution: Widespread in New Zealand from West Norfolk Ridge to Campbell Plateau. Northern and southern Atlantic, and Pacific Oceans and southern Australia.

Depth: 500 to 1500 m.

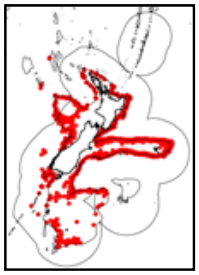
Similar species: Portuguese dogfish (*Centroscymnus coelolepis*) has weak abdominal ridges, and has large, flat dermal denticles. Velvet dogfish (*Zameus squamulosus*) has weak abdominal ridges, a more pointed snout longer than mouth width, erect or slightly oblique teeth near centre of lower jaw, and second dorsal fin base shorter than space between it and upper caudal fin origin.

Biology & ecology: Demersal and midwater.

Longnose velvet dogfish *Centroselachus crepidater*



Family: 37. Somniosidae (Sleeper sharks)
Maori names:
Other names: Golden dogfish (Aus.)
FishNZ reporting code: CYP
FishNZ research/observer code: CYP



Distinguishing features: Very dark brown to black, small to moderate sized and slender with an elongate, flattened snout, dorsal fins about equal in size. Both dorsal fins with fin spines. Long upper labial furrows (grooves in front of upper jaw) that almost encircle the mouth.

Colour: Uniformly very dark brown to black.

Size: To about 105 cm TL.

Length measurement method: Total length

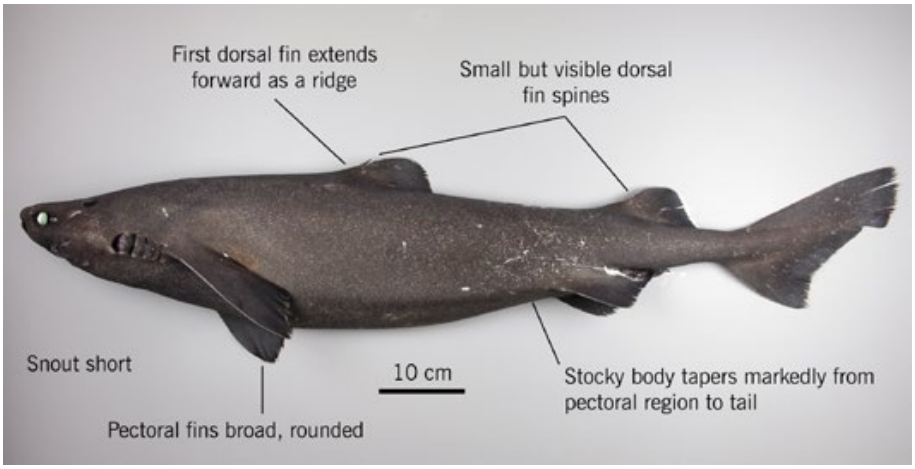
Distribution: Widespread in New Zealand from West Norfolk Ridge to Campbell Plateau. Widespread in Atlantic, Indian, and Pacific Oceans.

Depth: 500 to 1500 m.

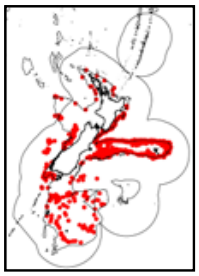
Similar species: Shovelnose dogfish (*Deania calcea*) also has a long snout, but is much paler in colour, usually mid grey-brown, and has a long, low first dorsal fin, longer and lower than the second dorsal fin.

Biology & ecology: Demersal but may also move into midwater.

Plunket's shark *Scymnodon plunketi*



Family: 37. Somniosidae (Sleeper sharks)
Maori names:
Other names: Plunket's dogfish
FishNZ reporting code: PLS
FishNZ research/observer code: PLS



Distinguishing features: Dark coloured, moderate-sized, stocky anterior to pectoral region, tapering rapidly from behind pectoral fins to tail. Short, broad head and snout. First dorsal fin extends forwards as ridge. Dorsal fin spines small, protruding. Pectoral fins broad and rounded. Dermal denticles moderate in size, ridged, skin rough.

Colour: Uniformly brownish-black.

Size: To about 170 cm TL.

Length measurement method: Total length

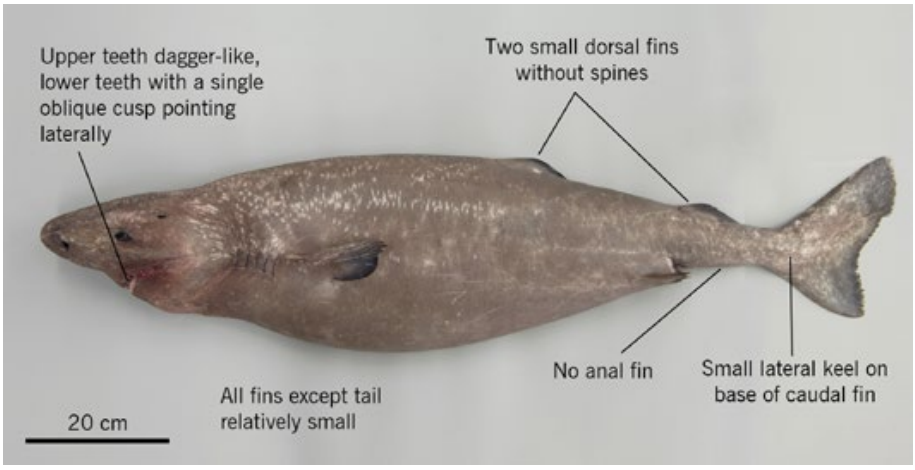
Distribution: Widespread in New Zealand from Lord Howe Rise to Campbell Plateau. Widespread in southern hemisphere from west Indian Ocean to New Zealand including southern Australia.

Depth: 500 to 1200 m.

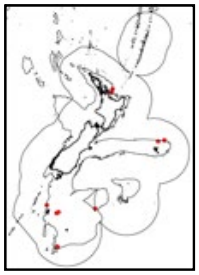
Similar species: Leafscale gulper shark (*Centrophorus squamosus*) has a pointed inner rear corner of the pectoral fin and is generally paler, brownish-grey. Seal shark (*Dalatias licha*) lacks dorsal fin spines. Owston's dogfish (*Centroscymnus owstonii*) has strong abdominal ridges. Portuguese dogfish (*Centroscymnus coelolepis*) has large, flat, smooth, dermal denticles.

Biology & ecology: Demersal and midwater.

Southern sleeper shark *Somniosus antarcticus*



Family: 37. Somniosidae (Sleeper sharks)
Maori names:
Other names:
FishNZ reporting code: OSD
FishNZ research/observer code: SSS



Distinguishing features: Anal fin absent, all other fins small except tail. Dorsal fins without spines, small lateral keel on base of tail, upper teeth dagger-like, lower jaw with tips of teeth (cusp) strongly oblique, angled laterally towards edge of jaw and in combination forming a straight cutting surface.

Colour: Light grey or pinkish grey with bluish-black fins, and often having many small white spots particularly on the upper surface. Usually covered with a dark brown mucus which makes the shark appear brown or black.

Size: To about 600 cm TL.

Length measurement method: Total length

Distribution: Central and southern New Zealand waters. Widespread in southern hemisphere.

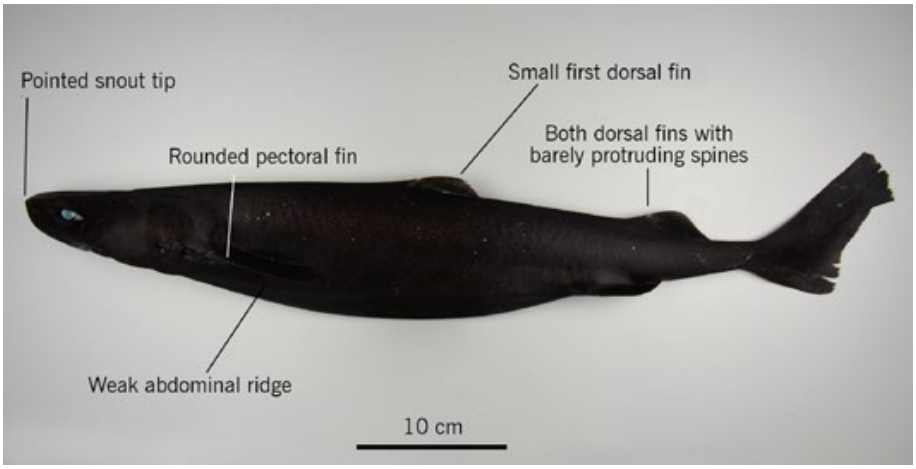
Depth: 400 to 1500 m.

Similar species: Little sleeper shark (*Somniosus longus*, SOM)

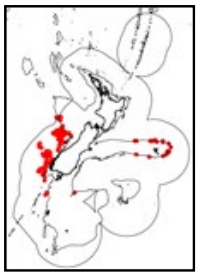
reaches about 134 cm TL, has slender body, depth about same as pectoral fin length, lower jaw teeth have more erect tips, forming a saw-tooth cutting surface, and is rare.

Biology & ecology: Demersal on the continental slope, possibly also swims in midwater. Feeds on carrion, such as dead marine mammal carcasses on seafloor.

Velvet dogfish *Zameus squamulosus*



Family: 37. Somniosidae (Sleeper sharks)
Maori names:
Other names:
FishNZ reporting code: OSD
FishNZ research/observer code: ZAS



Distinguishing features: Small, slender and black-bodied with weak abdominal ridges between pectoral and pelvic fins. Snout narrow and pointed, longer than mouth width. Both dorsal fins with barely protruding spines. Teeth near centre of lower jaw erect or only slightly oblique. Small (low) first dorsal fin. Rounded pectoral fins. Second dorsal fin base length less than distance between it and upper caudal fin origin.

Colour: Uniformly very dark brown to black.

Size: To about 85 cm TL.

Length measurement method: Total length

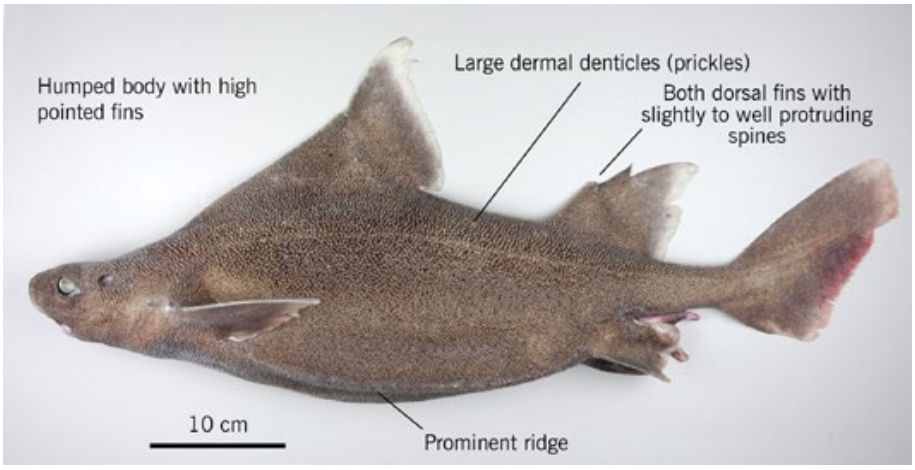
Distribution: From West Norfolk Ridge to Campbell Plateau In New Zealand. Worldwide, including Atlantic and southwest Indian Oceans, Hawaii and west Pacific Ocean from Japan to New Zealand.

Depth: 550 to 1500 m.

Similar species: Owston's dogfish (*Centroscymnus owstonii*) has strong abdominal ridges, a more rounded snout shorter than the mouth width, oblique teeth in the centre of the lower jaw, and a second dorsal fin base longer than the distance between it and the upper caudal fin origin.

Biology & ecology: Demersal and midwater. Little studied.

Prickly dogfish *Oxynotus bruniensis*



Family: 38. Oxynotidae (Rough sharks)
Maori names:
Other names:
FishNZ reporting code: PDG
FishNZ research/observer code: PDG

Distinguishing features: Stiff humped body, triangular in cross-section and with prominent abdominal ridges, high pointed dorsal fins, and large denticles giving the skin a rough or prickly appearance. Both dorsal fins with slightly to well protruding spines.

Colour: Mid-brown, often greyish, with white trailing edges to fins.

Size: To about 75 cm TL.

Length measurement method: Total length

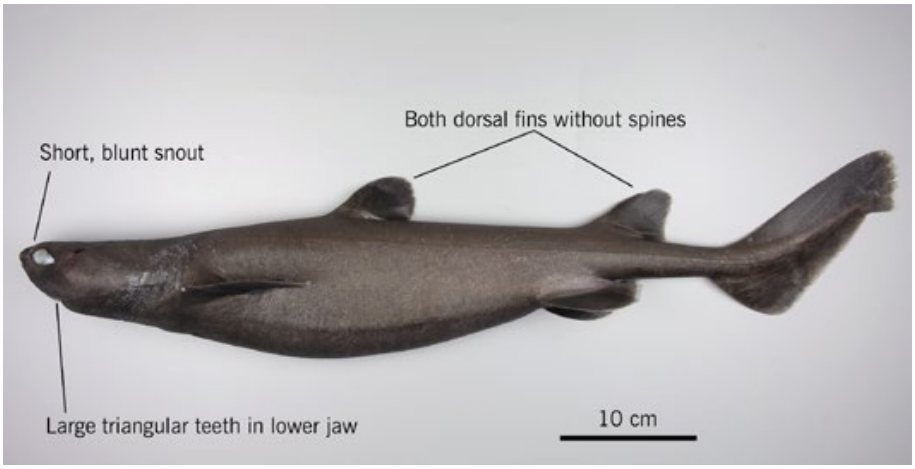
Distribution: Widespread around New Zealand. Also southern Australia.

Depth: 200 to 1100 m.

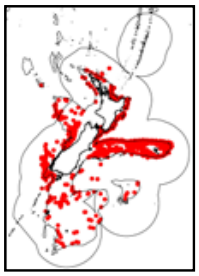
Similar species: -

Biology & ecology: Demersal.

Seal shark *Dalatias licha*



Family: 39. Dalatiidae (Kitefin sharks)
Maori names:
Other names: Black shark
FishNZ reporting code: BSH
FishNZ research/observer code: BSH



Distinguishing features: Both dorsal fins lack spines. Moderate sized with a short blunt snout giving the head a "seal-like" appearance. First dorsal fin rounded, second more pointed, and slightly larger. Thick lips. Teeth in lower jaw large, triangular, serrated.

Colour: Uniformly dark grey-brown to black, occasionally lighter.

Size: To about 170 cm TL.

Length measurement method: Total length

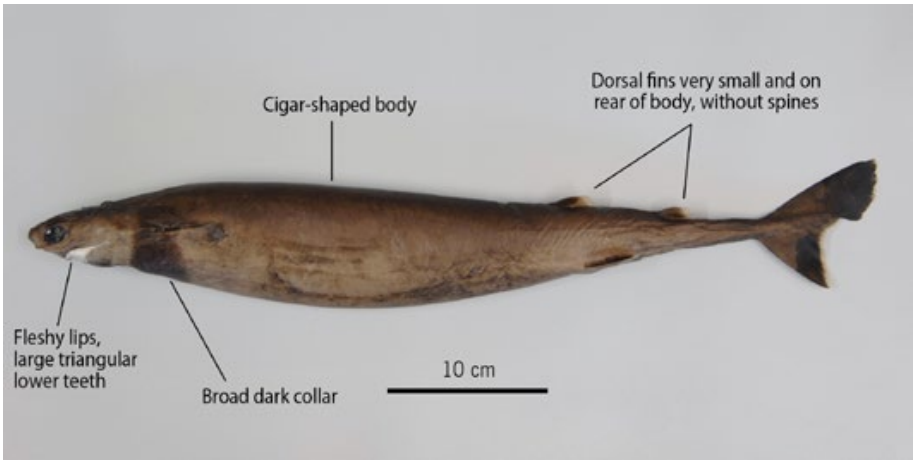
Distribution: Widespread around New Zealand. Widespread in Atlantic Ocean, western Mediterranean Sea, off southern Africa, western and central Pacific Ocean.

Depth: 400 to 1000 m.

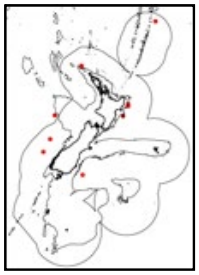
Similar species: Deepwater dogfishes have dorsal fin spines.

Biology & ecology: Demersal, sometimes feeds in midwater.

Cookie-cutter shark *Isistius brasiliensis*



Family: 39. Dalatiidae (Kitefin sharks)
Maori names:
Other names:
FishNZ reporting code: OSD
FishNZ research/observer code: IBR



Distinguishing features: Two very small dorsal fins, both lack spines, placed well back on cigar-shaped body. Broad dark collar on throat. Fleshy lips and large triangular lower teeth with erect cusps.

Colour: Dark brown above, paler below, with a dark band encircling the head at the level of the gills (more prominent ventrally).

Size: To 56 cm TL.

Length measurement method: Total length

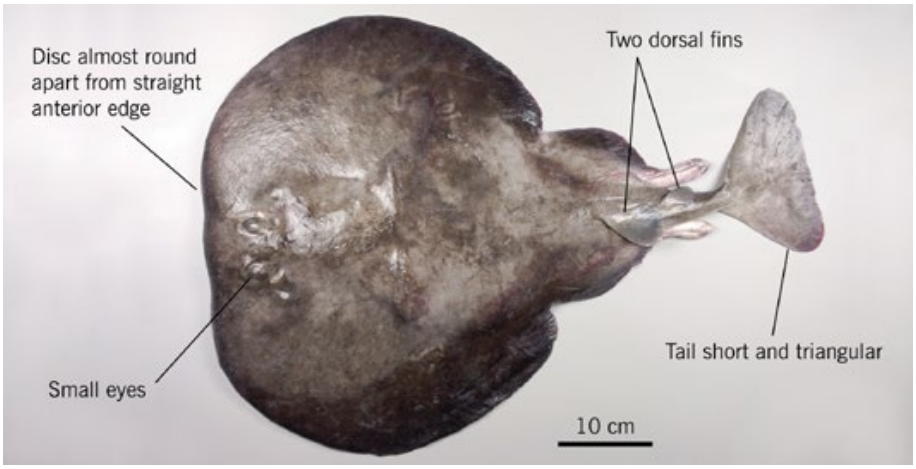
Distribution: Kermadec Ridge to southern South Island in New Zealand. Worldwide in tropical to temperate oceans.

Depth: A few to 1000 m.

Similar species: Pygmy shark (*Euprotomicrus bispinatus*) is smaller (maximum 27 cm TL), darker (mostly black without a dark collar), and has oblique cusps on the lower jaw teeth.

Biology & ecology: Pelagic in the open ocean. Inhabits deep water during the day and migrates to near the surface at night.

Electric ray *Tetronarce nobiliana*



Family: 42. Torpedinidae (Torpedo electric rays)
Maori names:
Other names:
FishNZ reporting code: ERA
FishNZ research/observer code: ERA

Distinguishing features: Disc almost round apart from straight anterior edge, tail short and triangular, eyes small, two dorsal fins. Caudal peduncle short with distance from rear edge of pelvic fin to anterior edge of ventral caudal fin lobe about half depth (dorsal to ventral) of caudal fin.

Colour: Grey to purplish-brown above, whitish below.

Size: To about 90 cm pelvic length (snout tip to rear edge of pelvic fin), or 123 cm TL.

Length measurement method: Pelvic length

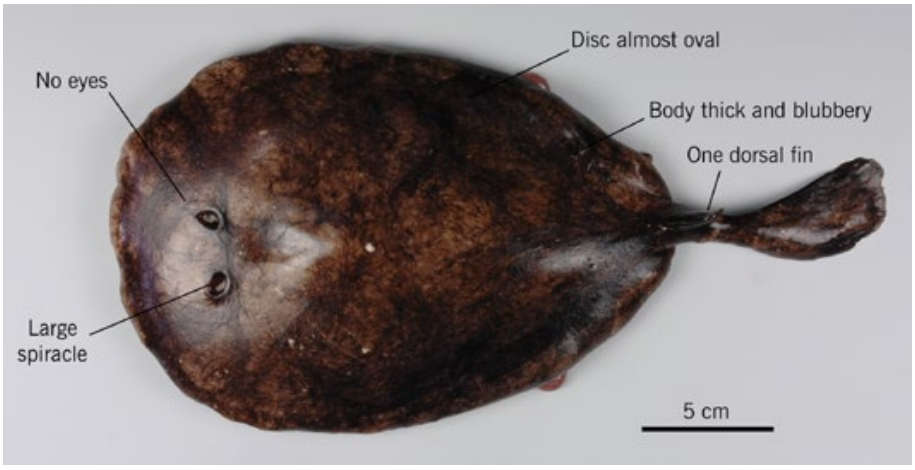
Distribution: North Cape to Stewart Island including Chatham Rise. Worldwide but patchy, including Mediterranean Sea, North Atlantic Ocean, and off South Africa and Australia.

Depth: A few to 500 m.

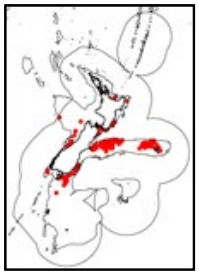
Similar species: The rare slender electric ray (*Tetronace* cf. *tokionis*) has a longer caudal peduncle with distance from rear edge of pelvic fin to anterior edge of ventral caudal fin lobe more than half depth (dorsal to ventral) of caudal fin. Ayson's numbfish (*Typhlonarke aysoni*, TAY) lacks eyes, has a single dorsal fin and a more rounded tail, is chocolate-brown above, and is much smaller.

Biology & ecology: Demersal. Capable of discharging a powerful electric shock.

Numbfish *Typhlonarke* spp.



Family: 43b. Narkidae (Numbfishes, sleeper rays)
Maori names:
Other names: Blind electric ray
FishNZ reporting code: BER
FishNZ research/observer code: BER



Distinguishing features: No eyes, one dorsal fin, body thick and blubbery, disc rounded to oval.

Colour: Dark brown above, with blackish disc margins, lighter brown below.

Size: To about 30 cm pelvic length, 43 cm TL.

Length measurement method: Pelvic length

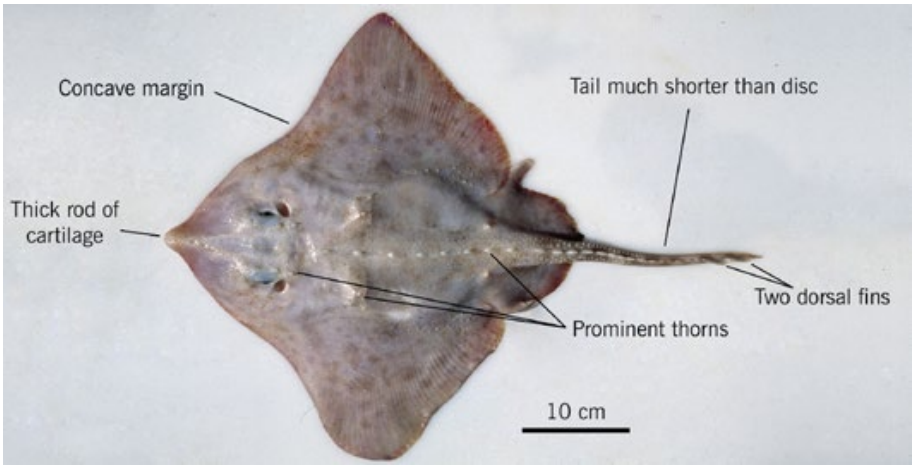
Distribution: Northeast coast of North Island to Snares Island Shelf including Chatham Rise. Known only from New Zealand.

Depth: 50 to 600 m.

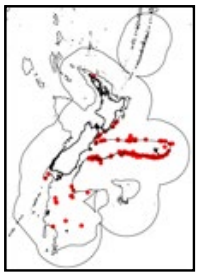
Similar species: Two species of *Typhlonarke* were recorded but only Ayson's numbfish, *T. aysoni* (**TAY**) is now considered valid. Electric ray (*Tetronace nobiliana*) has eyes, two dorsal fins, triangular tail and grows much larger.

Biology & ecology: Demersal.

Deepwater spiny skate *Amblyraja hyperborea*



Family: 48a. Rajidae (Hardnose skates)
Maori names:
Other names: Thorny skate
FishNZ reporting code: DSK
FishNZ research/observer code: DSK



Distinguishing features: Tail length much shorter than disc length. Prominent large thorns above spiracles, across pectoral girdle, and in line along middle of back and tail. Anterior wing margin with concave notch.

Colour: Greyish-brown with darker blotches above, underside white with broad brown margin and dark patches.

Size: To about 75 cm pelvic length (snout tip to rear edge of pelvic fin) or 120 cm TL.

Length measurement method: Pelvic length

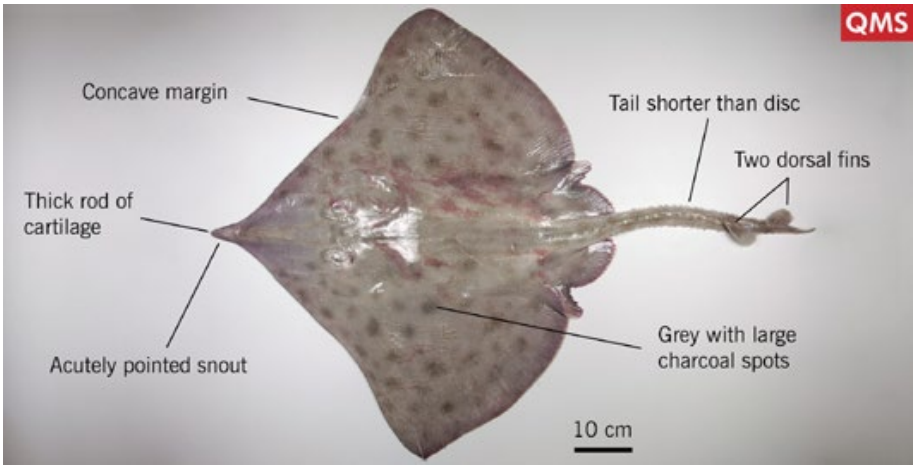
Distribution: Chatham Rise to Campbell Plateau in New Zealand. Also North Atlantic and North Pacific Oceans, off South Africa and southeast Australia.

Depth: 500 to 2600 m.

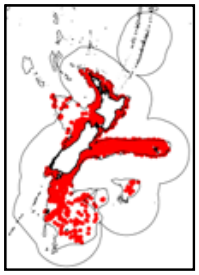
Similar species: Other skates lack combination of short tail, prominent thorns along midline, and concave anterior disc margin.

Biology & ecology: Demersal.

Smooth skate *Dipturus innominatus*



Family: 48a. Rajidae (Hardnose skates)
Maori names:
Other names:
FishNZ reporting code: SSK
FishNZ research/observer code: SSK



Distinguishing features: Tail length much shorter than disc length. Grey above with large dark (charcoal) spots, and no whitish spots. Snout acutely pointed, anterior disc margin concave.

Colour: Grey above with large dark (charcoal) spots which are sometimes inconspicuous and no whitish spots, underside variable, part whitish, plus blotchy light grey to brownish.

Size: To about 155 cm pelvic length (snout tip to rear edge of pelvic fin) or 240 cm TL.

Length measurement method: Pelvic length

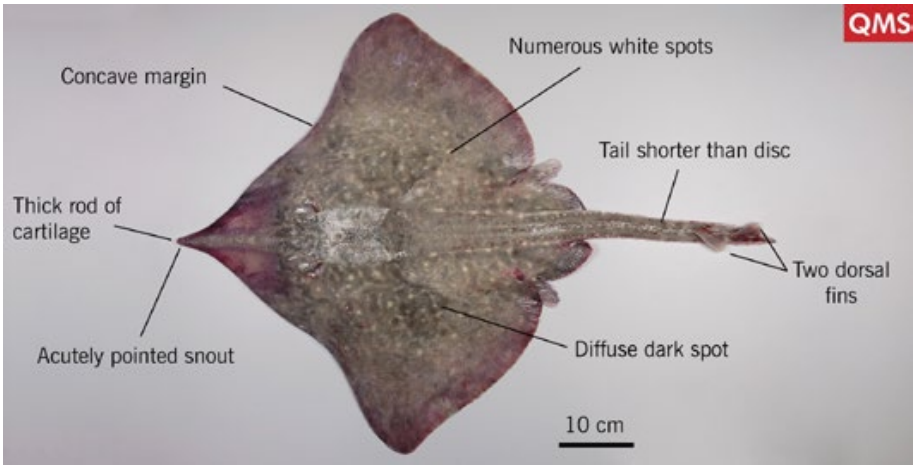
Distribution: Three Kings Islands to Campbell Plateau. Known only from New Zealand.

Depth: A few to 800 m.

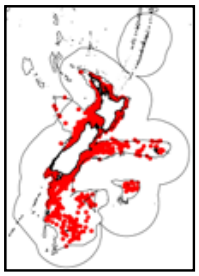
Similar species: Other skates lack combination of short tail, concave anterior disc margin, and disc colour pattern (only dark spots).

Biology & ecology: Demersal.

Rough skate *Zearaja nasuta*



Family: 48a. Rajidae (Hardnose skates)
Maori names:
Other names:
FishNZ reporting code: RSK
FishNZ research/observer code: RSK



Distinguishing features: Tail length much shorter than disc length. Numerous small white spots on upper disc and often large dark spot near middle of each wing. Snout acutely pointed, anterior disc margin concave.

Colour: Usually brown above (may be grey or olive green), with numerous small white spots, fewer small dark spots and sometimes lines, and often large, diffuse, dark spot near middle of each wing. Belly whitish but may have darker mottling, and usually has conspicuous black pores.

Size: To about 80 cm pelvic length (snout tip to rear edge of pelvic fin) or 120 cm TL.

Length measurement method: Pelvic length

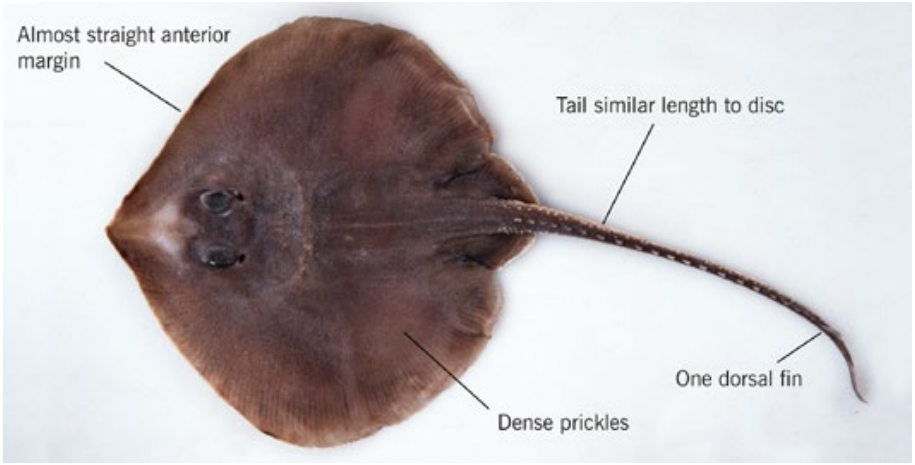
Distribution: Three Kings Islands to Campbell Plateau. Known only from New Zealand.

Depth: A few to 600 m.

Similar species: Other skates lack the combination of short tail, concave anterior disc margin, and upper disc colour pattern (whitish spots and small dark spots and lines).

Biology & ecology: Demersal.

Longtail skate *Arhynchobatis asperrimus*



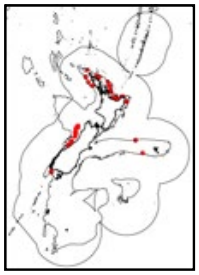
Family: 48b. Arhynchobatidae (Softnose skates)

Maori names:

Other names: Softnose skate

FishNZ reporting code: LSK

FishNZ research/observer code: LSK



Distinguishing features: Single dorsal fin, tail length similar to disc length. Disc with almost straight anterior margins and densely covered with small prickles.

Colour: Grey to brown above, pale below.

Size: To about 40 cm pelvic length (snout tip to rear edge of pelvic fin) or 75 cm TL.

Length measurement method: Pelvic length

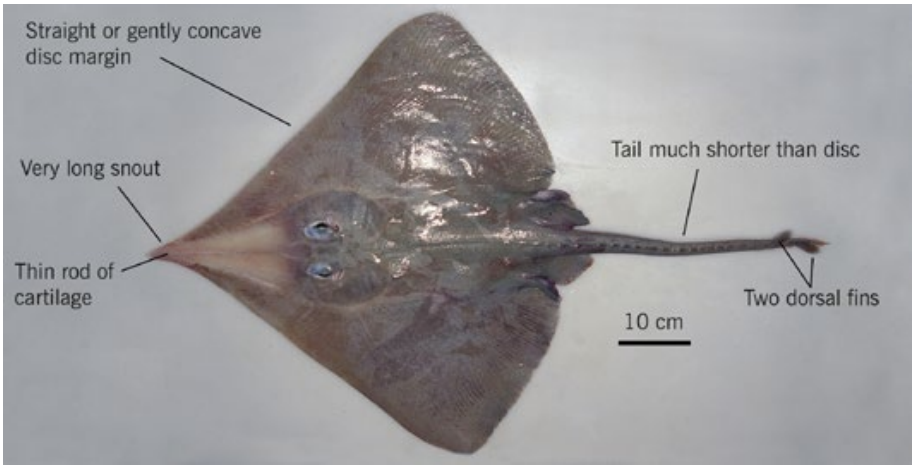
Distribution: Three Kings Islands to Foveaux Strait. Known only from New Zealand.

Depth: 100 to 700 m.

Similar species: Prickly deepsea skate (*Brochiraja spinifera*) has disc covered with prickles but it, and other skates, have two dorsal fins.

Biology & ecology: Demersal on inner continental shelf and upper continental slope.

Longnose deepsea skate *Bathyraja shuntovi*



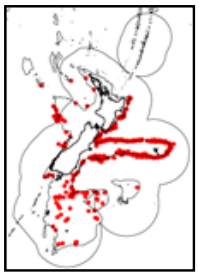
Family: 48b. Arhynchobatidae (Softnose skates)

Maori names:

Other names:

FishNZ reporting code: PSK

FishNZ research/observer code: PSK



Distinguishing features: Tail length much shorter than disc length, snout very long and transparent centrally, anterior disc margin straight to gently concave. Disc smooth in large individuals but may be prickly in juveniles.

Colour: Grey to brown above, pale below.

Size: To about 110 cm pelvic length (snout tip to rear edge of pelvic fin) or 175 cm TL.

Length measurement method: Pelvic length

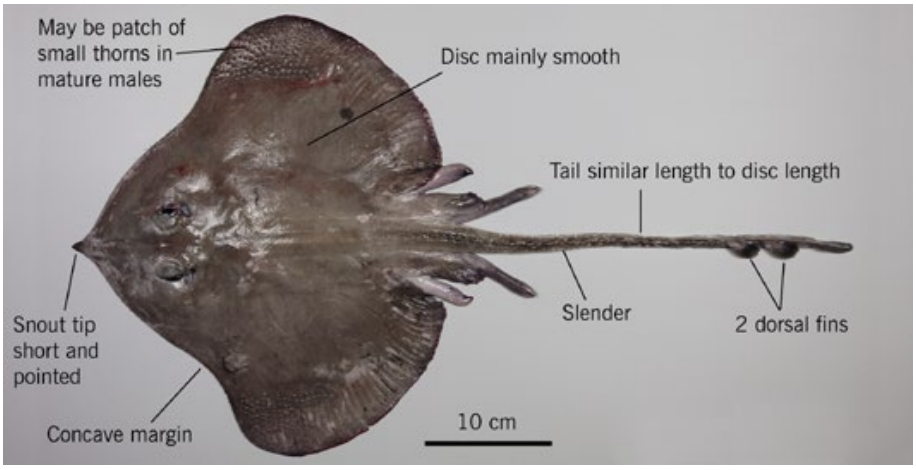
Distribution: North Cape to Campbell Plateau. Known only from New Zealand.

Depth: 500 to over 1500 m.

Similar species: Pacific blond skate (*Bathyraja pacifica*) is whitish, pinkish, or pale grey above, more robust, disc is more diamond-shaped with anterior and posterior margins of disc similar in length, and lives deeper (1200 m or greater). Other skates lack a short tail and very long snout.

Biology & ecology: Demersal.

Smooth deepsea skate *Brochiraja asperula*



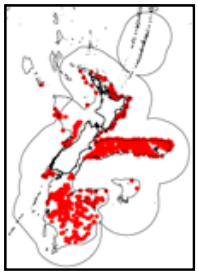
Family: 48b. Arhynchobatidae (Softnose skates)

Maori names:

Other names:

FishNZ reporting code: OSK

FishNZ research/observer code: BTA



Distinguishing features: Tail length similar to disc length, very slender. Disc mainly smooth except for sparse denticles on posterior midline, and small thorns on wing tips in mature males. Anterior wing margin concave. Snout tip short and sharply pointed.

Colour: Disc whitish, brownish, or greyish above without bluish hues.

Size: To about 40 cm pelvic length (snout tip to rear edge of pelvic fin) or 78 cm TL.

Length measurement method: Pelvic length

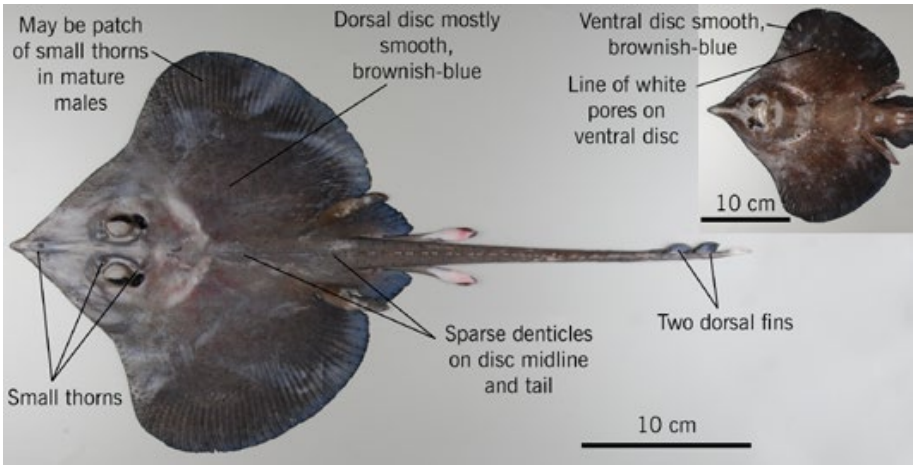
Distribution: Three Kings Islands to Campbell Plateau. Known only from New Zealand.

Depth: 200 to 1200 m.

Similar species: Blue skate (*B. leviveneta*) has smooth skinned disc and is widespread in NZ, but disc is pale bluish above and darker bluish-brown below with series of white pores below. Other skates lack combination of long tail, mostly smooth disc, and concave anterior disc margin. Longtail skate (*Arhynchobatis asperrimus*) has disc covered with denticles and only one dorsal fin.

Biology & ecology: Demersal.

Blue skate *Brochiraja leviveneta*



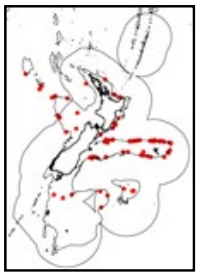
Family: 48b Arhynchobatidae (Softnose skates)

Maori names:

Other names:

FishNZ reporting code: OSK

FishNZ research/observer code: BRL



Distinguishing features: Upper and lower surfaces of disc brownish-blue, but lower surface darker with rows of pale pores (shown top right). Upper surface of disc mainly smooth but sparse covering of denticles on middle posterior disc and sides of tail. May be patch of small thorns (alar) on wings in mature males. Two dorsal fins.

Colour: Upper and lower surfaces of disc brownish-blue, but lower surface is darker and has rows of pale pores.

Size: To about 30 cm pelvic length, 60 cm TL.

Length measurement method: Pelvic length

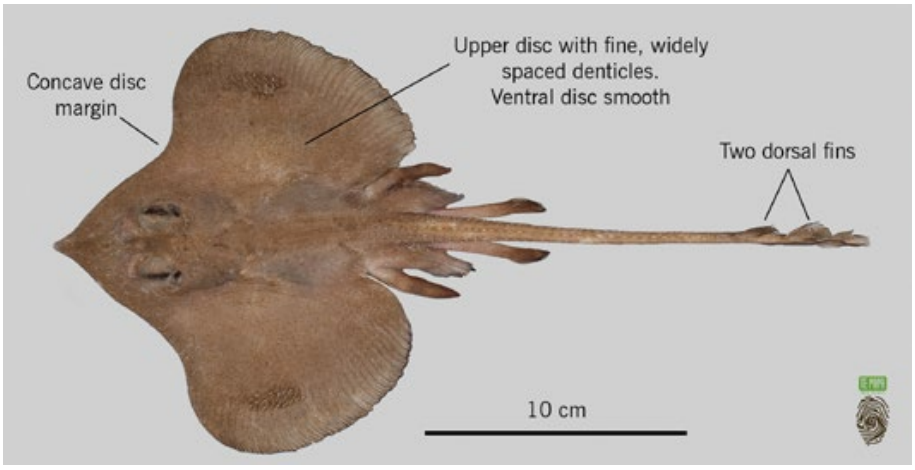
Distribution: Known only from New Zealand where it is widespread. Data plotted on map includes only Te Papa specimens and does not include any fisheries records.

Depth: 900 to 1100 m.

Similar species: Smooth deepsea skate (*Brochiraja asperula*) is greyish or brownish without bluish hues on upper surface but dark greyish or brownish on lower surface without conspicuous white pores.

Biology & ecology: Demersal.

Dwarf skate *Brochiraja microspinifera*



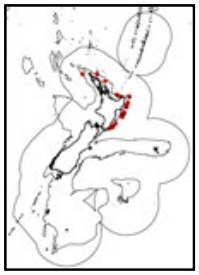
Family: 48b Arhynchobatidae (Softnose skates)

Maori names:

Other names:

FishNZ reporting code: OSK

FishNZ research/observer code: BMI



Distinguishing features: Upper disc surface covered with fine, widely-spaced denticles, lower surface smooth. May be patch of small thorns on wing in mature males. Leading lateral margins of disc concave. Two dorsal fins.

Colour: Upper surface uniform brownish. Lower surface darker with or without pale-edged pores.

Size: To about 15 cm pelvic length, 33 cm TL.

Length measurement method: Pelvic length

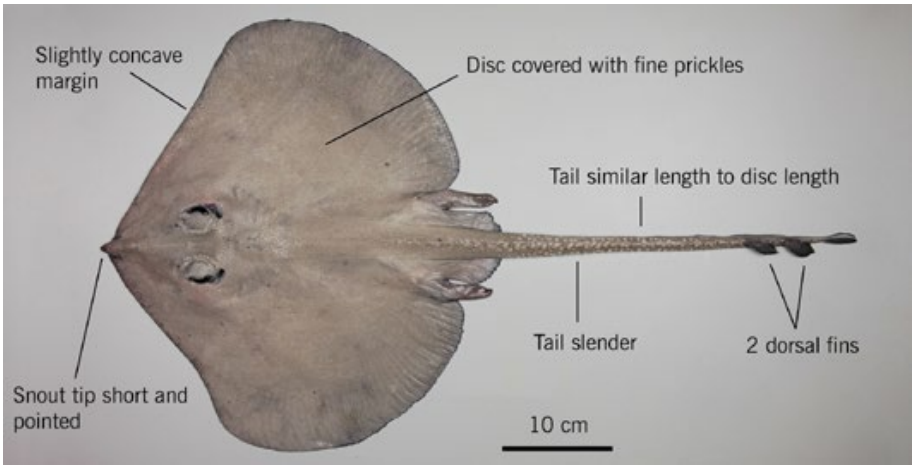
Distribution: Known only from east coast and far north of North Island, New Zealand. Data plotted on map includes only Te Papa specimens and does not include any fisheries records.

Depth: 600 to 1200 m.

Similar species: Prickly deepsea skate (*Brochiraja spinifera*) has upper disc covered with fine, closely-set denticles, leading lateral margins of disc are almost straight or slightly concave and they attain about 84 cm TL.

Biology & ecology: Demersal.

Prickly deepsea skate *Brochiraja spinifera*



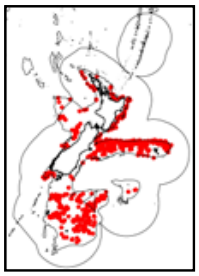
Family: 48b. Arhynchobatidae (Softnose skates)

Maori names:

Other names:

FishNZ reporting code: OSK

FishNZ research/observer code: BTS



Distinguishing features: Tail length similar to disc length, very slender. Disc uniformly covered in fine prickles. Anterior wing margin only slightly concave. Snout tip short and sharply pointed. Two dorsal fins.

Colour: Light brownish-grey above, grey to blackish below.

Size: To about 45 cm pelvic length, 84 cm TL.

Length measurement method: Pelvic length

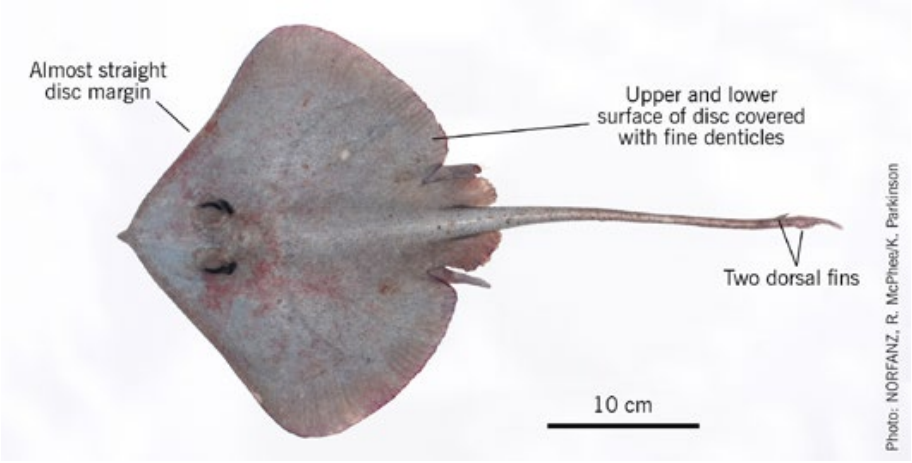
Distribution: Three Kings Islands to Campbell Plateau. Known only from New Zealand.

Depth: 200 to 1200 m.

Similar species: Dwarf skate (*B. microspinifera*) has fine prickles on upper disc but upper and lower sides of disc are dark brown, reaches only about 33 cm TL, and is known only from east coast North Island. Other skates lack combination of long tail, upper disc covered with prickles, and slightly concave anterior disc margin. Longtail skate (*Arhynchobatis asperrimus*) has upper disc covered with prickles (denticles) but only one dorsal fin.

Biology & ecology: Demersal.

Velcro skate *Notoraja alisae*



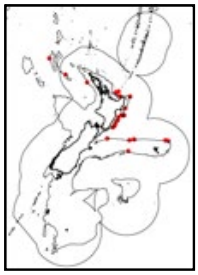
Family: 48b Arhynchobatidae (Softnose skates)

Maori names:

Other names:

FishNZ reporting code: OSK

FishNZ research/observer code: NAL



Distinguishing features: Upper and lower surfaces of the disc covered with close-set, fine, bristle-like denticles. Leading lateral margins of the disc almost straight or slightly concave. Two dorsal fins.

Colour: Upper and lower surfaces of the disc dark greyish-brown to greyish-blue.

Size: To about 45 cm pelvic length, 84 cm TL.

Length measurement method: Pelvic length

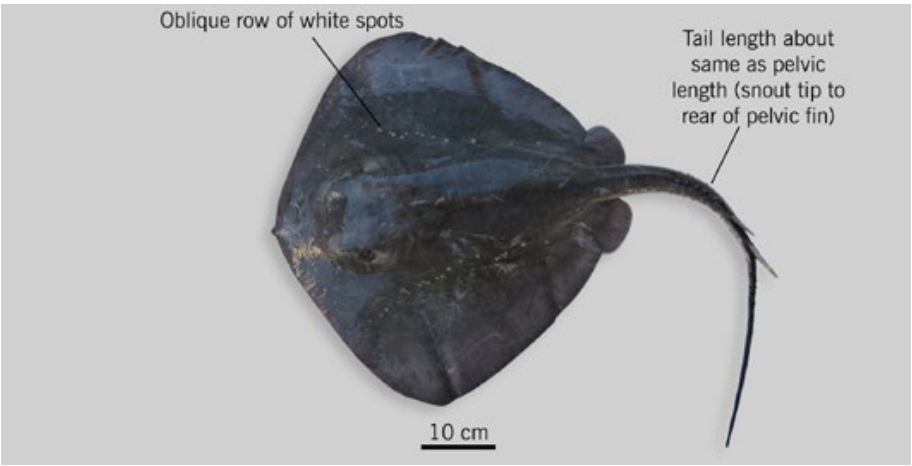
Distribution: Central and northern New Zealand. Data plotted on the map includes only data from Te Papa and does not include any fisheries records. Also known from Vanuatu, southern and northern Norfolk Ridges.

Depth: 800 to 1500 m.

Similar species: All other small New Zealand skates belonging to *Brochiraja* and *Notoraja* lack a dense covering of denticles on the entire lower surface.

Biology & ecology: Demersal.

Short-tail stingray *Bathytoshia brevicaudata*



Family: 55. Dasyatidae (Stingrays)

Maori names: Oru, paakaurua, roha, whai repo

Other names: Short-tailed black ray

FishNZ reporting code: BRA

FishNZ research/observer code: BRA

Distinguishing features: Tail length similar or shorter than pelvic length, oblique row of white spots on each side of head, wing tips rounded. Underside with a "flying-gull" shaped crease between the rear gill slits.

Colour: Dark grey or black above with an oblique row of white spots on each side of head, white below with broad grey margin.

Size: To about 230 cm pelvic length, 430 cm TL.

Length measurement method: Pelvic length

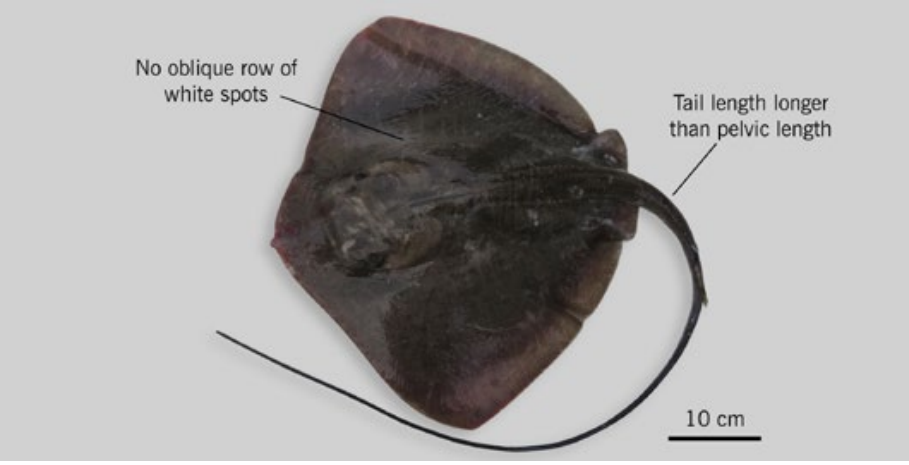
Distribution: Kermadec Islands to Foveaux Strait and Chatham Islands in New Zealand, more common in the north and uncommon south of Cook Strait. Widespread in southern hemisphere from off South Africa to Australia and New Zealand.

Depth: A few to 200 m.

Similar species: Long-tail stingray (*Bathytoshia lata*) has a longer tail (if undamaged) up to twice as long as pelvic length, and lacks oblique row of white spots on dorsal disc. Eagle ray (*Myliobatis tenuicaudatus*) has pointed wing tips, a protruding head, and one dorsal fin.

Biology & ecology: Demersal but may be in midwater around reefs. Coastal.

Long-tail stingray *Bathytoshia lata*



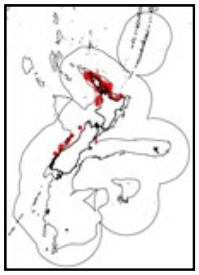
Family: 55. Dasyatidae (Stingrays)

Maori names: Oru, paakaurua, roha, whai repo

Other names:

FishNZ reporting code: WRA

FishNZ research/observer code: WRA



Distinguishing features: Tail (if undamaged) length much greater than pelvic length, no oblique row of white spots on each side of head, wing tips rounded.

Colour: Dark olive-green to black above without oblique row of white spots on each side of head, white below.

Size: To about 160 cm pelvic length, 330 cm TL.

Length measurement method: Pelvic length

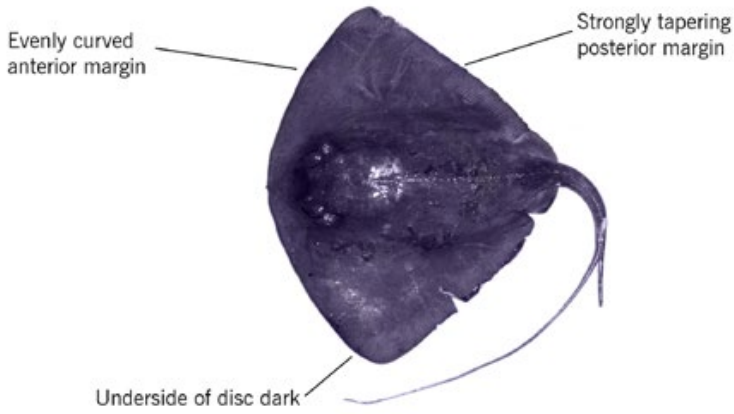
Distribution: Kermadec Islands to Cook Strait. Fisheries records from Campbell and Bounty Plateaus are erroneous. Reunion and Lord Howe Islands and Australia.

Depth: A few to 100m.

Similar species: Short-tail stingray (*Bathytoshia brevicaudata*) has tail length similar or shorter than pelvic length, oblique row of white spots on each side of head, underside with "flying-gull" shaped crease between rear gill slits. Eagle ray (*Myliobatis tenuicaudatus*) has wing tips acutely pointed, head protrudes ahead of anterior edge of wings, olive green to yellow above with blue-grey markings, one small dorsal fin.

Biology & ecology: Demersal, but may be in midwater near reefs. Coastal.

Pelagic stingray *Pteroplatytrygon violacea*



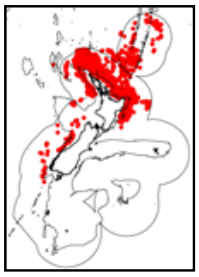
Family: 55. Dasyatidae (Stingrays)

Maori names:

Other names: Violet stingray

FishNZ reporting code: DAS

FishNZ research/observer code: DAS



Distinguishing features: Disc with an evenly curved anterior margin and strongly tapering posterior margin. Underside dark.

Colour: Black to dark bluish-black dorsal and brownish-black ventral disc.

Size: To about 50 cm pelvic length, 130 cm TL.

Length measurement method: Pelvic length

Distribution: Mainly northern New Zealand especially northeast of North Island, but may straggle down west coast South Island as far as Puysegur Point in warm summers. Worldwide in subtropical and warm temperate seas.

Depth: From surface to unknown depth, probably at least 200 m.

Similar species: Short-tail stingray (*Bathytoshia brevicaudata*) has disc with curved rear margin, oblique row of small white spots on each side of dorsal head, and is white below with broad grey margin. Long-tail stingray (*Bathytoshia lata*) disc has curved rear margin, and is white below.

Biology & ecology: Pelagic in the open ocean.

Manta ray *Mobula birostris*

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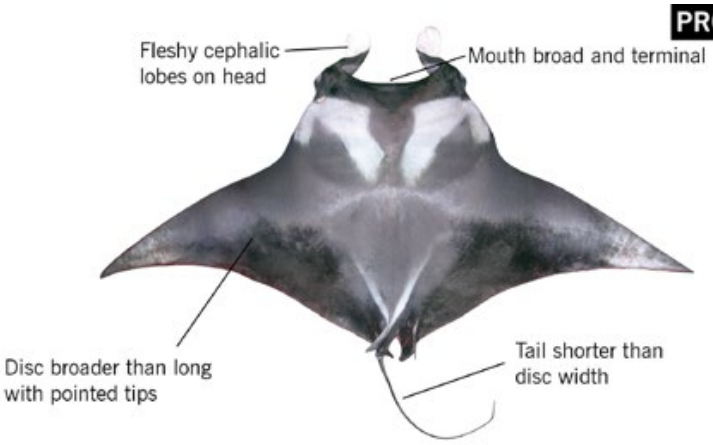


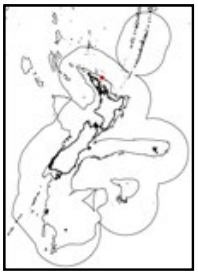
Family: 58. Myliobatidae (Devil rays, eagle rays, manta rays)

Maori names:

Other names: Giant manta ray

FishNZ reporting code: RMB

FishNZ research/observer code: RMB



W. White, CSIRO

Distinguishing features: Disc wider than long with pointed tips, head with prominent fleshy extensions of pectoral fins (cephalic lobes). Mouth broad and terminal (at front of head). Tail thin, length less than disc width, usually with a stinging spine.

Colour: Greyish-blue to black above, with irregular paler shoulder patches. White below, sometimes with grey or black patches behind the gills.

Size: To about 500 cm pelvic length, 900 cm disc width.

Length measurement method: Pelvic length

Distribution: Northeast coast of North Island. Worldwide in tropical, subtropical, and warm temperate seas.

Depth: Unknown. Usually seen near the surface, but probably extends to at least 200 m.

Similar species: Spinetail devil ray (*Mobula mobular*) has mouth on underside of head, white tip on dorsal fin, tail length equal to or greater than disc width.

Biology & ecology: Pelagic over the continental shelf and in the open ocean.

Spinetail devil ray *Mobula mobular*

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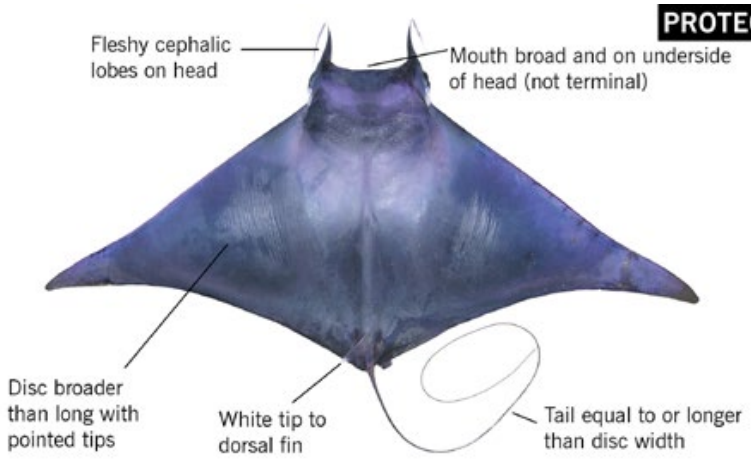


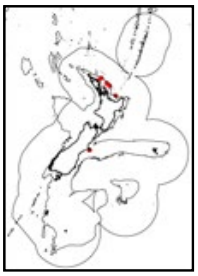
Family: 58 Myliobatidae (Devil rays, eagle rays, manta rays)

Maori names:

Other names: Japanese devil ray

FishNZ reporting code: MJA

FishNZ research/observer code: MJA



W. White, CSIRO

Distinguishing features: Disc wider than long, with pointed tips, head with prominent fleshy extensions of pectoral fins (cephalic lobes). Mouth broad and on underside of head. Dorsal fin with white tip. Tail thin, length equal to or greater than disc width, usually with a stinging spine.

Colour: Bluish or purplish-black above, iridescent when alive, white below with dark patches in adults, white tip on dorsal fin. Juveniles with two white crescents on 'shoulders'.

Size: To about 180 cm pelvic length, 310 cm disc width.

Length measurement method: Pelvic length

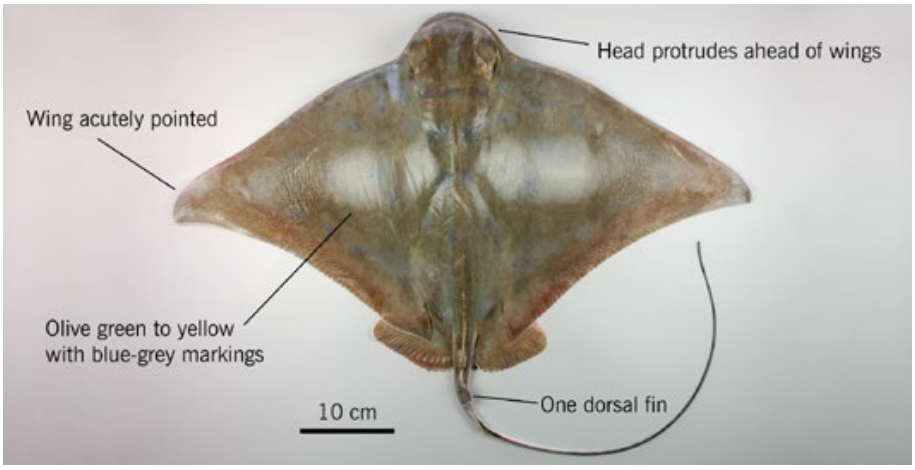
Distribution: Northeast and northwest coasts of North Island. Worldwide in tropical to warm temperate seas.

Depth: A few to 400 m.

Similar species: Manta ray (*Mobula birostris*) has a terminal mouth (at front of head), and tail length is less than disc width.

Biology & ecology: Pelagic over the continental shelf and in the open ocean. Usually at or beyond the shelf edge in New Zealand.

Eagle ray *Myliobatis tenuicaudatus*



Family: 58. Myliobatidae (Devil rays, eagle rays, manta rays)

Maori names: Whai repo

Other names:

FishNZ reporting code: EGR

FishNZ research/observer code: EGR

Distinguishing features: Wing tips acutely pointed, head protrudes ahead of anterior edge of wings, olive green to yellow above with blue-grey markings, one small dorsal fin.

Colour: Olive-green to yellow above with blue-grey markings, white below.

Size: To about 65 cm pelvic length, 105 cm disc width.

Length measurement method: Pelvic length

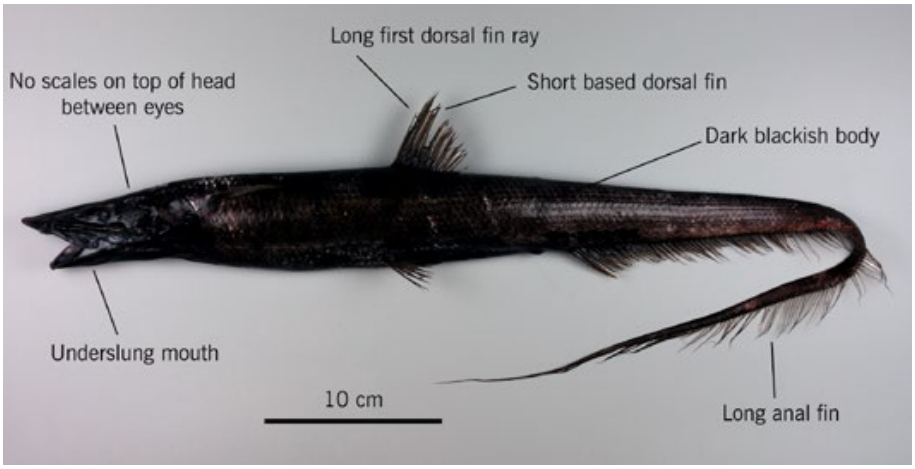
Distribution: Kermadec Islands, and Northland to Foveaux Strait, but uncommon south of Cook Strait in New Zealand. Norfolk Island and southern Australia.

Depth: A few to 75 m.

Similar species: Short-tail and long-tail stingrays (*Bathytoshia brevicaudata* and *B. lata*) lack acutely pointed wing tips, a protruding head, and a dorsal fin.

Biology & ecology: Demersal.

Black halosaur *Halosauropsis macrochir*



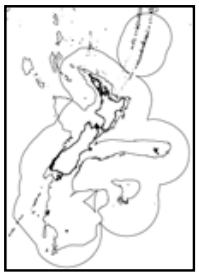
Family: 72. Halosauridae (Halosaurs)

Maori names:

Other names: Abyssal halosaur

FishNZ reporting code: UNI

FishNZ research/observer code: HAL



Distinguishing features: No scales on top of head between eyes. Body blackish-brown. Long first ray in dorsal fin. 14 lateral line scales from behind the head (origin) to the pelvic fin. Underslung mouth with short-based dorsal fin, long eel-like body with long anal fin, and lateral line running along body closer to ventral than dorsal surface.

Colour: Body, head, and fins blackish-brown.

Size: To 90 cm TL.

Length measurement method: Total length

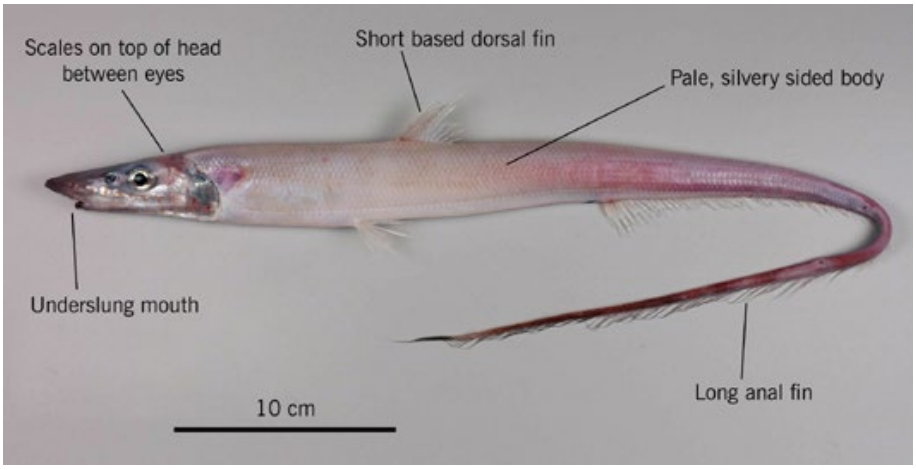
Distribution: Central and northern New Zealand. Some older fisheries records are unreliable and erroneously used the HAL species code for common halosaur (*Halosaurus pectoralis*). Worldwide in temperate regions of all oceans.

Depth: 1000 to 3200 m.

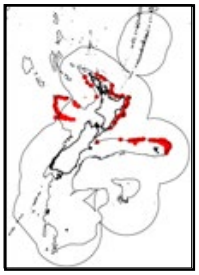
Similar species: *Aldrovandia affinis* has a very short first ray in dorsal fin and 18 lateral line scales from the origin behind the head to the pelvic fin. Common halosaur (*Halosaurus pectoralis*) has a pale head and body and has scales on the top of the head between the eyes.

Biology & ecology: Demersal.

Common halosaur *Halosaurus pectoralis*



Family: 72. Halosauridae (Halosaurs)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: HPE



Distinguishing features: Scales present on top of head between eyes. Body pale with silvery sides and belly. Underslung mouth with short based dorsal fin, long eel-like body with long anal fin, and lateral line running along the body closer to the ventral than dorsal surface.

Colour: Body pale with silvery sides and belly. Head with silvery sides, dusky snout and tip of lower jaw. Dorsal, pectoral, and pelvic fins pale. Anal fin pale anteriorly and dusky posteriorly.

Size: To about 87 cm TL.

Length measurement method: Total length

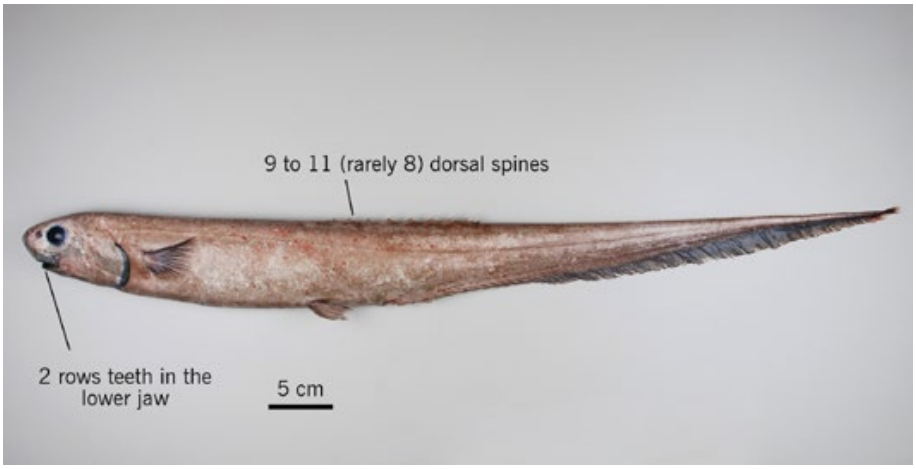
Distribution: Central and northern New Zealand. Southeast Indian and southwest Pacific Oceans.

Depth: 700 to 1000 m.

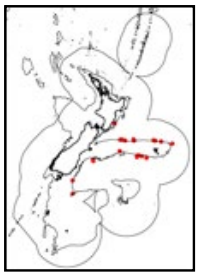
Similar species: Black halosaur (*Halosauropsis macrochir*) and *Aldrovandia affinis* are both blackish-brown and both lack scales on top of head between the eyes.

Biology & ecology: Demersal.

Giant spineback *Notacanthus chemnitzii*



Family: 73. Notacanthidae (Spiny eels)
Maori names:
Other names:
FishNZ reporting code: DWE
FishNZ research/observer code: NOC



Distinguishing features: Dorsal fin with 9 to 11 short stout spines. Two or more rows of teeth on lower jaw and on roof of the mouth (palatine).

Colour: Dark brown. Blackish rear two thirds of anal fin. Inside of mouth, lips, and gill cavity blackish.

Size: To about 120 cm TL.

Length measurement method: Total length

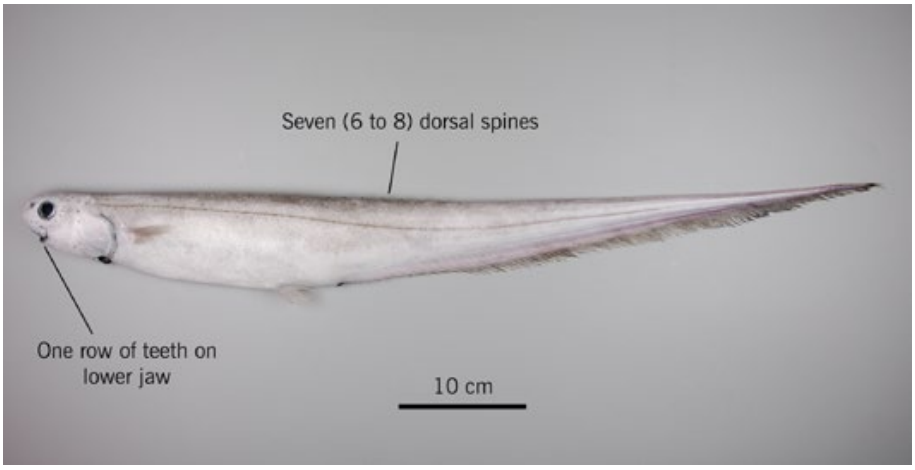
Distribution: Off Hawkes Bay to Campbell Plateau in New Zealand. Worldwide in non-equatorial seas.

Depth: New Zealand fisheries records from 440 to 1700.

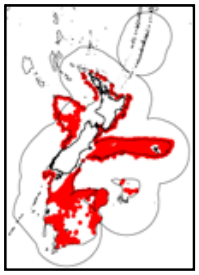
Similar species: Spineback (*Notacanthus sexspinis*) has 6 to 8, usually 7 dorsal spines, and a single row of teeth on the lower jaw.

Biology & ecology: Unknown. Presumed to be demersal.

Spineback *Notacanthus sexspinis*



Family: 73. Notacanthidae (Spiny eels)
Maori names:
Other names:
FishNZ reporting code: SBK
FishNZ research/observer code: SBK



Distinguishing features: Dorsal fin reduced to a series of 6 to 8 (usually 7) short stout spines, and lateral line running along the body closer to the dorsal than the ventral surface. Single row of teeth on lower jaw and on roof of mouth (palatine).

Colour: Pale whitish-brown above, paler below, with larger individuals darker. Inside of mouth and gill cavity black.

Size: To about 80 cm TL.

Length measurement method: Total length

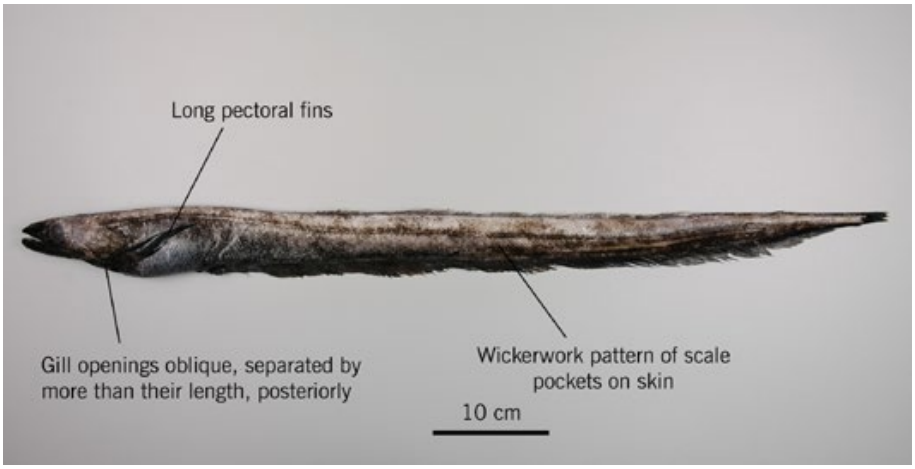
Distribution: Widespread in New Zealand (Northland to Campbell Plateau). Widespread in southern hemisphere.

Depth: 300 to 1100 m.

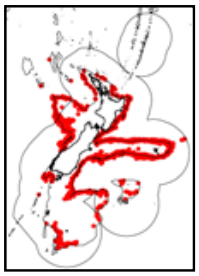
Similar species: *Notacanthus chemnitzii* has 8 to 11 dorsal spines, two or more rows of teeth in the lower jaw and two or more rows of palatine teeth on roof of the mouth, and is larger (to 120 cm TL) and darker bodied.

Biology & ecology: Largely unknown. Presumed to be demersal, but also observed in midwater swimming at least 100 m above the bottom.

Basketwork eel *Diastobranchus capensis*



Family: 80. Synaphobranchidae (Cutthroat eels)
Maori names:
Other names:
FishNZ reporting code: BEE
FishNZ research/observer code: BEE



Distinguishing features: Gill openings, before pectoral fin base, oblique. Long pectoral fins, about two-thirds of head length. Scale pockets on skin form wickerwork pattern - hence the common name basketwork eel.

Colour: Body dark brownish in larger and greyish-blue in smaller individuals. Scale pockets on skin form wickerwork pattern. Snout, lower jaw, pectoral, and anal fins dark. Dorsal fins dusky.

Size: To about 144 cm TL.

Length measurement method: Total length

Distribution: Widespread in New Zealand. Widespread in southern hemisphere.

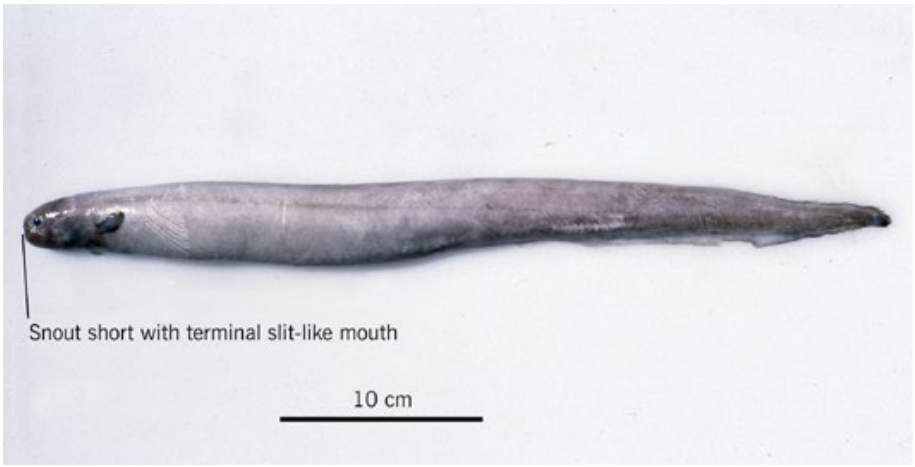
Depth: 700 to 1500 m.

Similar species: Grey cutthroat eel (*Synaphobranchus affinis*) is uniform dark grey and has parallel gill openings longitudinal to body and tiny scales forming a fine mosaic pattern on the skin.

Other cutthroat eels lack the combination of wickerwork skin pattern, oblique angle of gill openings, and very long pectoral fins (two-thirds of head length).

Biology & ecology: Unknown. Demersal. Appears to be a predator of squids but will scavenge whole fish, heads, etc, discarded from trawlers.

Snubnosed eel *Simenchelys parasitica*



Family: 80. Synaphobranchidae (Cutthroat eels)

Maori names:

Other names:

FishNZ reporting code: SNE

FishNZ research/observer code: SNE

Distinguishing features: Short blunt head with a terminal slit-like mouth. Small gill openings below and forward of the pectoral fin bases.

Colour: Head, body and fins greyish or brownish without any distinctive markings.

Size: To 61 cm TL.

Length measurement method: Total length

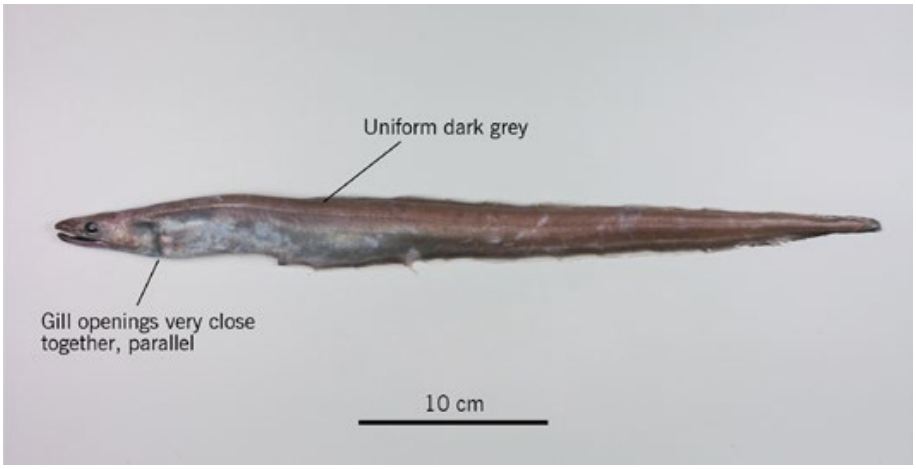
Distribution: Widespread in New Zealand. Worldwide except northeast Pacific Ocean.

Depth: 800 to 1500 m.

Similar species: Other cuttroat eels lack the short snout with terminal slit-like mouth.

Biology & ecology: Thought to scavenge dead fish, sometimes burrowing into the carcass, so mistakenly considered to be parasitic.

Grey cutthroat eel *Synaphobranchus affinis*



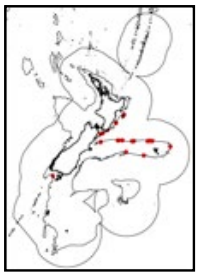
Family: 80. Synaphobranchidae (Cutthroat eels)

Maori names:

Other names:

FishNZ reporting code: SYN

FishNZ research/observer code: SAF



Distinguishing features: Gill openings very close together, almost parallel, longitudinal to ventral body below pectoral fin bases. Pectoral fins about half of head length. Dorsal fin origin in front of anal fin origin. Body scales tiny, elongate-oval, arranged at right angles to one another.

Colour: Uniformly dark grey.

Size: To 64 cm TL.

Length measurement method: Total length

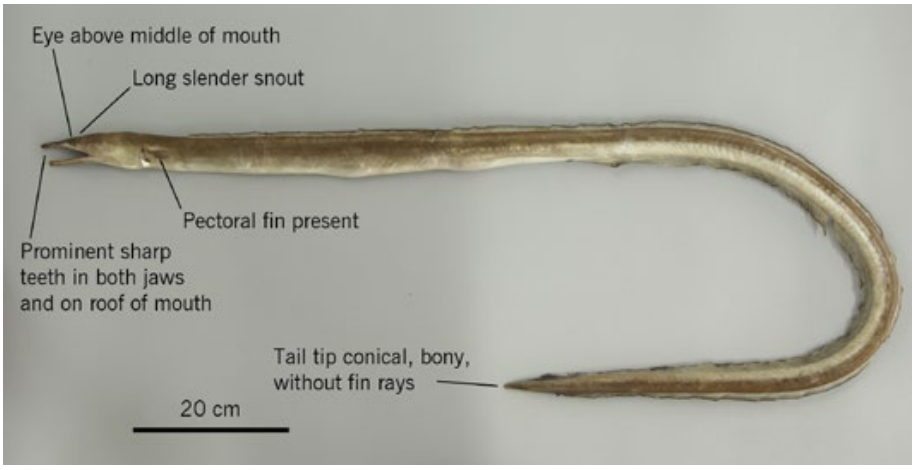
Distribution: Most records from central and northern New Zealand. Worldwide except northeast Pacific Ocean.

Depth: 500 to 1500 m.

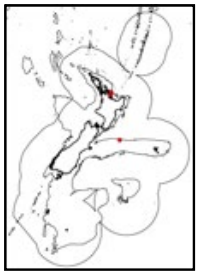
Similar species: Basketwork eel (*Diastobranchus capensis*) has oblique gill openings, close together at front, diverging posteriorly, black anal fin with origin in line or in front of dorsal fin origin, wickerwork body marking, and pectoral fins that are about two-thirds of head length.

Biology & ecology: Unknown. Demersal.

Snake eel *Ophisurus serpens*



Family: 81. Ophichthidae (Snake eels, worm eels)
Maori names:
Other names:
FishNZ reporting code: OSE
FishNZ research/observer code: OSE



Distinguishing features: Tail tip conical, bony, without fin rays, snout long and slender with eye centred above middle of large mouth, prominent sharp teeth in both jaws and on roof of mouth, pectoral fin present, head and lateral line pores black.

Colour: Grey, olive green or brown above, silvery white below, head and lateral line pores and fin margins black. Juveniles silvery.

Size: To 250 cm TL.

Length measurement method: Total length

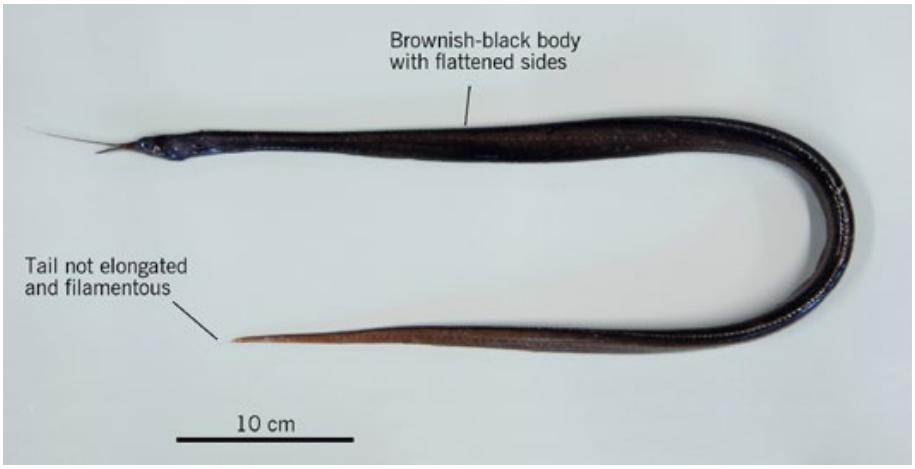
Distribution: Northern North Island in New Zealand. Temperate seas worldwide but there are probably several species.

Depth: A few to 200 m.

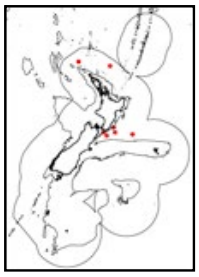
Similar species: Most other New Zealand eels lack a bony conical tail tip and have fin rays extending right around the tail. Other ophichthid eels with a bony conical tail tip lack pectoral fins and/or have a different colour pattern.

Biology & ecology: Demersal in estuaries and coastal waters. Lives in a burrow in mud or sand with only the head protruding.

Fewpore snipe eel *Avocettina paucipora*



Family: 85 Nemichthyidae (Snipe eels)
Maori names:
Other names:
FishNZ reporting code: DWE
FishNZ research/observer code: APA



Distinguishing features: Tail not extremely elongated and filamentous. Body sides flattened. Anus about one head length (tip of jaws to posterior of operculum) behind pectoral fins. Single lateral line pore per body segement.

Colour: Uniform brownish-black.

Size: To about 55 cm TL.

Length measurement method: Total length

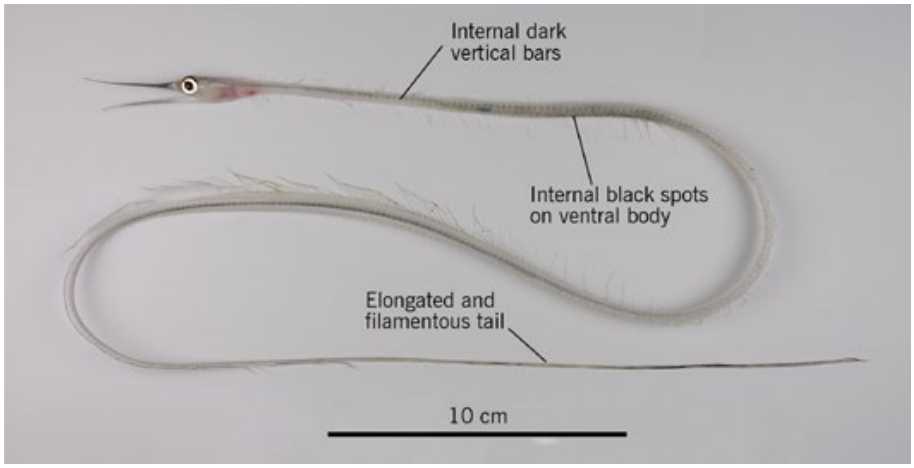
Distribution: Recorded from central and northern New Zealand north (32 to 42° S) but this may reflect collection effort. Data plotted on the map includes only Te Papa specimens and does not include any fisheries records. Widespread in southern hemisphere except for east Pacific Ocean.

Depth: 900 to 2700 m.

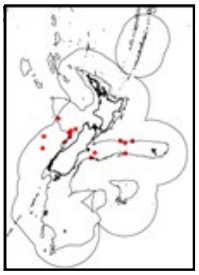
Similar species: Manypore snipe eel (*Avocettina acuticeps*, AVA) is also black and the two *Avocettina* species can only be separated using lateral line pore and vertebral counts, but manypore snipe eel is confined to northern New Zealand, north of about 35 S. Yano's snipe eel (*Labichthys yanoi*, LAY) is also uniform brownish-black but anus is below pectoral fin (anterior to rear end of pectoral fin). Species of *Nemichthys* have a long caudal fin filament and are pale greyish or translucent.

Biology & ecology: Live in midwater. Reported to feed on crustaceans.

Snipe eel *Nemichthys curvirostris*



Family: 85. Nemichthyidae (Snipe eels)
Maori names:
Other names: Blackspot snipe eel
FishNZ reporting code: DWE
FishNZ research/observer code: NCU



Distinguishing features: Tail elongated and filamentous. Anus below pectoral fin. Eye large. Lateral line pores numerous, in 3 rows. Body pale, with dark internal vertical bars (between vertebrae), and sometimes small blackish spots internally on ventral half of body.

Colour: Pale body with dark internal vertical bars, and sometimes small blackish spots internally on ventral half of body.

Size: To 180 cm TL.

Length measurement method: Total length

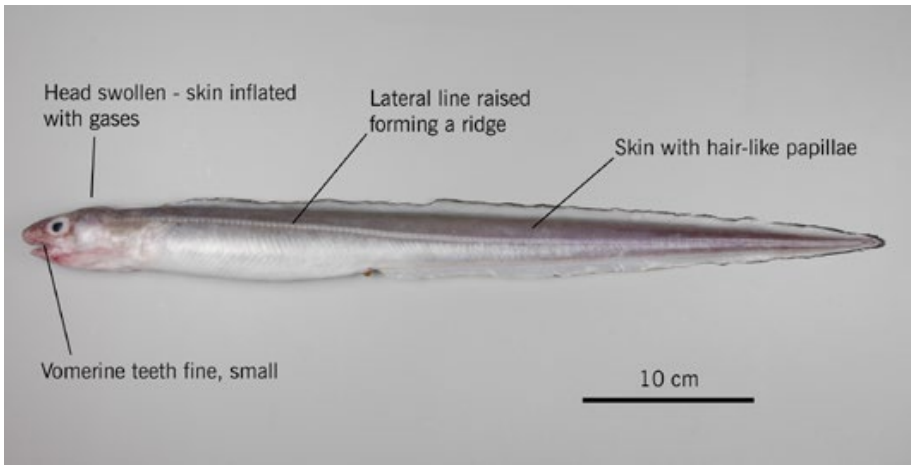
Distribution: Widespread in New Zealand. Widespread in Atlantic, Indian Oceans from 40 N to 40 S and South Pacific Ocean to 50 S.

Depth: Near surface to about 2000 m.

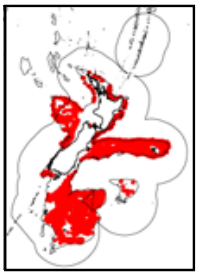
Similar species: *Nemichthys scolopaceus* has a brownish body, darker below than above, and body lacks internal dark bands. Species of black snipe eel (*Avocettina*) have a shortened tail (not elongated and filamentous) and a brownish-black body.

Biology & ecology: Live in midwater and probably caught as the net is shot or hauled to the surface. The function of the long curved jaws in females is unclear. Mature males have short jaws and a rounded head. Seen from submersibles hanging motionless in vertical position possibly waiting for prey.

Swollenhead conger *Bassanago bulbiceps*



Family: 86. Congridae (Conger eels)
Maori names:
Other names:
FishNZ reporting code: SCO
FishNZ research/observer code: SCO



Distinguishing features: Skin on head often inflated with gas in fresh trawl-caught specimens. Lateral line raised to form ridge, with 43 to 48 pores between head and origin of anal fin. Origin of dorsal fin above base of pectoral fin. Skin covered with hair-like papillae. Inside of mouth relatively dark.

Colour: Body pale greyish-brown, paler below. Skin on head of fresh trawl-caught specimens often reddish (bloody). Fins pale-dusky, sometimes fringed with black. Inside of mouth relatively dark.

Size: To about 106 cm TL.

Length measurement method: Total length

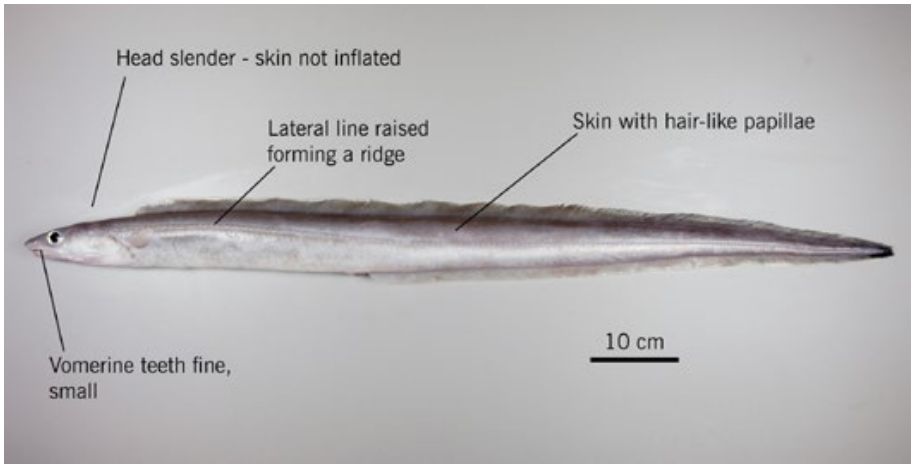
Distribution: Widespread in New Zealand. Also southern Australia.

Depth: 300 to 1100 m.

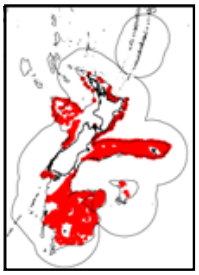
Similar species: Hairy conger (*B. hirsutus*) usually has a slender head not inflated with gas released during capture (freshly caught), inside of mouth is relatively pale, appear to be more slender-bodied, and has 39 to 44 pores along lateral line before anal fin origin. Other differences require microscopic and X-ray examination, e.g., dorsal fin rays 306 to 317 versus 327 to 353, anal fin rays 204 to 222 versus 240 to 258 (hairy conger versus swollenhead conger respectively).

Biology & ecology: Demersal.

Hairy conger *Bassanago hirsutus*



Family: 86. Congridae (Conger eels)
Maori names:
Other names:
FishNZ reporting code: HCO
FishNZ research/observer code: HCO



Distinguishing features: Head slender with skin rarely inflated with gas in fresh trawl-caught specimens. Lateral line raised to form ridge, with 39 to 44 pores between head and origin of anal fin. Origin of dorsal fin above base of pectoral fin. Skin covered with hair-like papillae. Inside of mouth relatively pale.

Colour: Body and head pale greyish-brown, paler below. Fins dusky. Inside of mouth relatively pale.

Size: To about 107 cm TL.

Length measurement method: Total length

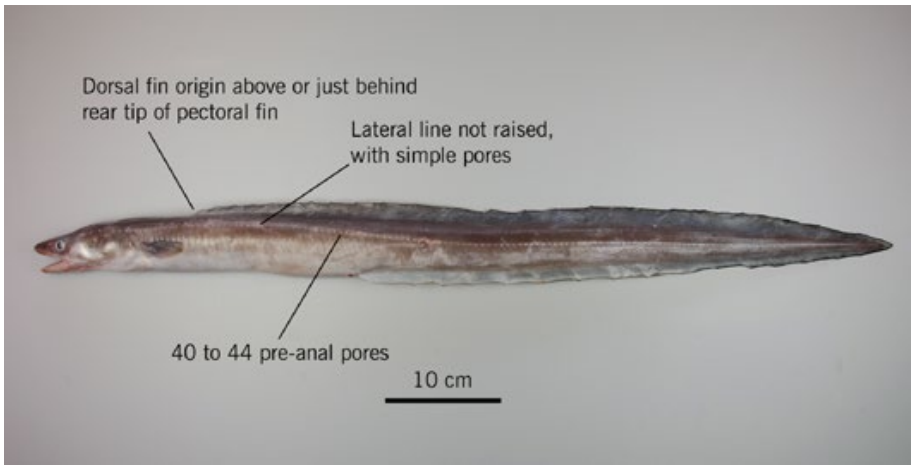
Distribution: Widespread in New Zealand. Also southern Australia.

Depth: 400 to 1000 m.

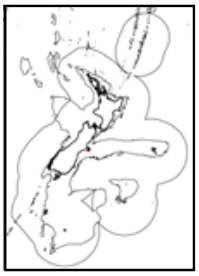
Similar species: Swollenhead conger (*B. bulbiceps*) has an enlarged head probably caused by gas released during capture (freshly caught), appears to have a stouter head, and has 43 to 48 pores along lateral line before anal fin origin. Other differences require microscopic and X-Ray examination, e.g., dorsal fin rays 327 to 353 versus 306 to 317, anal fin rays 240 to 258 versus 204 to 222 (swollenhead versus hairy conger respectively).

Biology & ecology: Demersal.

Southern conger *Conger verreauxi*



Family: 86. Congridae (Conger eels)
Maori names: Koiro, ngoio, ngoiro
Other names: Common conger eel
FishNZ reporting code: CON
FishNZ research/observer code: CVR



Distinguishing features: Dorsal fin origin above or just behind rear end of pectoral fin, lateral line not raised to form a ridge, with simple pores, 40 to 44 pores from behind head to anus.

Colour: Body and head greyish-brown to black on top, lighter underneath especially belly and cheeks, and lower jaw. Fins greyish, darker on top. Smaller individuals with a thin black margin on dorsal and anal fins.

Size: To about 220 cm TL.

Length measurement method: Total length

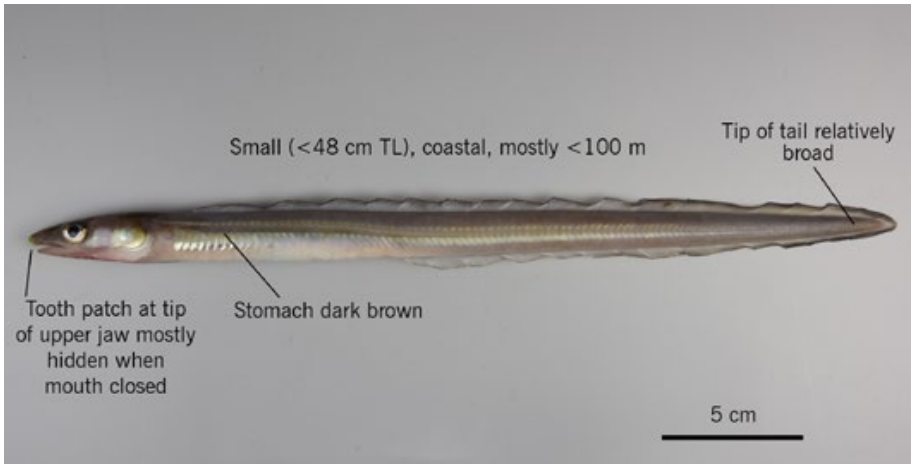
Distribution: Northland to Snares Islands but mostly found in central and southern New Zealand close to land. Most older fisheries records for this species probably used general species codes, e.g., CON. Also southern Australia.

Depth: A few to 200 m.

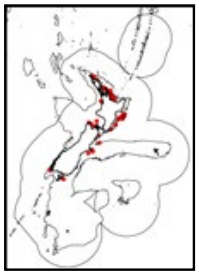
Similar species: Northern conger (*Conger monganius*) is uncommon, mostly recorded from northeast North Island, has more slender body, origin of dorsal fin behind rear end of pectoral fin by about half length of pectoral fin, 36 to 41 pores in lateral line between head and anus, and reaches about 90 cm TL. Conger eels as a group have dorsal fin origin about level with or not far behind gill openings, pectoral fins present, prominent lateral line, and bands of small teeth in upper and lower jaws and on roof of mouth.

Biology & ecology: More active at night, feeding on fishes, crustaceans, cephalopods. Inhabit crevices and caves in rocky inshore areas.

Silver conger *Gnathophis habenatus*



Family: 86. Congridae (Conger eels)
Maori names:
Other names:
FishNZ reporting code: SEE
FishNZ research/observer code: SEE



Distinguishing features: Small (to about 48 cm TL), coastal, with silvery belly. Tooth patch at tip of upper jaw (intermaxillary) hidden by lower jaw when mouth is closed. Stomach dark brown. Second pore on lateral line very slightly elevated. 35 to 40 pores on lateral line from behind head to level with the anus, tail relatively broad at tip. Preanal length 42 to 45% of TL.

Colour: Greyish upper and paler side with silvery belly. Dorsal and anal fins with a black margin. Stomach dark brown.

Size: To 48 cm TL.

Length measurement method: Total length

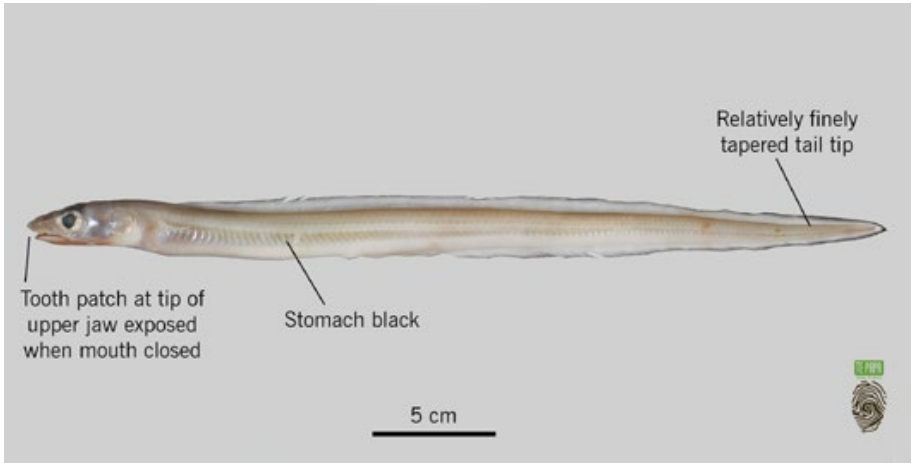
Distribution: Confined to New Zealand, from Kermadec to Snares Islands.

Depth: A few to 200 m.

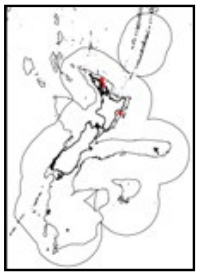
Similar species: Umbrella conger (*Gnathophis umbrellabius*) has an exposed tooth patch at tip of upper jaw when mouth is closed, black stomach, 34 to 38 lateral line pores before anus, relatively finely tapered tail, and preanal length is 35 to 41% of TL. Southern conger (*Conger verreauxi*) has 40 to 44 and northern conger (*C. monganius*) 36 to 41 lateral line pores before anus, and both are much larger and tend to be dull greyish.

Biology & ecology: Demersal.

Umbrella conger *Gnathophis umbrellabius*



Family: 86. Congridae (Conger eels)
Maori names:
Other names:
FishNZ reporting code: DWE
FishNZ research/observer code: UEE



Distinguishing features: Tooth patch at tip of upper jaw (intermaxillary) exposed when mouth is closed. Stomach black, 34 to 38 lateral line pores from behind head to anus but only second pore on the lateral line is very slightly elevated. Preanal length is 35 to 41% of TL.

Colour: Olive greenish upper body, silvery sides and lower body. Dorsal and anal fins with a black margin. Stomach black or dark brown but almost entire length of the intestine is pale.

Size: To about 45 cm TL.

Length measurement method: Total length

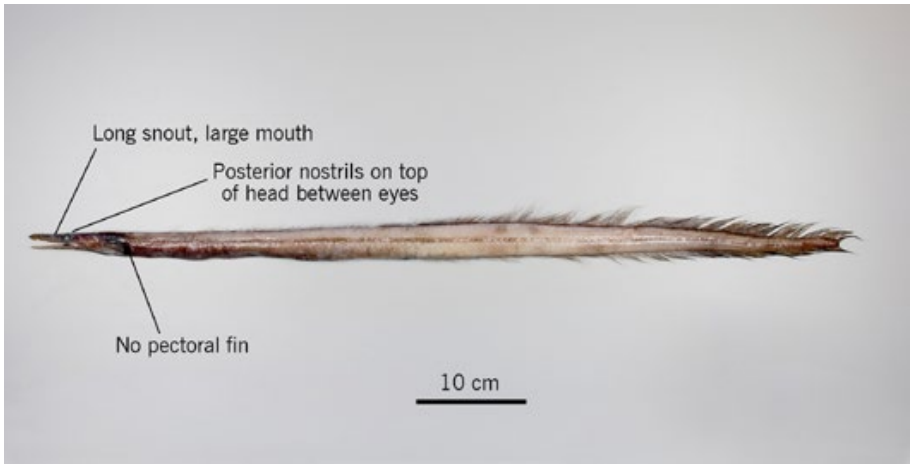
Distribution: New Zealand including Kermadec Islands and Australia.

Depth: 70 to 370 m.

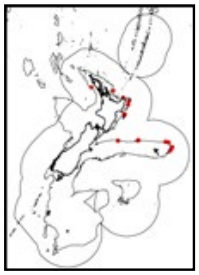
Similar species: Silver conger (*Gnathophis habenatus*) has tooth patch at the tip of the upper jaw (intermaxillary) hidden by the lower jaw when the mouth is closed, dark brown stomach, 35 to 40 pores on lateral line from behind head to anus, and a relatively broad tail tip, and preanal length 42 to 45% of TL. Species of *Bassanago* occur deeper than about 300 m, are pale greyish-brown (not silvery) and have lateral line pores in front of pectoral fin base in a straight line with none raised.

Biology & ecology: On muddy or silty bottom and active mainly at night, feeding on small crustaceans and polychaete worms. Spawns offshore in early winter. Larvae are pelagic for about 10 months, dispersing widely along the coast.

Duckbill eel *Nettastoma parviceps*



Family: 87. Nettastomatidae (Duckbill eels)
Maori names:
Other names: White duckbill eel
FishNZ reporting code: DWE
FishNZ research/observer code: NET



Distinguishing features: Elongated snout and large mouth. No pectoral fin. Dorsal fin origin close behind gill opening. Elongated and slender body. Anterior nostril tubular, near tip of snout. Posterior nostril on top of head, at upper rear margin of eye. (Specimen shown has a damaged tail).

Colour: Brownish body and fins. Pale body probably caused by the net rubbing off some of the skin.

Size: To 80 cm TL.

Length measurement method: Total length

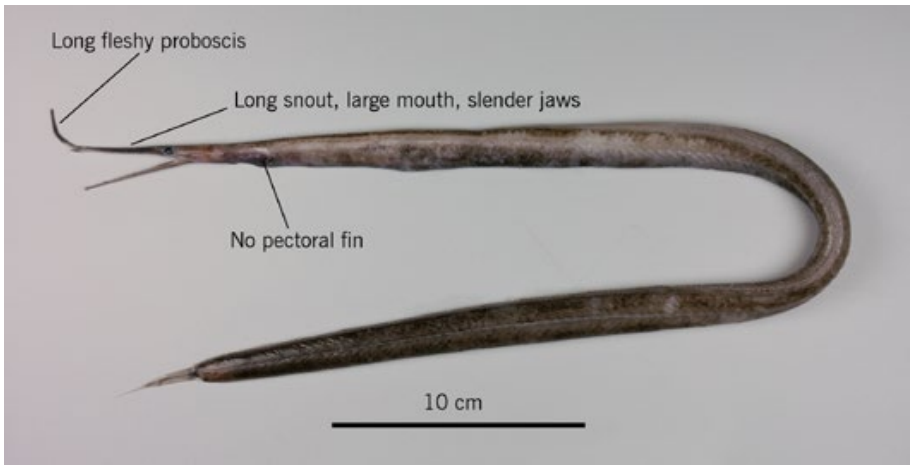
Distribution: Kermadec Ridge to Chatham Rise in New Zealand. Japan, Hawaii, southeast Australia and southwest Africa.

Depth: 360 to 1020 m.

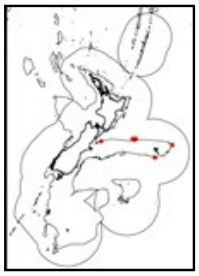
Similar species: Most other eels have a pectoral fin and lack an elongated head and snout. Periscope duckbill eel (*Venefica proboscidea*) has a long fleshy proboscis at tip of the snout.

Biology & ecology: Unknown. Demersal.

Periscope duckbill eel *Venefica proboscidea*



Family: 87. Nettastomatidae (Duckbill eels)
Maori names:
Other names:
FishNZ reporting code: DWE
FishNZ research/observer code: VEN



Distinguishing features: Tip of snout ending in a long fleshy proboscis. Elongated snout, large mouth, and slender jaws. No pectoral fin. Dorsal fin origin close behind gill opening. Elongated and slender body. (Specimen shown has a damaged tail).

Colour: Dark brownish-grey body, fins paler.

Size: To 99 cm TL.

Length measurement method: Total length

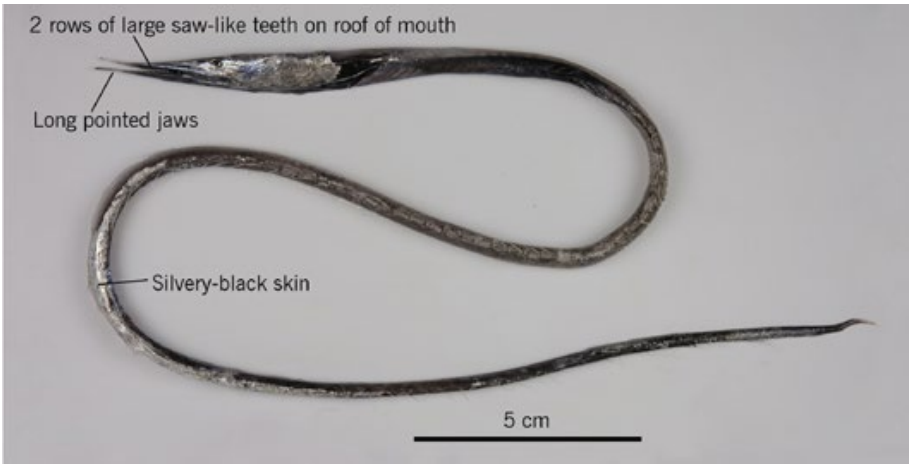
Distribution: Kermadec and Norfolk Ridges to Chatham Rise in New Zealand. Atlantic, Indian and southwest Pacific Oceans.

Depth: 1240 to 1710 m.

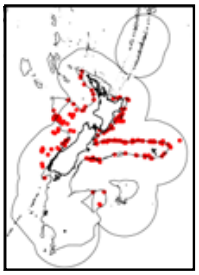
Similar species: Most other eels have a pectoral fin and lack an elongated head and snout. Duckbill eel (*Nettastoma parviceps*) lacks a long fleshy proboscis at tip of the snout.

Biology & ecology: Unknown. Demersal.

Common sawtooth eel *Serrivomer samoensis*



Family: 88 Serrivomeridae (Sawtooth eels)
Maori names:
Other names:
FishNZ reporting code: DWE
FishNZ research/observer code: SSA



Distinguishing features: Upper and lower jaws long, slightly curving. Teeth on roof of mouth (vomer) form a saw-like ridge. Silvery-black, elongated, and slender body. Small pectoral fin.

Colour: Silvery-black, darker in larger specimens.

Size: To about 60 cm TL.

Length measurement method: Total length

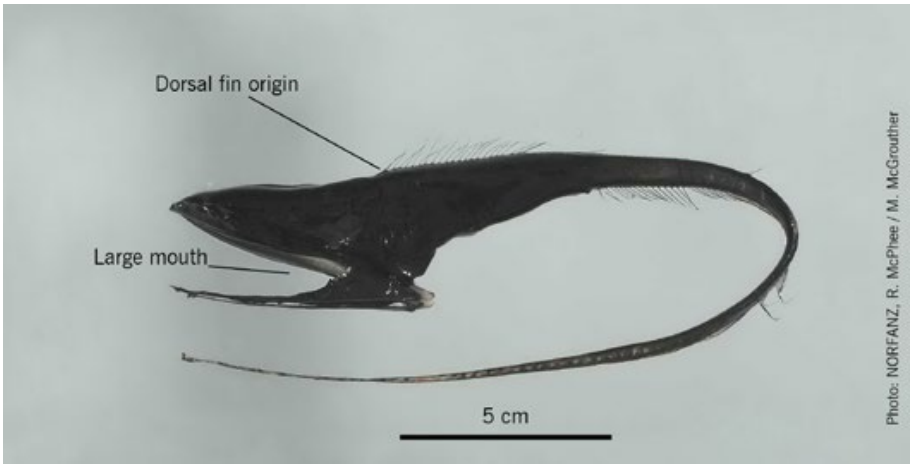
Distribution: Widespread in the New Zealand from Kermadec Ridge to Pukaki Rise (30 to 49° S). Recorded from southwest Pacific Ocean from Samoa to New Zealand.

Depth: 70 to 2250 m.

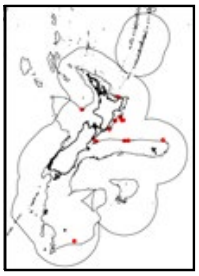
Similar species: Thread eel (*Serrivomer bertini*) can only be distinguished by vertebral, dorsal fin, and anal fin counts, but is confined to northern New Zealand, north of about 35 S.

Biology & ecology: Live in midwater.

Gulper eel *Eurypharynx pelecanoides*



Family: 91. Eurypharyngidae (Gulpers or pelican eels)
Maori names:
Other names: Pelican eel
FishNZ reporting code: GUL
FishNZ research/observer code: GUL



Distinguishing features: Greatly enlarged mouth. Skin covering mouth and throat greatly expandable. Very fragile body covered in dark velvety skin. Dorsal fin begins about midway between snout tip and anus. Tail ending in small light organ.

Colour: Skin blackish. Pale streak (probably a light organ) on each side of the dorsal fin.

Size: To about 75 cm TL.

Length measurement method: Total length

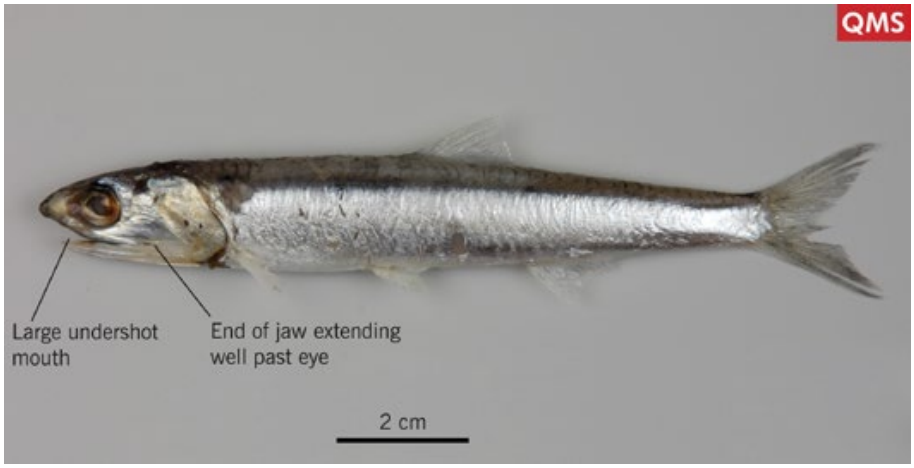
Distribution: Lord Howe Rise and Norfolk Ridge to Chatham Rise in New Zealand. Worldwide in all oceans from 65 N to 48 S.

Depth: 500 to 3000 m.

Similar species: Swallower eel (*Saccopharynx schmidti*) has a dorsal fin that begins over or slightly ahead of anus, smaller mouth, and a pale streak (probably a light organ) on each side of the dorsal fin.

Biology & ecology: Midwater. Feed on crustaceans, fishes, cephalopods. Light organ on tip of tail may lure predators towards a less vulnerable part of the body.

Anchovy *Engraulis australis*



Family: 95. Engraulidae (Anchovies)
Maori names: Kokowhaawhaa, korowhaawhaa
Other names:
FishNZ reporting code: ANC
FishNZ research/observer code: ANC

Distinguishing features: Small, with large undershot mouth and single dorsal fin.

Colour: Body blue-green above, silvery on sides and belly.

Size: To about 15 cm FL.

Length measurement method: Fork length

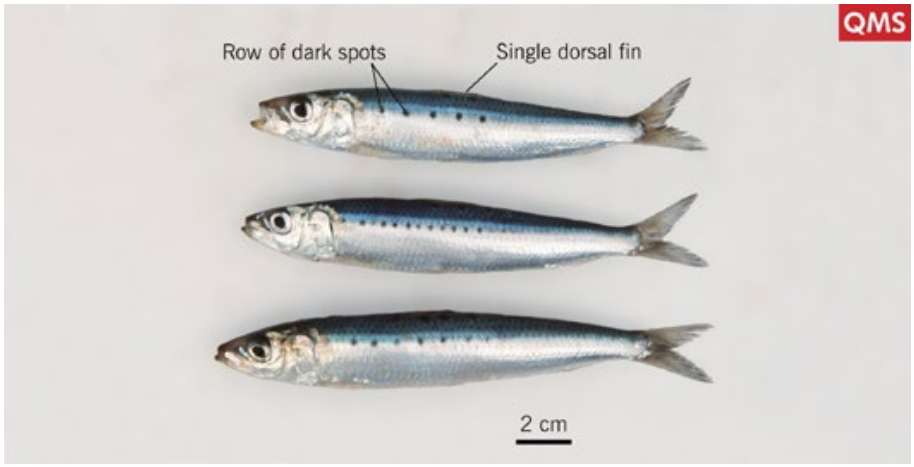
Distribution: Off Northland to Foveaux Strait in New Zealand. Common in northern and central waters. Southern Australia.

Depth: A few to 40 m.

Similar species: Only one species of anchovy occurs in New Zealand waters. Other small pelagic species lack combination of large undershot mouth, upper jaw reaching back to well past eye, single dorsal fin, and no scutes along belly.

Biology & ecology: Pelagic, usually in schools, inshore.

Pilchard *Sardinops sagax*



Family: 97. Clupeidae (Herrings)
Maori names: Mohimohi
Other names: Sardine
FishNZ reporting code: PIL
FishNZ research/observer code: PIL

Distinguishing features: Small, with single dorsal fin. Body blue-green above, silvery on sides with a longitudinal row of several dark spots.

Colour: Body blue-green above, silvery on sides with several distinctive black spots along each side.

Size: To about 25 cm FL.

Length measurement method: Fork length

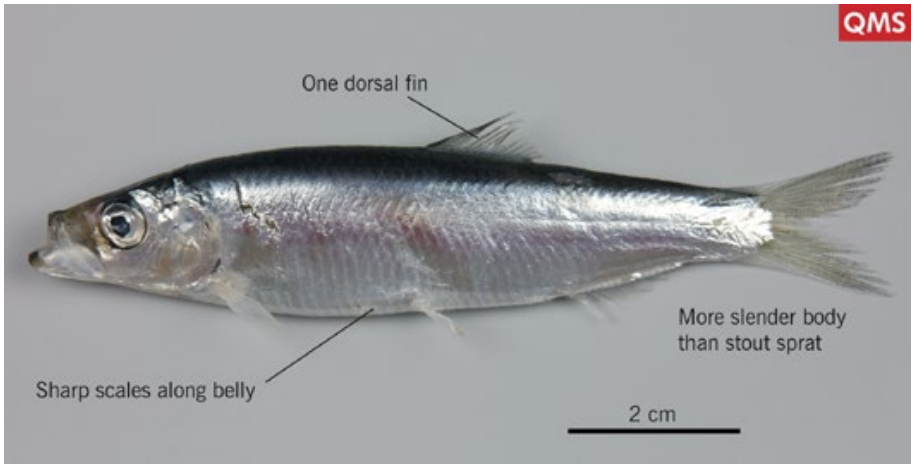
Distribution: Off Northland to Stewart Island in New Zealand but most common in northern and central waters. Worldwide.

Depth: A few to 60 m.

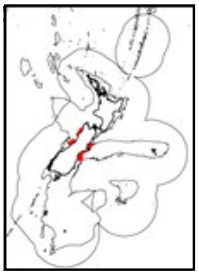
Similar species: Slender and stout sprats (*Sprattus antipodum* and *S. muelleri*) have bluish upper body and silvery sides without dark spots, laterally flattened body, a row of serrated scutes along ventral body. Anchovy (*Engraulis australis*) has silvery body without dark spots and an underslung lower jaw.

Biology & ecology: Pelagic, usually in schools on continental shelf, particularly in large embayments such as the Hauraki Gulf, Marlborough Sounds, and Tasman Bay.

Slender sprat *Sprattus antipodum*



Family: 97. Clupeidae (Herrings)
Maori names: Kuupae
Other names: Blueback sprat, sardine
FishNZ reporting code: SPR
FishNZ research/observer code: SPA



Distinguishing features: Single dorsal fin, laterally compressed body, and row of serrated scales along belly midline. Body depth less than or about same as head length.

Colour: Dark blue above with greenish sheen, silvery sides and belly.

Size: To about 15 cm FL.

Length measurement method: Fork length

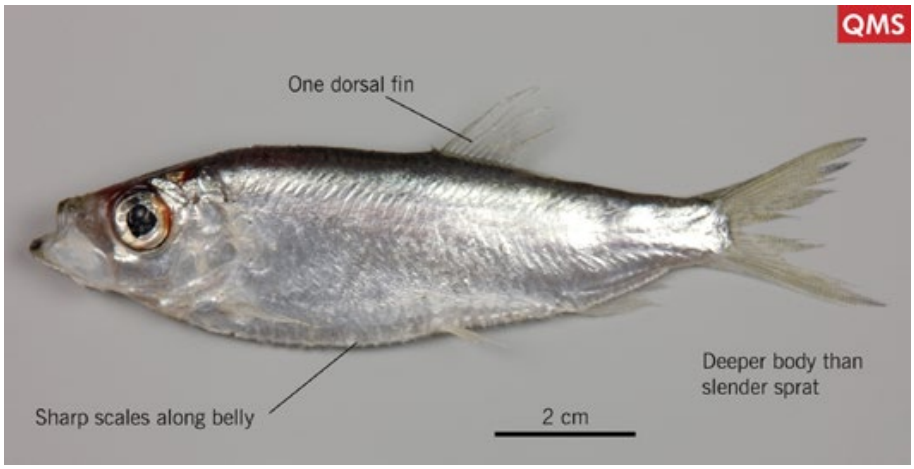
Distribution: Hauraki Gulf to Snares Island and known only from New Zealand.

Depth: A few to 110 m.

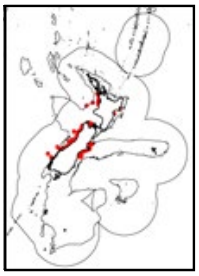
Similar species: Stout sprat (*Sprattus muelleri*) has deep body, narrow tooth pad on tongue, and no fine ridges on posterior margin of scales. Pilchard (*Sardinops sagax*) has body that is blue-green above, with silvery sides and a longitudinal row of several dark spots. Anchovy (*Engraulis australis*) has silvery body without dark spots and an underslung lower jaw.

Biology & ecology: Pelagic on continental shelf, and apparently more common off South Island.

Stout sprat *Sprattus muelleri*



Family: 97. Clupeidae (Herrings)
Maori names: Kuupae
Other names: Sprat, sardine
FishNZ reporting code: SPR
FishNZ research/observer code: SPM



Distinguishing features: Single dorsal fin, laterally compressed body, and row of serrated scales along belly midline. Body depth greater than or about same as head length.

Colour: Dark blue above with greenish sheen, silvery sides and belly.

Size: To about 15 cm FL.

Length measurement method: Fork length

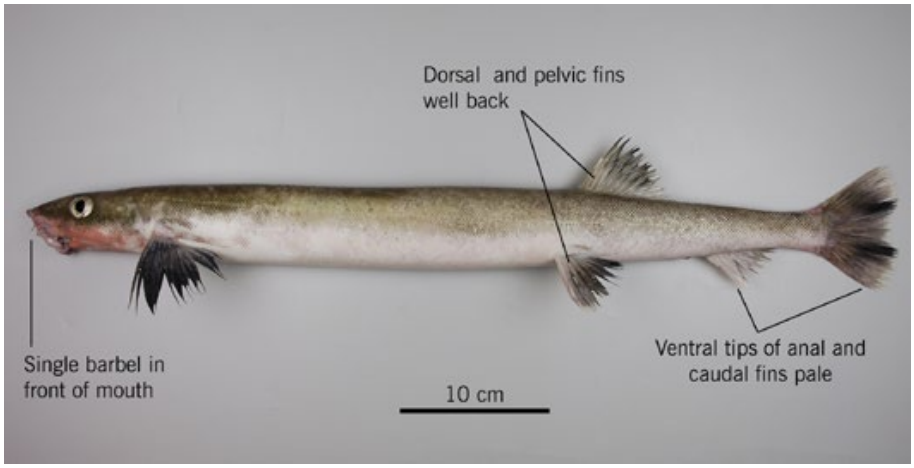
Distribution: Off Northland to Snares Island and known only from New Zealand.

Depth: A few to 110 m.

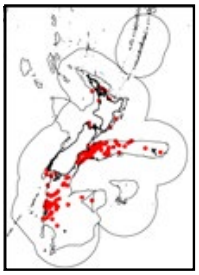
Similar species: Slender sprat (*Sprattus antipodum*) has slender body, broad tooth pad on tongue, and fine ridges on posterior margin of scales. Pilchard (*Sardinops sagax*) has body that is blue-green above, with silvery sides and a longitudinal row of several dark spots. Anchovy (*Engraulis australis*) has silvery body without dark spots and an underslung lower jaw.

Biology & ecology: Pelagic on continental shelf, usually in schools. Apparently most common along east coast of South Island.

Sandfish *Gonorynchus forsteri*



Family: 99. Gonorynchidae (Sandfishes)
Maori names:
Other names: Beaked salmon, sand eel
FishNZ reporting code: GON
FishNZ research/observer code: GFO



Distinguishing features: Elongated eel-like body with dorsal and pelvic fins well back on the body. Single barbel on underside of snout in front of upper jaw. Ventral tips of caudal and anal fins whitish or pale. Body covered with adherent spiny scales.

Colour: Body brownish dorsally and pale cream to pinkish ventrally. Pectoral and pelvic fins blackish. Dorsal fin with whitish lower third and rear ventral tip, blackish upper part. Anal fin whitish or pale including tip, may have dark posterior blotch. Caudal fin with whitish upper and lower tips, blackish blotches or bands centrally and dusky base.

Size: To about 56 cm SL.

Length measurement method: Standard length

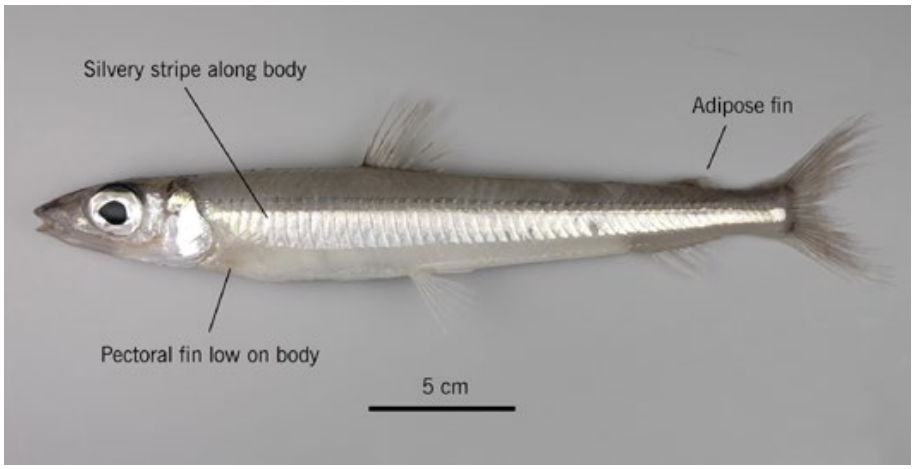
Distribution: Widespread in the New Zealand. Also from south of New Caledonia, and Lord Howe Rise.

Depth: 1 to 1230 m.

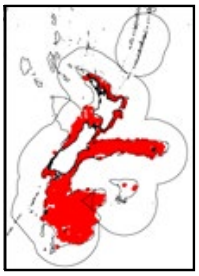
Similar species: Grey's sandfish, GOG (*Gonorynchus greyi*) has blackish ventral tips of the anal and caudal fins, and is much less common and appears to be confined to northern New Zealand north of about 40 S.

Biology & ecology: Lacks a gas bladder so probably demersal and known to burrow in soft sediment. Nocturnal in coastal waters. Has a median sensory barbel probably used to locate food on the seafloor. Thought to live mostly in coastal environments but found from a few metres to about 1200 m. The deepwater phase may be part of a spawning migration and the large eye is probably an adaptation for nocturnal and/or deepwater life.

Silverside *Argentina elongata*



Family: 166. Argentinidae (Silversides, argentines)
Maori names:
Other names:
FishNZ reporting code: SSI
FishNZ research/observer code: SSI



Distinguishing features: High short-based dorsal fin and small adipose fin (no rays). Pectoral fin base very low on body, almost on ventral surface. Tiny mouth. Broad silvery stripe running along side of head and body.

Colour: Broad silvery stripe running along side of head and body. Upper surface of body and head dull (non-reflective) greyish, and lower surface of body dull off-white. All fins pale without distinctive markings.

Size: To about 37 cm FL.

Length measurement method: Fork length

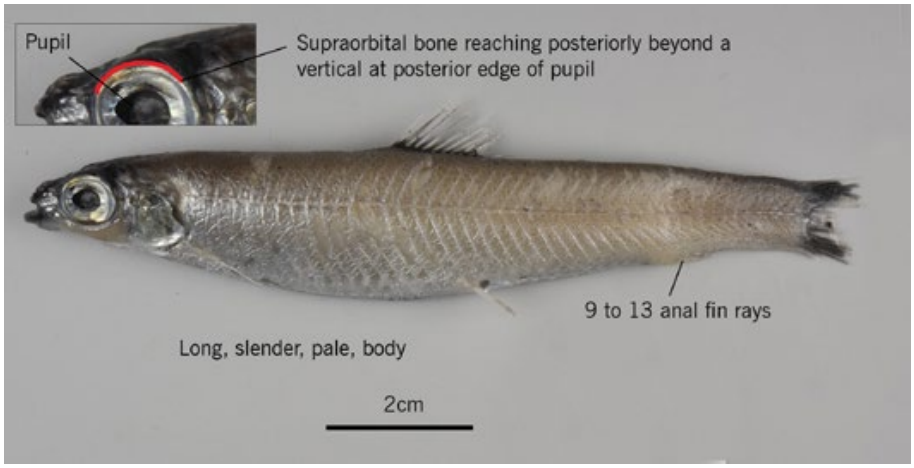
Distribution: Known only from but widespread in New Zealand. A similar species is found in southern Australia.

Depth: 100 to 700 m.

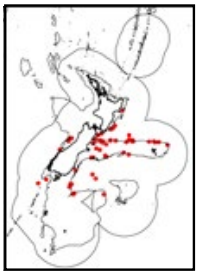
Similar species: Cucumber fish (*Paraulopus nigripinnis*) has dark tipped dorsal and caudal fins and a large mouth.

Biology & ecology: Unknown, but probably demersal. Food must be small because of size of the mouth.

Parin's deepsea smelt *Bathylagichthys parini*



Family: 168b Bathylagidae (Deepsea smelts)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: BPA



Distinguishing features: Supraorbital bone long, reaching back past a vertical through centre of eye. Body elongate. Operculum without radiating ridges. 9 to 13 anal fin rays. Dorsal adipose fin about opposite mid-anal fin.

Colour: Dull brownish upper body, silvery side and ventral surface of body and head. Often skinned during capture.

Size: To about 23 cm SL.

Length measurement method: Standard length

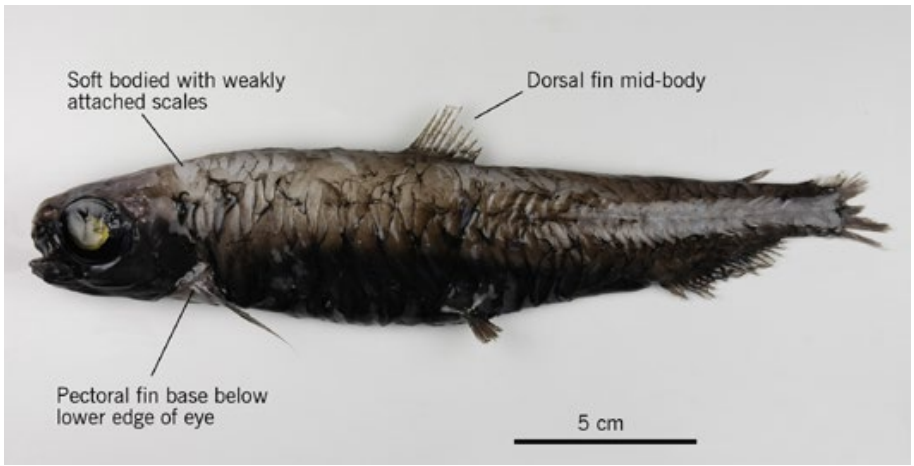
Distribution: Widespread in central and southern New Zealand from about 39 to 49 S. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Also off Chile.

Depth: 200 to 1500 m, but mostly 500 to 800 m.

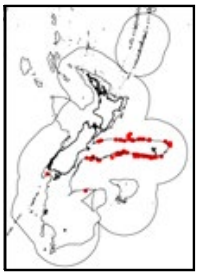
Similar species: There are four *Bathylagichthys* species (**BAH**) known from New Zealand. Stumpy deepsea smelt (*B. longipinnis*) has deep body with greatest body depth about 4 times into SL. Southern deepsea smelt (*B. kobylianskyi*) and pencil deepsea smelt (*B. problematicus*) are both long-bodied but both have short supraorbital bone which does not reach vertical through centre of eye. **BLG** (deepsea smelts, family Bathylagidae) should be used if identity is uncertain.

Biology & ecology: Not known.

Bigscale blacksmelt *Melanolagus bericoides*



Family: 168b. Bathylagidae (Deepsea smelts)
Maori names:
Other names: Bigscale deepsea smelt
FishNZ reporting code: UNI
FishNZ research/observer code: MEB



Distinguishing features: Operculum with several, radial, weak bony ridges ending post-ventrally in finger-like projections. Soft-bodied. Large scales weakly attached. Dorsal fin base about half length of anal fin base. Pectoral fin base on ventral half of body with upper edge of pectoral base about or lower than ventral edge of eye. Dorsal fin mid-body.

Colour: Undamaged skin blackish.

Size: To about 24 cm SL.

Length measurement method: Standard length

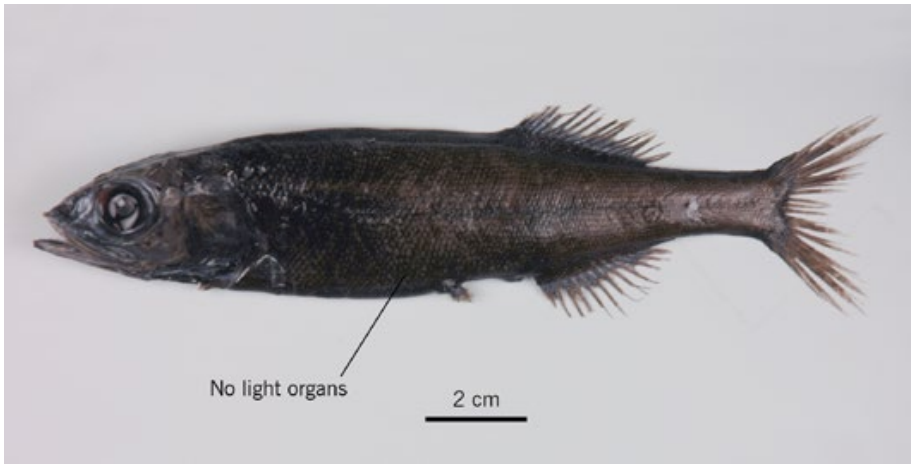
Distribution: Widespread in New Zealand from Kermadec Ridge to southwest of South Island including Chatham Rise and Challenger Plateau. Worldwide in temperate seas of both hemispheres.

Depth: 1000 to 1700 m.

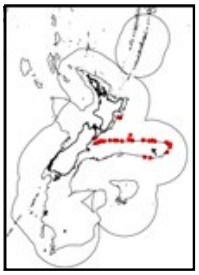
Similar species: Several deepsea smelts are recorded from New Zealand and are difficult to identify but all other species lack radial weak bony ridges ending post-ventrally in finger-like projections on operculum. The code **BLG** (deepsea smelts, family Bathylagidae) should be used if identity is uncertain.

Biology & ecology: Deep midwater and may migrate vertically at times during day. May be important food for predatory fishes.

Cloaked tubeshoulder *Normichthys yahganorum*



Family: 169. Platytroctidae (Tubeshoulders)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: NOR



Distinguishing features: No obvious light organs on body. Dorsal and anal fin bases about same length and set well back on body. External opening of internal light organ a small modified lateral line scale at shoulder.

Colour: Brownish-black.

Size: To about 16 cm SL.

Length measurement method: Standard length

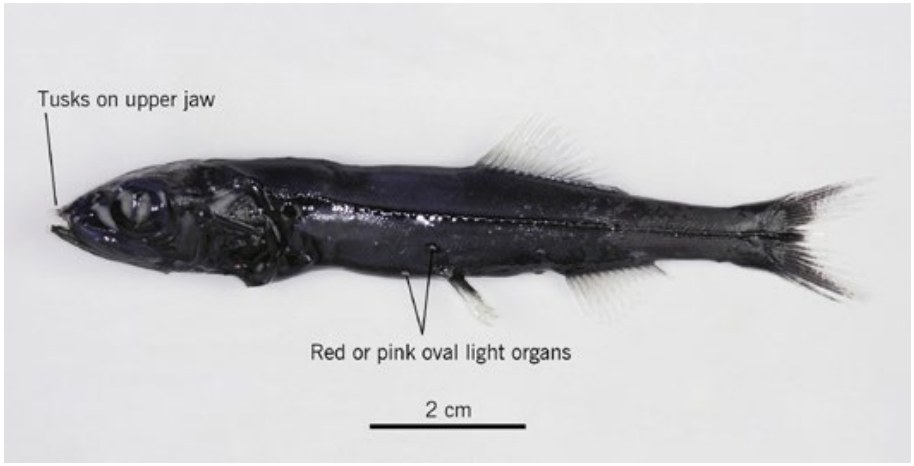
Distribution: Widespread in New Zealand from Northland to Campbell Plateau. Widespread in the southern hemisphere between about 20 and 59 S.

Depth: 780 to 2000 m.

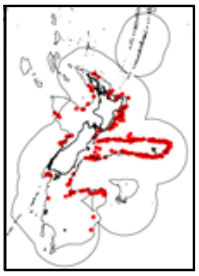
Similar species: Common tubeshoulder (*Persparsia kopua)* has oval pinkish or reddish external light organs on ventral body. Barlight tubeshoulder (*Holtbyrnia laticauda*) has long bars and oval whitish external light organs on ventral body. Slickheads (Alepocephalidae) lack small modfied lateral line scale at shoulder that marks the external opening of a light organ.

Biology & ecology: Unknown. Demersal.

Common tubeshoulder *Persparsia kopua*



Family: 169. Platytroctidae (Tubeshoulders)
Maori names:
Other names:
FishNZ reporting code: PER
FishNZ research/observer code: PER



Distinguishing features: Oval pinkish or reddish external light organs on ventral body. Forward projected tusks on upper jaw (premaxilla). Dorsal fin origin well ahead of anal fin origin. External opening of internal light organ a small modfied lateral line scale at shoulder.

Colour: Body brownish-black. Light organs pinkish or reddish.

Size: To about 17 cm SL.

Length measurement method: Standard length

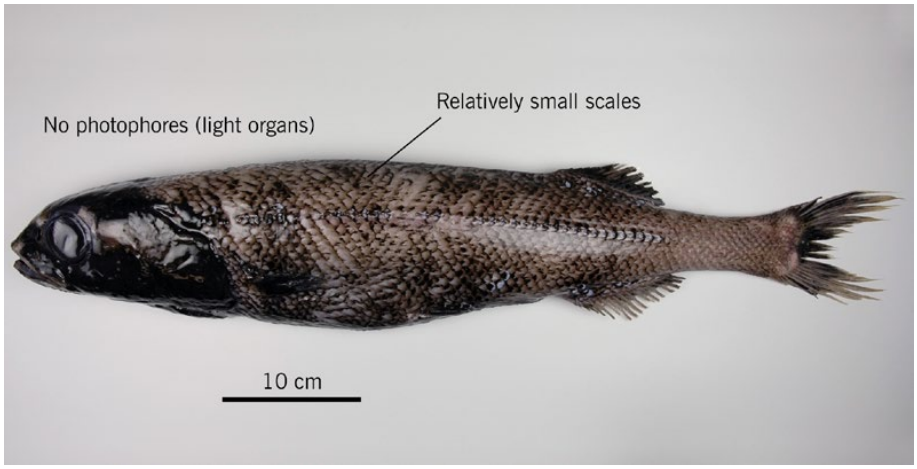
Distribution: Widespread in New Zealand from Three Kings Ridge to Campbell Plateau. Widespread in the southern hemisphere from South Africa to New Zealand, but not recorded from South America.

Depth: 650 to 1500 m.

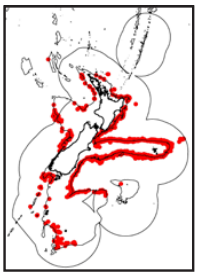
Similar species: Cloaked tubeshoulder (*Normichthys yahganorum*) has no obvious light organs on ventral body. Barlight tubeshoulder (*Holtbyrnia laticauda*) has long bars and oval whitish external light organs on ventral body. Slickheads (Alepocephalidae) lack small modfied lateral line scale at shoulder that marks external opening of a light organ.

Biology & ecology: Midwater, recorded to rise from bottom depths of about 500 to 900 m during day to 300 to 400 m at night.

Smallscale brown slickhead *Alepocephalus antipodianus*



Family: 171. Alepocephalidae (Slickheads)
Maori names:
Other names: Smallscaled brown slickhead
FishNZ reporting code: SSM
FishNZ research/observer code: SSM



Distinguishing features: Body covered in relatively small deciduous scales, 58 to 69 scales along body midline from behind head to tail. Head scaleless. No light organs. Dorsal and anal fins about same length and dorsal fin origin on or close to a vertical line through anal fin origin.

Colour: Mid to dark brown body with darker head, scale pocket margins and fins. Eyes dark.

Size: To about 90 cm FL.

Length measurement method: Fork length

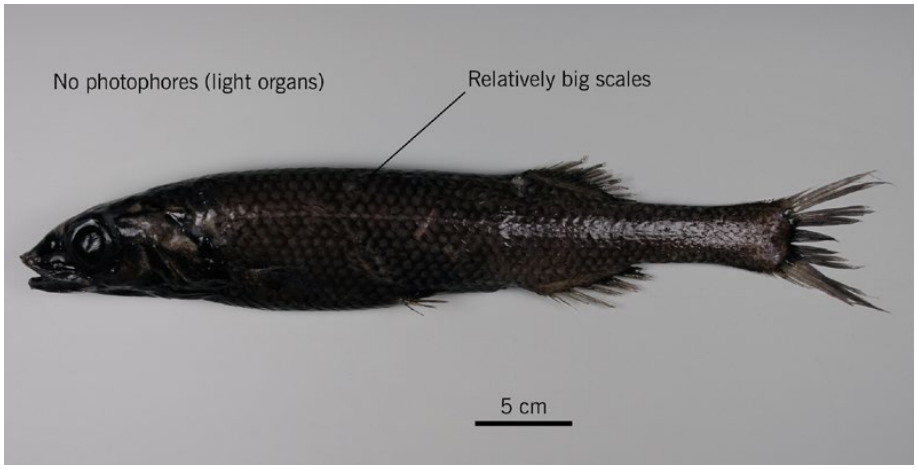
Distribution: Widespread in New Zealand. Widespread in the world's oceans from tropical to subantarctic latitudes.

Depth: 600 to 2700 m.

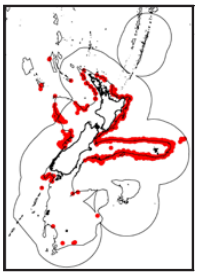
Similar species: Bigscale brown slickhead (Alepocephalus australis) has larger scales with 47 to 56 scales in a longitudinal series along midline of body. Species of Rouleina have a dark body and lackbody scales (some may have remnants of lateral line scales).

Biology & ecology: Probably demersal. Has large eggs which may be demersal.

Bigscale brown slickhead *Alepocephalus australis*



Family: 171. Alepocephalidae (Slickheads)
Maori names:
Other names: Bigscaled brown slickhead, largescaled brown slickhead
FishNZ reporting code: SBI
FishNZ research/observer code: SBI



Distinguishing features: Body covered in relatively big deciduous scales, 47 to 56 scales along body midline from behind head to tail. Head scaleless. No light organs. Snout longer than eye diameter. Dorsal and anal fins about same length and dorsal fin origin on or close to a vertical line through anal fin origin.

Colour: Mid to dark brown body with darker head, scale pocket margins and fins. Eyes dark.

Size: To about 63 cm FL.

Length measurement method: Fork length

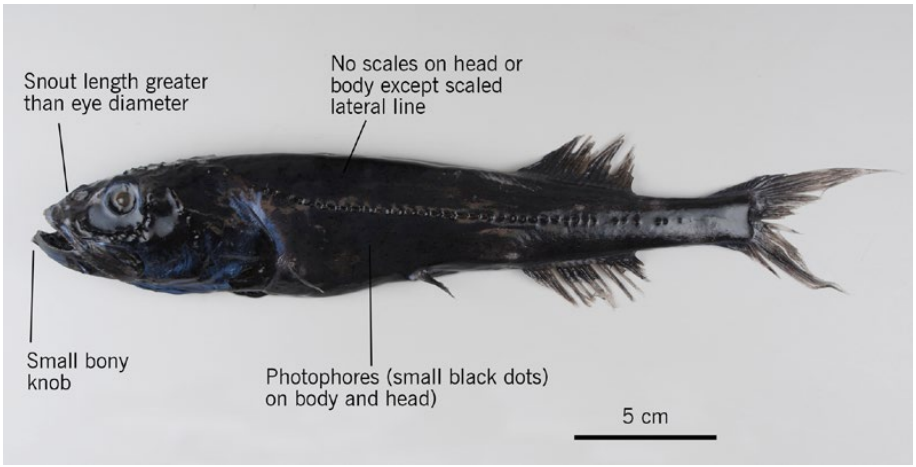
Distribution: Central and northern New Zealand, but records from southern New Zealand need to be confirmed. Widely distributed in subtropical and temperate waters of southern hemisphere in Atlantic, Indian and Pacific Oceans.

Depth: 600 to 2000 m.

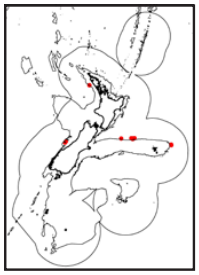
Similar species: Smallscale brown slickhead *(Alepocephalus antipodianus*) has smaller scales with 58 to 69 scales in a longitudinal series along body midline adjacent to lateral line. Species of *Rouleina* have a dark body and lack body scales (some may have remnant scales along lateral line).

Biology & ecology: Probably demersal. Has large eggs which may be demersal.

Bordello slickhead *Rouleina guentheri*



Family: 171. Alepocephalidae (Slickheads)
Maori names:
Other names:
FishNZ reporting code: SLK
FishNZ research/observer code: RGN



Distinguishing features: No scales on head or body except for lateral line scales. Dispersed, indistinct photophores (small black spots) on head and body. Snout equal to or longer than eye diameter. Head length less than about 30% SL. Lower jaw with small bony knob on lower tip.

Colour: Blue-black when skin undamaged but brownish body underneath skin.

Size: To about 35 cm FL.

Length measurement method: Fork length

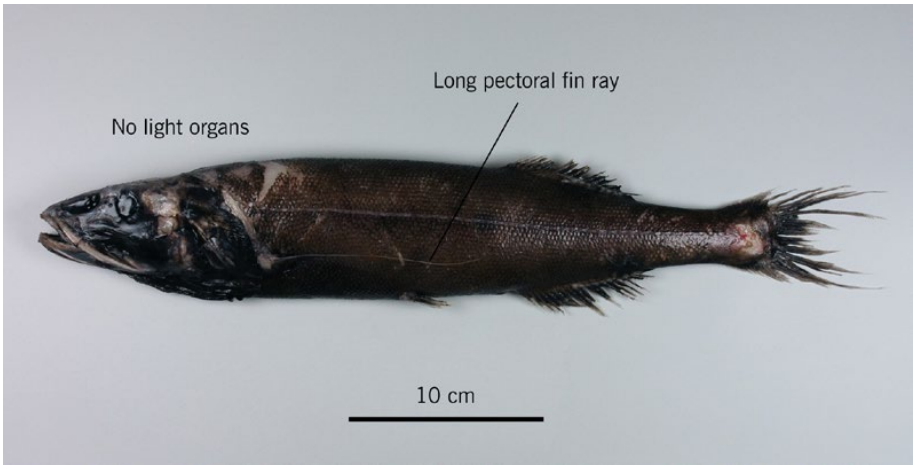
Distribution: Northern New Zealand from Reinga Ridge to Chatham Rise. Indo-West Pacific Ocean including New Zealand and Australia, and adjacent underwater ridges.

Depth: 800 to 1600 m.

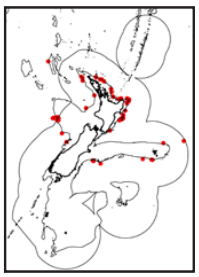
Similar species: 3 Species of *Rouleina* are recorded from New Zealand but they are difficult to identify. *Rouleina attrita* lacks photophores on head and body, and has long head more than 30% of SL. *R. eucla* has large photophores, and snout is shorter than eye diameter.

Biology & ecology: Unknown. Demersal. Other slickheads have large, probably demersal eggs.

Talismania longifilis *Talismania longifilis*



Family: 171. Alepocephalidae (Slickheads)
Maori names:
Other names: Threadfin slickhead
FishNZ reporting code: SLK
FishNZ research/observer code: TAL



Distinguishing features: Very long ray in pectoral fin, much longer than head length. Body covered in relatively small deciduous scales, 98 to 140 scales along body midline adjacent to lateral line from behind head to tail. Head scaleless. No light organs. Head long, about one-third of SL, eye small about one-third of snout length.

Colour: Mid to dark brown body with darker head and fins. Eyes dark.

Size: To about 50 cm FL.

Length measurement method: Fork length

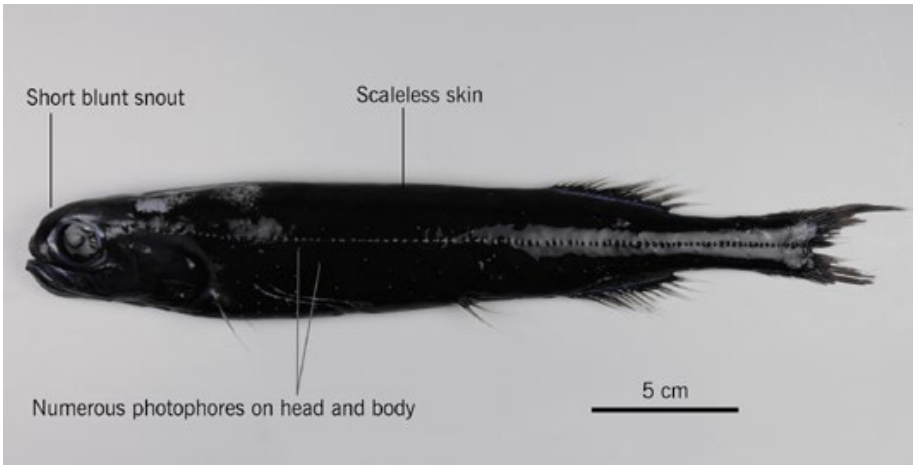
Distribution: West Norfolk Ridge to off West Coast South Island in New Zealand. Fisheries records from Chatham Rise are uncertain. Tropical and subtropical Atlantic, Indian, and west part of Pacific Ocean from New Zealand to Japan.

Depth: 800 to 1400 m.

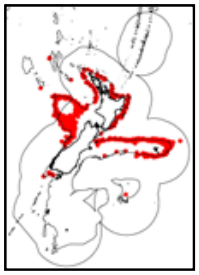
Similar species: Bigscaled brown slickhead (*Alepocephalus australis*) and smallscaled brown slickhead (*A. antipodianus*) both lack very long ray in pectoral fin, and have large body scales. Species of *Rouleina* have dark body and lack body scales.

Biology & ecology: Unknown. Probably demersal.

Black slickhead *Xenodermichthys copei*



Family: 171. Alepocephalidae (Slickheads)
Maori names:
Other names: Cope's bluntsnout slickhead
FishNZ reporting code: BSL
FishNZ research/observer code: BSL



Distinguishing features: Blue-black shiny scaleless skin covered with small raised photophores, appearing as pale dots. Short blunt snout and small mouth. Maxilla lacks teeth.

Colour: Entire head, body, and fins blue-black. Eyes black. Photophores on body appear as raised pale dots.

Size: About 45 cm FL.

Length measurement method: Fork length

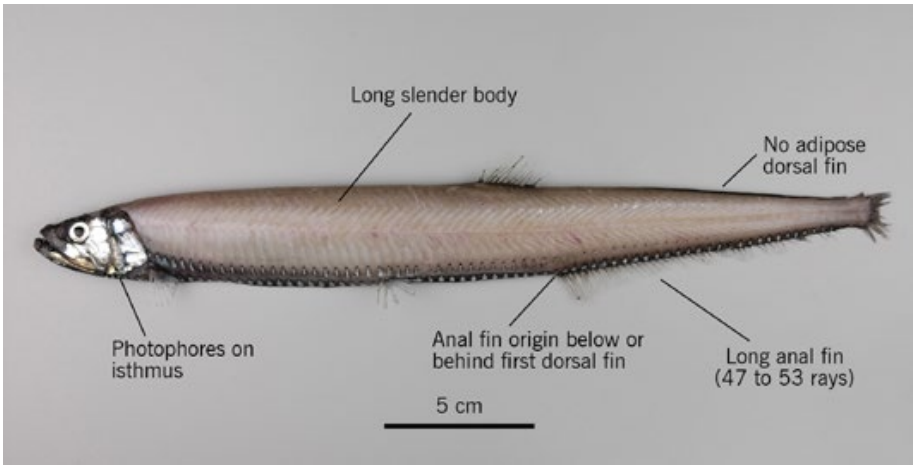
Distribution: Central and northern New Zealand. Appears to be absent from cooler waters of southwest Chatham Rise, southeast coast of South Island, Campbell and Bounty Plateaus. Widespread, circum-tropical except for the eastern Pacific.

Depth: 600 to 1100 m.

Similar species: Other slickheads lack shiny black scaleless skin, body peppered with photophores, and short blunt snout. Species of *Rouleina* also lack scales on body but have small teeth on maxilla.

Biology & ecology: Probably demersal. Has large eggs, which are probably demersal.

Rebain's portholefish *Diplophos rebainsi*



Family: 178 Diplophidae (Portholefishes)
Maori names:
Other names: Twinlight dragonfish
FishNZ reporting code: UNI
FishNZ research/observer code: DRB

Distinguishing features: Anal fin origin below or behind posterior end of first dorsal fin. Anal fin very long with 47 to 53 rays. Ventral photohores from anterior of isthmus to origin of pelvic fins 31 to 35. Long slender body and small head. Photophores on isthmus. One small photophore on head below front of eye. No adipose dorsal fin.

Colour: Dull pale brownish upper body and sides, but probably silvery when skin is undamaged. Head and photophores silvery.

Size: To about 26 cm SL.

Length measurement method: Standard length

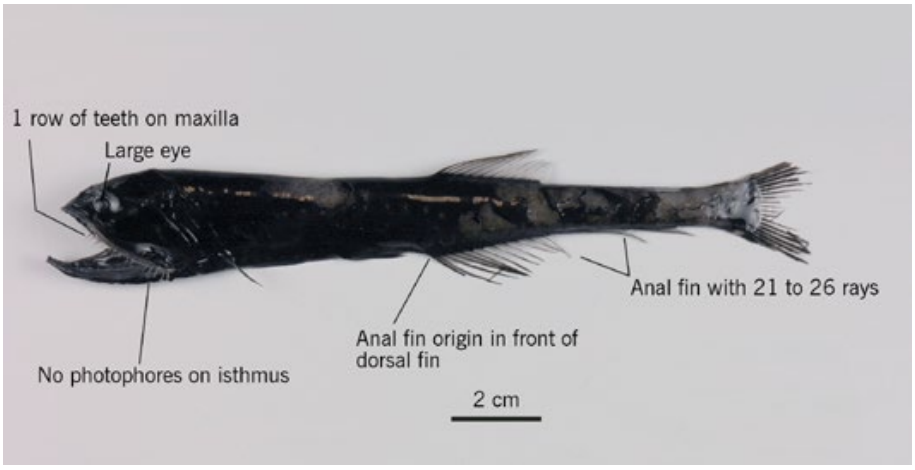
Distribution: Widespread in New Zealand. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Widespread in southern hemisphere.

Depth: 200 to 2000 m.

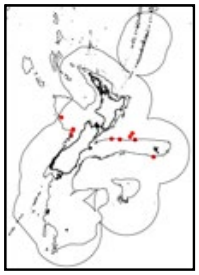
Similar species: Pacific portholefish (*Diplophos taenia*) is lesscommon in New Zealand and has 61 to 68 anal fin rays and 40 to 51 ventral photohores from anterior of isthmus to origin of pelvic fin.

Biology & ecology: Live in midwater.

Black lightfish *Sigmops bathyphilus*



Family: 179. Gonostomatidae (Bristlemouths)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: GBT



Distinguishing features: Anal fin origin just in front of dorsal fin origin. Anal fin rays 21 to 26. Large mouth with teeth on maxilla of upper jaw in 1 row with large teeth separated by small teeth. No photophores on isthmus. Anus closer to anal fin origin than to pelvic fin base. Large eye.

Colour: Blackish head and body.

Size: To about 20 cm SL.

Length measurement method: Standard length

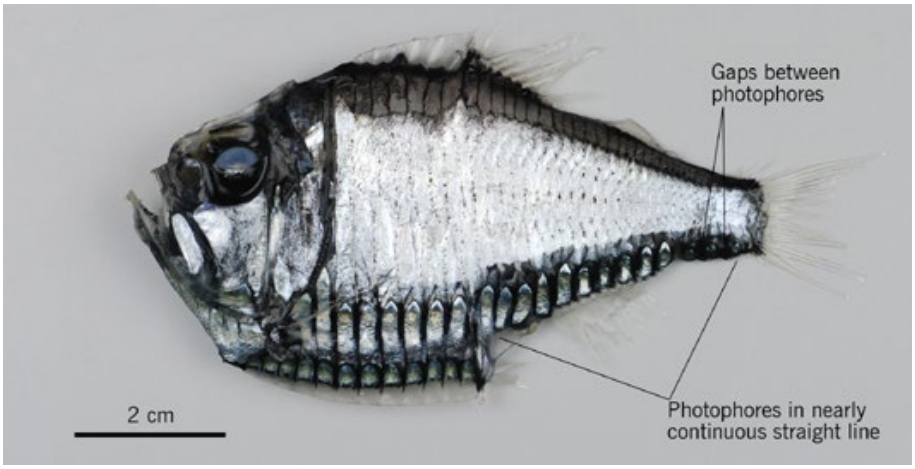
Distribution: Widespread in New Zealand in and north of the subtropical convergence. Worldwide in tropical and temperate seas.

Depth: Deep midwater, probably mostly greater than 700 m.

Similar species: *Sigmops ebelingi* is rare and northern and has anus midway between anal fin origin and pelvic fin base. *Sigmops elongatum* has 28 to 32 anal fin rays. Species of *Cyclothone* are very small, often only a few centimetres SL and have anal fin origin below or behind dorsal fin origin, and a very small eye.

Biology & ecology: Unknown.

Giant hatchetfish *Argyropelecus gigas*



Family: 180. Sternoptychidae (Marine hatchetfishes)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: AGI

Distinguishing features: Ventral photophores behind pelvic fin in a nearly continuous straight line. Ventral photophores behind anal fin separated by distinct gaps. Thin-bodied, eyes large and directed upwards.

Colour: Black upper body, sides and photophores silvery, fins not pigmented.

Size: To about 12 cm SL.

Length measurement method: Standard length

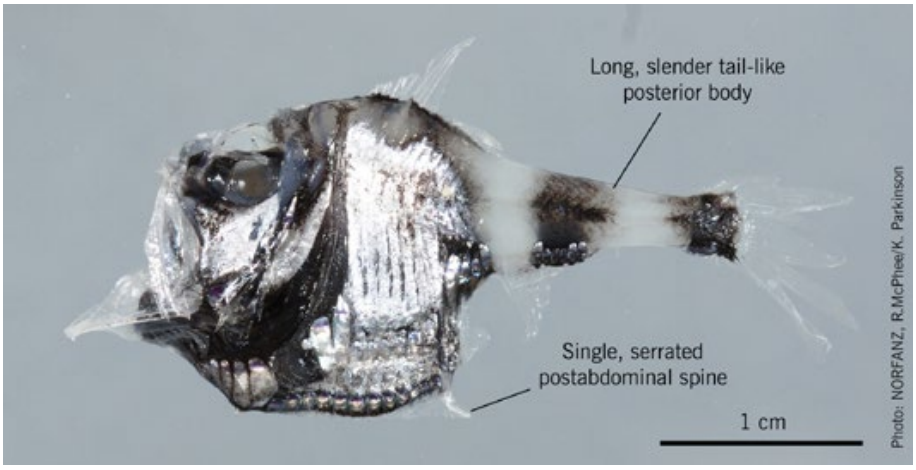
Distribution: Worldwide in tropical to temperate seas.

Depth: Midwater, mostly 400 to 600 m.

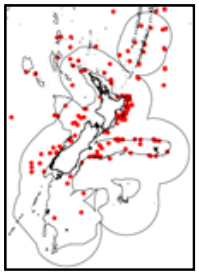
Similar species: Other hatchetfishes lack combination of ventral photophores behind pelvic fin in a nearly continuous straight line and ventral photophores behind anal fin separated by distinct gaps. Identification of most hatchetfish species requires microscopic study.

Biology & ecology: Largest species in genus. Does not appear to undergo vertical migration in water column.

Common hatchetfish *Argyropelecus hemigymnus*



Family: 180 Sternoptychidae (Marine hatchetfishes)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: AHE



Distinguishing features: Posterior body long, slender, and tail-like. Single serrated postabdominal spine.

Colour: Sides of head, trunk and photophores silvery. Black around ventral photophores. Rear half of body often appears to be banded with unpigmented and pigmented areas.

Size: To about 4 cm SL.

Length measurement method: Standard length

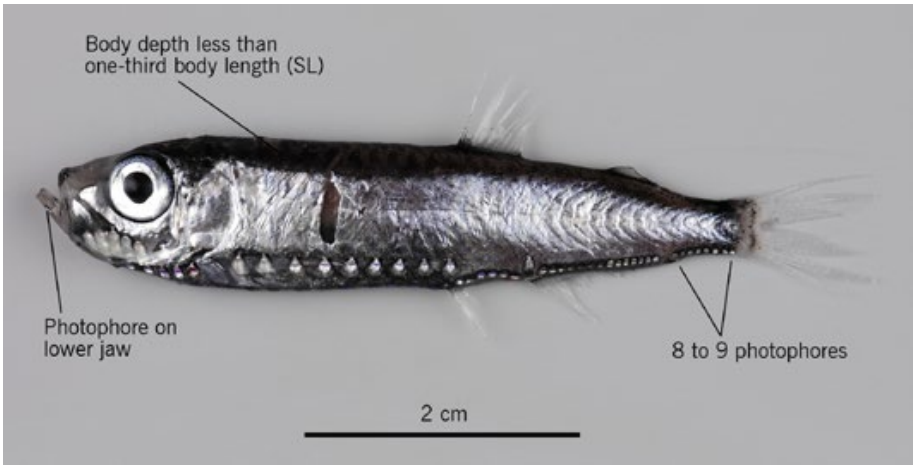
Distribution: Widespread in New Zealand from 25 to 51 S. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Worldwide in tropical and subtropical seas.

Depth: Midwater, mostly 250 to 650 m.

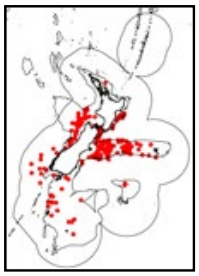
Similar species: Other hatchetfishes lack the slender tail-like posterior body and single serrated postabdominal spine.

Biology & ecology: Does not appear to undergo substantial diurnalvertical migration.

Pearlside *Maurolicus australis*



Family: 180. Sternoptychidae (Marine hatchetfishes)
Maori names:
Other names: Pennant pearlside
FishNZ reporting code: UNI
FishNZ research/observer code: MMU



Distinguishing features: Body depth less that one-third of body length (SL). Photophore on lower jaw. 8 to 9 photophores in the ventral series behind the anal fin.

Colour: Black upper body, sides and photophores silvery, fins not pigmented.

Size: To about 5 cm SL.

Length measurement method: Standard length

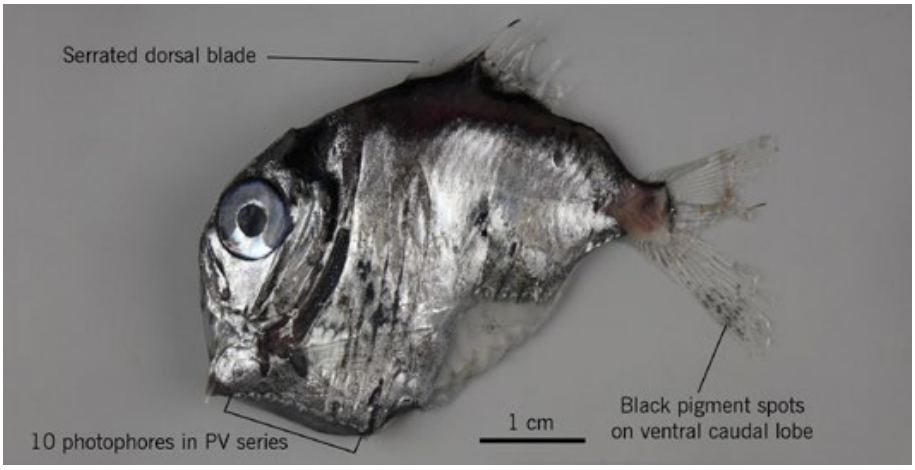
Distribution: Widespread in New Zealand (Kermadec Islands to Campbell Plateau). Southwest Pacific and southern Australia.

Depth: Midwater, mostly 150 to 400 m.

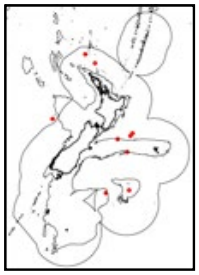
Similar species: Other hatchetfishes lack the combination of body depth less that one-third of body length (SL), photophore on lower jaw, 7 to 9 photophores in the ventral series behind the anal fin.

Biology & ecology: Can be very abundant and probably an important food for predatory fishes. Undergoes vertical migration in the water column and sometimes reaches surface waters at night. Feeds on copepods.

False oblique hatchetfish *Sternoptyx pseudodiaphana*



Family: 180 Sternoptychidae (Marine hatchetfishes)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: SPU



Distinguishing features: 10 ventral photophores in series below pectoral fin to pelvic fin (PV). Predorsal blade large and serrate. Length of dorsal fin base less than length of dorsal blade (origin to posterior point). Body silvery or pale. Lower lobe of caudal fin with black pigment spots.

Colour: Sides of body and head silvery. Lower lobe of caudal fin with black pigment spots.

Size: To about 6 cm SL.

Length measurement method: Standard length

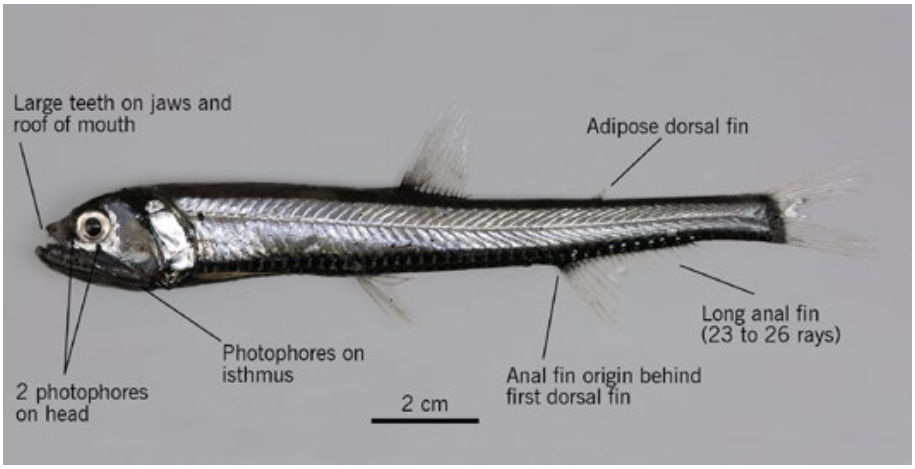
Distribution: Three Kings to Pukaki Rise in New Zealand. Data plotted on the map includes only data from Te Papa and does not include any fisheries records. Circumglobal in southern hemisphere and Southern Ocean.

Depth: 600 to 1500 m.

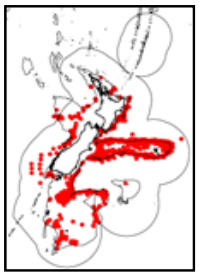
Similar species: Diaphanous hatchetfish (*Sternoptyx diaphana*) lacks dark pigment spots on lower caudal fin lobe. Thin hatchetfish (*Sternoptyx obscura*) has a blackish-silvery body with an arc of blackish pigment around base of caudal fin.

Biology & ecology: Midwater, migrates vertically in the water column, rising towards the surface at night.

Lighthousefish *Phosichthys argenteus*



Family: 181. Phosichthyidae (Lightfishes)
Maori names:
Other names: Silver lighthousefish
FishNZ reporting code: PHO
FishNZ research/observer code: PHO



Distinguishing features: Two small photophores on head, one just in front of eye and one below eye. Large teeth on jaws and roof of mouth. Anal fin origin well behind rear of first dorsal fin, long with 23 to 26 rays. Adipose fin present. Photophores on isthmus.

Colour: Dull brownish upper body, silvery sides and photophores.

Size: To 30 cm SL.

Length measurement method: Standard length

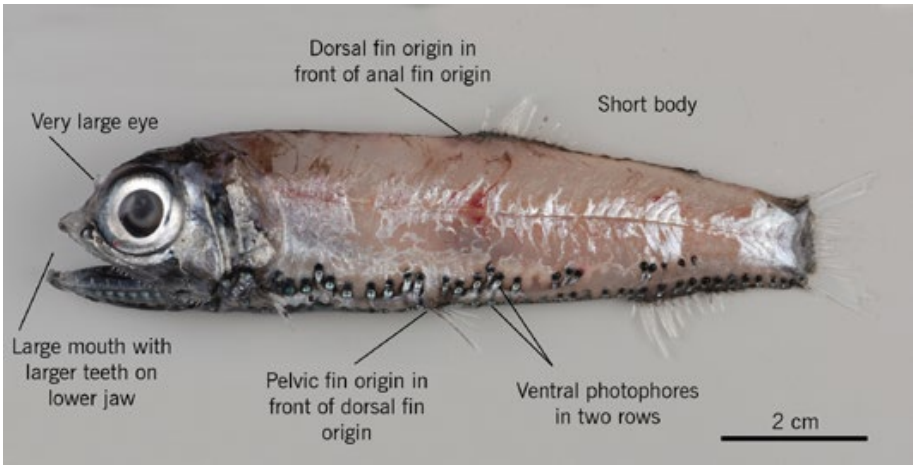
Distribution: Widespread in New Zealand (Kermadec Islands to Campbell Plateau). Widespread in subtropical and temperate southern hemisphere oceans.

Depth: Midwater at 370 to 1000 m.

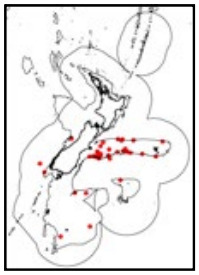
Similar species: Rebain's portholefish (*Diplophos rebainsi*) has a long slender body and small head, very long anal fin with 47 to 52 rays, and no adipose dorsal fin. Viperfish (*Chauliodus sloani*) has large fang-like teeth, a short anal fin close to tail and hexagonal body pigment pattern.

Biology & ecology: Probably an important prey of some deepsea fishes because of its large size and relatively high abundance.

Austral lightfish *Woodsia meyerwaardeni*



Family: 181 Phosichthyidae (Lightfishes)
Maori names:
Other names: Austral lighthousefish
FishNZ reporting code: UNI
FishNZ research/observer code: WMY



Distinguishing features: Ventral photophores in 2 rows. Dorsal fin origin anterior to anal fin and just behind pelvic fin origin. Body short. Anal fin with 14 to 16 rays, 12 to 14 AC (anal fin origin to caudal fin base) photophores, and 18 to 21 gill rakers on first arch. Head with very large eyes and a large mouth with a row of larger teeth on lower jaw.

Colour: Light to dark brown upper body with silvery sides and photophores.

Size: To about 10 cm SL

Length measurement method: Standard length

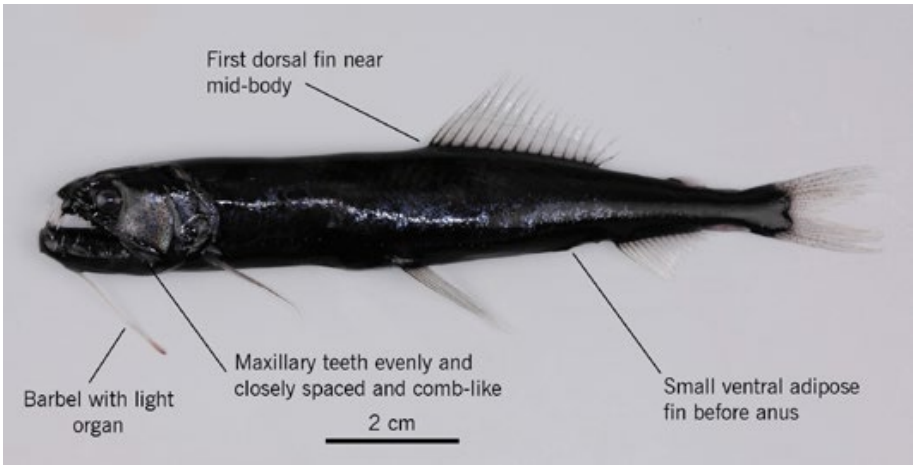
Distribution: Within and south of subtropical convergence in New Zealand. Dots plotted on the map includes only data from Te Papa and does not include any fisheries records. Temperate South Atlantic and South Pacific Oceans.

Depth: Midwater at 100 to 1000 m.

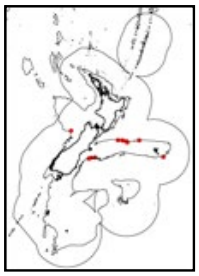
Similar species: *Ichthyococcus* spp. have blunt snout, mouth and eyes are smaller, and dorsal fin origin is in front of pelvic fin. *Margrethia obtusirostra* has a smaller eye and one row of ventral photophores.

Biology & ecology: Not known.

Snaggletooths *Astronesthes* spp.



Family: 182. Stomiidae (Barbeled dragonfishes)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: ASE



Distinguishing features: Maxillary teeth evenly and closely spaced and comb-like, slanted rearward, their bases touching. Small ventral adipose fin present before anus. First dorsal fin located near middle of body. Barbel with terminal light organ on chin. Photophore on head behind eye smaller than eye.

Colour: Brownish or blackish depending on species. Some species have purplish luminescent marking on sides of head and body.

Size: To about 30 cm SL.

Length measurement method: Standard length

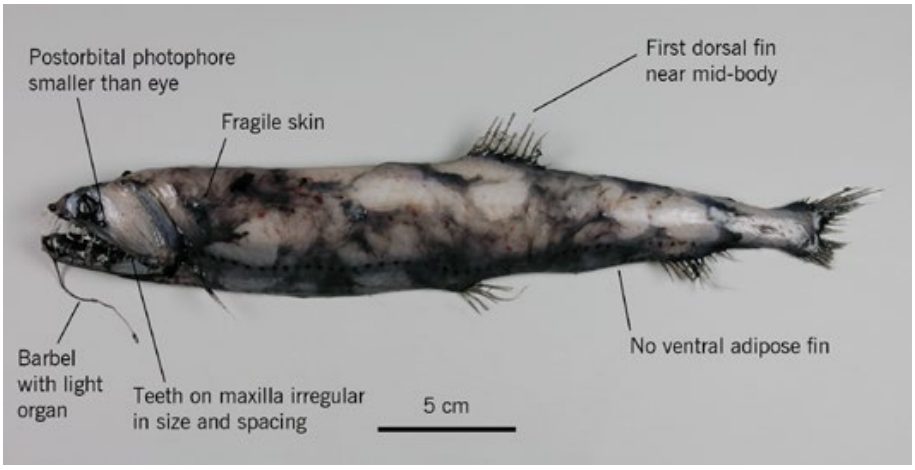
Distribution:
Data plotted on map includes only Te Papa specimens of Boulenger's snaggletooth (*Astronesthes boulengeri*, ASB) and does not include any fisheries records or data for other *Astronesthes* species.

Depth: Midwater, some live at great depths, e.g., to 5000 m, some migrate to surface layers at night.

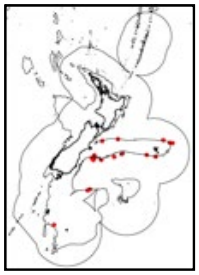
Similar species: There are 7 species of snaggletooth genus *Astronesthes* recorded from New Zealand. Boulenger's snaggletooth (*A. boulengeri*, ASB) (see image above) has anal fin origin behind rear end of first dorsal fin, and a short luminescent gland on dorsal and longer luminescent gland on ventral caudal peduncle. Identification of other *Astronesthes* species requires microscopic study. *Borostomias antarcticus* has widely spaced maxillary teeth (not comb-like) and no ventral adipose fin.

Biology & ecology: Little known. Presumed to be predators.

Southern snaggletooth *Borostomias antarcticus*



Family: 182. Stomiidae (Barbeled dragonfishes)
Maori names:
Other names:
FishNZ reporting code: BAN
FishNZ research/observer code: BAN



Distinguishing features: Teeth on maxilla irregular in size and spacing (not comb-like). No ventral adipose fin before anus. First dorsal fin located near middle of body. Barbel with terminal light organ on chin. Photophore on head behind eye smaller than eye.

Colour: Dark brownish-black.

Size: To 29 cm SL.

Length measurement method: Standard length

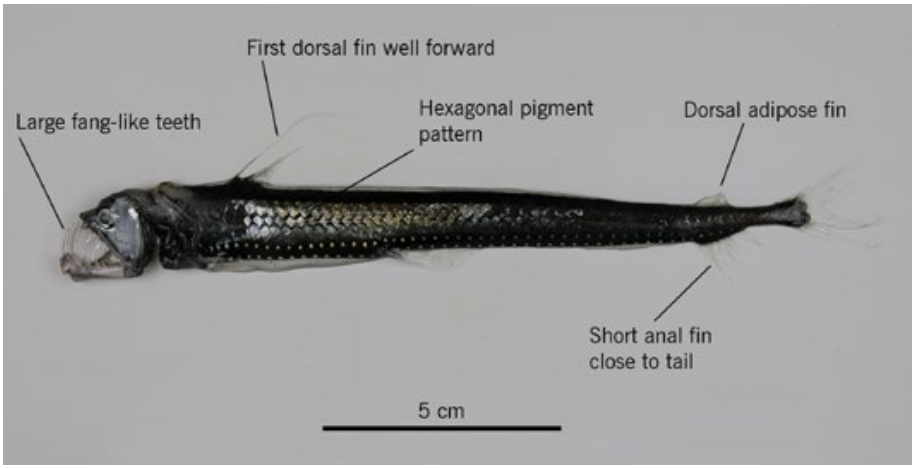
Distribution: Widespread in central and southern New Zealand. Widepread in southern hemisphere south of about 40 S. Mediterranean Sea and North Atlantic north of about 40 N.

Depth: Midwater at 350 to 2500 m.

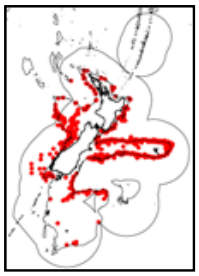
Similar species: *Astronesthes* spp. have closely spaced comb-like rear-slanted teeth on maxilla at rear of upper jaw, and a small ventral adipose fin. Scaleless black dragonfishes (*Melanostomias* spp.) have dorsal and anal fins of similar length close to tail. Giant black dragonfish (*Opostomias micripnus*) has dorsal and anal fins of similar length close to tail, and separate very long first pectoral fin ray.

Biology & ecology: Predator probably feeding on other fishes and crustaceans.

Viperfish *Chauliodus sloani*



Family: 182. Stomiidae (Barbeled dragonfishes)
Maori names:
Other names:
FishNZ reporting code: CHA
FishNZ research/observer code: CHA



Distinguishing features: Large fang-like teeth in upper and lower jaws. 5 rows of hexagonal pigment shapes running along sides of body, with 1 or more small photophores in each shape. Dorsal and ventral adipose fins present. First dorsal fin short-based and well forward on the body, with the first ray very long (undamaged). Short anal fin (10 to 13 rays) close to tail. Chin barbel reduced or absent (adults).

Colour: Body iridescent silver-blue with hexagonal pattern, fins pale.

Size: To 33 cm SL.

Length measurement method: Standard length

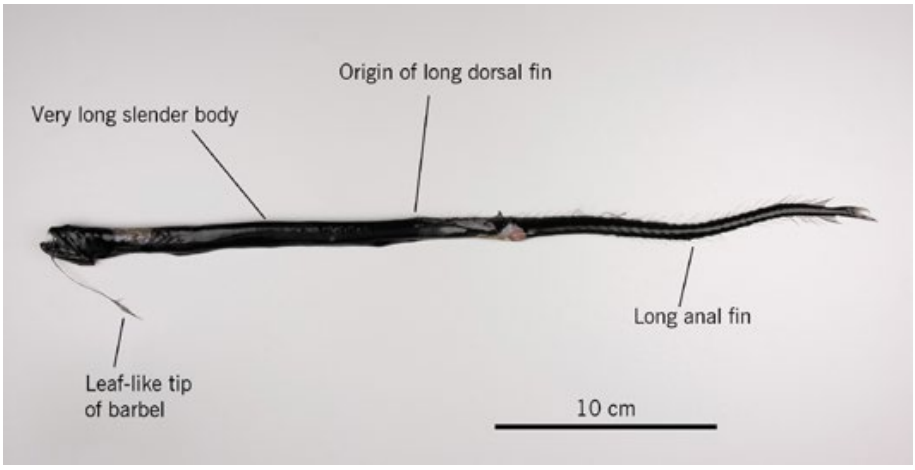
Distribution: Widespread in New Zealand. Worldwide.

Depth: Midwater at 500 to 2500 m.

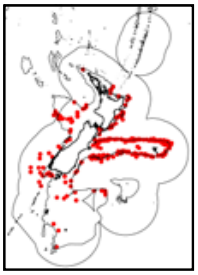
Similar species: Scaly dragonfishes (*Stomias* spp.) have a chin barbel, dorsal and anal fins close to tail and similar in length, and no dorsal adipose fin. Lighthouse fish (*Phosichthys argenteus*) lacks the hexagonal pigment pattern on the side of the body, has smaller teeth in jaws, longer anal fin, and first dorsal fin near mid-body.

Biology & ecology: Predator feeding on other fishes and crustaceans. The photophore on the tip of the long first dorsal fin ray may be used to lure prey. Found ar depths during the day but migrates to near surface at night.

Common black dragonfish *Idiacanthus atlanticus*



Family: 182 Stomiidae (Barbeled dragonfishes)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: IAT



Distinguishing features: Females have very long, slender, black body. Dorsal and anal fins very long, dorsal fin origin closer to head than to tail, anal fin about half the body length, both fins ending just before tail fin. Leaf-like barbel tip. Males lack barbel, pectoral and pelvic fins.

Colour: Black (females) or dark brown (males) head, body, and fins.

Size: Females to about 61 cm and males about 5 cm SL.

Length measurement method: Standard length

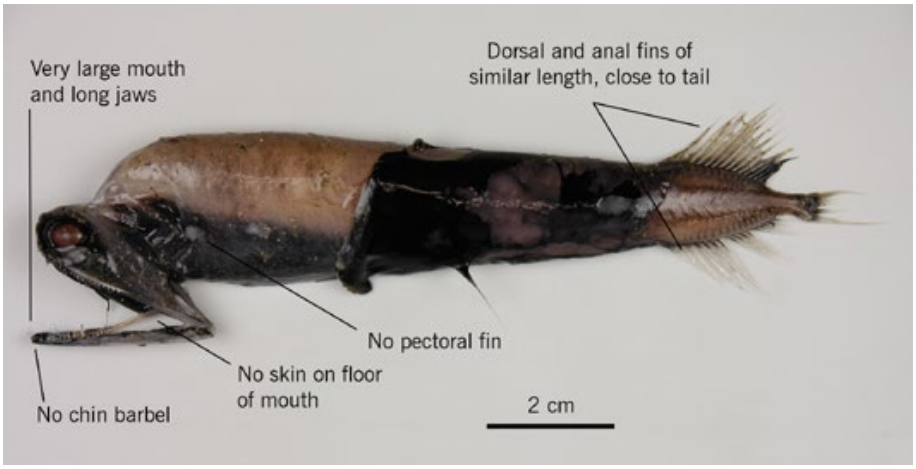
Distribution: Widespread in New Zealand. Widespread in the southern hemisphere.

Depth: Midwater down to about 2000 m.

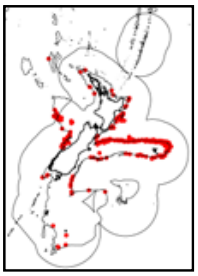
Similar species: There are rare records of strap dragonfish (*Idiacanthus fasciola*) from off northern New Zealand.

Biology & ecology: Females were captured from deeper than about 500 m during the night but ascend to near the surface at night. The very small males were captured at depths deeper than 1000 m.

Southern loosejaw *Malacosteus australis*



Family: 182. Stomiidae (Barbeled dragonfishes)
Maori names:
Other names: Southern stoplight loosejaw
FishNZ reporting code: UNI
FishNZ research/observer code: MAU



Distinguishing features: Very large mouth and long jaws. No skin on floor of mouth between each side of the lower jaw. Dorsal and anal fins of similar length and close to tail. Adipose fins absent. No chin barbel. No pectoral fin.

Colour: Brownish-black body when skin intact. Muscle underneath may be pale to bright orange.

Size: To about 25 cm SL.

Length measurement method: Standard length

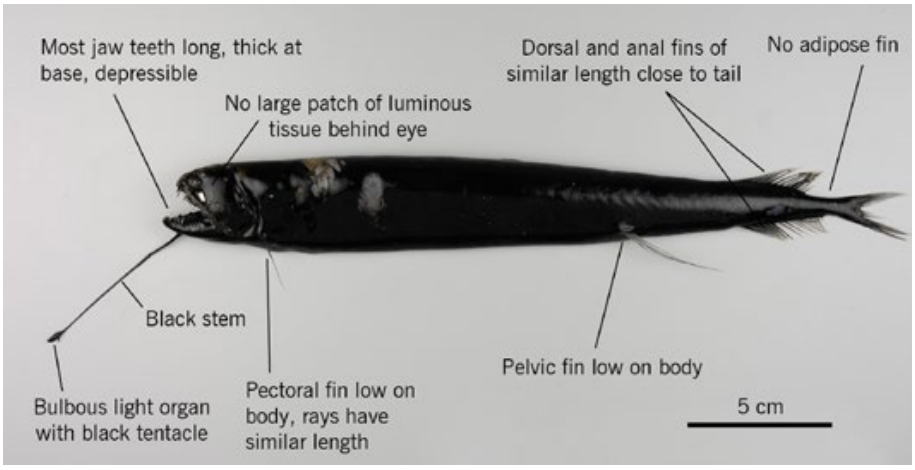
Distribution: Widespread in New Zealand. Widespread in southern hemisphere south of about 27 S.

Depth: Midwater at about 500 to 2000 m.

Similar species: *Malacosteus niger* is very rare and northern, recorded as far south as about 31 S. Other barbeled dragonfishes (Stomiidae) lack the very large mouth and have skin across the floor of the mouth.

Biology & ecology: Males have a smaller postorbital photophore on head and smaller, more numerous teeth compared to females. Probably migrates to near surface at night.

Black dragonfish *Melanostomias niger*



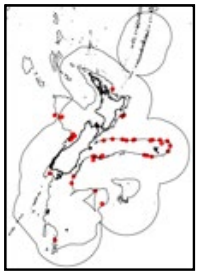
Family: 182 Stomiidae (Barbeled dragonfishes)

Maori names:

Other names:

FishNZ reporting code: MST

FishNZ research/observer code: MNG



Distinguishing features: Long chin barbel with a black stem and bulbous tip (light organ) with a small black tentacle attached. First ray of pectoral fin not much longer than other rays (5 rays total). Dorsal and anal fins of similar length and close to tail. Pectoral and pelvic fins near ventral body. No dorsal adipose fin. Photophore present behind and below eye (postorbital) but no large patch of luminescent tissue behind eye. Most jaw teeth long, thick at base, and depressible.

Colour: Black head, body, stem of chin barbel, and tentacle of light organ.

Size: To about 29 cm SL.

Length measurement method: Standard length

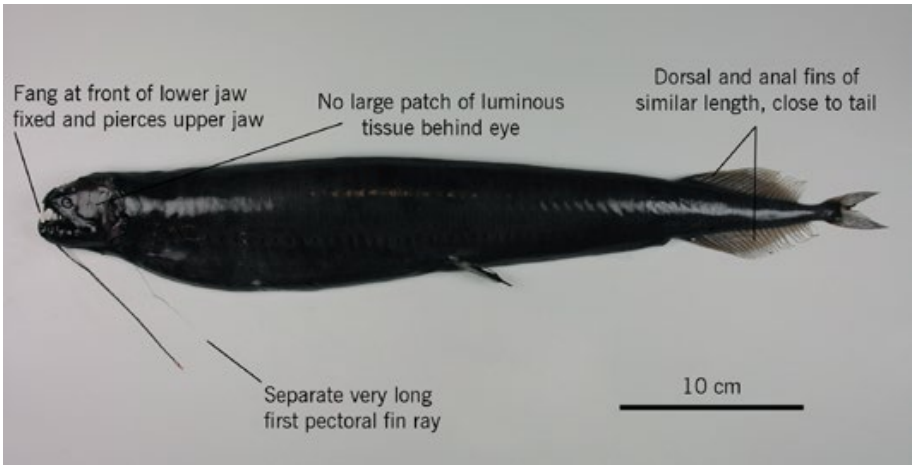
Distribution: Widespread in central New Zealand (35 to 50 S). Widespread in subtropical to temperate Atlantic and Pacific Oceans.

Depth: Midwater, 50 to 1220 m.

Similar species: Tentacled dragonfish (*Melanostomias tentaculatus*) is rare and has a pale tentacle on the bulb of the chin barbel light organ. Three other *Melanostomias* species recorded from New Zealand are rare and have flat (rather than bulbous) chin barbel light organs.

Biology & ecology: Predator. Luminous tip of chin barbel may act as a lure for prey.

Giant black dragonfish *Opostomias micripnus*



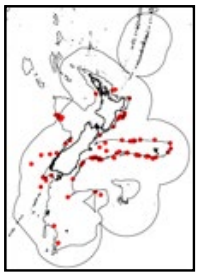
Family: 182. Stomiidae (Barbeled dragonfishes)

Maori names:

Other names: Speckled dragonfish

FishNZ reporting code: MST

FishNZ research/observer code: OMI



Distinguishing features: Large fang-like teeth in jaws, some fixed, front fangs in lower jaw pierce upper jaw. First ray of pectoral fin separated from other rays and very long. Dorsal and anal fins of similar length and close to the tail. Pectoral and pelvic fins on ventral body. No dorsal adipose fin. No large patch of luminescent tissue behind eye.

Colour: Blackish head and body. Barbel with black stem.

Size: To at least 66 cm SL.

Length measurement method: Standard length

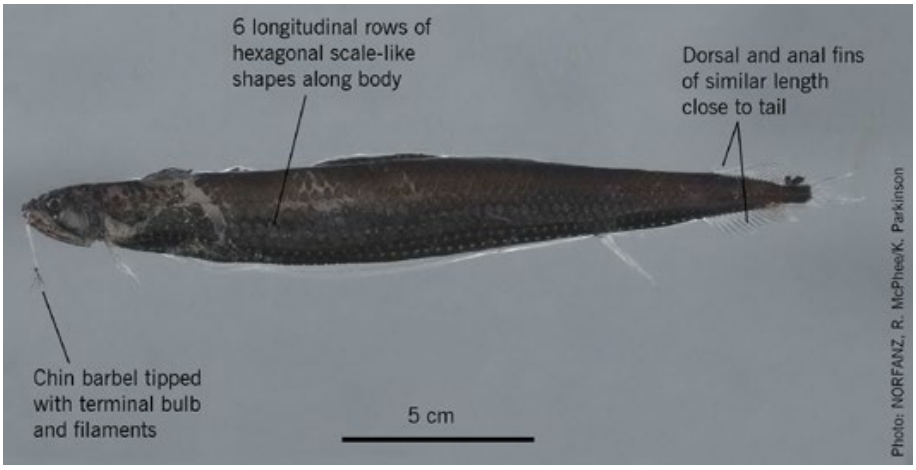
Distribution: Widespread in New Zealand from Norfolk Ridge to Campbell Plateau. Widespread in southern hemisphere south of about 30 S.

Depth: Midwater to about 2000 m.

Similar species: Black dragonfish (*Melanostomias niger*) has most jaw teeth long, thick at base, and depressible, large postorbital photophore on head, and first ray of pectoral fin not longer than other rays. Snaggletooth (*Borostomias antarcticus*) has first dorsal fin near the mid-body, well in front of anal fin.

Biology & ecology: Predator. Luminous tip of chin barbel may act as a lure.

Scaly dragonfish *Stomias boa*



Family: 182 Stomiidae (Barbeled dragonfishes)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: SBB

Distinguishing features: Body with 6 horizontal rows of hexagonal scale-like shapes. Body depth greater than head length. Chin barbel tipped with terminal bulb and several filaments. Dorsal and anal fins close to tail and similar in length. No dorsal adipose fin. Photophores on head, and in 2 lines along ventral body.

Colour: Body iridescent silver blackish-brown with hexagonal shapes, fins pale. Barbel stem pale, terminal bulb and filaments dark.

Size: To about 33 cm SL.

Length measurement method: Standard length

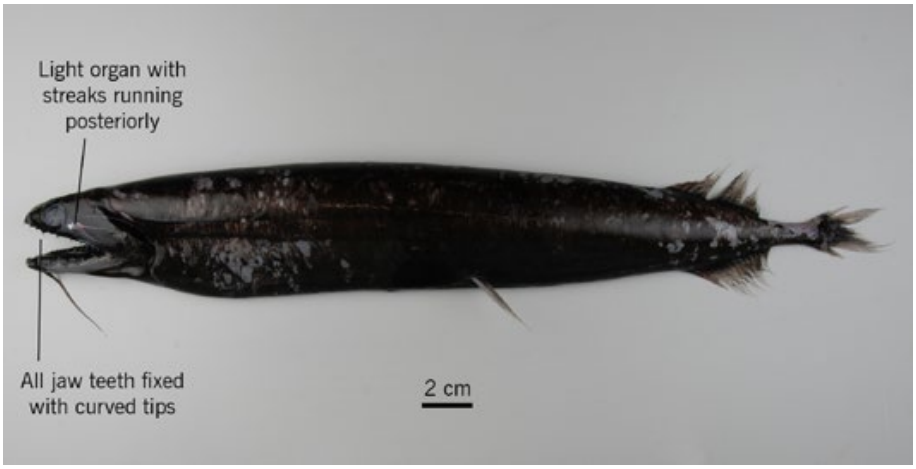
Distribution: Widespread in New Zealand. Worldwide in the southern hemisphere from 20 to 45 S, in Mediterranean and off northwest Africa.

Depth: Midwater at 900 to 1500 m by day and 100 to 500 m at night.

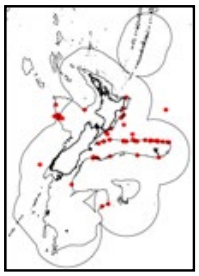
Similar species: Slender scaly dragonfish (*Stomias gracilis*) has body depth less than head length and appears to be more southern (44 to 55 S) in New Zealand. Gunther's scaly dragonfish (*Stomias affinis*) is only known from juveniles taken north of 30 S, and longbarbel scaly dragonfish (*S. longibarbatus*) has a barbel about half body length and is rare.

Biology & ecology: Probably undergoes vertical migration in the water column at night.

Starburst dragonfish *Trigonolampa miriceps*



Family: 182 Stomiidae (Barbeled dragonfishes)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: TMI



Distinguishing features: Large light organ on cheek, with streaks that extend back to posterior margin of operculum. All jaw teeth fixed (not depressible), short, with tips curved posteriorly. Chin barbel present, with small light organ at tip (undamaged). Dorsal fin above anal fin, both well back on body. No adipose fin. Pectoral fin and pelvic fins near ventral surface of body. Body scaleless with two lines of small photophores along ventral surface.

Colour: Lavender-black body. Lavendar cheek light organ with lighter streaks running posteriorly. Barbel shaft blackish with lavendar terminal light organ.

Size: To about 43 cm SL.

Length measurement method: Standard length

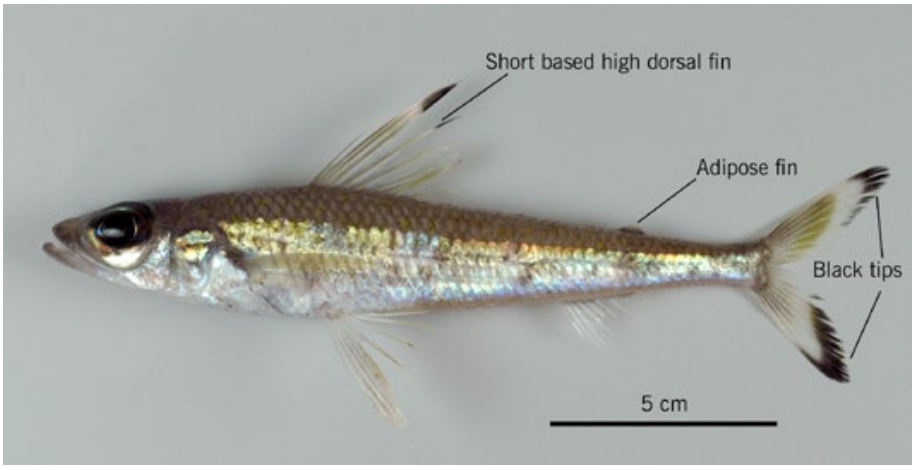
Distribution: From 37 to 50 °S in New Zealand. Data plotted on the map includes only data from Te Papa and does not include any fisheries records. Worldwide in tropical and warm temperature oceans.

Depth: 45 to 1700 m, but most were 700 to 900 m.

Similar species: Other species of scaleless black dragonfish (subfamily Melanostomiinae) have small cheek light organs, and larger less curved teeth.

Biology & ecology: Midwater, undertakes diurnal vertical migration with specimens caught closer to surface at night.

Cucumberfish *Paraulopus nigripinnis*



Family: 184. Paraulopidae (Cucumberfishes)
Maori names:
Other names:
FishNZ reporting code: CUC
FishNZ research/observer code: CUC

Distinguishing features: Caudal fin mostly pale but with black upper and lower tips. Usually 16 (15 to 17) pectoral rays.

Colour: Dull (non-reflective) brownish upper body and head with irregular blackish-brown blotches on sides of body. Sides mostly silvery including cheeks, plus belly and throat. Dark-tipped dorsal fin. Posterior tips of upper and lower lobes of caudal fin black.

Size: To about 30 cm FL.

Length measurement method: Fork length

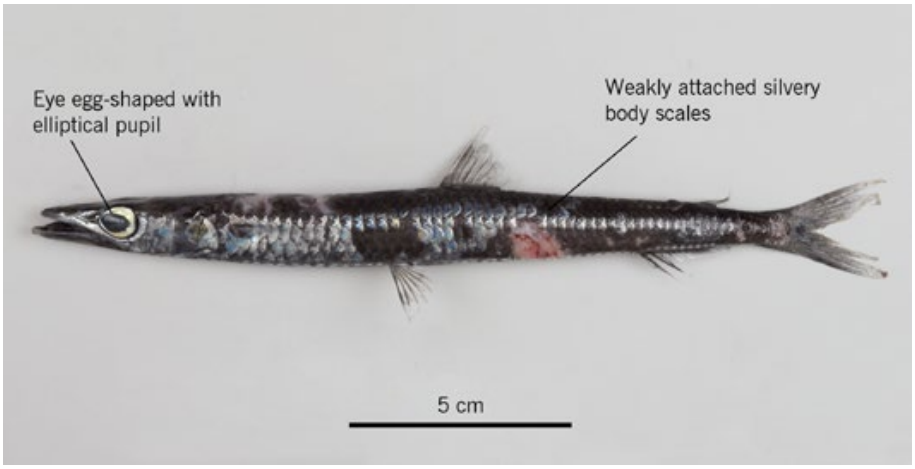
Distribution: Around North Island and upper South Island in New Zealand. Southern Australia.

Depth: 2 to 600 m.

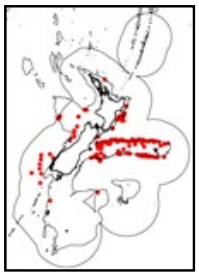
Similar species: Magpie cucumberfish (*Paraulopus okamurai*, POK) has mostly dark caudal fin with black upper and small white lower tip, usually 18 pectoral rays and is known from northern NZ and eastern Australia. New Zealand cucumberfish (*P. novaeseelandiae*, PNL) has whitish caudal fin base with black posterior margin of upper lobe and short dark oblique band on lower lobe with wide white tip, usually 17 (16 to 17) pectoral rays and is known from Challenger Plateau, northeast North Is. and Norfolk Is. Silverside (*Argentina elongata*) lacks dark tipped dorsal and caudal fin markings and has very small mouth.

Biology & ecology: Demersal.

Waryfishes *Scopelosaurus* spp.



Family: 191. Notosudidae (Waryfishes)
Maori names:
Other names:
FishNZ reporting code: SPL
FishNZ research/observer code: SPL



Distinguishing features: Egg-shaped eye with elliptical pupil. Moderate sized but weakly attached scales. Short-based first dorsal fin near mid-body, and small adipose fin near tail. Long thin gill rakers. Snout length less than body depth.

Colour: Head and body scales iridescent silver. Skin underneath scales brownish or blackish.

Size: To about 50 cm FL.

Length measurement method: Fork length

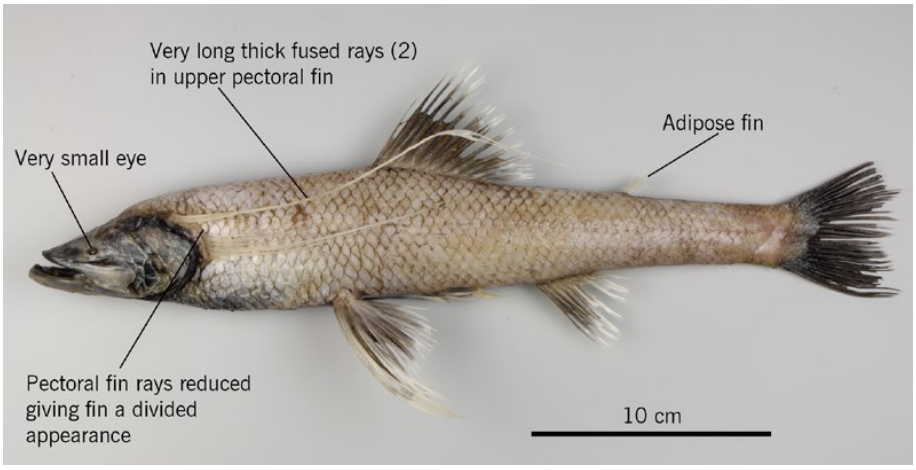
Distribution: Depends on species. Some, e.g., giant waryfish (*Scopelosaurus hamiltoni*) are widespread in New Zealand.

Depth: To about 2000 m.

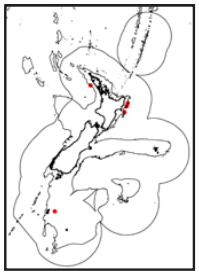
Similar species: There are five species of *Scopelosaurus* recorded from New Zealand but field identification to species is difficult and requires counts of lateral line scales, gill rakers, vertebrae. Norman's waryfish (*Luciosudis normani*) has very long snout, much greater than body depth.

Biology & ecology: Midwater, but larger individuals found closer to bottom than smaller fish.Predators with copepods recorded in stomachs of juveniles, and midwater fishes in stomachs of adults.

Feelerfish *Bathypterois longifilis*



Family: 192. Ipnopidae (Deepsea tripod fishes)
Maori names:
Other names:
FishNZ reporting code: TRI
FishNZ research/observer code: BLO



Distinguishing features: Underside of caudal fin with small notch near anterior base. Two of uppermost rays in pectoral fin fused, free, and very long, may be greater than SL, lower part of fin with shorter rays. Very small eye, adipose fin present, large mouth.

Colour: Head dull brownish-black. Body whitish wth brown scale pocket margins. Pectoral fin whitish, pelvic, first dorsal, and anal fins brownish with whitish tips. Caudal fin dark brownish-black.

Size: To about 38 cm SL.

Length measurement method: Fork length

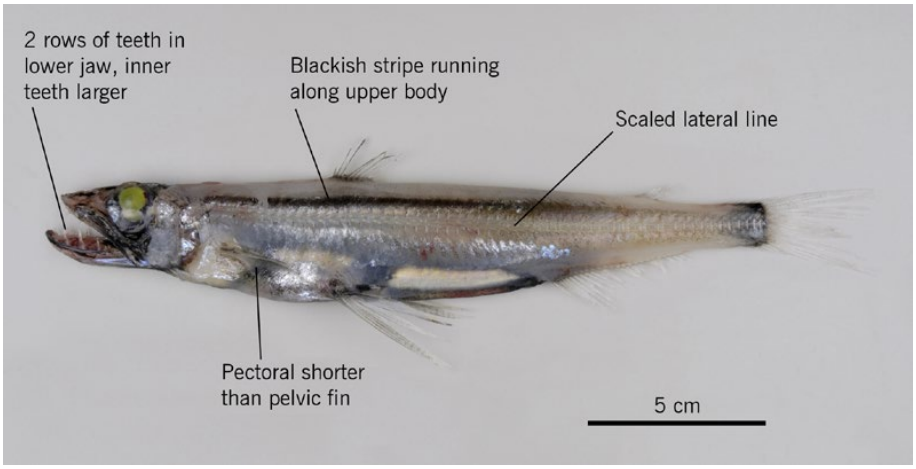
Distribution: Central and northern New Zealand from Kermadec Islands to north Chatham Rise. Australia.

Depth: About 900 to 1200 m.

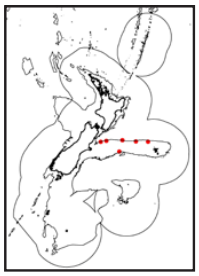
Similar species: Other New Zealand species of deepsea tripod fishes lack the subcaudal notch, are very rare, and deeper-living.

Biology & ecology: Demersal predator probably feeding on planktonic animals near seafloor. Other species observed from submersibles show individuals propped up on stiffened pelvic and caudal fins (tripod-like) with head facing into current. Long pectoral fin rays were spread and arched forward suggesting they were used to detect prey. Juveniles live near surface amongst other planktonic organisms, are almost transparent, and have enlarged sail-like dorsal, anal, pectoral and pelvic fins.

Krefft's pearleye *Scopelarchoides kreffti*



Family: 193. Scopelarchidae (Pearleyes)
Maori names:
Other names: Blackbelly pearleye
FishNZ reporting code: UNI
FishNZ research/observer code: SKR



Distinguishing features: Large eyes directed upwards. Lower jaw teeth in 2 rows, depressible, those on inner row are longest teeth in mouth. Row of large teeth on tongue hooked backwards. Gill rakers reduced and teeth-like. Lateral line with large scales. Pectoral shorter than pelvic fin. Pelvic fin origin in front or close to vertical line through origin of dorsal fin.

Colour: Blackish stripe extending along body from behind head to close to tail just above lateral line. Bases of first dorsal and tail fins blackish. Sides of head and body and parts of ventral body silvery (if undamaged). Greenish or yellowish eyes.

Size: To about 20 cm SL.

Length measurement method: Standard length

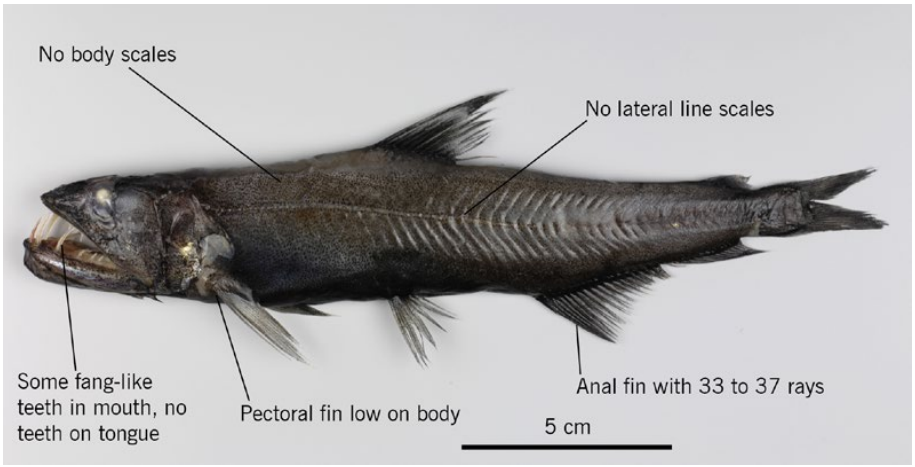
Distribution: Central and northern New Zealand. Circumglobal in southern hemisphere.

Depth: Midwater at 900 to 1200 m.

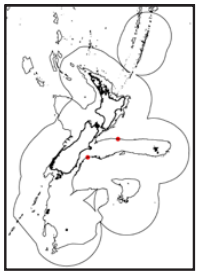
Similar species: Sabretooth fishes (Evermannellidae) lack lateral line scales and have toothless tongue.

Biology & ecology: Predator looking upwards for prey.

Brown sabretooth *Evermannella balbo*



Family: 194. Evermannellidae (Sabretoothfishes)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: EVB



Distinguishing features: Eye directed laterally and upward. Snout pointed with gently curved anterior profile. Some large fang-like teeth in mouth. No teeth on tongue. No scales on lateral line or rest of body. Teeth-like gill rakers only on lower second arch. Pectoral fins low on body. Anal fin rays 33 to 37.

Colour: Head and body brownish with numerous variable size melanophores.

Size: To about 20 cm SL.

Length measurement method: Standard length

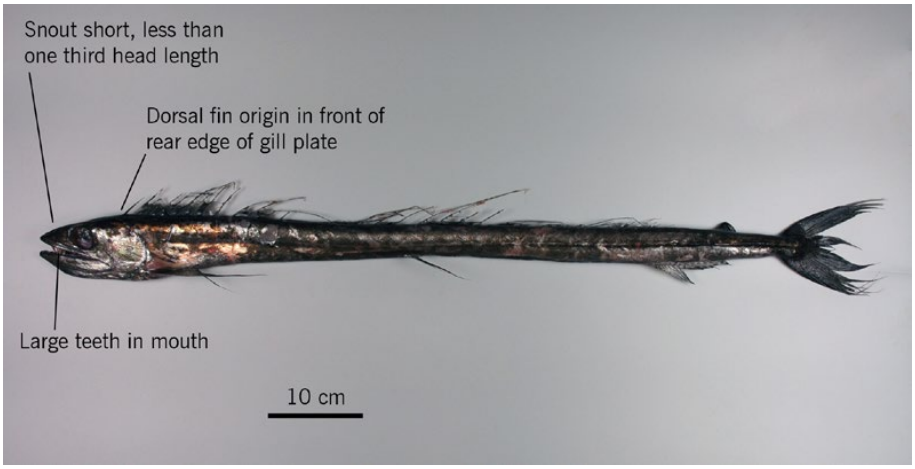
Distribution: Widespread in New Zealand from Challenger Plateau to Campbell Plateau. Widespread in southern hemisphere and North Atlantic Ocean.

Depth: About 800 to 1100 m.

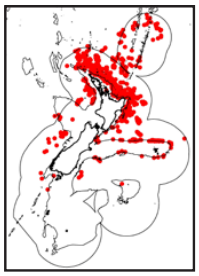
Similar species: Atlantic sabretooth (*Coccorella atlantica*) has blunt snout with a vertical anterior profile. Pearleyes (Scopelarchidae) have scaled lateral line and large teeth on tongue.

Biology & ecology: Oceanic, midwater, predator. Not known to migrate vertically in water column.

Shortsnout lancetfish *Alepisaurus brevirostris*



Family: 195. Alepisauridae (Lancetfishes)
Maori names:
Other names:
FishNZ reporting code: ABR
FishNZ research/observer code: ABR



Distinguishing features: Long slender body with large teeth in mouth, high sail-like dorsal fin, and long pectoral fins. Dorsal fin origin in front of rear edge of gill plate. Snout less than one-third of head length.

Colour: Body dark blue on dorsal surface, silvery-white below. Fins blue.

Size: To about 143 cm FL.

Length measurement method: Fork length

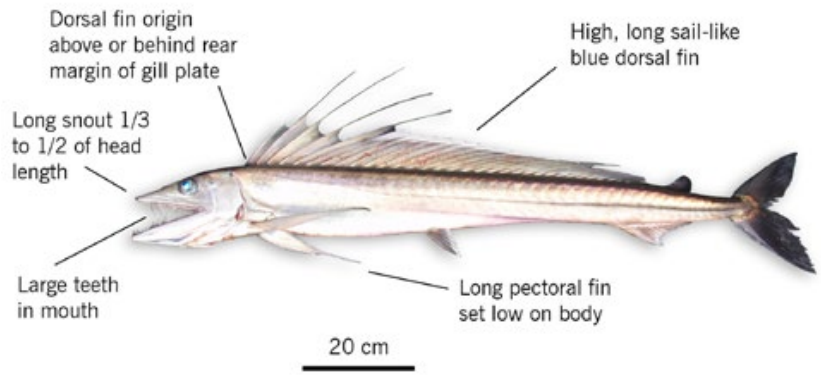
Distribution: Norfolk Ridge to off Canterbury (32 to 45 S) in New Zealand. Widespread in Atlantic and Pacific Oceans.

Depth: A few to 800 m.

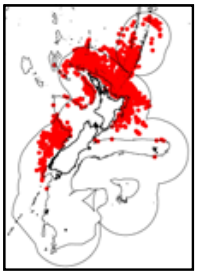
Similar species: Longsnout lancetfish (*Alepisaurus ferox*) specimens longer than about 50 cm FL have a relatively longer head and snout, and dorsal fin origin is above or behind rear margin of gill plate.

Biology & ecology: Oceanic and pelagic. Found beyond the 1000 m depth contour.

Longsnout lancetfish *Alepisaurus ferox*



Family: 195. Alepisauridae (Lancetfishes)
Maori names:
Other names:
FishNZ reporting code: LAT
FishNZ research/observer code: LAT



Distinguishing features: Long, slender, scaleless body with large teeth in mouth, high sail-like dorsal fin, and long pectoral fins. Dorsal fin origin behind rear edge of gill plate. Snout one-third to one-half of head length.

Colour: Body iridescent blue on dorsal surface and silvery-white below. Fins blue.

Size: To about 208 cm FL.

Length measurement method: Fork length

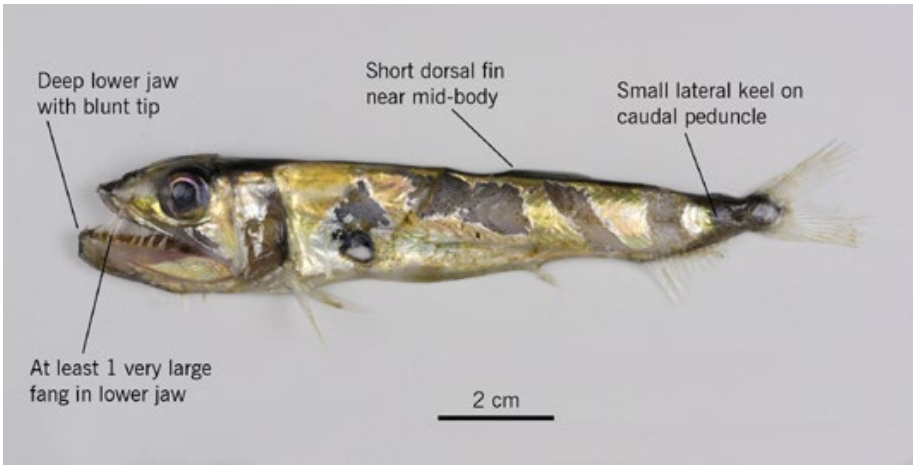
Distribution: Mostly recorded from northern New Zealand from Colville Ridge to Kaikoura. It is very likely that longline records include some shortsnout lancetfish (*Alepisaurus brevirostris*). Worldwide.

Depth: A few to 1000 m.

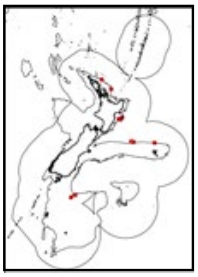
Similar species: Shortsnout lancetfish (*Alepisaurus brevirostris*) longer than about 50 cm FL have snout less than one-third head length, and the dorsal fin origin is in front of rear margin of gill plate.

Biology & ecology: Oceanic, pelagic. Found beyond 1000 m depth contour.

Hammerjaw *Omosudis lowii*



Family: 195a. Omosudidae (Hammerjaw)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: OMO



Distinguishing features: Lower jaw very deep and square at tip. Single short-based dorsal fin near middle of body. Small lateral keel on caudal peduncle above rear half of anal fin. Lower jaw with at least 1 very large fang and other variously sized but smaller fangs. 1 to 4 very large fangs on roof of mouth (palatine) in 1 row. No body or lateral line scales.

Colour: Iridescent brassy-silver on sides of head and body, dark upper body and caudal peduncle.

Size: To about 33 cm SL.

Length measurement method: Standard length

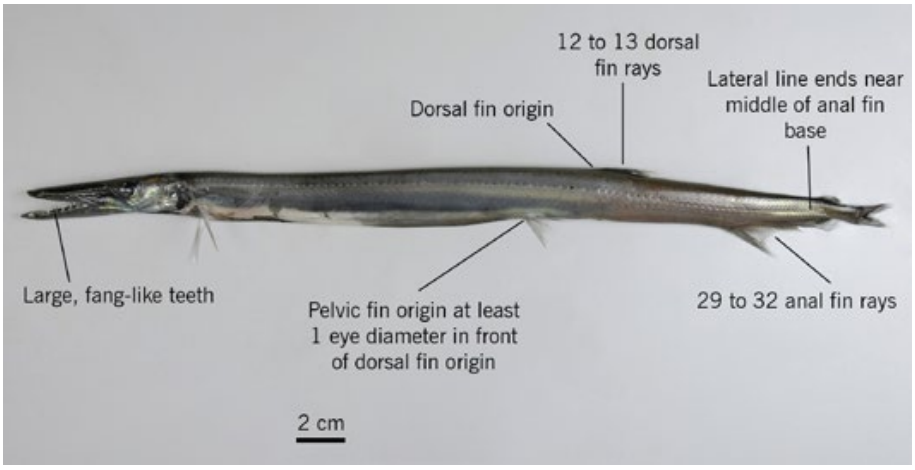
Distribution: From Norfolk Ridge to north Chatham Rise in New Zealand. Worldwide in tropical and temperate seas.

Depth: 30 to about 1800 m.

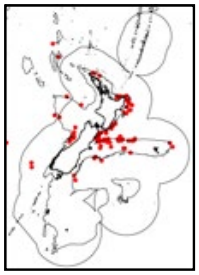
Similar species: Shortsnout and longsnout lancetfishes (*Alepisaurus brevirostris* and *A. ferox*) have very long-based dorsal fin and lower jaw is slender with pointed tip. Sabretooth fishes (Evermannellidae) have slender lower jaw, dorsal fin is in front of mid-body and lack lateral keel on caudal peduncle.

Biology & ecology: Midwater predator of fishes and squids. Capable of ingesting large prey. Synchronous hermaphrodites, i.e., each adult has functional male and females gonads.

Headband barracudina *Macroparalepis macrogeneion*



Family: 196 Paralepididae (Barracudinas)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: MMA



Distinguishing features: Pelvic fin origin at least 1 eye diameter in front of dorsal fin origin. 12 to 13 dorsal and 29 to 32 anal fin rays. No ventral adipose fin between pelvic fin base and origin of anal fin. Lateral line ends near middle of anal fin base. Large fang-like teeth in lower jaw.

Colour: Body bronze greyish-brown with iridescent sheen, darker dorsally. Side of head silvery.

Size: To about 53 cm SL.

Length measurement method: Standard length

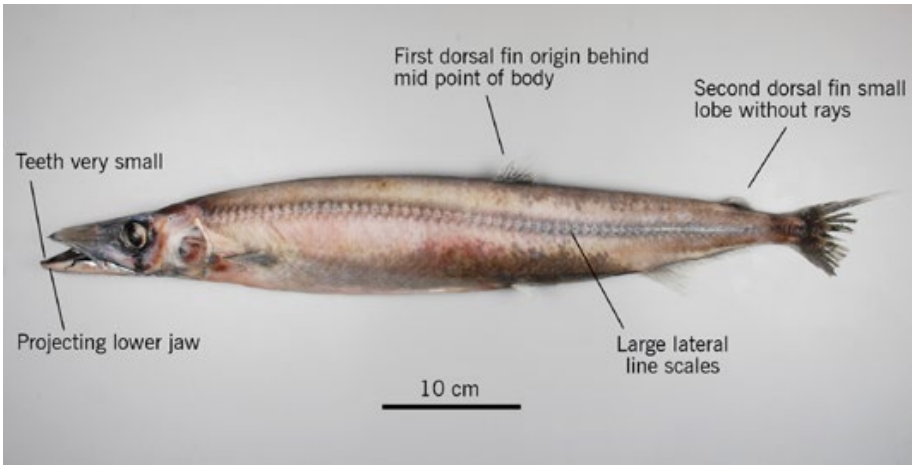
Distribution: Central and northern New Zealand from 29 to 48 S. Data plotted on the map includes only data from Te Papa and does not include any fisheries records. Widespread in southern hemisphere.

Depth: Near surface to about 1400 m.

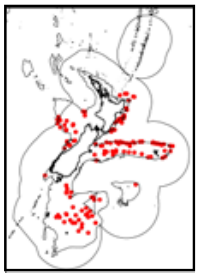
Similar species: *Macroparalepis longilateralis* is uncommon and has lateral line that ends at base of caudal fin. *Magnisudis prionosa* (**BCA**) has very small teeth and pelvic fin origin below dorsal fin base.

Biology & ecology: Midwater, migrates vertically in water column, rising towards the surface at night.

Giant barracudina *Magnisudis prionosa*



Family: 196. Paralepididae (Barracudinas)
Maori names:
Other names: Southern barracudina
FishNZ reporting code: BCA
FishNZ research/observer code: BCA



Distinguishing features: First dorsal fin origin behind mid-point of body. Second dorsal fin a small lobe-like fin without rays. Pelvic fin origin behind first dorsal fin origin. Large lateral line scales. Teeth very small.

Colour: Body violet-grey (when fresh), with silvery patches on head.

Size: To about 60 cm FL.

Length measurement method: Fork length

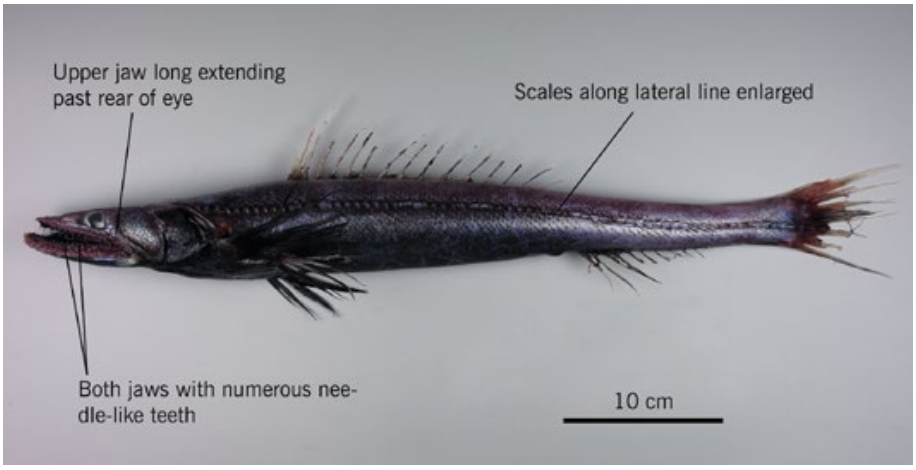
Distribution: Widespread in New Zealand from off Northland to Campbell Plateau. Widespread in southern hemisphere.

Depth: 500 to 1000 m.

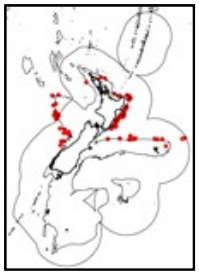
Similar species: Headband barracudina (*Macroparalepis macrogenion*) has pelvic fin origin at least 1 eye diameter in front of dorsal fin origin and has large fang-like teeth in lower jaw.

Biology & ecology: Probably midwater.

Deepsea lizardfish *Bathysaurus ferox*



Family: 197. Bathysauridae (Deepsea lizardfishes)
Maori names:
Other names:
FishNZ reporting code: BFE
FishNZ research/observer code: BFE



Distinguishing features: Upper and lower jaws with numerous needle-like depressible teeth. Large mouth with upper jaw extending back past rear of eye. Head flattened. Single dorsal fin. Scales along lateral line enlarged.

Colour: Head and body dark brownish-black. Fins dark, especially pectorals and pelvics.

Size: To about 75 cm TL.

Length measurement method: Total length

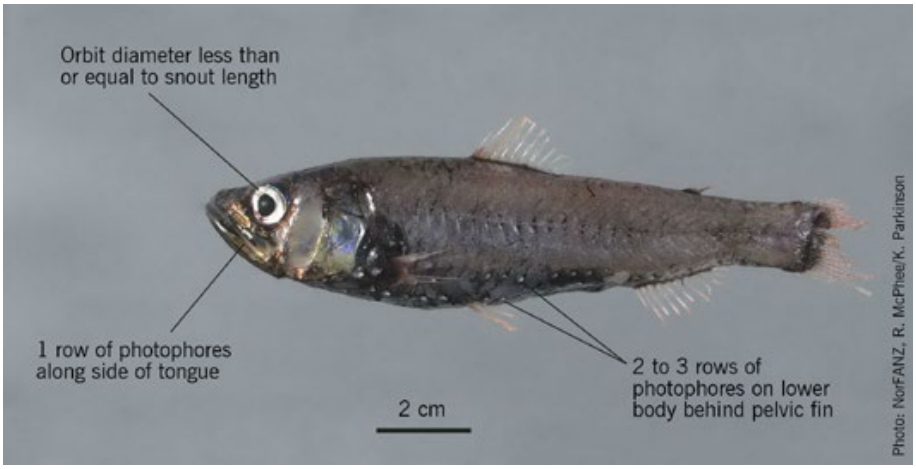
Distribution: Central and northern New Zealand. Southern Australia, North Atlantic Ocean and South Africa.

Depth: 1000 to 2600 m.

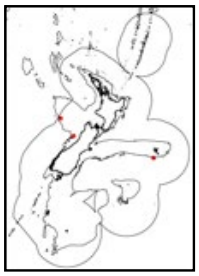
Similar species: Another species (*Bathysaurus mollis*) may be present in northern New Zealand but is caught at greater depths (1680 to 4900 m) and has an adipose fin. Deepsea flathead (*Hoplichthys haswelli*) occurs in shallower waters (300 to 800 m), has two dorsal fins, a wide spiny head, and a row of spiny scutes running along the side of the body.

Biology & ecology: Probably demersal 'sit and wait' predator, known to eat mainly fishes such as basketwork eel, rattails, and midwater fishes, plus crustaceans and squids. Meals are probably infrequent. Synchronous hermaphrodites with mature male and female gonads in same fish. Pelagic larva settle on seafloor at about 15 cm SL.

Largescale blackchin *Neoscopelus macrolepidotus*



Family: 199. Neoscopelidae (Blackchins)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: NML



Distinguishing features: Photophores around pectoral fin, in 1 mid-ventral and 2 lateral rows behind pelvic fin along lower third of body, and 1 row inside mouth along side of tongue. Uppermost lateral row of photophores ends before origin of anal fin base. Orbit diameter less than or equal to snout length. Outer jaw teeth small and fine, inner jaw teeth enlarged and depressible.

Colour: Body pinkish with silvery iridescent sides, blackish throat and belly. Sides of head silvery. Lower lip and lining of mouth blackish. Fins pink or reddish.

Size: To 27 cm SL.

Length measurement method: Standard length

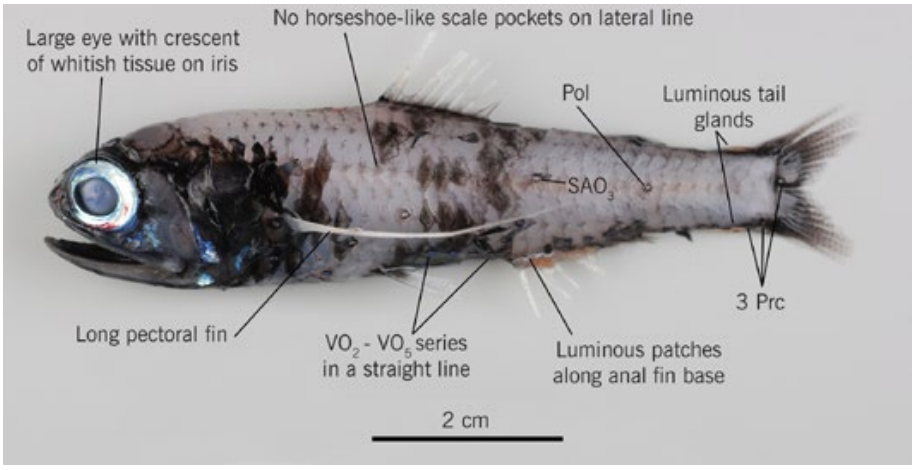
Distribution: Central and northern New Zealand from West Norfolk Ridge, northern North Island, Challenger Plateau, and off Chatham Island. Widespread in tropical and subtropical Atlantic, southwest and central Pacific Oceans, including Australia, Lord Howe and Norfolk Islands and New Caledonia.

Depth: 430 to 1020 m.

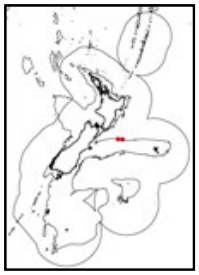
Similar species: Shortfin blackchin (*Neoscopelus microchir*), NMC, is probably more northern, rare and uppermost lateral row of photophores extends past end of anal fin base. Lanternfishes (Myctophidae) have orbit diameter greater than snout length, anal fin origin below dorsal fin.

Biology & ecology: Probably lives near seafloor.

Stubby lanternfish *Bolinichthys supralateralis*



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: BOS



Distinguishing features: Eye large with a whitish crescent on rear half of iris. Pectoral fin tip reaches past origin of anal fin. No horseshoe-like scale pockets on lateral line. 1 or 2 Pol and 3 Prc photophores. Pol and 3rd Prc at or just above lateral line. Luminous patches along anal fin base. VLO well below lateral line. VO to VO in a straight horizontal line. Scale-like upper and lower luminous caudal glands, without a black border, in both sexes.

Colour: Blackish or dark brownish head, body and fins, with blue irridescence on intact scales. Whitish eye iris.

Size: To about 11 cm SL.

Length measurement method: Standard length

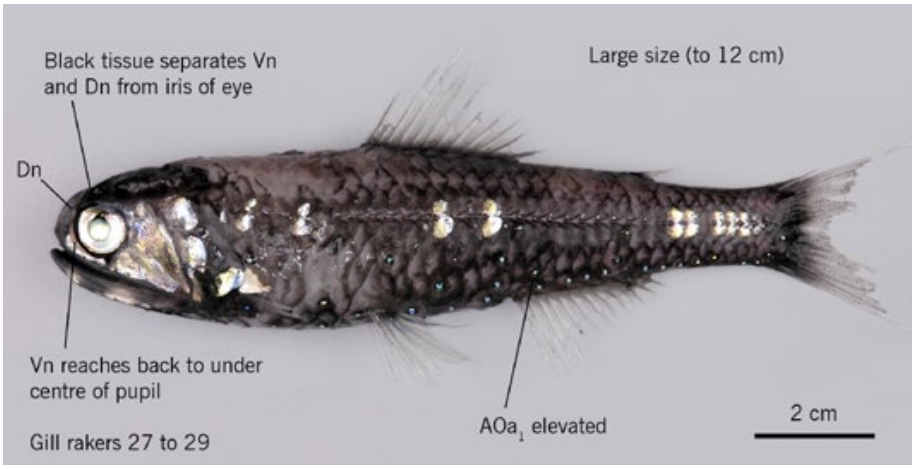
Distribution: Northern and central New Zealand from 33 to 43 S, including Chatham Rise. Tropical and subtropical Atlantic, Indian, and South Pacific Oceans.

Depth: Midwater, depths not known.

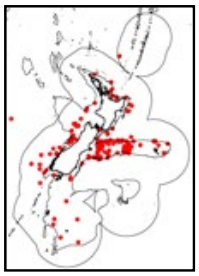
Similar species: Three other species of *Bolinichthys* species are recorded from northern New Zealand, north of about 35 S, but all have a VO photophore which is elevated so that VO to VO series does not form a straight horizontal line.

Biology & ecology: Not known.

Dana lanternfish *Diaphus danae*



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: DDA



Distinguishing features: Dn and Vn photophores present, but separated from eyes by black tissue. Vn photophore very large, extends posteriorly to under centre of pupil. No So photophore. No luminous caudal glands. AOa elevated, 27 to 29 gill rakers.

Colour: Dark brownish or purplish body and dorsal head. Side of head, iris of eye, and intact scales silvery-gold. Pupil of eye pale yellowish.

Size: To about 12 cm SL.

Length measurement method: Standard length

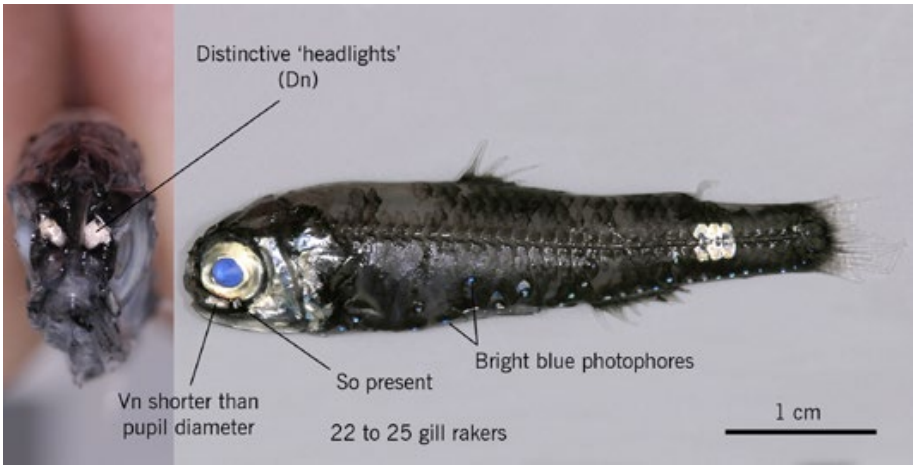
Distribution: Widespread in New Zealand from 31 to 55 S. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Southeast Indian and southwest Pacific Oceans including Tasman Sea.

Depth: Midwater, depths not known.

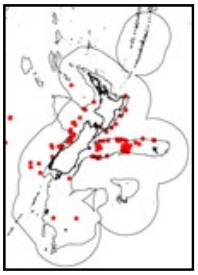
Similar species: There are 23 Diaphus species (DIA) known from New Zealand. Dana lanternfish (*Diaphus danae*) has a distinctive Vn which extends to under centre of pupil, moderate head depth, and high gill raker count. Headlight lanternfish (*D. effulgens*, **DEF**) reaches 14 cm SL but has very large 'headlights' (Dn photophores) and 17 to 20 gill rakers. Flathead lanternfish (*D. perspicillatus*, **DPE**) reaches 14 cm SL but Vn does not reach centre of pupil.

Biology & ecology: Not known.

Hudson's lanternfish *Diaphus hudsoni*



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: DHU



Distinguishing features: Dn and Vn photophores present, but Vn shorter than pupil diameter. Distinctive 'headlights' (round Dn photophores) on front of head. So photophore present. No luminous caudal glands. Bright blue photophores on body. AOa not elevated, 22 to 25 gill rakers.

Colour: Dark brownish-black body and dorsal head. Side of head, and intact scales silvery-pale yellow. Iris pale yellow.

Size: To about 8 cm SL.

Length measurement method: Standard length

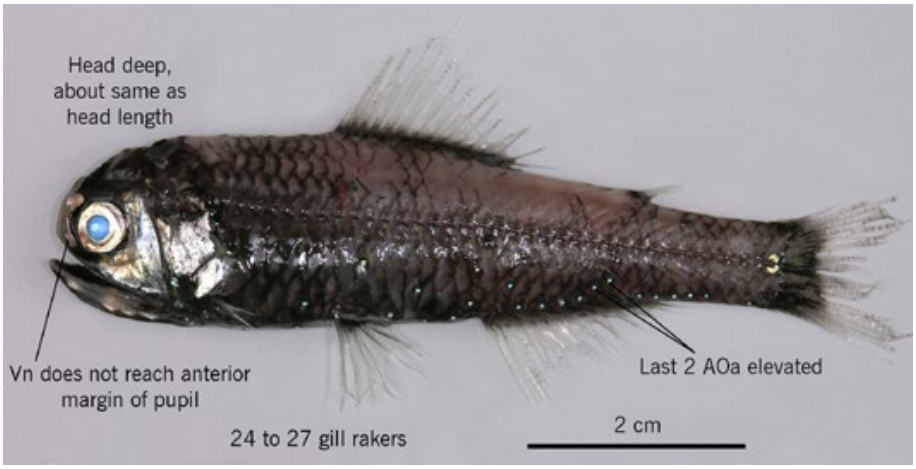
Distribution: Widespread in New Zealand from 35 to 52 S. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Subtropical South Atlantic and South Pacific Oceans, including Tasman Sea.

Depth: Midwater, depths not known.

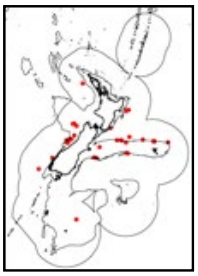
Similar species: There are 23 *Diaphus* species (**DIA**) known from New Zealand. Eight have So photophores but 3 are found north of North Island and only 2 have similar gill raker counts. *D. suborbitalis* (**DSB**) occurs near Kermadec Islands and *D. metopoclampus* (**DME**) has a deep head. *D. termophilus* (**DTE**) has a similar gill raker count, large Vn under eye, but no So photophore.

Biology & ecology: Not known.

Ostenfeld's lanternfish *Diaphus ostenfeldi*



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: DOE



Distinguishing features: Head deep, about same as head length. Dn and Vn photophores present, but Vn photophore does not reach anterior margin of pupil. So photophore absent. No luminous caudal glands. Last two AOa elevated, 24 to 27 gill rakers.

Colour: Dark brownish-black body and dorsal head. Side of head, and intact scales silvery-pale yellow. Iris pale yellow.

Size: To about 12 cm SL.

Length measurement method: Standard length

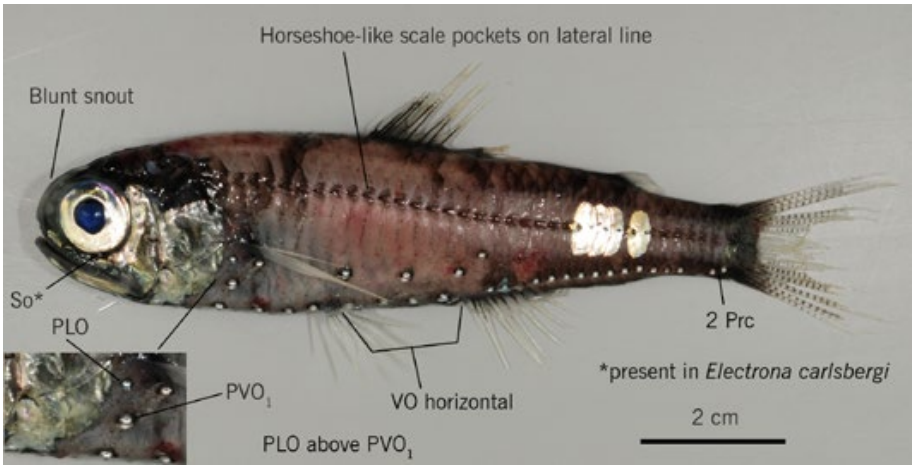
Distribution: Widespread in New Zealand from 35 to 52 S. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Subtropical and subantarctic South Atlantic and South Paciific Oceans, including Tasman Sea.

Depth: Midwater, depths not known.

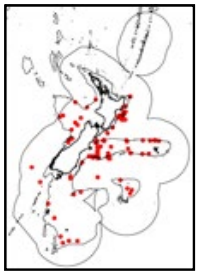
Similar species: There are 23 Diaphus species (DIA) known from New Zealand. *Diaphus metopoclampus* (**DME**) also has a deep head but Vn photophore extends posteriorly to under centre of pupil and last two AOa are not elevated.

Biology & ecology: Not known.

Electrona lanternfishes *Electrona* spp.



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: ELT



Distinguishing features: Horseshoe-like scale pockets along lateral line. AO photophores numerous (10 to 22) and in a continuous series with none elevated. 2 Prc, no Pol, PLO below level of pectoral fin base and almost above PVO. No luminous tail glands.

Colour: Depends on species. Scale pockets of lateral line dark brownish-black. Side of head and scales (when present) silvery.

Size: Smallest species (*Electrona paucirastra*) to about 7 and largest (*E. subaspera*) to 12 cm SL.

Length measurement method: Standard length

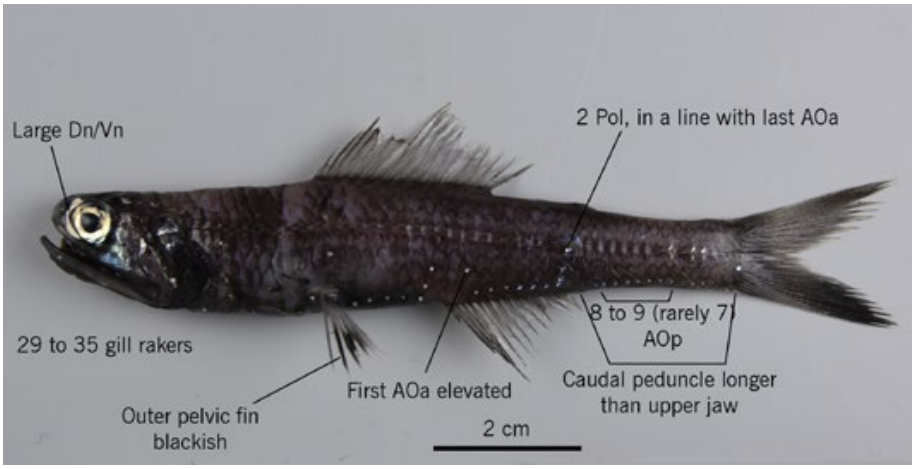
Distribution: Data plotted on map includes only Te Papa specimens of *Electrona carlsbergi* and does not include any fisheries records. In New Zealand *Electrona carlsbergi* (42 to 55 S), *E. paucirastra* (38 to 55 S) and *E. subaspera* (44 to 55 S) are from central and south, and *E. risso* is mostly north (28 to 47 S) of subtropical convergence. All 4 species are widespread in southern hemisphere but *Electrona risso* is also recorded from Hawaii and Mediterrean Sea.

Depth: Midwater, depths not known.

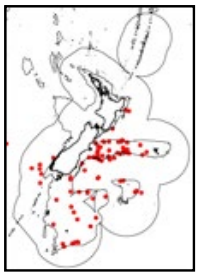
Similar species: There are 4 species of *Electrona* in New Zealand but only *E. carlsbergi* (**ELC**), see image above, has a distinctive, small So photophore under middle of eye. *Electrona paucirastra* (**EPA**) has PO5 elevated and VLO is midway between lateral line and pelvic fin base. *E. risso* (**ERI**) has body depth greater than head length, and SAO photophores are evenly spaced in a line. *E. subaspera* (**ESU**) has the 2 Prc photophores only separated by about one photophore diameter.

Biology & ecology: Not known.

Southern blacktip lanternfish *Gymnoscopelus piabilis*



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: GYP



Distinguishing features: Outer half of pelvic fin blackish. First AOa highly elevated. Caudal peduncle longer than upper jaw. 2 Pol on a sub-vertical line with last AOa. 5 Prc. Adipose fin base short. 8 to 9 (rarely 7) AOp. No luminous upper and lower tail glands. 29 to 35 gill rakers.

Colour: Scaleless body and top of head brownish-purple. Side of head and scales silvery-blue. Iris of eye pale gold. Outer half of pelvic fin and upper and lower tips of caudal fin blackish.

Size: To about 15 cm SL.

Length measurement method: Standard length

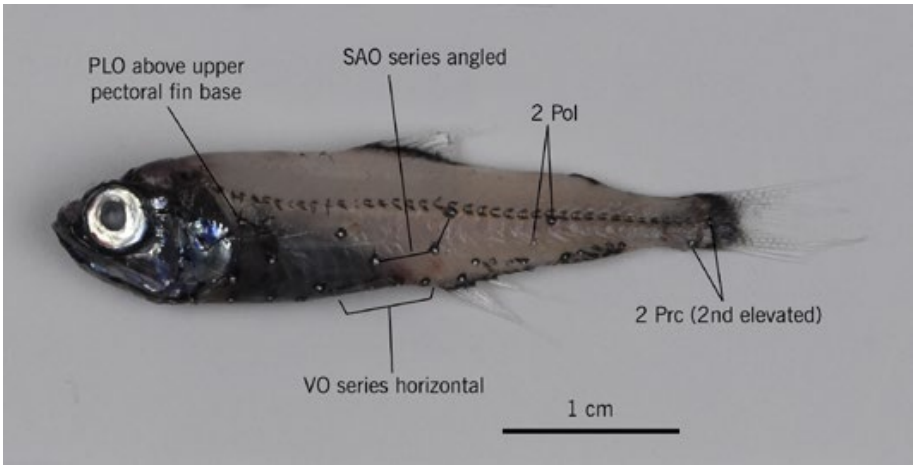
Distribution: Central and southern New Zealand from 38 to 55 S. Data plotted on the map includes only Te Papa specimens and does not include any fisheries records. Circumglobal but patchy in the southern hemisphere Atlantic and Pacific Oceans and Tasman Sea between the subtropical and Antarctic convergence.

Depth: Midwater, depths not known.

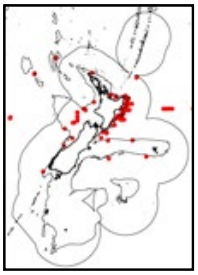
Similar species: There are 4 other species of *Gymnoscopelus* (**GYM**) in New Zealand and all lack the black tipped pelvic fin. *Gymnoscopelus bolini* (**GYB**) has upper PVO level with pectoral fin base and reaches 24 cm SL. *G. microlampus* (**GYI**) has 7 (rarely 8) AOp photophores, and caudal peduncle is shorter than or equal to upper jaw length. *G. fraseri* (**GYF**) and *G. hintonoides* (**GYH**) are relatively uncommon.

Biology & ecology: Not known.

Hygophum lanternfishes *Hygophum* spp.



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: HYG



Distinguishing features: Anal fin base longer than dorsal fin base. 2 Pol photophores and 2 Prc photophores, second elevated. SAO photophore series angled (not straight), VO photophores horizontal, PLO photophore above upper pectoral fin base. Supracaudal gland in males, infracaudal gland in females.

Colour: Undamaged condition unknown. Side of head silvery, iris of eye pale gold.

Size: To about 6.5 cm SL.

Length measurement method: Standard length

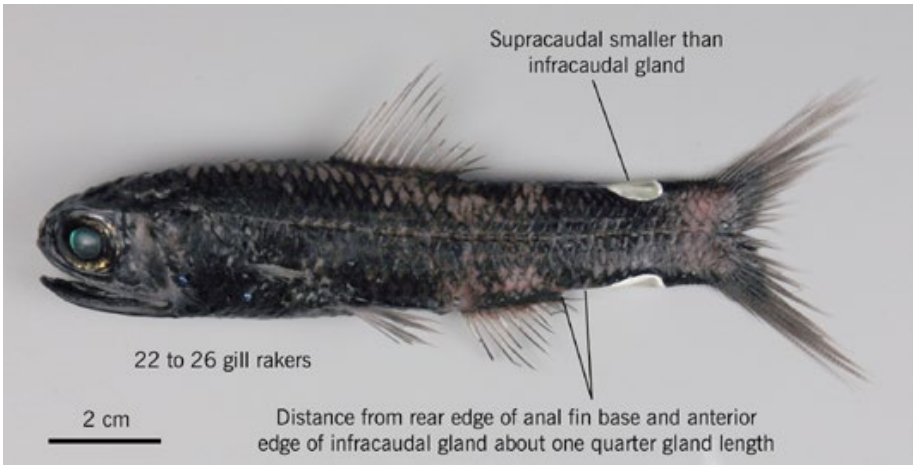
Distribution: Data plotted on the map includes only Te Papa specimens of *Hygophum hanseni* and does not include any fisheries records. *Hygophum hanseni* is known from 28 to 47 S, *H. hygomii* from 25 to 45 S, *H. proximum* from 28 to 42 S and *H. reinhardtii* from 26 to 38 S in New Zealand. *Hygophum hanseni* is confined to the southern hemisphere but the other 3 species also occur in the northern hemisphere.

Depth: Midwater, depths not known.

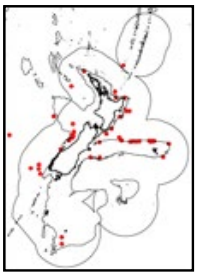
Similar species: There are 4 *Hygophum* species known from New Zealand. *Hygophum hanseni* (**HHN**) is illustrated above, but identification to species requires a microscope for this genus. *Myctophum* species (**MTP**) have one Pol and the SAO series are nearly straight. *Benthosema suborbitale* (**BSU**) has one Pol and a highly elevated VO. *Diogenichthys atlanticus* (**DAT**) has one Pol, the SAO series is straight or slightly curved, and the 2 Prc are widely spaced and horizontal (or Prc is slightly raised).

Biology & ecology: Not known.

Notal lanternfish *Lampadena notialis*



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: LNT



Distinguishing features: Relatively long infracaudal gland with distance between rear base of anal fin and anterior of gland about one quarter gland length. 22 to 26 gill rakers. Supracaudal shorter than infracaudal gland in both sexes. Dorsal fin base equal to or longer than anal fin base.

Colour: Head, body, and fins blackish or dark brownish. Iris of eye blackish with gold mottling. Supracaudal and infracaudal glands translucent whitish, bordered by black.

Size: To about 14 cm SL.

Length measurement method: Standard length

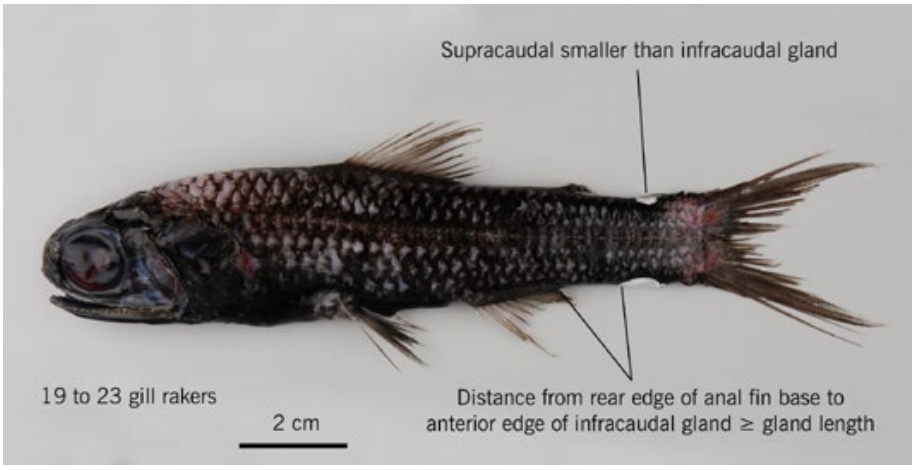
Distribution: Widespread in New Zealand from 30 to 55 S. Data plotted on the map includes only Te Papa specimens and does not include any fisheries records. Circumglobal in vicinity of subtropical convergence including Atlantic, Indian, Pacific Oceans and Tasman Sea.

Depth: Midwater, depths not known.

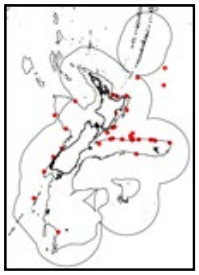
Similar species: *Lampadena speculigera* (**LSP**) has relatively short infracaudal gland separated from posterior end of anal fin base by distance equal to or greater than gland length, and fewer gill rakers (19 to 23). *Lampadena luminosa* and *L. urophaos* are rare in NZ and both have supracaudal gland equal to or slightly longer than infracaudal gland.

Biology & ecology: Not known.

Mirror lanternfish *Lampadena speculigera*



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: LSP



Distinguishing features: Relatively short infracaudal gland with distance between rear base of anal fin and anterior of gland equal to or slightly longer than gland length. 19 to 23 gill rakers. Supracaudal shorter than infracaudal gland in both sexes. Dorsal fin base equal to or longer than anal fin base.

Colour: Head, body, and fins blackish or dark brownish. Iris of eye blackish. Supracaudal and infracaudal glands translucent whitish, bordered by black.

Size: To about 15 cm SL.

Length measurement method: Standard length

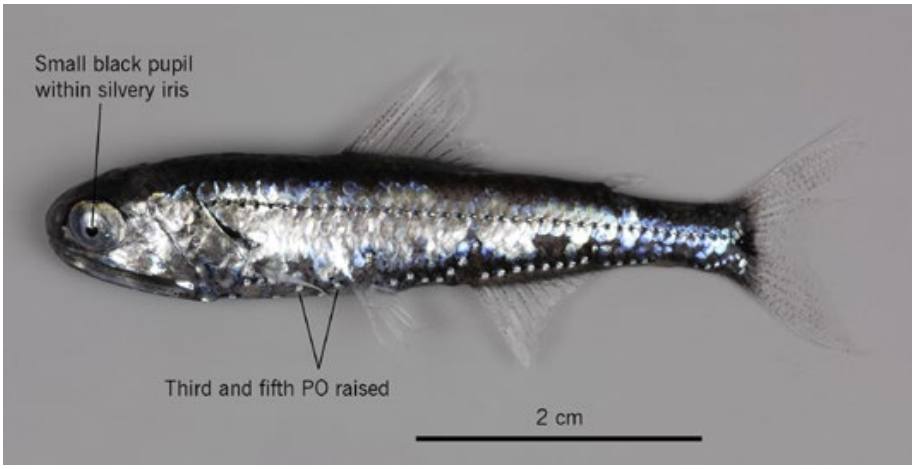
Distribution: Widespread in New Zealand from 28 to 55 S. Data plotted on the map includes only Te Papa specimens and does not include any fisheries records. North and South Atlantic, southern Indian and subtropical South Pacific Oceans, and Tasman Sea.

Depth: Midwater, depths not known.

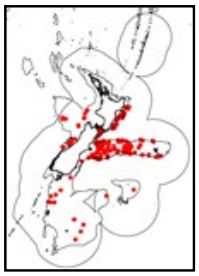
Similar species: *Lampadena notialis* (**LNT**) has relatively long infracaudal gland with distance between rear base of anal fin and anterior of gland about one quarter gland length. 22 to 26 gill rakers. *Lampadena luminosa* and *L. urophaos* are rare in NZ and both have supracaudal gland equal to or slightly longer than infracaudal gland.

Biology & ecology: Not known.

Hector's lanternfish *Lampanyctodes hectoris*



Family: 200. Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: LHE



Distinguishing features: Small central black pupil of eye surrounded by silvery iris. Third and fifth photophores in ventral body series between isthmus and pelvic fin origin raised above the others i.e., 1st , 2nd, and 4th photophores are lower and in a straight line. Eye diameter greater than snout length. Anal fin origin under or slightly behind rear of dorsal fin.

Colour: Upper body dark. Silvery scales (often lost) on sides of head and body. Body under scales dull brownish with scattered small melanophores. Fins mostly colourless with sparse small melanophores.

Size: To 7 cm SL.

Length measurement method: Standard length

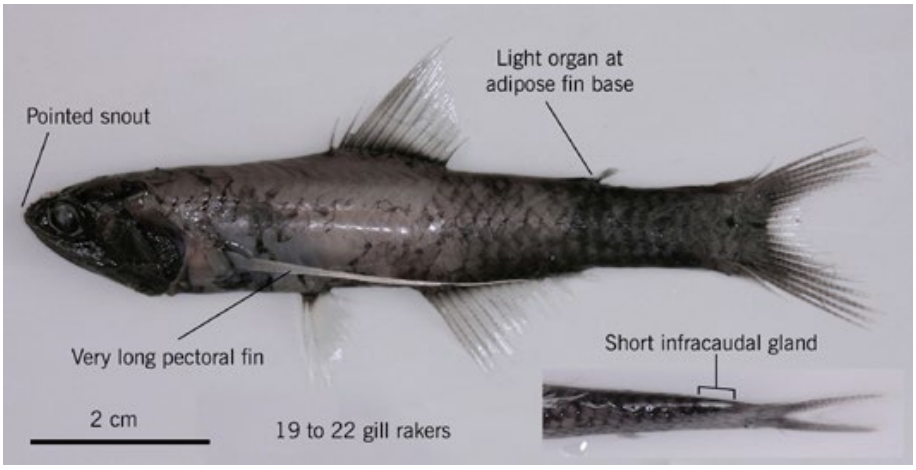
Distribution: Widespread in New Zealand from Kermadec Ridge to Campbell Plateau (30 to 52 S). Widespread in temperate and subantarctic southern hemisphere.

Depth: A few to 300 m.

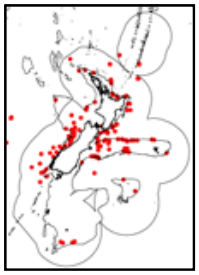
Similar species: Other lanternfishes lack the small central black pupil of the eye
surrounded by silvery iris.

Biology & ecology: Midwater, migrating from deep water during day to near surface at night above outer shelf and upper slope. Predator of planktonic crustaceans. Schooling species and can form very large aggregations. Probably an important food for range of marine predators.

Austral lanternfish *Lampanyctus australis*



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: LAU



Distinguishing features: Pectoral fin tip reaches rear base of anal fin. Infracaudal gland short (3 scales). 19 to 22 gill rakers and 13 to 15 pectoral fin rays. Lumious gland at adipose fin anterior base. Cheek photophores present. Supracaudal and infracaudal glands in both sexes. Secondary photophores prominent along body and on brachiostegal membranes. Dorsal fin base shorter than anal fin base.

Colour: Dark brownish or blackish head and body. Fins dusky. Iris of eye dark.

Size: To about 13 cm SL.

Length measurement method: Standard length

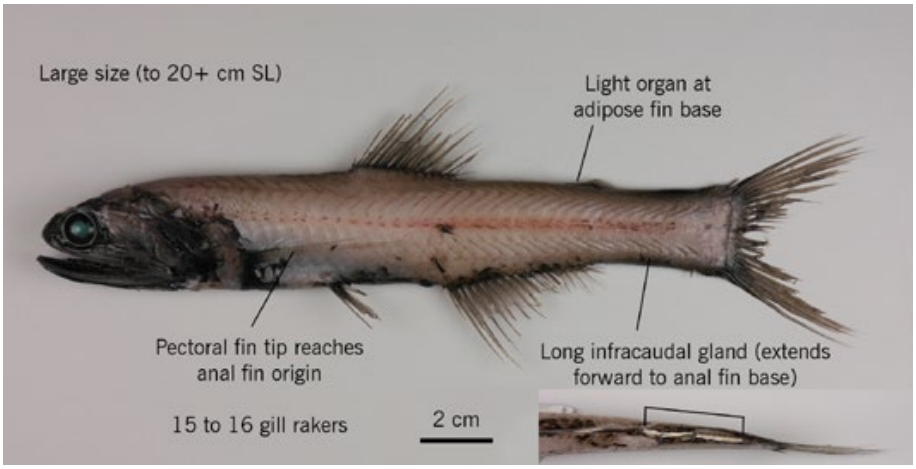
Distribution: Widespread in New Zealand from 28 to 55 S. Data plotted on the map includes only Te Papa specimens and does not include any fisheries records. Widespread in the southern hemisphere, associated with the subtropical convergence.

Depth: Midwater, depths not known.

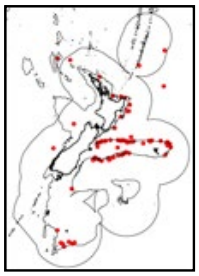
Similar species: There are 10 species of *Lampanyctus* in New Zealand. Most have long infracaudal glands but two uncommon species have short glands including *L. alatus* which has 12 to 14 gill rakers and 11 to 13 pectoral fin rays, is northern, and reaches about 6 cm SL. *L. pusillus* has 11 to 12 gill rakers, no luminous gland at adipose fin base and reaches about 4 cm SL.

Biology & ecology: Not known.

Intricate lanternfish *Lampanyctus intricarius*



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: LIT



Distinguishing features: Pectoral fin tip reaches anterior anal fin base. Infracaudal gland long (10 scales), along entire ventral caudal peduncle. 15 to 16 gill rakers. Luminous gland at adipose fin base. Cheek photophores present. Supracaudal and infracaudal glands in both sexes. Secondary photophores weakly developed and only along lateral line. Dorsal fin base shorter than anal fin base.

Colour: Dark brownish or blackish head and body. Fins dusky. Iris of eye dark.

Size: To about 20 cm SL.

Length measurement method: Standard length

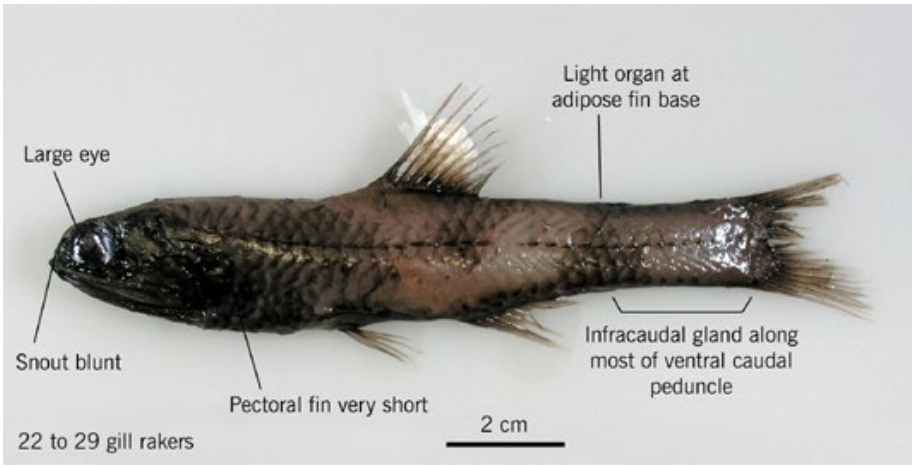
Distribution: Widespread in New Zealand from 28 to 55 S. Data plotted on the map includes only Te Papa specimens and does not include any fisheries records. Widespread in the subtropical to subantarctic southern hemisphere, and also from subtropical and subarctic North Atlantic.

Depth: Midwater, depths not known.

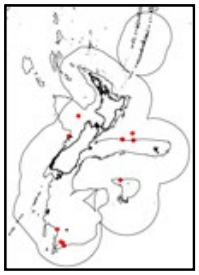
Similar species: There are 10 species of *Lampanyctus* in New Zealand waters. Other *Lampanyctus* species with a long infracaudal gland include *L. nobilis* and *L. tenuiformis* but both have fewer (13 to 14) gill rakers. *L. macdonaldi* (**LMD**) has short pectoral fin and 22 to 29 gill rakers. *L. lepidolychnus* (**LLP**) has small photophores, and a wide caudal peduncle (greater than head depth at centre of orbit).

Biology & ecology: Not known.

MacDonald's lanternfish *Lampanyctus macdonaldi*



Family: 200 Myctophidae (Lanternfishes)
Maori names: n.a.
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: LMD



Distinguishing features: Pectoral fin very short, tip does not reach anal fin origin. Infracaudal gland long (7 to 9 scales), along most of ventral caudal peduncle. 22 to 29 gill rakers. Eye large and snout blunt and short. Luminous gland at adipose fin base weakly developed and easily lost. 2 cheek photophores. Supracaudal and infracaudal glands in both sexes. Dorsal fin base shorter than anal fin base.

Colour: Dark brownish head and body. Fins dusky. Iris of eye dark.

Size: To about 13 cm SL

Length measurement method: Standard length

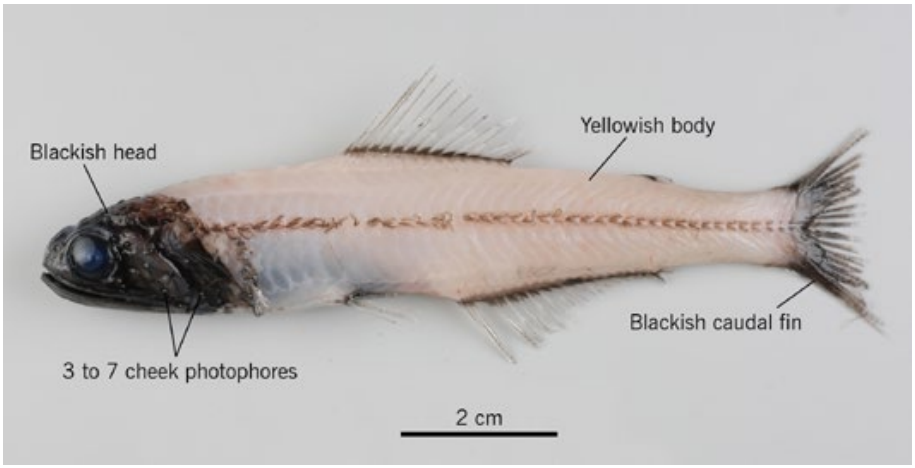
Distribution: Central and southern New Zealand from 40 to 55 S. Data plotted on the map includes only Te Papa specimens and does not include any fisheries records. North and South Atlantic Ocean and subtropical to subantarctic in the South Pacific Ocean and Tasman Sea.

Depth: Midwater, depths not known.

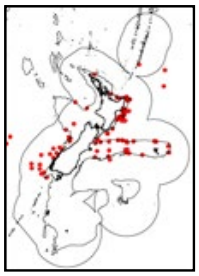
Similar species: There are 10 species of *Lampanyctus* in New Zealand but no other species has the combination of blunt snout, large eye, short pectoral fin, and high gill raker count (22 to 29).

Biology & ecology: Not known.

Blackhead lanternfish *Lampichthys procerus*



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: LPR



Distinguishing features: Blackish head and caudal fin, body pale yellowish (often denuded of scales and photophores during capture). Concave dorsal head and nape profile. 3 to 7 cheek photophores, 19 to 20 gill rakers.

Colour: Blackish head and caudal fin, yellowish body (scales, skin, and photophores lost).

Size: To about 9 cm SL.

Length measurement method: Standard length

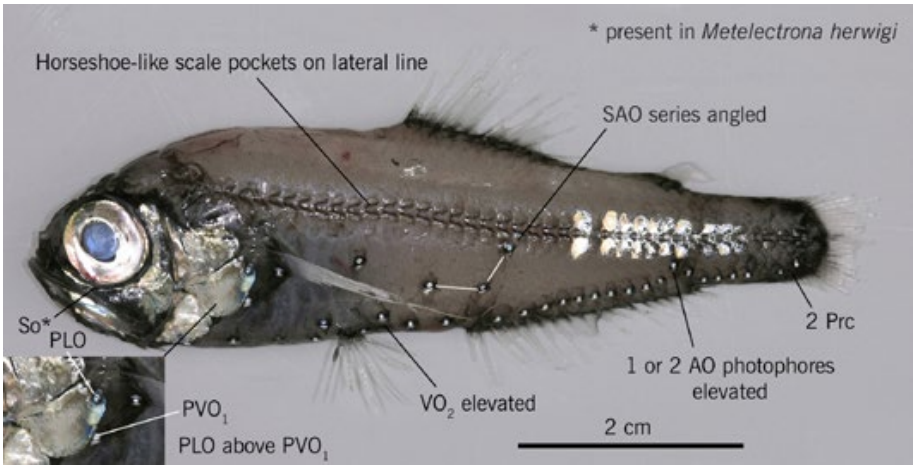
Distribution: Widespread in central and northern New Zealand from 33 to 48 S. Data plotted on the map includes only Te Papa specimens and does not include any fisheries records. Widespread in and north of the subtropical convergence in South Atlantic and South Pacific Ocean and Tasman Sea.

Depth: Midwater, depths not known.

Similar species: Distinctive elongate body form with a blackish head and tail, and yellowish body.

Biology & ecology: Not known.

Metelectrona lanternfishes *Metelectrona* spp.



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: MET

Distinguishing features: AO photophores continuous from anal fin origin to posterior caudal peduncle, 1 or 2 elevated near posterior anal fin base. 2 Prc, no Pol, PLO below level of pectoral fin base and almost directly above PVO, VO elevated. SAO photophores in angled line. Horseshoe-like scale pockets along lateral line. No luminous tail glands.

Colour: Pale brownish body and dorsal head. Brownish lateral line scale pockets. Side of head, intact scales, and iris of eye silvery.

Size: *Metelectrona herwigi* to about 6 cm SL and *M. ventralis* to about 3 cm SL.

Length measurement method: Standard length

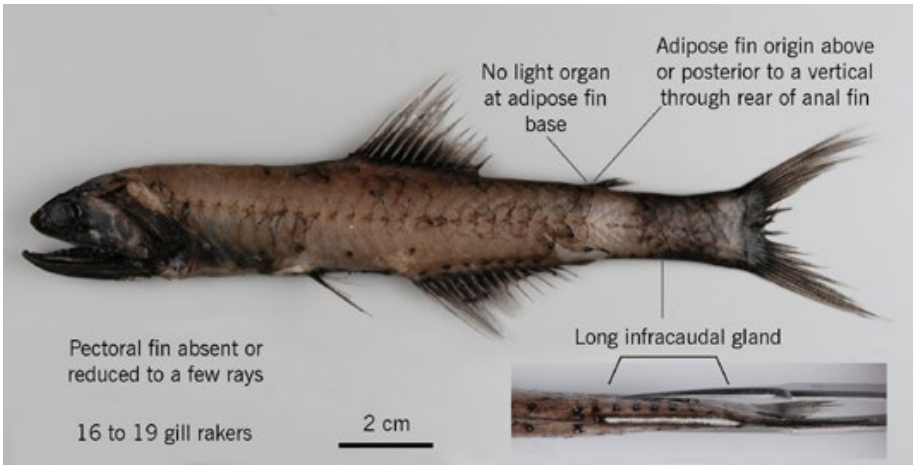
Distribution: Data plotted on the map includes only Te Papa specimens of *Metelectrona ventralis* and does not include any fisheries records. *Metelectrona herwigi* from 44 to 54 S and *M. ventralis* from 38 to 47 S in the New Zealand region. Both species associated with the subtropical convergence in the South Atlantic and South Pacific Oceans and Tasman Sea.

Depth: Midwater, depths not known.

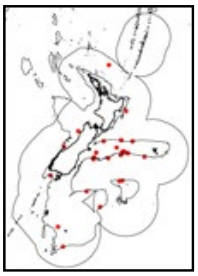
Similar species: *Metelectrona herwigi* (**MHE**) has a small So photophore under the eye and 21 to 23 gill rakers and *M. ventralis* (**MVE**), see image above, lacks a So photophore and has 23 to 26 gill rakers.

Biology & ecology: Not known.

Cripplefin lanternfish *Nannobrachium achirus*



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: LAC



Distinguishing features: Pectoral fin absent or reduced to a few filamentous rays. Adipose fin origin above or posterior to a vertical through rear of anal fin. Infracaudal gland long, along entire ventral caudal peduncle. 16 to 19 gill rakers. Dorsal fin base shorter than anal fin base. Supracaudal infracaudal glands in both sexes. No cheek photophores, secondary photophores, or luminous gland at adipose fin base.

Colour: Dark brownish head and body. Fins dusky. Iris of eye dark.

Size: To about 15 cm SL.

Length measurement method: Standard length

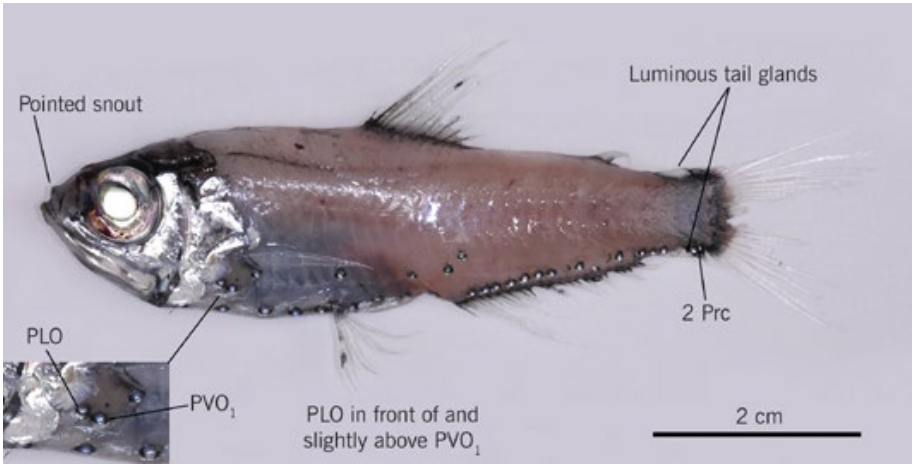
Distribution: Widespread in New Zealand from 33 to 54 S but mostly from subantarctic. Data plotted on the map includes only Te Papa specimens and does not include any fisheries records. Circumglobal in southern hemisphere subantarctic.

Depth: Midwater, depths not known.

Similar species: *Nannobrachium atrum* has very short pectoral fin, adipose fin origin is anterior to vertical through rear of anal fin, and infracaudal gland does not cover entire ventral caudal peduncle, with anterior end short of anal fin base.

Biology & ecology: Not known.

Protomyctophum lanternfishes *Protomyctophum* spp.



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names:
FishNZ reporting code: LAN
FishNZ research/observer code: PRO

Distinguishing features: Snout pointed, eye large. Anal fin base longer than dorsal fin base. AO photophores continuous from anal fin origin to posterior caudal peduncle. 2 Prc, no Pol. PLO in front of and slightly above PVO. No horseshoe-like scale pockets along lateral line. Luminous tail glands present.

Colour: Undamaged condition unknown. Side of head and iris of eye silvery.

Size: To about 8 cm SL.

Length measurement method: Standard length

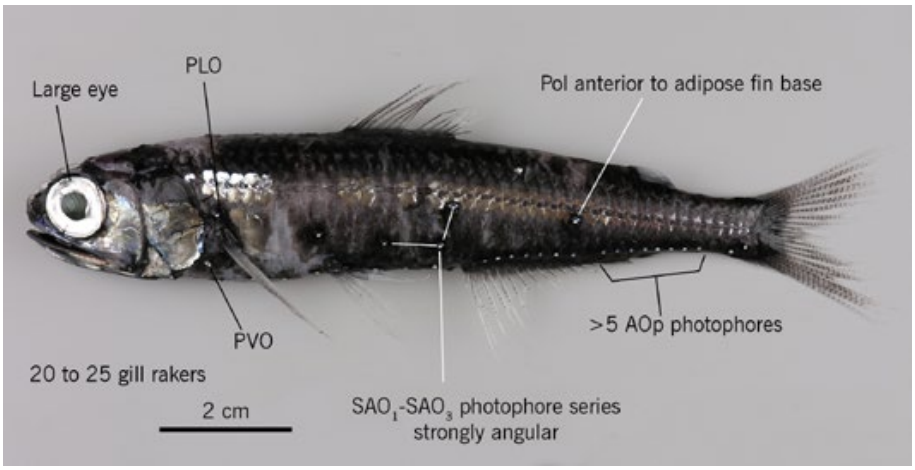
Distribution: Depends on species. At least 6 species known from central New Zealand.

Depth: Midwater, depths not known.

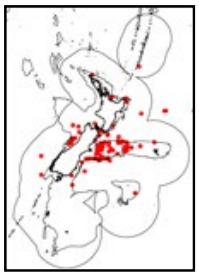
Similar species: There are several *Protomyctophum* species in New Zealand and identification to species requires a microscope. Specimens are fragile and usually missing scales and some photophores. *Electrona* (**ELC**) and *Metelectrona* (**MET**) have a more rounded head and the PLO is above the PVO photophore.

Biology & ecology: Not known.

Bogue lanternfish *Symbolophorus boops*



Family: 200 Myctophidae (Lanternfishes)
Maori names:
Other names: Spotfin lanternfish
FishNZ reporting code: LAN
FishNZ research/observer code: SBP



Distinguishing features: Eye large, diameter greater than PLO to PVO distance. Pol anterior to adipose fin base. More than 5 AOp photophores. 20 to 25 (usually 22 to 25) gill rakers. Line of SAO photophores strongly angled. Supracaudal gland present in males and infracaudal gland present in females. Anal fin base longer than dorsal fin base. Lateral line well developed.

Colour: Uniform dark brownish body and dorsal head (scales lost). Intact scales and side of head silvery. Iris of eye whitish.

Size: To about 16 cm SL.

Length measurement method: Standard length

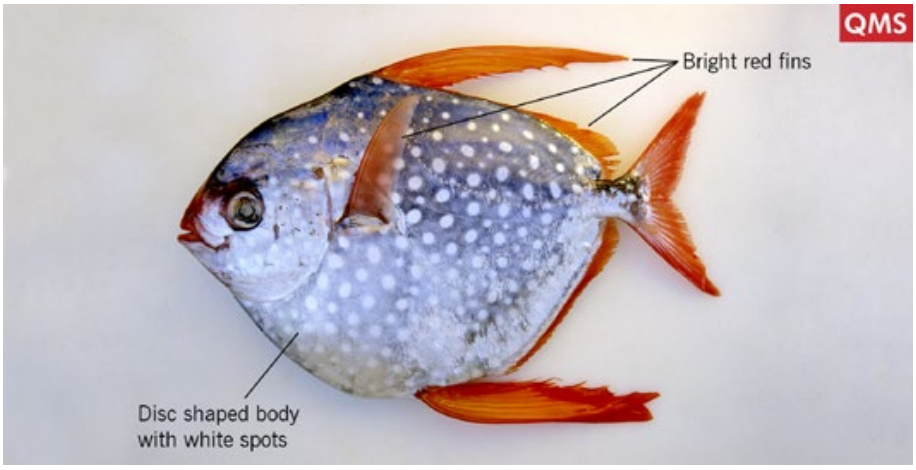
Distribution: From 33 to 48 S in New Zealand. Data plotted on the map includes only Te Papa specimens and does not include any fisheries records. Associated with subtropical convergence in South Atlantic, Indian, and South Pacific Oceans, and Tasman Sea.

Depth: Midwater, depths not known.

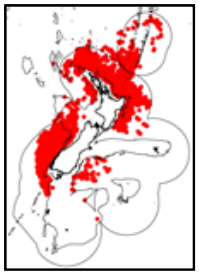
Similar species: *Symbolophorus barnardi* has 17 to 20 gill rakers and a smaller eye with diameter equal to or slightly greater than PLO to PVO distance. *S. evermanni* is rare, northern, has Pol photophore under adipose fin base and 5 or fewer AOp photophores.

Biology & ecology: Not known.

Moonfish *Lampris guttatus*



Family: 202. Lampridae (Opahs)
Maori names:
Other names:
FishNZ reporting code: MOO
FishNZ research/observer code: MOO



Distinguishing features: Disc-shaped with bright red fins and pink, blue, or purple body covered in white spots.

Colour: Bright red fins. Pink, blue, or purple body covered in white spots.

Size: To about 150 cm FL in New Zealand, reaches 200 cm FL.

Length measurement method: Fork length

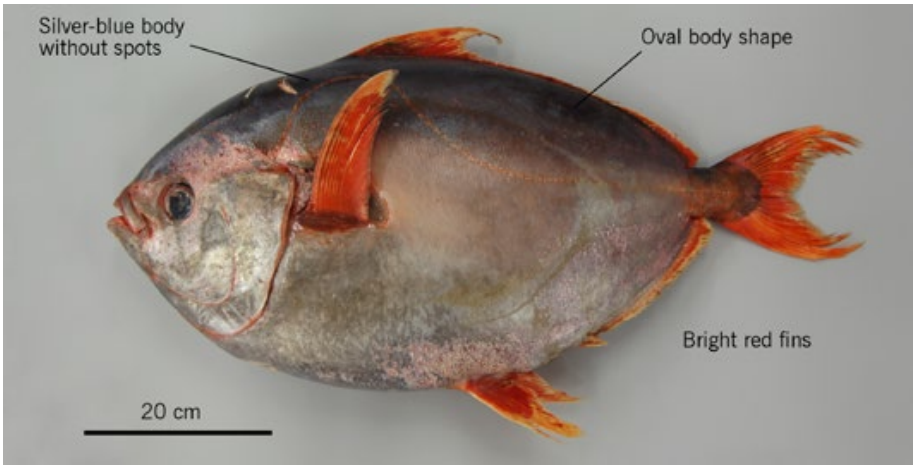
Distribution: Widespread in New Zealand from Kermadec Ridge to Snares Island shelf. Tropical and temperate waters of all major oceans.

Depth: Near surface to about 500 m.

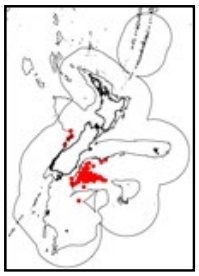
Similar species: Opah (*Lampris immaculatus*) is more elongate and lacks spots.

Biology & ecology: Pelagic.

Opah *Lampris immaculatus*



Family: 202. Lampridae (Opahs)
Maori names:
Other names: Southern opah
FishNZ reporting code: PAH
FishNZ research/observer code: PAH



Distinguishing features: Oval, dark, silver-blue body lacking spots, and upright bright red fins.

Colour: Body, without spots, dark silver-blue. Fins bright red.

Size: To about 142 cm FL.

Length measurement method: Fork length

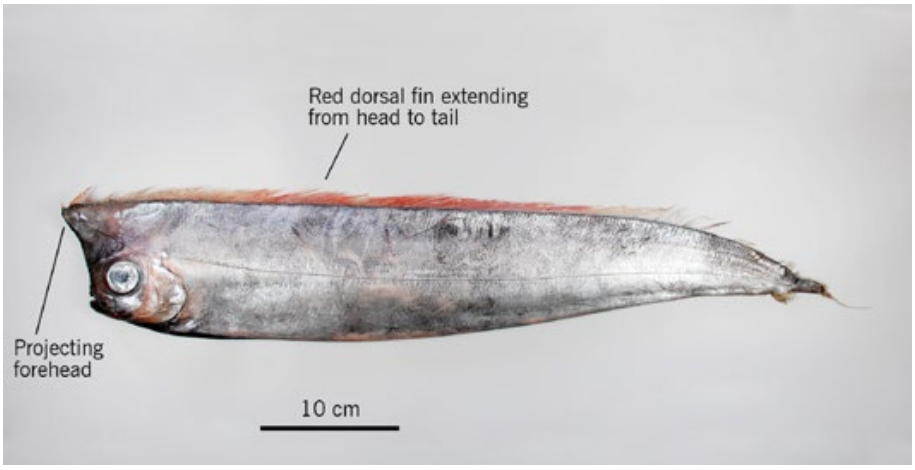
Distribution: Widespread in New Zealand, most records from south of subtropical convergence. Widespread in temperate waters of southern hemisphere south from about 37 to 70 S. Early fisheries records probably include mis-identifications of opah as moonfish.

Depth: Surface to about 500 m.

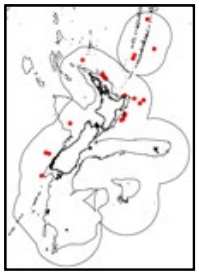
Similar species: Moonfish (*L. guttatus*) has pink, blue, or purple body covered in white spots.

Biology & ecology: Pelagic, oceanic. Feed on krill, fishes and squids with a preference for squids and myctophids.

Unicornfish *Lophotus capellei*



Family: 204. Lophotidae (Crestfishes)
Maori names:
Other names:
FishNZ reporting code: LCA
FishNZ research/observer code: LCA



Distinguishing features: Elongate laterally flattened body. Head with upright crest on projecting forehead. Dorsal fin extends from head to tail. No pelvic fin and small anal fin.

Colour: Body silvery with bright red crest and dorsal fin.

Size: To about 200 cm TL.

Length measurement method: Total length

Distribution: Recorded subtropical convergence north in New Zealand from Puysegar to Kermadec Ridge. Widespread in tropical to warm temperate oceans of world

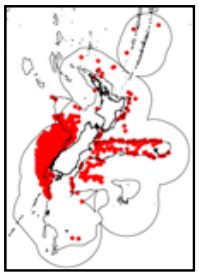
Depth: Near surface to about 500 m.

Similar species: Dealfish (*Trachipterus trachypterus*) and scalloped dealfish (*Zu elongatus*) lack an upright crest on a projecting forehead.

Biology & ecology: Rare in New Zealand waters. Midwater.

Dealfish *Trachipterus trachypterus*

Family: 206. Trachipteridae (Dealfishes)
Maori names:
Other names: Peregrin dealfish
FishNZ reporting code: DEA
FishNZ research/observer code: DEA



Distinguishing features: Elongate silvery-sided body with red dorsal and caudal fins. Head length about same as body depth in adults. Anal fin absent. Pelvic fin reduced or lost in adults. Scales absent except for lateral line scales that are tubular and bear sharp spines.

Colour: Head and body silvery, but dull brownish if skin missing. Fins crimson-red. Small specimens have 4 or 5 large black spots on body.

Size: To about 3 m TL.

Length measurement method: Total length

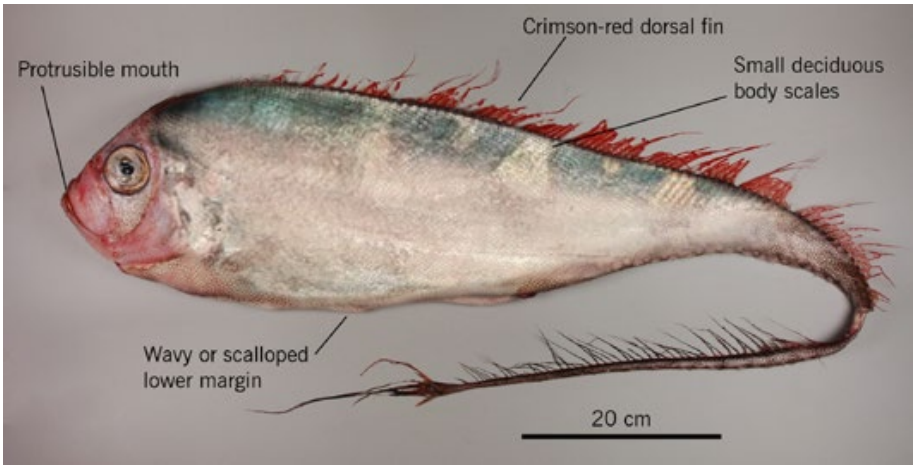
Distribution: Widespread in New Zealand. Mediteranean, east Atlantic, off South Africa, Japan, Australia.

Depth: Near surface to 1200 m. Captured on tuna longlines at less than 200 m and by trawlers down to about 1000 m in NZ waters.

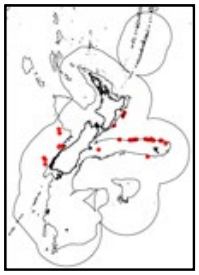
Similar species: Oarfish (*Regalecus glesne*) has black spots and blotches on sides of body and grows to much larger size (about 8 m). Scalloped dealfish (*Zu elongatus*) has scalloped (undulating) ventral body margin between pelvic fin bases and vent.

Biology & ecology: Unknown. Oceanic, probably lives in midwater. Juveniles sometimes strand.

Scalloped dealfish *Zu elongatus*



Family: 206. Trachipteridae (Dealfishes)
Maori names:
Other names: Taper-tail ribbonfish
FishNZ reporting code: UNI
FishNZ research/observer code: ZEL



Distinguishing features: Elongate, compressed, silvery body with scalloped (undulating) ventral surface between pelvic fin bases and vent. Protrusible mouth. Skin soft.

Colour: Body silvery, may have faint dark broad vertical bands (undamaged skin) on back, and red dorsal fin.

Size: To about 140 cm TL.

Length measurement method: Total length

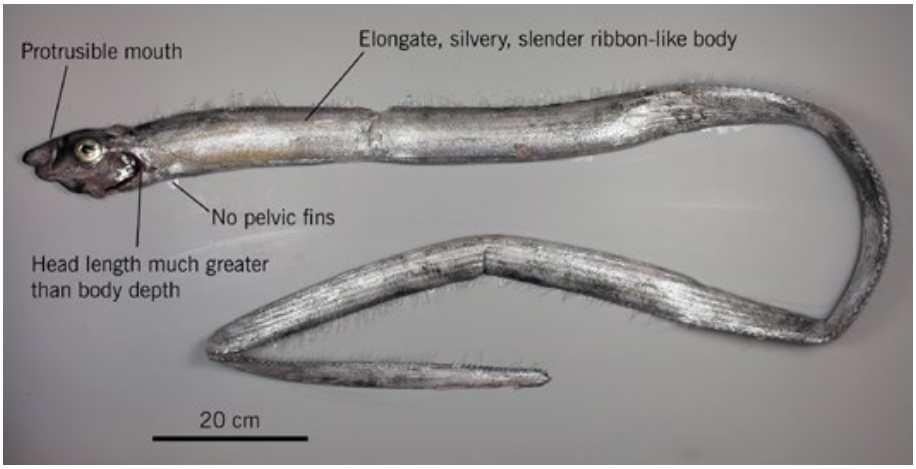
Distribution: Off Northland and southern Lord Howe Rise to Chatham Rise in New Zealand. Eastern Atlantic and Pacific from South Africa to Japan and New Zealand.

Depth: A few to about 1200 m.

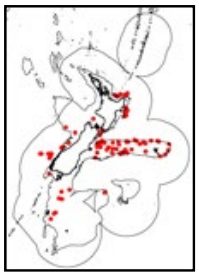
Similar species: Dealfish (*Trachipterus trachypterus*) do not have scalloped ventral margin between pelvic fin bases and vent.

Biology & ecology: Midwater, Oceanic. Uncommon.

Ribbonfish *Agrostichthys parkeri*



Family: 207. Regalecidae (Oarfishes)
Maori names:
Other names:
FishNZ reporting code: AGR
FishNZ research/observer code: AGR



Distinguishing features: Elongate silvery slender ribbon-like body. Protrusible upper jaw. Head length much greater than body depth. Head profile angled, not steep. No anal fin or pelvic fins. Scales absent except for tubular lateral-line scales.

Colour: Body silvery.

Size: To about 300 cm TL.

Length measurement method: Total length

Distribution: Widespread in New Zealand south of about 39 S. Possibly circumglobal in southern hemisphere.

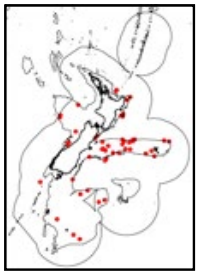
Depth: Not known. Captured at 500 to 1200 m by trawl net in NZ waters.

Similar species: Oarfish (*Regalecus glesne*) has black spots and blotches on sides of body, very steep (almost vertical) head profile, and grows to much larger size (about 8 m TL).

Biology & ecology: Little known. Probably lives in midwater and may swim with body oriented vertically.

Oarfish *Regalecus glesne*

Family: 207. Regalecidae (Oarfishes)
Maori names:
Other names:
FishNZ reporting code: OAR
FishNZ research/observer code: OAR



Distinguishing features: Elongate silvery body with black spots and blotches, fins crimson-red. First 8 to 10 dorsal fin rays and single pelvic fin ray extremely elongate. Head profile very steep, almost vertical. Protrusible upper jaw. No anal fin. Scales absent except for tubular lateral-line scales.

Colour: Body silvery with black spots and blotches. Elongate dorsal fin rays and single pelvic fin ray crimson-red.

Size: To about 8 m.

Length measurement method: Total length

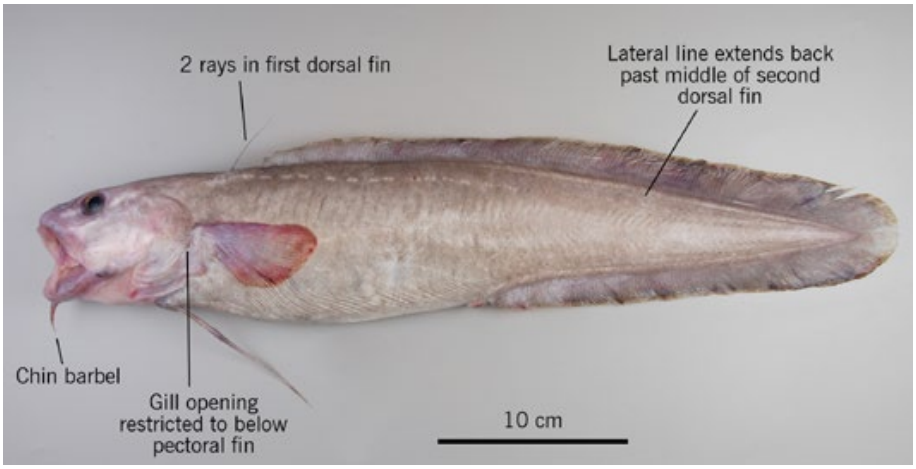
Distribution: Widespread in New Zealand region from Kermadec Islands to off Canterbury including Chatham Rise. Worldwide in all tropical and temperate oceans.

Depth: Not known. Observed live offshore near surface.

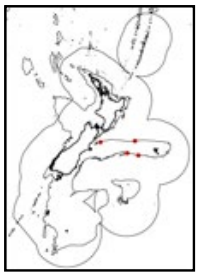
Similar species: Ribbonfish (*Agrostichthys parkeri*) lacks black spots and blotches on the body and lacks crimson-red elongated first dorsal fin rays and pelvic fin ray.

Biology & ecology: Largely unknown. Oceanic and probably lives in midwater. They swim with body oriented vertically, head up, propelled by undulation of dorsal fin.

Eel cod *Muraenolepis orangiensis*



Family: 212. Muraenolepididae (Eel cods)
Maori names:
Other names: Moray cod
FishNZ reporting code: MRL
FishNZ research/observer code: MWO



Distinguishing features: 2 rays (first small) in first dorsal fin. Long second dorsal and anal fins confluent with caudal fin. Chin barbel present. Lateral line composed of irregular series of tubed scales or pores (18 to 27) ending posterior to middle of second dorsal fin. Gill openings restricted to below pectoral fin base. Small scales embedded in skin with paving-stone pattern.

Colour: Dull reddish-brown body and head.

Size: To about 52 cm TL.

Length measurement method: Total length

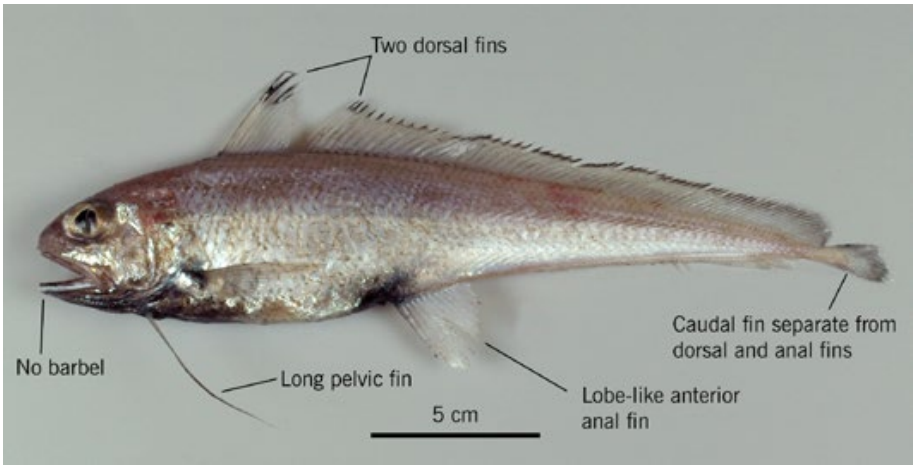
Distribution: Recorded from Chatham Rise, south in New Zealand. Widespread in the southern hemisphere.

Depth: 850 to 1300 m.

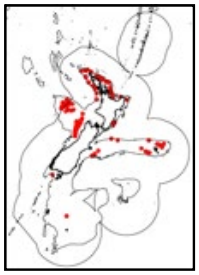
Similar species: Uncertainty about identity of New Zealand specimens, because of confused taxonomy. The Antarctic *Muraenolepis evseenkoi* has very short lateral line with only 2 tubed scales (pores) just behind head. Eelpouts (Zoarcidae) lack chin barbel, have a single long dorsal fin, and round, non-overlapping scales (when present). Snailfishes (Liparidae) also lack chin barbel and have a small distinct tail fin.

Biology & ecology: Demersal predator.

Eucla cod *Euclichthys polynemus*



Family: 214. Euclichthyidae (Eucla cods)
Maori names:
Other names:
FishNZ reporting code: EUC
FishNZ research/observer code: EUC



Distinguishing features: Two dorsal fins, first short and high, second long, extending back to, but separate from, small caudal fin. Dorsal caudal fin rays shorter than ventral rays. Anal fin with big anterior lobe followed by long low portion that extends back to but is separate from caudal fin. Long pelvic fin with 4 rays. No chin barbel.

Colour: Body pale with dull upper surface but silvery lower half. Blackish underside of head, chest, and around anus. Tip of first dorsal fin black, with narrow black margin along anterior part of second dorsal fin.

Size: To about 35 cm TL.

Length measurement method: Total length

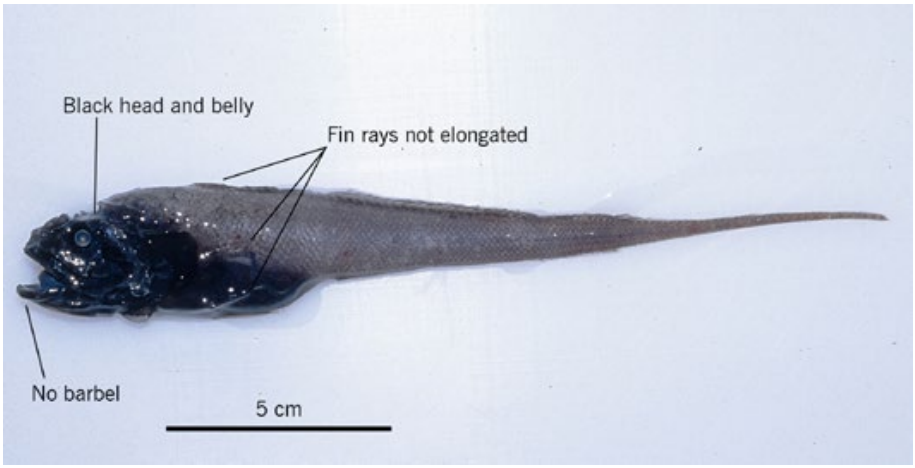
Distribution: Central and northern New Zealand from Northland to Chatham Rise. Records from the Campbell Plateau and deep water on Chatham Rise are probably erroneous. Western and southern Australia.

Depth: 250 to 800 m.

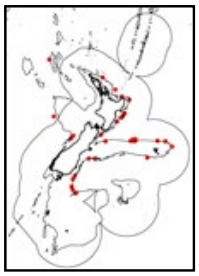
Similar species: Morids (deepsea cods) lack lobe-like anterior part of anal fin and very long four-rayed pelvic fin.

Biology & ecology: Unknown. Probably demersal. Never abundant.

Codhead rattail *Bathygadus cottoides*



Family: 215a. Bathygadidae (Codhead rattails)
Maori names:
Other names:
FishNZ reporting code: BAC
FishNZ research/observer code: BAC



Distinguishing features: Small, to less than 30 cm TL with very soft body and delicate small fin rays. Body brown but head and belly dark brown-black. No chin barbel and first dorsal, pectoral, and pelvic fins lack greatly elongated rays.

Colour: Body and fins brown but head and belly dark brown-black.

Size: To about 23 cm TL.

Length measurement method: Total length

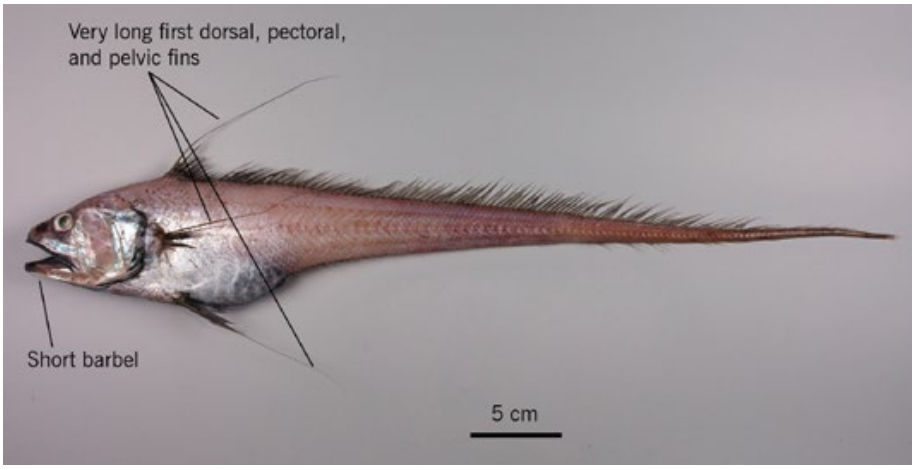
Distribution: Northern and central New Zealand from Kermadec, Colville and West Norfolk Ridges, east coast of North Island, Chatham Rise and Challenger Plateau. Southern Australia, subtropical and tropical Atlantic Ocean including South Africa.

Depth: About 950 to 1500 m.

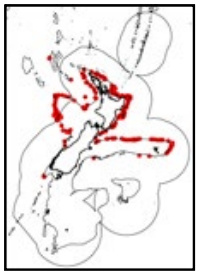
Similar species: *Bathygadus* cf. *spongiceps* has pale brownish body with silvery sides of head, and is large, rare, and reaches about 50 cm TL. Other macrouroids lack combination of small adult size, dark body colouration, no chin barbel, and no elongated rays in first dorsal, pectoral and anal fins. *Melanonus* spp. have single dorsal fin, and well developed teeth in upper and lower jaws.

Biology & ecology: Probably demersal. May be relatively common at specific depths in some areas, but are probably not retained in nets with large mesh size.

Filamentous rattail *Gadomus aoteanus*



Family: 215a. Bathygadidae (Codhead rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: GAO



Distinguishing features: Very long rays in first dorsal, pectoral, and pelvic fins. Second dorsal fin rays longer than rays in anal fin. Short chin barbel.

Colour: Sides of head and body pale silvery but brownish where skin was rubbed off. First dorsal, second dorsal, pectoral and pelvic fins dark/dusky.

Size: To about 40 cm TL.

Length measurement method: Total length

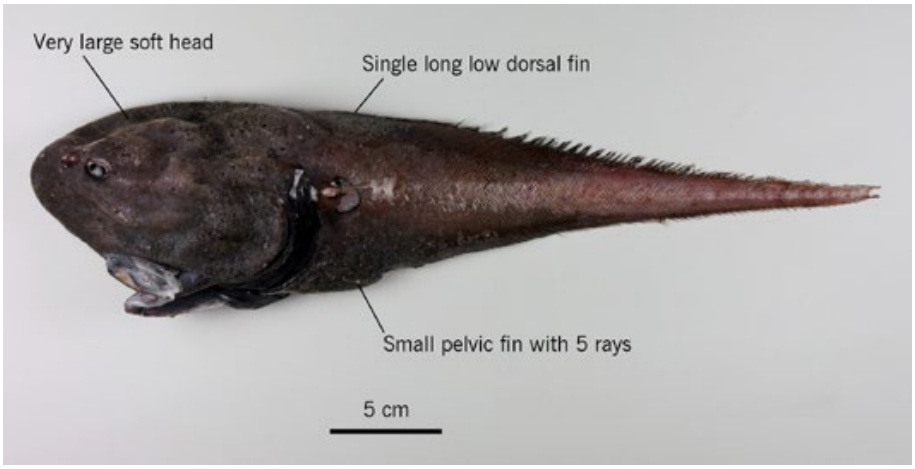
Distribution: Known only from New Zealand including central and northern areas, Lord Howe Rise, West Norfolk, Colville, and Kermadec Ridges.

Depth: 950 to 1400 m.

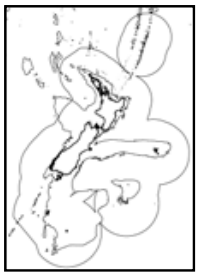
Similar species: Other macrouroid species lack elongated rays in first dorsal, pectoral, and pelvic fins, pale soft body with deciduous scales and low ridges on head. *Bathygadus* species lack a barbel.

Biology & ecology: Unknown. Probably demersal.

Balloonhead rattail *Squalogadus modificatus*



Family: 215b. Macrouroididae (Balloonhead rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: SQM



Distinguishing features: Very large soft head with rounded contours, and small eyes. One continuous dorsal fin lacking short high anterior section. Pelvic fins small with 5 or 6 rays.

Colour: Overall dark brownish-black.

Size: To about 36 cm TL.

Length measurement method: Total length

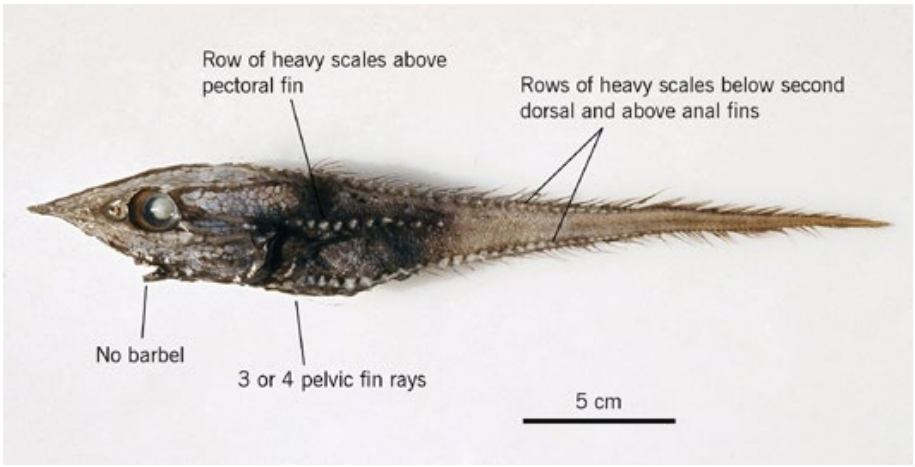
Distribution: Central and northern New Zealand from Colville Ridge to north Chatham Rise. Widespread in tropical and temperate seas except east and central North Pacific Ocean.

Depth: 600 to 1740 m.

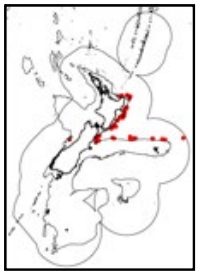
Similar species: *Cetonurus* species have a separate, high first dorsal fin and an eye diameter about equal to length of lower jaw. *Macrouroides inflaticeps* is not recorded from New Zealand but lacks pelvic fins.

Biology & ecology: Demersal.

Pineapple rattail *Idiolophorhynchus andriashevi*



Family: 215c. Trachyrincidae (Rough rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: PIN



Distinguishing features: Rows of enlarged scutes along bases of dorsal and anal fins, and above pectoral fin. Long pointed snout. Pelvic fin small with 3 or 4 rays. No chin barbel.

Colour: Head and body brownish-black. All fins blackish.

Size: To about 30 cm TL.

Length measurement method: Total length

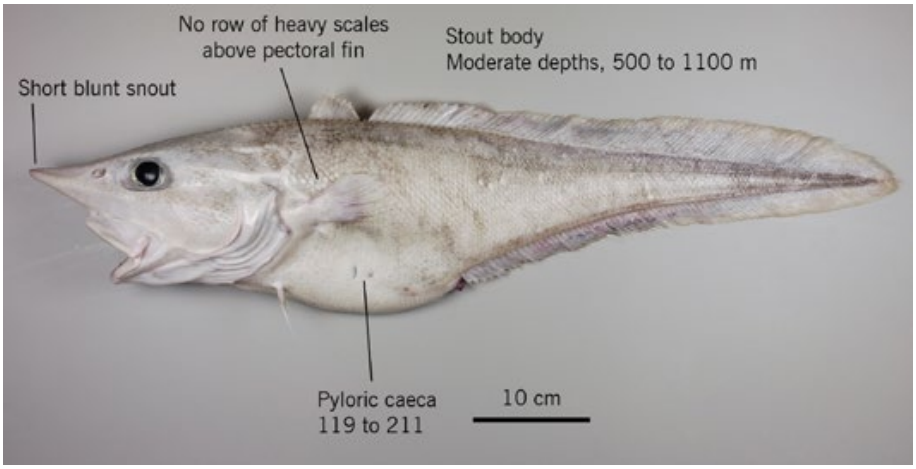
Distribution: Central and northern New Zealand from Bay of Plenty to off Canterbury including north Chatham Rise. Southwest Australia.

Depth: 1000 to 1800 m.

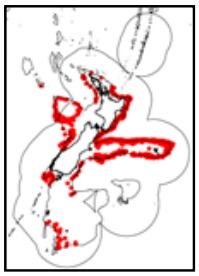
Similar species: White rattail (*Trachyrincus aphyodes*) and unicorn rattail (*T. longirostris*) both lack horizontal line of scutes above pectoral fin and both have 7 pelvic fin rays.

Biology & ecology: Unknown. Demersal.

White rattail *Trachyrincus aphyodes*



Family: 215c. Trachyrincidae (Rough rattails)
Maori names:
Other names:
FishNZ reporting code: WHX
FishNZ research/observer code: WHX



Distinguishing features: Rows of enlarged scutes along bases of dorsal and anal fins, no row above pectoral fin. Pit present on upper-rear head (temporal pit). Long pointed snout. Pelvic fin with 7 rays. Small chin barbel present. 119 to 211 pyloric caeca. Deep bodied with 3 to 4 rows of scales between lateral line and dorsal scutes.

Colour: Body pale cream. Fins pale to dusky, darker in small individuals. Prominent white pores on ventral midline before mouth.

Size: To about 96 cm TL.

Length measurement method: Total length

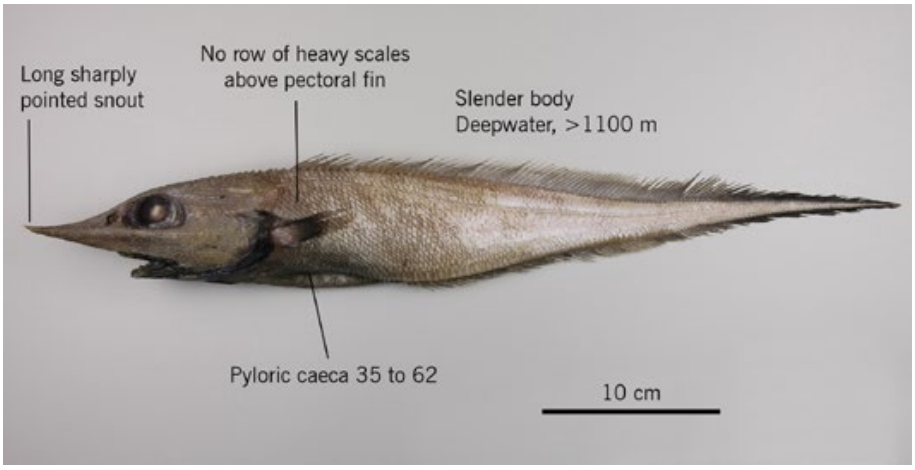
Distribution: Widespread and known only from New Zealand from off Northland to Campbell Plateau.

Depth: 700 to 1150 m.

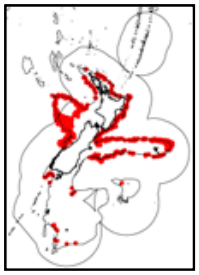
Similar species: Unicorn rattail (*Trachyrincus longirostris*) has fewer pyloric caeca (35 to 62), 2 to 3 rows of scales between lateral line and dorsal scutes, is smaller and more elongate, and usually deeper living.

Biology & ecology: Demersal.

Unicorn rattail *Trachyrincus longirostris*



Family: 215c. Trachyrincidae (Rough rattails)
Maori names:
Other names:
FishNZ reporting code: WHR
FishNZ research/observer code: WHR



Distinguishing features: Rows of enlarged scutes along bases of dorsal and anal fins, no row above pectoral fin. Pit present on upper-rear head (temporal pit). Long pointed snout. Pelvic fin with 6 to 7 rays. Small chin barbel present. 35 to 62 pyloric caeca. Slender body with 2 to 3 rows of body scales between lateral line and dorsal scutes.

Colour: Body pale brownish. All fins dusky with second dorsal and anal fins darker posteriorly.

Size: To about 50 cm TL.

Length measurement method: Total length

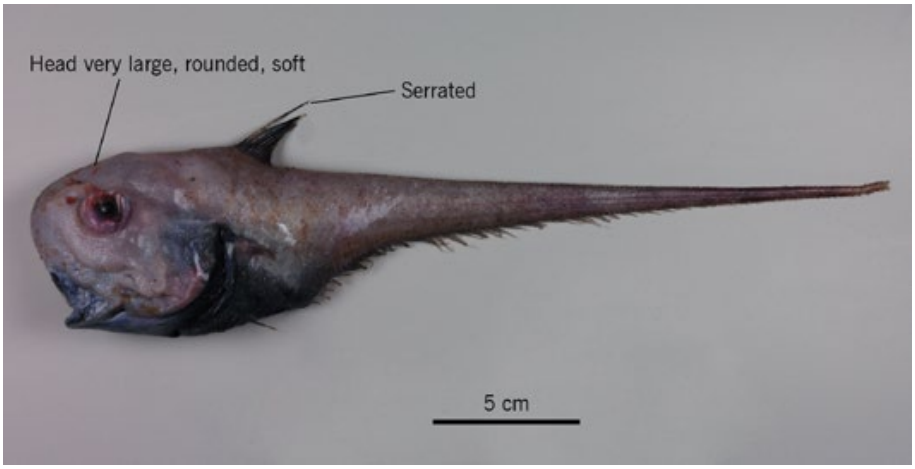
Distribution: Probably widespread in New Zealand from off East Cape to Bounty Plateau. Older fisheries records using this species code were probably mostly white rattail (*Trachyrincus aphyodes*). Southern Africa and Australia.

Depth: 1030 to 1400 m, but mostly more than 1100 m.

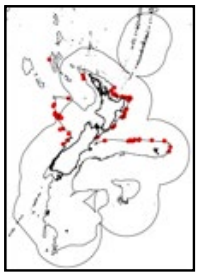
Similar species: White rattail (*Trachyrincus aphyodes*) has more pyloric caeca (119 to 211), 3 to 4 rows of scales between lateral line and dorsal scutes, is larger and stouter, and is usually at shallower depths.

Biology & ecology: Demersal.

Thickhead rattail *Cetonurus crassiceps*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CCR



Distinguishing features: Broad margin of naked brownish or blackish skin running along anal fin base. Head very large, rounded, soft, with ridges lacking thick modified scales. Body scales very small, lateral line indistinct. Serrated leading edge of spinous ray in first dorsal fin.

Colour: Body greyish-brown. Mouth and gill cavity dark blue-black. First dorsal and pelvic fins dark brown.

Size: To about 44 cm TL.

Length measurement method: Total length

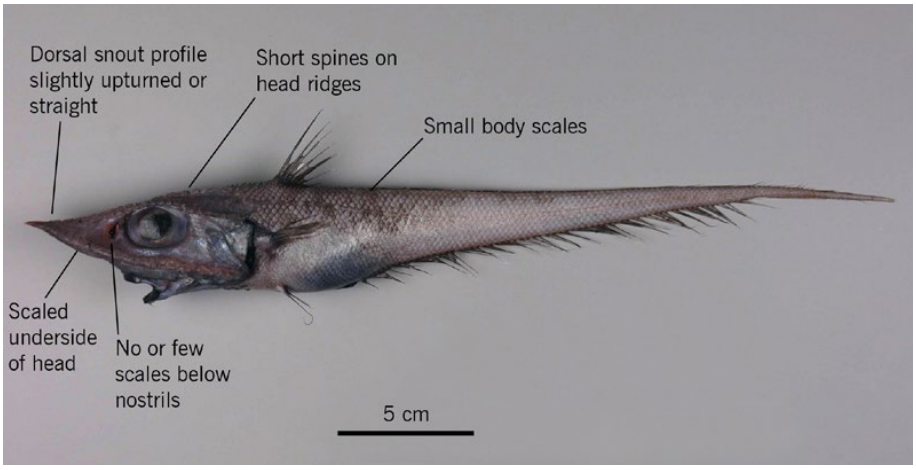
Distribution: Northern and central New Zealand from Kermadec Ridge and southern Lord Howe Rise to north Chatham Rise and Challenger Plateau. Widespread in southern hemisphere, including southwest Pacific, Hawaiian Islands, central and South Atlantic and southeast Pacific Oceans, but so far not known from Indian Ocean.

Depth: 670 to 1400 m.

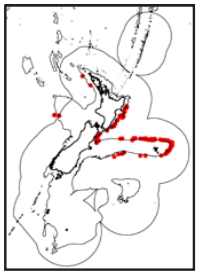
Similar species: Globehead rattail (*Cetonurus globiceps*) lacks broad margin of naked dark skin running along anal fin base. Other differences require microscopic study.

Biology & ecology: Unknown. Probably demersal.

Spottyface rattail *Coelorinchus acanthiger*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CTH



Distinguishing features: Snout almost straight (dorsal surface in lateral profile). A few or no scales on skin below nostrils to suborbital ridge. Short spines on head ridges. Moderate sized body scales, 5 to 8 between origin of second dorsal fin and lateral line. Underside of head sparsely scaled. Entire anal fin dark. No distinctive body markings.

Colour: No distinctive body markings. Entire anal fin dark. Other fins dusky/dark.

Size: To about 50 cm TL.

Length measurement method: Total length

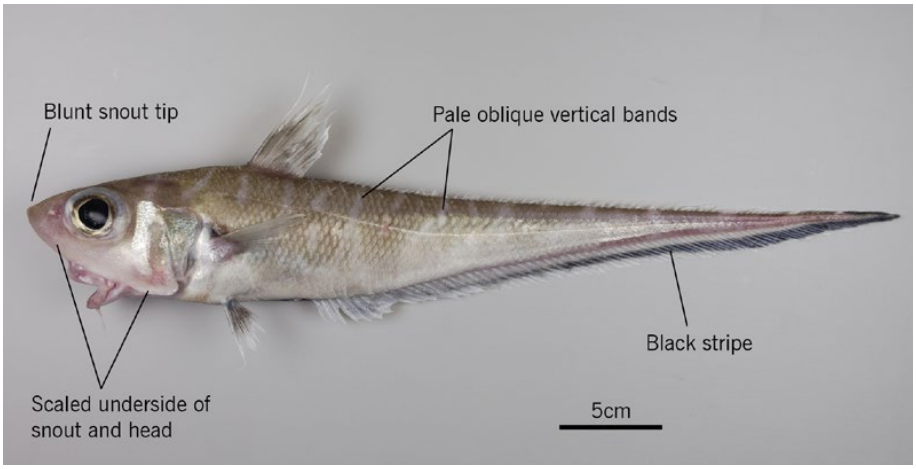
Distribution: Central and northern New Zealand from West Norfolk Ridge to north and northeast Chatham Rise. Southern Australia, off southern Africa and Argentina.

Depth: 840 to 1300 m.

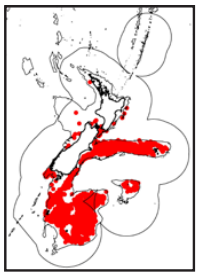
Similar species: Roughhead rattail (*C. trachycarus*) has long spines on ridges on top of head, and larger body scales, 5 to 7 scales between origin of second dorsal fin and lateral line. Upturned snout rattail (*C. mycterismus*) has strongly upturned snout, dark anterior third and pale posterior anal fin. Kermadec rattail (*C. kermadecus*), has scaled skin below nostrils down to suborbital ridge, pale brown body.

Biology & ecology: Unknown. Probably demersal.

Obliquebanded rattail *Coelorinchus aspercephalus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CAS



Distinguishing features: Series of pale oblique and vertical bands on top and sides of body. Underside of snout and head completely covered in small scales. Snout blunt and short. Black stripe running along anal fin with base and outer edge of anal fin pale. Gap between first and second dorsal fins about same length or less than length of first dorsal fin base.

Colour: Series of pale oblique and vertical bands on top and sides of body. Body and head pale brownish-grey with silvery sides and belly. Black stripe running along anal fin with base and outer edge of anal fin pale. Dorsal and pelvic fins with dusky/dark base and paler outer part.

Size: To about 56 cm TL.

Length measurement method: Total length

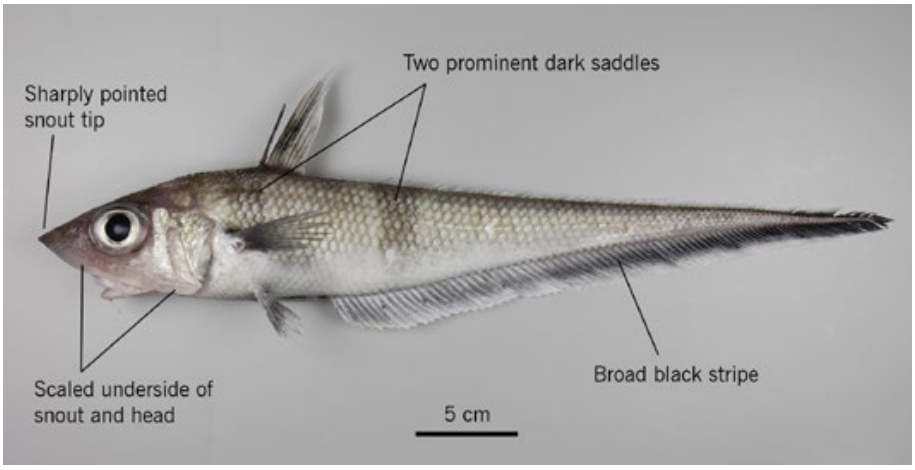
Distribution: Central and southern New Zealand including Chatham Rise, east and west coast of South Island, Campbell and Bounty Plateau. Known only from New Zealand.

Depth: 30 to 600 m.

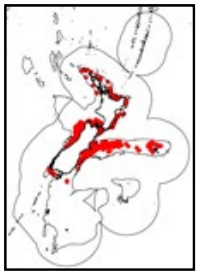
Similar species: Twosaddle rattail (*C. biclinozonalis*) has a series of dark saddle-like bands on top and sides of body with bands in front of first dorsal fin and near front of second dorsal fin darker than the others, a more pointed snout, and gap between first and second dorsal fins about twice length of first dorsal fin base.

Biology & ecology: Demersal. Males are much smaller than females, and consequently trawl catches are dominated by females, probably because males escape through net meshes.

Two saddle rattail *Coelorinchus biclinozonalis*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CBI



Distinguishing features: Series of dark saddle-like bands on top and sides of body with bands in front of first dorsal fin and near front of the second dorsal fin darker than others. Underside of snout and head completely covered in scales. Snout pointed and moderate in length. Thick black stripe running along anal fin. Gap between first and second dorsal fins about twice length of first dorsal fin base.

Colour: Series of dark saddle-like bands on top of body with bands in front of first dorsal fin and near front of second dorsal fin darker than others. Rest of body and head brownish-grey with pale sides and belly. Black stripe running along anal fin. Dorsal, pectoral, and pelvic fins dusky/dark.

Size: To about 62 cm TL.

Length measurement method: Total length

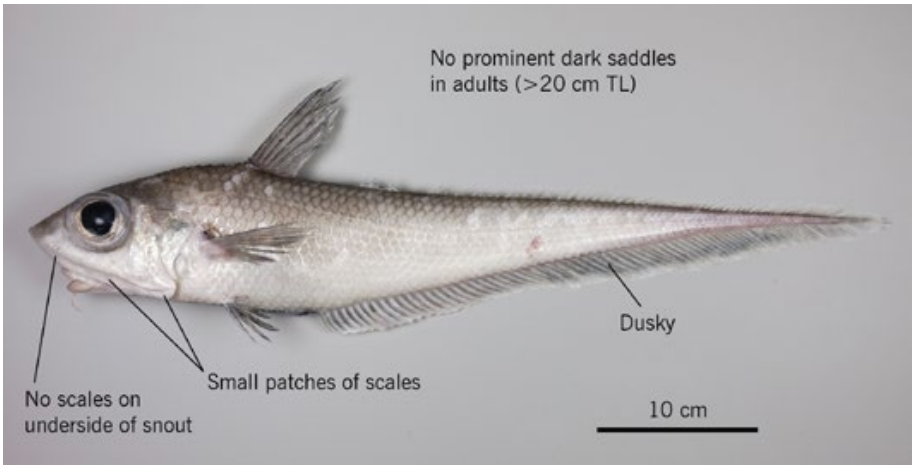
Distribution: Widespread in New Zealand from off Northland to Foveaux Strait including shallower parts of Chatham Rise and Chatham Island. Known only from New Zealand.

Depth: 5 to about 500 m.

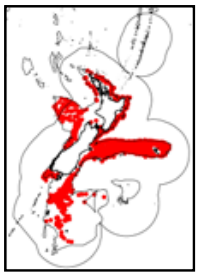
Similar species: Oblique banded rattail (*C. aspercephalus*) has pale oblique and vertical bands on top and sides of body, a blunter snout, and gap between first and second dorsal fins is about the same or less than length of first dorsal fin base.

Biology & ecology: Demersal. Recorded from water depth as shallow as 5 m, such as Wellington Harbour, which is very unusual for a macrourid.

Bollons' rattail *Coelorinchus bollonsi*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: CBO
FishNZ research/observer code: CBO



Distinguishing features: Uniform brown or grey on upper body with no dark saddle marks or bands on body in adults (greater than about 20 cm TL). Underside of snout and head lacking scales except for small patches adjacent to rear end of lower jaw and at rear end of head. Anal fin mostly dark or dusky, especially posterior half, without narrow dark stripe.

Colour: Uniform brown or grey upper body without saddle marks or bands in adults (greater than about 20 cm TL). Anal fin mostly dark or dusky, especially posterior half, without dark stripe. Other fins dark/dusky. Smaller individuals have indistinct dark saddles on upper body and are generally darker including fins.

Size: To about 71 cm TL.

Length measurement method: Total length

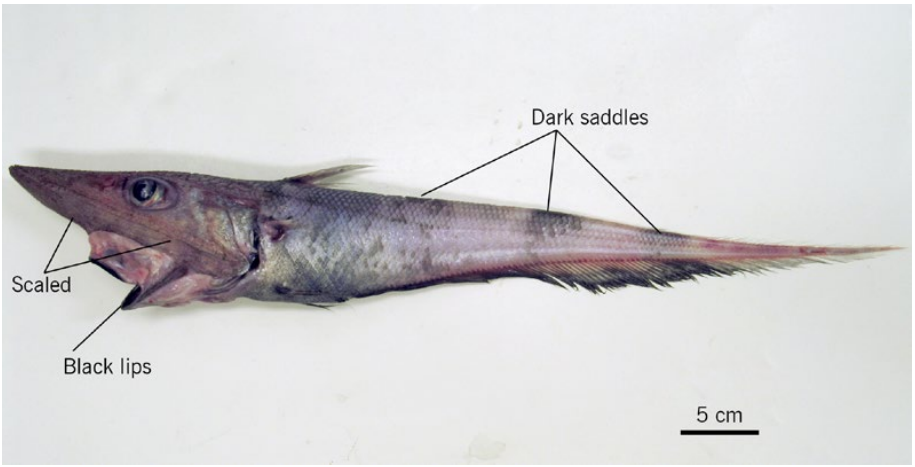
Distribution: Widespread in New Zealand from off Northland to Campbell Plateau, but apparently absent from Bounty Plateau. Known only from New Zealand.

Depth: 300 to 800 m.

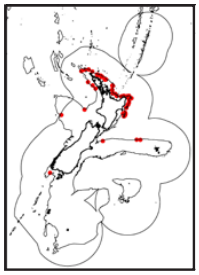
Similar species: Banded rattail (*C. fasciatus*) has dark saddle marks and an enlarged scale in front of first dorsal fin. Small banded rattail (*C. parvifasciatus*) has pale bands on upper tail, pale grey anal fin, and large ventral light organ. Dark banded rattail (*C. maurofasciatus*) has dark saddle marks on body and dark stripe along anal fin. Cook's rattail (*C. cookianus*) has very dark saddle marks on body and no scales on underside of head.

Biology & ecology: Largely unknown. Probably demersal. A very abundant species on Chatham Rise.

Blacklip rattail *Coelorinchus celaenostomus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CEX



Distinguishing features: Black lips, series of dark saddle marks on dorsal surface and sides, thick black stripe along anal fin, long snout, underside of snout completely scaled, inconspicuous light organ before anus.

Colour: Black lips, series of dark bands on dorsal surface and sides, thick black stripe along anal fin. Other fins dusky.

Size: To about 83 cm TL.

Length measurement method: Total length

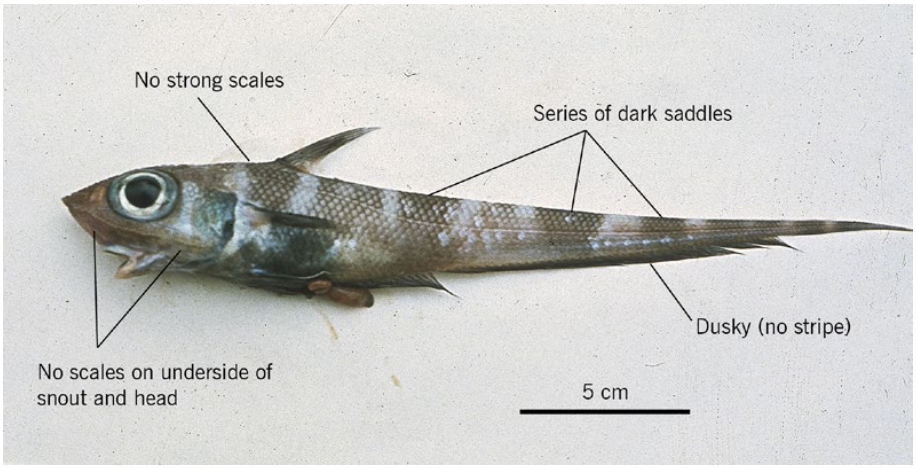
Distribution: Northern New Zealand from West Norfolk Ridge, North Island, northeast Chatham Rise and Puysegar. Known only from New Zealand.

Depth: 600 to 1000 m.

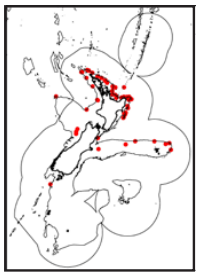
Similar species: Supanose rattail (*C. supernasutus*) lacks black markings on lips, body and fins.

Biology & ecology: Unknown. Demersal.

Cook's rattail *Coelorinchus cookianus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CCO



Distinguishing features: Series of dark saddle-like bands on top and sides of body. No scales on underside of snout. No enlarged or raised scales on midline ahead of first dorsal fin. Anal fin dusky without narrow dark stripe.

Colour: Series of dark saddle-like bands on top and sides of body. Anal fin dusky without narrow dark stripe. Other fins dusky without distinctive markings.

Size: To about 30 cm TL.

Length measurement method: Total length

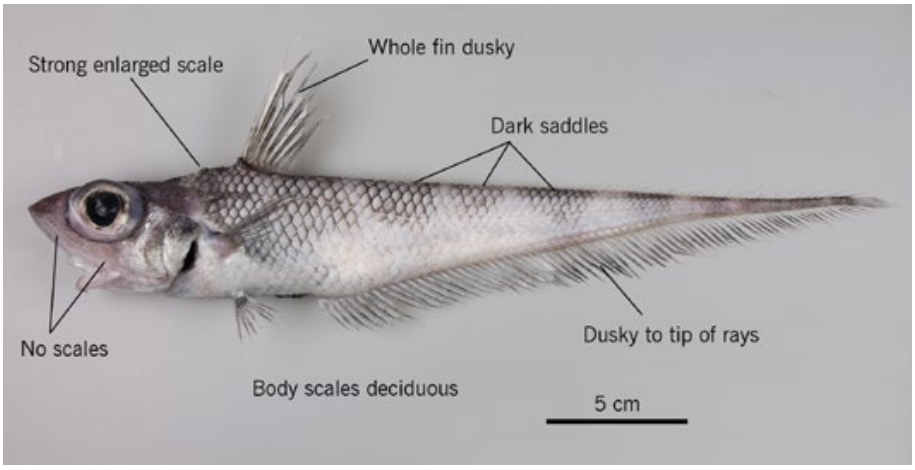
Distribution: Northern and central New Zealand from West Norfolk Ridge to northeast Chatham Rise. Known only from New Zealand.

Depth: 400 to 800 m.

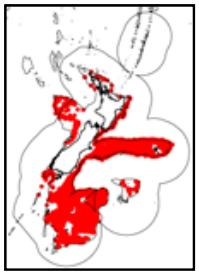
Similar species: Bollons' rattail (*C. bollonsi*) has small patches of scales on underside of head and lacks saddle marks in fish longer than about 20 cm TL. Banded rattail (*C. fasciatus*) has enlarged scale in front of first dorsal fin and deciduous body scales. Small banded rattail (*C. parvifasciatus*) has pale bands on upper tail, pale grey anal fin, and large light organ. Dark banded rattail (*C. maurofasciatus*) has dark stripe along anal fin, and dark upper two-thirds of first dorsal fin.

Biology & ecology: Unknown. Demersal.

Banded rattail *Coelorinchus fasciatus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: CFA
FishNZ research/observer code: CFA



Distinguishing features: Series of dark saddle-like bands on top and sides of body. No scales on underside of snout. One or two enlarged or raised scales on midline ahead of the first dorsal fin. Body scales deciduous. Anal fin dusky without narrow dark stripe.

Colour: Series of dark saddle-like bands on top and sides of body. Rest of body creamy especially belly. Anal fin dusky (sometimes rays pale near base) without narrow dark stripe. Other fins dusky.

Size: To about 35 cm TL.

Length measurement method: Total length

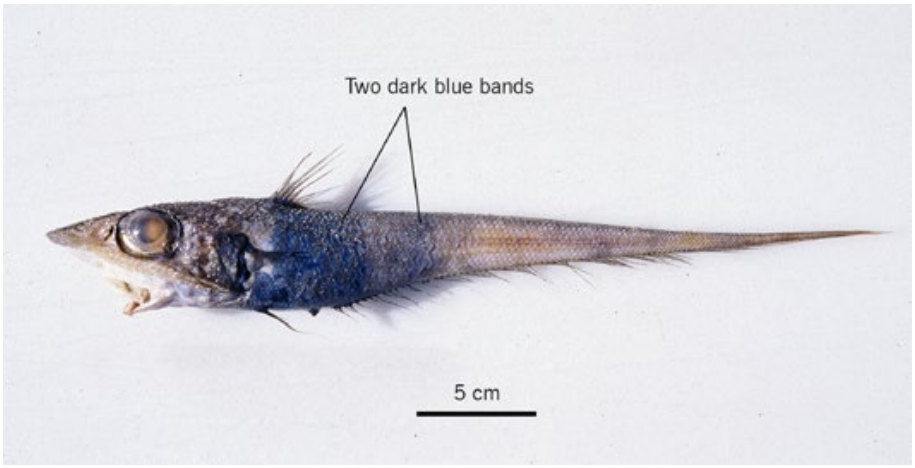
Distribution: Widespread in New Zealand from off Northland to Campbell Plateau including Challenger Plateau and Chatham Rise. Southeast Australia, Pacific and Atlantic coasts of South America.

Depth: 500 to 1000 m.

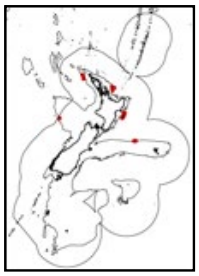
Similar species: Bollons' rattail (*C. bollonsi*) has small patches of scales on underside of head, and lacks dark saddle marks on body in fish less than about 20 cm TL. Small banded rattail (*C. parvifasciatus*) has pale bands on upper tail, pale grey anal fin, and large light organ. Cook's rattail (*C. cookianus*) lacks narrow dark stripe along anal fin, and lacks dark upper two-thirds of first dorsal fin. Dark banded rattail (*C. maurofasciatus*) has dark stripe along anal fin, and dark upper two-thirds of first dorsal fin.

Biology & ecology: Unknown. Demersal.

Horrible rattail *Coelorinchus horribilis*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CXH



Distinguishing features: Two dark bluish bands extending from dorsal to ventral surface of body. Thin dark rim around eye. Moderately long snout. No scales on underside of head except for strong scales just under tip of snout.

Colour: Two dark bluish bands extending from dorsal to ventral surface of body, rest of body and fins greyish-brown. Thin dark rim around eye.

Size: To about 35 cm TL.

Length measurement method: Total length

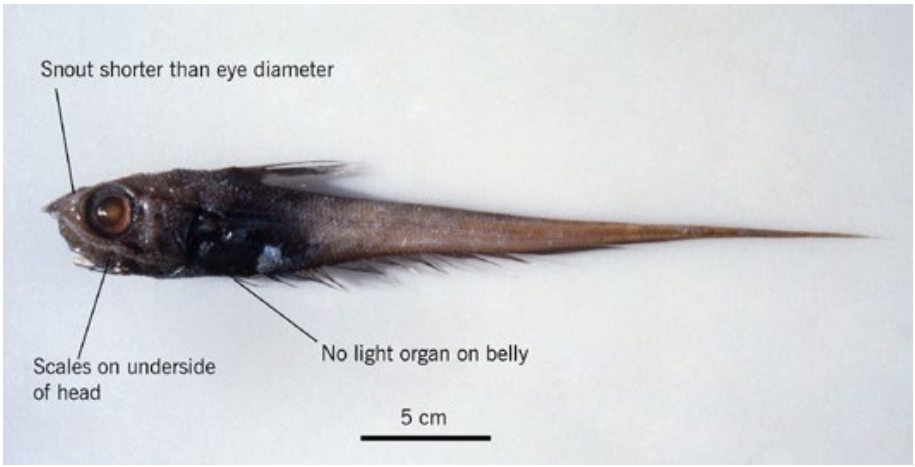
Distribution: Northern and central New Zealand from West Norfolk and Kermadec Ridges to northeast Chatham Rise. Known only from New Zealand.

Depth: 900 to 1200 m.

Similar species: Kaiyomaru rattail (*C. kaiyomaru*) has only one wide dark blue band on body, and lacks scales on underside of head at tip of the snout.

Biology & ecology: Unknown. Demersal.

Dusky rattail *Coelorinchus infuscus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CGX

Distinguishing features: Scales on underside of head. No obvious black light organ on belly in front of anus. Snout short, less than eye diameter. No prominent markings on head, body or fins.

Colour: Body pale to mid-brown. Dark bluish abdomen marking extending from dorsal to ventral body surface. Anal fin may be greyish. Upper two thirds of first dorsal fin dark brownish.

Size: To about 35 cm TL.

Length measurement method: Total length

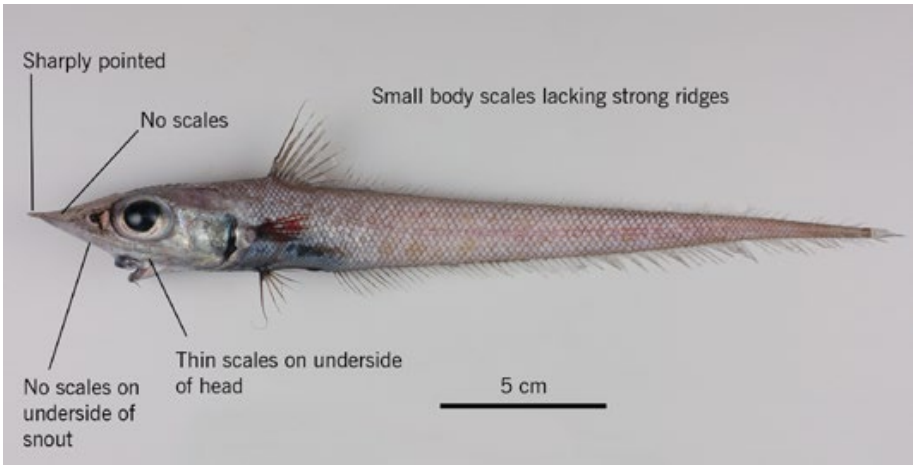
Distribution: From Bay of Plenty to northeast Chatham Rise. Known only from New Zealand. Possibly confined to underwater hills.

Depth: About 740 to 1000 m.

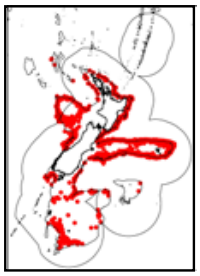
Similar species: Mahia rattail (*Coelorinchus matamua*) has black front half of anal fin changing abruptly to pale on rear half of fin.

Biology & ecology: Demersal.

Notable rattail *Coelorinchus innotabilis*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CIN



Distinguishing features: Long sharply pointed snout. Long oval body without any obvious markings. Areas on dorsal surface of snout lacking scales. Underside of head lacking scales except for thin flat scales behind mouth. Body scales small without strong raised ridges.

Colour: Body pale greyish without any obvious markings. All fins greyish.

Size: To about 40 cm TL.

Length measurement method: Total length

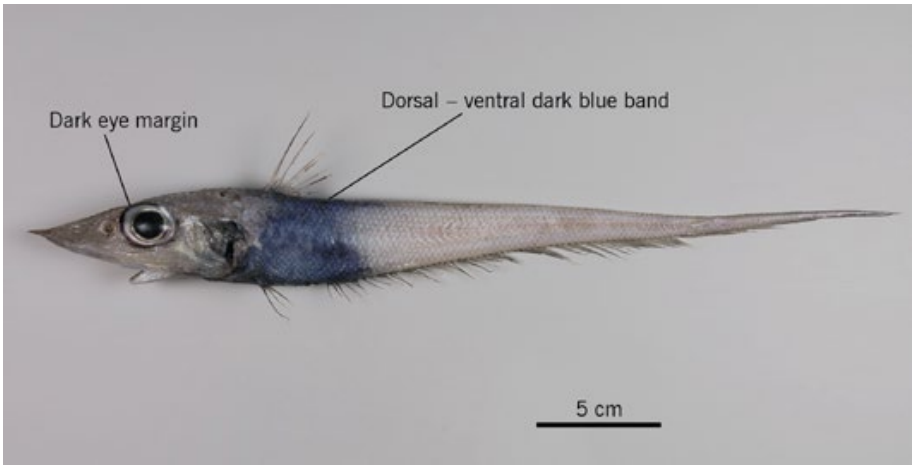
Distribution: Widespread in New Zealand from West Norfolk Ridge to Campbell Plateau. Southern Australia.

Depth: 500 to 1100 m.

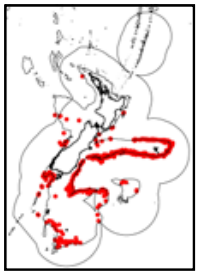
Similar species: Other *Coelorinchus* species lack combination of long sharply pointed snout, oval body without any obvious markings, no scales on anterior dorsal snout, no scales on underside of head except for thin flat scales from mouth back, body scales without strong ridges.

Biology & ecology: Unknown. Demersal.

Kaiyomaru rattail *Coelorinchus kaiyomaru*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CKA



Distinguishing features: Dark blue abdominal band extending from dorsal to ventral surface of body. Dark rim around eye. Moderately long snout. No scales on underside of head.

Colour: Dark blue abdominal band extending from dorsal to ventral surface of body, rest of body and fins pale greyish-brown. Dark rim around eye, darker anteriorly.

Size: To about 43 cm TL.

Length measurement method: Total length

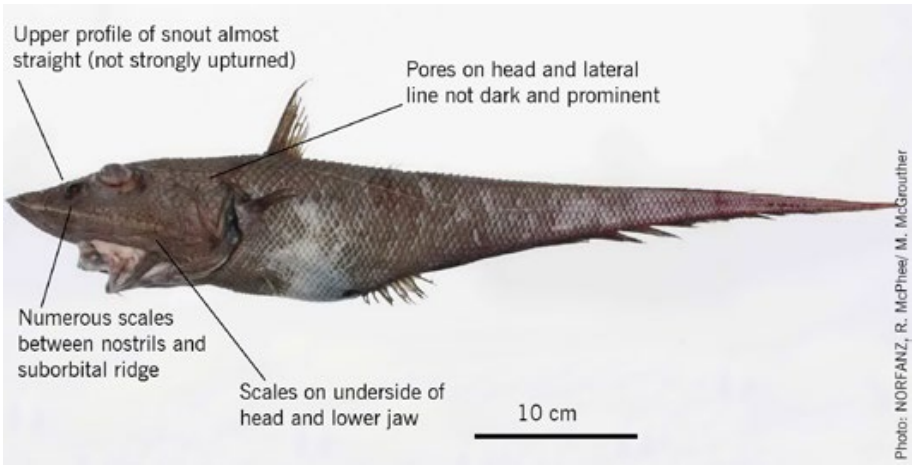
Distribution: Central and southern New Zealand from off Hawke Bay to Campbell Plateau. Widespread but patchy in southern hemisphere from Indian Ocean off South Africa, Tasmania, Falkland Island (South Atlantic Ocean).

Depth: 800 to 1200 m.

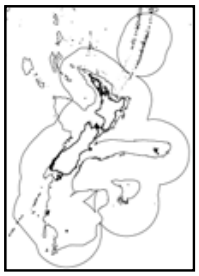
Similar species: Horrible rattail (*C. horribilis*) has two dark bluish bands on body, and strong scales on underside of head at tip of snout.

Biology & ecology: Unknown. Demersal.

Kermadec rattail *Coelorinchus kermadecus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CKE



Distinguishing features: Scales on underside of head and lower jaw. Upper profile of snout almost straight and not strongly upturned. Numerous scales between nostrils and suborbital ridge. Pores on head and lateral line not dark and prominent.

Colour: Body and head pale brownish. All fins dusky to blackish.

Size: To about 58 cm TL.

Length measurement method: Total length

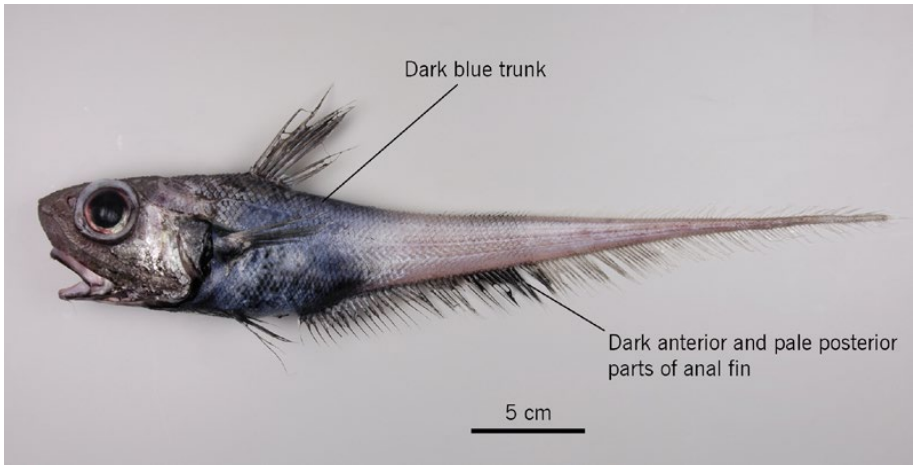
Distribution: Northern New Zealand from Kermadec Ridge and northeast North Island. Fisheries records from New Zealand are erroneous or unreliable. Australia, Lord Howe Rise, New Caledonia, and Norfolk Ridge.

Depth: 800 to 1300 m.

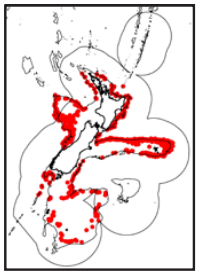
Similar species: Spotty face rattail (*Coelorinchus acanthiger*) has no or few scales between nostrils and suborbital ridge and is smaller (to 50 cm TL) and more slender. Roughhead rattail (*C. trachycarus*) has no scales between nostrils and suborbital ridge and has long spines on ridges on top of head.

Biology & ecology: Demersal.

Mahia rattail *Coelorinchus matamua*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: CMA
FishNZ research/observer code: CMA



Distinguishing features: Wide dark blue abdominal band extending from the dorsal to ventral surface of body. Front half of anal fin dark (black), rear half of fin pale. Short snout. Underside of head covered with scales.

Colour: Wide dark blue abdominal band extending from dorsal to ventral surface of body. Front half of anal fin dark (black), rear half of fin pale. Other fins dark/dusky.

Size: To about 85 cm TL.

Length measurement method: Total length

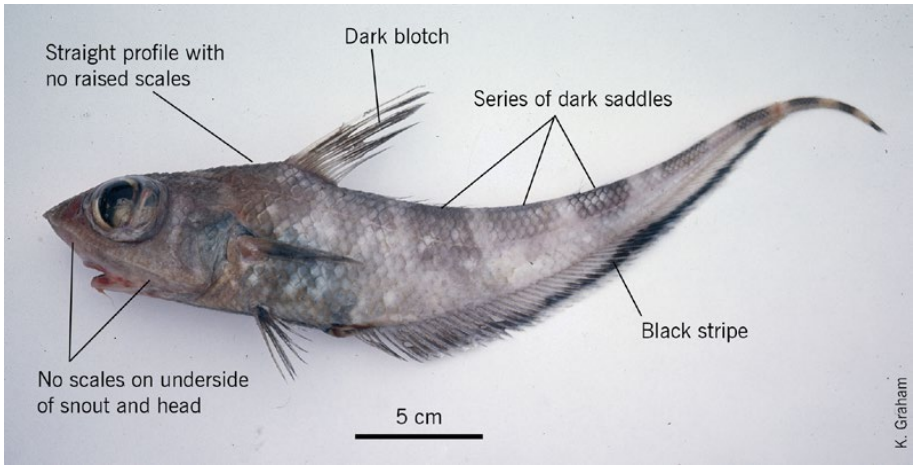
Distribution: Widespread in New Zealand from Northland to Campbell Plateau but not recorded from Bounty Plateau. Widespread in southern hemisphere from southern Africa, Indian Ocean, Southern Australia.

Depth: 600 to 1000 m.

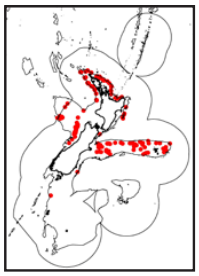
Similar species: Other species of *Coelorinchus* lack combination of dark blue abdomen, dark anterior and pale posterior parts of anal fin, scaled underside of head.

Biology & ecology: Unknown. Demersal.

Darkbanded rattail *Coelorinchus maurofasciatus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CDX



Distinguishing features: Series of dark saddle-like bands on top and sides of body. No scales on underside of snout. No enlarged or raised scales on midline ahead of first dorsal fin. Anal fin with narrow dark stripe. Upper two-thirds of first dorsal fin dark/black, base pale.

Colour: Series of dark saddle-like bands on top and sides of body. Anal fin with narrow dark stripe. Upper two-thirds of first dorsal fin dark/black, base pale.

Size: To about 50 cm TL.

Length measurement method: Total length

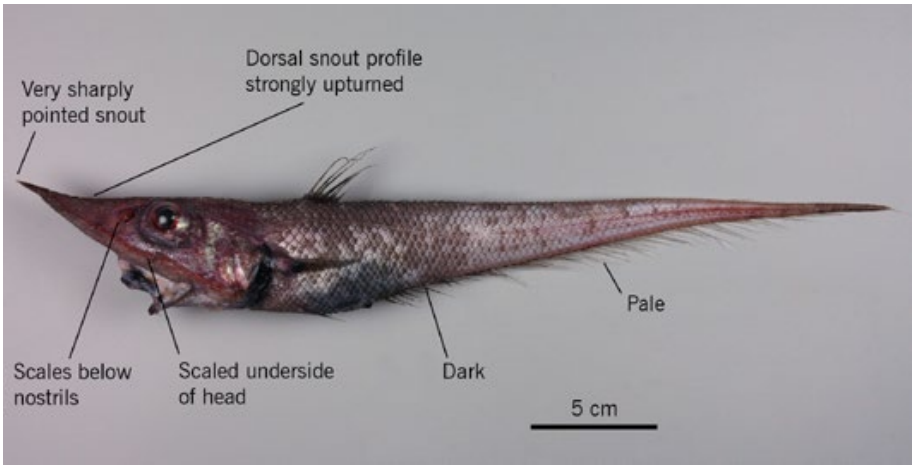
Distribution: Northern and central New Zealand from West Norfolk Ridge to Chatham Rise including Challenger Plateau. Southern Australia.

Depth: 300 to 800 m.

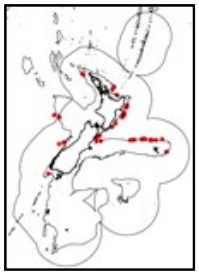
Similar species: Bollons' rattail (*C. bollonsi*) has small patches of scales on underside of head and lacks dark saddle marks on body in fish greater than about 20 cm TL. Banded rattail (*C. fasciatus*) has enlarged scale in front of first dorsal fin and deciduous body scales. Small banded rattail (*C. parvifasciatus*) has pale bands on upper tail, pale grey anal fin, and large light organ. Cook's rattail (*C. cookianus*) lacks dark stripe along anal fin, and lacks dark upper two thirds of first dorsal fin.

Biology & ecology: Unknown. Demersal.

Upturnedsnout rattail *Coelorinchus mycterismus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CJX



Distinguishing features: Snout strongly upturned (dorsal surface in lateral profile), tip very sharply pointed. Scales on underside of head, and on skin below nostrils to suborbital ridge. Anterior third of anal fin dark, posterior pale. No distinctive body or fin markings.

Colour: Body greyish-brown without distinctive markings. Anterior third of anal fin dark, posterior two thirds pale. Other fins greyish.

Size: To about 49 cm TL.

Length measurement method: Total length

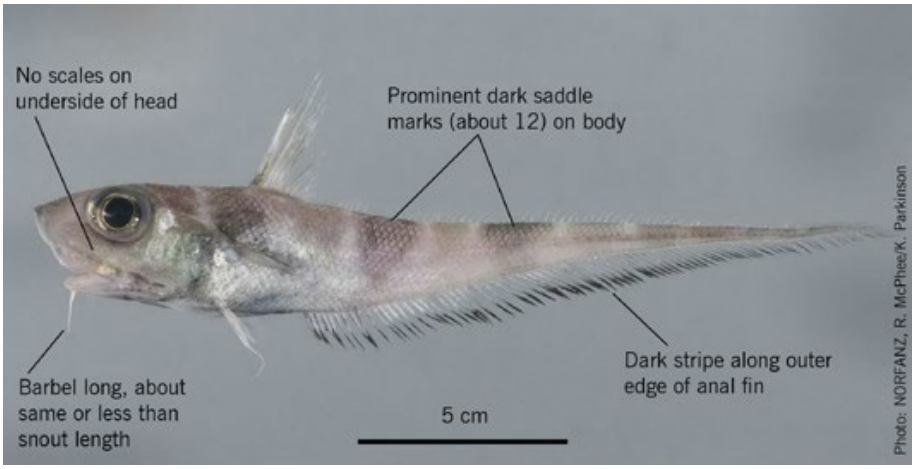
Distribution: Central and Northern New Zealand from West Norfolk Ridge to northwest Chatham Rise. Australia, Loyalty Ridge and southern Lord Howe Rise.

Depth: 800 to 1200 m.

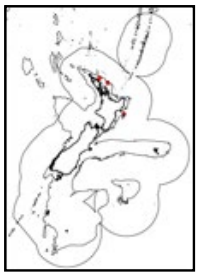
Similar species: Spotty faced rattail (*C. acanthiger*) has straight snout, no or few scales below nostrils, dusky anal fin. Roughhead rattail (*C. trachycarus*) has large coarse spines on ridges on top of head, no or few scales below nostrils, anal fin black. Kermadec rattail (*C. kermadecus*) has straight snout of moderate length, scaled skin below nostrils, anal fin dusky along entire length.

Biology & ecology: Unknown. Demersal.

Patterned rattail *Coelorinchus mystax*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CIX



Distinguishing features: No scales on underside of head. 9 to 10 prominent dark saddle marks on body. Dark stripe running along outer edge of anal fin. Barbel long, almost same or less than snout length. More than 100 (104 to 115) pyloric caeca.

Colour: 9 to 10 prominent dark saddle marks on body. First, third, and fifth marks are darker than the others counting back from first mark just in front of first dorsal fin. Dark stripe running along outer edge of anal fin. First dorsal fin with two pale stripes (may be faint) running from front to back, first about a third and second about two-thirds up from base of fin.

Size: To about 55 cm TL.

Length measurement method: Total length

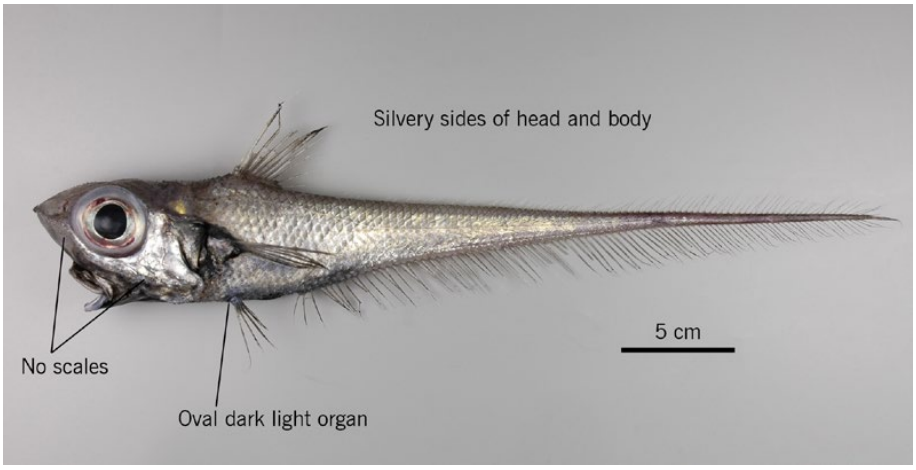
Distribution: Northern New Zealand from Reinga and Kermadec Ridges, and northeast North Island. Known only from New Zealand.

Depth: About 450 to 540 m.

Similar species: Dark banded rattail (*Coelorinchus maurofasciatus*) has pale outer and blackish inner stripes running along anal fin, dark upper two thirds of first dorsal fin, and other differences, e.g., pyloric caeca count.

Biology & ecology: Demersal.

Oliver's rattail *Coelorinchus oliverianus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: COL
FishNZ research/observer code: COL

Distinguishing features: Sides of body and head silvery with black underside of head around mouth and belly. Black oval light organ between bases of pelvic fins on belly. No scales on underside of head. Snout short. Very large eye.

Colour: Sides of body and head silvery with black underside of head around mouth and belly. Upper half of first dorsal fin blackish, other fins dusky.

Size: To about 45 cm TL.

Length measurement method: Total length

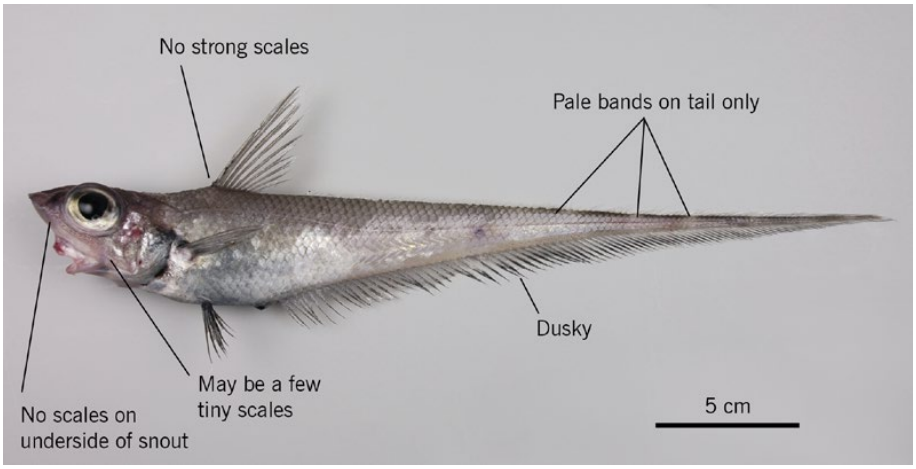
Distribution: Widespread in New Zealand from off Northland to Campbell Plateau including Challenger Plateau and Chatham Rise. Known only from New Zealand.

Depth: 400 to 800 m.

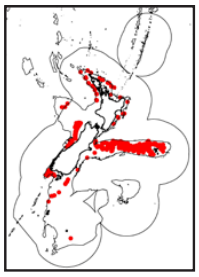
Similar species: Other species of *Coelorinchus* lack combination of silvery body and sides, light organ between pelvic fin bases, large eye, short snout.

Biology & ecology: Unknown. Demersal.

Smallbanded rattail *Coelorinchus parvifasciatus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CCX



Distinguishing features: Series of pale vertical bands on tail, best viewed dorsally. Underside of snout and head lacking scales except few tiny scales may be present adjacent to posterior end of lower jaw. Anal fin pale or slightly dusky lacking narrow dark stripe. Large tear-shaped dark window of light organ on belly ahead of anus.

Colour: Series of pale vertical bands on tail, rest of body pale grey-brown. Anal fin pale to slightly dusky, lacking narrow dark stripe. Other fins pale or slightly dusky.

Size: To 35 cm TL.

Length measurement method: Total length

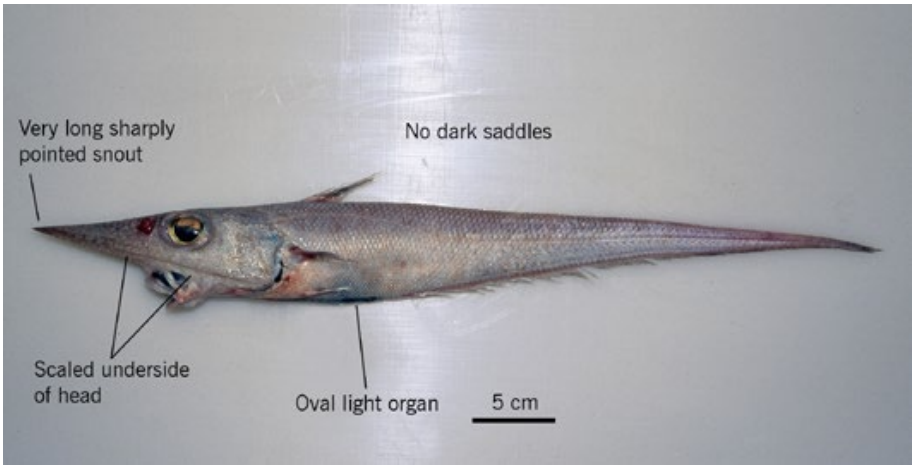
Distribution: Widespread in New Zealand from off Northland to off Stewart Island. Known only from New Zealand.

Depth: 300 to 800 m.

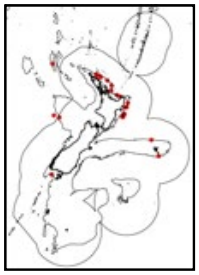
Similar species: Small Bollons' rattail (*C. bollonsi*) has dark body with faint saddle marks, and very dark fins, especially anal fin. Banded rattail (*C. fasciatus*) has dark saddle marks and enlarged scale in front of first dorsal fin. Dark banded rattail (*C. maurofasciatus*) has dark saddle marks on body and narrow dark stripe along anal fin. Cook's rattail (*C. cookianus*) has very dark saddle marks on body and no scales on underside of head.

Biology & ecology: Unknown. Demersal.

Supanose rattail *Coelorinchus supernasutus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CFX



Distinguishing features: Extremely long snout with sharp tip. Body and fins without any obvious markings. Upper and lower sides of head covered with coarse scales. Scales below nostrils extending down to suborbital ridge. Obvious oval black light organ in front of anus.

Colour: Body brownish-grey without any obvious markings. All fins greyish.

Size: To about 65 cm TL.

Length measurement method: Total length

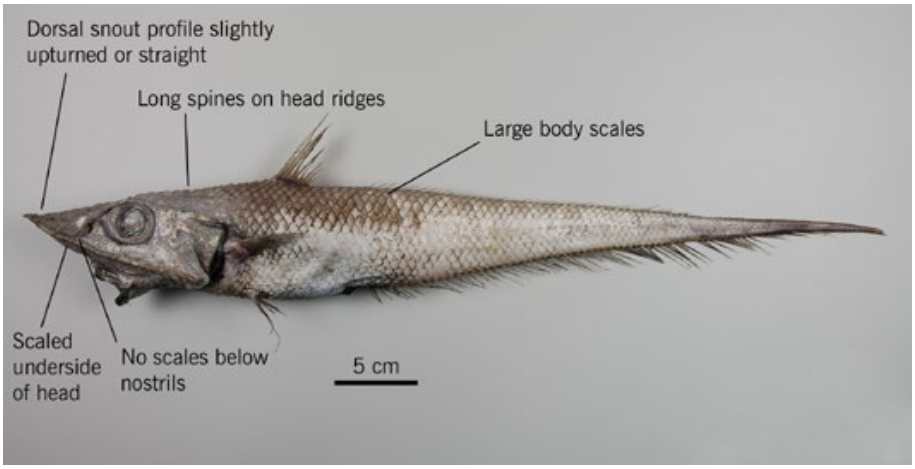
Distribution: Northern New Zealand from off Northland to off Hawke Bay. Australia, New Caledonia, Lord Howe Rise, and West Norfolk Ridge.

Depth: 500 to 900 m.

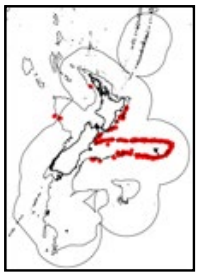
Similar species: Spotty faced rattail (*C. acanthiger*) has straight snout, no or few scales below nostrils, dusky anal fin, tiny light organ. Upturned snout rattail (*C. mycterismus*) has upturned snout, dark front and pale rear parts of anal fin, tiny light organ. Roughhead rattail (*C. trachycarus*) has large coarse spines on upper head, no or few scales below nostrils, anal fin black, tiny light organ. Kermadec rattail (*C. kermadecus*) has straight snout, scaled skin below nostrils, anal fin dusky.

Biology & ecology: Unknown. Demersal.

Roughhead rattail *Coelorinchus trachycarus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CHY



Distinguishing features: Snout almost straight (dorsal surface in lateral profile). No scales on skin below nostrils to suborbital ridge. Long spines on head ridges. Large body scales, 5 to 7 between origin of second dorsal fin and lateral line. Underside of head sparsely scaled. Entire anal fin dark. No distinctive body markings.

Colour: No distinctive body markings. Entire anal fin dark. Other fins dusky/dark.

Size: To about 51 cm TL.

Length measurement method: Total length

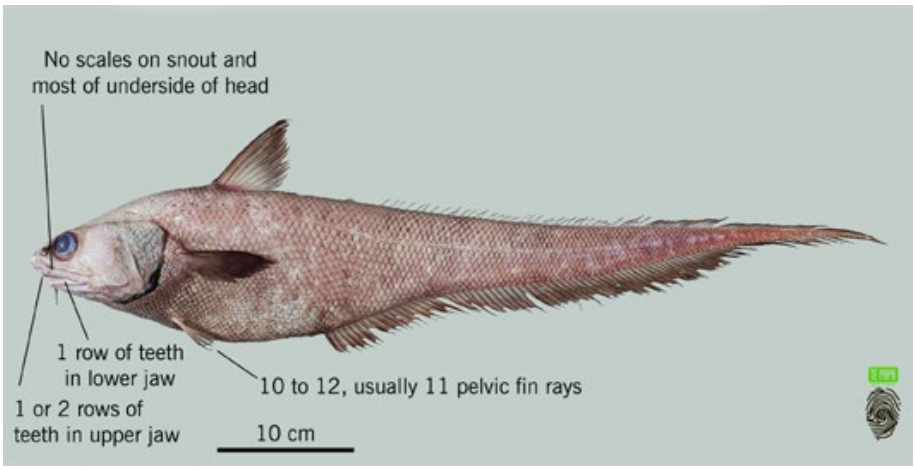
Distribution: Central and northern New Zealand from West Norfolk Ridge to Chatham Rise. Australia and Norfolk Ridge south of New Caledonia.

Depth: 600 to 1400 m.

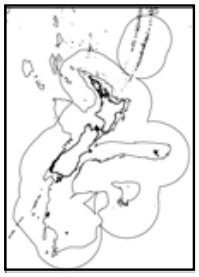
Similar species: Spotty faced rattail (*C. acanthiger*) has short spines on head ridges and smaller body scales, 5 to 8 scales between origin of second dorsal fin and lateral line. Upturned snout rattail (*C. mycterismus*) has strongly upturned snout, dark anterior and pale posterior parts of anal fin. Kermadec rattail (*C. kermadecus*) has scaled skin below nostrils, and pale brown body.

Biology & ecology: Unknown. Demersal.

Cosmopolitan rattail *Coryphaenoides armatus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: COM
FishNZ research/observer code: COM



Distinguishing features: No scales on most of underside of head including snout, below most of suborbital ridge, tip of lower jaw. 1 (large adults) or 2 rows of teeth in upper jaw (premaxilla) and 1 row in lower jaw. Pelvic fin with 10 to 12, usually 11 rays (Pacific specimens). Body scales thin and deciduous. Scales on head ridges (snout, eye, suborbital ridge) spiny and adherent. 11 to 14 pyloric caeca. Eye small, about same as snout length.

Colour: Dark brown to blackish overall. Fins blackish in large but paler in small specimens.

Size: To about 102 cm TL.

Length measurement method: Total length

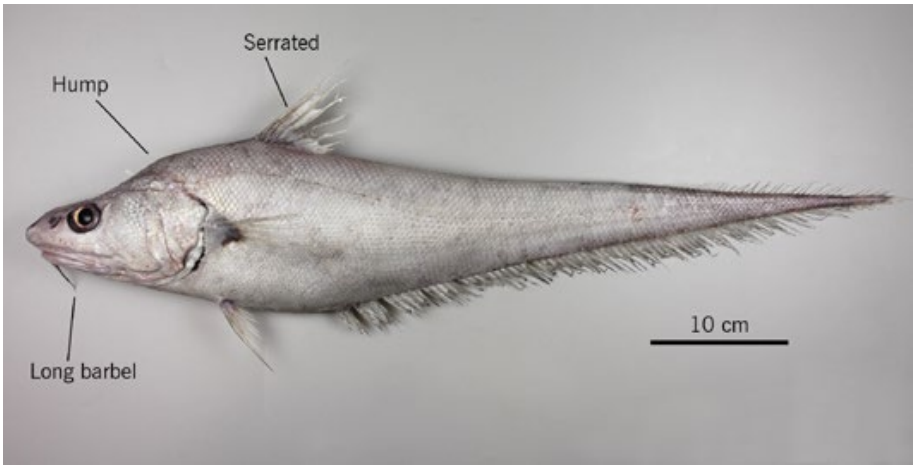
Distribution: Probably widespread in New Zealand. Almost worldwide.

Depth: 2000 to 4700 m.

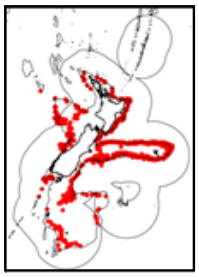
Similar species: Murray's rattail (*Coryphaenoides murrayi*) has broad band with outer teeth slightly enlarged in upper jaw. Striate rattail (*C. striaturus*) has scales on most of underside of head, upper jaw teeth in band with outer teeth enlarged. Bighead rattail (*C. rudis*) has scales on underside of head, outer teeth enlarged with inner band of fine teeth in upper jaw.

Biology & ecology: Deep slope and abyssal species, common in most oceans deeper than 2000 m. Young feed on benthic invertebrates, mostly crustaceans and holothuroids, switching to fishes, sea urchins and cephalopods as adults.

Humpback rattail *Coryphaenoides dossenus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names: Slender rattail (male)
FishNZ reporting code: RAT
FishNZ research/observer code: CBA



Distinguishing features: Marked dorsal hump on body behind head. Chin barbel long, usually greater than eye diameter. Narrow bluntly pointed snout. Serrated first dorsal fin. Underside of head covered in scales except for narrow naked band of skin under snout tip. Broad band of teeth in upper jaw with outer teeth enlarged, narrow band of teeth in lower jaw with outer teeth slightly enlarged. Usually 8 (7 to 9) pelvic fin rays.

Colour: Body, head and fins pale greyish-silver. Anal fin rays dark or dusky nearer outer edge of fin, pale along base.

Size: To about 85 cm TL.

Length measurement method: Total length

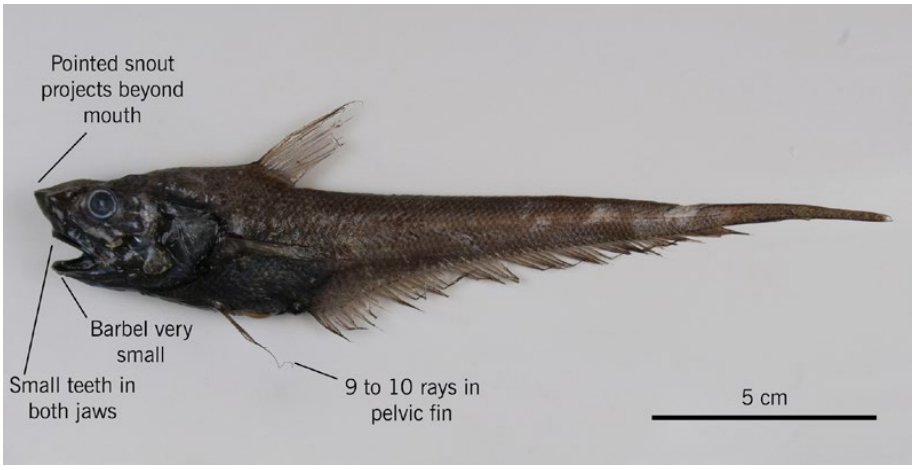
Distribution: Widespread in New Zealand from West Norfolk Ridge and Northland to Campbell Plateau. Widespread in southern hemisphere and Gulf of Guinea including South Atlantic off South Africa, Indian Ocean to Australia, Tasman and Coral Seas, New Caledonia and Vanuatu.

Depth: 900 to 1200 m.

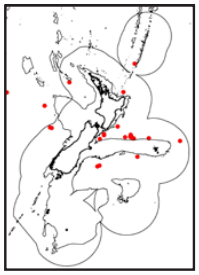
Similar species: The rare northern bighead grenadier (*C. rudis*) has a dark brownish body and usually 10 (8 to 11) pelvic fin rays. The very deep living cosmopolitan rattail (*C. armatus*) has a naked underside of the head, a shorter barbel, and usually 11 (10 to 12) pelvic fin rays.

Biology & ecology: Largely unknown. Demersal. Males are rarely caught and are much smaller, reaching about 43 cm TL, are more slender, and have a much less pronounced hump behind the head compared to most of the females.

Finetail rattail *Coryphaenoides filicauda*



Family: 215d Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CFI



Distinguishing features: Snout sharply pointed, projecting beyond mouth. Ventral surface of head anterior to mouth naked, but most of ventral surface posterior to mouth and posterior half of lower jaw covered with cycloid scales. 9 to 10 pelvic fin rays. Pelvic fin length shorter than head length. Barbel very short, less than eye diameter. Band of small teeth in upper and 2 rows of small teeth in lower jaw.

Colour: Head, body, and most of fins whitish or pale brownish, sometimes dusky. Longest (leading) rays of first dorsal, pectoral and pelvic fins blackish.

Size: To about 40 cm TL.

Length measurement method: Total length

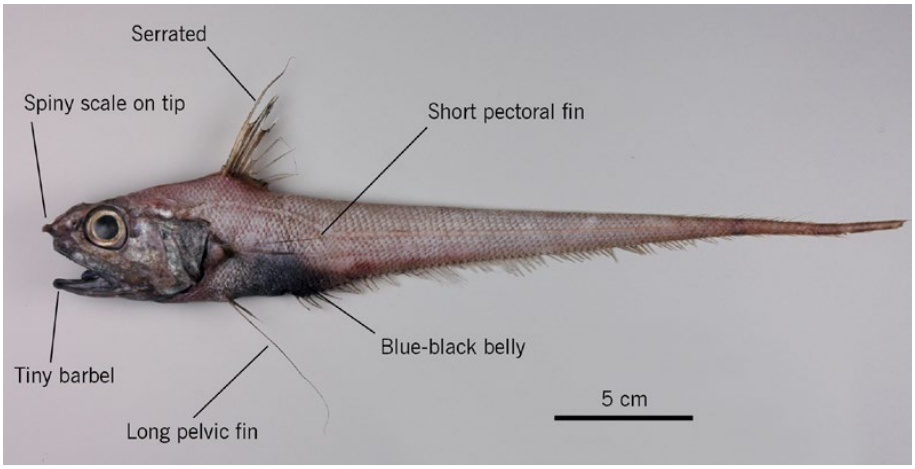
Distribution: Widespread in New Zealand. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Widespread in southern hemisphere.

Depth: 1300 to 5000 m.

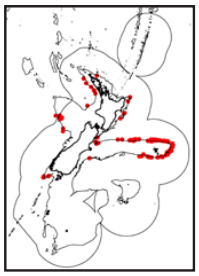
Similar species: Striate rattail (*Coryphaenoides striaturus*) has a scaled ventral surface of head anterior to mouth (snout). Murray's rattail (*Coryphaenoides murrayi*) has an outer row of enlarged teeth in upper and a single row of teeth in lower jaw.

Biology & ecology: Demersal.

McMillan's rattail *Coryphaenoides mcmillani*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CMX



Distinguishing features: Tip of snout armed with spiny modified scale with smaller spiny scales on each side of snout. Pectoral fin short, less than head length, but pelvic fin longer than or about same as head length. Chin barbel tiny. Serrated spine in first dorsal fin. Belly between pelvic fins and front part of anal fin dark bluish-black.

Colour: Body greyish with dark bluish-black belly between pelvic fins and front part of anal fin. Head with greyish-silvery sides and darker underside.

Size: To about 35 cm TL.

Length measurement method: Total length

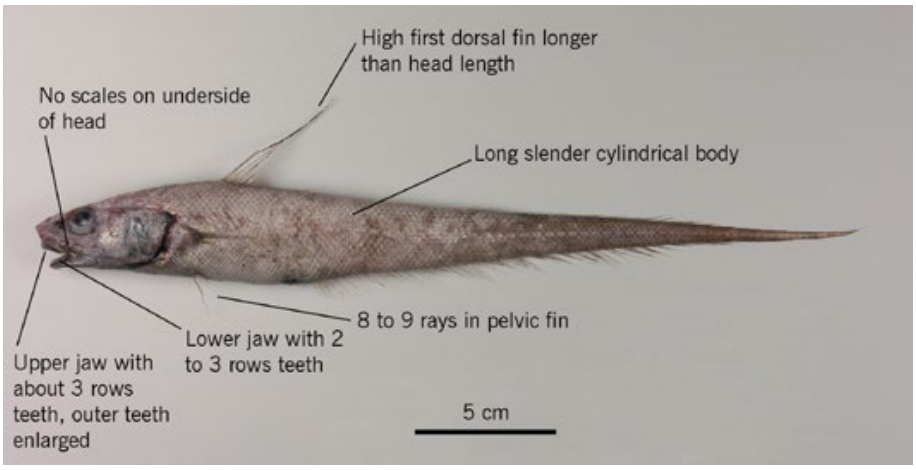
Distribution: Widespread from New Zealand from West Norfolk Ridge to Puysegar including Challenger Plateau and Chatham Rise. Widespread in southern hemisphere from southern Africa to New Zealand, including Australia.

Depth: 800 to 1500 m.

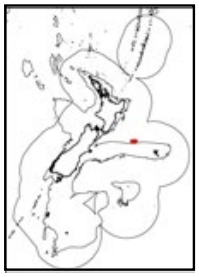
Similar species: Serrulate rattail (*C. serrulatus*) has pectoral and pelvic fin rays that are shorter than head length, and moderate length chin barbel, less than eye diameter. Four-rayed rattail (*C. subserrulatus*) has pectoral and pelvic fins that are extremely long, much longer than head length, and tiny (rudimentary) chin barbel.

Biology & ecology: Largely unknown. Demersal.

Small mouth rattail *Coryphaenoides microstomus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CMI



Distinguishing features: No scales on most of underside of head including snout, below suborbital ridge, and lower jaw. Narrow band of about 3 rows of teeth in upper jaw with outer teeth slightly enlarged, and 2 to 3 rows of teeth in lower jaw. Pelvic fin with 8 to 9 rays. High first dorsal fin, greater than head length. Small head and long slender cylindrical body. Short barbel, about half eye diameter.

Colour: Dark greyish-brown.

Size: To about 27 cm TL.

Length measurement method: Total length

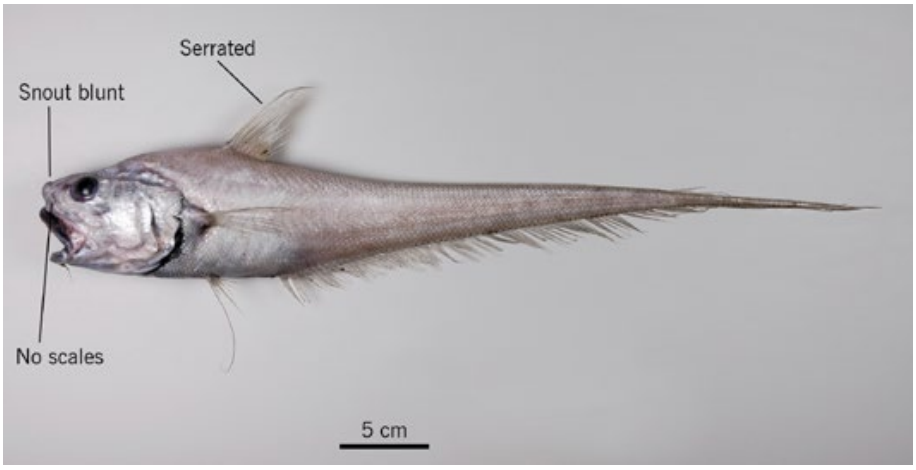
Distribution: Known only from north Chatham Rise slope in New Zealand but probably more widespread.

Depth: 1500 to 1800 m.

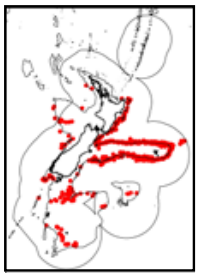
Similar species: Humpback rattail (*Coryphaenoides dossenus*) has scales on underside of head and barbel longer than eye diameter.

Biology & ecology: Demersal. Females captured during June 2010 had enlarged ovaries with hyaline eggs and appeared close to spawning.

Murray's rattail *Coryphaenoides murrayi*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CMU



Distinguishing features: Tip of snout not armed with spiny modified scale (scute). Ventral surface of snout lacking scales. Pale greyish body and fins. Upper jaw teeth in broad band with outer series slightly enlarged. Lower jaw teeth in 1 row.

Colour: Pale silvery-grey body and fins without obvious markings.

Size: To about 80 cm TL.

Length measurement method: Total length

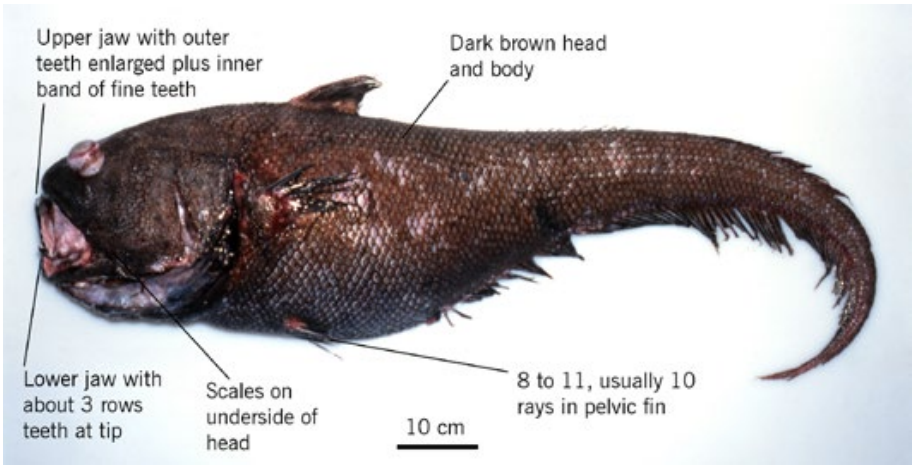
Distribution: Widespread in New Zealand from off west coast North Island to Campbell Plateau including Challenger Plateau and Chatham Rise. Western Indian Ocean to southeast Australia and Fiji.

Depth: 700 to at least 2400 m.

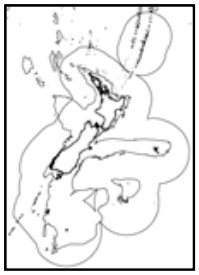
Similar species: Striate rattail (*Coryphaenoides striaturus*) has scaled underside of snout.

Biology & ecology: Demersal.

Bighead rattail *Coryphaenoides rudis*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CRD



Distinguishing features: Scales on underside of head and lower jaw. Upper jaw with outer teeth enlarged plus inner band of fine teeth. Lower jaw with about 3 rows of teeth near tip reducing to 1 at rear. Pelvic fin with 9 to 10 (usually 10, rarely 8 or 11) rays. Mouth large. No strong ridges on head.

Colour: Overall dark brown with scale pockets prominently outlined in brownish-black. Fins dark brown to blackish.

Size: To 120 cm TL.

Length measurement method: Total length

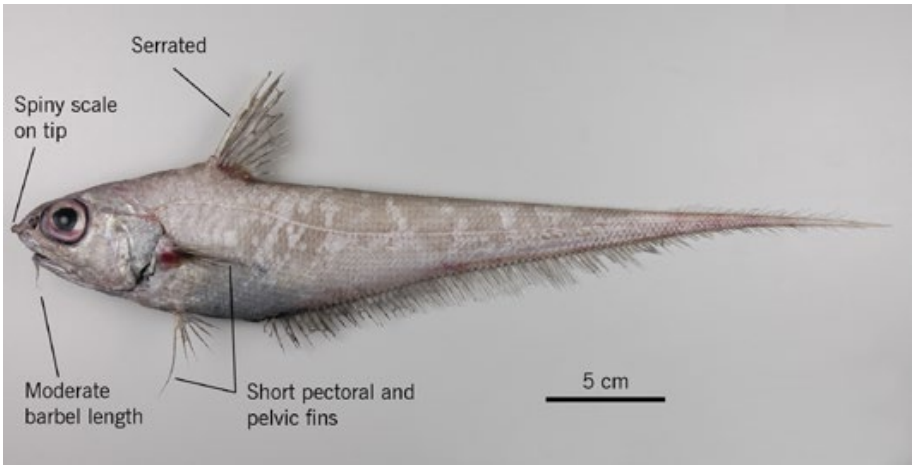
Distribution: In New Zealand only known from northern waters, including Kermadec region and West Norfolk Ridge. North Atlantic, Indian and Pacific Oceans.

Depth: 1000 to 3500 m.

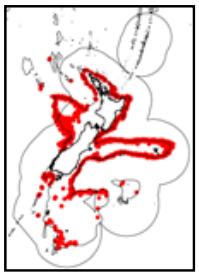
Similar species: Cosmopolitan rattail (*Coryphaenoides armatus*) has no scales on most of underside of head, 1 or 2 rows of teeth in upper jaw and 1 row in lower jaw.

Biology & ecology: Demersal. Larger fish feed on cephalopods.

Serrulate rattail *Coryphaenoides serrulatus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CSE



Distinguishing features: Tip of snout armed with spiny modified scale with smaller spiny scales on each side of snout. Pectoral and pelvic fins not elongated, about same or less than head length. Chin barbel moderate in length, shorter than eye diameter. Strong serrated spine in first dorsal fin. Belly near anus dark greyish-brown.

Colour: Body and head pale greyish-brown. Belly near anus dark greyish-brown. All fins dusky.

Size: To about 51 cm TL.

Length measurement method: Total length

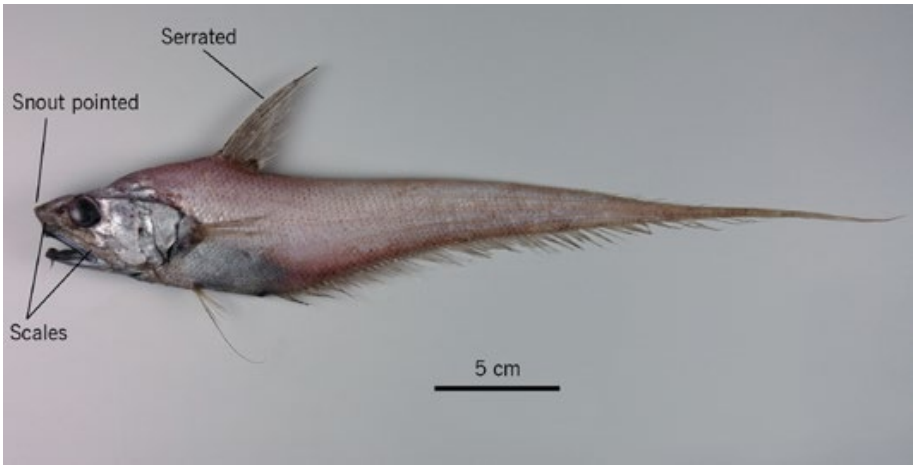
Distribution: Widespread in New Zealand from West Norfolk Ridge to Campbell Plateau including Challenger Plateau and Chatham Rise. Australia.

Depth: 750 to 1280 m.

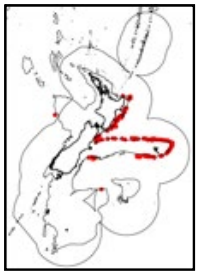
Similar species: Four-rayed rattail (*C. subserrulatus*) has very long pectoral and pelvic fins, much longer than head length, and tiny (rudimentary) chin barbel. McMillan's rattail (*C. mcmillani*) has pectoral fin shorter than head length, and pelvic fin usually longer or about same as head length, and tiny chin barbel.

Biology & ecology: Largely unknown. Demersal. A very abundant species with numerous records.

Striate rattail *Coryphaenoides striaturus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CTR



Distinguishing features: Tip of snout not armed with spiny modified scale (scute). Ventral surface of snout covered with small scales. Pale greyish body and fins. Upper jaw teeth in band with outer series enlarged. Lower jaw teeth in 1 row.

Colour: Silvery-grey body and fins without obvious markings.

Size: To about 55 cm TL.

Length measurement method: Total length

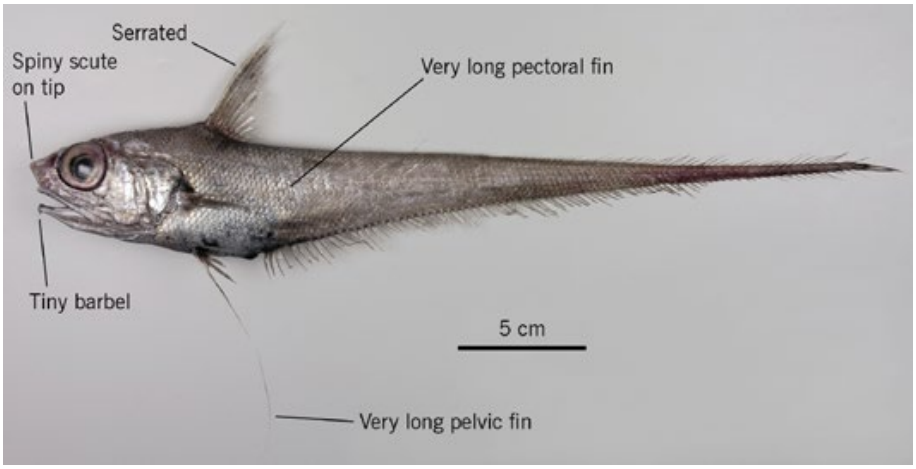
Distribution: Central and northern New Zealand from West Norfolk Ridge to Bounty Trough. Widespread in Southern Hemisphere from Atlantic off South Africa, Indian Ocean, Australia, Lord Howe Rise, New Caledonia.

Depth: 1000 to at least 1400 m.

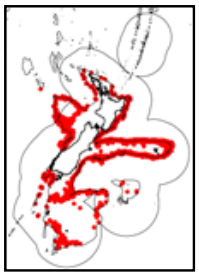
Similar species: Murray's rattail (*Coryphaenoides murrayi*) lacks scales on underside of snout.

Biology & ecology: Demersal.

Four-ray rattail *Coryphaenoides subserrulatus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CSU



Distinguishing features: Tip of snout armed with spiny modified scale with smaller spiny scales on each side of snout. Pectoral and pelvic fins elongated, both much longer than head length. Chin barbel tiny. Serrated spine in first dorsal fin. Belly near anus greyish-silver.

Colour: Body and head pale greyish-silver sometimes with greenish iridescence. Belly near anus greyish-silver. All fins slightly dusky.

Size: To about 45 cm TL.

Length measurement method: Total length

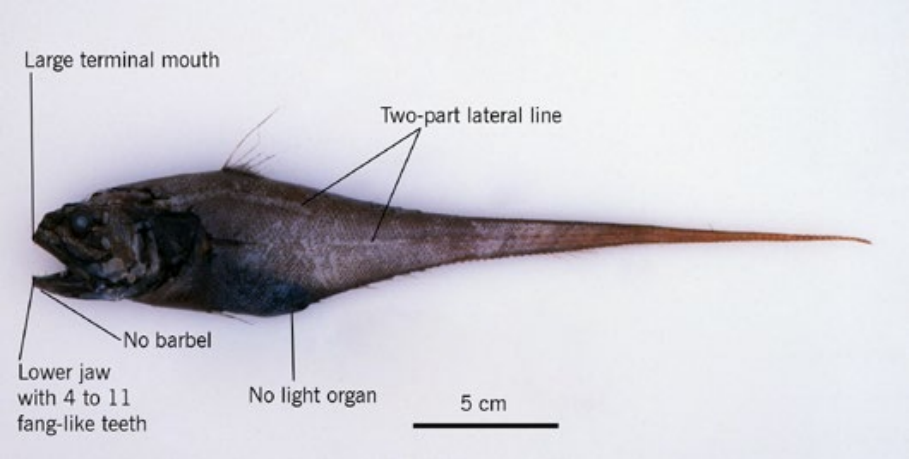
Distribution: Widespread in New Zealand. Widespread in southern hemisphere from Agulhas Plateau, Southeast Australia, Pacific off Chile and South Atlantic off Argentina.

Depth: 700 to 1200 m.

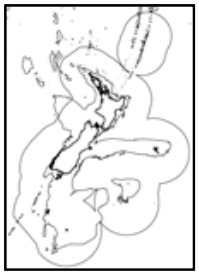
Similar species: Serrulate rattail (*C. serrulatus*) has pectoral and pelvic fins rays that are shorter than head length, and moderate length chin barbel, less than eye diameter. McMillan's rattail (*C. mcmillani*) has pectoral fin shorter than head length, and pelvic fin usually longer or about same as head length, and tiny chin barbel.

Biology & ecology: Largely unknown. Demersal. A very abundant species with numerous records.

Dogtooth rattail *Cynomacrurus piriei*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: CPI



Distinguishing features: Large terminal mouth. Lower jaw with one row of 4 to 11 fang-like teeth, upper jaw with small teeth in narrow band plus one or more pairs of fang-like teeth near front. No barbel or light organ. Anus close to anal fin origin. Two-part lateral line with short upper section behind head and second longer section on mid-body and tail.

Colour: Dark brown to brownish-black.

Size: To about 50 cm TL.

Length measurement method: Total length

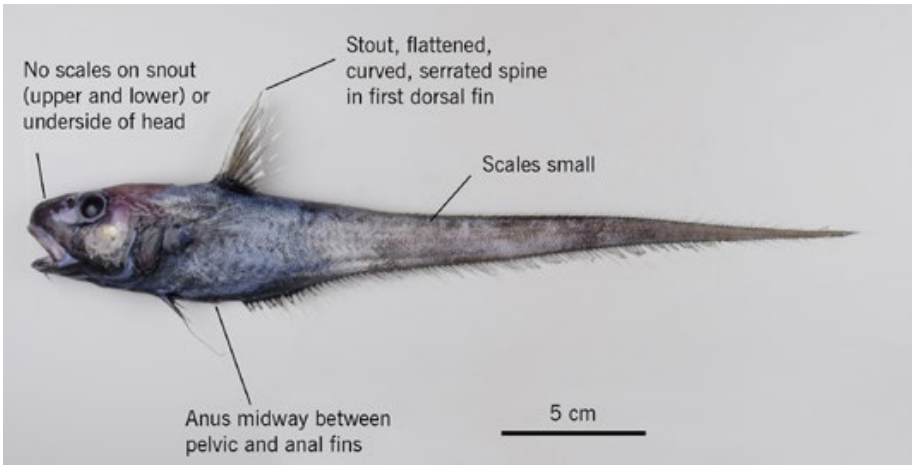
Distribution: Probably southern in New Zealand with records from south Chatham Rise and Bounty Trough. Widespread in southern hemisphere from cool temperate to Antarctic waters.

Depth: 500 to 3800 m.

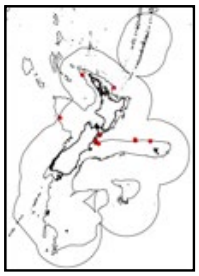
Similar species: *Odontomacrurus murrayi* has anus about midway between pelvic and anal fins, small light organ between pelvic finbases, and is black overall.

Biology & ecology: Deep midwater predator.

Naked snout rattail *Haplomacrourus nudirostris*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: HAN



Distinguishing features: No scales on top of snout or on underside of head including snout. Scales small, those on head and front of body lacking spinules. Anus about midway between anal and pelvic fins. Small light organ between pelvic fin bases. Spinous ray of first dorsal fin stout, flattened, curved and finely serrated.

Colour: Overall brownish black with bluish abdomen from behind head to about a third of body length.

Size: To about 60 cm TL.

Length measurement method: Total length

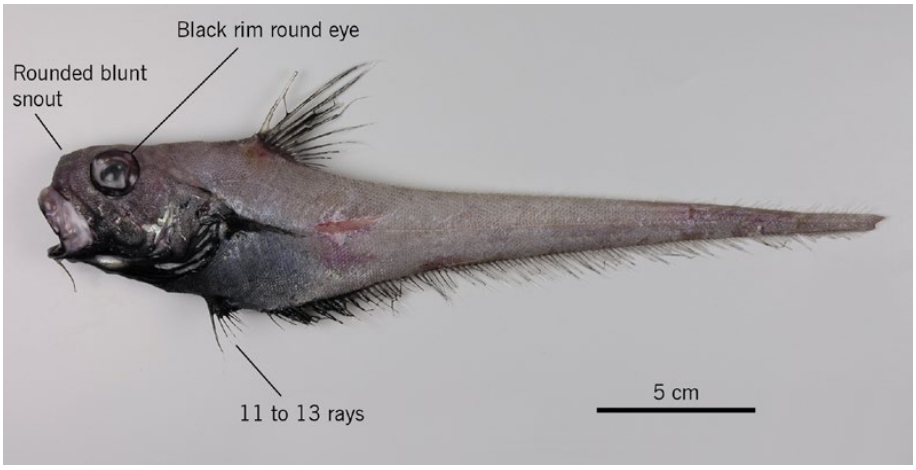
Distribution: Central and northern New Zealand from off Northland to northeast Chatham Rise including Challenger Plateau. South Atlantic off Africa and Argentina, Indian Ocean, Australia and Wallis and Futuna Islands.

Depth: 790 to 1590 m.

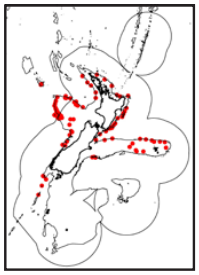
Similar species: Species of *Nezumia* have upper snout scaled with a strong scute at the tip, and prominent scaled suborbital ridge.

Biology & ecology: Demersal.

Bulbous rattail *Kuronezumia bubonis*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names: Bulbous black rat
FishNZ reporting code: RAT
FishNZ research/observer code: NBU



Distinguishing features: First dorsal fin spine serrated. Bulbous light organ between pelvic fin bases. Snout rounded and not protruding, no obvious terminal scute. Ventral surface of head scaled except for naked margin of skin above upper jaw. Dorsal, pectoral, and pelvic fins blackish.

Colour: Body brownish. All fins dark brown or black.

Size: To about 73 cm TL.

Length measurement method: Total length

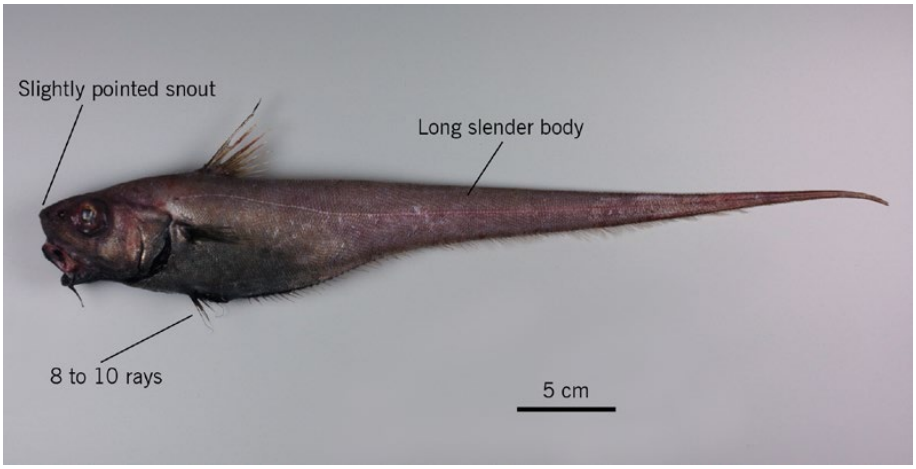
Distribution: Central and northern New Zealand from West Norfolk Ridge to Puysegar including Challenger Plateau and Chatham Rise. Worldwide in tropical and temperate seas.

Depth: 600 to 1100 m.

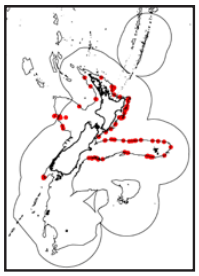
Similar species: *Kuronezumia leonis* has slightly protruding snout tipped with enlarged button-like scute, and greyish first dorsal, pectoral, and pelvic fins.

Biology & ecology: Demersal.

Starnose black rat *Kuronezumia leonis*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: NPU



Distinguishing features: First dorsal fin spine serrated. Snout protruding and tipped with small scute. Ventral surface of head covered with scales. Fins greyish. Body pale greyish-brown, covered with small scales.

Colour: Body pale greyish-brown, first dorsal, pectoral, and pelvic fins greyish.

Size: To about 50 cm TL.

Length measurement method: Total length

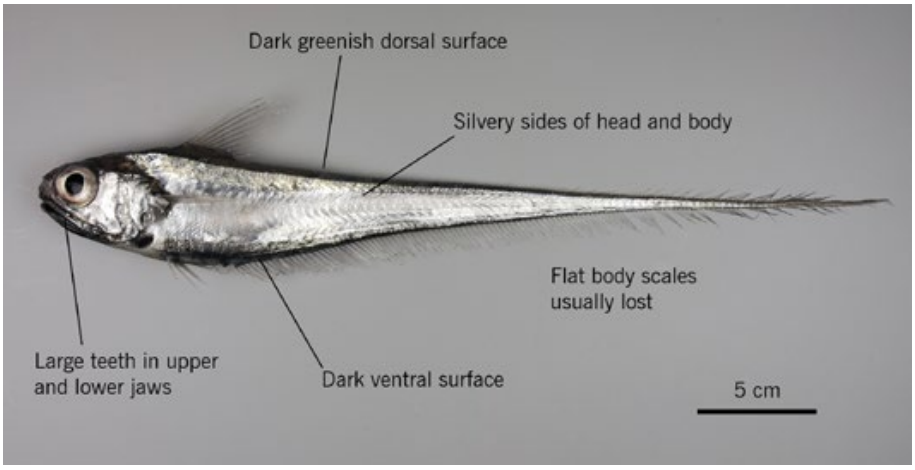
Distribution: Central and northern New Zealand from off Northland to Puysegar. Widespread in southern hemisphere including South Atlantic, southern Africa, Mozambique, Kerguelen Ridge, southern Australia.

Depth: 700 to 1200 m.

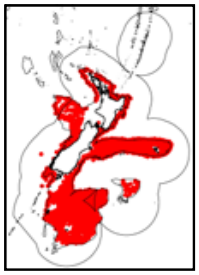
Similar species: Bulbous rattail (*Kuronezumia bubonis*) has rounded non-protruding snout not tipped with scute, and blackish first dorsal, pectoral, and pelvic fins.

Biology & ecology: Demersal.

Javelinfish *Lepidorhynchus denticulatus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: JAV
FishNZ research/observer code: JAV



Distinguishing features: Body with dull (non-reflective) dorsal surface, silvery sides, and dark/silvery ventral surface. Mouth large, almost terminal. Small barbel. Dorsal spine smooth. Outer row of teeth in upper jaw enlarged. Single row of teeth in lower jaw.

Colour: Body with dull (non-reflective) dorsal surface, silvery sides, and dark/silvery ventral surface. Fins dusky/dull.

Size: To about 72 cm TL.

Length measurement method: Total length

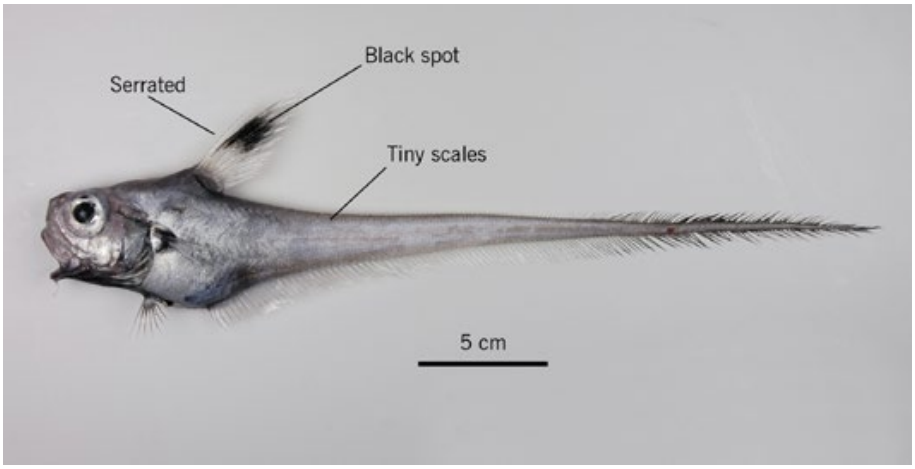
Distribution: Widespread in New Zealand from off Northland to Campbell Plateau. Southern Australia, Lord Howe Rise and Hawaii.

Depth: 250 to 1200 m.

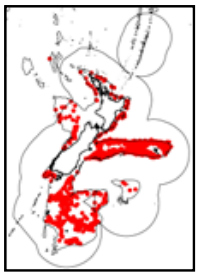
Similar species: Other species lack silvery sided body, black ventral body surface, and enlarged saw teeth.

Biology & ecology: Probably demersal. Can be abundant in some areas such as slopes of Chatham Rise and east coast of South Island.

Blackspot rattail *Lucigadus nigromaculatus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: VNI



Distinguishing features: Large dark blotch on top half of first dorsal fin. Very short trunk with long slender tail, short rounded snout lacking strong ridges or spiny scutes. Serrated spine in first dorsal fin. Small teeth in jaws and very small body scales.

Colour: Head and body greyish, greyish-silver on sides and belly. Underside of head and throat dark. Large dark blotch on top half of first dorsal fin. Second dorsal and anal fins dusky posteriorly. Pectoral and pelvic and other parts of fins pale.

Size: To about 40 cm TL.

Length measurement method: Total length

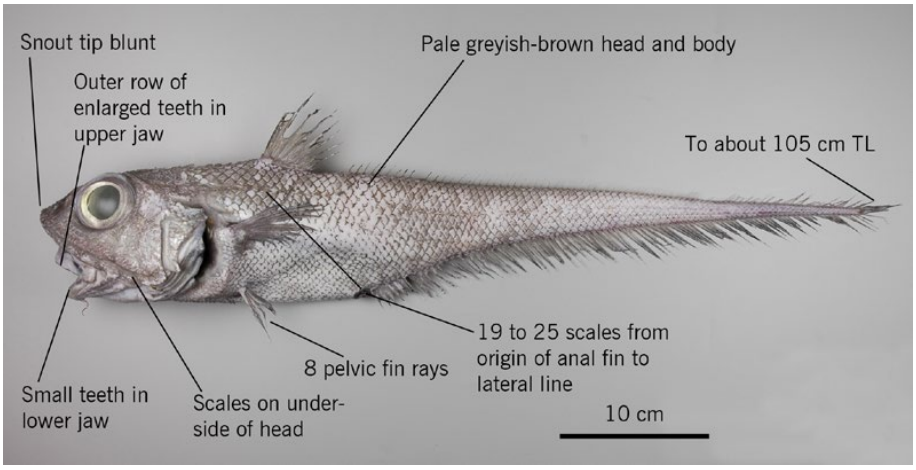
Distribution: Widespread in New Zealand from West Norfolk Ridge to Campbell Plateau. Off southern Africa and possibly southeast Pacific, widespread off southern Australia.

Depth: 400 to 800 m.

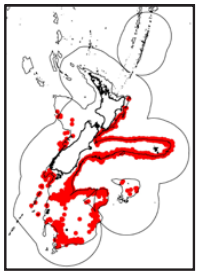
Similar species: Other species lack combination of serrated firstdorsal fin spine, large dark blotch on first dorsal fin, short rounded snout, and long slender tail.

Biology & ecology: Demersal.

Carinate rattail *Macrourus carinatus*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names: Ridge scaled rattail
FishNZ reporting code: MCA
FishNZ research/observer code: MCA



Distinguishing features: 8 (7 to 9) pelvic fin rays. 2 to 5 rows of small uniform sized teeth in lower jaw. Outer row of enlarged teeth (3 to 6 rows total) in upper jaw. Snout tip blunt. Pale greyish-brown head and body. Scales on most of underside of head and lower jaw but no scales under snout in front of mouth. 19 to 25 scales in diagonal row from origin of anal fin to (not including) lateral line scale.

Colour: Pale greyish-brown head and body. Greyish-brown fins.

Size: To about 105 cm TL.

Length measurement method: Total length

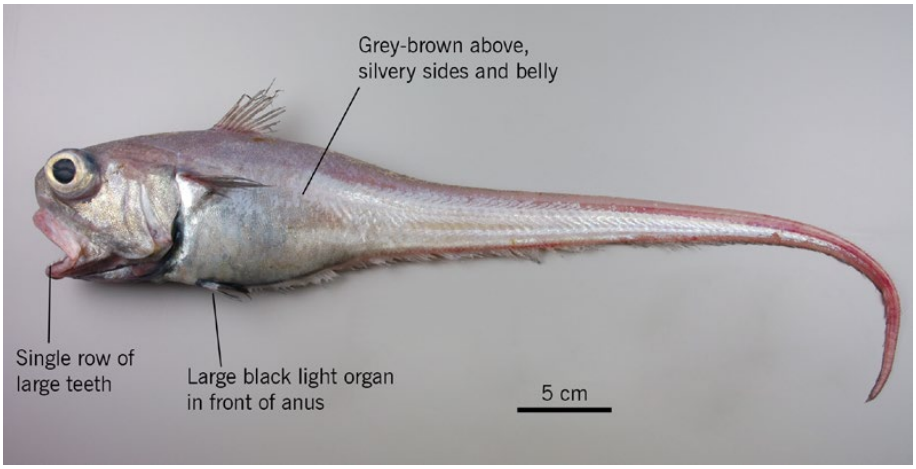
Distribution: Widespread in New Zealand but most abundant in south. Widespread in temperate to Subantarctic waters of the southern hemisphere and northern Southern Ocean.

Depth: 400 to 1500 m.

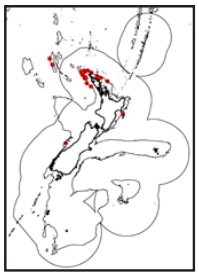
Similar species: Bigeye rattail (*M. holotrachys*) has no scales onunderside of head. Whitson's rattail (*M. whitsoni*) has 1 row of slightly enlarged teeth in lower jaw, 36 to 45 scales from origin of anal fin to lateral line scale. Caml rattail (*M. caml*) has 8 pelvic fin rays, 4 to 5 rows of small uniform teeth in upper jaw, 30 to 40 scales from origin of anal fin to lateral line.

Biology & ecology: Demersal. Poorly known.

Smoothhead rattail *Malacocephalus laevis*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: MLA



Distinguishing features: First dorsal fin spine smooth. Bean-shaped black light organ on ventral body between pelvic fin bases. Large mouth with two rows of teeth in upper jaw and single row of canine-like teeth in lower jaw. Small body scales give body velvety feel.

Colour: Dull brownish grey dorsal surface of body with silvery sides and pale ventrally. Pale tipped dorsal fin especially in Juveniles.

Size: To about 74 cm TL.

Length measurement method: Total length

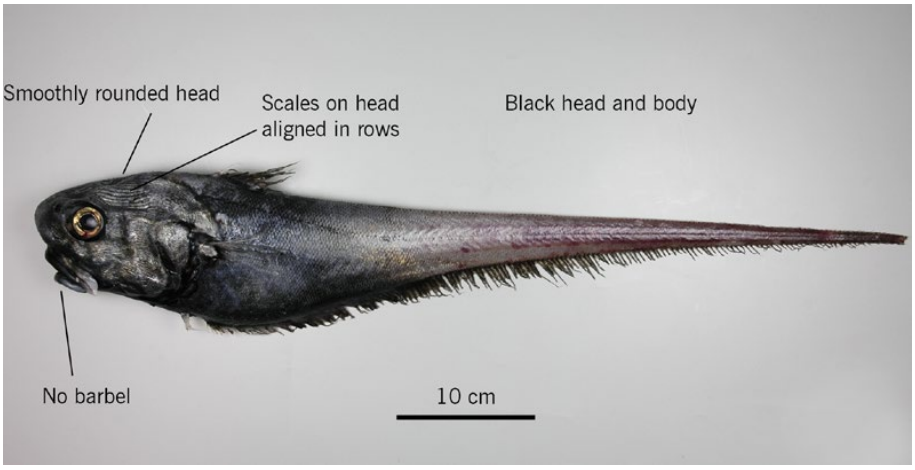
Distribution: Northern New Zealand from Kermadec and West Norfolk Ridges to off Hawke Bay. Widespread in warm waters of the Atlantic, Indian and Pacific Oceans.

Depth: 200 to 1000 m.

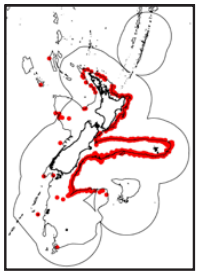
Similar species: Other species lack large bean-shaped black lightorgan between pelvic fin bases, and large mouth with large canine-like teeth in lower jaw.

Biology & ecology: Demersal.

Black javelinfish *Mesobius antipodum*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names: Black whiptail (Aus.)
FishNZ reporting code: RAT
FishNZ research/observer code: BJA



Distinguishing features: Head smoothly rounded without spiny ridges and covered with distinctive elongated scales fused to skin giving combed pattern. Head and body black, fading to greyish brown on tail. No chin barbel. Small black light organ between pelvic fin bases.

Colour: Head and body black, fading to greyish brown on tail. Fins black.

Size: To about 77 cm TL.

Length measurement method: Total length

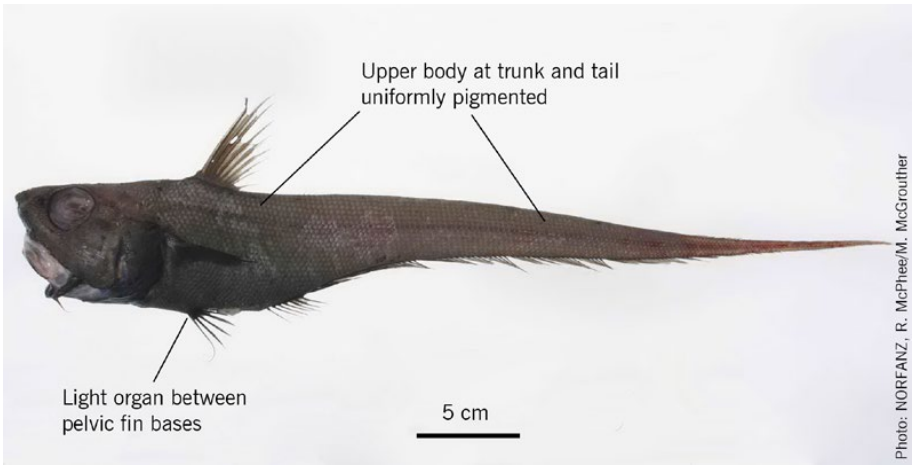
Distribution: Widespread in New Zealand from West Norfolk Ridge to Pukaki Rise. Widespread in southern hemisphere in South Atlantic, Indian, Southern and southwest Pacific Oceans.

Depth: 800 to 1400 m.

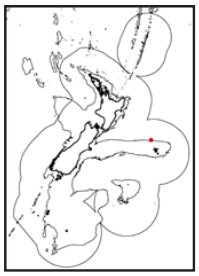
Similar species: Other species lack combination of large, soft, rounded head with distinctive elongated scales fused to skin, black head and body fading to greyish-brown on tail.

Biology & ecology: Largely unknown. Demersal and in midwater.

Cohen's rattail *Nezumia coheni*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: NZC



Distinguishing features: Small lens-like light organ on underside of body about on line between pelvic fin bases. Upper body above lateral line at trunk and on tail uniformly pigmented. 10 to 12, usually 11 pelvic fin rays.

Colour: Overall grey-brown. Darker pigment of abdomen not extending up to reach dorsal surface of body.

Size: To about 40 cm TL.

Length measurement method: Total length

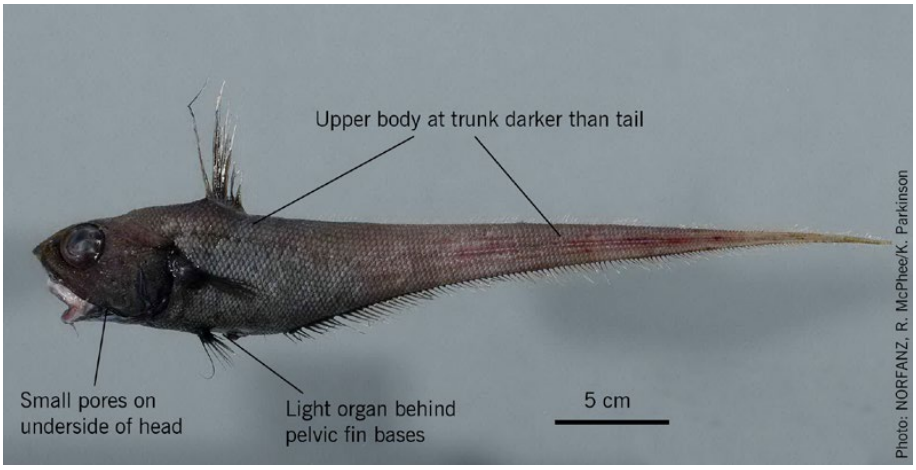
Distribution: Northern New Zealand from Kermadec Ridge, West Norfolk Ridge and northeast coast North Island. Australia and New Caledonia.

Depth: 700 to 1400 m.

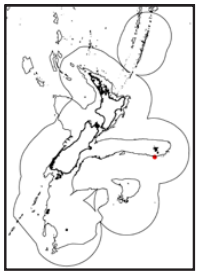
Similar species: Kapala rattail (*Nezumia kapala*) and *N. namatahi* have small lens-like light organ on underside of body well behind line between pelvic fin bases, and both have dark trunk which reaches to dorsal surface of body and is darker than upper side of tail.

Biology & ecology: Demersal.

Kapala rattail *Nezumia kapala*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: NZK



Distinguishing features: Small lens-like light organ on underside of body well behind line between pelvic fin bases. Upper body above lateral line at trunk noticeably darker than upper body on tail. 11 to 12, usually 11 pelvic fin rays. Sensory pores on underside of head small and inconspicuous.

Colour: Overall pale to dark brownish with abdomen/trunk noticeably darker and extending up to dorsal surface of body.

Size: To about 41 cm TL.

Length measurement method: Total length

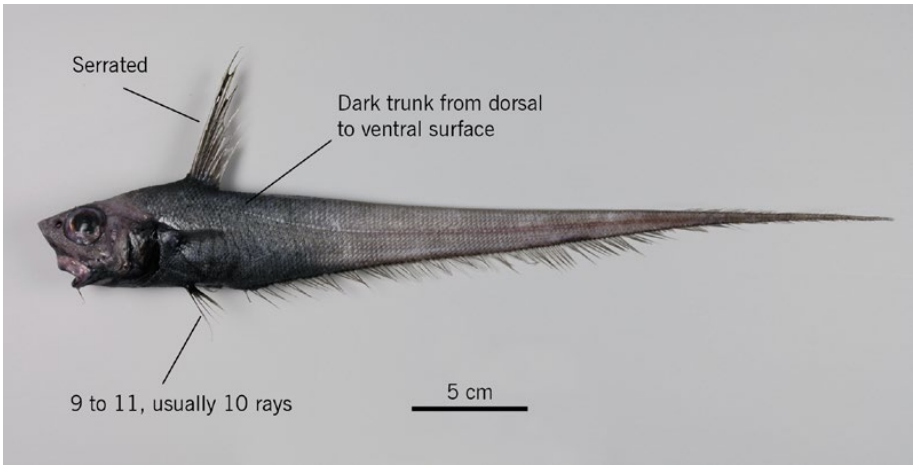
Distribution: New Zealand from southern Kermadec Ridge to north and east Chatham Rise. Australia.

Depth: 850 to 1250 m.

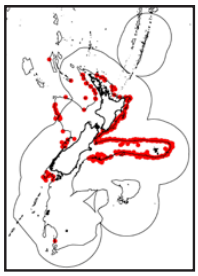
Similar species: Cohen's rattail (*Nezumia coheni*) has small lens-like light organ on underside of body about on line between pelvic fin bases, and darker pigment of abdomen does not extend to dorsal surface of body and is not noticeably darker than upper tail. *N. namatahi* has 9 to 11, usually 10 pelvic fin rays, and sensory pores on underside of head are large and prominent.

Biology & ecology: Demersal.

Squashed face marlinspike *Nezumia namatahi*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: NNA



Distinguishing features: First dorsal fin spine serrated and very long. Ventral surface of snout mostly lacking scales. Pelvic fin with 9 to 11 (usually 10) rays. Blue abdominal area reaches dorsal surface of body. Small anterior dermal window of light organ located between anus and rear of pelvic fin bases.

Colour: Body dark brownish-black. Blue abdominal area reaches dorsal surface of body. All fins dark.

Size: To about 36 cm TL.

Length measurement method: Total length

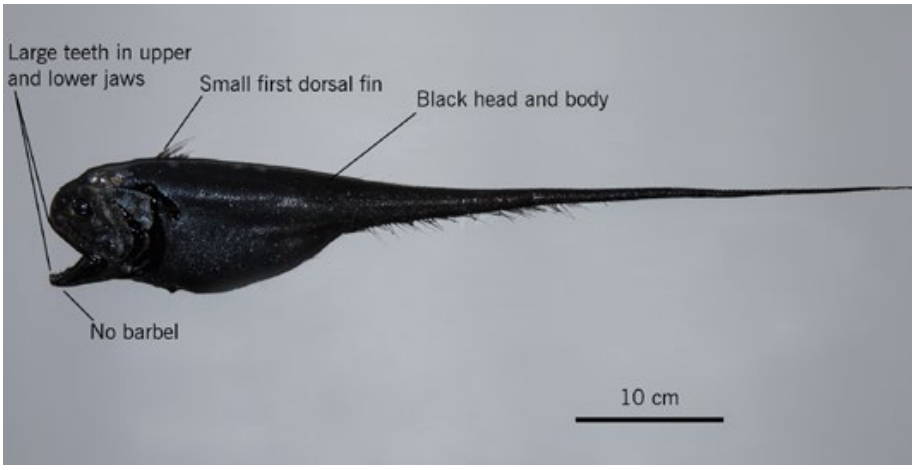
Distribution: Widespread in New Zealand from Kermadec Ridge to Stewart-Snares slope. Common off southeast Australia.

Depth: 700 to 1200 m.

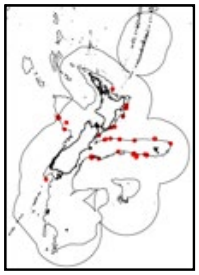
Similar species: Kapala rattail (*Nezumia kapala*) has 11 to 12 (usually 12) pelvic fin rays. Cohen's rattail (*Nezumia coheni*) has anterior dermal window of light organ between rear bases of pelvic fins, abdominal area is not notably dark and does not extend to dorsal surface, and has 11 (10 to 12) pelvic fin rays.

Biology & ecology: Demersal.

Large fang rattail *Odontomacrurus murrayi*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: OMU



Distinguishing features: No chin barbel. Mouth large, both jaws armed with single row of pointed teeth. Anus about midway between pelvic and anal fins. Head and body black or bluish-black. Pectoral fins with 8 to 12 rays. Large sensory pores on head.

Colour: Body and all fins black or bluish-black.

Size: To about 64 cm TL.

Length measurement method: Total length

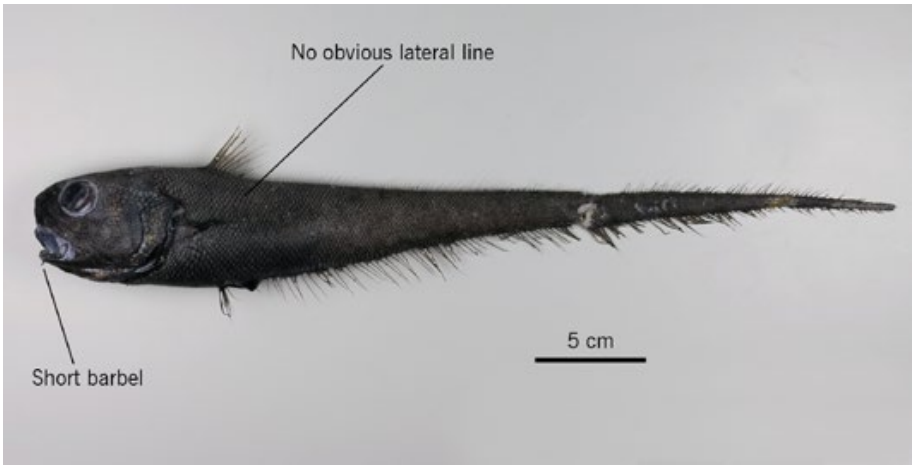
Distribution: Central and northern New Zealand from off Northland to Bounty Trough. Worldwide in tropical and subtropical/warm temperate seas.

Depth: Usually deeper than about 800 m.

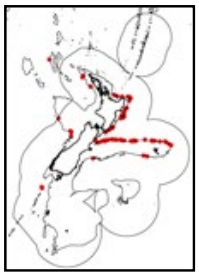
Similar species: Black javelinfish (*Mesobius antipodum*) has bands of fine teeth in both jaws and smaller sensory pores on head. Dogtooth rattail (*Cyanomacrurus piriei*) has large teeth in both jaws, anus close to anal fin origin and 15 to 17 rays in pectoral fin.

Biology & ecology: Largely unknown. Possibly midwater.

Velvet rattail *Trachonurus gagates*



Family: 215d. Macrouridae (Rattails)
Maori names:
Other names:
FishNZ reporting code: RAT
FishNZ research/observer code: TRX



Distinguishing features: Body dark brown or blackish, covered with small bristly scales. No lateral line of grooved scales on body. Head scaled. Small chin barbel present. Teeth small. Spinous ray of first dorsal fin short, not serrated.

Colour: Body dark brown or blackish. Dorsal and anal fins dusky, pectoral and pelvic fins blackish.

Size: To about 48cm TL.

Length measurement method: Total length

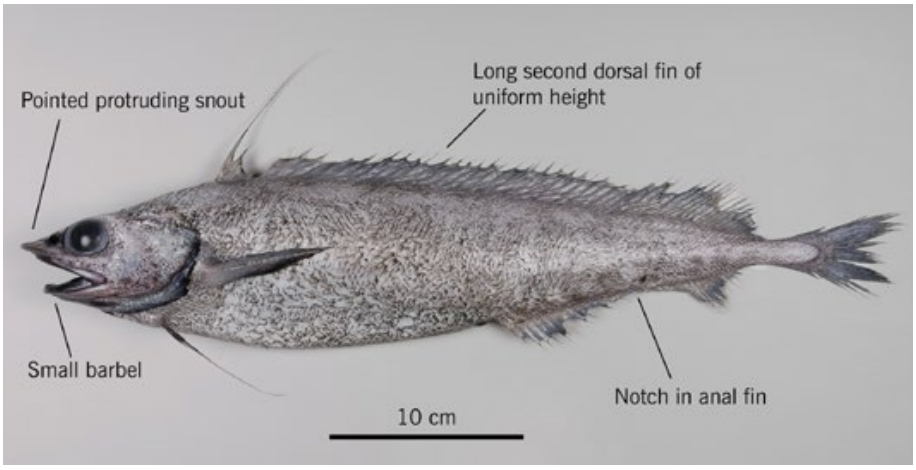
Distribution: Central and northern New Zealand from West Norfolk Ridge to off Canterbury. Southern Australia.

Depth: 800 to 1200 m.

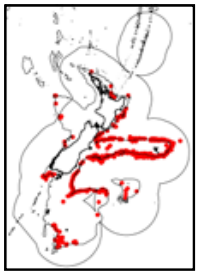
Similar species: *Trachonurus villosus* has obvious lateral line, and is pale greyish.

Biology & ecology: Demersal.

Violet cod *Antimora rostrata*



Family: 216. Moridae (Deepsea cods)
Maori names:
Other names:
FishNZ reporting code: VCO
FishNZ research/observer code: VCO



Distinguishing features: Elongated ray in first dorsal fin that is about equal to head length. First dorsal fin short-based with 5 or more rays. Small chin barbel present. Notch in anal fin. Snout pointed and protruding in front of mouth, about same length as eye diameter.

Colour: Head and body colour variable, but generally pale greyish-brown in small and almost black in large individuals. Fins also pale in small and dark in large individuals.

Size: To about 67 cm TL.

Length measurement method: Total length

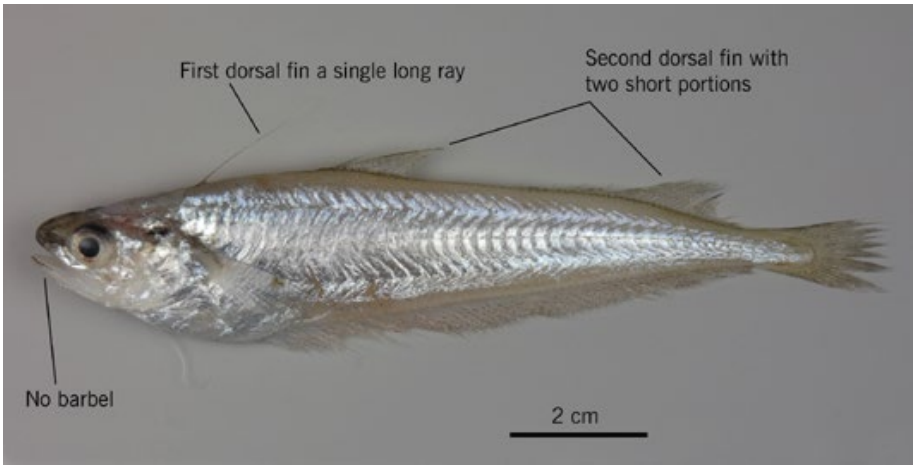
Distribution: Widespread in temperate and cooler waters of southern and northern hemispheres, including New Zealand and southern Australia.

Depth: Reported from 400 to 2900 m but usually found at 800 to 1800 m.

Similar species: Small-headed cod (*Lepidion microcephalus*) has a short blunt snout which is less than eye diameter.

Biology & ecology: A widespread and deep-living species but surprisingly poorly studied. Probably predatory. Appears to spawn in winter in New Zealand. Males are smaller than females.

Ahuru *Auchenoceros punctatus*



Family: 216. Moridae (Deepsea cods)
Maori names: Ahuru
Other names: Pink cod
FishNZ reporting code: MOD
FishNZ research/observer code: PCO

Distinguishing features: First dorsal fin a single long ray, second dorsal fin with high anterior portion, then a low intermediate gradually increasing to a high posterior portion. Long anal fin, and long pelvic fin with two rays. No chin barbel.

Colour: Sides of head and body, and belly silvery, rest of body pale pinkish-grey. Small dark spot on head above operculum. Second dorsal, caudal and anal fins with dark pepper-sized spots.

Size: To about 13 cm TL.

Length measurement method: Total length

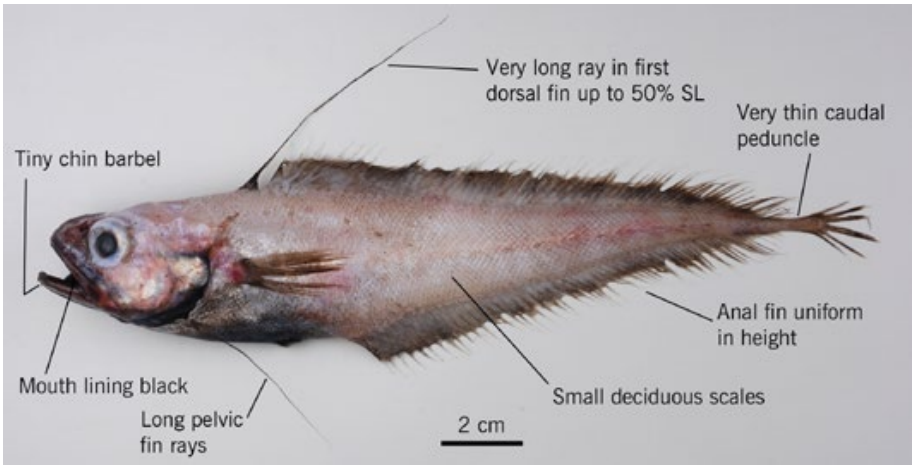
Distribution: Known only from east and west coasts of North and South Islands at shallow inshore localities. Fisheries records from depths greater than about 100 m on Chatham Rise, and Bounty and Campbell Plateaus are probably erroneous.

Depth: 0 to 80 m.

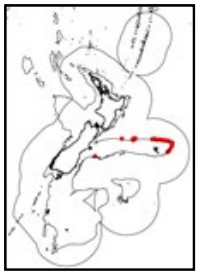
Similar species: Dwarf cod (*Notophycis marginata*) has a dark tipped first dorsal fin with 8 to 10 rays, and a small chin barbel.

Biology & ecology: Unknown. Caught in bottom trawls but likely to be in midwater over sandy and muddy bottom habitat in inshore waters.

Codling *Guttigadus globiceps*



Family: 216. Moridae (Deepsea cods)
Maori names:
Other names: Fathead cod
FishNZ reporting code: MOD
FishNZ research/observer code: GGC



Distinguishing features: Very long second ray of first dorsal fin, up to about half body length (SL). Very thin caudal peduncle. Body scales small, deciduous. Anus separated (forward) from anal fin origin. Narrow band of small teeth in upper and lower jaws. Very small chin barbel. Pelvic fin with 2 long rays plus 1 to 3 smaller rays (microscopic). Anal fin uniform in height (not indented).

Colour: Head and body pale brownish with silvery side of head and abdomen. Mouth and gill cavity black. Second dorsal and anal fins with pale base and brownish outer part.

Size: To about 20 cm SL.

Length measurement method: Standard length

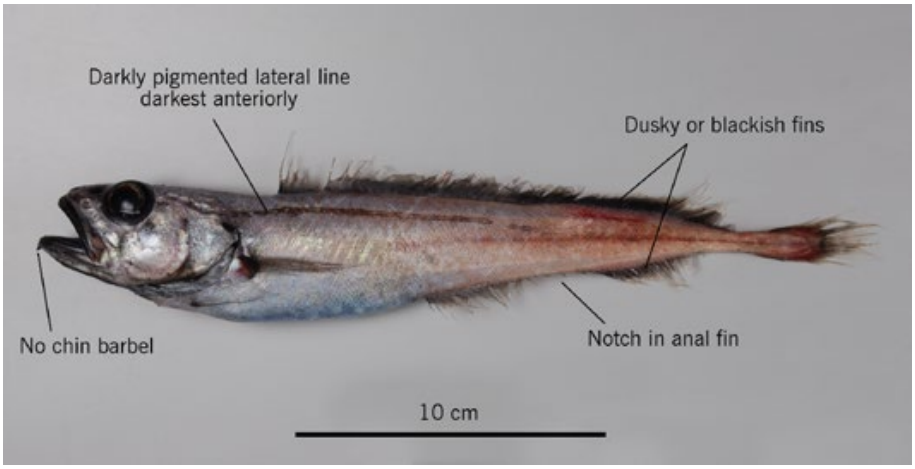
Distribution: Southern Lord Howe Rise and west coast North Island to Bounty Plateau including Chatham Rise in New Zealand. Widespread in the southern hemisphere.

Depth: 730 to 1640 m.

Similar species: The 3 other NZ species of *Guttigadus* all have short second ray of first dorsal fin. Tadpole cod (*G. globosus*) has fleshy bases of dorsal and anal fins and lower jaw fits inside upper when mouth closed. Little codling (*G. kongi*) has loose but not fleshy fin bases, lower jaw does not fit inside upper when mouth closed, scales present on top of head beween eyes. Nakedhead codling (*G. nudicephalus*) has loose but not fleshy fin bases, lower jaw does not fit inside upper when mouth closed, lacks scales on top of head beween eyes.

Biology & ecology: Demersal.

Johnson's cod *Halargyreus johnsonii*



Family: 216. Moridae (Deepsea cods)
Maori names:
Other names: Johnson's slender cod
FishNZ reporting code: HJO
FishNZ research/observer code: HJC

Distinguishing features: Head and body dusky with dark scale pockets. Entire lateral line darkly pigmented. All fins, especially dorsal and anal fins dusky to blackish. Two dorsal fins, uniform in height. Dorsal and anal fins separated from caudal fin. Anal fin with a distinct notch in the middle. Snout short, about same length as eye, rounded. No chin barbel. Tiny teeth with bands in both upper and lower jaws.

Colour: Head and body dusky with dark scale pockets. Entire lateral line darkly pigmented. All fins, especially dorsal and anal fins dusky to blackish. Lips dusky.

Size: To about 70 cm TL.

Length measurement method: Total length

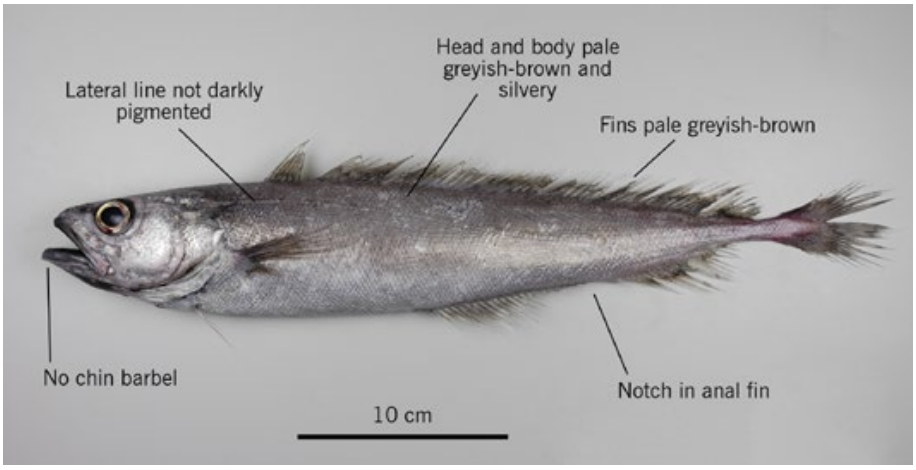
Distribution: Probably widespread in New Zealand. Data plotted on the map includes only data from Te Papa and does not include any fisheries records. Widespread in temperate and polar parts of the Arctic, Atlantic, Pacific, and Southern Oceans.

Depth: 770 to 2070 m.

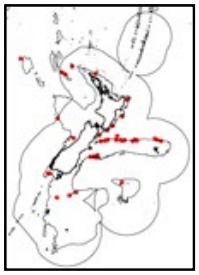
Similar species: Previously confused with the Australasian slender cod (*Halargyreus* sp.) which is shallower-living, has a pale and silvery head and body, pale lateral line, and pale to dusky (not blackish) fins. Violet cod (*Antimora rostrata*) has an elongated first dorsal fin ray and a chin barbel. Hake (*Merluccius australis*) has large sharp teeth and a notch in the second dorsal fin.

Biology & ecology: Demersal.

Australasian slender cod *Halargyreus* sp. A



Family: 216 Moridae (Deepsea cods)
Maori names:
Other names:
FishNZ reporting code: HJO
FishNZ research/observer code: HAS



Distinguishing features: Head and body pale greyish-brown and silvery. Lateral line pale, not heavily pigmented. Fins pale to dusky, not blackish. Two dorsal fins, uniform in height. Dorsal and anal fins separated from caudal fin. Anal fin with a distinct notch in the middle. No chin barbel. Tiny teeth with bands in both upper and lower jaws.

Colour: Head and body pale greyish-brown and silvery. Lateral line pale, not heavily pigmented. Fins pale to dusky, not blackish.

Size: To about 70 cm TL.

Length measurement method: Total length

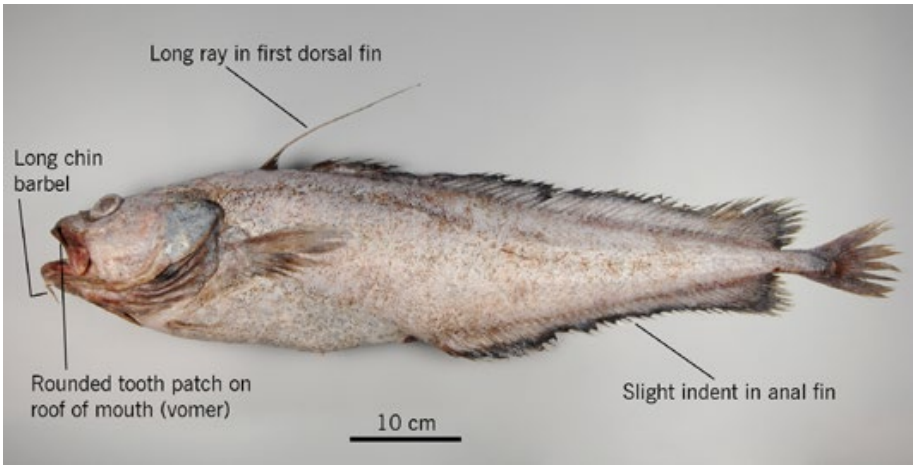
Distribution: Widespread in New Zealand. Data plotted on the map includes only data from Te Papa and does not include any fisheries records. Also known from the Indian Ocean and Australia.

Depth: Deeper than about 400 m but the greatest depth is unknown.

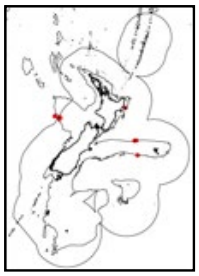
Similar species: Previously confused with the deeper-living Johnson's cod (*Halargyreus johnsonii*) which has a darkly pigmented lateral line, darkest anteriorly, dusky head and body, and dusky to blackish fins.

Biology & ecology: Demersal. Spawns in winter (July-August) on the Chatham Rise and may be aggregated in association with orange roughy (*Hoplostethus atlanticus*) at spawning locations for the latter. Probably more abundant than Johnson's cod.

Roundtooth cod *Lepidion inosimae*



Family: 216. Moridae (Deepsea cods)
Maori names:
Other names: Giant cod
FishNZ reporting code: LEG
FishNZ research/observer code: LPI



Distinguishing features: Elongated ray in first dorsal fin, usually longer than head length. Tooth patch on roof of mouth (vomer) rounded. Anal fin with slight indent behind midpoint. First dorsal fin short based with 5 or 6 rays. Chin barbel long.

Colour: Head and body pale brownish. Inner 2/3rd of second dorsal and anal fins pale brownish, outer edge dark brownish-black.

Size: To 170 cm TL.

Length measurement method: Total length

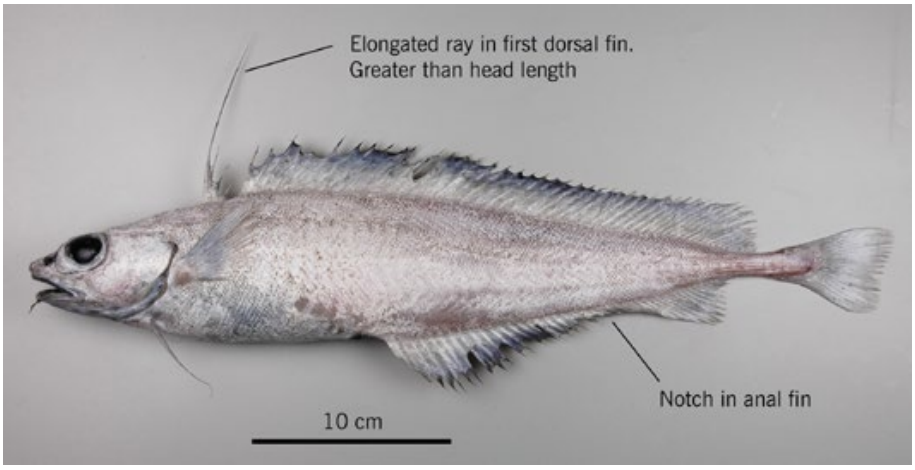
Distribution: Northern New Zealand including Challenger Plateau and North Island. Northwest and central Pacific, and Australia.

Depth: 580 to 1350 m.

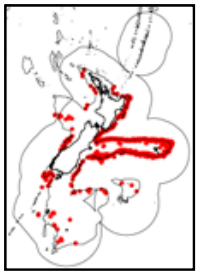
Similar species: Schmidt's cod (*Lepidion schmidti*) has triangular tooth patch on roof of mouth (vomer). Smallhead cod (*Lepidion microcephalus*) has small head, an elongated ray of first dorsal fin that is much greater than head length, deep notch in anal fin, and is a much smaller species, reaching about 46 cm TL.

Biology & ecology: Demersal.

Smallhead cod *Lepidion microcephalus*



Family: 216. Moridae (Deepsea cods)
Maori names:
Other names:
FishNZ reporting code: SMC
FishNZ research/observer code: SMC



Distinguishing features: Elongated ray in the first dorsal fin much greater than head length. First dorsal fin short based with 6 rays. Chin barbel present. Prominent indent or notch in the anal fin.

Colour: Head and body pale greyish-brown. Second dorsal and anterior end of anal fin with wide dusky margins. Other fins pale.

Size: To about 46 cm TL.

Length measurement method: Total length

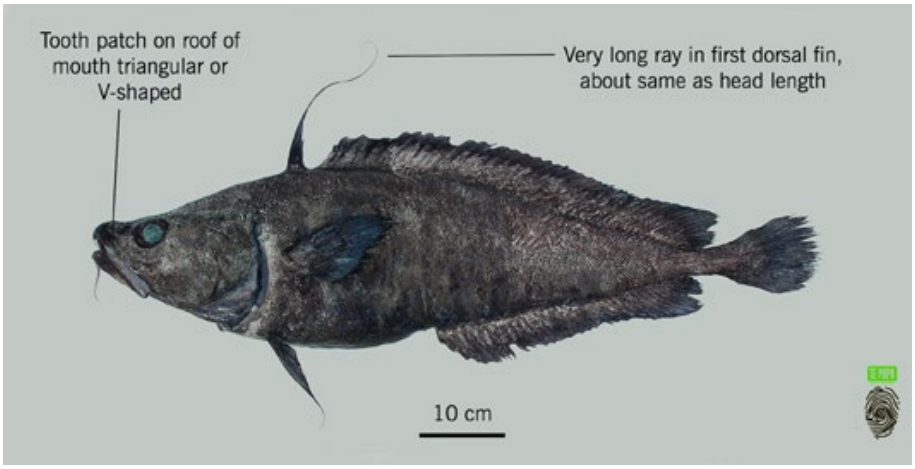
Distribution: Widespread in New Zealand. Also Australia (NSW, Tas).

Depth: 600 to 1100 m.

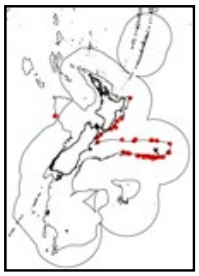
Similar species: Violet cod (*Antimora rostrata*) has a pointed protruding snout that is about the same length as the eye. Schmidt's cod (*Lepidion schmidti*) has a larger head with first dorsal fin ray length about the same as the head length, and only a slight notch in the anal fin, and is much larger (to over 100 cm TL).

Biology & ecology: Demersal.

Schmidt's cod *Lepidion schmidti*



Family: 216. Moridae (Deepsea cods)
Maori names:
Other names: Giant lepidion
FishNZ reporting code: LEG
FishNZ research/observer code: LPS



Distinguishing features: Very long ray in first dorsal fin usually about same as head length. Tooth patch on roof of mouth (vomer) triangular or V-shaped. Anal fin with slight indent behind midpoint. First dorsal fin short based with 6 rays. Chin barbel present.

Colour: Head and body dark greyish-brown but head paler than body. Dorsal and anal fins dusky, caudal, pectoral, and pelvic fins darker, bluish-brown.

Size: To over 100 cm TL.

Length measurement method: Total length

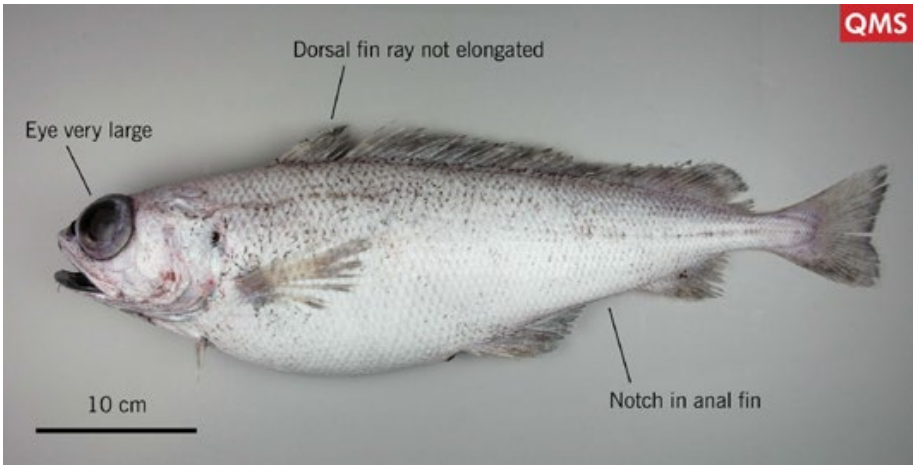
Distribution: Both coasts of New Zealand from Cape Reinga to Puysegur Bank and the Chatham Rise. Australia, Japan, North Atlantic and the Southern Ocean.

Depth: 800 to 1790 m.

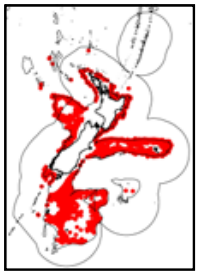
Similar species: The rarer and possibly more northern roundtooth cod (*Lepidion inosimae*) has a rounded tooth patch on the roof of the mouth (vomer). Smallhead cod (*Lepidion microcephalus*) has an elongated first dorsal fin ray that is much longer than the head length, a deep notch in the anal fin, and is a much smaller species, reaching about 46 cm TL.

Biology & ecology: Demersal and possibly associated with rises or steeply undulating ground.

Ribaldo *Mora moro*



Family: 216. Moridae (Deepsea cods)
Maori names:
Other names:
FishNZ reporting code: RIB
FishNZ research/observer code: RIB



Distinguishing features: Two dorsal fins, the first lacking an elongated ray. Deep notch in the anal fin giving the appearance of two fins. Very large eye, much longer than snout. Chin barbel present. Uniform pale greyish-brown head and body.

Colour: Uniform pale greyish-brown head and body. All fins slightly dusky.

Size: To about 79 cm TL.

Length measurement method: Total length

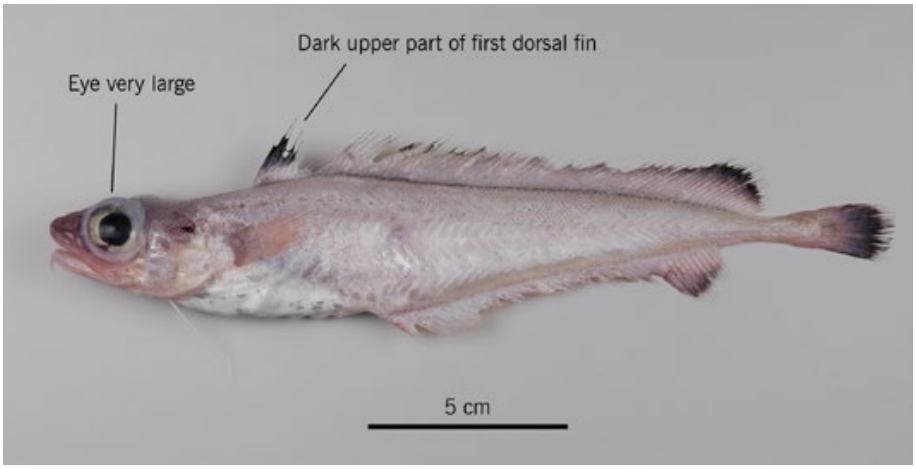
Distribution: Widespread in New Zealand. Also in the North Atlantic, west Mediterranean, Indian, and South Pacific Oceans.

Depth: 400 to 1100 m.

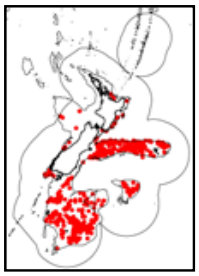
Similar species: Other morid cods lack the short ray in the first dorsal fin, very large eye, and pale body and head.

Biology & ecology: Demersal. Carnivore, feeding on fishes, crustaceans, cephalopods, and other invertebrates. Females reacha larger size than males. Probably spawns in winter.

Dwarf cod *Notophycis marginata*



Family: 216. Moridae (Deepsea cods)
Maori names:
Other names:
FishNZ reporting code: MOD
FishNZ research/observer code: DCO



Distinguishing features: Chin barbel present. Two dorsal fins, the first with a dark blotch at the tip. Body, head and fins pale pinkish.

Colour: Body, head and fins pale pinkish. First dorsal fin with a dark blotch at the tip, second dorsal fin with a dusky margin, darker posteriorly, and dusky caudal fin.

Size: To about 24 cm TL.

Length measurement method: Total length

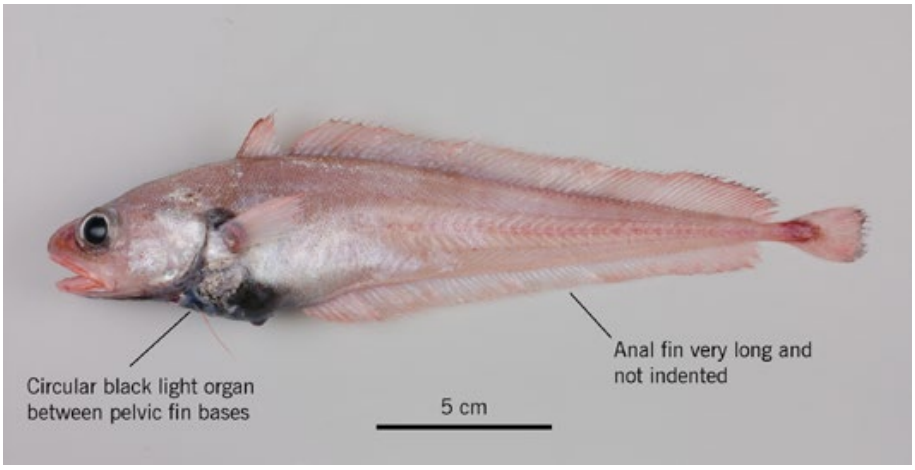
Distribution: Central and southern New Zealand. Australia (NSW, Tas), and southern South America (Chile and Argentina).

Depth: 300 to 800 m.

Similar species: Other morid cods lack a pink body and fins, and dark tipped first dorsal fin.

Biology & ecology: Unknown, probably demersal.

Luminous cod *Physiculus luminosa*



Family: 216. Moridae (Deepsea cods)
Maori names:
Other names: Luminescent cod
FishNZ reporting code: MOD
FishNZ research/observer code: PLU

Distinguishing features: Circular black light organ on midline of belly between bases of pelvic fins. Small chin barbel present. First dorsal fin short based, second very long . Anal similar to second dorsal fin, and of uniform height (not indented). Pelvic fin origin below and ahead of pectoral fin origin.

Colour: Reddish or pinkish upper head and body with pale silvery side of head and belly. Dark ventral belly and throat. Black light organ between pelvic fin bases. Dorsal, caudal, and anal fins reddish or pinkish with dark outer margin.

Size: To about 30 cm SL.

Length measurement method: Standard length

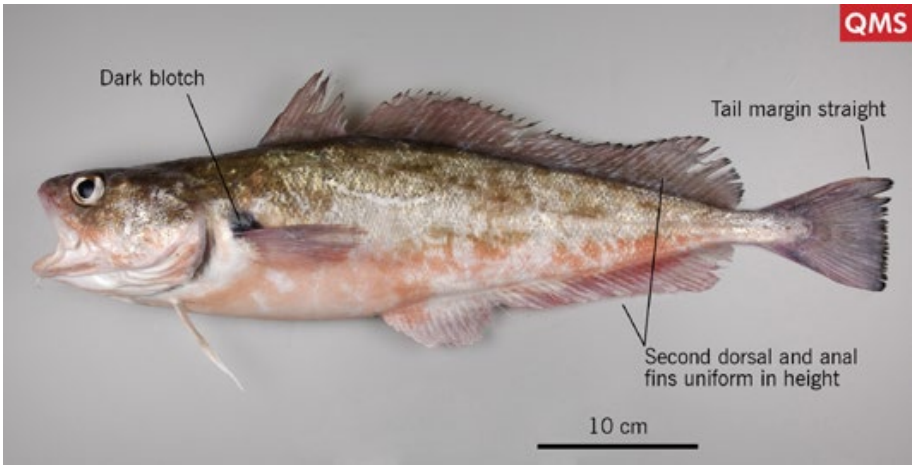
Distribution: New Zealand region from West Norfolk Ridge, northeast North Island, Challenger Plateau, north and east Chatham Rise. Widespread in South Pacific from Australia almost to South America.

Depth: 100 to 1000 m.

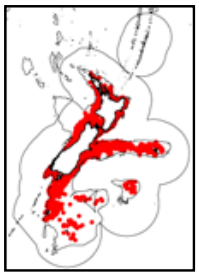
Similar species: Dwarf cod (*Notophycis marginata*) has dark blotch at tip of first dorsal fin, deeply indented anal fin, and lacks light organ on belly.

Biology & ecology: Demersal.

Red cod *Pseudophycis bachus*



Family: 216. Moridae (Deepsea cods)
Maori names: Hoka
Other names:
FishNZ reporting code: RCO
FishNZ research/observer code: RCO



Distinguishing features: Large dark blotch on the upper base of the pectoral fin. Caudal fin margin straight or only slightly rounded. Second dorsal and anal fins uniform in height without an obvious notch. Caudal fin separate from the second dorsal and anal fins. Chin barbel present. No light organ on midline of belly.

Colour: Copper, greyish-brown, or pinkish above and pink or whitish below. Large dark blotch on the upper base of the pectoral fin. Both dorsal fins, and tail fin with narrow dark outer margin.

Size: To about 77 cm TL.

Length measurement method: Total length

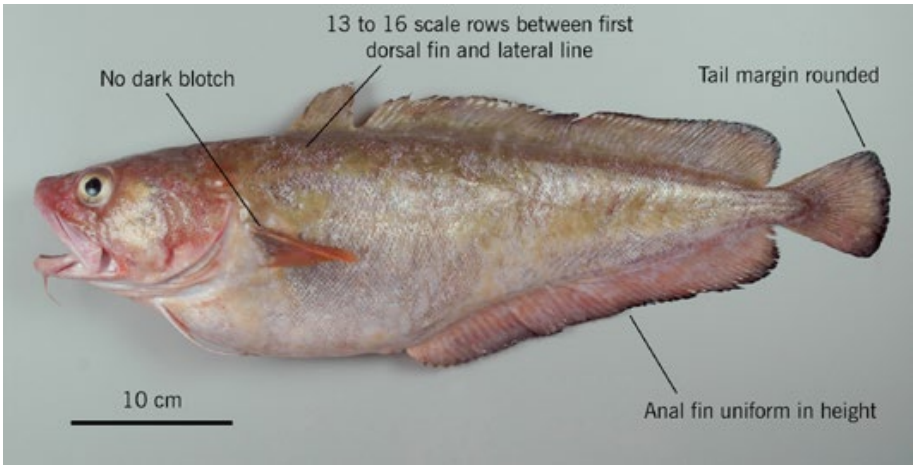
Distribution: Known only from and widespread in New Zealand from Cape Reinga to south of Campbell Island, including Pukaki Rise, Bounty Plateau, Chatham Rise and Chatham Islands, but possibly absent from the central Challenger Plateau. There is a very similar species in southern Australia from eastern Bass Strait, Tasmania and South Australia.

Depth: 5 to 600 m.

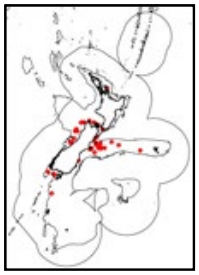
Similar species: Southern bastard cod (*Pseudophycis barbata*) has a rounded tail fin margin and lacks a dark blotch on the base of the pectoral fin. Northern bastard cod (*P. breviuscula*) is a small species reaching about 25 cm TL, has a rounded tail fin margin and lacks a dark blotch on the base of the pectoral fin.

Biology & ecology: Demersal and found in a range of habitats from rocky or sandy coasts to deeper offshore fine sediment. Spawning fish were recorded from February and from August to October. Short-lived, reaching about 6 years of age.

Southern bastard cod *Pseudophycis barbata*



Family: 216. Moridae (Deepsea cods)
Maori names:
Other names:
FishNZ reporting code: SBR
FishNZ research/observer code: SBR



Distinguishing features: No dark blotch on the base of the pectoral fin. Caudal fin margin rounded. No elongated rays in the first dorsal fin. Second dorsal fin and anal fins relatively uniform in height. Prominent chin barbel. 13 to 16 scales in a transverse row from the first dorsal fin origin to the lateral line.

Colour: Head, and body reddish-brown, paler underneath. Pectoral fin reddish-orange and lacking dark blotch at base. Dorsal, caudal and anal fins pale reddish-brown with a thin dark outer margin on second dorsal, caudal and anal fins.

Size: To at least 64 cm TL.

Length measurement method: Total length

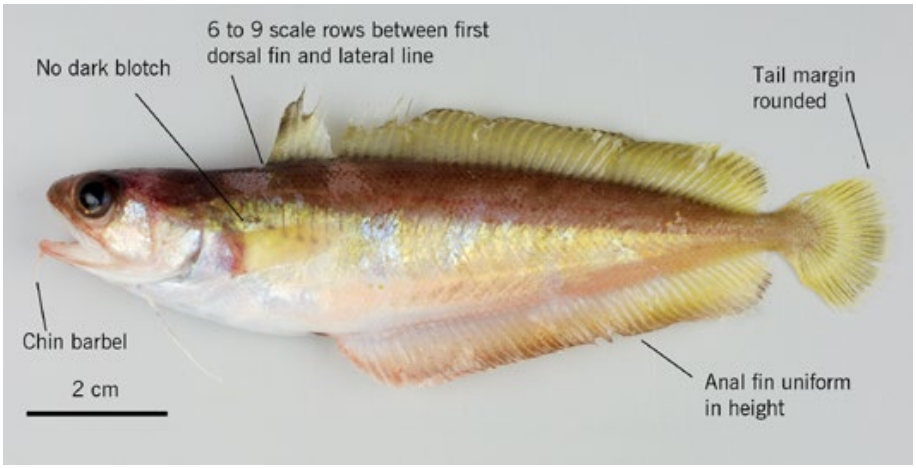
Distribution: Widespread in New Zealand. Also in Australia (NSW, Vic, Tas, SA, WA). Fisheries records deeper than about 300 m are unlikely to be this species.

Depth: 0 to 300 m.

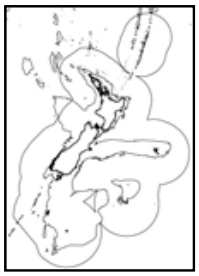
Similar species: Red cod (*Pseudophycis bachus*) has a prominent blackish spot on the base of pectoral fin and the tail margin is straight. Northern bastard cod (*P. breviuscula*) is small (to about 25 cm TL), and has larger body scales with 6 to 9 scales in a transverse row from the first dorsal fin origin to the lateral line.

Biology & ecology: Appears to live in rocky areas and has been observed by divers in caves and rock crevices. Only occasionally taken by trawling.

Northern bastard cod *Pseudophycis breviuscula*



Family: 216. Moridae (Deepsea cods)
Maori names:
Other names:
FishNZ reporting code: BRC
FishNZ research/observer code: BRC



Distinguishing features: No dark blotch at base of pectoral fin, rounded tail margin, long second dorsal and anal fins which are uniform in height. Large scales with 6 to 8 rows between first dorsal fin and lateral line. Prominent chin barbel.

Colour: Reddish-brown above, silvery white below. Dorsal, anal and caudal fins with blackish margins.

Size: To 25 cm TL.

Length measurement method: Total length

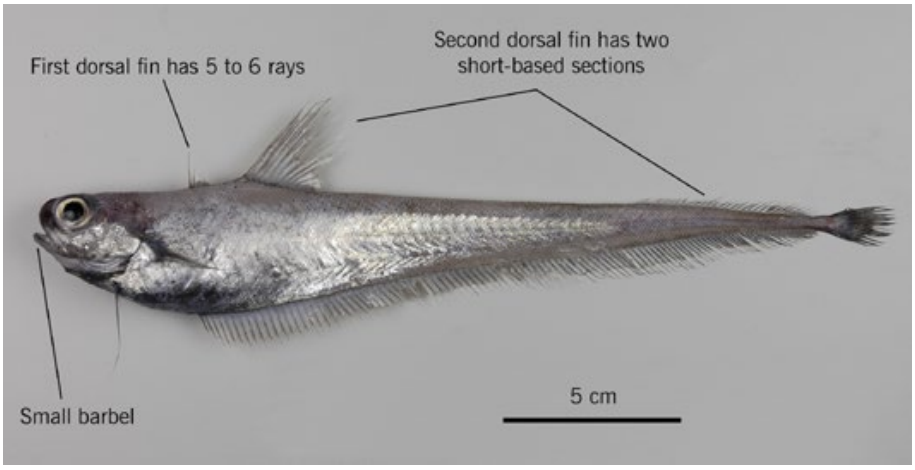
Distribution: Off Northland to Cook Strait but more common north of East Cape in New Zealand. Southern Australia. Most fisheries records using this code (**BRC**) are probably southern bastard cod (*Pseudophycis barbata*) **SBR**.

Depth: 0 to 200 m.

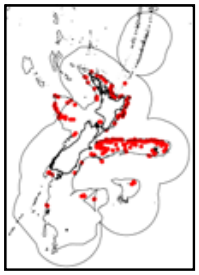
Similar species: Southern bastard cod (*Pseudophycis barbata*) grows larger (to 64 cm TL), and has smaller scales, 12 to 18 scale rows between first dorsal fin and lateral line. Red cod (*Pseudophycis bachus*) has dark blotch at base of pectoral fin and straight tail margin. Rock cod (*Lotella rhacina*) is pale to dark chocolate-brown and has small body scales, 21 to 30 in a transverse row from origin of first dorsal fin to lateral line.

Biology & ecology: Demersal in coastal waters, from rock pools and reefs to the continental shelf edge.

Grenadier cod *Tripterophycis gilchristi*



Family: 216. Moridae (Deepsea cods)
Maori names:
Other names:
FishNZ reporting code: GRC
FishNZ research/observer code: GRC



Distinguishing features: First dorsal fin tiny with 5 to 6 rays, second dorsal fin divided into two short portions, the anterior high and the posterior portion low. Very long anal fin. Tiny chin barbel. Teeth small and flattened with a single row in each jaw.

Colour: Body and head pale greyish-brown with silvery sides. Belly and throat blackish. Fins pale or slightly dusky. Rear margin of caudal fin whitish in life.

Size: To about 33 cm TL.

Length measurement method: Total length

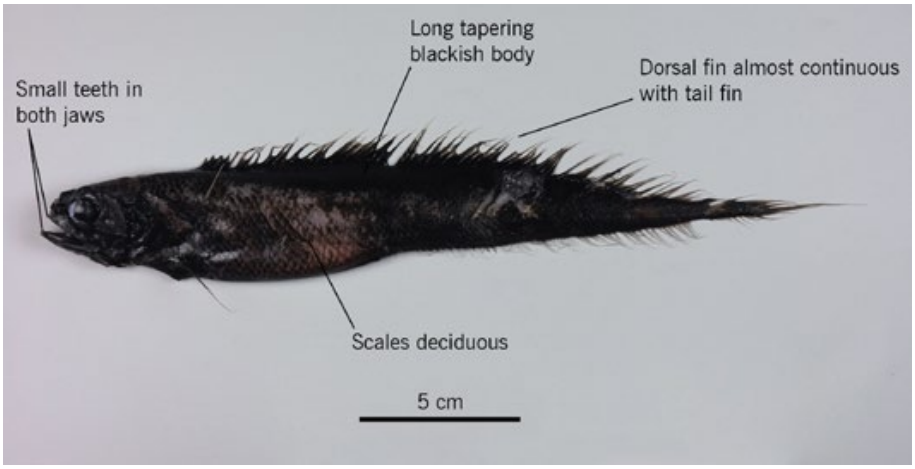
Distribution: Central and northern New Zealand. Widespread in the temperate southern hemisphere including Atlantic, Indian, and southwest Pacific Oceans.

Depth: 500 to 1000 m.

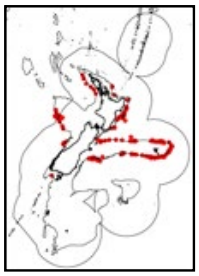
Similar species: Giant grenadier cod (*Tripterophycis svetovidovi*) has widely spaced conical teeth. Other morid cods lack the small first dorsal fin and two part second dorsal fin.

Biology & ecology: Unknown. Probably demersal.

Smalltooth pelagic cod *Melanonus gracilis*



Family: 217. Melanonidae (Pelagic cods)
Maori names:
Other names: Black pelagic cod
FishNZ reporting code: UNI
FishNZ research/observer code: MEL



Distinguishing features: Band of uniformly small teeth in both jaws. Long tapering blackish body. No chin barbel. Head blunt. Anus close to anal fin origin. Small deciduous scales present on head and body. Dorsal fin long-based and almost continuous with tail fin, with short high anterior section. Anal fin also long and of uniform height but lower than dorsal fin.

Colour: Blackish head, body, fins, and inside mouth.

Size: To about 25 cm TL.

Length measurement method: Total length

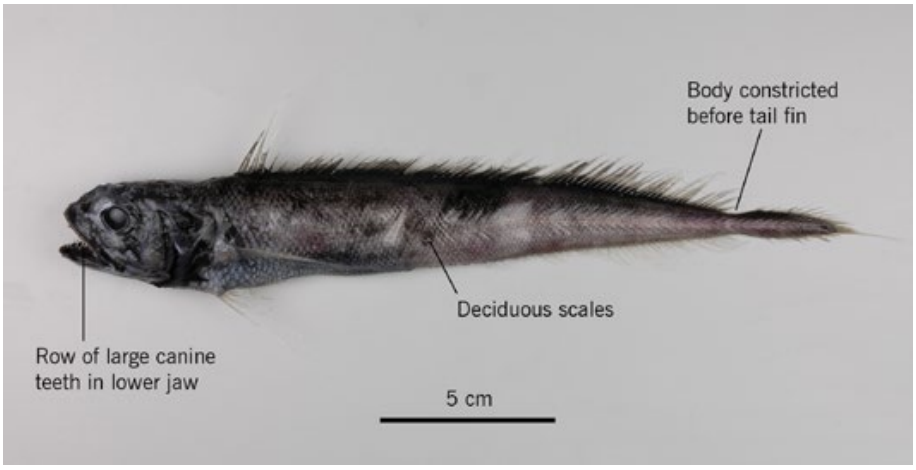
Distribution: Widespread in New Zealand from Kermadec Ridge to off Auckland Islands. Widespread in subtropical, temperate, and Subantarctic southern hemisphere.

Depth: About 800 to 1500 m.

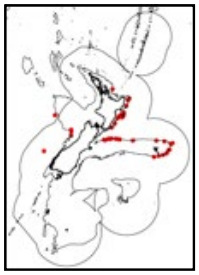
Similar species: Largetooth pelagic cod (*Melanonus zugmayeri*) has row of large canine-like teeth in lower jaw plus band of moderate sized teeth in both jaws.

Biology & ecology: Midwater.

Largetooth pelagic cod *Melanonus zugmayeri*



Family: 217. Melanonidae (Pelagic cods)
Maori names:
Other names: Arrowtail pelagic cod
FishNZ reporting code: UNI
FishNZ research/observer code: MEZ



Distinguishing features: Row of large canine-like teeth in lower jaw plus band of moderate sized teeth in both jaws. Long tapering body constricted before tail. No chin barbel. Head blunt. Anus close to anal fin origin. Small deciduous scales present on head and body. Dorsal fin long-based with short high anterior section. Anal fin long and of uniform height but lower than dorsal fin.

Colour: Blackish head, body, fins, and inside mouth.

Size: To about 25 cm TL.

Length measurement method: Total length

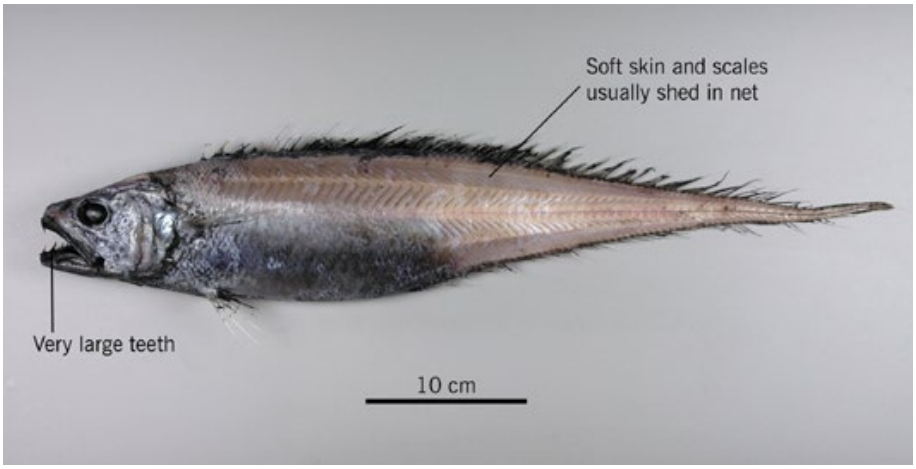
Distribution: Most records from central and northern New Zealand from West Norfolk Ridge to north and east Chatham Rise. Worldwide in tropical, subtropical, and temperate seas of both hemispheres.

Depth: About 900 to 2000 m.

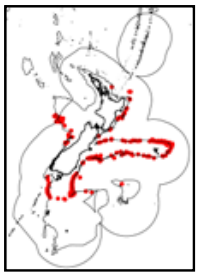
Similar species: Smalltooth pelagic cod (*Melanonus gracilis*) hasband of uniformly small teeth in both jaws.

Biology & ecology: Midwater.

Fangtooth hake *Lyconus pinnatus*



Family: 218. Merlucciidae (Merluccid hakes)
Maori names:
Other names:
FishNZ reporting code: LYC
FishNZ research/observer code: LYC



Distinguishing features: Long body, flattened laterally with long tapering tail lacking separate caudal fin. Strong teeth in jaws with 2 canine-like teeth on tip of upper jaw, longest teeth about half eye diameter.

Colour: Pale silvery-grey body and head. Dark fins and lining of mouth.

Size: To about 68 cm TL.

Length measurement method: Total length

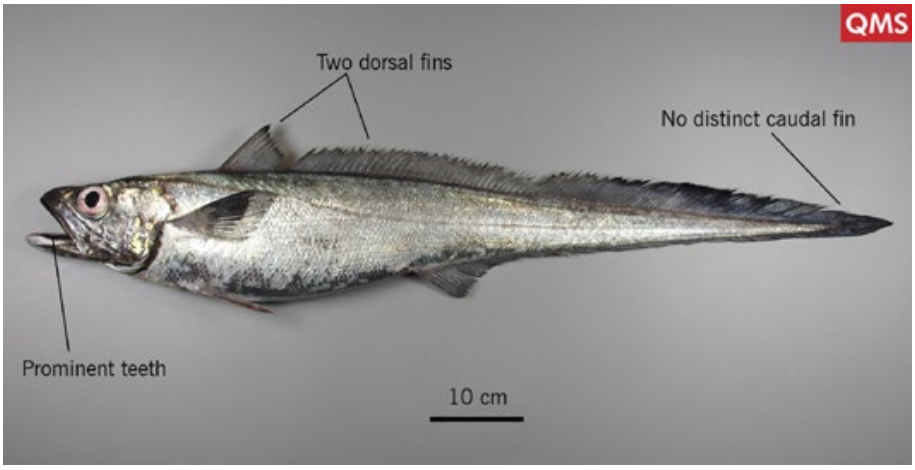
Distribution: Widespread in New Zealand from Bay of Plenty to Campbell Plateau. Temperate southern hemisphere.

Depth: 800 to 1300 m.

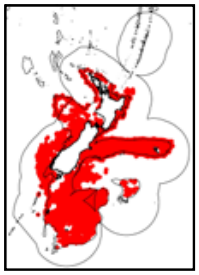
Similar species: Poorly known group that appears to include 2 species, one with small eye and large teeth, and second with relatively large eye and smaller teeth. Hoki (*Macruronus novaezelandiae*) has 2 separate dorsal fins, lacks very large teeth at tip of upper jaw, and silvery skin is more adherent and rarely lost.

Biology & ecology: Unknown. Predator of fishes.

Hoki *Macruronus novaezelandiae*



Family: 218. Merlucciidae (Merluccid hakes)
Maori names: Hoki
Other names: Blue grenadier (Aus.)
FishNZ reporting code: HOK
FishNZ research/observer code: HOK



Distinguishing features: Long tapering body, laterally flattened. First dorsal fin short-based, second dorsal fin long and continuous with anal fin round tail. Terminal mouth with slender long teeth. Scales shed very easily.

Colour: Upper head and body silvery with purple or blue-green tinge, silvery sides and belly. Fins darker.

Size: To about 142 cm TL.

Length measurement method: Total length

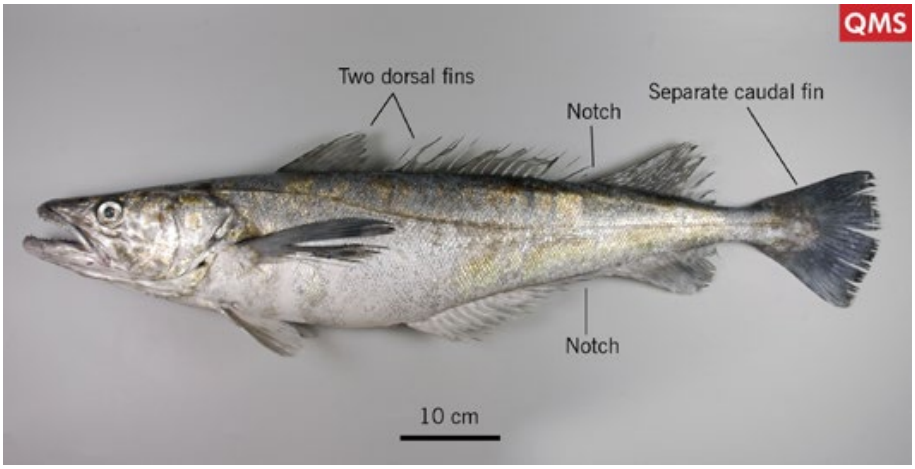
Distribution: Widespread in New Zealand from West Norfolk Ridge to Campbell Plateau. Southern Argentina and Australia, including Tasmania.

Depth: 10 to 1200 but usually 200 to 600 m.

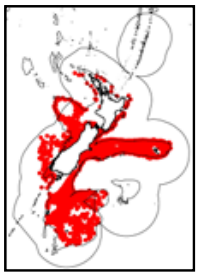
Similar species: Javelinfish (*Lepidorhynchus denticulatus*) has very high first dorsal fin, low second dorsal fin, and dark ventral body surface. *Lyconus pinnatus* has strong teeth in both jaws with two canine-like teeth on tip of upper jaw, longest teeth in mouth about half eye diameter, no clear separation between first and second dorsal fins, and very soft skin on body that is usually lost. Hake (*Merluccius australis*) has separate tail fin and deep notch on anal fin.

Biology & ecology: Small individuals are known from shallow waters and large fish are generally found deeper than about 400 m. Migrate to and spawn from late June to September at known spawning grounds on west coast South Island, Puysegur, Pegagus Canyon, Conway Trough, and Cook Strait. Feed on midwater fish, squids and crustaceans. Attain maximum age of about 25 years.

Hake *Merluccius australis*



Family: 218. Merlucciidae (Merluccid hakes)
Maori names: Kehe
Other names: Southern hake
FishNZ reporting code: HAK
FishNZ research/observer code: HAK



Distinguishing features: Two dorsal fins, first short-based and second fin long with notch about midway. Long anal fin with notch. Separate truncated caudal fin. No chin barbel. Teeth in jaws large, sharp, with outer ones fixed and inner ones depressible inwards.

Colour: Greyish above sometimes with bronze sheen, paler grey-silvery on sides and whitish below. Pectoral, dorsal, and caudal fins dusky, anal and pelvic fins paler.

Size: To about 140 cm TL.

Length measurement method: Total length

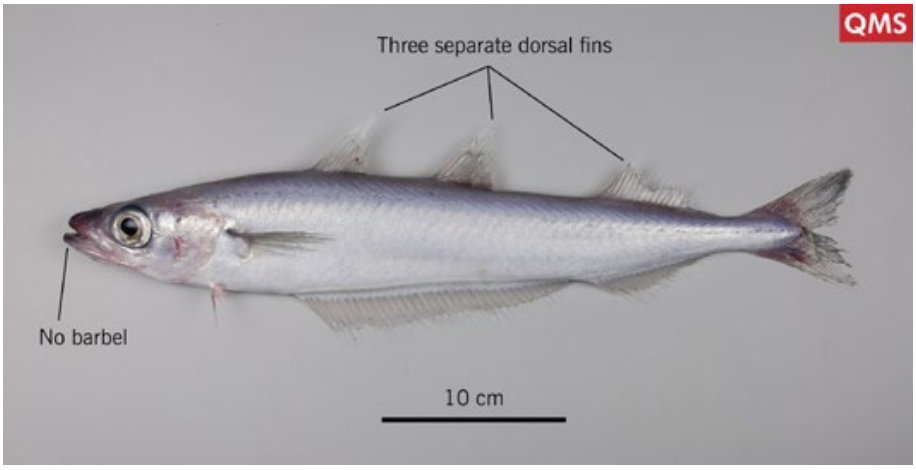
Distribution: Widespread in New Zealand from off Northland to Campbell Plateau but most common in central and southern waters. Southern South America.

Depth: 5 to 1100 m.

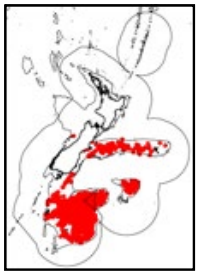
Similar species: Hoki (*Macruronus novaezelandiae*) lacks separate caudal fin and lacks deep notch in second dorsal and anal fins. Johnson's cod (*Halargyreus johnsonii*) and Australasian slender cod (*Halargyreus* sp. A) have bands of tiny teeth in jaws and lack notch in second dorsal fin.

Biology & ecology: Demersal. Three main spawning grounds are known: west coast South Island from June to October with a peak in September, west of Chatham Island from about September to January, northeast of Auckland Island from September to February with a peak in September-October. Females grow larger than males. Reaches age of at least 25 years.

Southern blue whiting *Micromesistius australis*



Family: 220. Gadidae (Cods)
Maori names:
Other names:
FishNZ reporting code: SBW
FishNZ research/observer code: SBW



Distinguishing features: Three dorsal fins and two anal fins. No barbel at tip of lower jaw. Lower jaw longer than upper. Lateral line continuous along entire length of body.

Colour: Pale bluish-grey upper body with dull silvery sides and lower body. Dorsal, anal and pelvic fins pale, caudal and pectoral fins slightly dusky.

Size: To about 60 cm FL.

Length measurement method: Fork length

Distribution: Recorded from Chatham Rise south on east coast of New Zealand but most abundant in subantarctic waters including Bounty and Campbell Plateaus. Both coasts of southern South America (Chile, Argentina), Falkland, South Georgia, S. Shetland, S. Orkney, Elephant Islands, and the north of the Antarctic Peninsula.

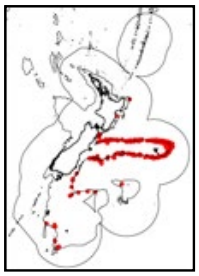
Depth: 200 to 800 m.

Similar species: Three dorsal fins and two anal fins are distinctive and unique features of this species.

Biology & ecology: Demersal but also move into midwater at times to feed and spawn. Females are larger than males. Growth rates are relatively fast: fish are about 20 cm FL after 1 year, and about 30 cm FL after 2 years. Maximum age is about 25 years.

Common messmate *Echiodon cryomargarites*

Family: 221. Carapidae (Pearlfishes)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: ECR



Distinguishing features: 1 or 2 fang-like teeth at tip of upper and lower jaws, followed by band of fine pointed teeth. Pelvic fin absent. Mouth large extending back behind rear of eye. 19 to 21 pectoral fin rays.

Colour: Greyish, partially translucent body with very fine melanophores marking muscle blocks (myotomes), and also dispersed on the upper and posterior body.

Size: To about 50 cm TL.

Length measurement method: Total length

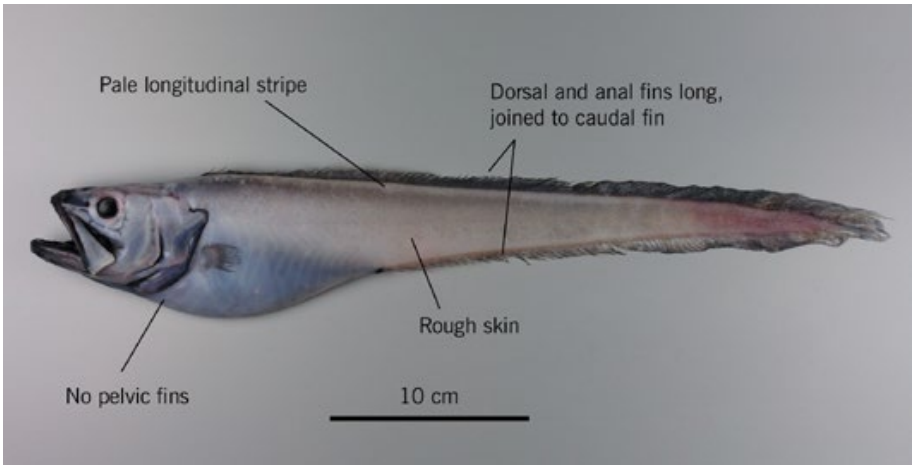
Distribution: Widespread in New Zealand from East Cape to Campbell Plateau. Widespread in the southern hemisphere mainly between 42 and 53 S.

Depth: About 800 to 1400 m.

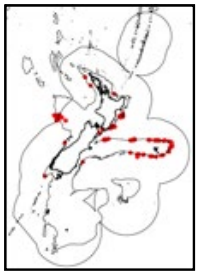
Similar species: There are 5 other rarer species of *Echiodon* recorded from New Zealand and identification requires a microscope. Snipe eels (Nemichthyidae) have jaws lengthened into a delicate diverging beak covered with tiny teeth.

Biology & ecology: Adults are free living on continental slope. Juveniles live in midwater and may have a very long spine in first dorsal fin and length of intestine outside body cavity.

Blue cuskeel *Brotulotaenia nigra*



Family: 222. Ophidiidae (Cusk-eels)
Maori names:
Other names:
FishNZ reporting code: BCR
FishNZ research/observer code: BCR



Distinguishing features: Elongate eel-like body with long dorsal and anal fins continuous around tail. Large head and mouth. No external pelvic fins. Body pale blue or grey with longitudinal pale stripes running along bases of dorsal and anal fins. Skin with granular texture.

Colour: Body pale blue or grey with longitudinal pale stripes running along bases of dorsal and anal fins. Head pale except for black snout, jaws, opercular and branchiostegal membranes. Fins greyish-black.

Size: To about 86 cm TL.

Length measurement method: Total length

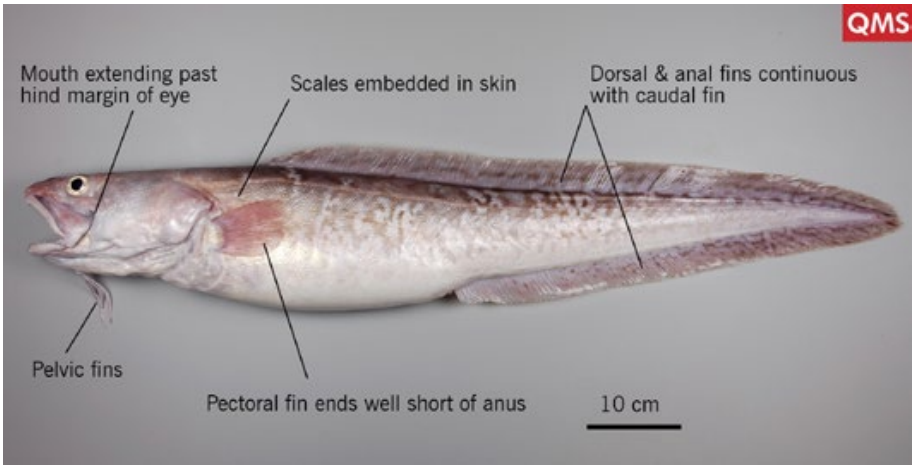
Distribution: Central and northern New Zealand. Atlantic, Indian and west Pacific Oceans.

Depth: Captured in bottom trawls at 400 to 1500 m.

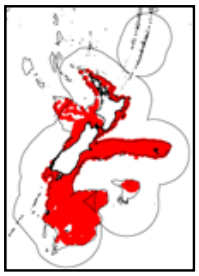
Similar species: Ling (*Genypterus blacodes*) has pelvic fins and pinkmottled body.

Biology & ecology: Larvae are pelagic in upper layers of water column, with adults found at times near the seafloor.

Ling *Genypterus blacodes*



Family: 222. Ophidiidae (Cusk-eels)
Maori names: Hoka, hokarari
Other names:
FishNZ reporting code: LIN
FishNZ research/observer code: LIN



Distinguishing features: Pinkish body mottled with brown wavy markings on sides. Dorsal and anal continuous with caudal fin. Pelvic fins well forward, origin under eyes. Mouth extending beyond vertical through hind margin of eye. Scales embedded in skin. Pectoral fin short, ending well short of anus.

Colour: Pinkish body mottled with brown wavy markings on sides, paler below. Head uniformly brownish above. Mottling extends onto dorsal and anal fins.

Size: To about 200 cm TL.

Length measurement method: Total length

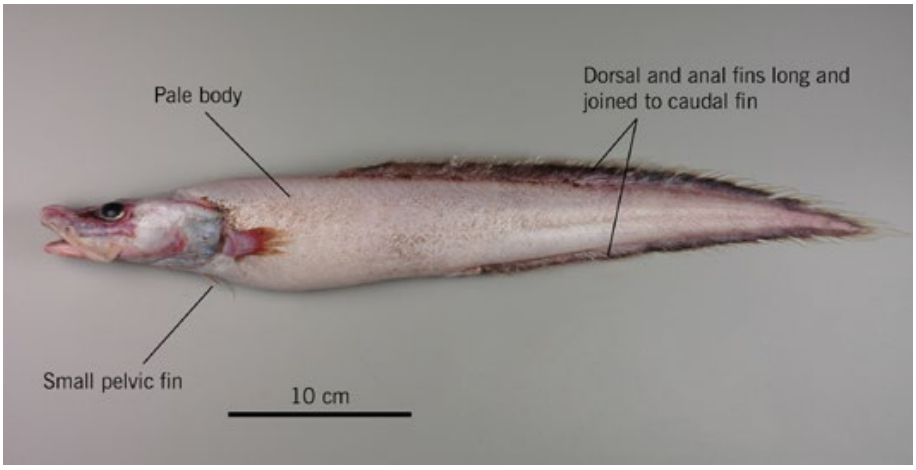
Distribution: Widespread in New Zealand. Southern Australia and southern South America.

Depth: 100 to 900 m.

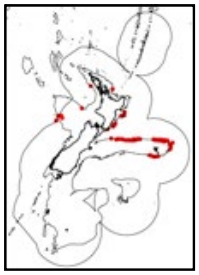
Similar species: Brown brotula (*Cataeyx niki*) has uniform dull brown upper body and sides and is generally much smaller and stouter.

Biology & ecology: Demersal predators of crustaceans and fishes. Spawn in early spring to summer. Reach ages of at least 30 years.

White brotula *Cataetyx chthamalorhynchus*



Family: 223. Bythitidae (Viviparous brotulas)
Maori names:
Other names:
FishNZ reporting code: CAX
FishNZ research/observer code: CAX



Distinguishing features: Elongate eel-like body with long dorsal and anal fins continuous around tail. Large head and mouth. Small pelvic fins present. Body pale brown. Fins dusky.

Colour: Body and head pale brown. Fins dusky.

Size: To at least 57 cm TL.

Length measurement method: Total length

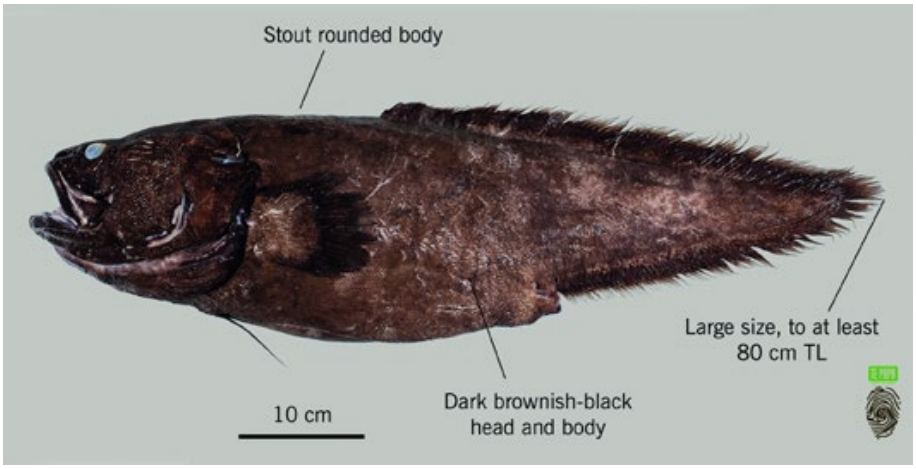
Distribution: Most records are from central and northern New Zealand but probably more widespread. Australia and South Africa.

Depth: 700 to 1500 m.

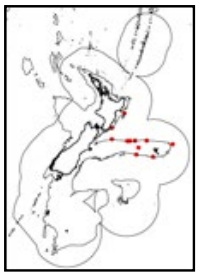
Similar species: Brown brotula (*Cataetyx niki*) is mid to dark brown, deeper bodied, and reaches a large size (about 88 cm TL). Blue cusk eel (*Brotulotaenia nigra*) has pale blue or grey body with longitudinal pale stripes running along bases of dorsal and anal fins.

Biology & ecology: Probably demersal.

Brown brotula *Cataetyx niki*



Family: 223. Bythitidae (Viviparous brotulas)
Maori names:
Other names: Brown cusk
FishNZ reporting code: CAN
FishNZ research/observer code: CAN



Distinguishing features: Stout rounded body with long dorsal and anal fins continuous around tail. Operculum with stout spine. Small scales on head and body. Eyes below upper profile of head. Skin may have bubbly texture in freshly caught fish.

Colour: Mottled dark brownish-black on head and dark brownish on body and fins.

Size: To about 88 cm TL.

Length measurement method: Total length

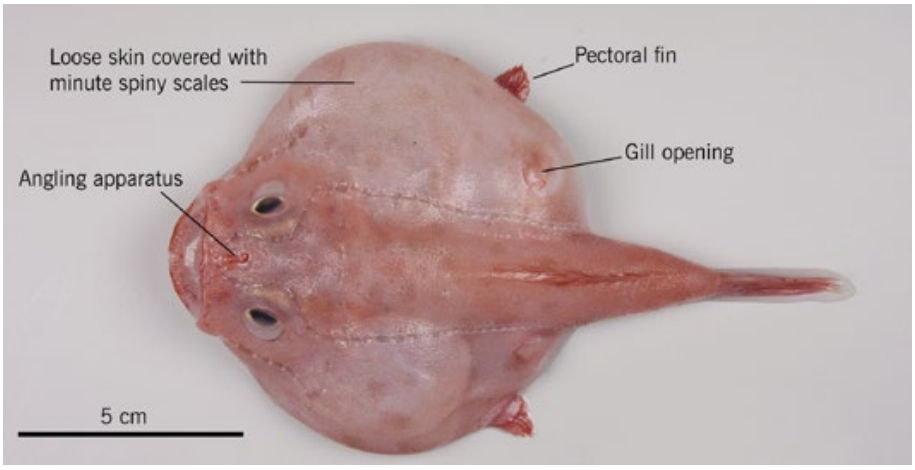
Distribution: Most records from central and northern New Zealand but may be more widespread. Widespread in the southern hemisphere.

Depth: 600 to 1600 m.

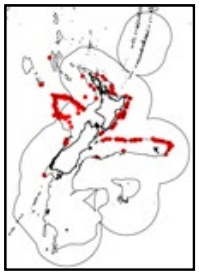
Similar species: White brotula (*Cataetyx chthamalorhynchus*) has pale slender body with eyes close to upper profile of head and only reaches about 57 cm TL.

Biology & ecology: Demersal.

Pink frogmouth *Chaunax russatus*



Family: 232. Chaunacidae (Coffinfishes)
Maori names:
Other names: Coffinfish, red frogmouth
FishNZ reporting code: CHX
FishNZ research/observer code: CHX



Distinguishing features: Flaccid body with loose skin covered by minute spiny scales. Short spine armed with fishing lure on snout above upper jaw. Large eyes, conspicuous lateral line system.

Colour: Pinkish or reddish body and head, paler underneath. Fins slightly darker pink or red.

Size: To about 29 cm TL.

Length measurement method: Total length

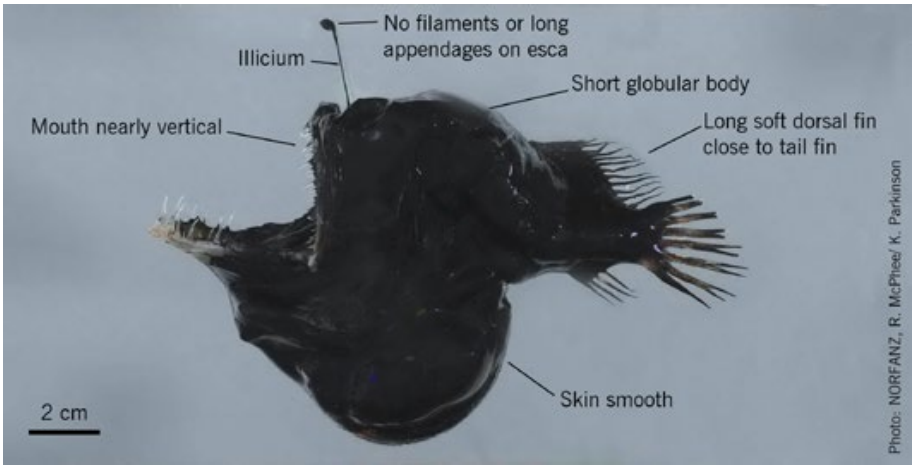
Distribution: Central and northern New Zealand from West Norfolk Ridge to Chatham Rise. West Indian and southern Pacific Oceans.

Depth: 500 to 1200 m.

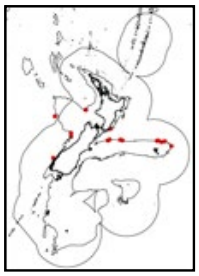
Similar species: Redshoes frogmouth (*Chaunax mulleus*), also from central and northern New Zealand, has underside of outer half of pectoral and pelvic and lower margin of caudal fin dark red. Other species of *Chaunax* present in New Zealand have distinctive blotched or mottled body markings and are relatively uncommon.

Biology & ecology: Benthic. Presumably prey is attracted to the moving lure and then engulfed.

Humpback anglerfish *Melanocetus johnsonii*



Family: 236. Melanocetidae (Black seadevils)
Maori names:
Other names:
FishNZ reporting code: BAF
FishNZ research/observer code: MEJ



Distinguishing features: Females with short globular body and skin smooth appearing naked. Illicium on snout tip, with bulbous esca lacking elongated appendages and filaments. Mouth oblique to nearly vertical. Long soft dorsal fin with 13 to 16 rays immediately before tail fin.

Colour: Dark blackish-brown.

Size: To about 15 cm SL.

Length measurement method: Standard length

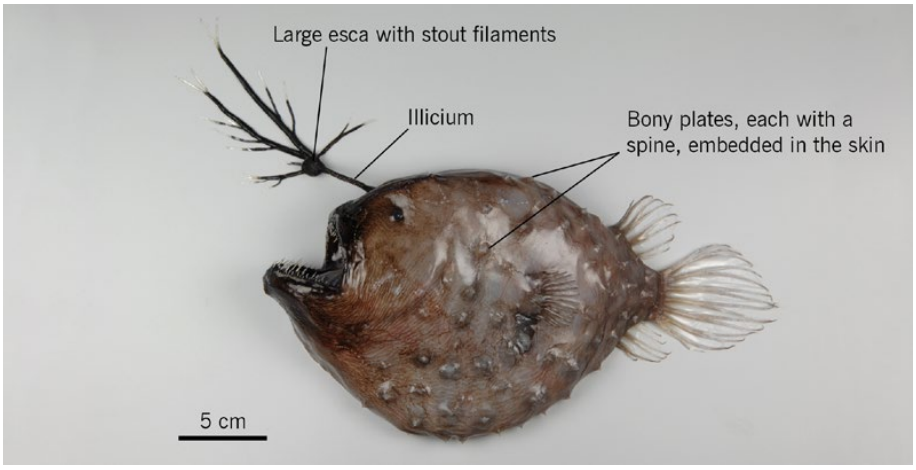
Distribution: Widespread in New Zealand form Kermadec Ridge to Campbell Plateau. Worldwide in tropical to temperate oceans from 53 N to 52 S.

Depth: Midwater from 30 to about 1500 m.

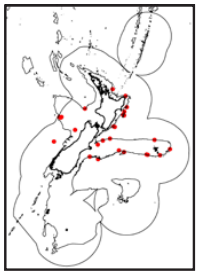
Similar species: Murray's humpback anglerfish (*Melanocetus murrayi*) is rare, deep-living, ususally 2000 m or more, and has small esca bulb, and soft easily damaged skin.

Biology & ecology: Females attract prey using luring device (illicium and bioluminescent esca) on snout. Males are vey small (to about 2.8 cm SL) and attach themselves to females using specialised jaws but are not parasitic.

Prickly anglerfishes *Himantolophus* spp.



Family: 237. Himantolophidae (Prickly anglerfishes, footballfishes)
Maori names:
Other names:
FishNZ reporting code: BAF
FishNZ research/observer code: HIM



Distinguishing features: Skin of head and body of females with widely spaced bony plates each bearing a median spine. Illicium stout with large esca bearing stout filaments. Lower jaw stout, projecting beyond upper jaw. Short soft dorsal fin with 5 or 6 rays.

Colour: Brownish or greyish.

Size: To about 36 cm SL.

Length measurement method: Standard length

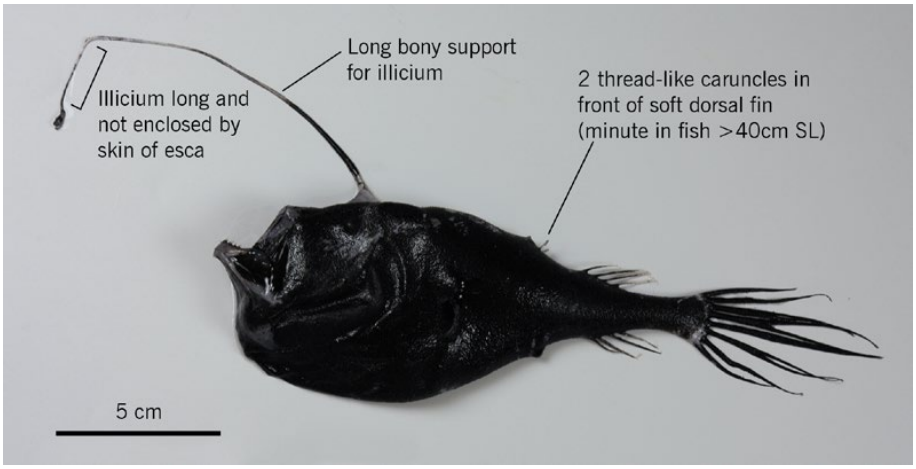
Distribution: *Himantolophus appelii* and *H. stewarti* are both widespread in New Zealand from off Northland to Campbell Plateau, and in southern hemisphere between about 25 and 54 S.

Depth: Midwater at about 340 to 1400 m.

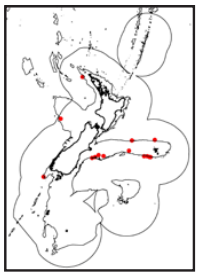
Similar species: *Himantolophus appelii* and *H. stewarti* are commonly recorded from New Zealand but identification to species is difficult and involves examination of escal appendages. Four other species of *Himantolophus* are rare in New Zealand.

Biology & ecology: Females attract prey using luring device (illicium and bioluminescent esca) on snout. Males are very small (to about 4 cm SL) and probably attach themselves to females using specialised jaws but are not parasitic.

Seadevils *Ceratias* spp.



Family: 242. Ceratiidae (Seadevils)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: CER



Distinguishing features: Females usually with 2 thread-like (thin) caruncles (modified dorsal fin rays, each with bioluminescent gland) on dorsal midline just in front of soft dorsal fin origin, may be minute in specimens longer than 40 cm SL. Illicium long with bioluminescent esca and not enveloped by skin of esca, on end of very long bony support element. Skin covered with numerous small spines that are larger and more sparse with increased fish size.

Colour: Blackish. Larger specimens may have skin eroded revealing white underneath.

Size: To about 85 cm SL.

Length measurement method: Standard length

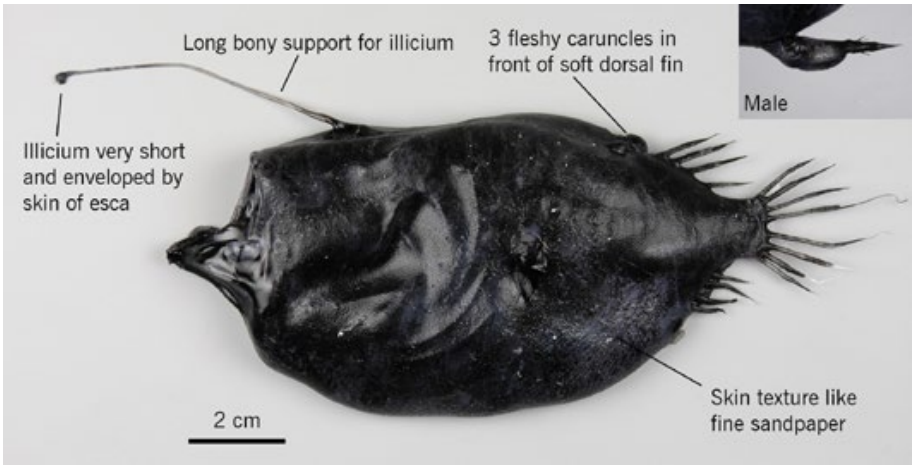
Distribution: Northern seadevil (*Ceratias holboelli*) is recorded from Bay of Plenty to Pukaki Rise and southern seadevil (*C. tentaculatus*) from off Raglan to Auckland Island in New Zealand. *Ceratias holboelli* is from Atlantic, Indian, and Pacific Oceans between 66 N and 43 S. C*eratias tentaculatus* is widespread in the southern hemisphere from 35 to 68 S.

Depth: Midwater. 550 to about 1100 m (northern seadevil) and 190 to 1500 m (southern seadevil).

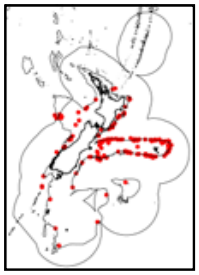
Similar species: The 2 New Zealand species, northern seadevil (*Ceratias holboelli*) and southern seadevil (*C. tentaculatus*) are difficult to identify to species in the field. Warty seadevil (*Cryptopsaras couesii*) has 3 fleshy caruncles, and very short illicium completely enveloped by skin of esca, on end of very long bony support element.

Biology & ecology: Females attract prey using luring device (illicium and bioluminescent esca) on head. Males are very small (to about 8 cm SL depending on species) and probably attach themselves to females initially using specialised jaws and are then dependent (parasitic) on the female.

Warty seadevil *Cryptopsaras couesii*



Family: 242. Ceratiidae (Seadevils)
Maori names:
Other names:
FishNZ reporting code: SDE
FishNZ research/observer code: SDE



Distinguishing features: Females with 3 fleshy (bulbous) caruncles (modified dorsal fin rays, each with bioluminescent gland) on dorsal midline just in front of soft dorsal fin origin. Illicium very short with bioluminescent esca and completely enveloped by skin of esca, on end of very long bony support element. Skin with fine sandpaper-like texture, covered with numerous small spines.

Colour: Dark brownish or blackish.

Size: To about 45 cm TL.

Length measurement method: Total length

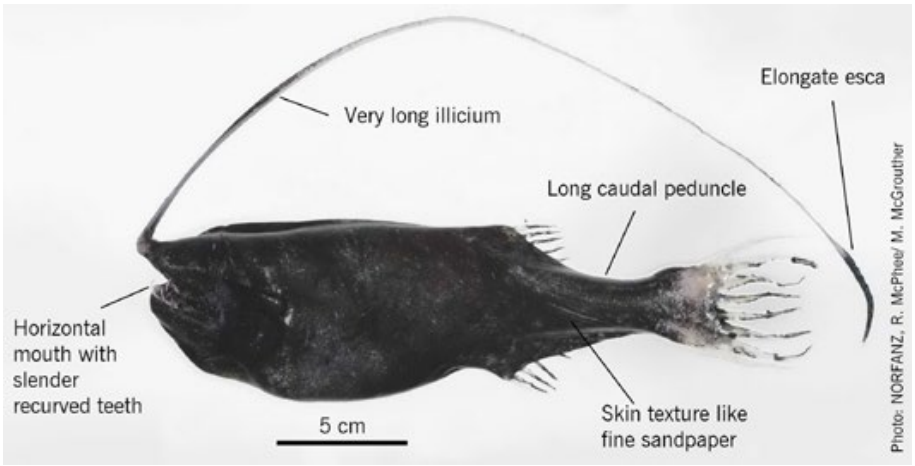
Distribution: Widepread in New Zealand from Kermadec Ridge to Campbell Plateau. Worldwide in major oceans from 63 N to 54 S.

Depth: Midwater from near surface to about 1300 m.

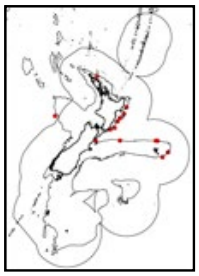
Similar species: *Ceratias* spp. have 2 thread-like caruncles (may be minute in specimens longer than 40 cm SL), and long illicium not enveloped by skin of esca, on end of very long bony support element.

Biology & ecology: Females attract prey using luring device (illicium and bioluminescent esca) on head. Males are very small (to about 1.6 cm SL) and probably attach themselves to females initially using specialised jaws and are then dependent (parasitic) on the female.

Whipnose anglers *Gigantactis* spp.



Family: 243. Gigantactinidae (Whipnose anglerfishes)
Maori names:
Other names:
FishNZ reporting code: BAF
FishNZ research/observer code: GIG



Distinguishing features: Females with elongated streamlined body, small head, long slender caudal peduncle. Mouth large and almost horizontal, with slender recurved teeth. Long ilicium on tip of snout, with elongated esca. Skin with sandpaper-like texture, covered with numerous tiny spines.

Colour: Blackish.

Size: To about 36 cm SL.

Length measurement method: Standard length

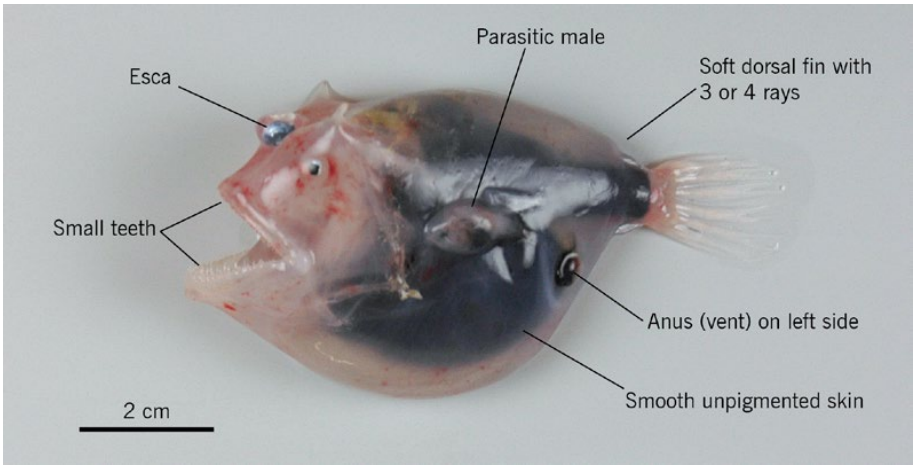
Distribution: *Gigantactis paxtoni* is recorded from Norfolk Ridge to Pukaki Rise in New Zealand. New Guinea, southwest Indian Ocean, and southeast Australia.

Depth: Midwater, 900 to about 1400 m.

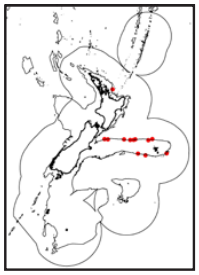
Similar species: Four species of *Gigantactis* are recorded from New Zealand but *Gigantactis paxtoni* is the common species and the other 3 are rare. It has a long tapering esca with no filaments at escal base.

Biology & ecology: Females attract prey using luring device (illicium and bioluminescent esca) on snout. Males are tiny (to 2.2 cm SL) and probably attach themselves to females using specialised jaws but are not parasitic.

Phantom angler *Haplophryne mollis*



Family: 244. Linophrynidae (Leftvents)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: LPH



Distinguishing features: Females with short globular body and smooth, unpigmented skin. Bulbous bioluminescent esca sessile on snout. Short soft dorsal fin with 3 or 4 rays and anal fin with 3 rays. Anus (vent) on left side. Small teeth.

Colour: Unpigmented skin.

Size: To about 16 cm SL.

Length measurement method: Standard length

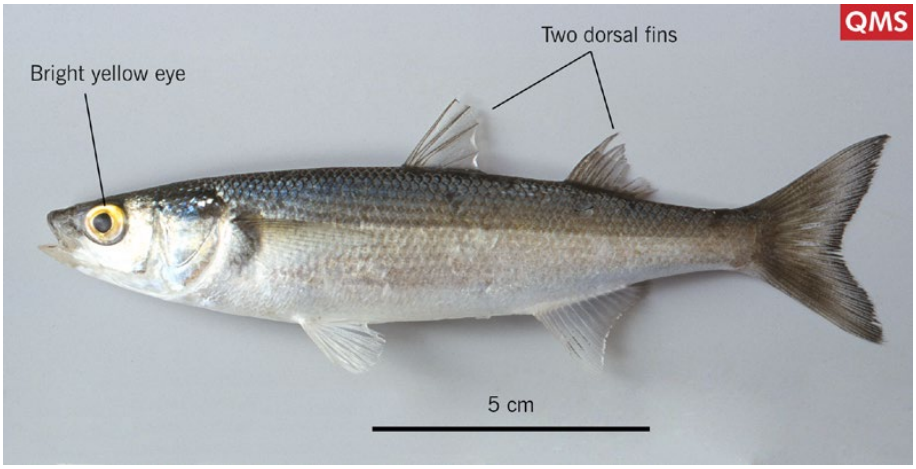
Distribution: Recorded from West Norfolk Ridge to Chatham Rise in New Zealand. Widespread in warmer waters of all major oceans from 66 N to 44 S.

Depth: Midwater at about 700 to 1300 m.

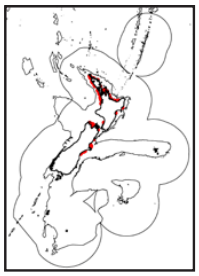
Similar species: Bearded angler (*Linophryne densiramus*) has darkly pigmented skin and elaborate barbel under lower jaw. Humpback anglerfish (*Melanocetus johnsonii*) has darkly pigmented skin and long soft dorsal fin with 13 to 16 rays.

Biology & ecology: Females attract prey using luring device (bioluminescent esca) on head. Males are very small (to about 1.5 cm SL) and probably attach themselves to females initially using specialised jaws and are then dependent (parasitic) on female.

Yelloweye mullet *Aldrichetta forsteri*



Family: 245. Mugilidae (Mullets)
Maori names: Aua, awa, matakawhiti
Other names: Herring, sprat
FishNZ reporting code: YEM
FishNZ research/observer code: YEM



Distinguishing features: Small estuarine and shallow water species with small head, bright yellow eye, and thin easily dislodged scales. Two widely separated dorsal fins.

Colour: Body grey-green above, silvery-white below, eye bright yellow.

Size: To about 40 cm FL.

Length measurement method: Fork length

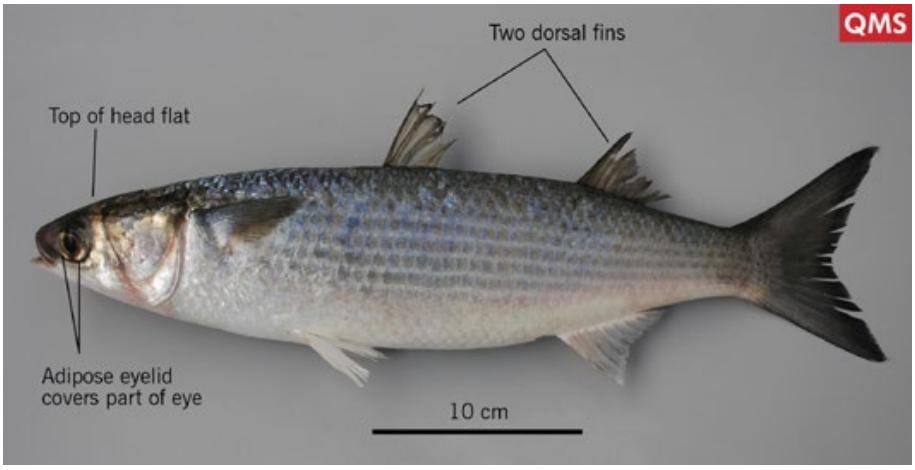
Distribution: Widespread in coastal New Zealand from off Northland to Fiordland including Chatham Island. Southern Australia.

Depth: A few to 50 m.

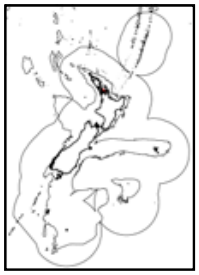
Similar species: Grey mullet (*Mugil cephalus*) occurs around northern New Zealand, is dark grey above with broad head, dull yellow eye, and large firm scales.

Biology & ecology: Common in shallow bays, harbours and estuaries, usually in schools.

Grey mullet *Mugil cephalus*



Family: 245. Mugilidae (Mullets)
Maori names: Kanae, hopuhopu
Other names: Sea mullet (Aus.)
FishNZ reporting code: GMU
FishNZ research/observer code: GMU



Distinguishing features: Adipose eyelid prominent, covering more than half of eye. Anal fin with 3 spines and 8 (rarely 9) soft rays. Head flattened dorsally, snout short, equal to or less than eye length.

Colour: Upper head and body greenish or greyish-blue, silvery below. Pectoral, dorsals and caudal fins dark. Iris pale yellow.

Size: To about 90 cm FL but mostly less than 40.

Length measurement method: Fork length

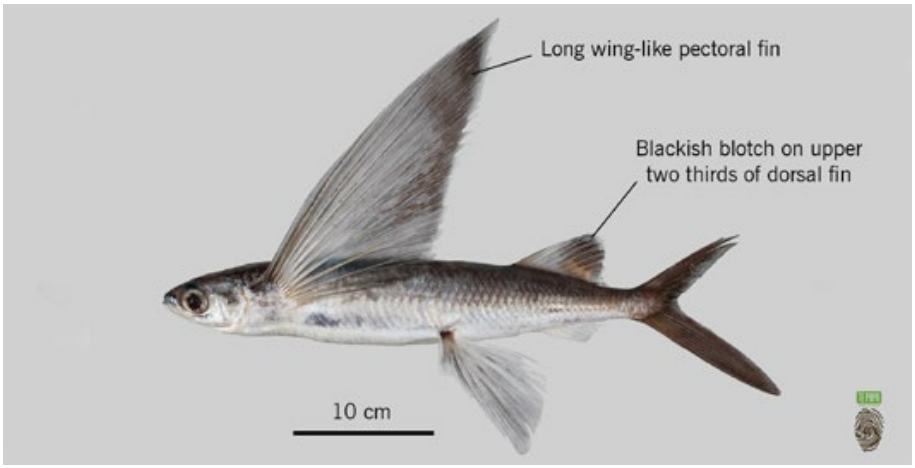
Distribution: Prefers warmer inshore marine, estuaries, and occasionally lower reaches of rivers of northern New Zealand. Offshore fisheries records are erroneous. Worldwide in tropical (less abundant), subtropical, and warm temperate waters but genetic evidence there are about 14 populations.

Depth: A few to 10 m.

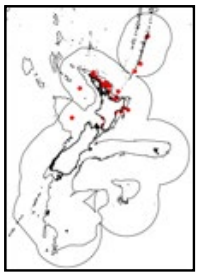
Similar species: Yelloweye mullet (*Aldrichetta forsteri*) has brightyellow eye without obvious adipose eyelid, pointed snout, longer than eye length, and anal fin has 3 spines and 12 (rarely 13) soft rays.

Biology & ecology: Tolerant of temperatures from 12 to 25 C, salinities from hypersaline to fresh water. Appear to spend most time in estuaries, and move to sea to spawn from November to February. Feed on algae. Reach ages of at least 15 years in New Zealand.

Barbeled flying fish *Cheilopogon pinnatibarbatus*



Family: 253. Exocoetidae (Flyingfishes)
Maori names:
Other names:
FishNZ reporting code: FLY
FishNZ research/observer code: CPB



Distinguishing features: Very long pectoral fins (and pelvic fins in some species) forming wings, which give capacity to glide for considerable distance above water surface. Lateral line running along lower body on each side. Dorsal and anal fins set well back on body and lacking spines. Lower lobe of caudal fin longer than upper lobe.

Colour: Dark iridescent blue or green above, pale silvery below. Dorsal fin with blackish blotch on upper two thirds.

Size: To about 45 cm FL, but other species are usually less than about 30 cm FL.

Length measurement method: Fork length

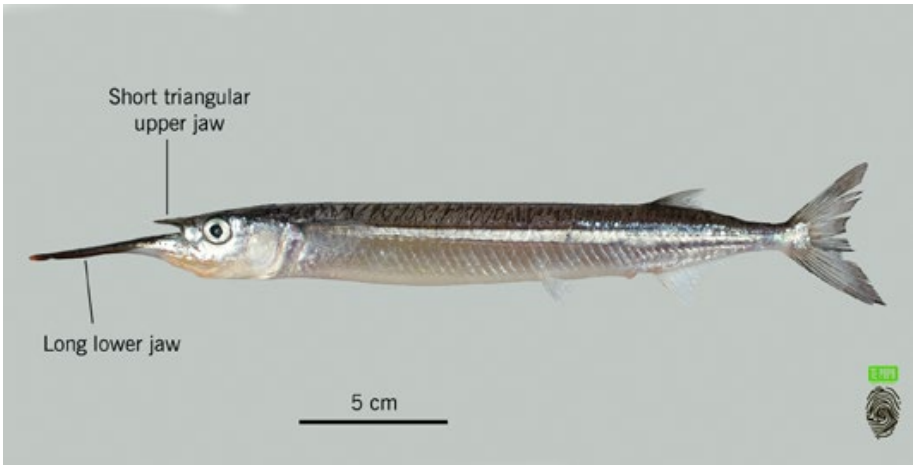
Distribution: Found as far south as Cook Strait. Data plotted on map includes only Te Papa specimens of *Cheilopogon pinnatibarbatus* and does not include any fisheries records. Worldwide in tropical and warm temperate seas.

Depth: From sea surface to unknown depth.

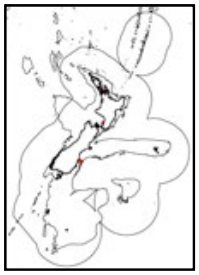
Similar species: There are seven species of flying fishes recorded from New Zealand but barbeled flying fish (*Cheilopogon pinnatibarbatus*), **CPB**, see image above, is largest and most common species. Other fishes lack wing-like pectoral fins set high on body.

Biology & ecology: Pelagic. Found in surface waters.

Garfish *Hyporhamphus ihi*



Family: 254. Hemiramphidae (Halfbeaks)
Maori names: Ihe, takeke
Other names: Piper
FishNZ reporting code: GAR
FishNZ research/observer code: GAR



Distinguishing features: Elongate beak-like extension of lower jaw, and short triangular upper jaw. Elongate body with short-based dorsal and anal fins at rear of body just in front of caudal fin. Normal sized pectoral and pelvic fins.

Colour: Dark blue-green above with brown flecks, silvery-white sides and belly, with silver stripe running from behind top of pectoral fin base to tail. Pectoral, dorsal, pelvic and caudal fins dusky, anal fin pale.

Size: To about 40 cm FL.

Length measurement method: Fork length

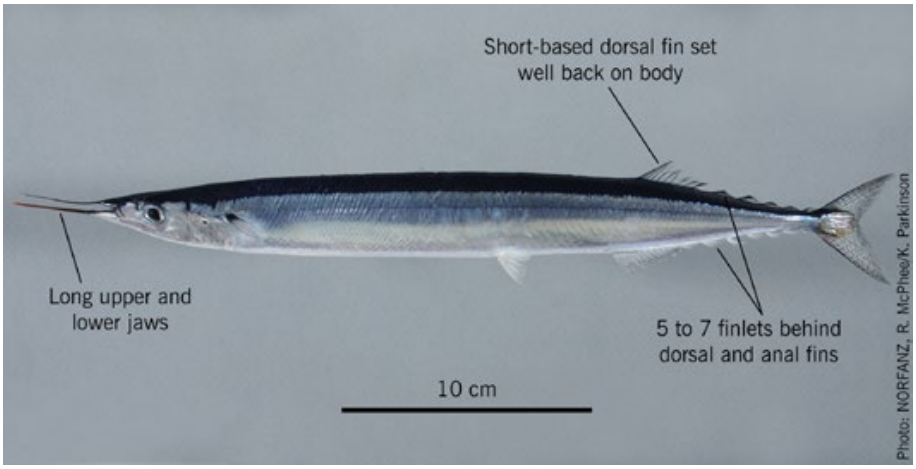
Distribution: Found only in New Zealand from Cape Reinga to off Otago and Chatham Island, but most common in northern and central inshore waters.

Depth: A few to 10 m.

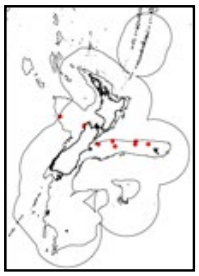
Similar species: Distinctive long lower jaw. Sauries and needlefishes (rare and northern) both have long upper and lower jaws.

Biology & ecology: Pelagic schooling species that is most abundant in sheltered gulfs, bays and large estuaries particularly near seagrass beds in shallow waters, and over shallow reefs. Feed near the surface on invertebrates, algae, and plant matter. Spawn in spring/early summer.

Saury *Scomberesox saurus*



Family: 256. Scomberesocidae (Sauries)
Maori names: Moeanu
Other names: Ocean piper, needle fish
FishNZ reporting code: SAU
FishNZ research/observer code: SAU



Distinguishing features: Elongate compressed body. Elongated toothless upper and lower jaws. Short-based dorsal fin set well back on body. 5 to 7 small finlets behind dorsal and anal fins.

Colour: Dark blue above, silvery-white below, with broad silver lateral stripe on the sides. Small dark blue or green spot on pectoral fin base.

Size: To about 50 cm FL.

Length measurement method: Fork length

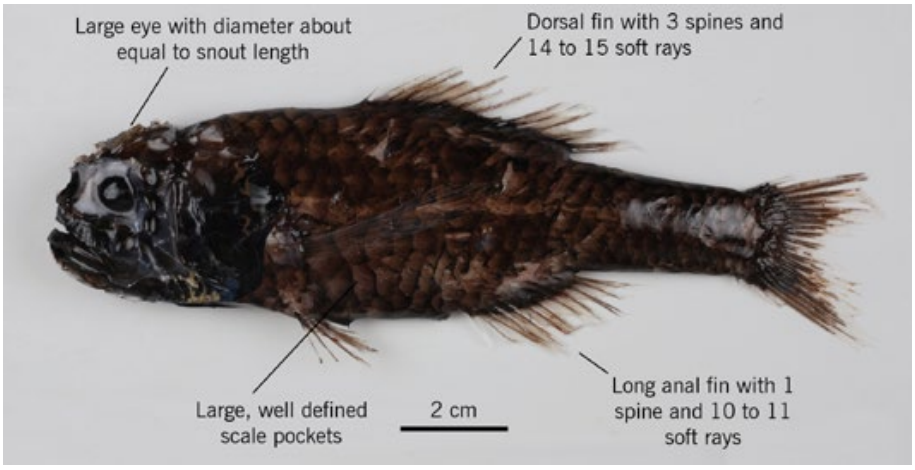
Distribution: Widespread in New Zealand from West Norfolk and Colville Ridges to off Southland including Chatham Rise. Temperate waters of both hemispheres in Atlantic, Indian and Pacific Oceans.

Depth: Surface to about 30 m.

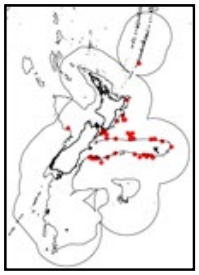
Similar species: Garfish (*Hyporhamphus ihi*) has an elongate beak-like extension of lower jaw, short triangular upper jaw, and lacks finlets.

Biology & ecology: Pelagic schooling species living at or near surface. Oceanic, but known to sometimes come close to shore in large numbers.

Common bigscalefish *Poromitra atlantica*



Family: 267 Melamphaidae (Bigscalefishes)
Maori names:
Other names: Southern bigscale
FishNZ reporting code: UNI
FishNZ research/observer code: CBS



Distinguishing features: Large, bluntly rounded head with prominent bony ridges. Body covered with large, well defined scale pockets (scales deciduous). One spine centrally on front of head near nostrils. Long anal fin with 1 weak spine and 10 to 11 soft rays. Single dorsal fin with 3 spines and 14 to 15 soft rays. Relatively large eye with diameter about same as snouth length.

Colour: Uniform dark brownish head, body and fins.

Size: To about 16 cm SL.

Length measurement method: Standard length

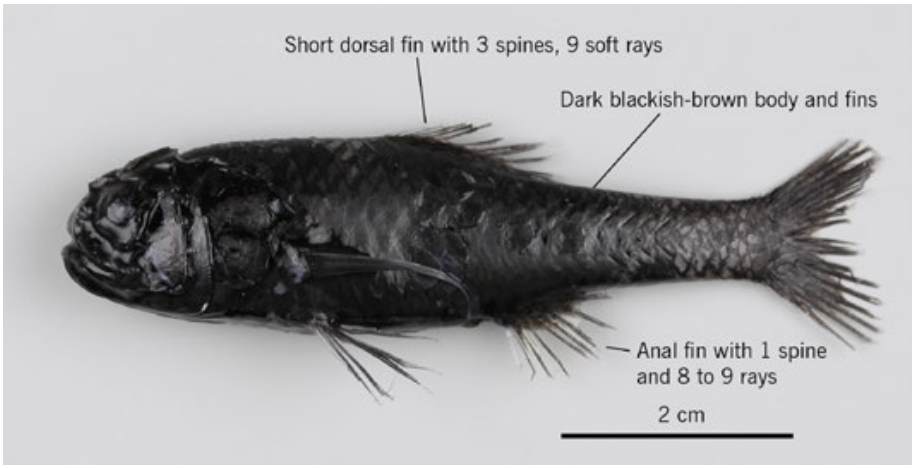
Distribution: Mostly recorded from central and northern New Zealand north but probably more widespread. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Widespread in southern hemisphere.

Depth: 200 to 2700 m.

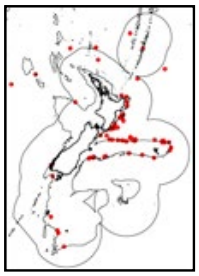
Similar species: The 3 other species of *Poromitra* recorded from New Zealand have fewer anal (7 to 9) and dorsal fin soft rays (9 to 12) and are relatively rare. Black bigscale fish (*Sio nordenskjoldii*, **SNO**) is uniformly jet black and has a short dorsal fin with 3 spines and 9 soft rays. **MPH** (family Melamphaidae) should be used for unidentified bigscalefishes.

Biology & ecology: Not known.

Black bigscalefish *Sio nordenskjoldii*



Family: 267 Melamphaidae (Bigscalefishes)
Maori names:
Other names: Bigscale
FishNZ reporting code: UNI
FishNZ research/observer code: SNO



Distinguishing features: Short dorsal fin near mid-body with 3 spines and 9 soft rays. Anal fin with 1 weak spine and 8 to 9 soft rays. Pelvic fins with 1 spine and 7 soft rays. Head large, rounded. Bony crests on top of the head above and behind the eye, well developed but smooth (not serrated). No small spine on central anterior head above nostrils.

Colour: Body and fins dark blackish-brown.

Size: To about 12 cm SL.

Length measurement method: Standard length

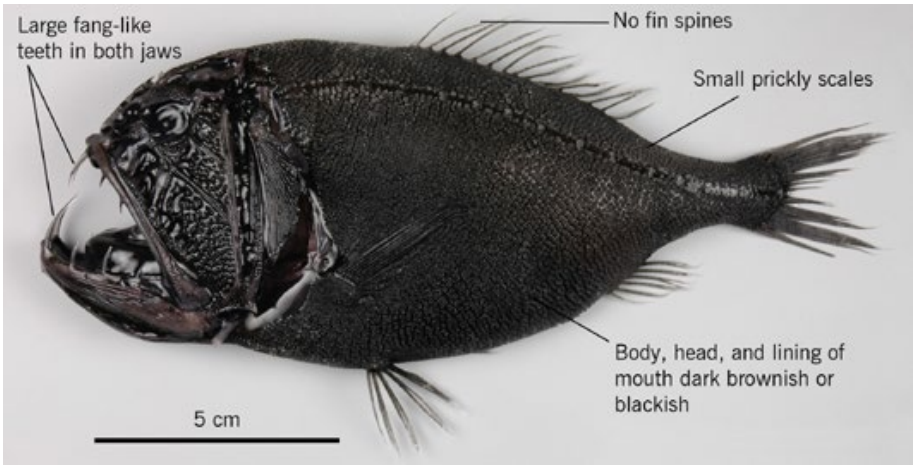
Distribution: From about 28 to 54 S in New Zealand. Data plotted on the map includes only Te Papa specimens and does not include any fisheries records. Circumglobal in the southern hemisphere south of 20 S.

Depth: 300 to 2200 m.

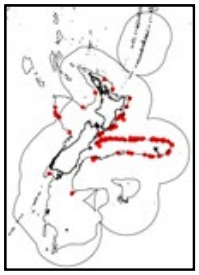
Similar species: Most of the other species of bigscalefishes (MPH)have 10 or more soft dorsal fin rays. The very rare *Poromitra oscitans* has 9 to 11 soft rays but has a very small eye.

Biology & ecology: Not known.

Fangtooth *Anoplogaster cornuta*



Family: 276. Anoplogastridae (Fangtooths)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: ANO



Distinguishing features: Adults with large mouth and large fang-like teeth in upper and lower jaws. No spines in fins. Dorsal fin long and anal fin short based. Scales small, prickly, embedded in skin. Lateral line an open groove, bridged at intervals by scales.

Colour: Adults uniformly brownish-black including inside mouth, juveniles with pale body.

Size: To 17 cm SL.

Length measurement method: Standard length

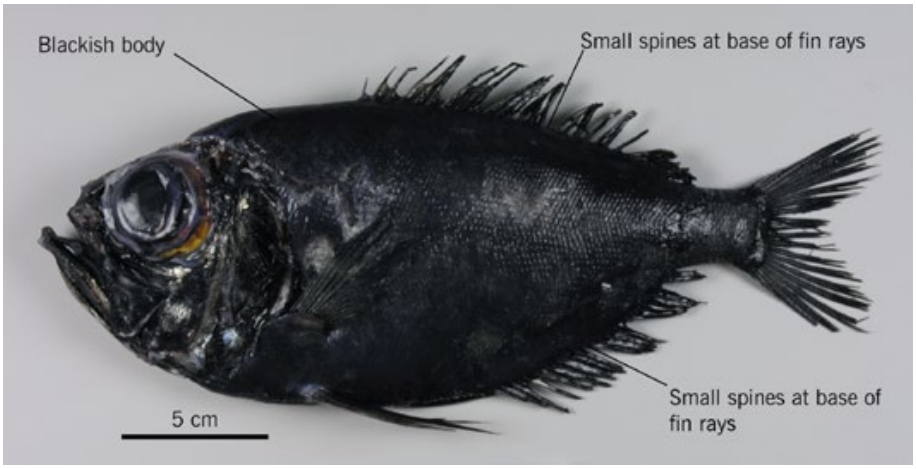
Distribution: Widespread in New Zealand from Kermadec Ridge to Auckland Island. Worldwide from 64 N to 50 S.

Depth: Deep midwater to 5000 m, but adults mostly 500 to 2000 m.

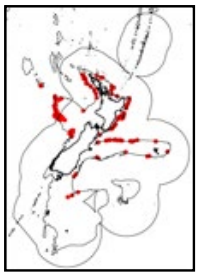
Similar species: Spinyfin (*Diretmichthys parini*), and roughies (Trachichthyidae) have bands of small teeth in both jaws and do not have large fang-like teeth.

Biology & ecology: Predators of crustaceans as juveniles and fishes as adults.

Spinyfin *Diretmichthys parini*



Family: 277. Diretmidae (Spinyfins)
Maori names:
Other names: Black roughy, black discfish
FishNZ reporting code: SFN
FishNZ research/observer code: SFN



Distinguishing features: Blackish-brown head, body, and fins. Small lateral spines on base of rays of dorsal and anal fins. No lateral line. Anus about halfway between pelvic fin base and anal fin origin.

Colour: Blackish-brown head, body, and fins.

Size: To about 41 cm FL.

Length measurement method: Fork length

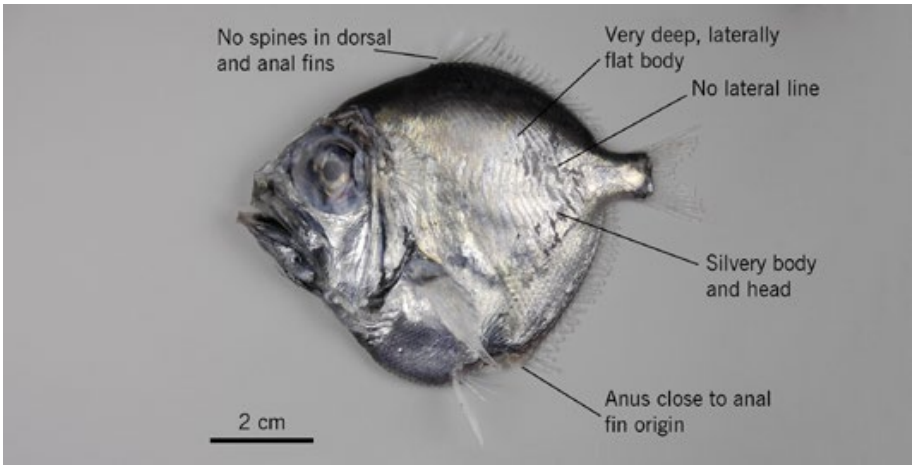
Distribution: Mostly recorded from central and northern New Zealand but also from Campbell Plateau. Widespread in Atlantic, Indian and Pacific Oceans.

Depth: 700 to 1300 m (adults).

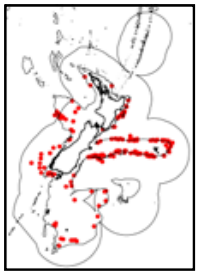
Similar species: Discfish (*Diretmus argenteus*) has a deeper disc-shaped body, with a blackish upper surface, and silvery sides and lower body, anus close to anal fin origin, and grows to only about 12 cm SL. Species of roughy (*Hoplostethus*) are usually not black, have a lateral line, and lack lateral spines on base of dorsal and anal fin rays.

Biology & ecology: Juveniles are probably in midwater and adults live deeper and closer to the bottom.

Discfish *Diretmus argenteus*



Family: 277. Diretmidae (Spinyfins)
Maori names:
Other names: Silver discfish
FishNZ reporting code: DIS
FishNZ research/observer code: DIS



Distinguishing features: Nearly circular body, almost as deep as long, and strongly laterally flattened. Very large eye, much greater than snout length. No spines in long-based dorsal and anal fins. Bands of small teeth in both jaws. Small spiny scales. Enlarged scales (scutes) on belly. No lateral line. Anus immediately in front of anal fin origin.

Colour: Silvery side and underside of head and body, bluish-black upper body. Inside of mouth and gill cavity blackish.

Size: To about 15 cm TL.

Length measurement method: Fork length

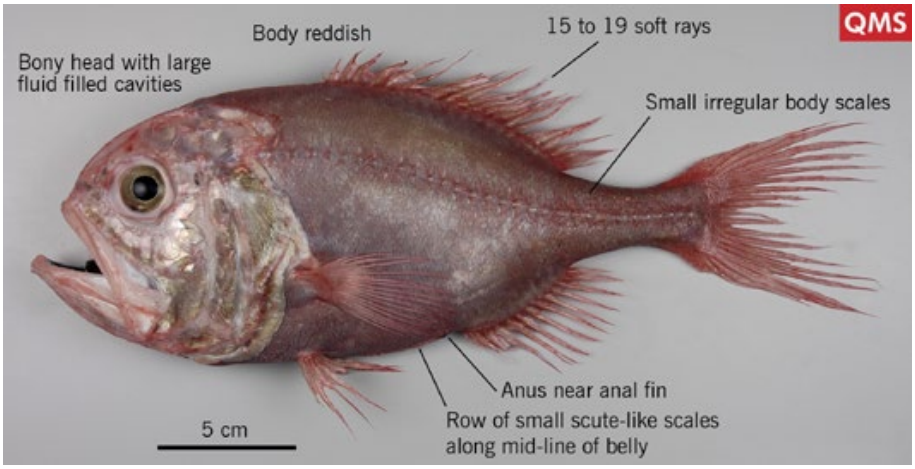
Distribution: Widespread in New Zealand from Kermadec Ridge to Campbell Plateau. Widespread in tropical and temperate oceans, but absent from northern Pacific.

Depth: 300 to 1000 m.

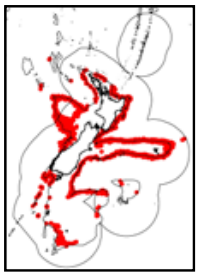
Similar species: Spinyfin (*Diretmichthys parini*) is uniformly blackish, body depth about half SL, anus about halfway between pelvic fin base and anal fin origin. Roughies (Trachichthyidae) have spines in anal and dorsal fins and have lateral line. Capro dory (*Capromimus abbreviatus*) has separate spiny and soft dorsal fins.

Biology & ecology: Midwater. Probably feed on planktonic animals.

Orange roughy *Hoplostethus atlanticus*



Family: 280. Trachichthyidae (Roughies)
Maori names:
Other names:
FishNZ reporting code: ORH
FishNZ research/observer code: ORH



Distinguishing features: Large bony head with fluid-filled canals covered with thin skin. Upper body and fins reddish, paler body in smaller individuals. Anus close to anal fin origin. Lateral line scales enlarged compared to other body scales. Row of 19 to 25 small saw-like scales (scutes) in series on belly from behind pelvic fin to before anus. Dorsal fin spines 4 to 6 and soft rays 15 to 19.

Colour: Upper body and fins reddish, sides paler reddish-grey, sometimes silvery. Mouth lining black. Iris pale yellow. Body of smaller individuals paler and very small fish have blackish pectoral and pelvic fins.

Size: To about 55 cm SL.

Length measurement method: Standard length

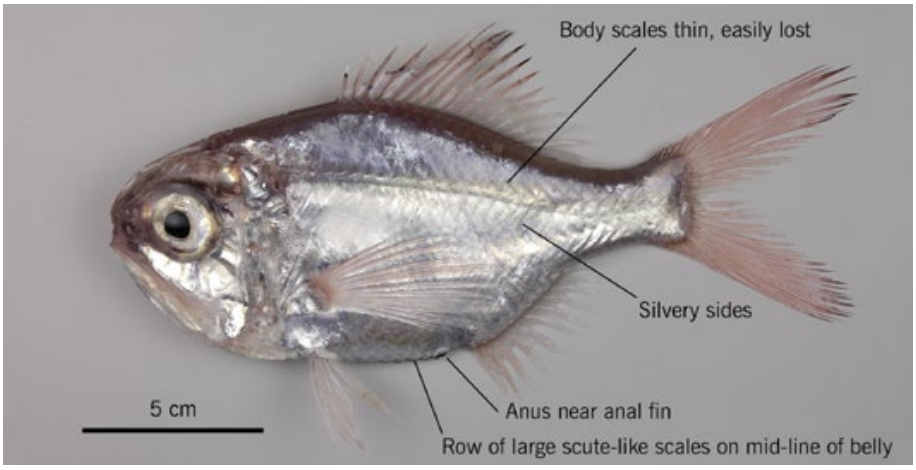
Distribution: Widespread in New Zealand from West Norfolk Ridge to Campbell Plateau. Widespread in temperate waters of Atlantic, Indian, and South Pacific Oceans.

Depth: 700 to 1200 m.

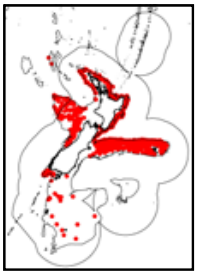
Similar species: Silver roughy (*Hoplostethus mediterraneus*, **SRH**) has 12 or 13 dorsal fin soft rays, large body scales that are usually lost, 9 to 11 belly scutes, and pinkish pectoral and pelvic fins. Giant sawbelly (*Hoplostethus melanopeza*, **GSA**) has 9 to 12 large belly scutes.

Biology & ecology: Demersal. Probably migrate considerable distances and spawn from June to August at specific sites, including north Chatham Rise, Challenger Plateau, Ritchie Bank. Feed on midwater fishes, cephalopods and crustaceans. Slow growing and long lived, attaining ages of at least 100 years.

Silver roughy *Hoplostethus mediterraneus*



Family: 280. Trachichthyidae (Roughies)
Maori names:
Other names:
FishNZ reporting code: SRH
FishNZ research/observer code: SRH



Distinguishing features: Large bony head with fluid-filled canals covered with thin skin. Row of 9 to 11 saw-like scales (scutes) on belly between pelvic fin and anus. Anus near origin of anal fin with no scutes between anus and anal fin. Enlarged scales along lateral line. Thin body scales usually lost during capture.

Colour: Body and head dull pinkish above, with silvery sides. All fins pinkish with faint black on tips of dorsal and caudal fins.

Size: To about 20 cm FL.

Length measurement method: Fork length

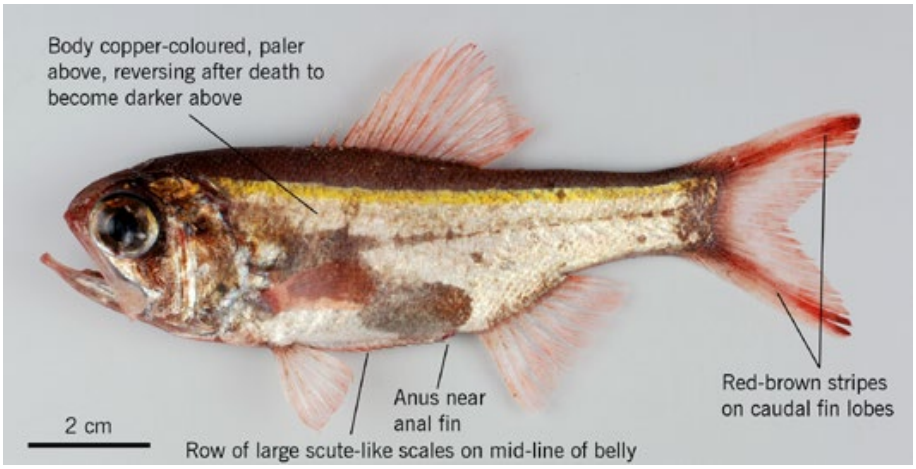
Distribution: Widespread in New Zealand from West Norfolk Ridge to Campbell Plateau but most abundant in, and north of subtropical convergence. Apparently widespread in temperate northern and southern hemispheres, although there may be more than one species involved.

Depth: 400 to 800 m.

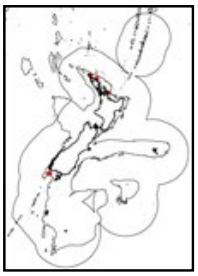
Similar species: Common roughy (*Paratrachichthys trailli*, **RHY**) has anus surrounded by round black light organ between pelvic fin bases, scutes between anus and pelvic fin, small rough adherent body scales, and lacks enlarged scales in lateral line. Orange roughy (*H. atlanticus*) has 15 to 19 dorsal fin rays, small irregular body scales, and 19 to 25 small belly scutes in front of anus.

Biology & ecology: Demersal.

Slender roughy *Optivus elongatus*



Family: 280. Trachichthyidae (Roughies)
Maori names: Puramorehu
Other names:
FishNZ reporting code: SLR
FishNZ research/observer code: SLR



Distinguishing features: Anus near anal fin, large scutes on belly anterior to anus, red-brown stripes on caudal fin lobes, lighter above than below but this reverses after death.

Colour: Copper-coloured, lighter on back than sides and belly, but this reverses after death so that back is darkest. Red-brown stripes on upper and lower caudal fin lobes.

Size: To about 12 cm FL.

Length measurement method: Fork length

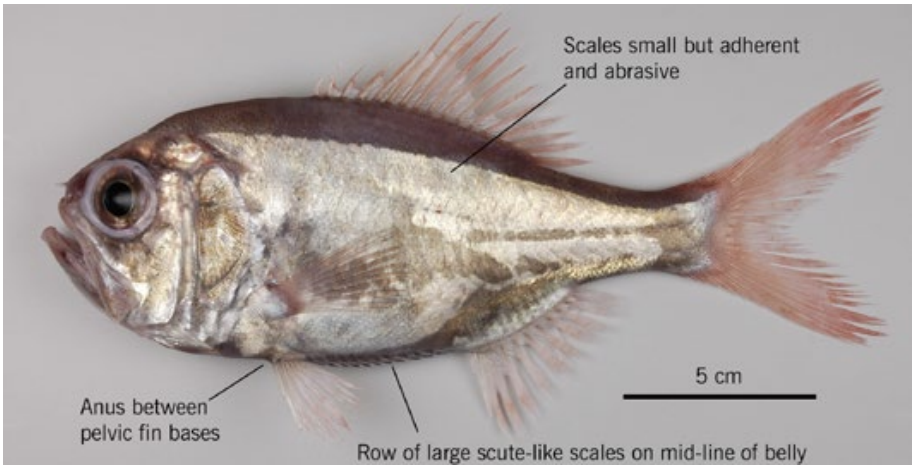
Distribution: Kermadec Islands, North Island to Cook Strait and Chatham Island. Known only from New Zealand.

Depth: A few to 70 m.

Similar species: Other roughies are all deep-bodied and lack stripes on tail.

Biology & ecology: In caves on rocky reefs by day, emerging at night to feed. May occur in deeper open water during day.

Common roughy *Paratrachichthys trailli*



Family: 280. Trachichthyidae (Roughies)
Maori names: Patohe
Other names:
FishNZ reporting code: RHY
FishNZ research/observer code: RHY

Distinguishing features: Anus surrounded by round black light organ between pelvic fin bases. Row of 11 to 13 large saw-like scales (scutes) on belly between anus and anal fin. Body covered with small, rough, adherent scales. No enlarged scales in lateral line.

Colour: Body and head dull pinkish red above, with silvery sides. All fins pinkish. Oval of black tissue (light organ) around anus.

Size: To about 25 cm FL.

Length measurement method: Fork length

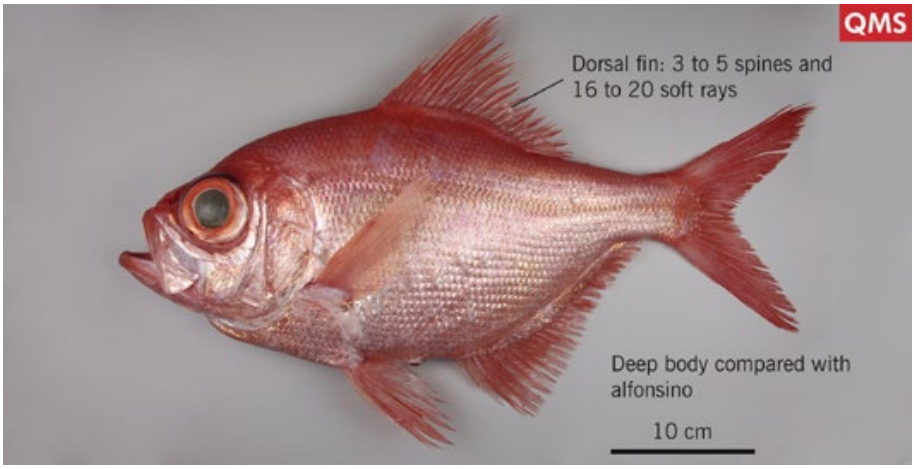
Distribution: Known only from, but widespread in New Zealand from off Northland to Campbell Plateau including shallower parts of Chatham Rise.

Depth: A few to 600 m.

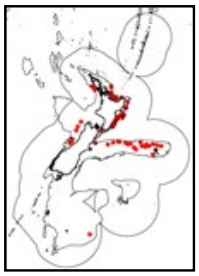
Similar species: Silver roughy (*Hoplostethus mediterraneus*) has anus near origin of anal fin, no scutes between anus and anal fin, enlarged scales on lateral line, and thin body scales (often lost during capture). Orange roughy (*H. atlanticus*) has anus near origin of anal fin, no scutes between anus and anal fin, and enlarged scales on lateral line.

Biology & ecology: Small individuals live in shallow coastal waters (5 to 10 m), often observed by divers in caves and crevices. Larger individuals are in deeper water and occasional catches of many tonnes of apparently spawning individuals have been reported.

Longfinned beryx *Beryx decadactylus*



Family: 281. Berycidae (Alfonsinos)
Maori names:
Other names: Imperador (Australia)
FishNZ reporting code: BYX
FishNZ research/observer code: BYD



Distinguishing features: Bright red body and fins. Body depth much greater than head length. Anal fin origin below about middle of dorsal fin base. Dorsal fin with 3 to 5, usually 4, spines, 16 to 20 soft rays. Two small spines on snout.

Colour: Upper head and body, all fins and iris of eye bright red, becoming silvery-pink below.

Size: To 55 cm FL or more.

Length measurement method: Fork length

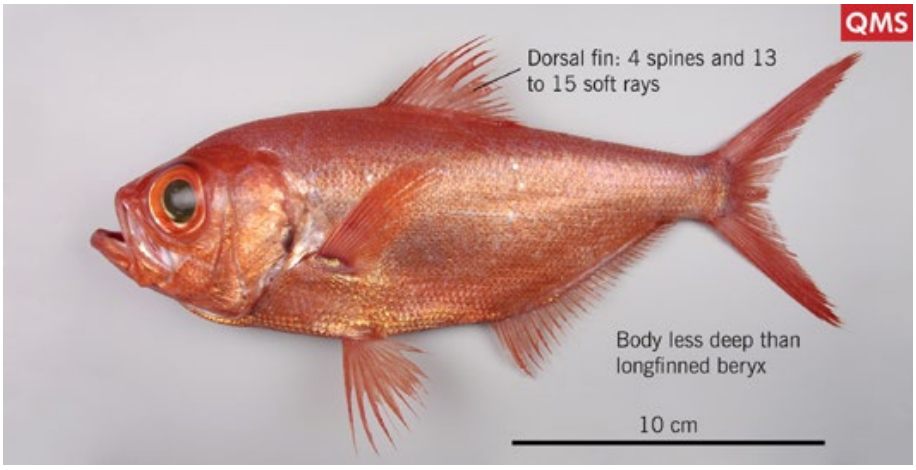
Distribution: Mostly around the North Island. Occurs in most temperate and some subtropical oceans except northeast Pacific Ocean.

Depth: 180 to 1000 m.

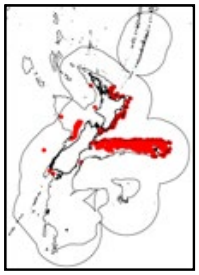
Similar species: Alfonsino (*Beryx splendens*) has a more slender body and 12 to 15 soft dorsal rays. Red snapper (*Centroberyx affinis*) differs in having rows of white spots on body scales forming longitudinal lines and 7 dorsal fin spines.

Biology & ecology: Uncommon. Demersal and semi-pelagic, usually over or near reefs, hills, or rough bottom. Mainly encountered off the North Island east coast and on the Chatham Rise.

Alfonsino *Beryx splendens*



Family: 281. Berycidae (Alfonsinos)
Maori names:
Other names: Splendid alfonsino
FishNZ reporting code: BYX
FishNZ research/observer code: BYS



Distinguishing features: Bright red body and fins. Body depth about equal to or slightly more than head length. Anal fin origin below rear end of dorsal fin base. Dorsal fin with 3 to 5, usually 4, spines, 13 to 15 soft rays. One small spine on snout.

Colour: Upper head and body, all fins and iris of eye bright red, often silvery-pink (paler) below.

Size: To about 50 cm FL.

Length measurement method: Fork length

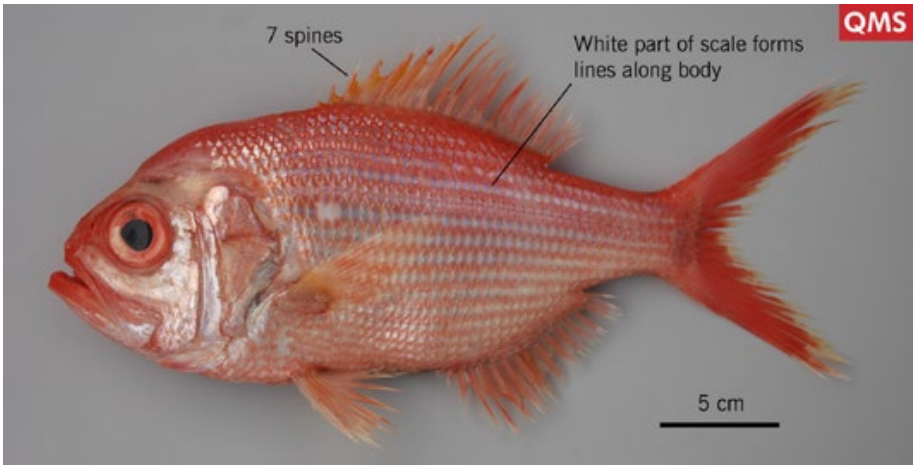
Distribution: Central and northern New Zealand. Occurring in most temperate seas except eastern North Pacific Ocean.

Depth: 180 to 1000 m.

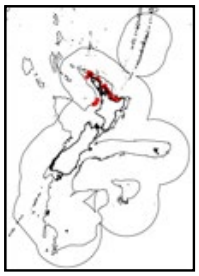
Similar species: Longfinned beryx (*Beryx decadactylus*) has a deeper body and 16 to 20 soft dorsal rays. Red snapper (*Centroberyx affinis*) has white spots on the body scales forming longitudinal lines and 7 dorsal fin spines. Rubyfish (*Plagiogeneion rubiginosum*) has a much longer dorsal fin with 12 spines.

Biology & ecology: Demersal and semi-pelagic, usually over or near reefs, hills, or rough bottom. Mainly encountered on the Chatham Rise and along the Wairarapa coast.

Red snapper *Centroberyx affinis*



Family: 281. Berycidae (Alfonsinos)
Maori names: Koarea
Other names: Golden snapper (NZ), redfish (Australia)
FishNZ reporting code: RSN
FishNZ research/observer code: RSN



Distinguishing features: Bright red body with white marks on scales forming longitudinal lines. Dorsal fin with 7 spines.

Colour: Body bright red with white marks on scales forming longitudinal lines. Caudal fin red, other fins pink with yellowish tinge.

Size: To about 40 cm FL.

Length measurement method: Fork length

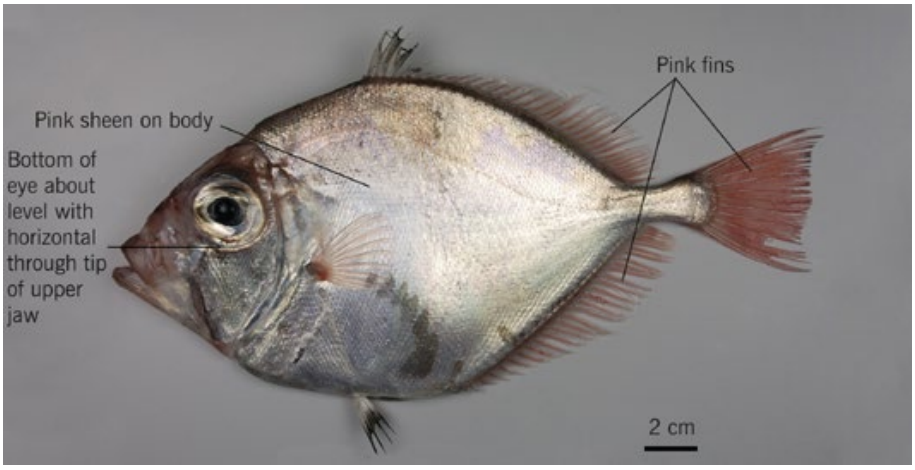
Distribution: Northern New Zealand north of about Cook Strait, including Kermadec Islands. Also south-east Australia and West Norfolk Ridge.

Depth: 10 to 500 m.

Similar species: Alfonsino (*Beryx splendens*) and longfinned beryx (*Beryx decadactylus*) have 4 dorsal fin spines compared with 7 for red snapper. They are also uniform red in body colour without the longitudinal rows of white marks. Rubyfish (*Plagiogeneion rubiginosum*) has a much longer dorsal fin with 12 spines.

Biology & ecology: Demersal, usually near deep reefs.

Silver dory *Cyttus novaezealandiae*



Family: 283. Cyttidae (Lookdown dories)
Maori names:
Other names: Pink dory
FishNZ reporting code: SDO
FishNZ research/observer code: SDO

Distinguishing features: Small, to about 30 cm TL, with bottom of eye about level with tip of upper jaw, pink fins and faint pink sheen on body, dorsal and anal fin bases lacking rows of spiny scutes, scales obvious.

Colour: Body silver with pinkish sheen. Soft dorsal, anal and pectoral fins pink. Spiny dorsal and pelvic fins plus margin of caudal fin black.

Size: To about 30 cm TL.

Length measurement method: Total length

Distribution: Widespread in New Zealand. Southern Australia.

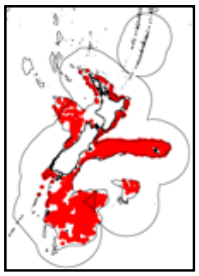
Depth: 200 to 400 m.

Similar species: Lookdown dory (*C. traversi*) has a much higher eye position and grey fins. Mirror dory (*Zenopsis nebulosa*) has rows of spiny scutes along the bases of the soft dorsal and anal fins and a smooth scaleless body.

Biology & ecology: Demersal.

Lookdown dory *Cyttus traversi*

Family: 283. Cyttidae (Lookdown dories)
Maori names:
Other names: King dory (Australia)
FishNZ reporting code: LDO
FishNZ research/observer code: LDO



Distinguishing features: Large, to about 65 cm TL, with steep snout and bottom of eye well above a horizontal line through tip of upper jaw. Greyish second dorsal, anal and caudal fins. Dorsal and anal fin bases lacking rows of spiny scutes. Small scales present.

Colour: Body grey, snout and mouth pinkish, fin rays grey.

Size: To about 65 cm TL.

Length measurement method: Total length

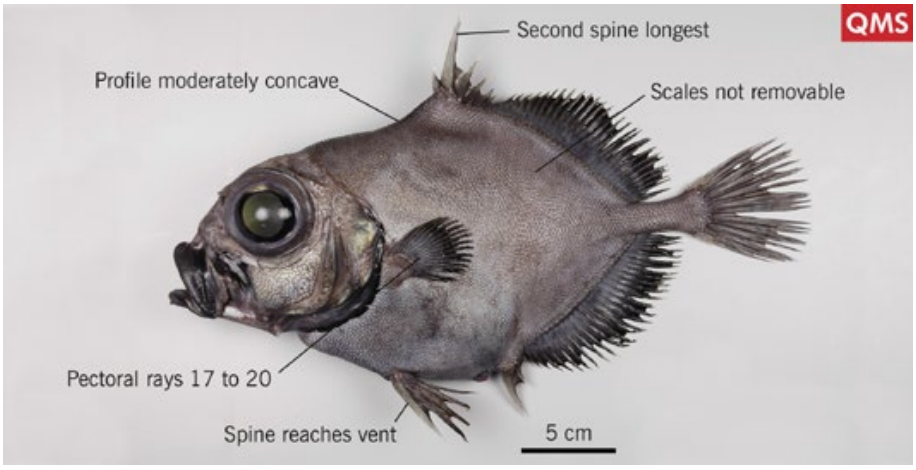
Distribution: Widespread in New Zealand. Southern Australia and southern Africa.

Depth: 150 to 1100 m.

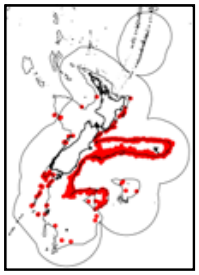
Similar species: Silver dory (*Cyttus novaezealandiae*) has pink fins, and eye not much above the mouth. Mirror dory (*Zenopsis nebulosa*) has a row of spiny scutes along the bases of the soft dorsal and anal fins and a smooth scaleless body.

Biology & ecology: Demersal.

Black oreo *Allocyttus niger*



Family: 284. Oreosomatidae (Oreos)
Maori names:
Other names:
FishNZ reporting code: BOE (effort), OEO (landing)
FishNZ research/observer code: BOE



Distinguishing features: Body scales cannot be dislodged, predorsal profile slightly concave and not rising steeply, tip of pelvic spinereaches to vent, small fin spinules, premaxillary bone wide, pectoral rays 17 to 20.

Colour: Body uniform grey-black, fins black.

Size: To about 49 cm TL.

Length measurement method: Total length

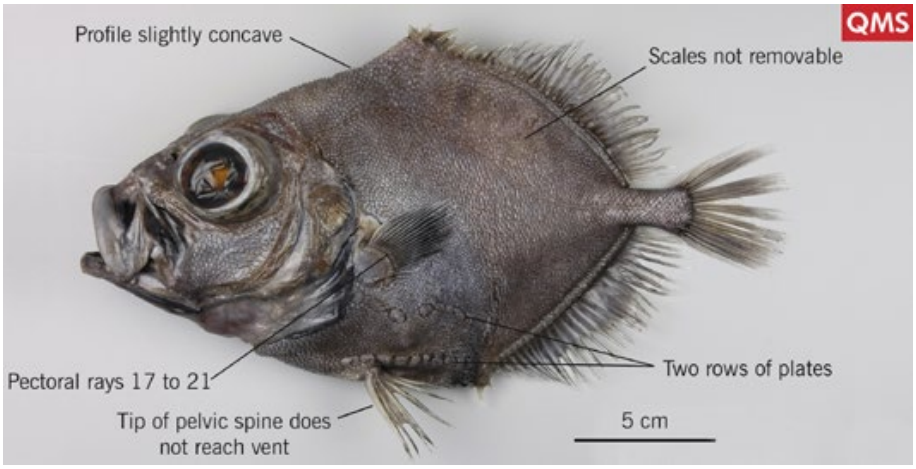
Distribution: Mainly southeast and southern New Zealand. Elsewhere known from temperate southwest Atlantic and south Indian Oceans including southern Australia.

Depth: 550 to 1200 m.

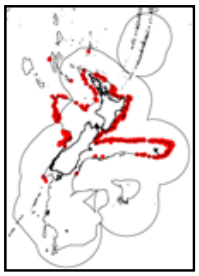
Similar species: Spiky oreo (*Neocyttus rhomboidalis*) has body scales that can be dislodged from the skin, a more concave predorsal profile. Warty oreo (*Allocyttus verrucosus*) has two rows of flat bony plates on abdomen, pelvic spine not reaching the vent. Oxeye oreo (*Oreosoma atlanticum*) is small (22 cm TL), has a huge eye, greatly elevated dorsal hump, scales that are easily shed, and a northern distribution. Rough oreo (*Neocyttus psilorhynchus*) is very rare (see spiky oreo).

Biology & ecology: Demersal. Juveniles pelagic and rare. Like other oreos, slow growing and long-lived.

Warty oreo *Allocyttus verrucosus*



Family: 284. Oreosomatidae (Oreos)
Maori names:
Other names:
FishNZ reporting code: WOE (effort), OEO (landing)
FishNZ research/observer code: WOE



Distinguishing features: Body scales cannot be dislodged, two rows of small bony plates on abdomen, predorsal profile slightly concave and not rising steeply, tip of pelvic spine not reaching vent, no spinules on fins, premaxillary bone moderate width, pectoral rays 17 to 21.

Colour: Body light blue-grey with bluish tinge retained longest around upper and posterior parts of abdomen, fins grey with black membranes.

Size: To about 43 cm TL.

Length measurement method: Total length

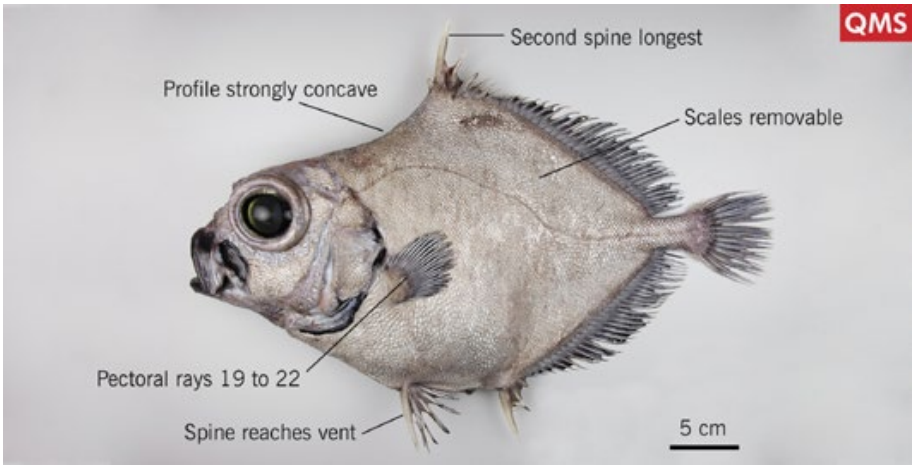
Distribution: Central and northern New Zealand. Circumglobal in temperate southern hemisphere including Australia.

Depth: 800 to 1500 m.

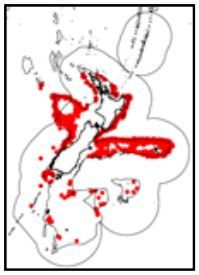
Similar species: Black oreo (*Allocyttus niger*) lacks two rows of flat bony plates on abdomen (small knobs may be present in small fish) and has pelvic spine reaching vent. Spiky oreo (*Neocyttus rhomboidalis*) has body scales that can be dislodged, a more concave predorsal profile, pelvic spines extending to vent. Oxeye oreo (*Oreosoma atlanticum*) is small (22 cm TL), has scales that are easily shed, large eye, greatly elevated dorsal hump, and a northern distribution. Rough oreo (*Neocyttus psilorhynchus*) is very rare (see spiky oreo).

Biology & ecology: Demersal. Deepest living of the oreos in New Zealand area and consequently juveniles are often the only specimens caught, i.e., at shallow end of the species depth range. Juveniles have dark blotches on body, and bony plates on abdomen are relatively large compared to those on adults.

Spiky oreo *Neocyttus rhomboidalis*



Family: 284. Oreosomatidae (Oreos)
Maori names:
Other names: Spikey oreo
FishNZ reporting code: SOR (effort), OEO (landing)
FishNZ research/observer code: SOR



Distinguishing features: Body scales can be dislodged, predorsal profile strongly concave and rises steeply, tip of pelvic spine reaches to vent, moderate fin spinules, premaxillary bone narrow, pectoral rays 19 to 22.

Colour: Body light brownish grey, fin rays grey but membranes black.

Size: To about 48 cm TL.

Length measurement method: Total length

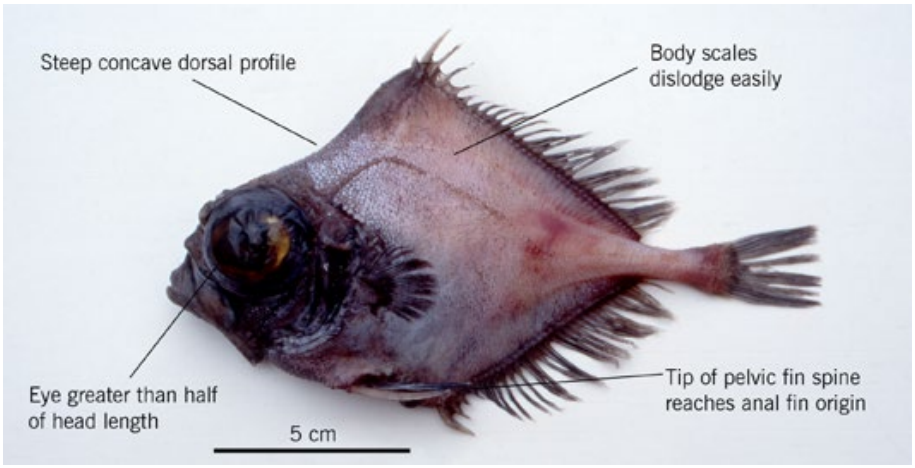
Distribution: Widespread in New Zealand and temperate southern hemisphere including Australia.

Depth: 500 to 1100 m.

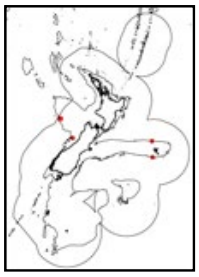
Similar species: The very rare rough oreo (*Neocyttus psilorhynchus*) has part of the snout (between the lachrymal and suborbital crest) lacking scales, 16 to 18 pectoral fin rays. Black oreo (*Allocyttus niger*) is grey-black and has scales that cannot be dislodged from the skin. Warty oreo (*Allocyttus verrucosus*) has a double row of flat bony plates on abdomen, pelvic spine does not reach the vent. Oxeye oreo (*Oreosoma atlanticum*) is small (22 cm TL), has a huge eye, greatly elevated dorsal hump, and a northern distribution.

Biology & ecology: Demersal.

Oxeye oreo *Oreosoma atlanticum*



Family: 284. Oreosomatidae (Oreos)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: OXO



Distinguishing features: Adults have steep, slightly concave dorsal profile from snout tip to dorsal fin origin. Very large eye, more than half head length. Tip of pelvic fin spine reaches back to anal fin origin. Body scales weakly attached. Prominent horizontal bony ridge on operculum. Stout spines on first dorsal, anal, and pelvic fins. Small adult size, to about 22 cm TL. Juveniles have prominent cones on upper and lower body.

Colour: Greyish-brown

Size: To about 22 cm TL.

Length measurement method: Total length

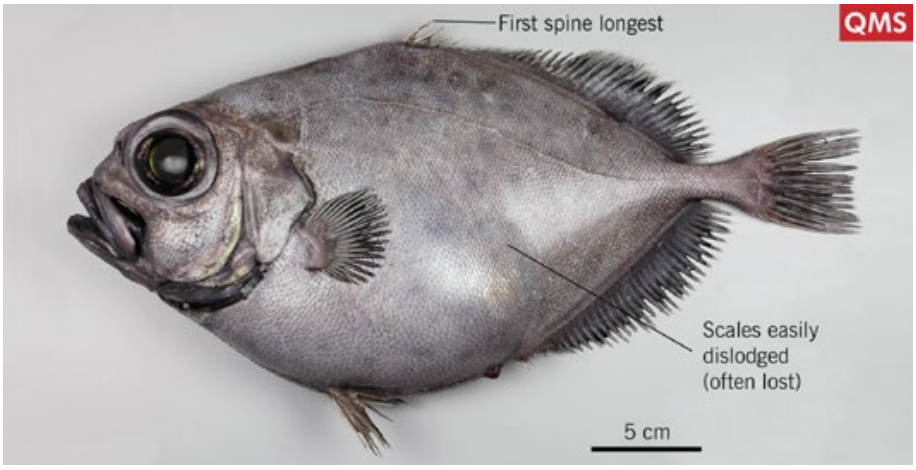
Distribution: Widespread in New Zealand from southern Lord Howe and West Norfolk Ridges to Puysegur and Chatham Rise (Adults and juveniles). Widespread in southern hemisphere.

Depth: About 550 to 1350 m (adults).

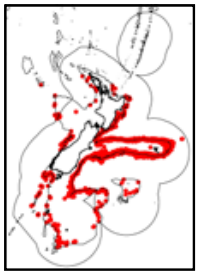
Similar species: Black oreo (*Allocyttus niger)* has scales that cannotbe dislodged from the skin. Spiky oreo (*Neocyttus rhomboidalis*) and rough oreo (*Neocyttus psilorhynchus*) have more concave predorsal profile, and small eye, less than half head length. Warty oreo (*Allocyttus verrucosus*) has pelvic spine not reaching the vent, and double row of flat bony plates (usually 8) on lower abdomen.

Biology & ecology: Juveniles are midwater, rarely caught, and are thought to feed on planktonic organisms such as copepods.They have stout cones on upper and lower body possibly to discourage predators such as tunas. Specimens were recovered from stomachs of albacore tuna caught near surface by trolling. Adults are demersal and appear to aggregate to feed like other species of oreos.

Smooth oreo *Pseudocyttus maculatus*



Family: 284. Oreosomatidae (Oreos)
Maori names:
Other names:
FishNZ reporting code: SSO (effort), OEO (landing)
FishNZ research/observer code: SSO



Distinguishing features: First dorsal spine longer than second, fin spines small, operculum fully scaled but with no strong ridge or radiating striations, body scales easily dislodged.

Colour: Body bluish-grey to greyish-brown, fins dark grey. Juveniles (less than about 156 mm TL) body silvery grey with numerous dark blue blotches.

Size: To about 68 cm TL.

Length measurement method: Total length

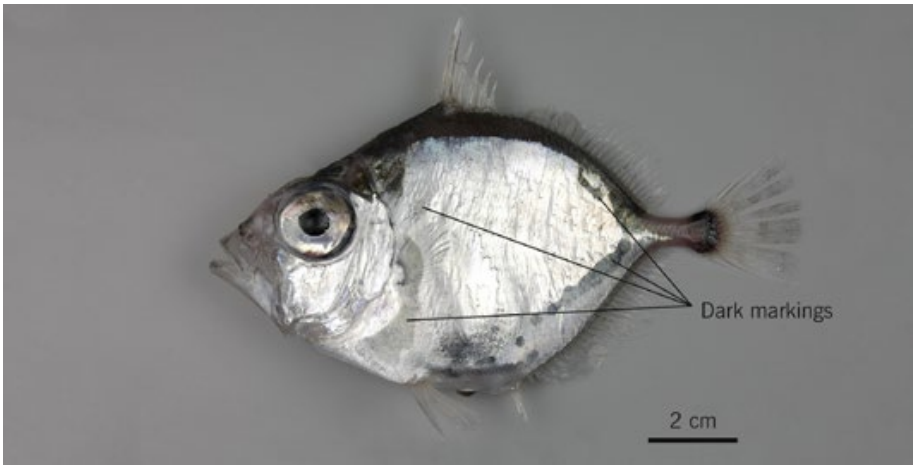
Distribution: Widespread off central and southern New Zealand and temperate southern hemisphere including Australia.

Depth: 600 to 1500 m.

Similar species: Other oreos have the first spine in the dorsal fin shorter than the second spine, and body scales that are more adherent.

Biology & ecology: Demersal. Like other oreos, slow growing and long-lived.

Capro dory *Capromimus abbreviatus*



Family: 286. Zeniontidae (Armoreye dories)
Maori names:
Other names:
FishNZ reporting code: CDO
FishNZ research/observer code: CDO

Distinguishing features: Small, to about 10 cm TL. Silvery body with distinctive dark markings behind the gills and along the body margins near the bases of the soft dorsal and anal fins.

Colour: Silvery body with dark blue blotches behind the gills and on body margins near the base of the tail.

Size: To about 10 cm TL.

Length measurement method: Total length

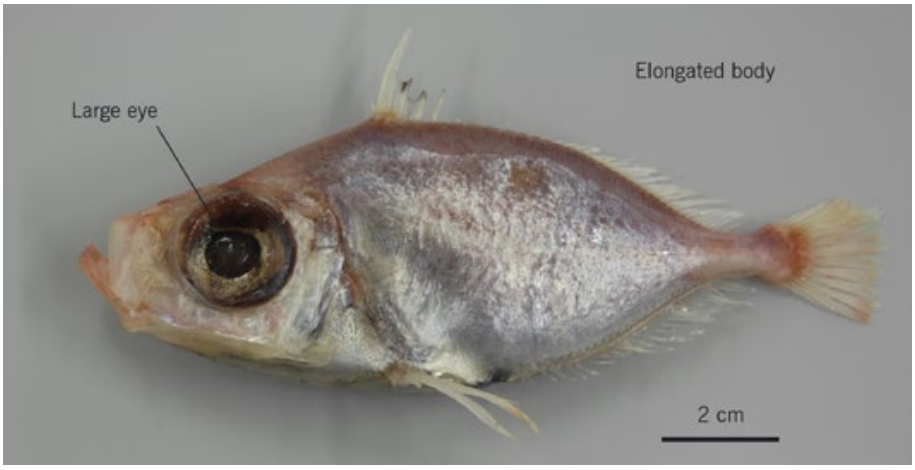
Distribution: Widespread but found only in New Zealand, mainly from central and northern waters.

Depth: 200 to 500 m.

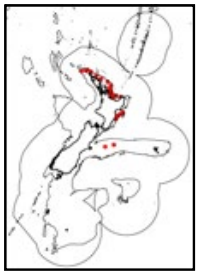
Similar species: Dories (Zeidae) lack the dark body markings and are larger.

Biology & ecology: Demersal. More common off east coast of northern and central New Zealand.

Zenion dory *Zenion* sp. A



Family: 286. Zeniontidae (Armoreye dories)
Maori names:
Other names: Elongate dory
FishNZ reporting code: UNI
FishNZ research/observer code: ZDO



Distinguishing features: Small, to about 16 cm TL, with a relatively elongated body and large eyes. One serrated spine in pelvic fin.

Colour: Body silvery with a reddish-brown sheen.

Size: To about 16 cm TL.

Length measurement method: Total length

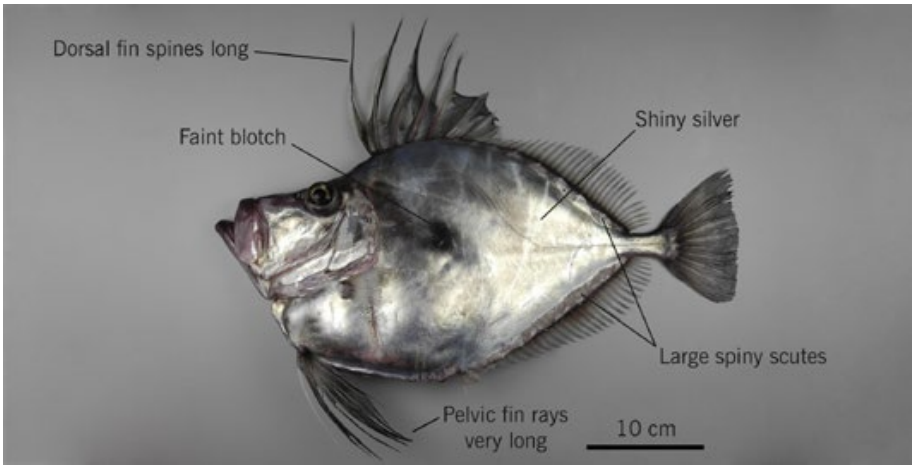
Distribution: Central and northern New Zealand including Kermadec and Colville Ridges. Eastern Australia.

Depth: 330 to 700 m.

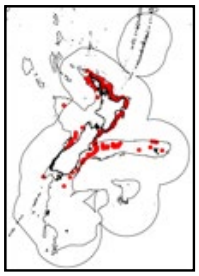
Similar species: Dories (Zeidae) lack the very large eye and elongate body.

Biology & ecology: Unknown.

Mirror dory *Zenopsis nebulosa*



Family: 288. Zeidae (Dories)
Maori names:
Other names:
FishNZ reporting code: MDO
FishNZ research/observer code: MDO



Distinguishing features: Body shiny silver with a faint central blotch on each side, spinous dorsal and pelvic fin rays long, dorsal and anal fin bases with a row of spiny scutes, smooth body without scales.

Colour: Body silvery and mirror-like with a faint central blotch on each side. Spiny dorsal and pelvic fins blackish, other fins grey.

Size: To about 70 cm TL.

Length measurement method: Total length

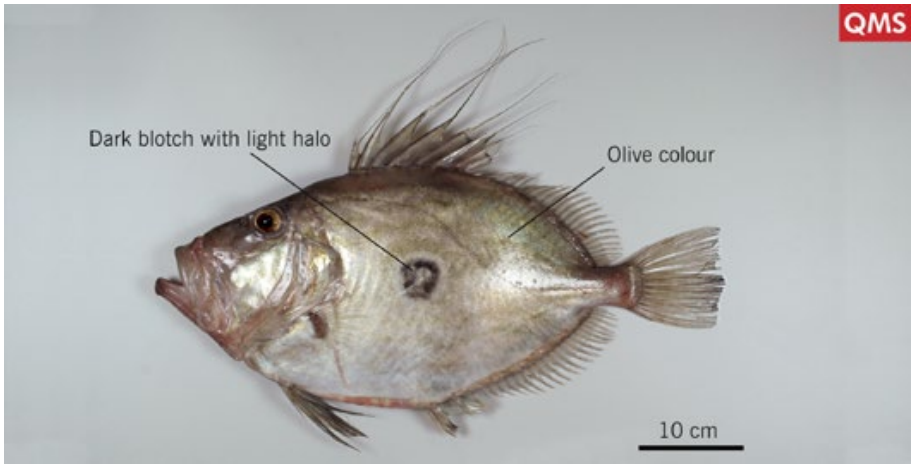
Distribution: Northern and central New Zealand. Widespread in Pacific Ocean including western Australia, Japan, off California and Peru.

Depth: 150 to 600 m.

Similar species: Silver dory (*Cyttus novaezealandiae*) has pink fins. Lookdown dory (*Cyttus traversi*) has the eye high on the head. Both of these species also have small body scales but lack a row of spiny scutes along the bases of the soft dorsal and anal fins.

Biology & ecology: Demersal.

John dory *Zeus faber*



Family: 288. Zeidae (Dories)
Maori names: Kuparu
Other names:
FishNZ reporting code: JDO
FishNZ research/observer code: JDO

Distinguishing features: Body very thin with large dark spot ringed with silver on centre of each side, pelvic and particularly dorsal fin rays elongated, very large protrusible mouth.

Colour: Body and fins olive brown with a golden sheen. A large central dark spot ringed with silver is present on each side of the body.

Size: To about 60 cm TL.

Length measurement method: Total length

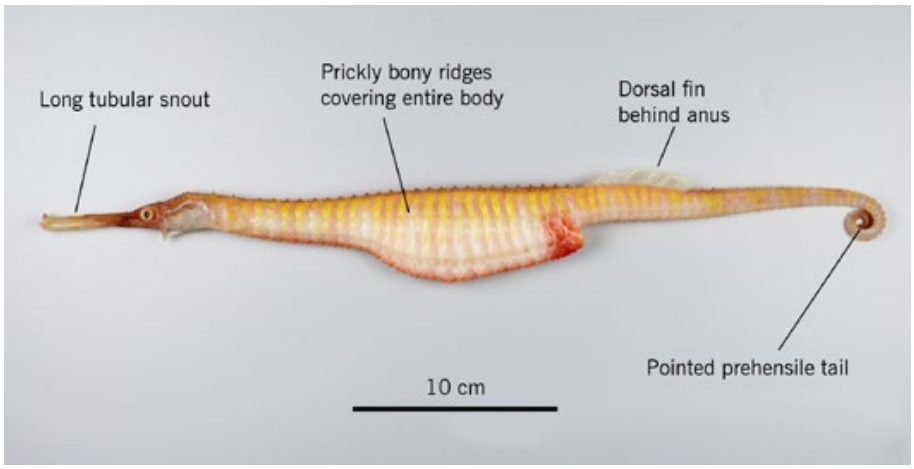
Distribution: Widespread in New Zealand, mostly from Cook Strait north. Eastern Atlantic and western Indian Oceans, including Australia, and South China Sea.

Depth: A few to 300 m.

Similar species: Other dories lack the dark body spot and olive body colour.

Biology & ecology: Demersal.

Spiny seadragon *Solegnathus spinosissimus*



Family: 295. Syngnathidae (Pipefishes, seahorses)
Maori names:
Other names:
FishNZ reporting code: SDR
FishNZ research/observer code: SDR

Distinguishing features: Snout long and tubular, body ringed by many bony, prickly ridges, tail pointed and prehensile, dorsal fin behind anus, body with alternating red and yellow stripes.

Colour: Body with alternating reddish-pink and yellow stripes, head and snout reddish with short yellow lines and dots, area around anus dark red.

Size: To 50 cm TL.

Length measurement method: Total length

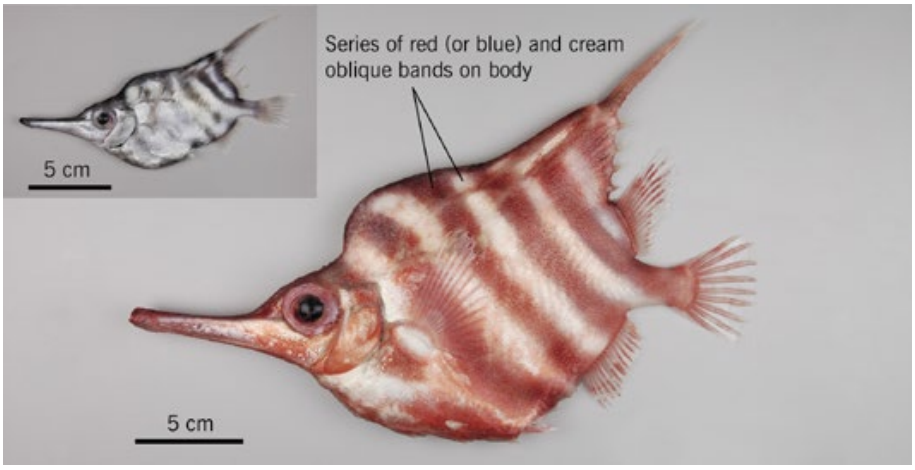
Distribution: Widespread in New Zealand from Cape Reinga to Stewart/Snares shelf, and Chatham Islands. Also eastern Australia.

Depth: 50 to about 250 m, shallower in Fiordland.

Similar species: Seahorse (*Hippocampus abdominalis*) is not prickly, has dorsal fin anterior to anus, and usually has head at right angles to body.

Biology & ecology: Demersal on continental shelf.

Banded bellowsfish *Centriscops humerosus*



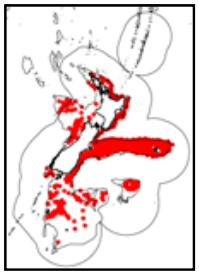
Family: 298. Macroramphosidae (Snipefishes, bellowsfishes)

Maori names:

Other names: Redbanded bellowsfish

FishNZ reporting code: BBE

FishNZ research/observer code: BBE



Distinguishing features: Snout elongated to form a long tube with a small terminal mouth. Very strong spine (second) in first dorsal fin. Series of 5 or 6 red (or bluish) and cream diagonal bands on body.

Colour: Series of five or six red and cream diagonal bands on body. Dark bands are bluish-grey rather than red in individuals less than about 20 cm TL.

Size: To about 30 cm TL.

Length measurement method: Total length

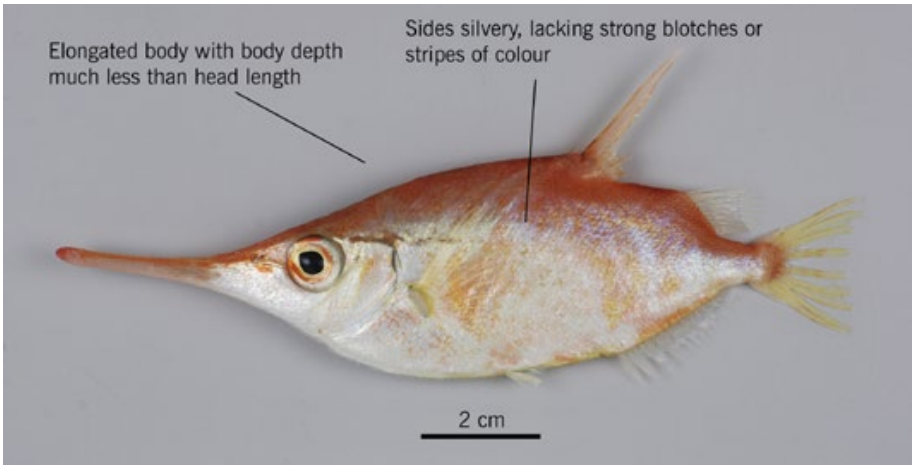
Distribution: Widespread in New Zealand. Widespread in southern hemisphere except South America.

Depth: 200 to 900 m.

Similar species: Crested bellowsfish (*Notopogon lilliei*) lacks series of 6 diagonal bands on body.

Biology & ecology: Largely unknown. Probably demersal. Smallmouth and long snout are adapted for selecting small food items.

Snipefish *Macroramphosus scolopax*



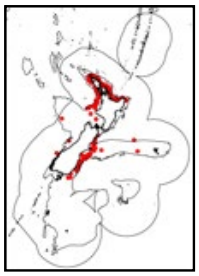
Family: 298. Macroramphosidae (Snipefishes, bellowsfishes)

Maori names:

Other names:

FishNZ reporting code: SNI

FishNZ research/observer code: SNI



Distinguishing features: Snout elongated to form long tube with small terminal mouth. Very strong spine (second) in first dorsal fin. Elongated slender body with head length greater than body depth. Body reddish above with pale silvery sides and belly.

Colour: Body reddish-pink to orange above with pale silvery sides and belly. Fins pale pink.

Size: To about 19 cm TL.

Length measurement method: Total length

Distribution: Central and northern New Zealand. Worldwide in temperate latitudes.

Depth: 50 to 350 m.

Similar species: Banded bellowsfish (*Centriscops humerosus*) has a series of 5 or 6 red (or bluish) and cream diagonal bands on body. Crested bellowsfish (*Notopogon lilliei*) has complex oval shapes and spots on body. Orange bellowsfish (*Notopogon xenosoma*) has orange to pink body with white streaks and blotches.

Biology & ecology: Probably demersal. Thought to feed on zooplankton (copepods and ostracods) and benthic invertebrates.

Crested bellowsfish *Notopogon lilliei*

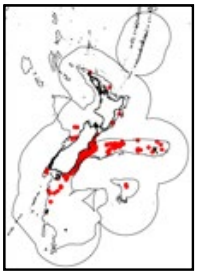
Family: 298. Macroramphosidae (Snipefishes, bellowsfishes)

Maori names:

Other names:

FishNZ reporting code: CBE

FishNZ research/observer code: CBE



Distinguishing features: Snout elongated to form long tube with small terminal mouth. Very strong spine (second) in first dorsal fin. Dorsal profile in front of dorsal fin nearly straight, with very gentle convex curve, bearing very small low patch of bristles in large individuals. Distinctive and complex colour pattern including reddish-brown oval rear part of the body with enclosed smaller pale reddish-pink oval with silvery margin.

Colour: Distinctive and complex pattern including a reddish-brown rear body with an enclosed smaller pale reddish-pink oval with a silvery margin. Small silvery spots on chest. Second dorsal, anal, and caudal fins with alternating transparent and reddish bands.

Size: To about 30 cm TL.

Length measurement method: Total length

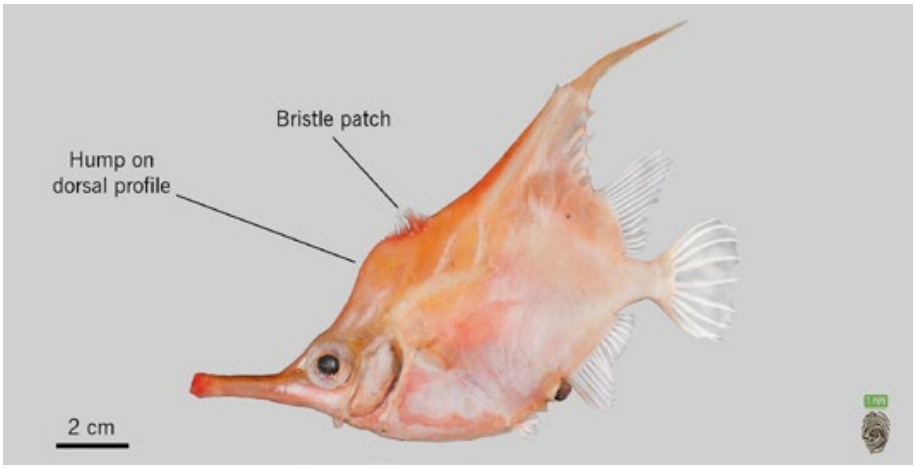
Distribution: Most records from central and southern New Zealand. Southeast Australia.

Depth: 50 to 500 m.

Similar species: Banded bellowsfish (*Centriscops humerosus*) has a series of 5 or 6 red (or bluish) and cream diagonal bands on body.

Biology & ecology: Largely unknown. Probably demersal. Small mouth and long snout are adapted for selecting small food items.

Orange bellowsfish *Notopogon xenosoma*



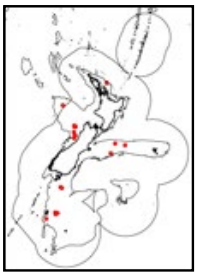
Family: 298. Macroramphosidae (Snipefishes, bellowsfishes)

Maori names:

Other names:

FishNZ reporting code: UNI

FishNZ research/observer code: NOF



Distinguishing features: Snout elongated to form long tube with small terminal mouth. Strong spine (second) in first dorsal fin. Dorsal profile in front of dorsal fin with low but distinct angled hump, bearing prominent brush-like patch of bristles in large males.

Colour: Body orange to pink with white streaks and blotches.

Size: To about 20 cm TL.

Length measurement method: Total length

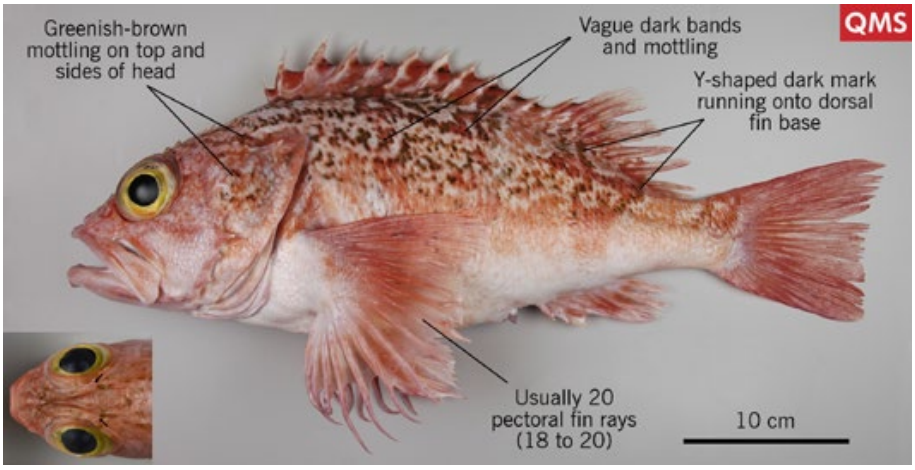
Distribution: Northern North Island and east coast South Island in New Zealand. Fisheries records from Campbell Plateau are probably mis-identifications. Madagascar, Mozambique, South Africa, Australia, New Caledonia, and Norfolk Island.

Depth: 190 to 450 m.

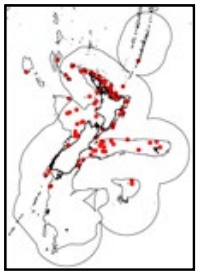
Similar species: Crested bellowsfish (*Notopogon lilliei*) has a complex body coloration with a pale oblong shape on the rear half of the body and silvery (pale) spots on the chest, and lacks a distinct hump on the dorsal profile in front of the dorsal fin.

Biology & ecology: Unknown, probably demersal.

Bigeye sea perch *Helicolenus barathri*



Family: 304a Sebastidae (Sea perches)
Maori names:
Other names: Bigeye seaperch
FishNZ reporting code: SPE
FishNZ research/observer code: HBA



Distinguishing features: One or two short pale filaments on head ridge above eye (see inset). Body with distinct, dark, Y-shaped band below and running up onto soft dorsal fin. Greenish-brown mottling on top and sides of head. Other indistinct dark vertical bands on rest of body and top of caudal peduncle. Usually 20 pectoral rays (18 to 20).

Colour: Head and body pinkish-red dorsally, whitish ventrally. Dark reddish to greenish-brown mottling on top and sides of head and forming diffuse vertical bands on body. One distinct Y-shaped vertical band extends onto soft dorsal fin.

Size: To about 60 cm TL.

Length measurement method: Total length

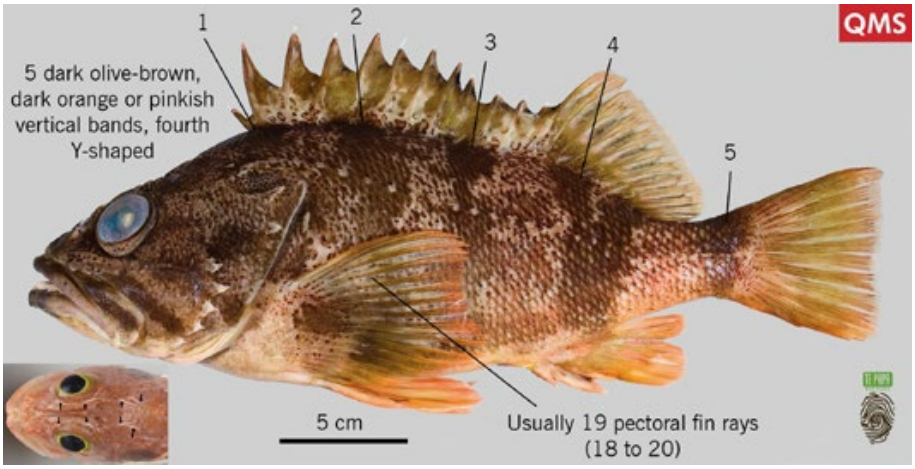
Distribution: Widespread in New Zealand from Lord Howe, Norfolk, and Kermadec Ridges in north to Snares Island in south, plus Chatham Island and Bounty Plateau. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Off Australia from New South Wales to Victoria including Tasmania.

Depth: About 150 to 900 m.

Similar species: Sea perch (*Helicolenus percoides*) is shallower-living (overlaps at 150 to 380 m), has 3 to 6 (usually 5) long whitish or pale pinkish filaments on head ridge above eye, 5 distinct dark vertical bands including one Y-shaped band below soft dorsal fin, and usually 19 pectoral fin rays.

Biology & ecology: Demersal. Ovoviviparous, i.e., retains fertilised eggs inside body which develop internally (but are not externally nourished by the mother).

Sea perch *Helicolenus percoides*



Family: 304a Sebastidae (Sea perches)
Maori names:
Other names: Jock Stewart
FishNZ reporting code: SPE
FishNZ research/observer code: HPC

Distinguishing features: Three to 6 (usually 5) long whitish or pale pinkish filaments (some paired) on head ridge above eye (see inset). Body with 5, distinct, dark, vertical bands including, one Y-shaped band below soft dorsal fin and small band on caudal peduncle. Top of head relatively uniformly darkly pigmented (pinkish to brownish), not mottled. Usually 19 pectoral fin rays (18 to 20).

Colour: Head, and body variably brownish, orange, yellow, or pink, paler ventrally. Five distinct dark vertical bands variably olive-brown in shallow water (a few to 50 m), orange or reddish-pink in deeper living (greater than about 150 m) fish.

Size: To about 50 cm TL.

Length measurement method: Total length

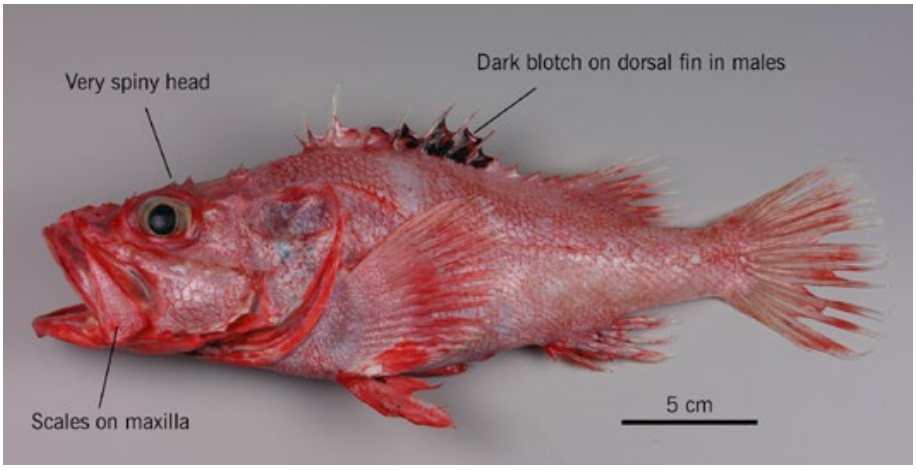
Distribution: Widespread in New Zealand from Kermadec and Norfolk Ridges in north to Snares Island in south, plus Chatham Island and Bounty Plateau in east. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Australia from New South Wales to Victoria including Tasmania.

Depth: A few to 380 m.

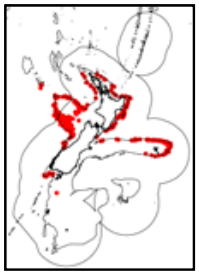
Similar species: Bigeye sea perch (*Helicolenus barathri*) is deeper-living (overlaps at 150 to 380 m), has 1 (usually) or 2 short pale filaments on head ridge above eye, single distinct dark Y-shaped band below and running up onto soft dorsal fin plus other indistinct dark vertical bands on rest of body and top of caudal peduncle, and usually 20 pectoral rays.

Biology & ecology: Demersal. Ovoviviparous.

Cape scorpionfish *Trachyscorpia eschmeyeri*



Family: 304a. Sebastidae (Sea perches)
Maori names:
Other names: Deepwater ocean perch
FishNZ reporting code: TRS
FishNZ research/observer code: TRS



Distinguishing features: Scales on lateral surface of maxilla, head profile concave (adults) or straight (young), no blackish saddles on body. Dark blotch on dorsal fin of males. 5 to 7 sharp spines on suborbital ridge.

Colour: Body and head pinkish (smaller) or reddish (larger) with darker pigment around lips, eyes, and gill membranes. Fins pinkish or reddish with lower pectoral, pelvic and front of anal fin darker. Males with large black blotch on spinous portion of dorsal fin.

Size: To about 47 cm TL.

Length measurement method: Total length

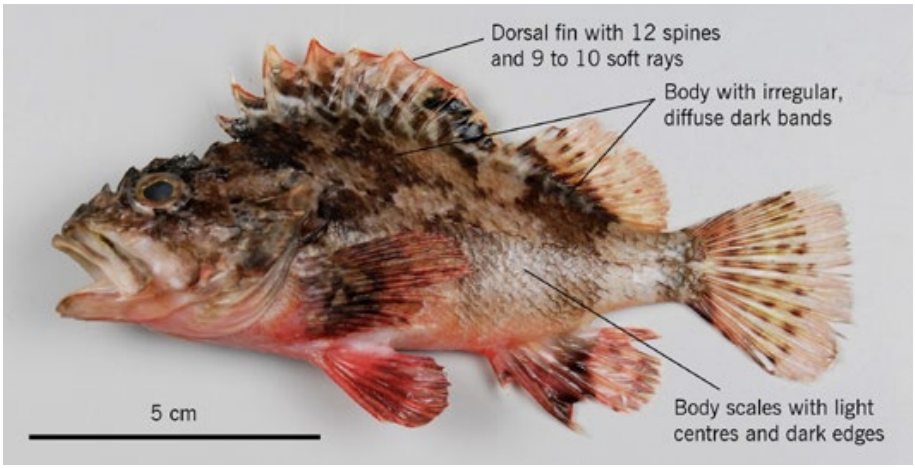
Distribution: Central and northern New Zealand. Widespread in southern hemisphere from west coast of Africa to Australia and New Zealand.

Depth: 500 to 1250 m.

Similar species: Deepsea scorpionfish (*Trachyscorpia carnomagula*) lacks scales on maxilla, has blackish posterior head, and 4 dark saddles on body.

Biology & ecology: Demersal.

Dwarf scorpionfish *Scorpaena papillosa*



Family: 304d. Scorpaenidae (Scorpionfishes, lionfishes)
Maori names:
Other names: Red scorpionfish
FishNZ reporting code: RSC
FishNZ research/observer code: RSC

Distinguishing features: Head very spiny, suborbital ridge with series of spines, dorsal fin with 12 spines and 9 to 10 soft rays, strong spines on top of head at inner rear margin of eye. Body with irregular diffuse dark bands, body scales with light centres and dark edges.

Colour: Variably coloured but often with red-brown bands on body and a pale band across nape behind eyes. Body scales with dark edges. Males have dark blotch at posterior end of spinous dorsal fin.

Size: 25 cm TL.

Length measurement method: Total length

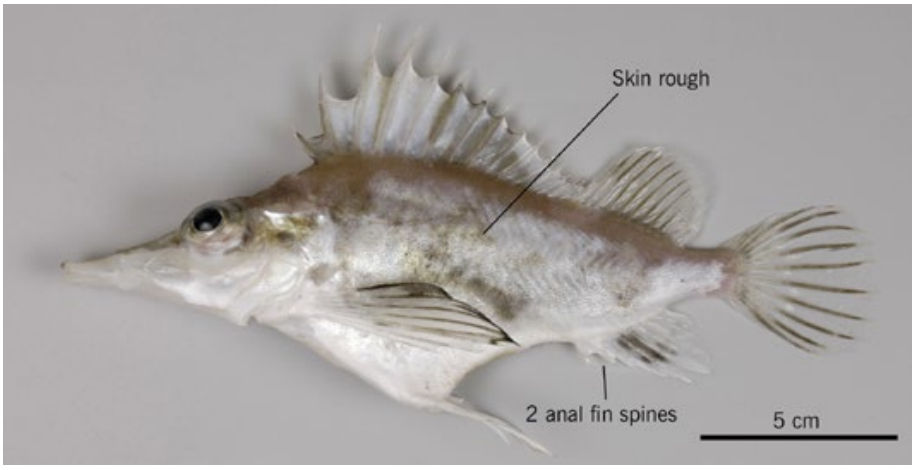
Distribution: Widespread in New Zealand from Three Kings Islands to Snares Islands, and Chatham Islands. Southeast Australia.

Depth: A few to about 50 m.

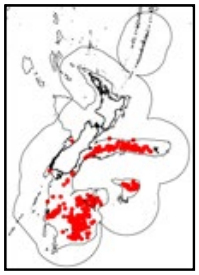
Similar species: Northern scorpionfish (*Scorpaena cardinalis*) is larger (to 60 cm TL), lacks dark scale edges, lacks strong spines on top of head at inner rear margin of eye, and is not found south of East Cape. Other scorpionfishes are rare/uncommon and northern.

Biology & ecology: Demersal on rough ground and rocky reefs.

Alert pigfish *Alertichthys blacki*



Family: 309. Congiopodidae (Pigfishes)
Maori names:
Other names:
FishNZ reporting code: API
FishNZ research/observer code: API



Distinguishing features: Skin of body rough, 2 or 3 anal fin spines, elongated snout. No strong banding on body.

Colour: Dull silvery-grey body with tan to brown mottling and spots; black on upper pectoral fin and sometimes on other fins.

Size: To about 20 cm TL.

Length measurement method: Total length

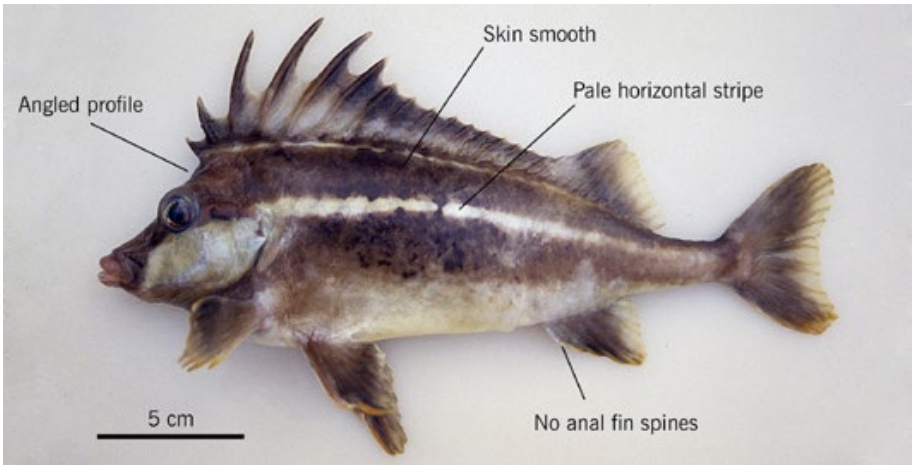
Distribution: Central and southern New Zealand from Chatham Rise south. Known only from New Zealand.

Depth: 100 to 600 m.

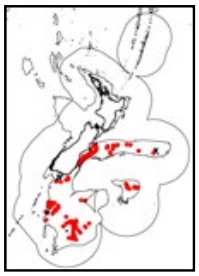
Similar species: Deepsea pigfish (*Congiopodus coriaceus*) lacks anal fin spines, has smooth body skin, and pale stripe running along body. Pigfish (*C. leucopaecilus*) lacks anal fin spines, has smooth body skin, and series of pale and dark blotches along body.

Biology & ecology: Unknown. Demersal on outer shelf and inner slope.

Deepsea pigfish *Congiopodus coriaceus*



Family: 309. Congiopodidae (Pigfishes)
Maori names:
Other names:
FishNZ reporting code: DSP
FishNZ research/observer code: DSP



Distinguishing features: Skin on body smooth. No spines in anal fin. Pale stripe running along side of body. Head lateral profile between eye and origin of first dorsal fin at about 45 degrees to horizontal.

Colour: Pale horizontal stripe on side of body from behind head, fading on caudal peduncle. Rest of body dark brownish fading to cream on belly.

Size: To about 32 cm FL.

Length measurement method: Fork length

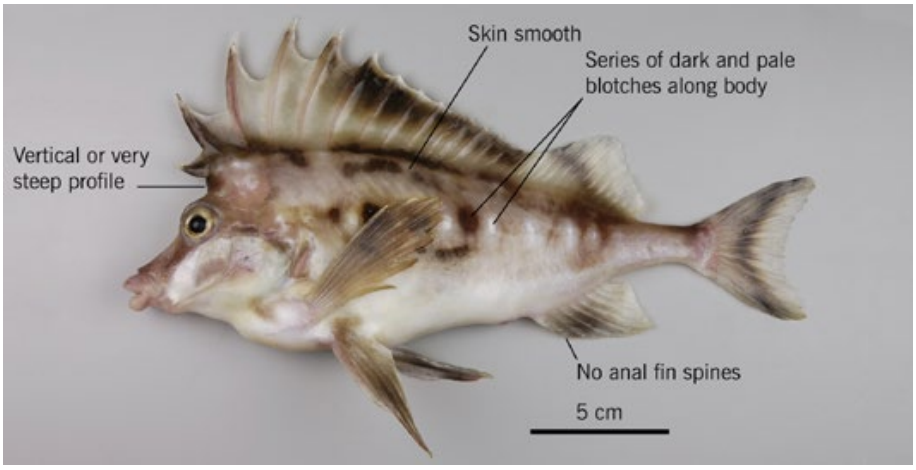
Distribution: Recorded from about Chatham Rise south. Known only from New Zealand.

Depth: 140 to 390 m.

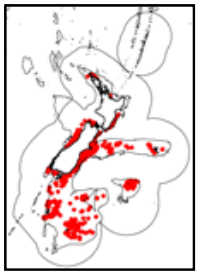
Similar species: Pigfish (*Congiopodus leucopaecilus*) has series of pale (and dark) blotches running along side of body and has almost vertical head profile between eyes and origin of first dorsal fin.

Biology & ecology: Demersal.

Pigfish *Congiopodus leucopaecilus*



Family: 309. Congiopodidae (Pigfishes)
Maori names: Purumorua
Other names: Southern pigfish
FishNZ reporting code: PIG
FishNZ research/observer code: PIG



Distinguishing features: Skin on body smooth. No spines in anal fin. Series of pale and dark blotches along side of body. Head lateral profile between eye and origin of first dorsal fin almost vertical.

Colour: Series of pale and dark blotches running along side of body. Rest of body blotchy brownish dorsally, cream ventrally.

Size: To at least 28 cm FL.

Length measurement method: Fork length

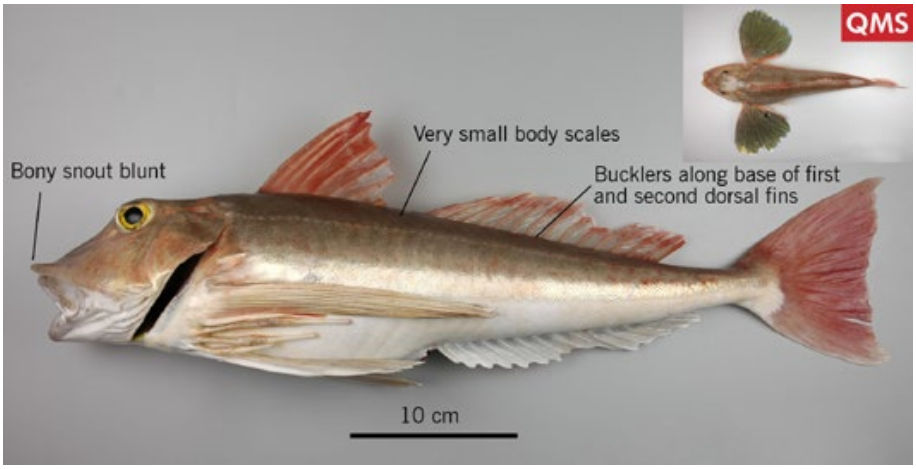
Distribution: Commonly taken around South Island and rarely seen north of Cook Strait. Records from northern New Zealand may be misidentified. Known only from New Zealand.

Depth: 0 to 100 m but usually 0 to 50 m.

Similar species: Deepsea pigfish (*Congiopodus coriaceus*) has almost continuous pale stripe running along side of body and head profile between eyes and origin of first dorsal fin is about 45degrees to horizontal.

Biology & ecology: Demersal.

Red gurnard *Chelidonichthys kumu*



Family: 310. Triglidae (Searobins, gurnards)
Maori names: Kumu, kumukumu
Other names: Gurnard
FishNZ reporting code: GUR
FishNZ research/observer code: GUR

Distinguishing features: Upper head and body reddish to reddish-brown after death without prominent spots. Body scales very small, not obvious, firmly attached to skin and covering all of body except chest and front part of belly. Bony snout blunt, lacking long forward-pointing spines on each side. Spiny plates (bucklers) along base of first and second dorsal fins.

Colour: Upper head and body reddish to reddish-brown after death without prominent spots, lower head and body silvery-white. Dorsal and caudal fins reddish, anal and pelvic fins white. Pattern on upper surface of pectoral fins probably varies with sex of individual.

Size: To about 55 cm FL.

Length measurement method: Fork length

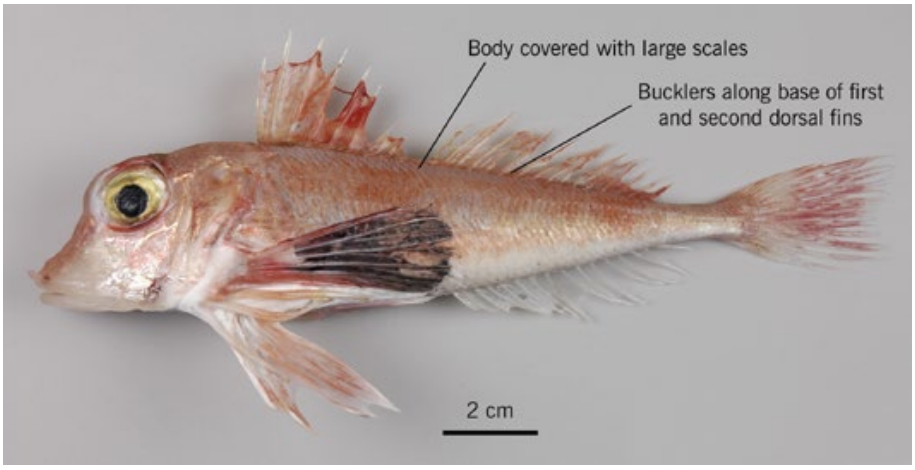
Distribution: Widespread in New Zealand from Cape Reinga to Stewart Island, shallow parts of Chatham Rise, and Chatham Island. Southern and eastern Australia and Lord Howe Island.

Depth: 10 to 200 m.

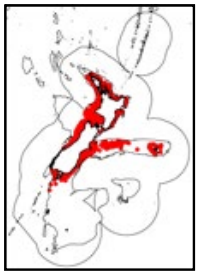
Similar species: Spotted gurnard (*Pterygotrigla andertoni*) has prominent black spots on top of head and upper body. Yellow spotted gurnard (*P. pauli*) has prominent yellow spots on upper body behind head. Latchet (*P. polyommata*), known from 1 specimen from northeast North Island lacks prominent black spots on body and has two long forward-projecting (rostral) spines on snout. Scaly gurnard (*Lepidotrigla brachyoptera*) has large firmly attached body scales.

Biology & ecology: Demersal. Reach age of about 16 years, with females growing faster and larger than males. Spawn in spring and summer.

Scaly gurnard *Lepidotrigla brachyoptera*



Family: 310. Triglidae (Searobins, gurnards)
Maori names:
Other names:
FishNZ reporting code: SCG
FishNZ research/observer code: SCG



Distinguishing features: Body covered with large firmly attached scales. 10 to 12 scale rows from (but not including) lateral line scale to anal fin origin. Spiny plates (bucklers) along base of first and second dorsal fins.

Colour: Upper head and body reddish after death, sometimes with darker mottling. Side of head and lower body silvery-white, belly white. First dorsal fin with dark red blotch between 4th and 6th ray. Caudal fin with broad dark red vertical band between paler bands. Pectoral fin colours probably different for males and females.

Size: To about 20 cm FL.

Length measurement method: Fork length

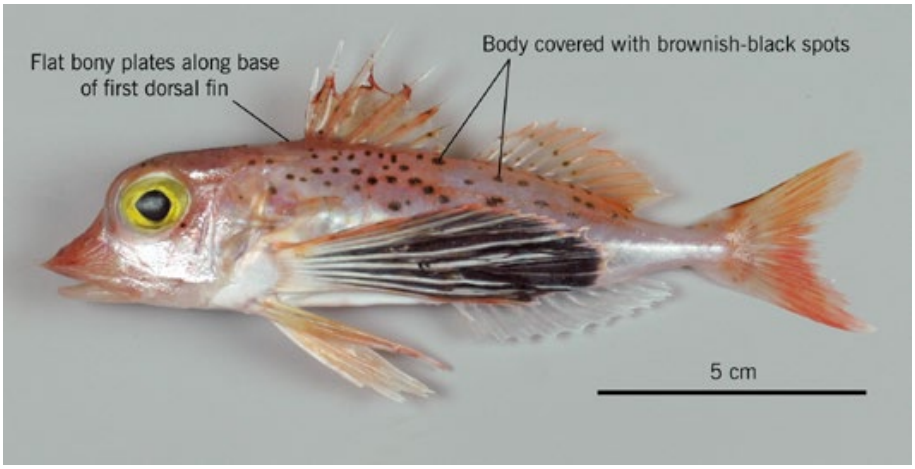
Distribution: Widespread from Three Kings to south of Stewart Island, shallower parts of Chatham Rise and around Chatham Island. Known only from New Zealand.

Depth: 50 to 400 m.

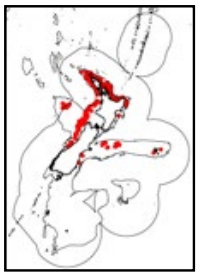
Similar species: Other New Zealand gurnards lack large firmly attached body scales. *Lepidotrigla robinsi*, known only from Kermadec Islands, has smaller scales with 21 to 26 scales rows from (but not including) lateral line to anal fin origin.

Biology & ecology: Demersal.

Spotted gurnard *Pterygotrigla andertoni*



Family: 310. Triglidae (Searobins, gurnards)
Maori names:
Other names:
FishNZ reporting code: JGU
FishNZ research/observer code: JGU



Distinguishing features: Top of head and upper body covered with prominent black spots. Flat bony plates along base of first dorsal fin.

Colour: Upper head and body mostly red with prominent black spots. Head and body with silvery sides, white belly and chest. Upper side of pectoral fin with large dark eyespots on background of semicircular yellowish and bluish lines. Anal fin white, other fins red. Eye yellow.

Size: To about 40 cm FL.

Length measurement method: Fork length

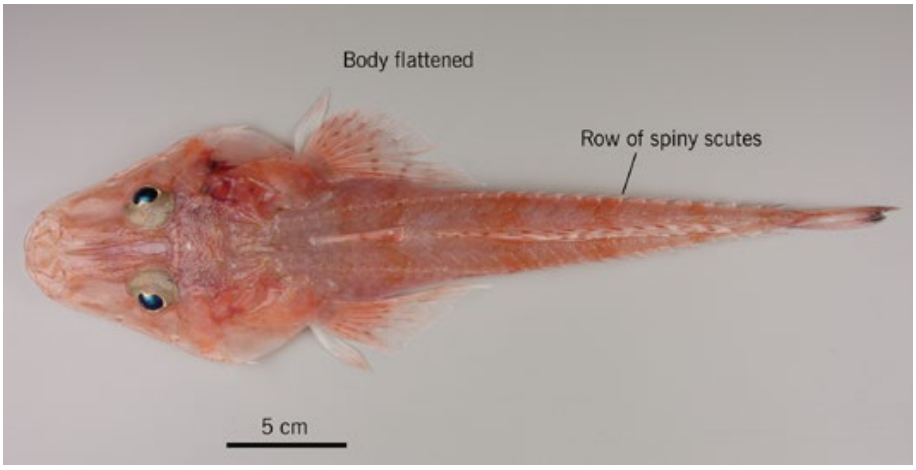
Distribution: Central and northern New Zealand. Southeast Australia and New Caledonia.

Depth: 100 to 500 m.

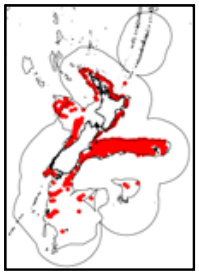
Similar species: Closely similar *Pterygotrigla picta* is known only from off Chile. Yellow spotted gurnard (*P. pauli*) has prominent yellow spots on upper body behind head. Latchet (*P. polyommata*), known from 1 specimen from northeast North Island lacks prominent black spots on top of head and upper

Biology & ecology: Demersal.

Deepsea flathead *Hoplichthys* cf. *haswelli*



Family: 314. Hoplichthyidae (Ghost flatheads)
Maori names:
Other names: Deepsea ghostflathead
FishNZ reporting code: FHD
FishNZ research/observer code: FHD



Distinguishing features: Strongly flattened wide head, with elongated flattened body. Spinous first and soft rayed second dorsal fins. Row of spiny scutes running along side of body from behind head to caudal peduncle.

Colour: Pale reddish-pink upper head and body with whitish underside. Pelvic fins white, other fins pinkish with dark flecks on pectoral and second dorsal fins. Caudal fin with dark posterior margin.

Size: To about 50 cm TL.

Length measurement method: Total length

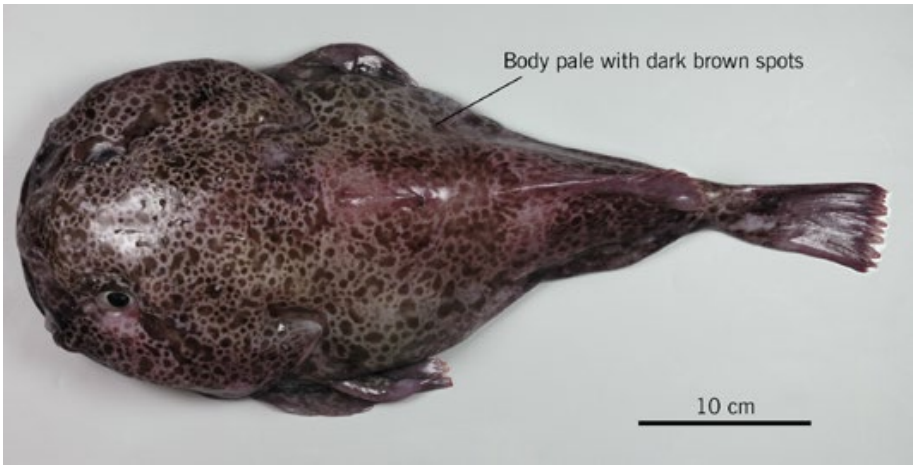
Distribution: Widespread in New Zealand although rarely recorded from the Campbell and Bounty Plateaus. Southern Australia.

Depth: 300 to 800 m.

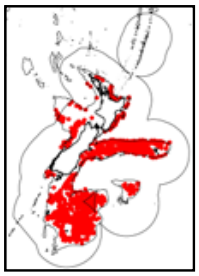
Similar species: Slender ghostflathead (*Hoplichthys gilberti*), recorded from northern New Zealand, is very slender with large eyes. Specimens should be retained for Te Papa.

Biology & ecology: Demersal. Reported to favour sandy or soft bottom.

Pale toadfish *Ambophthalmos angustus*



Family: 325. Psychrolutidae (Toadfishes)
Maori names:
Other names:
FishNZ reporting code: TOP
FishNZ research/observer code: TOP



Distinguishing features: Large head and tadpole shaped body with loose scaleless skin. Dorsal and anal fins partially hidden by skin. Body pale with numerous irregular small dark spots. A few large cirri (filaments) on top of head and nape.

Colour: Body pale with numerous irregular small dark spots. Elongate dark bar extending posteriorly from eye.

Size: To about 60 cm TL.

Length measurement method: Total length

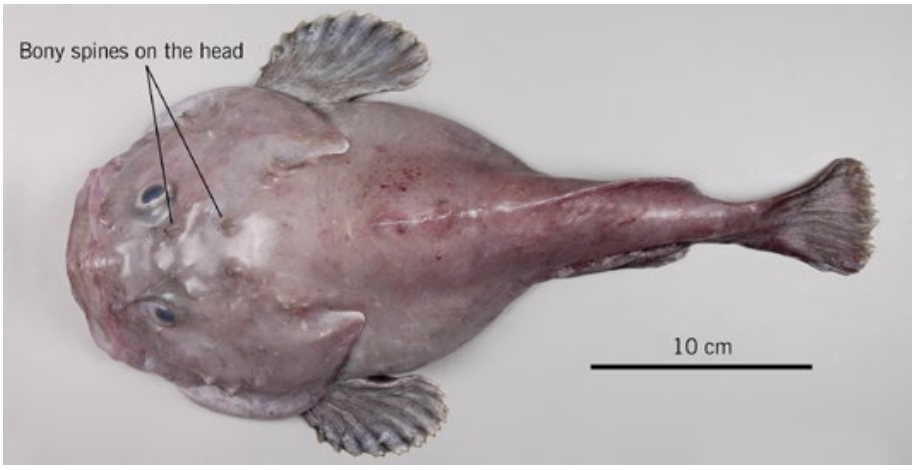
Distribution: Confined to but widespread in New Zealand.

Depth: 250 to 900 m.

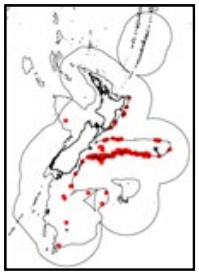
Similar species: Variable spotted toadfish (*Neophrynichthys heterospilos*), from Campbell Plateau (120 to about 460 m) has dark body with variable pale spots on body and fins. Dark toadfish (*N. latus*) from inshore (a few to 110 m), has dark body with large pale spots, numerous small cirri on top of head, reaches about 20 cm TL. Marbled toadfish (*Ambophthalmos eurystigmatephoros*) from Campbell Plateau (230 to about 530 m) has two large grey-brown saddles on a light tan background.

Biology & ecology: Unknown. Probably burrows in mud with eyes and mouth protruding, waiting for prey.

Bonyskull toadfish *Cottunculus nudus*



Family: 325. Psychrolutidae (Toadfishes)
Maori names:
Other names:
FishNZ reporting code: COT
FishNZ research/observer code: COT



Distinguishing features: Large head and tadpole-shaped body with loose scaleless skin. Dorsal and anal fins partially hidden by skin. Prominent bony spines (part of skull) on top and sides of head. Top of head lacks or has very small cirri (filaments). Body uniform greyish.

Colour: Body uniform pale greyish upper surface and sides. Blackish underside. Pectoral, caudal and anal fins dark grey.

Size: To about 40 cm TL.

Length measurement method: Total length

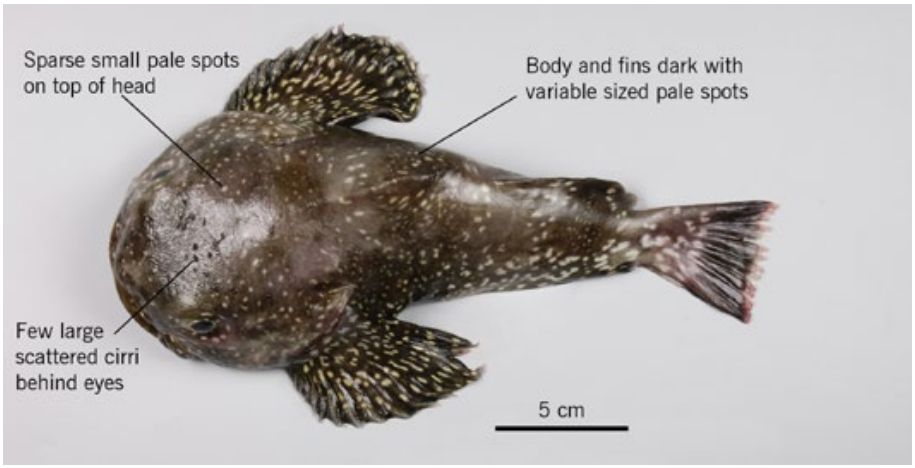
Distribution: Recorded only from New Zealand including east coasts of North and South Islands, Chatham Rise, and Campbell Plateau.

Depth: 700 to 1200 m.

Similar species: Blobfish (*Psychrolutes microporos*) and hairynose blobfish (*Ebinaria* sp. A) lack bony spines on head.

Biology & ecology: Unknown. Possibly burrows in mud with eyes and mouth protruding, drawing in prey by suction.

Variable spotted toadfish *Neophrynichthys heterospilos*



Family: 325. Psychrolutidae (Toadfishes)
Maori names:
Other names: Southern dark toadfish
FishNZ reporting code: TOA
FishNZ research/observer code: VST

Distinguishing features: Sparse small pale spots on top of head and nape, covering less than 50% of area. Few (up to about 50) large, scattered cirri on top of the head behind eyes. 25 to 26 pectoral fin rays.

Colour: Most of body, head and fins dark olive-brownish with pale spots and blotches. Pale spots larger ventrally and posteriorly but belly pale. Sparse small pale spots on a top of head and nape, covering less than 50% of area.

Size: To about 33 cm TL.

Length measurement method: Total length

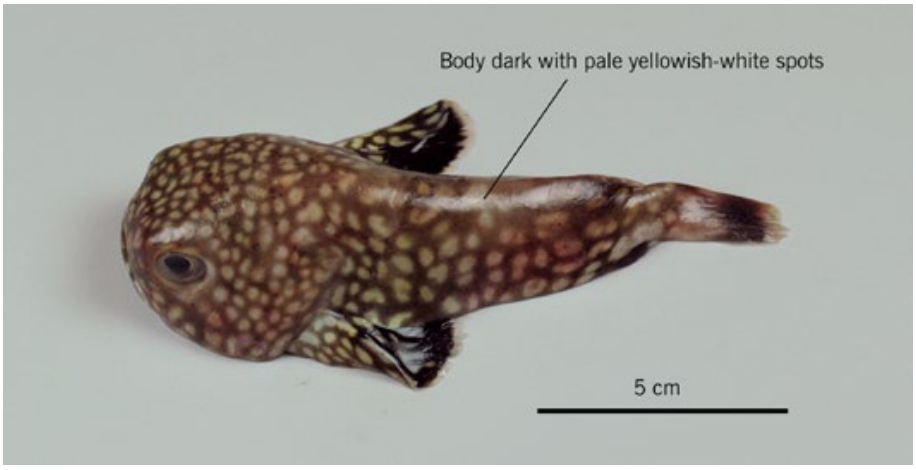
Distribution: Known only from New Zealand including Pukaki Rise, Campbell Rise, and the Auckland Islands.

Depth: 120 to 460 m.

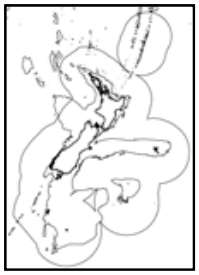
Similar species: Dark toadfish (*Neophrynichthys latus*) has pale spots on top of head and nape (more than 50%), many (over 100) small cirri on top of head behind eyes, and is coastal (less than 110 m). Pale toadfish (*Ambophthalmos angustus*) has pale body with variable dark spots, few large cirri on top of head, reaches 60 cm TL, and is widely distributed at depths of 250 to 900 m. Marbled toadfish (*Ambophthalmos eurystigmatephoros*) from Campbell Plateau (230 to 530 m) has two large grey-brown saddles on body on a light tan background.

Biology & ecology: Unknown.

Dark toadfish *Neophrynichthys latus*



Family: 325. Psychrolutidae (Toadfishes)
Maori names:
Other names:
FishNZ reporting code: TOD
FishNZ research/observer code: TOD



Distinguishing features: Large head and tadpole-shaped body with loose scaleless skin. Dorsal and anal fins partially hidden by skin. Body brownish with numerous pale spots. Numerous small cirri (filaments) covering more than half of top of head and nape.

Colour: Body brownish with numerous pale spots. Pectoral and caudal fins dark with encroaching pale spots.

Size: To about 27 cm TL.

Length measurement method: Total length

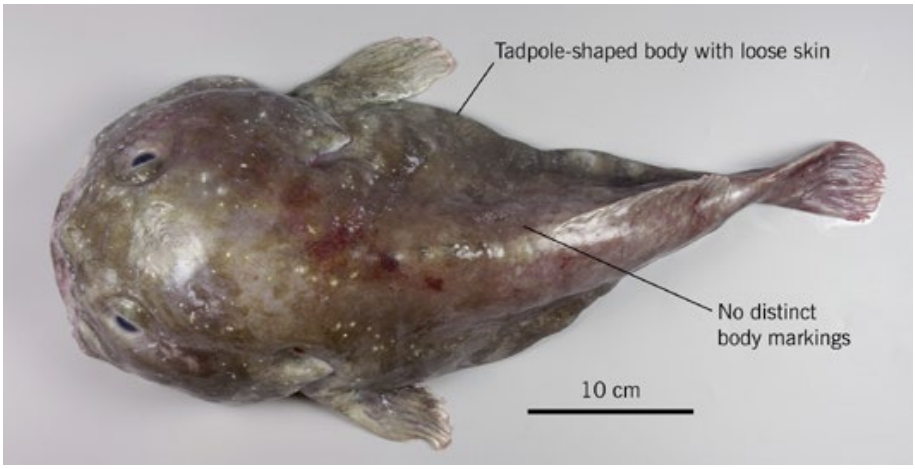
Distribution: Validated records are confined to coastal waters of central and southern New Zealand. Found only in New Zealand. Fisheries records for this species are unreliable due to mis-identifications.

Depth: A few to 110 m.

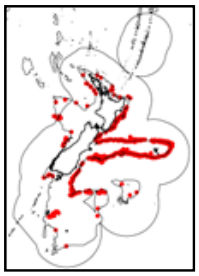
Similar species: Variable spotted toadfish (*N. heterospilos*), known from the Campbell Plateau at 120 to about 460 m, has fewer larger cirri on top of head and nape, smaller and more variable pale spots on body and fins. Pale toadfish (*Ambophthalmos angustus*) is more widespread at depths of 250 to 900 m, has pale body with variable sized and shaped dark spots, a few large cirri on top of head, and attains 60 cm TL.

Biology & ecology: Reported to be sluggish and to burrow in sand or mud with the eyes and mouth protruding, drawing in prey by suction. Spawns July-August.

Blobfish *Psychrolutes microporos*



Family: 325. Psychrolutidae (Toadfishes)
Maori names:
Other names:
FishNZ reporting code: PSY
FishNZ research/observer code: PSY



Distinguishing features: Large head and tadpole-shaped body with loose scaleless skin. Dorsal and anal fins partially hidden by skin. Head smooth, lacking protruding bony spines on top and sides. Body uniform pale pinkish-olive. Reaches about 63 cm TL.

Colour: Body, head and fins uniform pale pinkish-olive, paler underneath.

Size: To about 63 cm TL.

Length measurement method: Total length

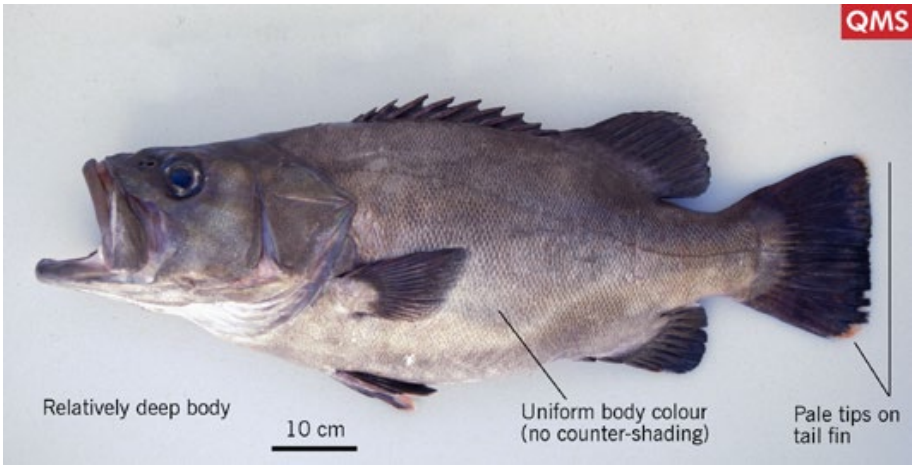
Distribution: Widespread in New Zealand. Also recorded from Japan.

Depth: 600 to 1500 m.

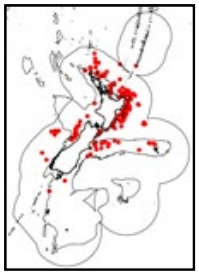
Similar species: Bonyskull toadfish (*Cottunculus nudus*) has bony spines on head. Hairynose toadfish (*Ebinania* sp. A) has nose-like projection on snout tip. Variable spotted toadfish (*Neophrynichthys heterospilos*) has dark body with pale spots. Dark toadfish (*N. latus*) from a few to 110 m has dark body with large pale spots, and many small cirri on top of head. Marbled toadfish (*Ambophthalmos eurystigmatephoros*) from 230 to 530 m has light tan body with 2 large dark saddles.

Biology & ecology: Unknown. Probably burrows in mud with the eyes and mouth protruding, waiting for prey.

Bass *Polyprion americanus*



Family: 337. Polyprionidae (Wreckfishes)
Maori names: Moeone, toti
Other names:
FishNZ reporting code: BAS (effort), HPB (landing)
FishNZ research/observer code: BAS



Distinguishing features: Adults have a relatively uniform body coloration without a sharp change from dark upper to pale lower body (no counter-shading), upper and lower tips of the tail fin pale, and tail margin is straight to slightly rounded.

Colour: Adults have uniform body colour without a sharp change from dark upper to pale lower body. Upper and lower tips of tail fin pale. Leading edge of pelvic fin pale. Pelagic juveniles have mottled body camouflage pattern with dark brown to grey blotches on pale cream to yellow background.

Size: To 175 cm TL.

Length measurement method: Total length

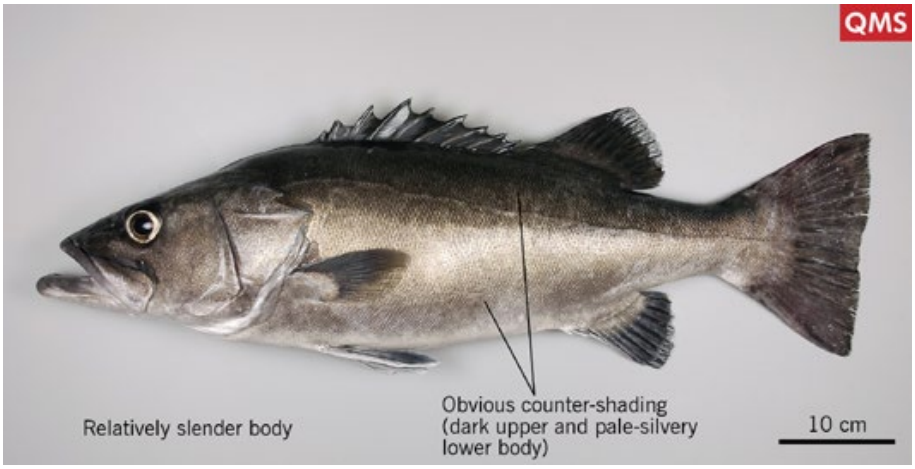
Distribution: Widespread in New Zealand from Kermadec Islands to southern end of Stewart/Snares shelf/slope, including shallower parts of Chatham Rise and Chatham Islands. Widespread in subtropical and temperate Atlantic, south Indian, and southwest Pacific Oceans.

Depth: 30 to 900 m.

Similar species: Adult hapuku (*P. oxygeneios*) have a dark upper body with a sharp change about mid-body to a pale silvery lower body (counter-shading), the tail fin is uniform blackish or greyish lacking pale upper and lower tips, and the tail margin is straight or slightly forked.

Biology & ecology: Adults are demersal over reefs and rises and appear to be much less common than hapuku in New Zealand. Juveniles are pelagic, sometimes well offshore, and have been observed around colonies of goose barnacles attached to floating objects at the surface. Probably settle on the bottom at about 60 cm TL. Probably reach ages of at least 40 years.

Hapuku *Polyprion oxygeneios*



Family: 337. Polyprionidae (Wreckfishes)
Maori names: Haapuku, kapua, whapuku
Other names: Groper
FishNZ reporting code: HAP (effort), HPB (landing)
FishNZ research/observer code: HAP

Distinguishing features: Adults have a dark upper body with a sharp change about mid-body to a pale silvery lower body (counter-shading), the tail fin is uniform blackish or greyish lacking pale upper and lower tips, and the tail margin is straight or slightly forked.

Colour: Adults have dark upper body with a sharp change to a pale silvery lower body. Tail fin uniform blackish lacking pale upper and lower tips. Other fins dark except pelvics which have a whitish leading edge. Pelagic juveniles have a series of 3 or 4 broad vertical irregular dark bands on the body.

Size: To 178 cm TL.

Length measurement method: Total length

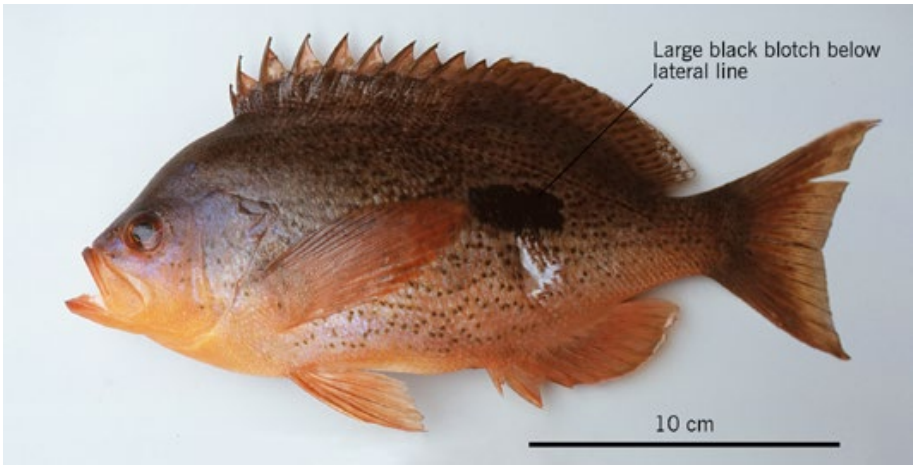
Distribution: Widespread in New Zealand from Kermadec Islands to Campbell Plateau, including shallower parts of Chatham Rise, and Chatham Islands. Widespread in southern hemisphere but absent off South Africa.

Depth: 50 to 600 m.

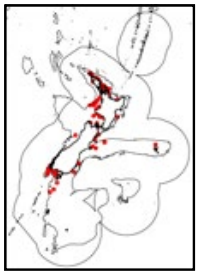
Similar species: Adult bass (*P. americanus*) have a relatively uniform body coloration without a sharp change from dark upper to pale lower body (no counter-shading), upper and lower tips of the tail fin pale, and tail margin is straight to slightly rounded.

Biology & ecology: Adults are demersal over reefs and rises. Juveniles are pelagic, sometimes well offshore and settle on the bottom at about 50 cm TL. Reach an age of at least 60 years. Spawn in winter but spawning areas are unknown. Predators of fishes and invertebrates such as red cod, tarakihi, blue cod, hoki, squids.

Butterfly perch *Caesioperca lepidoptera*



Family: 338. Serranidae (Sea basses)
Maori names: Oia
Other names:
FishNZ reporting code: BPE
FishNZ research/observer code: BPE



Distinguishing features: Large dark blotch on side of the body below lateral line and numerous small brownish spots over the body.

Colour: Adults with large dark blotch on side of body below lateral line and numerous small brownish spots over body. Head and body reddish-brown above, paler orange below. Fins reddish-brown, paler below.

Size: To about 40 cm TL.

Length measurement method: Total length

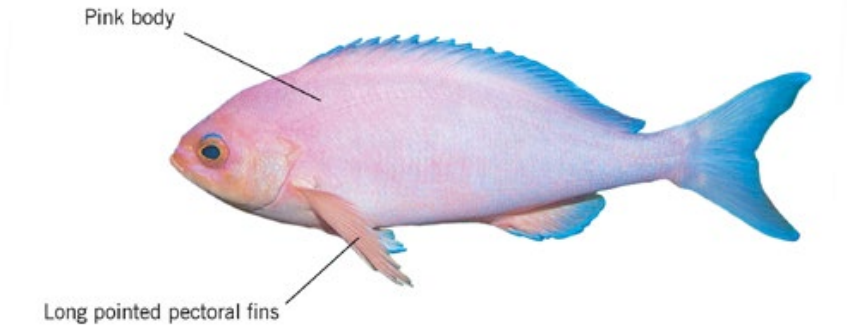
Distribution: Widespread in New Zealand from the Three Kings to the Snares Islands and also Chatham Island. Southern Australia.

Depth: 10 to 200 m.

Similar species: Orange perch (*Lepidoperca aurantia*) has an orange blotch (less distinct) on the side but lacks scattered small dark spots on the body.

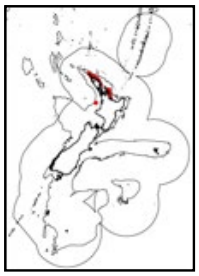
Biology & ecology: Forms schools in rocky near-shore areas, often where there are currents. Feeds on planktonic animals carried by the current. Spawns July to October.

Pink maomao *Caprodon longimanus*



M. Francis

Family: 338. Serranidae (Sea basses)
Maori names: Mata maataa, maataataa
Other names:
FishNZ reporting code: PMA
FishNZ research/observer code: PMA



Distinguishing features: Pectoral fins long and pointed. Body and fins uniform pinkish-mauve (females), sometimes with blackish blotches on upper body and dorsal fin and yellowish dorsal, tail, anal, and pelvic fins (males).

Colour: Uniform pinkish-mauve body and fins (females), sometimes with blackish blotches on upper body and dorsal fin and yellowish fins (some males).

Size: To 55 cm FL.

Length measurement method: Fork length

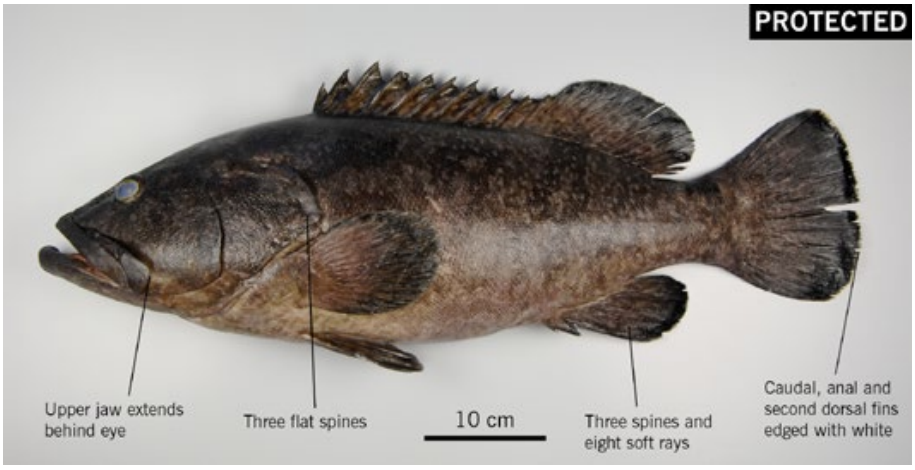
Distribution: Northern North Island from Three Kings Islands to about Cape Palliser in New Zealand. Also Australia and ridges in Tasman Sea.

Depth: A few to 170 m.

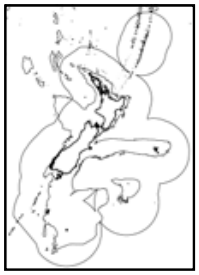
Similar species: The taxonomy of the genus is under study. Butterfly perch (*Caesioperca lepidoptera*) has scattered small dark spots plus a large black blotch on the side of the body. Orange perch (*Lepidoperca aurantia*) has a large orange blotch on the side of the body.

Biology & ecology: Form large schools in midwater near islands, reefs and pinnacles, often in areas of current flow. Individuals may start life as female and change sex to male.

Spotted black grouper *Epinephelus daemelii*



Family: 338. Serranidae (Sea basses)
Maori names:
Other names: Spotted black groper
FishNZ reporting code: SBG
FishNZ research/observer code: SBG



Distinguishing features: Three flat spines on rear of gill cover, 11 dorsal fin spines, 3 anal fin spines and 8 soft rays; upper jaw (maxilla) extends well behind eye; body with 5 oblique dark bands and black saddle on caudal peduncle, rear fins with prominent black and white bands on the margins.

Colour: Body varies from almost white to brown-black (usually dark after death). Four oblique dark bands (which split ventrally) on body and dorsal fins, dark band on nape and dark saddle on caudal peduncle. Rear fins edged with broad irregular black band and narrow white band.

Size: To about 170 cm TL, but rarely longer than 100 cm around mainland New Zealand.

Length measurement method: Total length

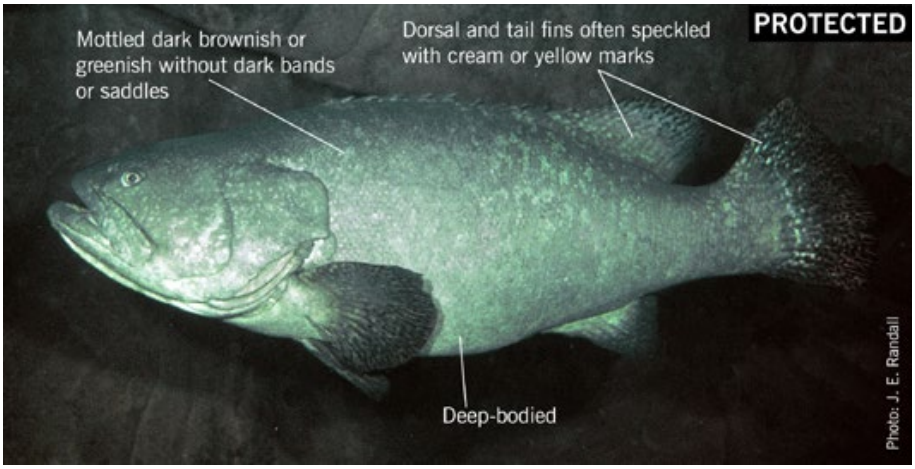
Distribution: Northern New Zealand from Kermadec Islands to Cook Strait and Westport. Also Norfolk and Lord Howe Islands, reefs in Tasman Sea, and southeast Australia.

Depth: 2 to 60 m.

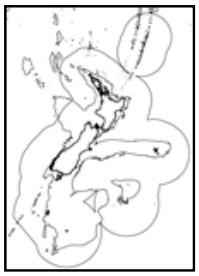
Similar species: Convict grouper (*E. octofasciatus*) has 8 broad dark brown bars, first on nape, second at dorsal fin origin, maxilla reaches to below rear half of eye, anal fin with 3 spines and 9 soft rays, and lives at 30 to 350 m. Giant grouper (*E. lanceolatus*) is mottled dark brownish or greenish overall and lacks dark bands or saddles on the body or caudal peduncle. Hapuku (*Polyprion oxygeneios*) and bass (*P. americanus*) have greyish/silvery body and a long, strong ridge on the gill cover.

Biology & ecology: Demersal on inshore reefs.

Giant grouper *Epinephelus lanceolatus*



Family: 338. Serranidae (Sea basses)
Maori names:
Other names: Queensland grouper, giant Queensland grouper
FishNZ reporting code: GGP
FishNZ research/observer code: GGP



Distinguishing features: Large adults stout, deep-bodied, mottled dark brownish or greenish overall and lacking dark bands or saddles on the body or caudal peduncle. Dorsal and tail fins often speckled with cream or yellow marks. Eye very small. Three flat spines on rear of gill cover; 11 dorsal fin spines; 3 spines and 8 soft rays in anal fin.

Colour: Body of adults mottled dark brownish or greenish, lacking dark bands or saddles on the body or caudal peduncle. Fins of adults with small cream or yellow and dark spots and marks. Juveniles golden yellow with about 4 broad dark bands across head and body with a Y-shaped dark band in the pectoral region.

Size: To 270 cm SL and 300 kg.

Length measurement method: Total length

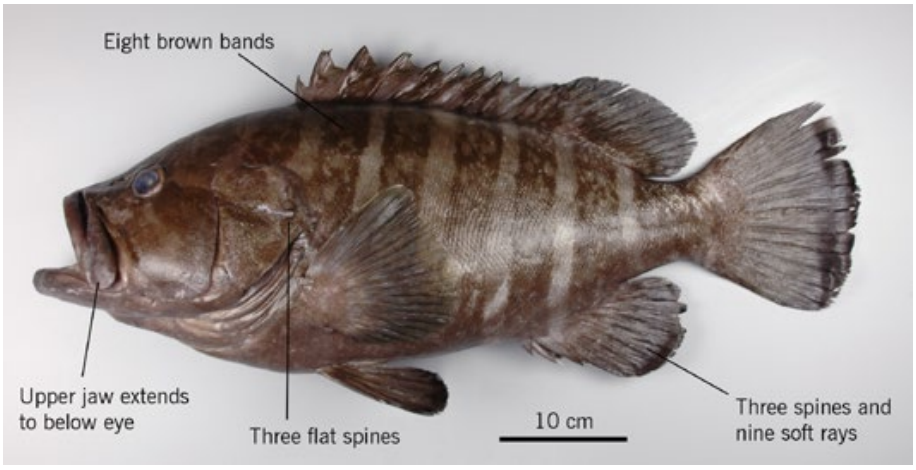
Distribution: Kermadec Islands and northeast coast of North Island from Three Kings to Aldermen Islands. Widespread in tropical or sub-tropical seas of Indian and west Pacific Oceans from southern Africa in west to Pitcairn Island in east.

Depth: 5 to 50 m.

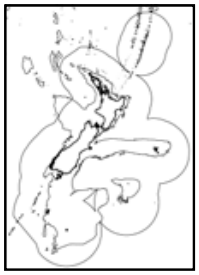
Similar species: Spotted black grouper (*Epinephelus daemelii*) has 5 oblique dark bands on body, a dark saddle on the caudal peduncle, and rear fins have black and white margins. Convict grouper (*E. octofasciatus*) has 8 broad dark brown bands on the body and 9 anal fin soft rays.

Biology & ecology: Demersal on reefs. Feeds mostly on other fishes.

Convict grouper *Epinephelus octofasciatus*



Family: 338. Serranidae (Sea basses)
Maori names:
Other names: Eightbar grouper, convict groper
FishNZ reporting code: CGR
FishNZ research/observer code: CGR



Distinguishing features: Three flat spines on rear of gill cover; 11 to 12 dorsal fin spines, 3 anal fin spines and 9 soft rays. 8 broad dark brown bands - first on nape, second at dorsal fin origin and covering first 2 dorsal fin spines. Upper jaw (maxilla) reaches to below eye.

Colour: 8 slightly oblique, dark brown bands on body (first on nape behind eye is diffuse and indistinct). Spaces between bands lighter brown.

Size: To about 170 cm TL.

Length measurement method: Total length

Distribution: Northeast North Island and Kermadec Islands in New Zealand. Widespread in Indo-west Pacific from South Africa to Japan, French Polynesia, Western Australia, and New Caledonia.

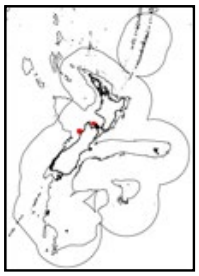
Depth: 30 to 350 m.

Similar species: Spotted black grouper (*E. daemelii*) has 4 oblique dark bands on body and dorsal fins which split ventrally, dark band on nape, and dark saddle on caudal peduncle, 8 anal fin soft rays, rear fins edged with white, and upper jaw extending posteriorly beyond eye.

Biology & ecology: Demersal on the outer continental shelf and upper continental slope.

Red banded perch *Hypoplectrodes huntii*

Family: 338. Serranidae (Sea basses)
Maori names:
Other names:
FishNZ reporting code: RBP
FishNZ research/observer code: RBP



Distinguishing features: Operculum with 3 flat spines, body with 7 orange-brown bands which taper towards belly.

Colour: Body with 7 orange-brown bands which taper towards belly, head orange-brown often with greenish tinge on top, fins red or orange.

Size: To about 20 cm TL.

Length measurement method: Total length

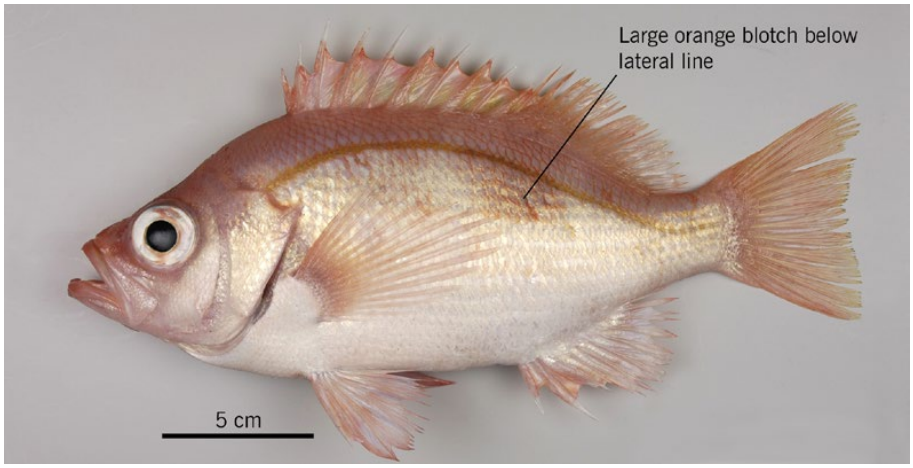
Distribution: Three Kings Islands to Snares Islands, Chatham Islands. Known only from New Zealand.

Depth: 5 to at least 30 m.

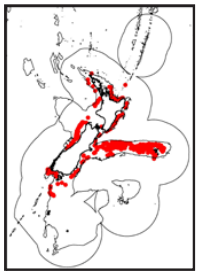
Similar species: Halfbanded perch (*Hypoplectrodes* sp. A) has 6 reddish bands which usually do not reach ventral margin, red-brown band across nape which continues as a stripe through eye and on to snout, and yellowish fins. Eyebrow perch (*Hypoplectrodes* sp. B) has prominent bony ridges over eyes. Sea perches (*Helicolenus bararthri* and *H. percoides*) have 4 broad, irregular brown bands on body and 1 on nape.

Biology & ecology: Rocky reefs.

Orange perch *Lepidoperca aurantia*



Family: 338. Serranidae (Sea basses)
Maori names:
Other names:
FishNZ reporting code: OPE
FishNZ research/observer code: OPE



Distinguishing features: Large diffuse orange blotch on the side below the lateral line.

Colour: Large diffuse orange blotch on the side below the lateral line. Head and body pinkish-orange above, silvery-white below. Dorsal, caudal, and pectoral fins pinkish, pelvics and anal fins pinkish-white. Prominent lateral line yellowish-orange.

Size: To about 39 cm FL.

Length measurement method: Fork length

Distribution: Widespread from Three Kings to Snares Islands shelf/slope, and Chatham Rise. Known only from New Zealand.

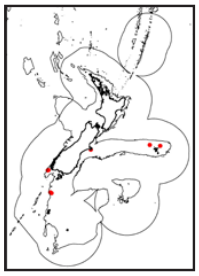
Depth: 70 to 500 m.

Similar species: Red lined perch (*Lepidoperca tasmanica*) has about 12 wavy red horizontal lines on body, dark blotches on the membranes between the first dorsal fin spines, and an indistinct red blotch on the caudal peduncle. The very rare *L. inornata* is known only from the far north in New Zealand and has a very large eye. Butterfly perch (*Caesioperca lepidoptera*) has numerous small dark spots on the body plus a large dark blotch.

Biology & ecology: Demersal. Possibly spawns in summer (March).

Red lined perch *Lepidoperca tasmanica*

Family: 338. Serranidae (Sea basses)
Maori names:
Other names: Wavyline perch
FishNZ reporting code: WLP
FishNZ research/observer code: WLP



Distinguishing features: Operculum with 3 flat spines (uppermost small and may be hidden), body with about 12 wavy red stripes.

Colour: White with about 12 wavy red horizontal stripes, blackish blotches on membranes of spiny dorsal fin, head pink-red above and whitish below, dark ring around upper half of eye, diffuse red spot on caudal peduncle.

Size: About 20 cm FL.

Length measurement method: Fork length

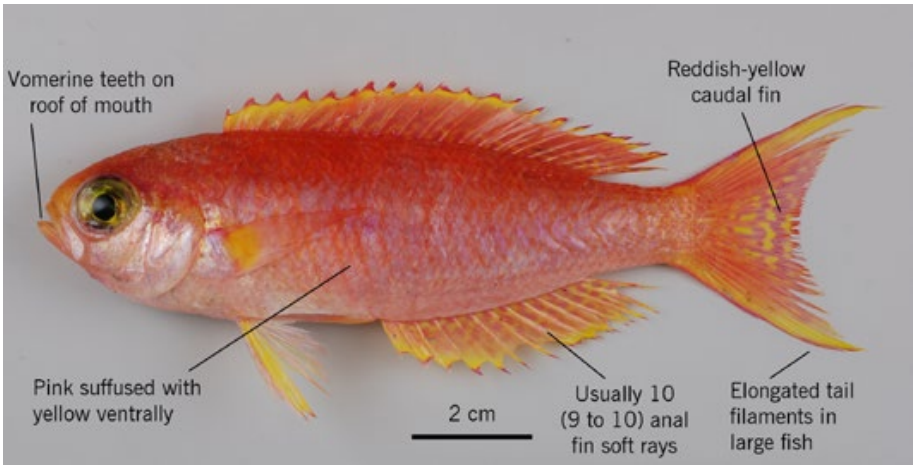
Distribution: Challenger Plateau to Snares shelf/slope, Chatham Islands and Chatham Rise in New. Tasmania.

Depth: 110 to 440 m, but shallower (10 to 40 m) in Fiordland.

Similar species: Colour pattern is unique.

Biology & ecology: Steep rocky reefs.

Southern splendid perch *Callanthias allporti*



Family: 341. Callanthiidae (Splendid perches)
Maori names:
Other names: Rosy perch, Allport's perch
FishNZ reporting code: SPP
FishNZ research/observer code: SDP

Distinguishing features: Large vomerine teeth (4 to 6) on roof of mouth, usually 10 (9 to 10) anal fin soft rays. Body mainly pink or reddish suffused with yellow ventrally, caudal fin reddish-yellow, pectoral fin base yellow. Tail filaments elongated in larger fish.

Colour: Similar for both sexes. Body pink or reddish, often with yellowish areas on head, chin, throat and fins. Fins increasingly yellow in large fish.

Size: 28 cm FL.

Length measurement method: Fork length

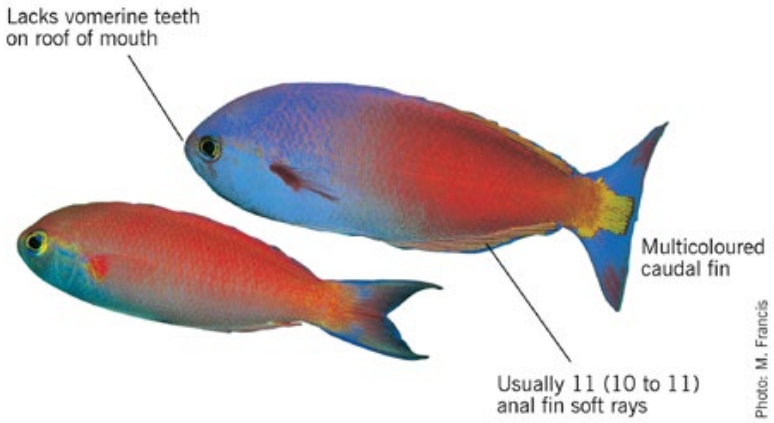
Distribution: Three Kings Islands to Snares and Chatham Islands in New Zealand. Louisville Seamount Chain and southern Australia.

Depth: 140 to 570 m but seen at 4 to 24 m in Fiordland.

Similar species: Northern splendid perch (*Callanthias australis*) lacks large vomerine teeth on roof of mouth, usually has 11 (10 to 11) anal fin soft rays and multi-coloured tail fin.

Biology & ecology: Rocky reefs, in small groups or schools.

Northern splendid perch *Callanthias australis*



Family: 341. Callanthiidae (Splendid perches)
Maori names:
Other names: Splendid perch
FishNZ reporting code: NSP
FishNZ research/observer code: NSP

Distinguishing features: Lacks large vomerine teeth on roof of mouth, usually 11 (10 to 11) anal fin soft rays. Females mainly red, males multi-coloured, both sexes with bright red pectoral fin base. Short thin filaments on upper and lower tail lobes in large males.

Colour: Females light red to crimson, with silvery lower face and throat. Males purplish-red anteriorly, changing to red on posterior half of body, tail bluish-purple with yellow centre and red tips. Both sexes with a bright red pectoral fin base.

Size: 30 cm FL. Females change sex to males at about 20 cm FL.

Length measurement method: Fork length

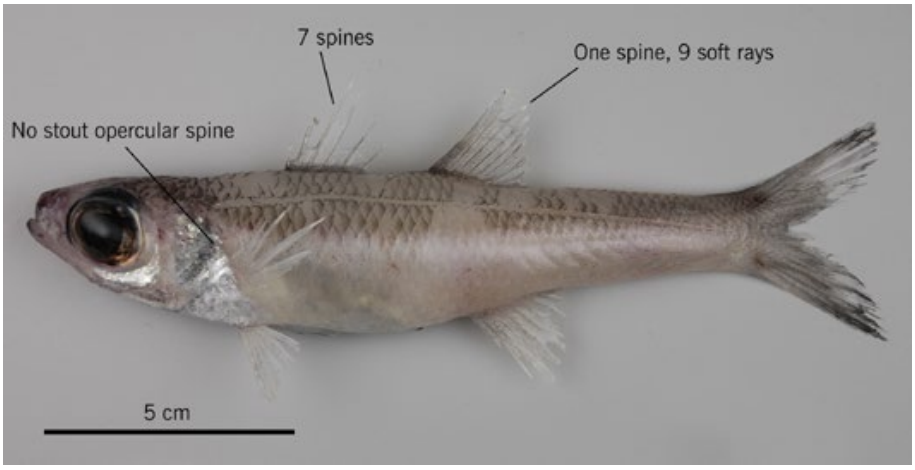
Distribution: Kermadec to Snares Islands and shelf in New Zealand. Southern Australia.

Depth: 20 to 350 m.

Similar species: Southern splendid perch (*Callanthias allporti*) has 4 to 6 large vomerine teeth on roof of mouth, usually 10 anal fin softrays, and reddish-yellow tail fin.

Biology & ecology: Rocky reefs, in small groups or schools.

White cardinalfish *Epigonus denticulatus*



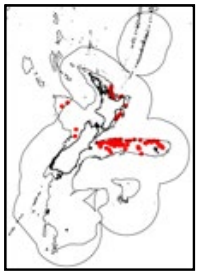
Family: 353. Epigonidae (Deepsea cardinalfishes)

Maori names:

Other names: White deepsea cardinal

FishNZ reporting code: EPD

FishNZ research/observer code: EPD



Distinguishing features: No stout spine near rear edge of operculum. Second dorsal fin with one spine and 9 (9 to 10) soft rays. 7 (7 to 8) spines in first dorsal fin. Pale head and body, small adult size (to 25 cm FL).

Colour: Body pale greyish-brown, darker above. Chest and belly silvery but this may be lost during capture. Caudal fin dusky, other fins paler.

Size: To about 25 cm FL.

Length measurement method: Fork length

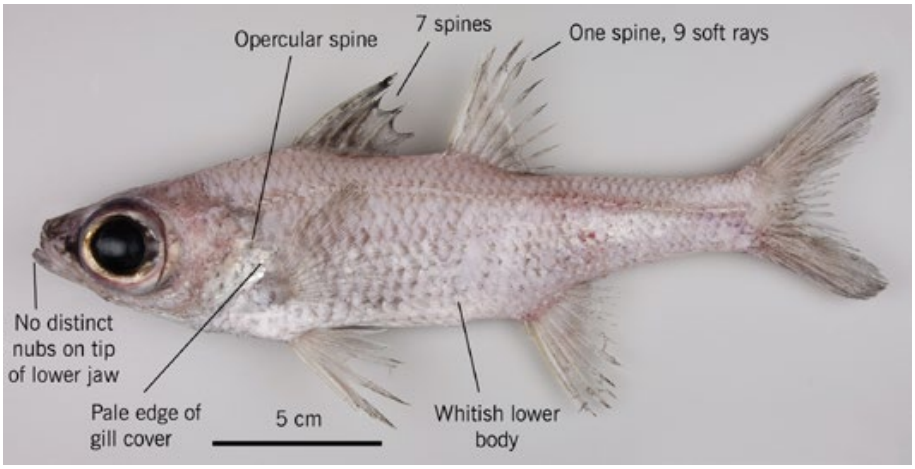
Distribution: Top of the North Island to Puysegur area including Chatham Rise in New Zealand. Widespread from the Caribbean and Mediterranean to South Africa, South America, Japan, and southern Australia.

Depth: 130 to 830 m.

Similar species: Deepsea cardinalfish (*Epigonus telescopus*) hasdarker, greyish-purple head and body, usually 8 (7 to 8) spines in first dorsal fin, and has large adult size (to 75 cm FL). Bigeye cardinalfish (*E. lenimen*) has an opercular spine and a whitish ventral body and head. Swordtongue cardinalfish (*E. machaera*) has an opercular spine and 2 rounded nubs on tip of lower jaw. Robust cardinalfish (*E. robustus*) has an opercular spine and 2 pointed nubs on tip of lower jaw.

Biology & ecology: Adults probably live near the bottom but juveniles appear to be pelagic.

Bigeye cardinalfish *Epigonus lenimen*



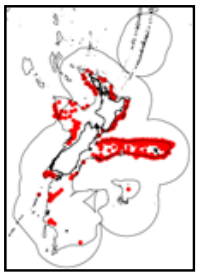
Family: 353. Epigonidae (Deepsea cardinalfishes)

Maori names:

Other names: Bigeye deepsea cardinal

FishNZ reporting code: EPL

FishNZ research/observer code: EPL



Distinguishing features: No distinct nubs on tip of lower jaw. Body below the lateral line often whitish. Small stout spine near rear edge of operculum. Edge of gill cover and isthmus pale (no black pigment). Second dorsal fin with one spine and 9 (8 to 9) soft rays.

Colour: Upper body pale brownish but below the lateral line often whitish. Edge of gill cavity and isthmus pale (no black pigment). Fins pale or dusky with no distinctive markings.

Size: To about 26 cm FL.

Length measurement method: Fork length

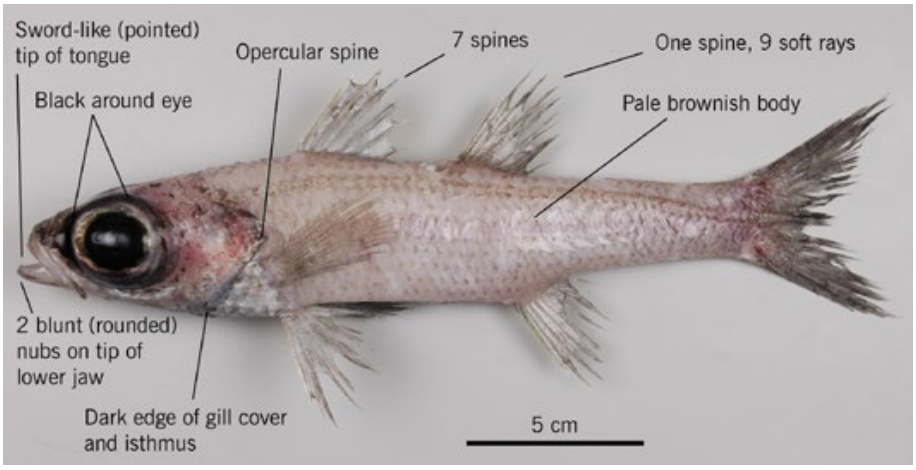
Distribution: Widespread in New Zealand from top of North Island to Campbell Plateau. Southwest Indian Ocean south of Madagascar and the southwest Pacific Ocean including southern Australia.

Depth: 300 to 800 m.

Similar species: Deepsea cardinalfish (*E. telescopus*) and white cardinalfish (*E. denticulatus*) lack an opercular spine. swordtongue cardinalfish (*Epigonus machaera*) has two blunt nubs on tip of lower jaw, a sword-like pointed tip of tongue, and robust cardinalfish (*E. robustus*) has two pointed nubs on tip of lower jaw, and a broad triangular tongue.

Biology & ecology: Adults probably live near the bottom, but juveniles appear to be pelagic.

Swordtongue cardinalfish *Epigonus machaera*



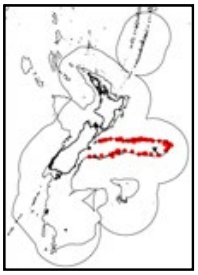
Family: 353 Epigonidae (Deepsea cardinalfishes)

Maori names:

Other names: Swordtongue deepsea cardinal

FishNZ reporting code: UNI

FishNZ research/observer code: EPM



Distinguishing features: Tip of lower jaw (viewed ventrally) with two small nubs that are either rounded or with a few small points of bone. Tongue narrow, sword-like, may be pointed at tip, greatest width less than 50% of length. Small stout spine near rear edge of operculum.

Colour: Body uniform pale brownish. Black pigment around eye, thicker dorsally and ventrally, and in gill cavity. Inside of mouth pale.

Size: To about 25 cm FL.

Length measurement method: Fork length

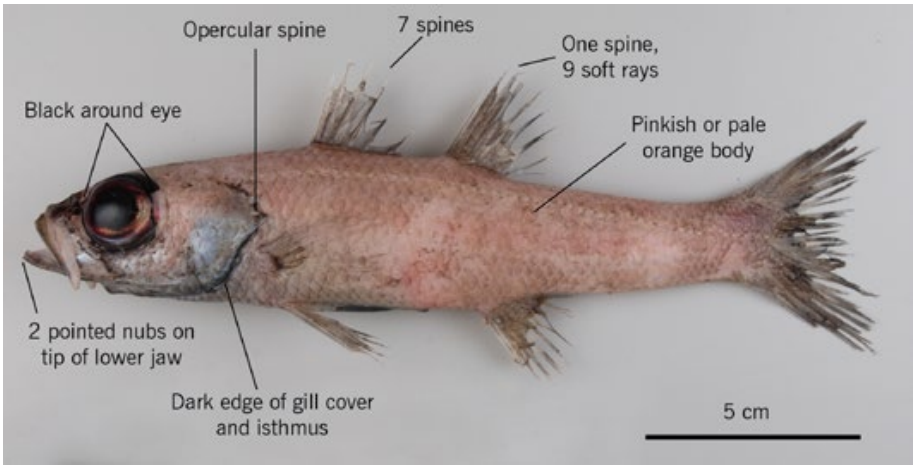
Distribution: Known only from New Zealand but the distribution is not well known. The species was described in 2012 but identification was difficult prior to 2015 so there are few fisheries records.

Depth: About 550 to 1050 m.

Similar species: Previously confused with the deeper-living robust cardinalfish (*Epigonus robustus*) which has two sharply-pointed nubs on anterior tip of lower jaw (viewed ventrally) and may have a broad triangular tongue, greatest width more than 50% of length, and pale pinkish or pale orange body and dorsal head.

Biology & ecology: Probably demersal.

Robust cardinalfish *Epigonus robustus*



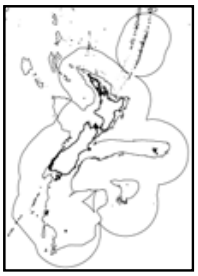
Family: 353. Epigonidae (Deepsea cardinalfishes)

Maori names:

Other names: Robust deepsea cardinal

FishNZ reporting code: ERB

FishNZ research/observer code: ERB



Distinguishing features: Tip of lower jaw (viewed ventrally) has two sharply-pointed nubs. Tongue may be broad and triangular. Body pinkish, pale orange or brownish. Dark pigment inside the gill covers and on isthmus. Second dorsal fin with one spine and 9 soft rays. Small stout spine near rear edge of operculum.

Colour: Body uniform pinkish, pale orange, or brownish. Extensive black pigmented areas around the eyes, and dark pigment inside the gill covers and on isthmus. Fins pale or dusky with no distinctive markings.

Size: To about 25 cm FL.

Length measurement method: Fork length

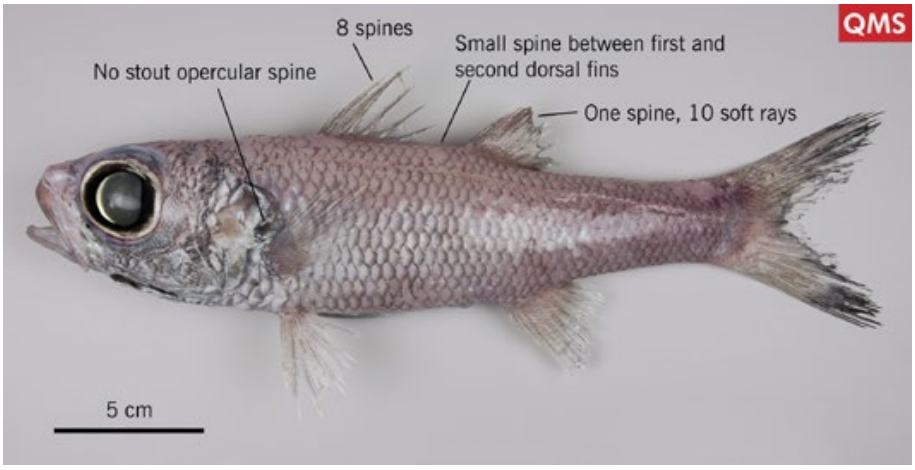
Distribution: Widespread in New Zealand from southern Lord Howe Rise to Campbell Plateau. Widespread in the southern hemisphere, including off South Africa, South America, and Australia north to Fiji.

Depth: About 900 to 1700 m.

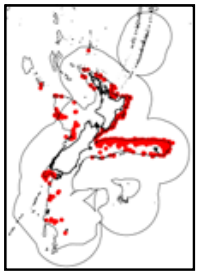
Similar species: Swordtongue cardinalfish (*Epigonus machera*) lives shallower, about 550 to 1050 m, has tip of lower jaw (viewed ventrally) with two small nubs that are either rounded or with a few small points of bone, a narrow sword-like tongue, which may be pointed at tip, and a pale brownish body and head. Bigeye cardinalfish (*E. lenimen*) lacks nubs on tip of lower jaw, and has a whitish lower body. Deepsea cardinalfish (*E. telescopus*) and white cardinalfish (*E. denticulatus*) lack an opercular spine and nubs on tip of lower jaw.

Biology & ecology: Adults probably live near the bottom, but juveniles appear to be pelagic.

Deepsea cardinalfish *Epigonus telescopus*



Family: 353. Epigonidae (Deepsea cardinalfishes)
Maori names:
Other names: Black deepsea cardinal
FishNZ reporting code: CDL
FishNZ research/observer code: EPT



Distinguishing features: Head and body greyish-purple. No stout opercular spine. No nubs at tip of lower jaw. Second dorsal fin with one spine and 10 (9 to 11) soft rays. First dorsal fin with 8 (7 to 8) spines.

Colour: Scale pockets pinkish with a dark greyish-purple margin giving the body a dark purple hue, darker in larger individuals. Fins dusky in small and dark greyish-purple in larger individuals with no distinctive markings.

Size: To about 75 cm FL.

Length measurement method: Fork length

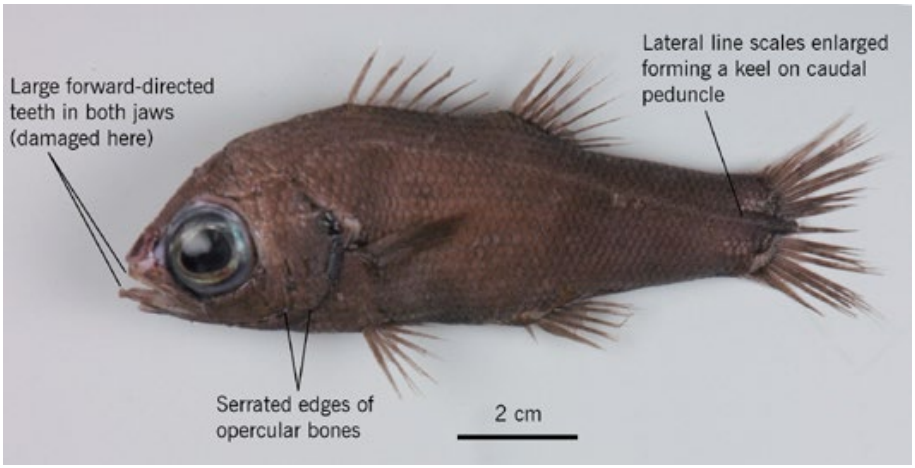
Distribution: Widespread in New Zealand from off top of North Island to Campbell Plateau. North and South Atlantic Oceans and Mediterranean Sea. Widespread in the southern hemisphere.

Depth: 300 to 1200 m.

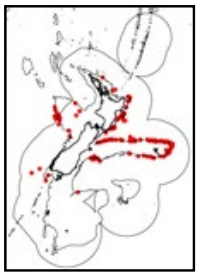
Similar species: White cardinalfish (*E. denticulatus*) has pale head and body, 7 (7 to 8) spines in the first dorsal fin, and is small (to 25 cm FL). Bigeye cardinalfish (*E. lenimen*) has an opercular spine, and whitish ventral body. Swordtongue (*E. machaera*), and robust cardinalfishes (*E. robustus*), have opercular spines, and nubs at tip of lower jaw.

Biology & ecology: Adults live near the bottom but at times school above the bottom, e.g., over hills. Small juveniles are thought to live pelagically. Possibly spawn May-June. Feed on midwater fishes, natant decapod crustaceans and cephalopods.

Robust pelagic basslet *Rosenblattia robusta*



Family: 353a. Howellidae (Pelagic basslets)
Maori names:
Other names: Rotund cardinalfish
FishNZ reporting code: UNI
FishNZ research/observer code: ROS



Distinguishing features: Lateral line scales on caudal peduncle enlarged forming a distinct keel. Large forward-directed teeth in both jaws, anterior teeth visible when mouth closed. Serrations on rear and lower edges of opercular bones.

Colour: Dark brownish head, body, and fins. Juveniles have dark body and pale caudal peduncle.

Size: To about 10 cm SL.

Length measurement method: Standard length

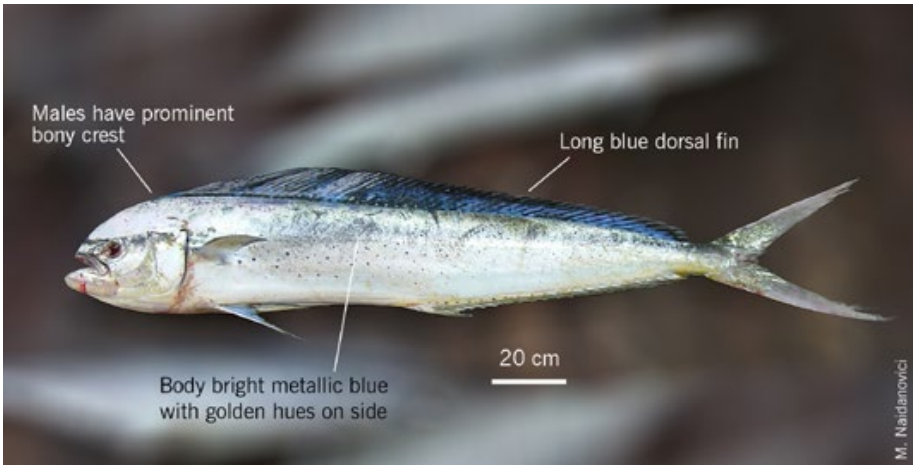
Distribution: Widespread in New Zealand from Kermadec Islands to Campbell Plateau. Widespread in southern hemisphere.

Depth: Midwater at 700 to 2000 m.

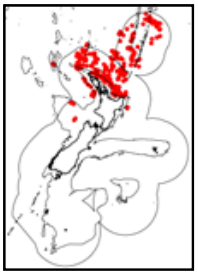
Similar species: Sherborn's basslet (*Howellia sherborni*) lacks forward-directed teeth in both jaws, and has long pectoral fin with tip reaching back past mid-base of anal fin. Deepwater cardinalfishes, *Epigonus* spp. lack a keel of enlarged lateral line scales on caudal peduncle, lack large teeth in jaws, and may have weakly serrated opercular bones.

Biology & ecology: Unknown. Midwater.

Dolphinfish *Coryphaena hippurus*



Family: 361. Coryphaenidae (Dolphinfishes)
Maori names:
Other names: Mahi mahi, common dolphinfish
FishNZ reporting code: DOF
FishNZ research/observer code: DOF



Distinguishing features: Single long dorsal fin extends from above eye almost to caudal fin with 56 to 66 rays. Concave anal fin extends from anus almost to caudal fin. Prominent bony crest on front of head in mature males. Small oval tooth patch on tongue.

Colour: Striking body colours with golden hues on sides, metallic blues and greens on back and sides, white and yellow on lower body. Small specimens have pronounced vertical bars on sides of body.

Size: To about 200 cm FL.

Length measurement method: Fork length

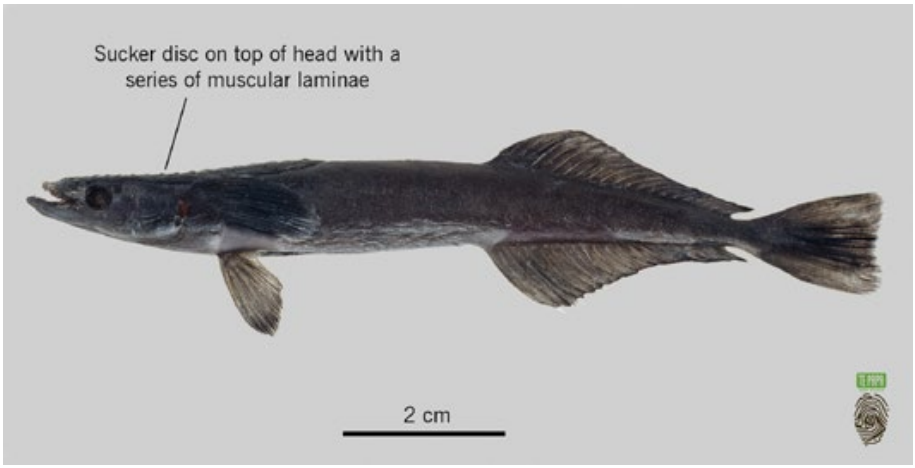
Distribution: Most records are from Bay of Plenty north in New Zealand. Worldwide in tropical and subtropical seas.

Depth: A few to 85 m.

Similar species: Pompano dolphinfish (*Coryphaena equiselis*), which is not recorded in New Zealand waters, has a trapezoid (square at front) shaped patch of teeth on tongue and fewer dorsal fin rays (52 to 59).

Biology & ecology: Pelagic, forms schools. Usually found in open waters but sometimes occurs near the coast. Associated with warmer water in northern New Zealand from December to May.

Common remora *Remora remora*



Family: 363 Echeneidae (Remoras)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: REO

Distinguishing features: Sucker disc with 16 to 19 laminae, 23 to 25 dorsal (second) fin rays. Uniform tan to dark brown head, body and fins.

Colour: Uniform tan to dark brown head, body and fins.

Size: To about 62 cm SL.

Length measurement method: Standard length

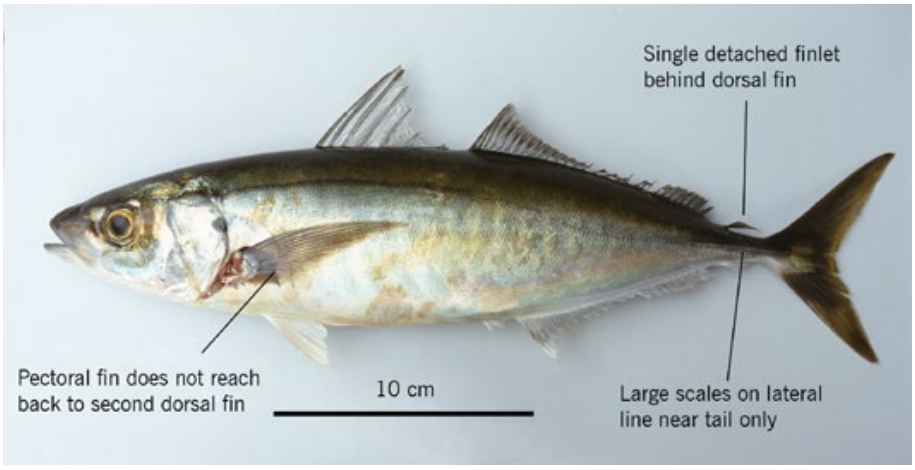
Distribution: Widespread in New Zealand. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Worldwide in tropical and subtropical seas.

Depth: Unknown and dependent on host.

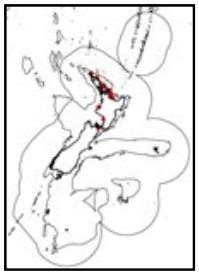
Similar species: Grey marlinsucker (*Remora brachyptera*) is also relatively common in New Zealand but has robust body, 14 to 18 laminae, and 28 to 34 second dorsal fin rays. Four other species are uncommon or rare including hardfin marlinsucker (*Remora osteochir)* with 17 to 19 laminae, 23 to 25 second dorsal rays, white remora (*Remora albescens*) 12 to 13 laminae, sharksucker (*Echeneis naucrates*) 21 to 28 laminae, slender remora (*Phtheirichthys lineatus*) 9 to 11 laminae.

Biology & ecology: Most often seen on shark hosts (12 host species) but also large fishes and turtles. Feed on parasitic and free-living crustaceans, small fishes, and host food scraps.

Koheru *Decapterus koheru*



Family: 364. Carangidae (Jacks, trevallies)
Maori names: Koheru, hature
Other names:
FishNZ reporting code: KOH
FishNZ research/observer code: KOH



Distinguishing features: Large scales (scutes) on lateral line only near tail. Pectoral fin short, not reaching back to origin of second dorsal fin. Lateral line curves down gently below second dorsal fin. Single detached finlet behind second dorsal fin. Adipose eyelid partly covers anterior and posterior of eye.

Colour: Blue-green above, sides silvery, golden stripe along body in life.

Size: To 40 cm FL.

Length measurement method: Fork length

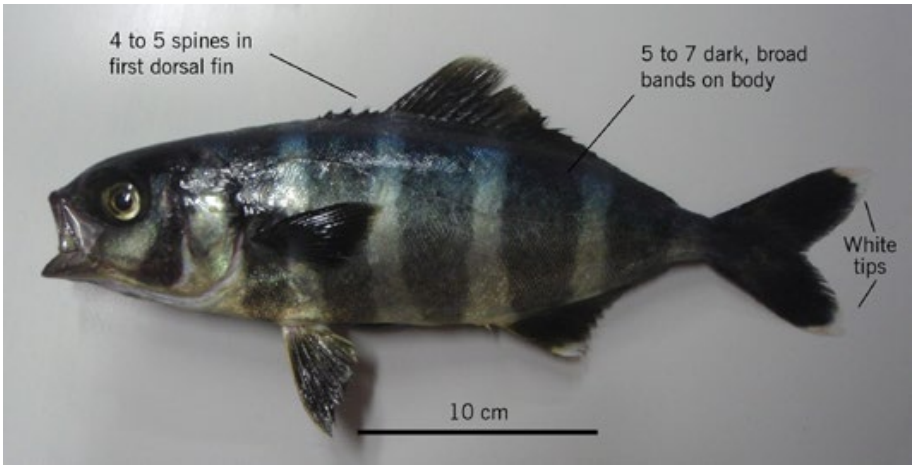
Distribution: Three Kings Islands to southern North Island, but most abundant on northeast coast of North Island. Known only from New Zealand.

Depth: A few to 90 m.

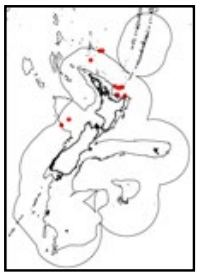
Similar species: Greenback jack mackerel (*Trachurus declivis*), slender jack mackerel (*Trachurus murphyi*), and yellowtail jack mackerel (*Trachurus novaezelandiae*), all have large scute-like scales along the entire length of lateral line, long pectoral fin reaching back to at least origin of second dorsal fin, and lateral line dips down abruptly below second dorsal fin.

Biology & ecology: Coastal, regularly schools around northern coastal reefs, and found in shallow bays, harbours and estuaries.

Pilotfish *Naucrates ductor*



Family: 364. Carangidae (Jacks, trevallies)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: PIF



Distinguishing features: Body with 5 to 7 broad, dark vertical bars. Prominent white tips on upper and lower lobes of caudal fin. First dorsal fin with 4 to 5 spines not connected by a membrane.

Colour: Body dark to pale bluish, with 5 to 7 broad, dark vertical bars. Prominent white tips on upper and lower lobes of caudal fin and smaller white tips on second dorsal and anal fin lobes. Caudal peduncle with well developed lateral fleshy keel on each side.

Size: To about 63 cm FL.

Length measurement method: Fork length

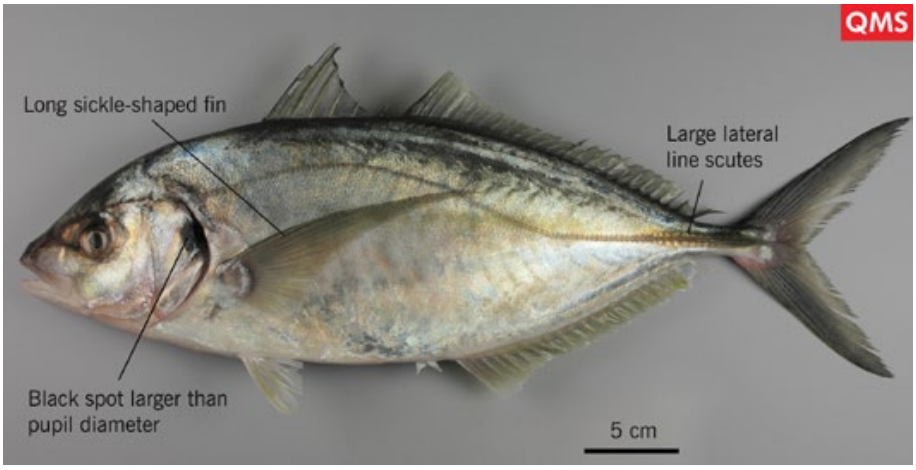
Distribution: From about Three Kings Ridge to Kaikoura but most records are from northern North Island in New Zealand. Widespread in tropical and subtropical oceans of the world.

Depth: A few to 400 m.

Similar species: Ocean blue-eye (*Seriolella labyrinthicus*) has faint broad dark vertical bands in life but these fade on death, lacks white tipped caudal fin lobes, lacks keel on caudal peduncle, and has 7 to 9 short spines in first dorsal fin that increase in length posteriorly.

Biology & ecology: Pelagic. Often associated with large slow-moving fishes but also observed near reefs.

Trevally *Pseudocaranx georgianus*



Family: 364. Carangidae (Jacks, trevallies)
Maori names: Araara
Other names:
FishNZ reporting code: TRE
FishNZ research/observer code: TRE

Distinguishing features: Moderately deep body with elongated sickle-shaped pectoral fin, small body scales, row of large lateral line scutes (scales) on tail in front of caudal fin, and 2 short stout spines ahead of anal fin soft rays. Black spot on operculum larger than pupil diameter.

Colour: Body light blue-green above, silvery white below, and with a yellowish sheen. Fins light yellow-green. A dark blotch on upper rear edge of gill cover.

Size: To about 83 cm FL.

Length measurement method: Fork length

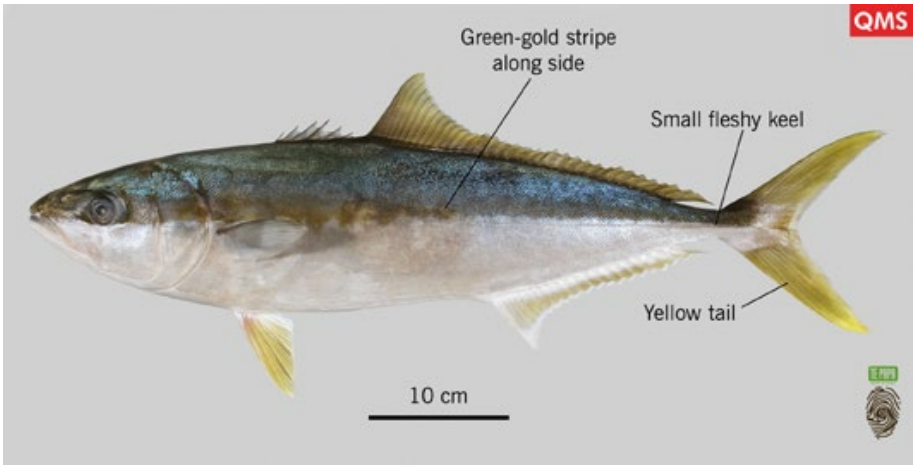
Distribution: Widespread in central and northern New Zealand from Kermadec Islands to off Canterbury with records from Chatham Island and Foveaux Strait. Norfolk Island. Other overseas records are uncertain.

Depth: A few to 240 m.

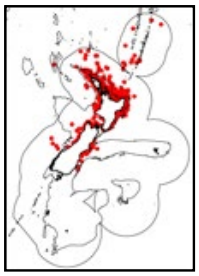
Similar species: Other deep-bodied jacks lack sickle-shaped pectoral fin and dark blotch on rear part of gill cover.

Biology & ecology: Shallow harbours to pelagic and demersal waters of continental shelf, often near reefs.

Kingfish *Seriola lalandi*



Family: 364. Carangidae (Jacks, trevallies)
Maori names: Haku
Other names: Yellowtail kingfish
FishNZ reporting code: KIN
FishNZ research/observer code: KIN



Distinguishing features: Large elongate fish with green-gold stripe along side from snout through eye to yellow tail. No lateral line scutes. Small fleshy keel on tail in front of caudal fin. Teeth whitish.

Colour: Body bluish-green above, silvery-white below, with green-gold stripe along side from snout to tail. Caudal fin olive-yellow, pectoral and pelvic fins yellowish. Juveniles to about 20 cm FL with many irregular, dark, narrow, vertical bands on body.

Size: To about 160 cm FL.

Length measurement method: Fork length

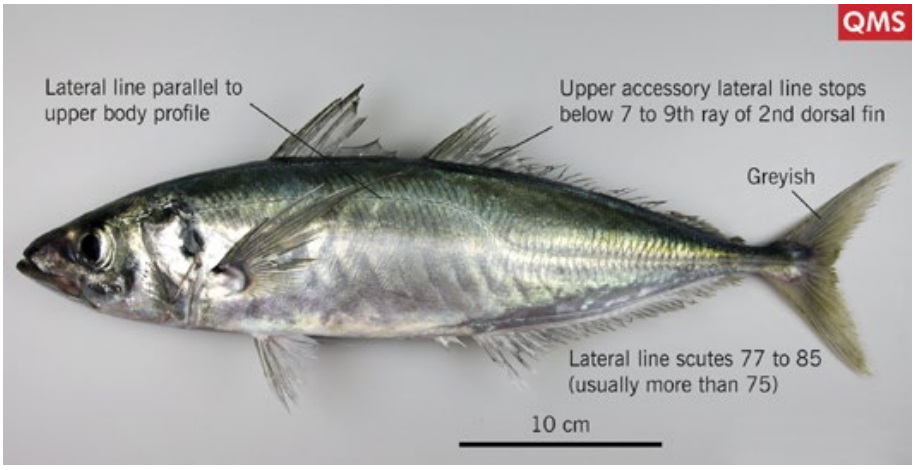
Distribution: Kermadec Islands to Foveaux Strait including Chatham Island in New Zealand but most records from North Island. Circumglobal in temperate southwest and east Atlantic, Indo-Pacific, and east Pacific Oceans.

Depth: A few to 200 m.

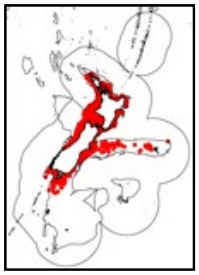
Similar species: Other large jacks have infrequently been reportedfrom northern New Zealand. These include amberjack (*Seriola dumerili*) which has a brownish caudal fin, samsonfish (*S. hippos*) which has tissue surrounding teeth engorged with blood making teeth reddish, and almacojack (*S. rivoliana*) which lacks fleshy caudal keel and has dark or dusky caudal fin.

Biology & ecology: Pelagic on continental shelf, often associated with reefs.

Greenback jack mackerel *Trachurus declivis*



Family: 364. Carangidae (Jacks, trevallies)
Maori names:
Other names: Horse mackerel
FishNZ reporting code: JMA
FishNZ research/observer code: JMD



Distinguishing features: Large scute-like scales along entire length of lateral line with front (curved) part of lateral line parallel with curve of upper body profile. Upper accessory lateral line (immediately below base of dorsal fin) stops below fifth to eleventh (usually seventh to ninth) ray in second dorsal fin. Body bluish-green above with greyish caudal fin.

Colour: Greenish above, silvery below. Caudal fin greyish.

Size: To about 55 cm FL.

Length measurement method: Fork length

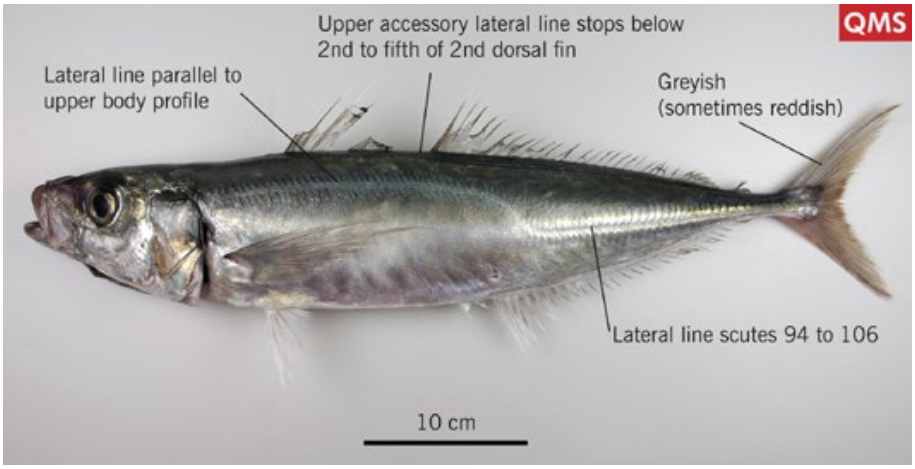
Distribution: Widespread in New Zealand from Kermadec Islands to Snares Island shelf, including Chatham Rise, but absent from Campbell Plateau. South Australia.

Depth: A few to 300 m.

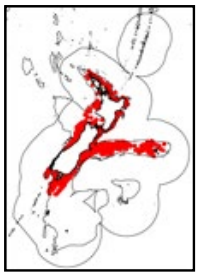
Similar species: There are three very similar jack mackerel species in New Zealand waters. Yellowtail jack mackerel (*T. novaezelandiae)* and slender jack mackerel (*T. murphyi*) both have short upper accessory lateral line that extends back only to start of second dorsal fin.

Biology & ecology: Midwater.

Slender jack mackerel *Trachurus murphyi*



Family: 364. Carangidae (Jacks, trevallies)
Maori names:
Other names: Chilean jack mackerel
FishNZ reporting code: JMA
FishNZ research/observer code: JMM



Distinguishing features: Large scute-like scales along entire length of lateral line with front (curved) part of lateral line parallel with curve of upper body profile. Body bluish-green above with greyish caudal fin. Caudal fin region may be reddish (bloody) because of damage from meshes of net. Upper accessory lateral line stops below second to fifth ray in second dorsal fin.

Colour: Bluish green above, silvery below. Caudal fin greyish but may be reddish (bloody) due to damage from net.

Size: To about 60 cm FL.

Length measurement method: Fork length

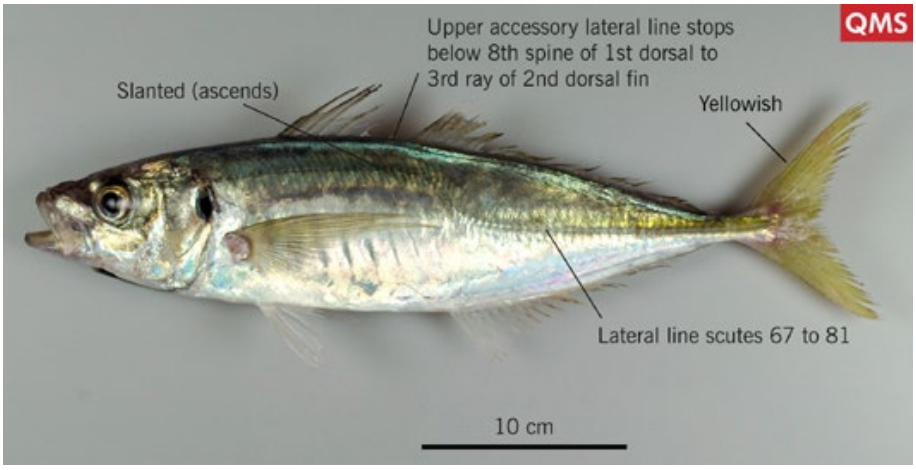
Distribution: Widespread in New Zealand from West Norfolk Ridge and Northland to Snares Island shelf, including Chatham Rise, but absent from Campbell Plateau. Also found off Peru, Chile and Pacific subantarctic zone (southern Australia to east Pacific).

Depth: A few to 500 m.

Similar species: There are three very similar jack mackerel species in New Zealand waters. Yellowtail jack mackerel (*T. novaezelandiae*) also has short upper accessory lateral line but it has 67 to 81 lateral line scales (scutes) compared to 94 to 106 in slender jack mackerel. Greenback jack mackerel (*T. declivis*) has long upper accessory lateral line which extends back to 5th to 11th, usually 7th to 9th ray of second dorsal fin.

Biology & ecology: Midwater.

Yellowtail jack mackerel *Trachurus novaezelandiae*



Family: 364. Carangidae (Jacks, trevallies)
Maori names: Haature, hauture
Other names: Yellowtail, Horse mackerel
FishNZ reporting code: JMA
FishNZ research/observer code: JMN

Distinguishing features: Large scute-like scales along entire length of lateral line with front (curved) part of lateral line slanted or ascending slightly front to rear. Upper accessory lateral line stops below eight spine of first dorsal to third ray in second dorsal fin. Body yellowish-green above with yellowish caudal fin.

Colour: Brassy green above, silvery below, sometimes with iridescent brown vertical bands in fresh specimens. Yellowish tinges on scutes on tail. Caudal and second dorsal fins yellowish.

Size: To about 47 cm FL.

Length measurement method: Fork length

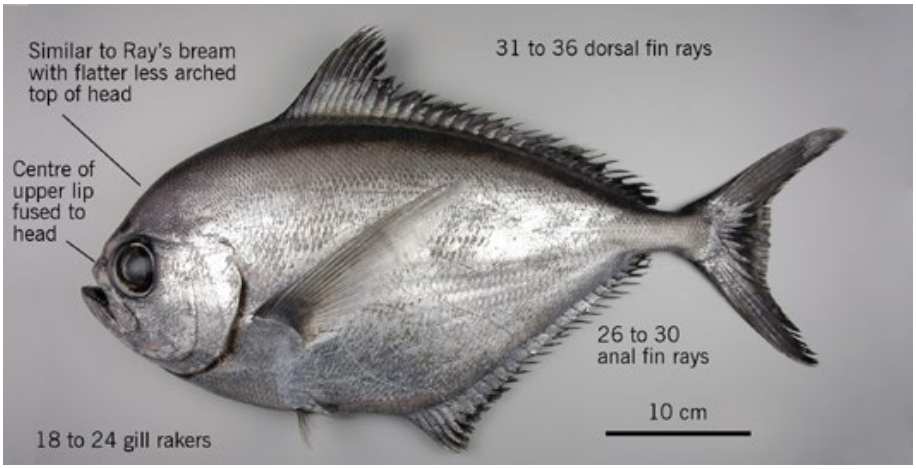
Distribution: Coastal waters off Northland to Otago in New Zealand but absent from Chatham Rise and Campbell Plateau. Southern half of Australia.

Depth: A few to 150 m.

Similar species: There are three very similar jack mackerel species in New Zealand waters. Slender jack mackerel (*T. murphyi*) also has short upper accessory lateral line but has 94 to 106 lateral line scales (scutes) compared to 67 to 81 in yellowtail jack mackerel. Greenback jack mackerel (*T. declivis*) has long upper accessory lateral line which extends back to the 5th to 11th, usually 7th to 9th ray of second dorsal fin.

Biology & ecology: Midwater.

Southern bream *Brama australis*



Family: 367. Bramidae (Pomfrets)
Maori names:
Other names: Southern Ray's bream
FishNZ reporting code: UNI
FishNZ research/observer code: SRB

Distinguishing features: Dorsal profile of head less arched (flatter) than Ray's bream (*Brama brama*) and eye relatively close to upper head margin. Middle of upper lip fused to head. Dorsal fin elements (spines plus rays) 31 to 36 (often 34 to 35), anal fin elements 26 to 30 (often 27), and gill rakers on outer arch 18 to 24.

Colour: Body silver-grey (fading to greyish on death).

Size: To about 56 cm FL.

Length measurement method: Fork length

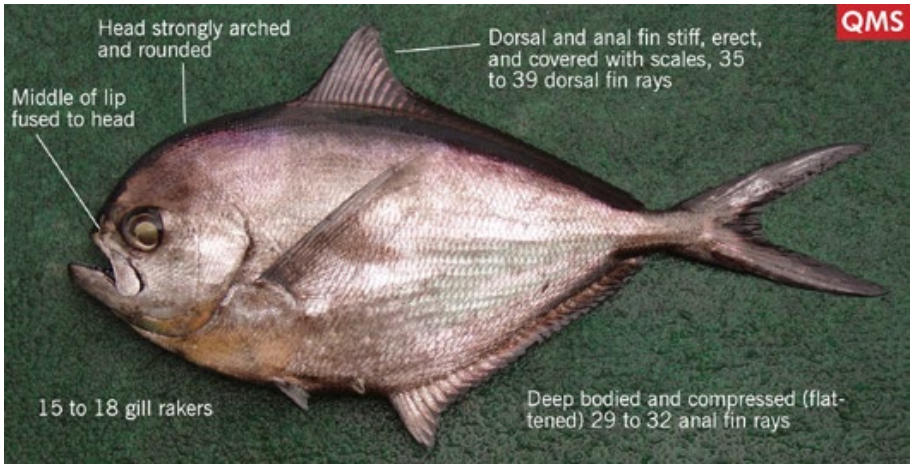
Distribution: Widespread in New Zealand from far north to Campbell Plateau. Widespread in southern hemisphere between 36 and 48 S.

Depth: About 50 to 500 m.

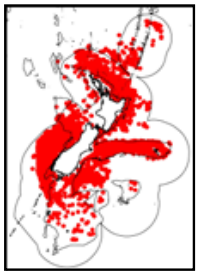
Similar species: Ray's bream (*Brama brama*) also has the middle of the upper lip fused to head but has a more strongly arched dorsal head profile, the eye is lower on the head, there are more dorsal fin elements (spines plus rays) 35 to 39 (often 37 to 38), more anal fin elements 29 to 32 (often 30), and fewer gill rakers on outer side of first arch (15 to 18). Bronze bream (*Xenobrama microlepis*) has the upper lip free and not joined to the head near the snout tip.

Biology & ecology: Pelagic.

Ray's bream *Brama brama*



Family: 367. Bramidae (Pomfrets)
Maori names:
Other names:
FishNZ reporting code: RBM
FishNZ research/observer code: RBM



Distinguishing features: Dorsal profile of head strongly arched and rounded. Middle of upper lip fused to head. Dorsal and anal fins stiff, erect and covered with scales. Dorsal fin elements (spines plus rays) 35 to 39 (often 37 to 38), anal fin elements 29 to 32 (often 30), and gill rakers on outer side of first arch 15 to 18.

Colour: Body metallic silver fading to silvery brown on death.

Size: To about 60 cm FL.

Length measurement method: Fork length

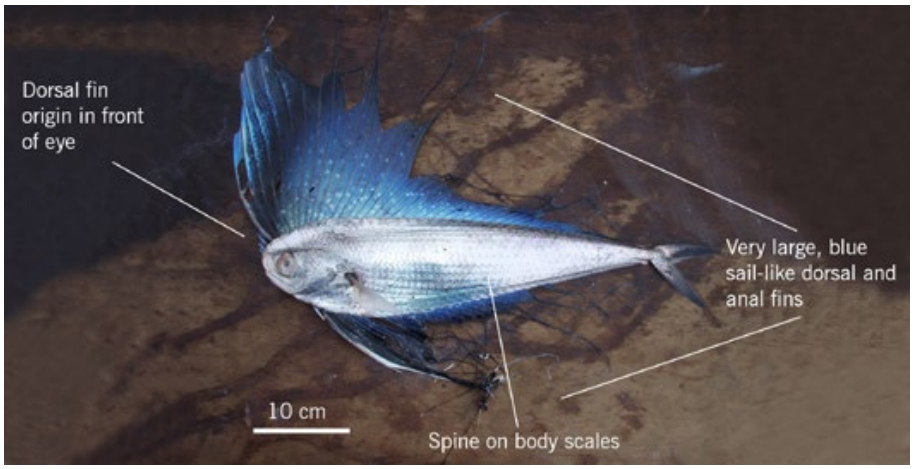
Distribution: Widespread in central and northern New Zealand, including Chatham Rise and upper half of South Island. Older fisheries records (see map)of this species are likely to include southern bream (*B. australis*) and to a lesser extent bronze bream (*Xenobrama microlepis*) because of confused identification of these species. Also found in North Atlantic Ocean, off South Africa, western South America, and Australia.

Depth: Surface to about 500 m.

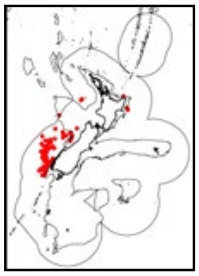
Similar species: Southern bream (*B. australis*) has a less strongly arched upper head profile, fewer dorsal fin elements (spines plus rays) 31 to 36 (often 34 to 35), fewer anal fin elements 26 to 30 (often 27), and more gill rakers on outer arch 18 to 24. Bronze bream (*Xenobrama microlepis*) has a less strongly arched upper head profile and the upper lip is free and not joined to the head near the snout tip.

Biology & ecology: Pelagic.

Wingfish *Pteraclis velifera*



Family: 367. Bramidae (Pomfrets)
Maori names:
Other names: Spotted fanfish
FishNZ reporting code: WIN
FishNZ research/observer code: WIN



Distinguishing features: Very large sail-like dorsal and anal fins that fold away into sheaths of enlarged scales. The first few dorsal fin rays are much thicker than the rest. Dorsal fin origin well ahead of eye. Elongate body. Scales with sharp spine.

Colour: Body metallic silver. Dorsal and anal fins vivid blue with turquoise spots.

Size: To about 53 cm FL.

Length measurement method: Fork length

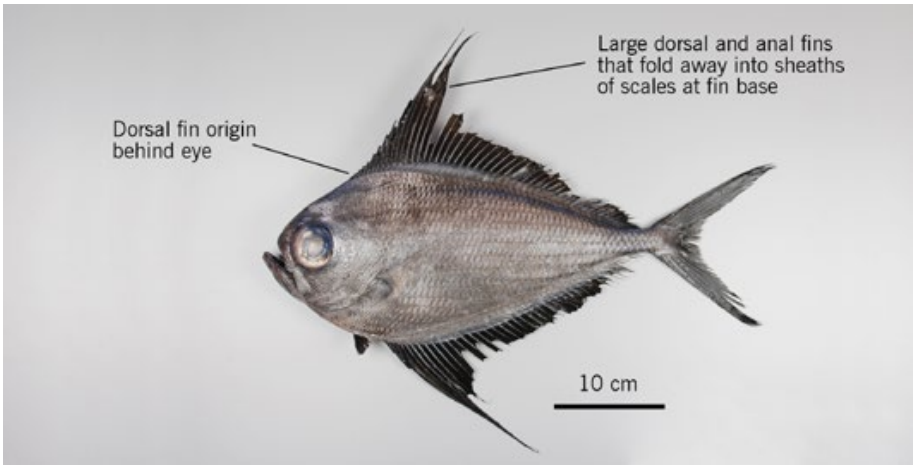
Distribution: Widespread from off Northland to Puysegur in New Zealand. Widespread in southern hemisphere.

Depth: From near the surface to about 800 m.

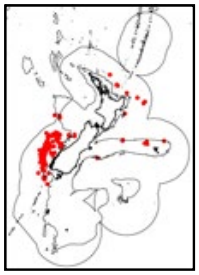
Similar species: Fanfish (*Pterycombus petersii*) has smaller (lower) dorsal and anal fins, all dorsal fin rays are of similar thickness, the dorsal fin origin is above or behind the eye, and the body is shorter and deeper.

Biology & ecology: Pelagic, usually in oceanic waters.

Fanfish *Pterycombus petersii*



Family: 367. Bramidae (Pomfrets)
Maori names:
Other names: Prickly pomfret, prickly fanfish
FishNZ reporting code: FAN
FishNZ research/observer code: FAN



Distinguishing features: Large (high) dorsal and anal fins that fold away into sheaths of enlarged scales. All dorsal fin rays are of similar thickness. Dorsal fin origin above or behind the eye.

Colour: Body bronze to silvery-white. Membranes of the dorsal and anal fins black.

Size: To about 45 cm FL.

Length measurement method: Fork length

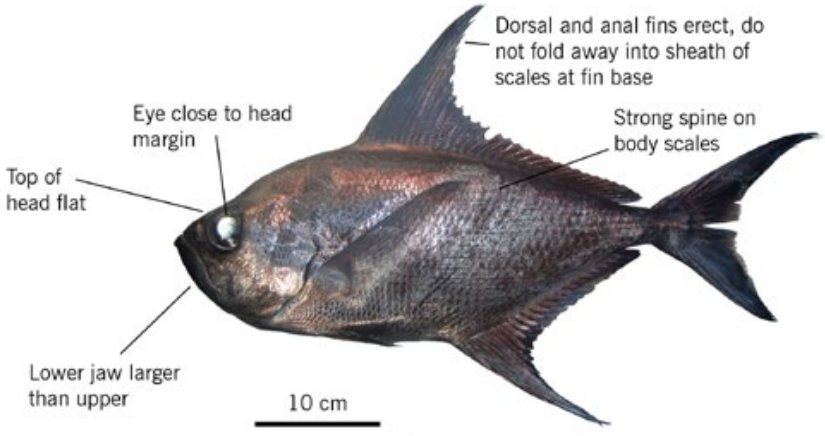
Distribution: Widespread in New Zealand from Kermadec Ridge to near Snares Islands. Widespread in North and South Pacific and Indian Oceans.

Depth: Near surface to about 1080 m.

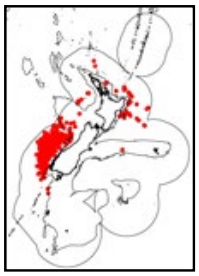
Similar species: Flathead pomfret (*Taractes asper*) has stiff, erect dorsal and anal fins and the dorsal fin origin is behind the head. Wingfish (*Pteraclis velifera*) has very large sail-like dorsal and anal fins, the dorsal fin origin is well ahead of the eye, and the body is longer and more slender. Southern bream (*Brama australis*), Ray's bream (*B. brama*), and Bronze bream (*Xenobrama microlepis*) have small (low) dorsal and anal fins and dorsal fin origin is behind the head.

Biology & ecology: Pelagic, oceanic.

Flathead pomfret *Taractes asper*



Family: 367. Bramidae (Pomfrets)
Maori names:
Other names: Rough pomfret
FishNZ reporting code: TAS
FishNZ research/observer code: TAS



Distinguishing features: Dorsal profile of head from nostrils to behind eyes straight or slightly arched and flattened. Upper lip joined to head at tip of snout. Eye close to upper head margin. Lower jaw longer than upper. Dorsal and anal fins stiff, erect, covered with scales, and do not fold away into sheath at fin base. Dorsal fin origin behind head. Raised spines in middle of each body scale.

Colour: Body silvery (fading to brown on death).

Size: To at least 52 cm FL in New Zealand.

Length measurement method: Fork length

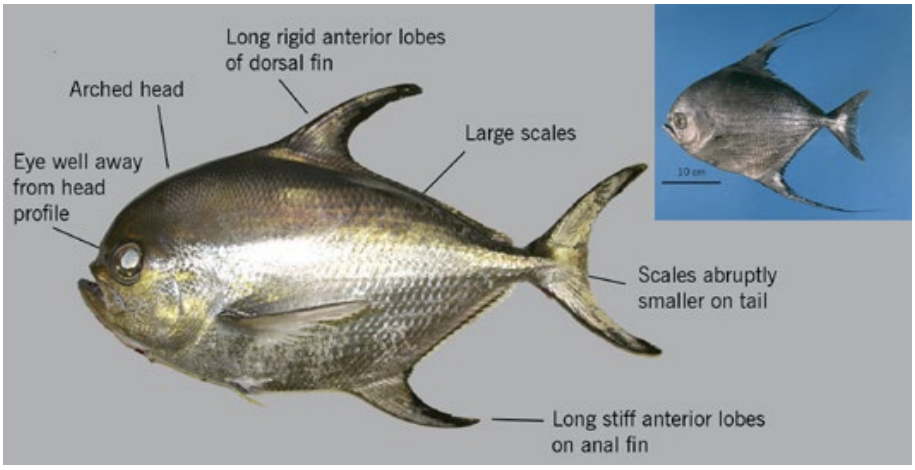
Distribution: Widespread in New Zealand from Kermadec Ridge to Puysegur in and north of the subtropical convergence. Widespread in tropical and temperate seas of the world.

Depth: 20 to about 1000 m.

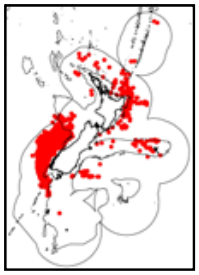
Similar species: Fanfish (*Pterycombus petersii*) has dorsal and anal fins that fold away into sheaths of enlarged scales, and dorsal fin origin is above or just behind the eye. Southern bream (*Brama australis*) and Ray's bream (*B. brama*) have arched head profiles and lack spines on body scales. Bronze bream (*Xenobrama microlepis*) lacks stiff dorsal and anal fins and lacks spines on body scales. Wingfish (*Pteraclis velifera*) has very large sail-like dorsal and anal fins, and dorsal fin origin is in front of eye.

Biology & ecology: Pelagic, oceanic.

Big-scale pomfret *Taractichthys longipinnis*



Family: 367. Bramidae (Pomfrets)
Maori names:
Other names: Longfinned bream, longfinned pomfret, pomfret
FishNZ reporting code: BSP
FishNZ research/observer code: BSP



Distinguishing features: Top of head prominently arched with eye well away from head margin. Long stiff anterior lobes of dorsal and anal fins that do not fold away into sheath at fin base. Large body scales, 39 to 46 scales between hind edge of operculum and caudal fin base. Scales on tail fin abruptly smaller than on caudal peduncle. Juveniles have very long dorsal and anal fin rays which become relatively shorter with age.

Colour: Silver-grey.

Size: To about 100 cm FL in New Zealand.

Length measurement method: Fork length

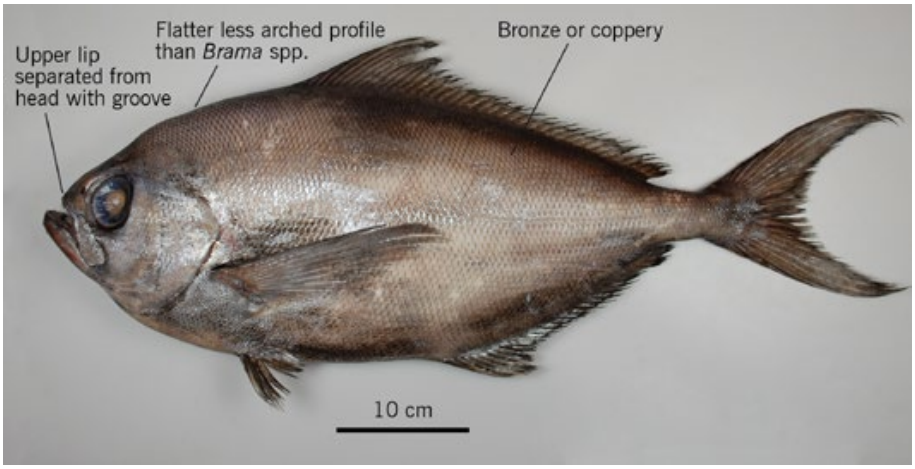
Distribution: Widespread in New Zealand from Kermadec Ridge, Chatham Rise and Subantarctic. Widespread in tropical and temperate oceanic waters of seas of the world.

Depth: To about 1000 m.

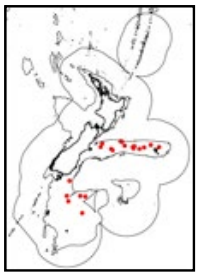
Similar species: Southern bream (*Brama australis*) and Ray's bream (*B. brama*) have smaller scales, especially at the base of the tail, and lacks stiff fin spines. Flathead pomfret (*Taractes asper*) has a flatter head profile.

Biology & ecology: Pelagic, oceanic, and migratory.

Bronze bream *Xenobrama microlepis*



Family: 367. Bramidae (Pomfrets)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: BBR



Distinguishing features: Distinct groove separating the upper lip from the top of the head near the snout tip. Dorsal profile of head less arched (flatter) than Ray's bream, and snout more pointed. Body metallic bronze to golden in colour. Dorsal fin elements (spines plus rays) 38 to 42 (often 40), anal fin elements 27 to 30 (often 29), and gill rakers on outer arch 9 to 14.

Colour: Body metallic bronze to coppery.

Size: To about 60 cm FL.

Length measurement method: Fork length

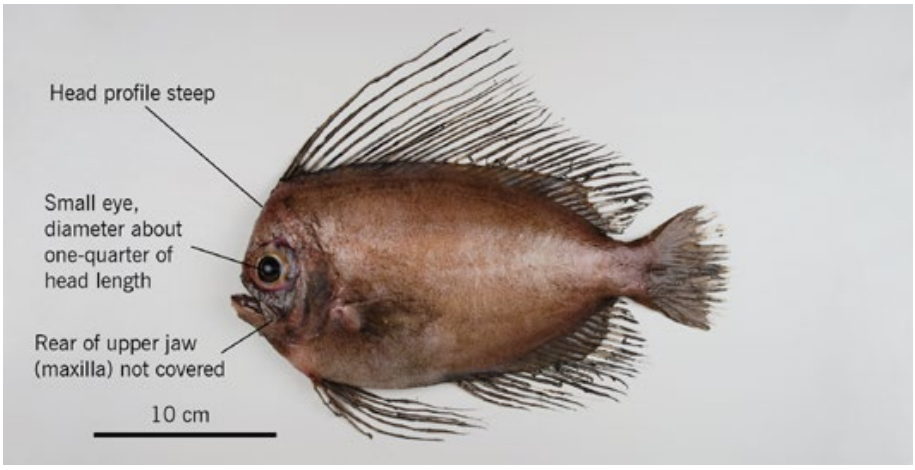
Distribution: Recorded from central and southern New Zealand but some older fisheries records were probably mis-identifed as Ray's bream. South Pacific Ocean between 35 and 55 S.

Depth: Near surface to 1600 m.

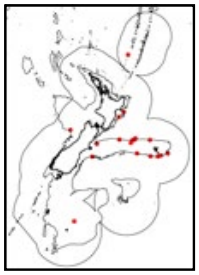
Similar species: Ray's bream (*Brama brama*) has upper lip joined to head near snout tip, strongly arched dorsal head profile, fewer dorsal fin elements (spines plus rays) 35 to 39 (often 37 to 38), fewer anal fin elements 29 to 32 (often 30), and more gill rakers on outer arch (15 to 18). Southern bream (*B. australis*) has upper lip joined to head near snout tip, less strongly arched dorsal head profile, fewer dorsal fin elements 31 to 36 (often 34 to 35), fewer anal fin elements 26 to 29 (often 27), and more gill rakers on outer arch (18 to 24).

Biology & ecology: Pelagic.

Largemouth manefish *Caristius meridionalis*



Family: 368. Caristiidae (Manefishes)
Maori names:
Other names: Southern manefish
FishNZ reporting code: UNI
FishNZ research/observer code: PLA



Distinguishing features: Head profile steep. Small eye diameter, about one-quarter of head length. Rear of upper jaw (maxilla) not covered by fleshy extension of suborbital ridge. Origin of dorsal fin close to line through rear of eye. Lateral line rises steeply behind head and runs close to dorsal fin base back onto tail fin base. Skin extends onto bases of dorsal and anal fins. Scales deciduous. Fin rays fold into fleshy sheaths.

Colour: Head, body, and fins dark brownish or blackish.

Size: To about 32 cm TL.

Length measurement method: Total length

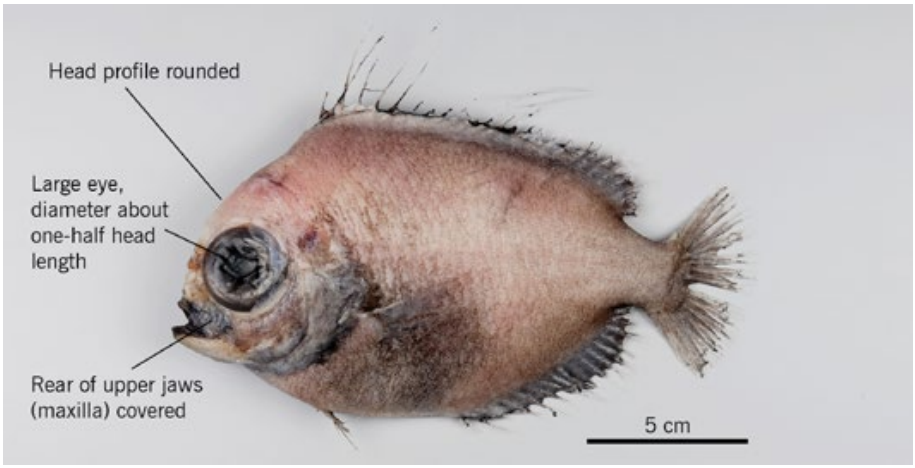
Distribution: Widespread in New Zealand from Kermadec Ridge to Campbell Plateau. Southern hemisphere South Pacific and western South Atlantic Oceans south of 30 S.

Depth: About 750 to 1330 m.

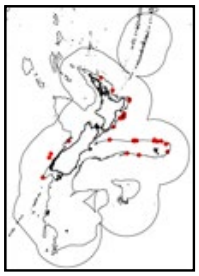
Similar species: Heemstra's manefish (*Neocaristius heemstrai*) has a rounded lateral head profile, large eye diameter (about one-half of head length), origin of dorsal fin is well behind rear edge of eye, and rear of upper jaw (maxilla) is covered by fleshy extension of the suborbital ridge.

Biology & ecology: Adults probably midwater. Juvenile observed eating gelatinous zooplanton. Stomach contents of that specimen also included midwater fishes and crustaceans.

Veilfin manefish *Neocaristius heemstrai*



Family: 368. Caristiidae (Manefishes)
Maori names:
Other names: Veilfin manefish
FishNZ reporting code: CST
FishNZ research/observer code: CST



Distinguishing features: Head lateral profile rounded. Large eye diameter, about one-half of head length. Rear of upper jaw (maxilla) covered by fleshy extension of suborbital ridge. Origin of dorsal fin well behind a vertical line through rear of eye. Lateral line rises steeply behind head and runs close to dorsal fin base back to about rear of first dorsal fin. Skin extends onto bases of dorsal and anal fins. Scales deciduous. Dorsal and anal fin rays fold down into fleshy sheaths.

Colour: Head and body brownish. Dorsal and anal fins blackish. Tail, pelvic, and pectoral fins brownish.

Size: To about 25 cm TL.

Length measurement method: Total length

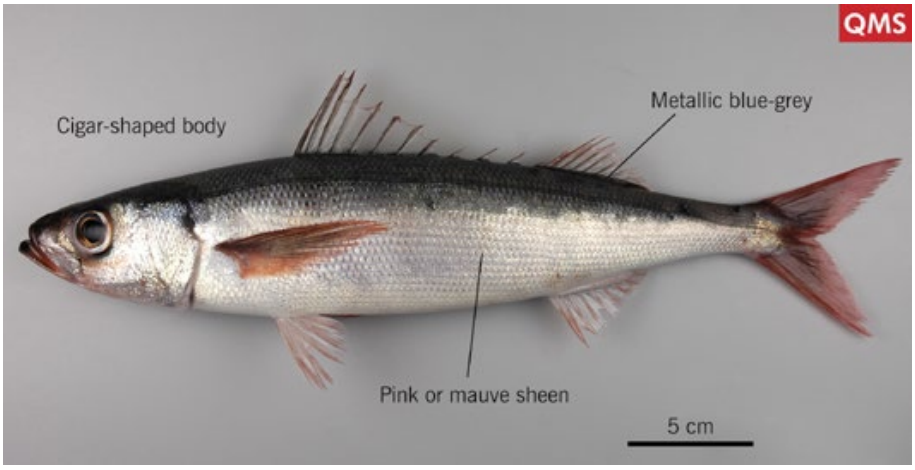
Distribution: Widespread in New Zealand from off Northland to Puysegur. Widespread in southern hemisphere south of about 30 S.

Depth: Midwater at about 800 to 1400 m.

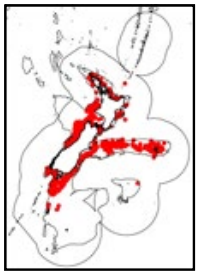
Similar species: Largemouth manefish (*Caristius meridionalis*) has steeply angled head profile, small eye diameter (about one-quarter of head length), origin of first dorsal fin is above rear edge of eye, and rear of upper jaw (maxilla) is not covered by fleshy extension of suborbital ridge.

Biology & ecology: Unknown. Midwater.

Redbait *Emmelichthys nitidus*



Family: 369. Emmelichthyidae (Bonnetmouths, rovers)
Maori names:
Other names: Red baitfish
FishNZ reporting code: RBT
FishNZ research/observer code: RBT



Distinguishing features: Body cigar-shaped, metallic blue-grey above, silver on side and abdomen, but suffused with pink and mauve along side. Two dorsal fins with very short spines between. Scales small and firm.

Colour: Body metallic blue-grey above, silver on side and abdomen, with pink flush along side. Fins pink.

Size: To about 37 cm FL.

Length measurement method: Fork length

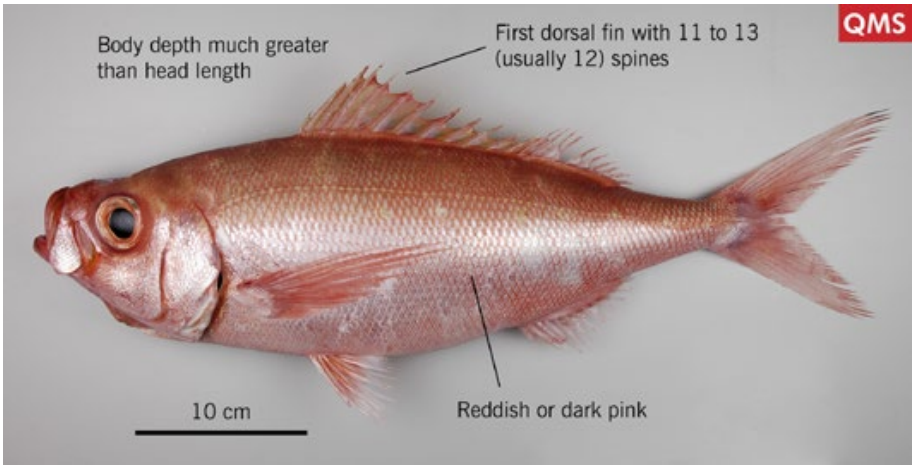
Distribution: Widespread in New Zealand from West Norfolk Ridge to Snares Island slope. Southern Indian and west Pacific Oceans including Australia.

Depth: 20 to about 500 m.

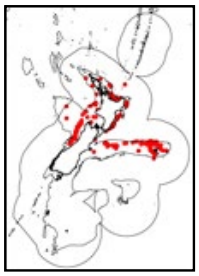
Similar species: Rubyfish (*Plagiogeneion rubiginosum*) has deep body, with body depth greater than head length and body is uniformly bright red.

Biology & ecology: Caught near bottom but in midwater at times.

Rubyfish *Plagiogeneion rubiginosum*



Family: 369. Emmelichthyidae (Bonnetmouths, rovers)
Maori names:
Other names:
FishNZ reporting code: RBY
FishNZ research/observer code: RBY



Distinguishing features: Reddish or dark pink head, body, and fins. Spinous first dorsal continuous with soft rayed second dorsal fin. Body deep, greater than head length.

Colour: Reddish or dark pink head, body, and fins, paler below. Scaled part of maxilla, and side of head and body silvery.

Size: To 57 cm FL.

Length measurement method: Fork length

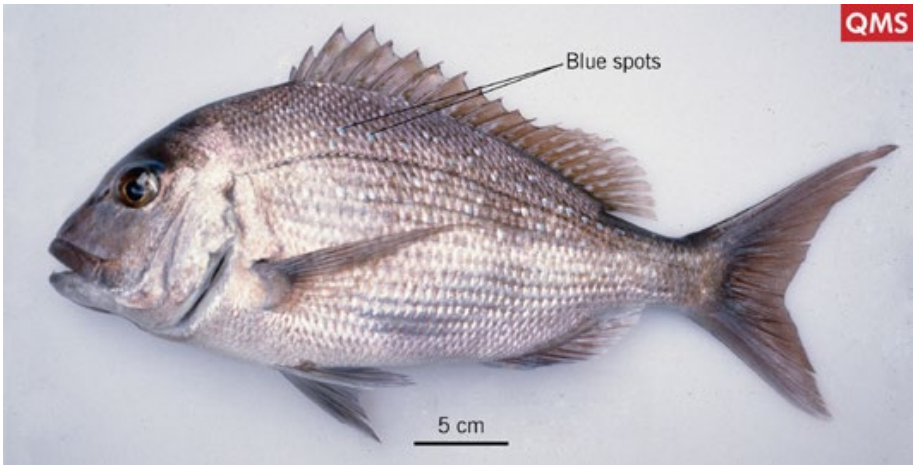
Distribution: Widespread in central and northern New Zealand from Kermadec Ridge to off Otago. Southern Africa to Australasia.

Depth: 50 to 500 m.

Similar species: Alfonsino (*Beryx splendens*) has short dorsal fin, with length of base much less than depth of body and 4 dorsal fin spines. Redbait (*Emmelichthys nitidus*) has gap between spiny first and soft rayed second dorsal fins, body depth less than head length, and metallic greyish-green upper surface with silvery and pinkish side and lower body.

Biology & ecology: Demersal but also in midwater above shallow (150 to 250 m) rises. Spawns in late spring/early summer. Long lived, with estimates up to 85 years.

Snapper *Chrysophrys auratus*



Family: 378. Sparidae (Seabreams, porgies)
Maori names: Karati, taamure
Other names:
FishNZ reporting code: SNA
FishNZ research/observer code: SNA

Distinguishing features: Golden pink to reddish upper body, with many small blue spots. Rounded dorsal head profile, except for very large fish which may develop hump on nape and lesser one on snout.

Colour: Golden pink to reddish upper body, with many small blue spots. Underside of body whitish-silver. Fins pink to reddish above, paler below.

Size: To about 100 cm FL.

Length measurement method: Fork length

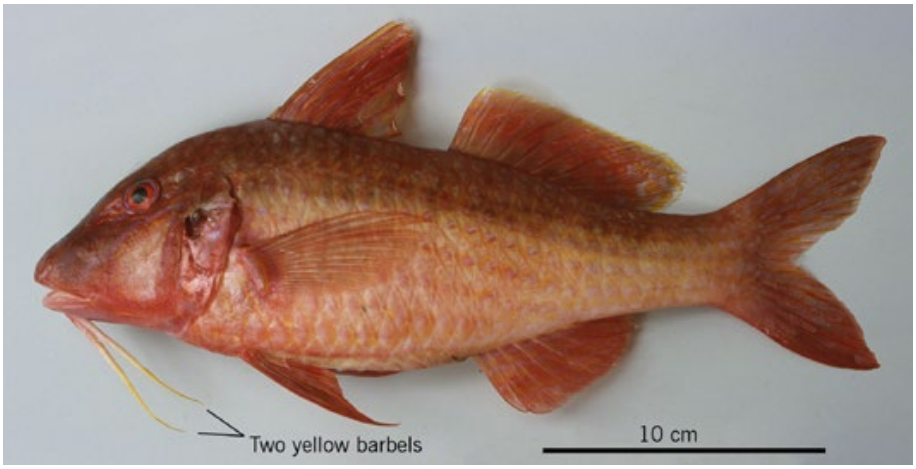
Distribution: Central and northern coastal New Zealand. Southern Australia, Norfolk and Lord Howe Islands.

Depth: A few to about 200 m.

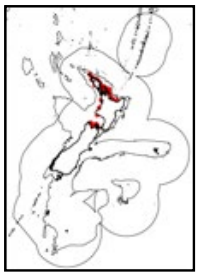
Similar species: Yellowfin bream (*Acanthopagrus australis*) has silvery-bronze body, dark blotch at origin of lateral line, lower fins and ventral part of caudal fin are yellowish. Red snapper (*Centroberyx affinis*) lacks small blue spots on body, and has narrow white stripes along the side.

Biology & ecology: Demersal.

Goatfish *Upeneichthys porosus*



Family: 382. Mullidae (Goatfishes)
Maori names: Aahuruhuru
Other names: Red mullet
FishNZ reporting code: RMU
FishNZ research/observer code: RMU



Distinguishing features: Two long yellowish chin barbels. Large weakly attached scales. Two widely separated, short-based, high dorsal fins.

Colour: Body colour highly variable. Freshly dead individuals have head, body, and fins reddish, paler below, with indistinct dark brownish broken band from top of gill cover to tail base, and yellowish chin barbels.

Size: To about 40 cm FL.

Length measurement method: Fork length

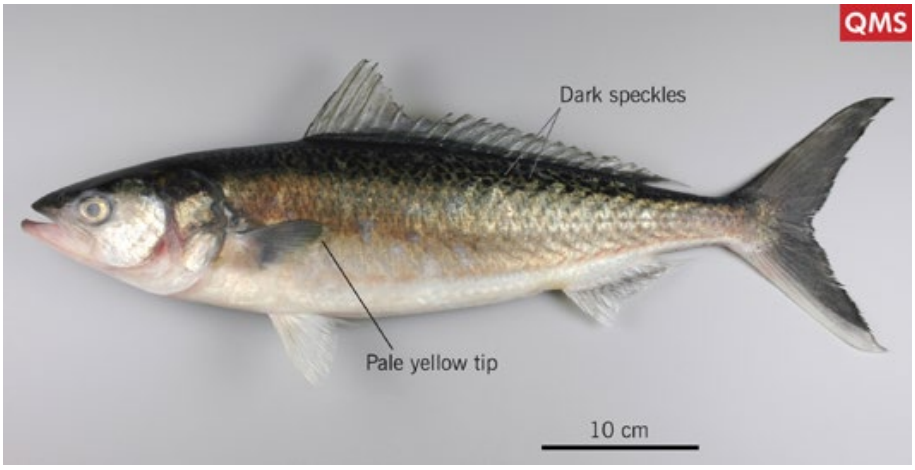
Distribution: Northern and central New Zealand from Kermadec Islands to Golden Bay/Marlborough Sounds, uncommon south of Hawke Bay in east and Farewell Spit in west. Found only in New Zealand.

Depth: A few to 100 m.

Similar species: Other goatfishes are rare in New Zealand. Blackspot goatfish (*Parupeneus spilurus*) has black spot on caudal peduncle, and bartail goatfish (*Upeneus francisi*) has 4 pairs of orange and white bars on upper lobe of caudal fin.

Biology & ecology: Demersal on sand areas near reefs. Spawn October to January.

Kahawai *Arripis trutta*



Family: 389. Arripidae (Kahawai, Australian salmon)

Maori names: Kahawai

Other names:

FishNZ reporting code: KAH

FishNZ research/observer code: ATT

Distinguishing features: Streamlined, spindle-shaped body with irregular small dark speckles on upper sides, large deciduous scales. Tail fin lobe length about equal to head length.

Colour: Greenish-blue above with irregular small dark speckles, grading to silvery-white below. Outer edge of pectoral fin pale yellow.

Size: To about 70 cm FL.

Length measurement method: Fork length

Distribution: Throughout New Zealand including Chatham Island south to about 45 S, more abundant about and north of Cook Strait, present in southern areas only in warmer months, and rare at Kermadec Islands. Also found off southeast Australia, Lord Howe and Norfolk Islands.

Depth: A few to 150 m.

Similar species: *Arripis xylabion* occurs in far north of North Island,as well as Lord Howe, Norfolk and Kermadec Islands, is rare, and has dark grey pectoral fin and tail fin lobe longer than head length.

Biology & ecology: Pelagic on continental shelf, often in schools.

Parore *Girella tricuspidata*

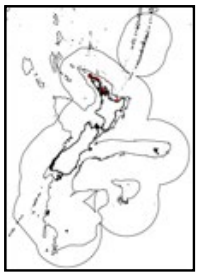
Family: 391a. Girellidae (Nibblers)

Maori names: Parore

Other names:

FishNZ reporting code: PAR

FishNZ research/observer code: PAR



Distinguishing features: Series of 9 to 12 narrow vertical dark bars on side of body. Dorsal fin with 13 to 15 spines.

Colour: Pale olive-yellow to dark greyish-brown with series of 9 to 12 narrow vertical dark bars on side of body. Dorsal, caudal, anal, and pectoral fins pale to brownish. Pelvic fins pale.

Size: To about 60 cm FL.

Length measurement method: Fork length

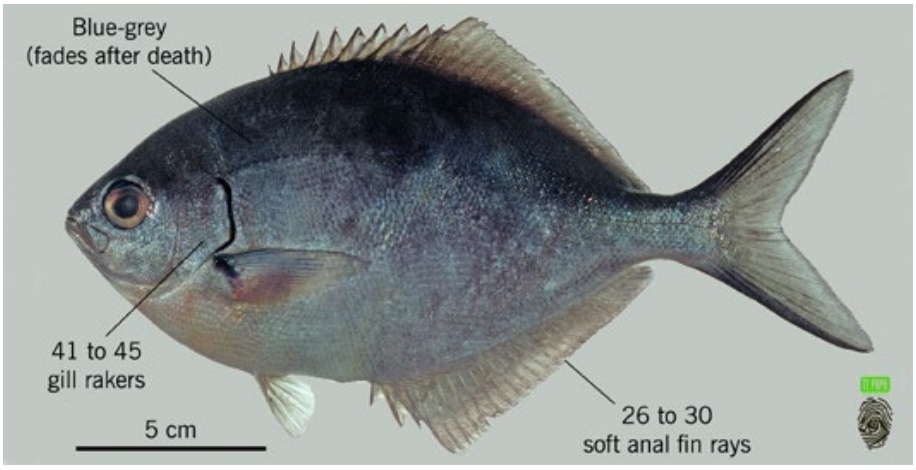
Distribution: Northern coastal New Zealand from off Northland to Cook Strait, more common in far north. Southeast Australia.

Depth: A few to 50 m, usually less than 15 m.

Similar species: Other species lack series of narrow vertical dark bars on side of body.

Biology & ecology: Mangrove swamps, estuaries, harbours, and shallow coastal reefs, often in schools. Adults largely herbivorous. Spawn in spring-summer.

Sweep *Scorpis lineolata*



Family: 391c. Scorpididae (Sweeps, halfmoons)

Maori names: Hui

Other names:

FishNZ reporting code: SWE

FishNZ research/observer code: SWE

Distinguishing features: Body oval to diamond-shaped, tail strongly forked, blue-grey (fading after death), head and mouth small, anal and soft dorsal fins about equal in length, 26 to 30 soft anal rays, 41 to 45 gill rakers.

Colour: Blue-grey with blackish opercular membrane and dusky fin rays on upper and lower caudal lobes.

Size: 35 cm FL.

Length measurement method: Fork length

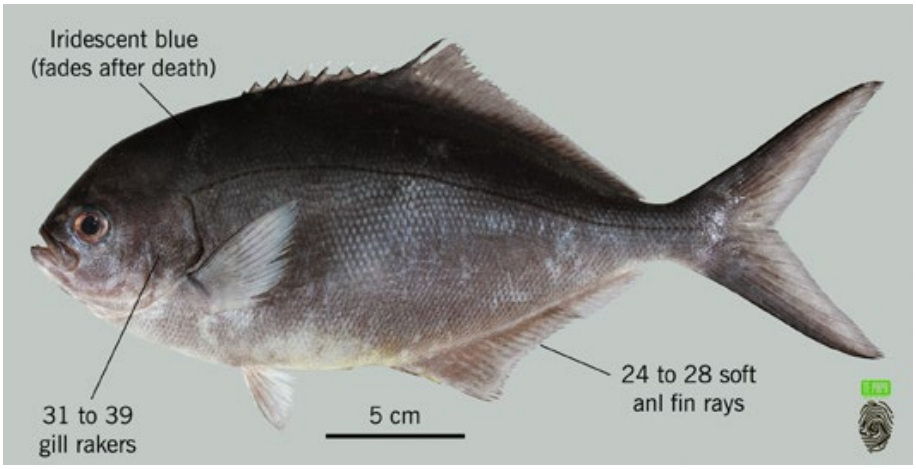
Distribution: Three Kings Islands to Fiordland in New Zealand. Southeast Australia and Lord Howe Island.

Depth: A few to about 30 m.

Similar species: Blue maomao (*Scorpis violacea*) is iridescent blue (fades to dusky grey after death), has fewer gill rakers, and large fish develop a humped forehead profile.

Biology & ecology: Schools around shallow rocky reefs.

Blue maomao *Scorpis violacea*



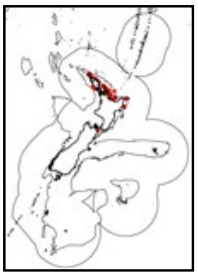
Family: 391c. Scorpididae (Sweeps, halfmoons)

Maori names: Maomao

Other names:

FishNZ reporting code: BMA

FishNZ research/observer code: BMA



Distinguishing features: Body oval, tail strongly forked, iridescent blue (fading after death), head and mouth small, anal and soft dorsal fins about equal in length, 24 to 28 soft anal rays, 31 to 39 gill rakers. Large fish may be more elongated and develop a humped profile on forehead.

Colour: Iridescent blue, paler ventrally (fades to dusky grey after death).

Size: 40 cm FL.

Length measurement method: Fork length

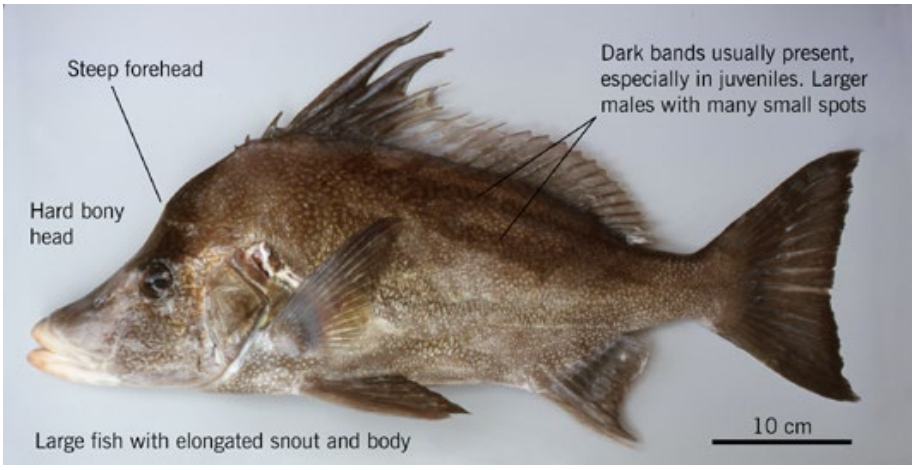
Distribution: Kermadec Islands to Cook Strait and Kaikoura in New Zealand. Eastern Australia (rare), Lord Howe and Norfolk Islands.

Depth: A few to about 30 m.

Similar species: Sweep (*Scorpis lineolata*) is blue-grey, lacks iridescence, has more gill rakers, and large fish do not develop a humped forehead profile.

Biology & ecology: Schools around shallow rocky reefs.

Giant boarfish *Paristiopterus labiosus*



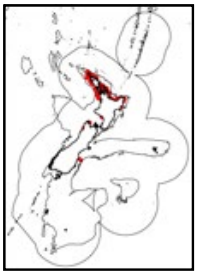
Family: 396. Pentacerotidae (Boarfishes, armorheads)

Maori names:

Other names: Sowfish

FishNZ reporting code: BOA

FishNZ research/observer code: BOA



Distinguishing features: Hard, bony head with steep forehead above eyes and elongated snout. Adult males have small yellow spots over body without obvious dark stripes. Adult females have 4 oblique dark stripes on body. Juveniles are deep bodied with short snout and have oblique very dark stripes on body.

Colour: Adult males have small yellow spots over body without obvious dark stripes. Adult females have 4 oblique dark stripes on body. Juveniles have oblique very dark stripes on body.

Size: To about 85 cm FL.

Length measurement method: Fork length

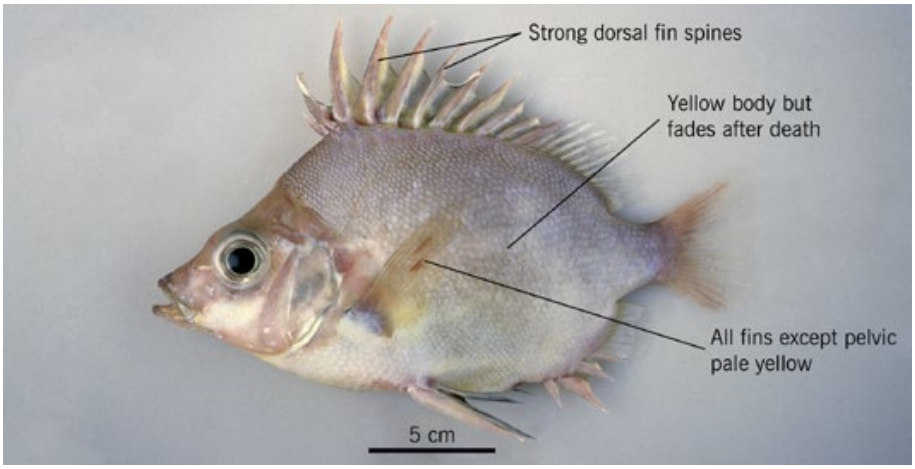
Distribution: Northern New Zealand, mainly north of East Cape. Older fisheries records from offshore and southern New Zealand are misidentified. Also southeast Australia.

Depth: A few to about 200 m.

Similar species: Longfin boarfish (*Zanclistius elevatus*) has very high dorsal fin with black blotch near rear margin, and two irregular oblique brown bands on side of body. Southern boarfish (*Pentaceros richardsoni*) has iridescent dark blue on upper body, silvery-grey sides and belly. Yellow boarfish (*Pentaceros decacanthus*) has strong dorsal spines and yellow body.

Biology & ecology: Demersal and coastal.

Yellow boarfish *Pentaceros decacanthus*



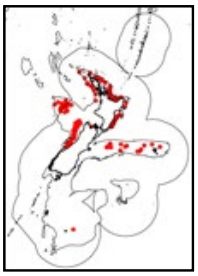
Family: 396. Pentacerotidae (Boarfishes, armorheads)

Maori names:

Other names: Bigspine boarfish

FishNZ reporting code: YBO

FishNZ research/observer code: YBO



Distinguishing features: Small (to about 32 cm TL) with strong dorsal fin spines. Yellow body fading to brown after capture. Fins pale yellow except for pelvic which has black fin membranes.

Colour: Body greyish-yellow fading to brown after capture. Fins pale yellow except for pelvic which has black fin membranes.

Size: To about 32 cm TL.

Length measurement method: Total length

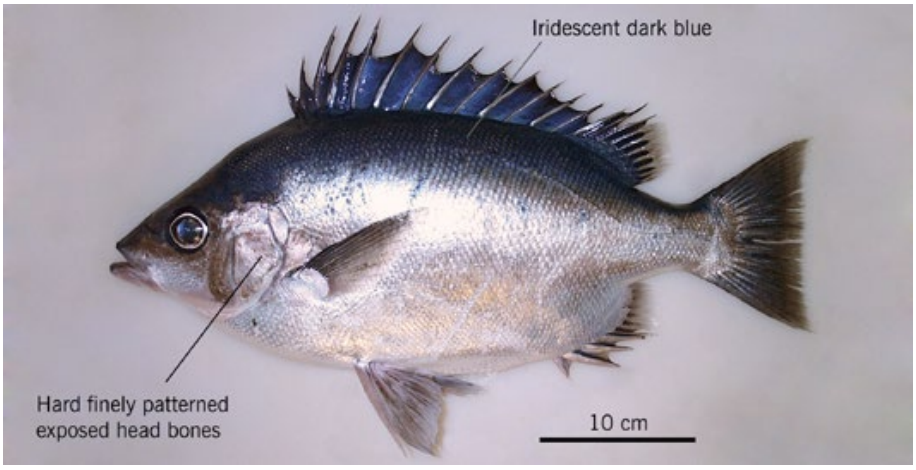
Distribution: Central and northern New Zealand from Three Kings Bank to Chatham Rise. Southern Australia, Chesterfield Islands and New Caledonia.

Depth: 200 to 700 m.

Similar species: Southern boarfish (*Pentaceros richardsoni*) has iridescent dark blue on upper body, silvery-grey side and belly. Giant boarfish (*Paristiopterus labiosus*) has dark oblique stripes (female) or small yellow spots (male) on body. Longfin boarfish (*Zanclistius elevatus*) has very high dorsal fin with black blotch near rear margin, and two irregular brown bands on side of body.

Biology & ecology: Demersal.

Southern boarfish *Pentaceros richardsoni*



Family: 396. Pentacerotidae (Boarfishes, armorheads)

Maori names:

Other names: Pelagic armourhead

FishNZ reporting code: SBO

FishNZ research/observer code: SBO

Distinguishing features: Iridescent dark blue on upper body, silvery-grey sides and belly, hard head with finely patterned bones on surface.

Colour: Body iridescent dark steely-blue above, silvery-grey on sides and below.

Size: To about 55 cm FL.

Length measurement method: Fork length

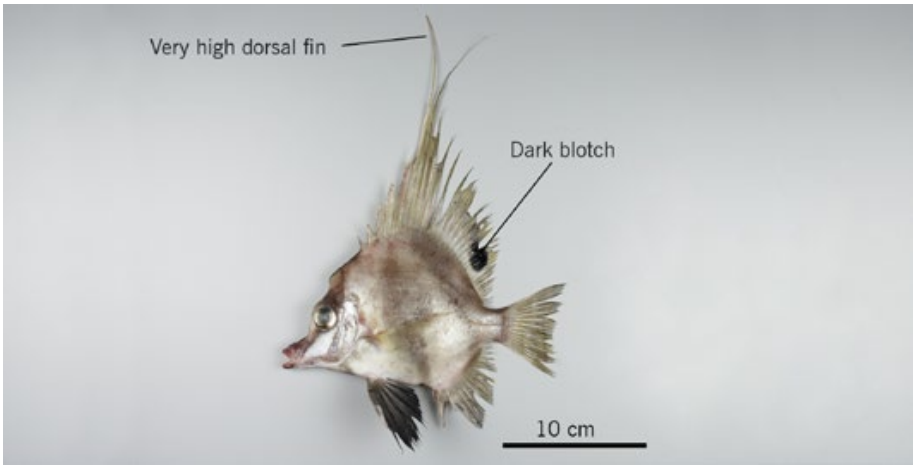
Distribution: Widespread in New Zealand from Colville Ridge to Pukaki Rise. Circumglobal in temperate oceans of southern hemisphere.

Depth: 160 to 600 m.

Similar species: Yellow boarfish (*Pentaceros decacanthus*) has strong dorsal fin spines and yellow body. Longfinned boarfish (*Zanclistius elevatus*) has very high dorsal fin with black blotch near rear margin, and two irregular brown bands on sides of body. Giant boarfish (*Paristiopterus labiosus*) has dark oblique stripes or many small yellow spots on body.

Biology & ecology: Demersal. Adults often near rises, juveniles near the surface. Uncommon.

Longfin boarfish *Zanclistius elevatus*



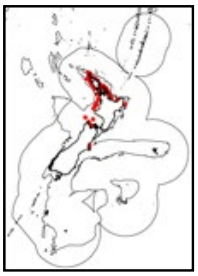
Family: 396. Pentacerotidae (Boarfishes, armorheads)

Maori names:

Other names:

FishNZ reporting code: LFB

FishNZ research/observer code: LFB



Distinguishing features: Very high dorsal fin with black blotch near rear margin. Two irregular oblique brown bands on side of body. Long snout and steep profile of head and nape.

Colour: Body silvery-grey with two irregular oblique brown side of body, another through eye. Dorsal fin has black blotch near rear margin.

Size: To about 42 cm TL.

Length measurement method: Total length

Distribution: North Island, usually north of East Cape in New Zealand. Southern Australia.

Depth: 25 to 500 m.

Similar species: Giant boarfish (*Paristiopterus labiosus*) has dark oblique stripes or small yellowish spots on body. Southern boarfish (*Pentaceros richardsoni*) has iridescent dark blue on upper body, silvery-grey sides and belly. Yellow boarfish (*Pentaceros decacanthus*) has strong dorsal fin spines and yellow body.

Biology & ecology: Demersal, usually near rocky reefs.

Marblefish *Aplodactylus arctidens*

Family: 404. Aplodactylidae (Marblefishes)
Maori names: Kawikawi, kehe, koeae
Other names: Granite trout
FishNZ reporting code: GTR
FishNZ research/observer code: GTR

Distinguishing features: Olive green or brown with numerous small whitish irregular spots, blotches, and lines on head, body and fins. Lips fleshy, upper lip projecting. Mouth small with upper jaw (maxilla) not reaching a vertical at front margin of eye. Teeth of both jaws small, in 3 to 6 rows, outermost largest.

Colour: Olive green or brown with numerous small whitish irregular spots, blotches, and lines on head, body and fins.

Size: To about 70 cm TL.

Length measurement method: Total length

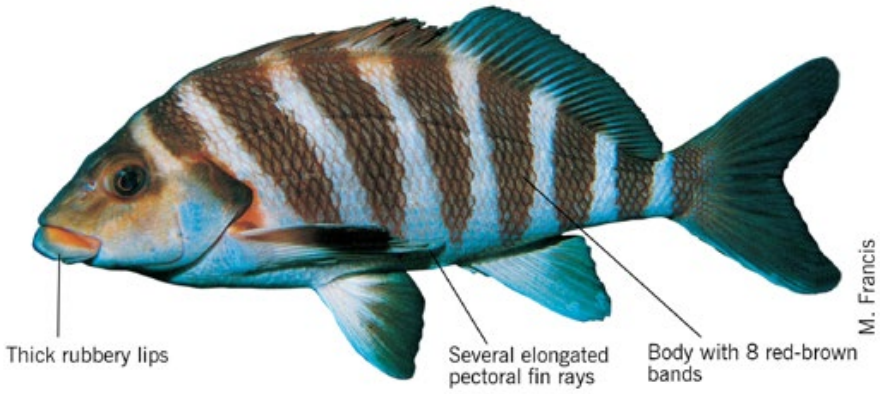
Distribution: Widespread in New Zealand from Three Kings to Snares and also Chatham Islands. Southern Australia (WA, Vic, Tas, SA).

Depth: 1 to about 15 m.

Similar species: Notch-head marblefish (*Aplodactylus etheridgii*) has distinct dip in lateral profile behind head, is covered in small spots, has 2 or 3 large white blotches on side of body, and is confined to northern New Zealand, Great Barrier Island and north. Hiwihiwi (*Chironemus marmoratus*) has dip in lateral profile behind head, mosaic of large light and dark patches on body with tiny white spots on head, body, and fins.

Biology & ecology: Inhabit reefs, caves, and crevices. Solitary and occupy a territory. Feed on red and small brown seaweeds. Spawn in August-September.

Red moki *Cheilodactylus spectabilis*



Family: 405. Cheilodactylidae (Moki, tarakihi)
Maori names: Nanua, manua, maratea
Other names:
FishNZ reporting code: RMO
FishNZ research/observer code: RMO

Distinguishing features: Lips thick and fleshy, pectoral fin with 5 to 6 fleshy, slightly elongated rays, body and tail base with 6 to 8 vertical or oblique, tapered, red-brown bands. Anal fin short-based, with 8 to 9 soft rays.

Colour: Body and tail base with 6 to 8 vertical or oblique, tapered, red-brown bands. Rarely uniformly red-brown with bands indistinct or absent.

Size: 70 cm FL.

Length measurement method: Fork length

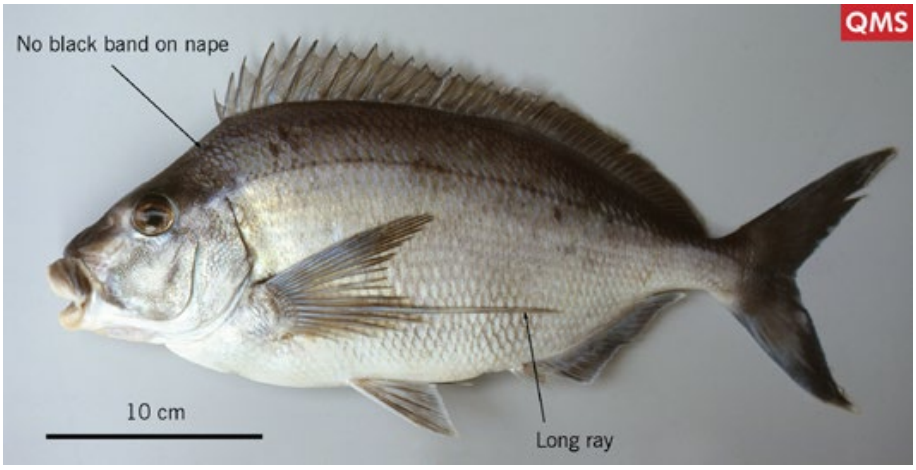
Distribution: Widespread in northern New Zealand from Three Kings Islands to Cook Strait. Rare around the South and Chatham Islands. Southeast Australia.

Depth: A few to 50 m.

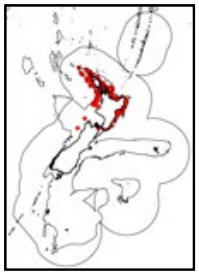
Similar species: Tarakihi (*Nemadactylus macropterus*), king tarakihi (*Nemadactylus* sp. A), and porae *(Nemadactylus douglasii*) have single elongated pectoral fin ray, and different colour pattern. Blue moki (*Latridopsis ciliaris*) is blue-grey and lacks prominent vertical bands. Copper moki (*Latridopsis forsteri*) has a black margin on the tail fin and several thin horizontal coppery stripes on body.

Biology & ecology: Rocky reefs.

Porae *Nemadactylus douglasii*



Family: 405. Cheilodactylidae (Moki, tarakihi)
Maori names: Porae
Other names:
FishNZ reporting code: POR
FishNZ research/observer code: POR



Distinguishing features: Single ray in lower pectoral fin longer and thicker than adjacent rays. No dark saddle mark on nape of neck. Small mouth with thick rubbery lips.

Colour: Silvery, with greenish-blue sometimes with yellowish tinge above, pale silvery below lateral line. Fins may have bluish tinge. Juveniles with dark blotch just below centre of lateral line, fading with growth.

Size: To about 81 cm FL.

Length measurement method: Fork length

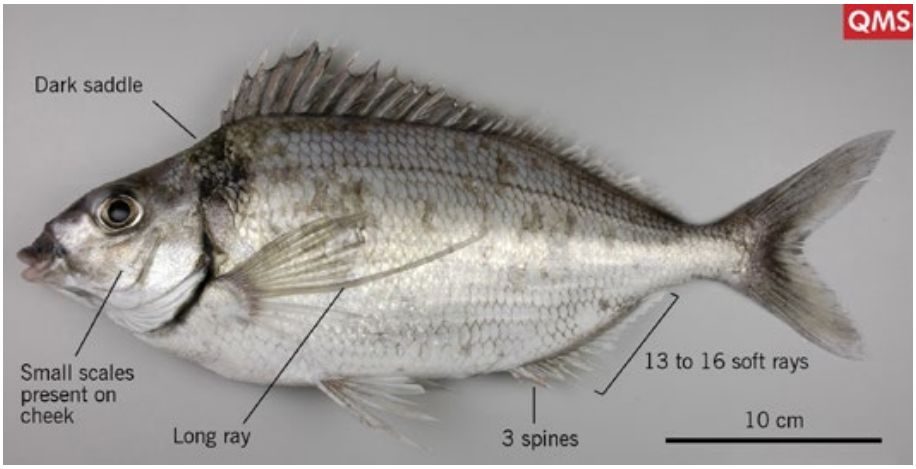
Distribution: Widespread in northern New Zealand from Kermadec Islands to about Cook Strait. Southern Australia.

Depth: About 7 to 107 m.

Similar species: Tarakihi (*Nemadactylus macropterus*) has black saddle on nape of neck. King tarakihi (*Nemadactylus* sp. A) has broad black saddle on nape of neck and dark upper posterior halfof pectoral fin.

Biology & ecology: Coastal, found on reefs and on sandy areas, and are thought to maintain a home-range. Spawn late summer and autumn.

Tarakihi *Nemadactylus macropterus*



Family: 405. Cheilodactylidae (Moki, tarakihi)
Maori names: Tarakihi
Other names:
FishNZ reporting code: TAR
FishNZ research/observer code: NMP

Distinguishing features: Single ray in lower pectoral fin longer and thicker than adjacent rays. Dark saddle mark on nape of neck. Small mouth with thick rubbery lips. Small scales present on cheek. Anal fin with 3 spines and 13 to 16 soft rays.

Colour: Silvery-grey above to silvery-white below. Dark band on nape of neck extends down to near pectoral fin base. Fins pale to dusky with no distinctive markings. Juveniles silvery with dusky bands or blotches on upper body.

Size: To about 70 cm FL.

Length measurement method: Fork length

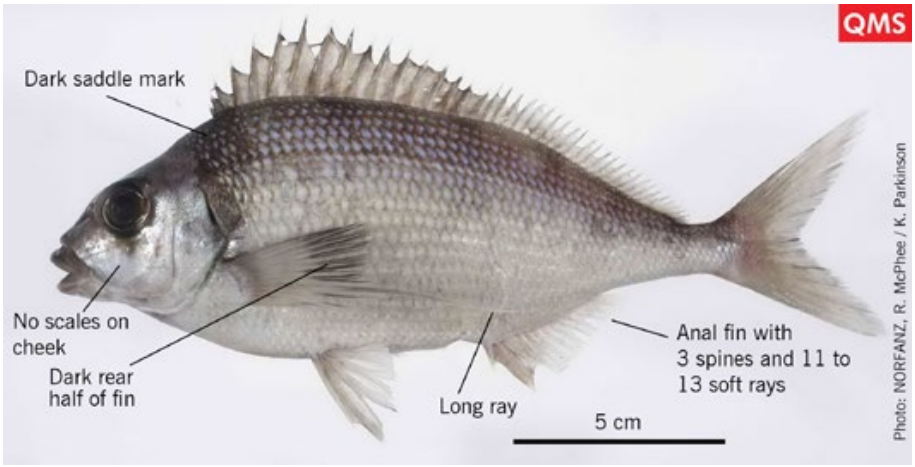
Distribution: Widespread in New Zealand from Three Kings to just south of Snares Islands, shallow parts of Chatham Rise, and Chatham Islands. Southern Australia.

Depth: 5 to 500 m.

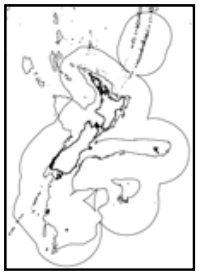
Similar species: King tarakihi (*Nemadactylus* sp A.) has broad black saddle on nape of neck, dark upper posterior half of pectoral fin, and 11 to 13 soft anal fin rays. Porae (*Nemadactylus douglasii*) lacks black saddle on nape of neck.

Biology & ecology: Demersal. Small fish shallower than larger individuals. Spawn at specific localities, e.g., East Cape, northeast coast of South Island, and Fiordland, with some measured migration of individuals of about 500 km. Young have pelagic paper-fish stage with very thin silvery body. Attain ages of about 45 years.

King tarakihi *Nemadactylus* sp. A



Family: 405. Cheilodactylidae (Moki, tarakihi)
Maori names:
Other names:
FishNZ reporting code: TAR
FishNZ research/observer code: KTA



Distinguishing features: Single ray in lower pectoral fin longer and thicker than adjacent rays.
Dark saddle mark on nape of neck. Rear half of upper pectoral fin blackish. Small mouth with thick rubbery lips. No scales on cheek. Anal fin with 3 spines and 11 to 13 soft rays.

Colour: Silvery-grey with black band on nape of neck extending down to near pectoral fin base, rear half of upper pectoral fin blackish.

Size: To about 60 cm FL.

Length measurement method: Fork length

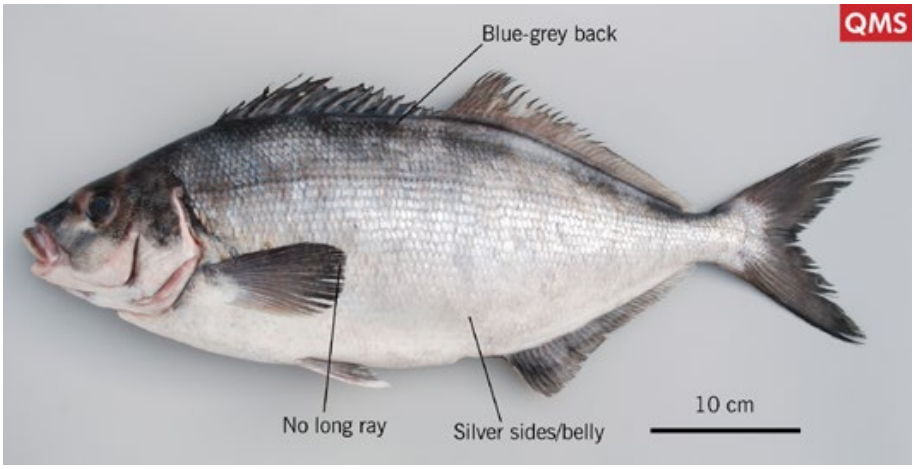
Distribution: Northern New Zealand from Kermadec Islands to off Gisborne. Southeast Australia, Lord Howe and Norfolk Islands, and West Norfolk Ridge.

Depth: About 70 to 340 m.

Similar species: Tarakihi (*Nemadactylus macropterus*) has narrow black saddle on nape of neck, lacks dark upper rear half of pectoral fin, and has 13 to 16 soft anal fin rays. Porae (*Nemadactylus douglasii*) lacks black saddle on nape of neck.

Biology & ecology: Demersal on the continental shelf and possibly upper continental slope.

Moki *Latridopsis ciliaris*



Family: 406. Latridae (Trumpeters)
Maori names: Moki
Other names: Blue moki
FishNZ reporting code: MOK
FishNZ research/observer code: MOK

Distinguishing features: Deep bodied. Blue-grey above and silver-white below without extended pectoral rays.

Colour: Body blue-grey above, silver-white below, fins dark grey. Live images at night showed body with light and dark vertical bands.

Size: To about 90 cm FL.

Length measurement method: Fork length

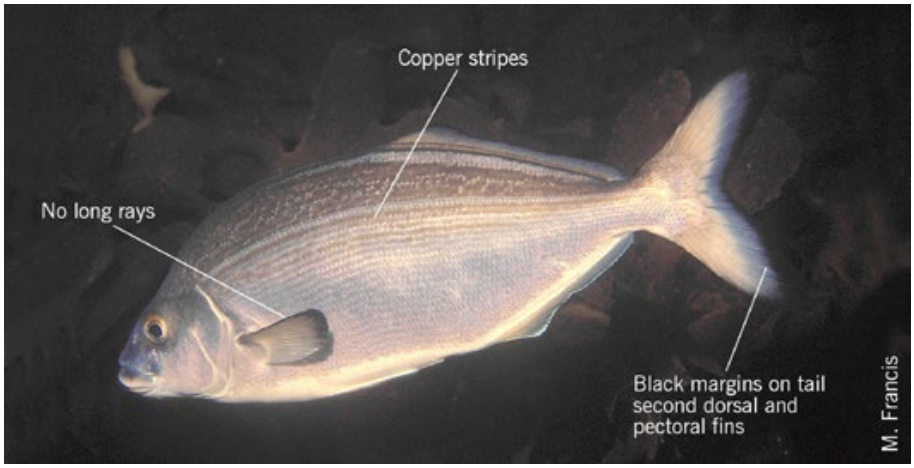
Distribution: Widespread, but more common in central and southern New Zealand including Chatham and Auckland Islands. Known only from New Zealand, but a few vagrants recorded from Tasmania.

Depth: A few to 230 m.

Similar species: Copper moki (*Latridopsis forsteri*) has black margin on tail fin and several thin pinkish-olive longitudinal lines along back. Porae (*Nemadactylus douglasii*) and tarakihi (*N. macropterus*) have broadly similar colour and body form, but have a very elongated pectoral fin ray.

Biology & ecology: Demersal, usually over soft bottom associated with reefs.

Copper moki *Latridopsis forsteri*



Family: 406. Latridae (Trumpeters)
Maori names:
Other names:
FishNZ reporting code: CMO
FishNZ research/observer code: CMO

Distinguishing features: Lips thick and fleshy, no elongated rays in pectoral fin, several narrow longitudinal coppery stripes on upper body, margins of pectoral, soft dorsal, and tail fins black.

Colour: Silvery-white with several narrow longitudinal coppery stripes on upper body, margins of pectoral, soft dorsal, and tail fins black

Size: 65 cm FL.

Length measurement method: Fork length

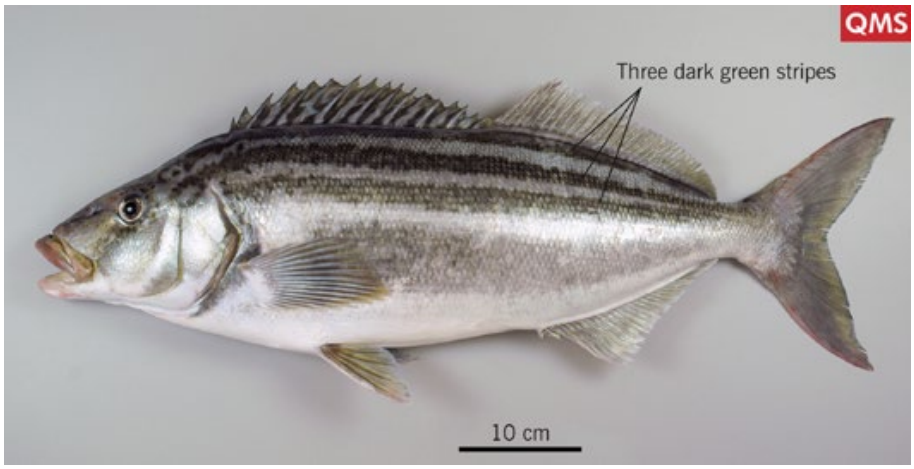
Distribution: Off Northland to Snares Island, with most records from Cook Strait south in New Zealand. Southeast Australia.

Depth: A few to 60 m.

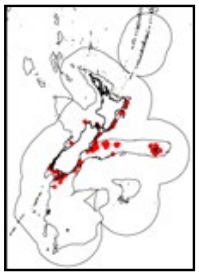
Similar species: Blue moki (*Latridopsis ciliaris*) and red moki (*Cheilodactylus spectabilis*) differ in colour pattern. Tarakihi (*Nemadactylus macropterus*), king tarakihi (*Nemadactylus* sp. A), and porae (*Nemadactylus douglasii*) have single elongatedpectoral fin ray, and different colour pattern.

Biology & ecology: Demersal on continental shelf.

Trumpeter *Latris lineata*



Family: 406. Latridae (Trumpeters)
Maori names: Kohikohi
Other names: Striped trumpeter (Australia)
FishNZ reporting code: TRU
FishNZ research/observer code: TRU



Distinguishing features: Three dark green longitudinal stripes on upper body.

Colour: Body light olive above with three dark green longitudinal stripes above, and silvery with yellowish sheen below.

Size: To about 110 cm FL.

Length measurement method: Fork length

Distribution: Widespread in New Zealand, but rare north of East Cape. Widespread in temperate southern hemisphere including southern Australia and islands in southern Indian and Atlantic Oceans but absent from coastal waters of South Africa.

Depth: A few to 300 m.

Similar species: Telescopefish (*Mendosoma lineatum*) is blue-green above with many fine brown longitudinal stripes and a protrusible mouth.

Biology & ecology: Demersal, usually over rocky reefs.

Telescope fish *Mendosoma lineatum*

Family: 406. Latridae (Trumpeters)
Maori names: Koihi
Other names:
FishNZ reporting code: TEL
FishNZ research/observer code: TEL

Distinguishing features: Head pointed with highly protrusible mouth, body green with many longitudinal gold-brown stripes. Dorsal fin spines 22 to 25, soft rays 22 to 29, and anal fin soft rays 17 to 21.

Colour: Green above with many longitudinal gold-brown stripes, silver below.

Size: 37 cm FL.

Length measurement method: Fork length

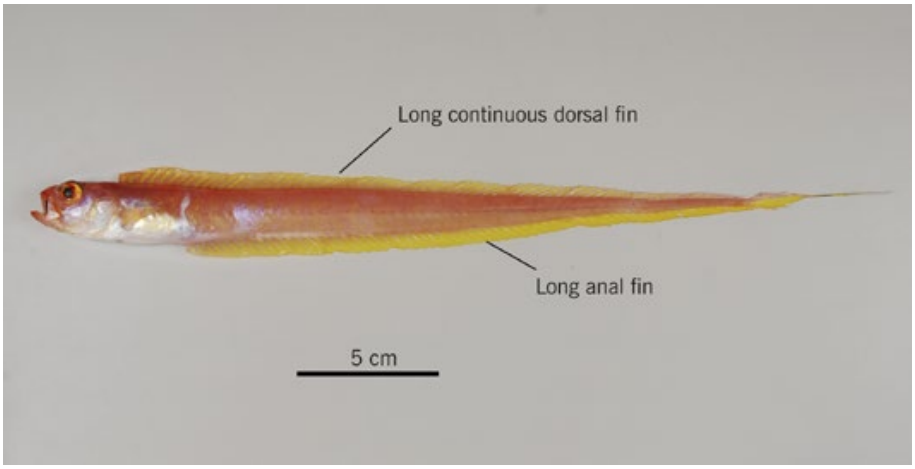
Distribution: Kapiti Island and Castlepoint to Auckland Islands, including Chatham Island in the New Zealand region. Widespread in cool temperate waters of southern hemisphere.

Depth: A few to 30 m.

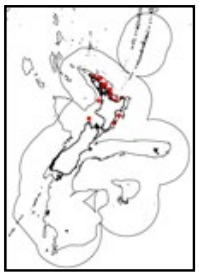
Similar species: Trumpeter (*Latris lineata*) has 3 dark green longitudinal stripes on upper body.

Biology & ecology: Schools near reefs in coastal waters.

Red bandfish *Cepola haastii*



Family: 407. Cepolidae (Bandfishes)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: CEP



Distinguishing features: Eel-like body with long dorsal and anal fins. Top of head, eye, most of body, and fins pale reddish-orange or yellow.

Colour: Top of head, eye, most of body, and fins pale reddish-orange or yellow with some pale silvery bars and blotches on body and a pale longitudinal mid lateral streak. Cheek (preoperculum and operculum) and belly silvery.

Size: To about 60 cm TL.

Length measurement method: Total length

Distribution: Central and northern coastal New Zealand from off Northland to Golden Bay. Known only from New Zealand.

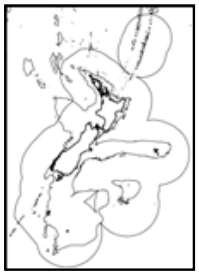
Depth: About 20 to 360 m.

Similar species: Distinctive body shape, long dorsal and anal fins, bright colouration, and coastal habitat.

Biology & ecology: Benthic. Lives in burrows in sandy sediment.

Twospot demoiselle *Chromis dispila*

Family: 411. Pomacentridae (Damselfishes)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: TSD



Distinguishing features: Body blue-grey with 2 prominent white spots on back.

Colour: Body blue-grey with 2 prominent white spots on back. Base of inner pectoral fin black. Small juveniles olive green with 2 white spots.

Size: 18 cm FL.

Length measurement method: Fork length

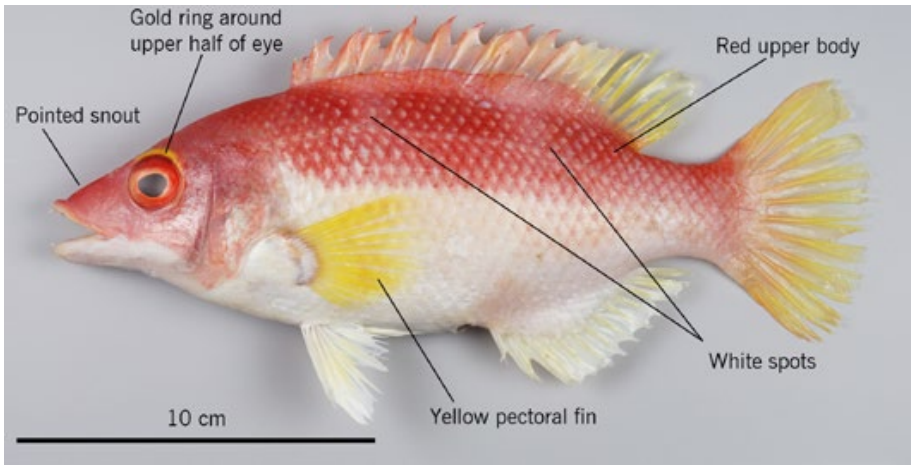
Distribution: Kermadec Islands, northeast coast of North Island south to East Cape. Known only from New Zealand.

Depth: A few to 90 m.

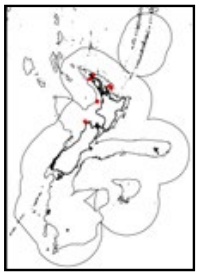
Similar species: Onespot demoiselle (*Chromis hypsilepis*) has one white spot on body at posterior end of dorsal fin, and is yellowish-green.

Biology & ecology: Schools near reefs in coastal waters.

Foxfish *Bodianus flavipinnis*



Family: 412. Labridae (Wrasses)
Maori names: Kotakota
Other names: Yellow foxfish
FishNZ reporting code: FOX
FishNZ research/observer code: FOX



Distinguishing features: Snout pointed, red body with yellow pectoral fins. Rounded caudal fin.

Colour: Bright red with white lower jaw and belly, 2 white spots on back (may be faint), pectoral fin bright yellow, tail and rear of dorsal fin yellowish, gold ring around upper half of eye.

Size: 40 cm FL.

Length measurement method: Fork length

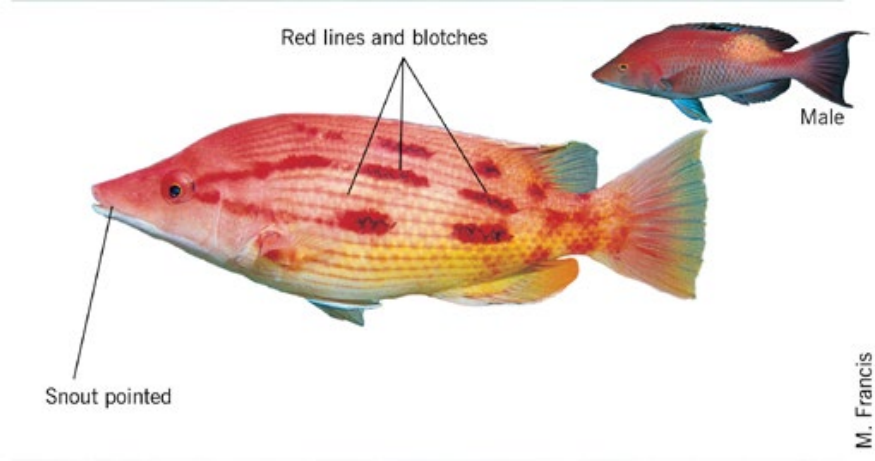
Distribution: Kermadec Islands, Cape Reinga to Hawke Bay on east coast North Island and south to Farewell Spit on west coast of New Zealand. Also east and south coasts of Australia.

Depth: 30 to 150 m, possibly deeper.

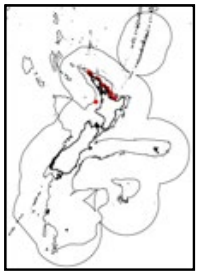
Similar species: Red pigfish (*Bodianus unimaculatus*) female has 3 horizontal rows of dark red dashes on the body, male has red head and body with large pale blotch on back (fresh) and both lack yellow pectoral fins. Gold-stripe wrasse (*B. flavifrons*) has 2 broad gold horizontal stripes on the head.

Biology & ecology: Demersal on rocky reefs. Possibly occurs in more open habitats in deeper water as it is frequently trawled in Australia.

Red pigfish *Bodianus unimaculatus*



M. Francis



Family: 412. Labridae (Wrasses)
Maori names: Paakurakura
Other names:
FishNZ reporting code: RPI
FishNZ research/observer code: RPI

Distinguishing features: Snout pointed, colour patterns of males and females distinctive.

Colour: Females cream-white with pink upper back and snout, 3 horizontal rows of blood-red dashes, 2 originating from eye, interspersed with thin red dotted lines. Males (see image) have red head and body, large cream patch on back, and large blue-rimmed black blotch on first dorsal fin.

Size: To about 50 cm FL.

Length measurement method: Fork length

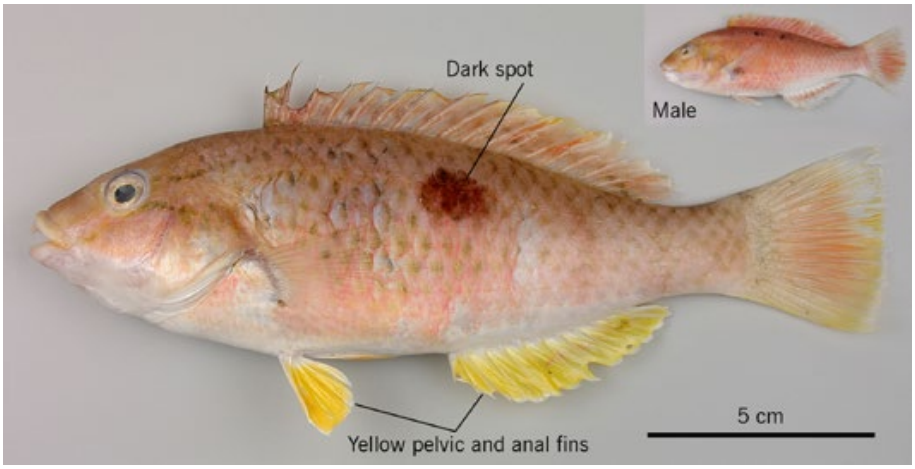
Distribution: Kermadec Islands down to East Cape in New Zealand. South Pacific from eastern Australia to Rapa and Easter Island, Norfolk Island, and north end of Louisville Ridge.

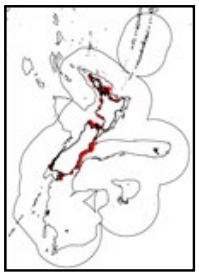
Depth: A few to about 60 m.

Similar species: Foxfish (*Bodianus flavipinnis*) has red upper body with yellow pectoral fin. Gold-stripe wrasse (*B. flavifrons*) has 2broad horizontal gold stripes on head.

Biology & ecology: Demersal on rocky reefs.

Spotty *Notolabrus celidotus*





Family: 412. Labridae (Wrasses)
Maori names: Paketi, pakirikiri
Other names:
FishNZ reporting code: STY
FishNZ research/observer code: STY

Distinguishing features: Females have large brown or black spot on side of body, and pelvic and front part of anal fins are yellowish. Males have diffuse small dark spots on side of body above lateral line, and anal fin has orange or reddish stripe running along fin.

Colour: Body colour of juveniles and females yellowish/brown, with single brown or black spot on side. Males (see image) yellowish/brown with light blue lines on head and more diffuse brown or black spots high on side.

Size: To about 27 cm TL.

Length measurement method: Total length

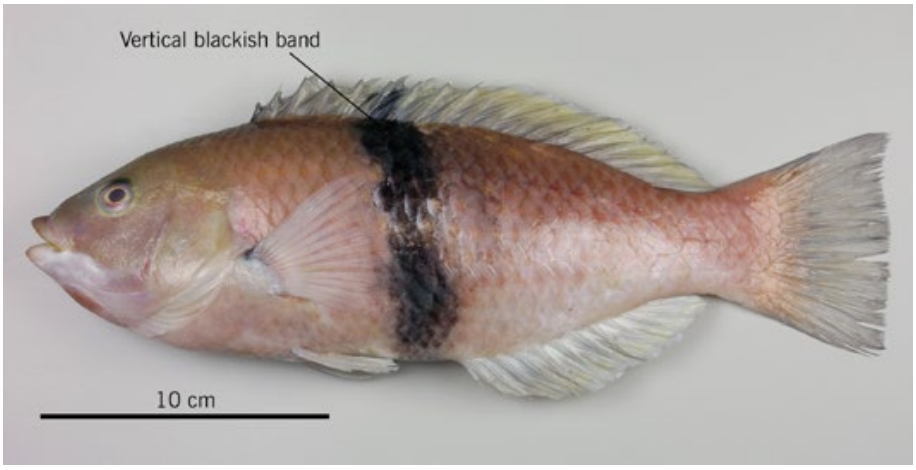
Distribution: Known only from New Zealand coastal waters from Cape Reinga to Stewart Island and Chatham Island.

Depth: A few to about 145 m.

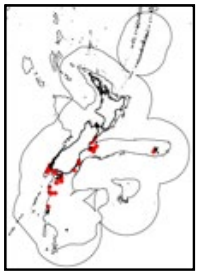
Similar species: Other wrasses lack large dark spot on side of body in females, and diffuse small dark spots on side of body above lateral line in males.

Biology & ecology: Occupy wide range of habitats from estuaries and intertidal rockpools to exposed coast. One of commonest coastal fishes encountered at depths less than about 10 m. Smaller fish are females and these change to males at about 20 cm TL. Spawn July to December. Reach about seven years of age.

Girdled wrasse *Notolabrus cinctus*



Family: 412. Labridae (Wrasses)
Maori names:
Other names:
FishNZ reporting code: GPF
FishNZ research/observer code: GPF



Distinguishing features: Adults with narrow vertical blackish band in middle of body from dorsal fin to belly.

Colour: Adults with narrow vertical blackish band in middle of body from dorsal fin to belly. Rest of upper body and head pale brown, paler below. Whitish lower jaw, throat and pectoral fin base. Juveniles with narrow vertical pale band in middle of body.

Size: To about 36 cm TL.

Length measurement method: Total length

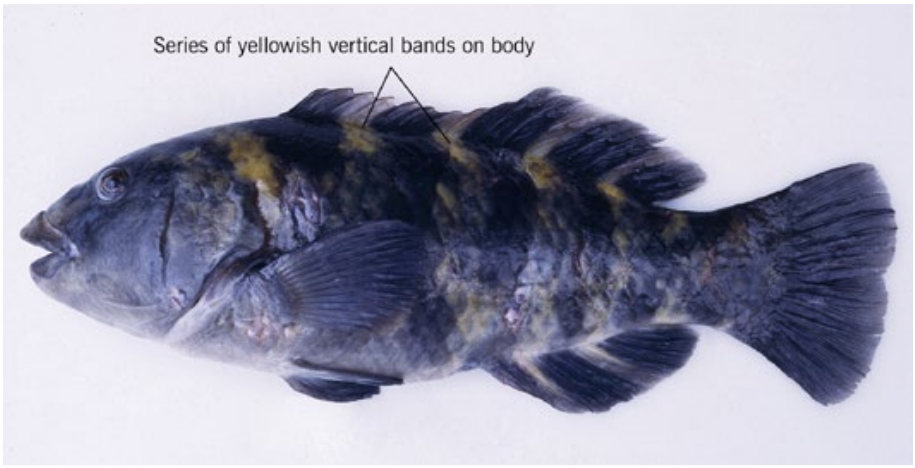
Distribution: Known only from coastal New Zealand from Hawke Bay to Auckland and Chatham Islands but most common in the south.

Depth: A few to 210 m.

Similar species: Other wrasses lack narrow dark vertical band in middle of body in adults.

Biology & ecology: Reef dweller. Spawn in summer and start life as female and change sex to male like other wrasses, i.e., larger individuals are likely to be males. Feed during day on small invertebrates.

Banded wrasse *Notolabrus fucicola*



Family: 412. Labridae (Wrasses)
Maori names:
Other names:
FishNZ reporting code: BPF
FishNZ research/observer code: BPF

Distinguishing features: Four pale yellowish or cream bands on back below dorsal fin, extending up onto dorsal fin. Fifth pale band on caudal peduncle. Anal fin with two pale yellowish or cream bands. Yellowish or cream blotch on nape above top of operculum.

Colour: Adults greenish or greyish-brown with 4 pale yellowish or cream bands on back extending up onto dorsal fin. Fifth pale band on caudal peduncle. Yellowish or cream band on nape above top of operculum. Juveniles yellowish-green or brown with series of 6 yellowish blotches on back.

Size: To about 50 cm FL.

Length measurement method: Fork length

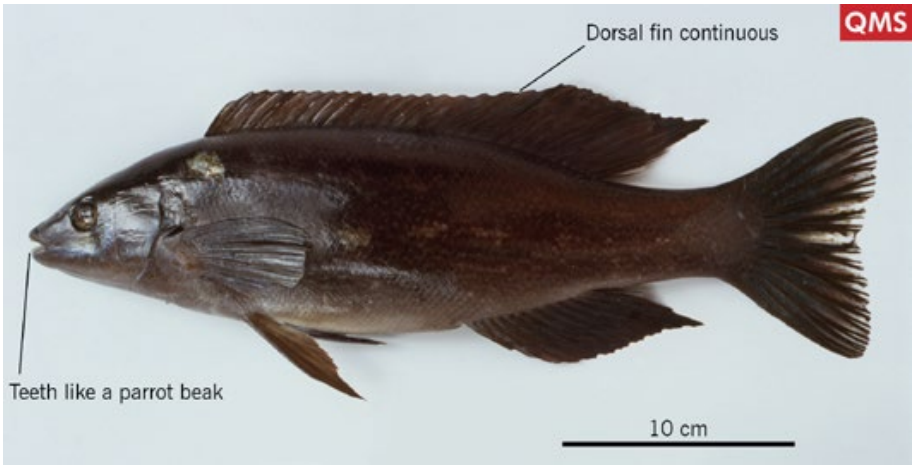
Distribution: Widespread in coastal New Zealand from Three Kings to Snares Islands and Chatham Island. Southeast Australia.

Depth: A few to 90 m.

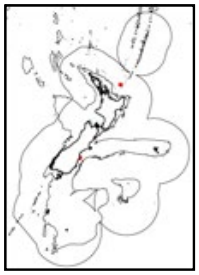
Similar species: Other wrasses lack series of pale bands on back, dorsal, and anal fins.

Biology & ecology: Reef dwellers and most abundant down to about 10 m, although large males occur to about 50 m. Sex change from female to male may occur at any age. Some become males before sexually maturing as females, while others remain as females. Feed during day on small fishes and invertebrates.

Butterfish *Odax pullus*



Family: 412. Labridae (Wrasses)
Maori names: Koaea, marari, tarao
Other names:
FishNZ reporting code: BUT
FishNZ research/observer code: BUT



Distinguishing features: Jaw teeth parrot-like. Dorsal fin continuous. Long trailing edges of dorsal and anal fins. Scales small with 65 to 84 along lateral line plus 3 scales on caudal fin base.

Colour: Adult females brown, olive-green or dark green above and paler below with series of silver blotches running along body. Adult males dark olive-green to blue-black above, paler below. Juveniles have golden-yellow body and series of silver blotches running along body.

Size: To about 55 cm TL.

Length measurement method: Total length

Distribution: Known only from coastal New Zealand. Widespread from North Cape to Snares Islands, plus Chatham, Antipodes, and Bounty Islands.

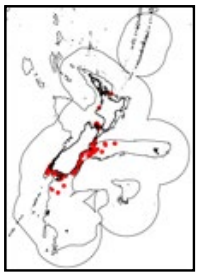
Depth: A few to 40 m.

Similar species: Adults of very rare blue-finned butterfish (*Odax cyanoallix*), known only from northeast of North Island and Three Kings Islands, have blue head stripes and blue fin margins, 6 pale vertical bands along body, and 54 to 58 lateral line scales plus 2 scales on caudal fin base.

Biology & ecology: Shallow, rocky, seaweed covered reefs and are rare trawl catch. Adults eat brown algae and salps. Spawn July to March and may live to about 15 years.

Scarlet wrasse *Pseudolabrus miles*

Family: 412. Labridae (Wrasses)
Maori names:
Other names: Red soldierfish
FishNZ reporting code: SPF
FishNZ research/observer code: SPF



Distinguishing features: Reddish-brown to black vertical band on base of caudal fin. Scarlet head with white lower jaw and throat.

Colour: Dark vertical band on caudal fin base, scarlet head and white lower jaw and throat. Adult males have scarlet margin on most scales. Females are scarlet above with scarlet and yellow horizontal lines below. Juveniles are pale pink-orange above with faint horizontal lines, and white below.

Size: To about 35 cm FL.

Length measurement method: Fork length

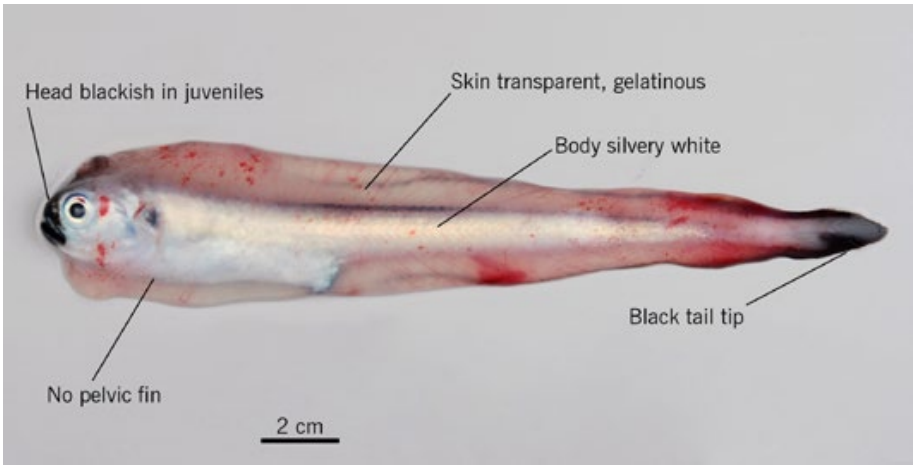
Distribution: Known only from coastal New Zealand from Three Kings to Snares and also Chatham Island.

Depth: A few to 240 m.

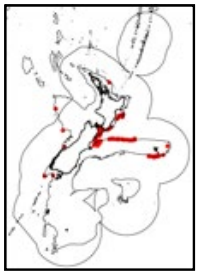
Similar species: Other wrasses lack dark vertical band on base of caudal fin.

Biology & ecology: Reef dweller. Spawn in spring-early summer and start life as females and change sex to males like other wrasses, i.e., larger individuals are likely to be males. Feed during day on small invertebrates.

Limp eelpout *Melanostigma gelatinosum*



Family: 416. Zoarcidae (Eelpouts)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: EPO



Distinguishing features: Skin thin, transparent, and gelatinous. No pelvic fin or scales. Anterior and top of head blackish in juveniles and dusky in adults. Tip of tail and posterior parts of dorsal and anal fins blackish.

Colour: Anterior and top of head blackish in juveniles and dusky in adults. Tip of tail and posterior parts of dorsal and anal fins blackish. Most of skin colourless. Most of head and body silvery white or yellowish.

Size: To about 29 cm TL.

Length measurement method: Total length

Distribution: West Norfolk Ridge to southwest Chatham Rise in New Zealand. Widespread in temperate to polar southern hemisphere south of 30 S.

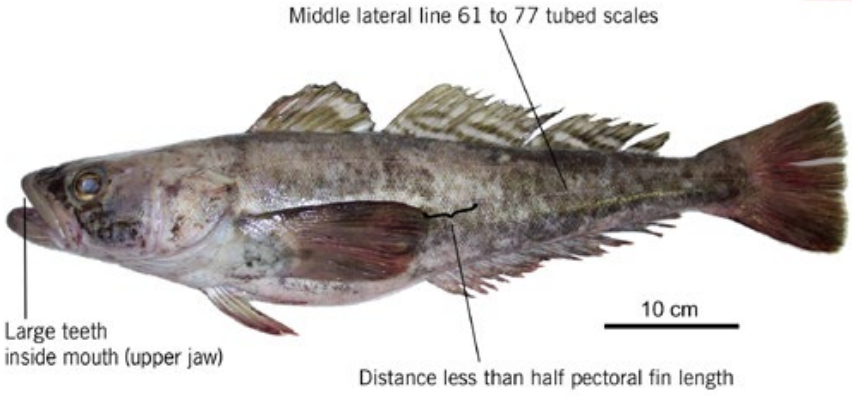
Depth: About 100 to 1400 m.

Similar species: *Melanostigma vitiazi* lacks a black tipped tail and adults (to 17 cm TL) have chocolate brown body with black snout, lips, and chin.

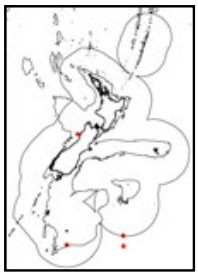
Biology & ecology: Poorly known. Midwater. Numerous juveniles were captured during midwater trawling at depths less than about 500 m in Cook Strait.

Patagonian toothfish *Dissostichus eleginoides*

QMS



Family: 427. Notothenidae (Ice cods, cod icefishes)
Maori names:
Other names:
FishNZ reporting code: PTO
FishNZ research/observer code: PTO



Distinguishing features: Middle lateral line with 61 to 77 tubed scales. Distance from rear edge of pectoral fin to start of middle lateral line less than about half length of pectoral fin. A few enlarged canine-like teeth near middle of upper jaw.

Colour: Large individuals are brownish-grey on upper surface of body with darker blotches, and pale greyish on lower surface. Fins dark or dusky. Smaller individuals are paler with blotchy dark body marking and diagonal dark stripes on dorsal fins, but other fins are dusky.

Size: To about 215 cm TL.

Length measurement method: Total length

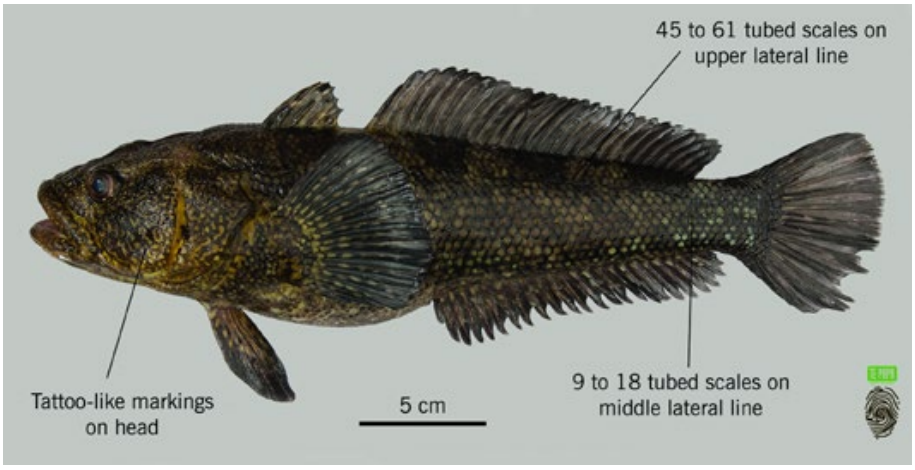
Distribution: Most records from south of 50 S in New Zealand, with 1 record from Chatham Rise. Widespread between about 40 and 60 S in the Southern Ocean. Sometimes extending south to about 72 S in the Ross Sea region.

Depth: New Zealand records were about 400 to 800 m, but elsewhere down to about 2000 m.

Similar species: Antarctic toothfish (*Dissostichus mawsoni*, **ATO**) has shorter middle lateral line with 35 to 48 tubed scales, teeth near middle of upper jaw not enlarged, known only from Antarctic south of about 60 S. Other cod icefishes (nototheniids) have shorter middle lateral lines with fewer than about 48 tubed scales, and lack large teeth in upper jaw.

Biology & ecology: Demersal. Reach age of at least 50 years.

Maori chief *Notothenia angustata*



Family: 427. Notothenidae (Ice cods, cod icefishes)

Maori names:

Other names:

FishNZ reporting code: NOT

FishNZ research/observer code: MCH

Distinguishing features: Large fish have heavy ridges above eyes. Scales large with 49 to 60 in a longitudinal series from upper end of gill opening to caudal fin. Long upper lateral line with 45 to 61 tubed scales. Short middle lateral line with 9 to 18 tubed scales running forward from caudal peduncle. Small teeth in jaws. Two dorsal fins, first short-based.

Colour: Dark olive green to black, covered with pale marbling giving a tattoed appearance, base of pectoral fins yellow, belly cream or yellow.

Size: To about 50 cm TL.

Length measurement method: Total length

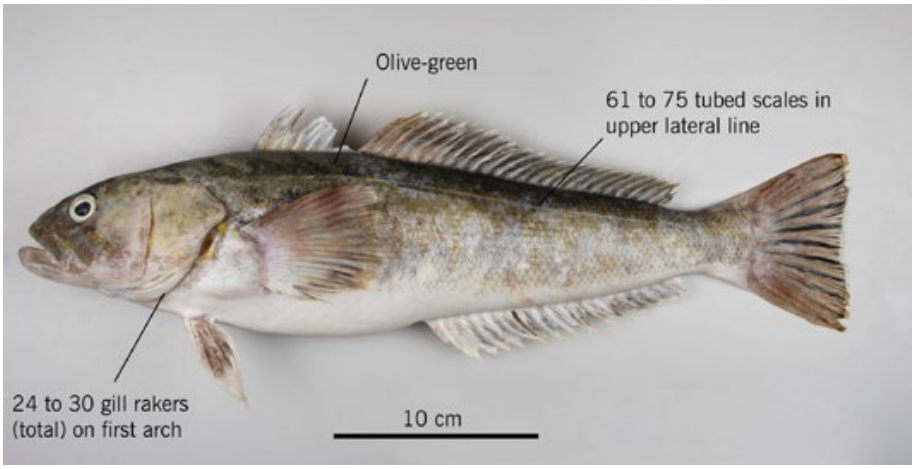
Distribution: Cook Strait to Campbell Island, including Chatham Island in New Zealand. Subantarctic Chile and Argentina.

Depth: A few to 100 m.

Similar species: Black cod (*Paranotothenia magellanica*) lacks eyebrow ridges and has 47 to 64 scales from the upper end of gill opening to caudal fin, upper lateral line 36 to 46, and middle lateral line 5 to 14 tubed scales. Smallscaled cod (*Notothenia microlepidota*) has smaller scales, 84 to 98 from the upper end of gill opening to caudal fin, upper lateral line 61 to 75, and middle lateral line 24 to 37 tubed scales. Patagonian toothfish (*Dissostichus eleginoides*) has 61 to 77 tubed scales in middle lateral line and prominent canine-like teeth on roof of mouth.

Biology & ecology: Demersal on reefs.

Smallscale cod *Notothenia microlepidota*



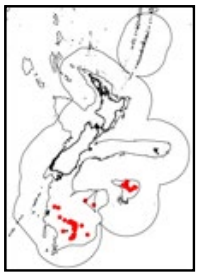
Family: 427. Notothenidae (Ice cods, cod icefishes)

Maori names:

Other names:

FishNZ reporting code: SCD

FishNZ research/observer code: SCD



Distinguishing features: Long upper lateral line with 61 to 75 tubed scales from upper end of gill opening to near rear end of dorsal fin. Short middle lateral line with 24 to 37 tubed scales running forward from caudal peduncle. Scales small with 84 to 98 in longitudinal series from upper end of gill opening to caudal fin. Total gill rakers on first arch 24 to 30. Small teeth in jaws. Two dorsal fins, first short-based.

Colour: Upper head and body variable from olive-greenish to dark purple-brown, paler below. Throat, gill membranes, and opercles may be yellowish. Dorsal, caudal, and pectoral fins variable from reddish-brown to dark brownish.

Size: To about 65 cm TL.

Length measurement method: Total length

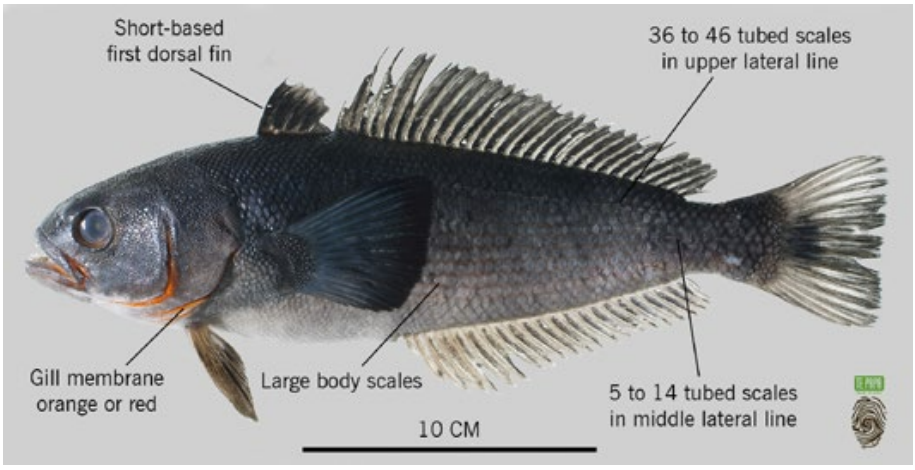
Distribution: Southern New Zealand from Otago to Campbell Plateau, and Bounty Plateau. Macquarie Island.

Depth: A few to 1000 m.

Similar species: Black cod (*Paranotothenia magellanica*) has larger scales, 47 to 64 from upper end of gill opening to caudal fin. Upper 36 to 46 and middle lateral line 5 to 14 tubed scales. Maori chief (*Notothenia angustata*) has larger scales, 49 to 60 from upper end of gill opening to caudal fin. Upper 45 to 61, and middle lateral line 9 to 18 tubed scales. Patagonian toothfish (*Dissostichus eleginoides*) has 61 to77 tubed scales in middle lateral line and prominent canine-like teeth on roof of mouth.

Biology & ecology: Demersal. Captured in only a few metres at Campbell Island, but also caught offshore by trawling to about 1000 m.

Black cod *Paranotothenia magellanica*



Family: 427. Nototheniidae (Ice cods, cod icefishes)
Maori names:
Other names:
FishNZ reporting code: BCD
FishNZ research/observer code: BCD

Distinguishing features: Scales large with 47 to 64 tubed scales from upper end of gill opening to near rear end of dorsal fin. Upper lateral line 36 to 46 and middle lateral line 5 to 14 tubed scales. Two dorsal fins, first short-based.

Colour: Back dark blue, grey-green, brown or black, belly cream, gold-yellow or reddish, gill membrane orange or red.

Size: To about 40 cm TL.

Length measurement method: Total length

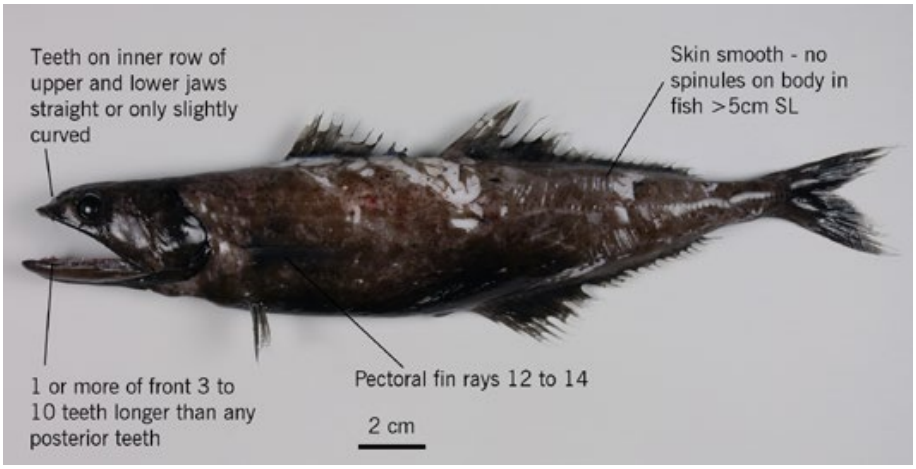
Distribution: South Island from Farewell Spit and Kaikoura south, and Subantarctic islands in New Zealand. Circumpolar in the Subantarctic.

Depth: A few to 440 m.

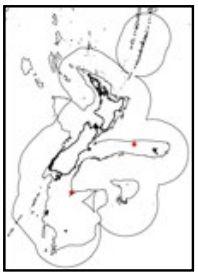
Similar species: Smallscaled cod (*Notothenia microlepidota*) has smaller scales, 84 to 98 from the upper end of gill opening to caudal fin. Upper 61 to 75 and middle lateral line 24 to 37 tubed scales. Maori chief (*Notothenia angustata*) has large eyebrow ridges and 49 to 60 scales from upper end of gill opening to caudal fin. Upper 45 to 61, and middle lateral line 9 to 18 tubed scales. Patagonian toothfish (*Dissostichus eleginoides*) has 61 to 77 tubed scales in middle lateral line and prominent canine-like teeth on roof of mouth.

Biology & ecology: Demersal on reefs. Juveniles pelagic and may be found in open waters a long distance from land. **Poorly known, please retain and send to Te Papa.**

Black swallower *Chiasmodon microcephalus*



Family: 432. Chiasmodontidae (Swallowers)
Maori names:
Other names: Southern swallower
FishNZ reporting code: UNI
FishNZ research/observer code: CML



Distinguishing features: Two rows of teeth in upper and lower jaws, outer row of smaller teeth, and inner row of larger teeth. One or more large fang-like teeth at anterior of upper (canines) and lower jaws. Teeth on inner row of upper and lower jaws straight or only slightly curved. 12 to 14 pectoral fin rays. Scales absent except along lateral line. No spinules on body (skin smooth) in fish greater than about 5 cm SL. Photophores absent.

Colour: Head, body, and fins dark brownish or blackish.

Size: To about 23 cm SL.

Length measurement method: Standard length

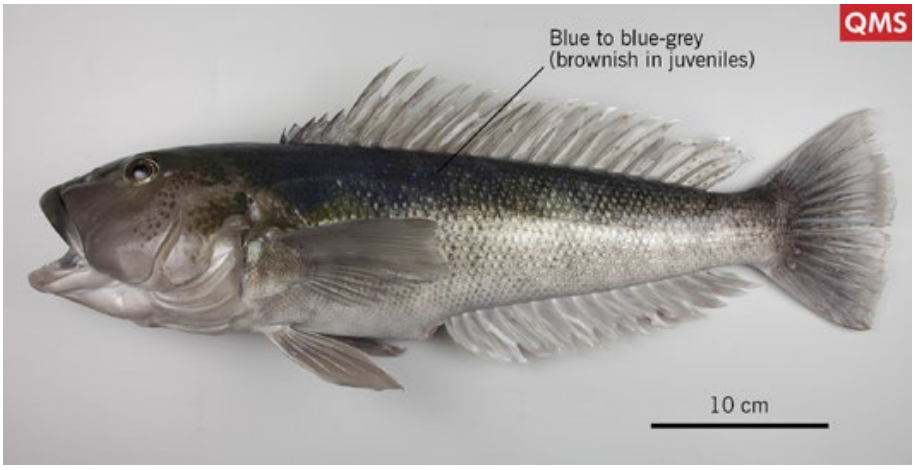
Distribution: Widespread in New Zealand from southern Lord Howe Ridge to Campbell Plateau including Chatham Rise. Widespread in southern hemisphere between 32 and 54 S.

Depth: Midwater at 150 to 2500 m.

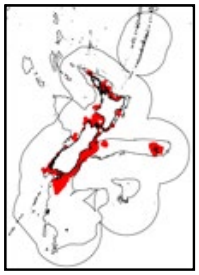
Similar species: Paxton's swallower (*Pseudoscopelus paxtoni*) has 3 rows in upper and 2 rows of needle-like teeth in lower jaws and lacks large fang-like or canine teeth at anterior of jaws, and has photophores formed as fine granular lines on ventral body and sides of head.

Biology & ecology: Predators of fishes and squids. Stretchable stomach and body wall and able to ingest prey larger than themselves.

Blue cod *Parapercis colias*



Family: 435. Pinguipedidae (Sandperches)
Maori names: Raawaru, pakirikiri, patutuki
Other names:
FishNZ reporting code: BCO
FishNZ research/observer code: BCO



Distinguishing features: Blue-grey above and whitish below in large individuals. Smaller individuals with broken narrow whitish line running along upper body. 20 to 21 dorsal fin soft rays and 16 to 17 anal fin soft rays. 10 to 12 rows of scales between dorsal fin base and lateral line.

Colour: Large adults blue-grey above often with greenish tinge and whitish below. Smaller fish have broken narrow whitish line running along upper body. Very small individuals have 2 longitudinal dark brown lines on upper body, separated by narrow cream line.

Size: To about 60 cm TL.

Length measurement method: Total length

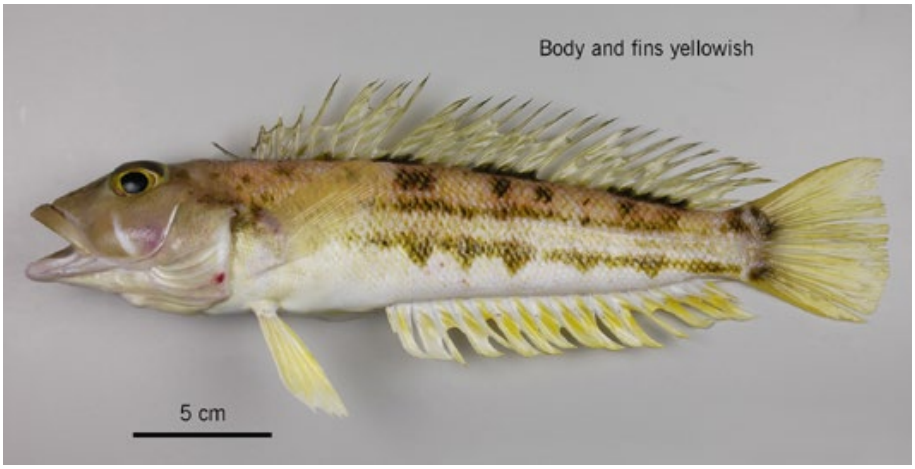
Distribution: Known only from coastal New Zealand. Widespread from Three Kings Islands to Snares Islands shelf, including Mernoo Bank and Chatham Island.

Depth: A few to 200 m.

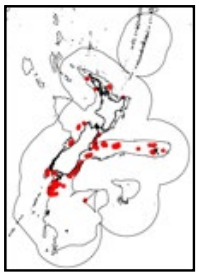
Similar species: Yellow cod (*Parapercis gilliesi*) has yellowish-tan body with 2 longitudinal rows of dark brown blotches, yellow fins, 21 dorsal fin soft rays, and 17 anal fin soft rays.

Biology & ecology: Demersal, usually found in sandy areas adjacent to reefs. Spawn late winter to early summer. May live to about 32 years.

Yellow cod *Parapercis gilliesii*



Family: 435. Pinguipedidae (Sandperches)
Maori names:
Other names: Yellow weever
FishNZ reporting code: YCO
FishNZ research/observer code: YCO



Distinguishing features: Yellowish-tan body with 2 longitudinal rows of dark brown blotches, and yellow fins. Usually 5 spines and 21 soft rays in dorsal fin, and 17 anal fin soft rays. 6 to 7 rows of scales between dorsal fin base and lateral line.

Colour: Yellowish-tan upper body and side with 2 longitudinal rows of dark brown blotches, whitish below, and yellow fins.

Size: To about 35 cm TL.

Length measurement method: Total length

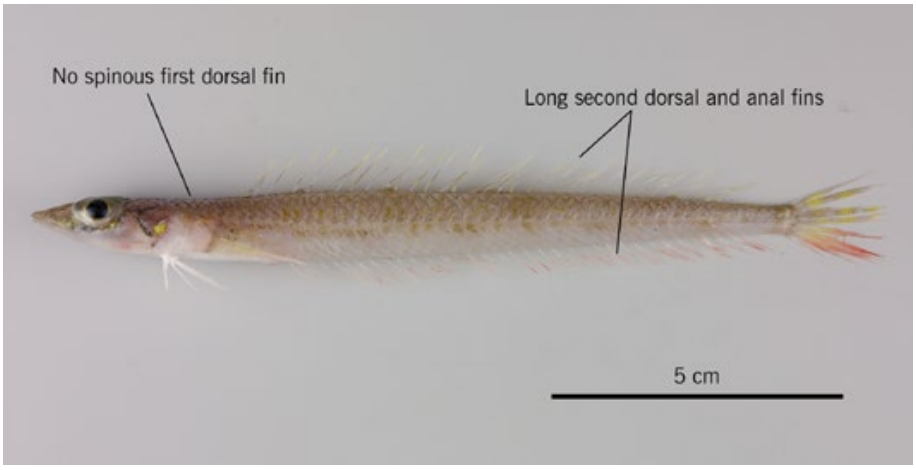
Distribution: Known only from New Zealand. Widespread from Norfolk Ridge and Three Kings to Snares Island including Chatham Rise.

Depth: 50 to 500 m.

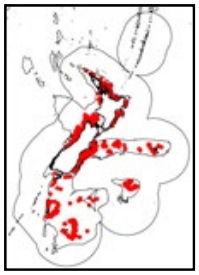
Similar species: Blue cod (*Parapercis colias*) has bluish-grey or pale fins, 20 to 21 dorsal fin soft rays and 16 to 17 anal fin soft rays. Rare redbanded weever (*Parapercis binivirgata*) from northeast North Island has 13 dark red-brown vertical bands arranged in pairs along body, yellow fins, 23 to 24 dorsal fin soft rays and 19 to 20 anal fin soft rays.

Biology & ecology: Demersal. On sandy areas adjacent to reefs.

Opalfishes *Hemerocoetes* spp.



Family: 439. Percophidae (Opalfishes)
Maori names:
Other names:
FishNZ reporting code: OPA
FishNZ research/observer code: OPA



Distinguishing features: Long slender oval body with flattened head and large eyes. One long-based soft dorsal (spines absent) and anal fins, with separate caudal fin. Some species with small, iridescent, blue/green, yellow/orange and red markings on fins, head, and body.

Colour: Body and head pale brownish overall, paler underneath. Some species with small, iridescent, blue/green, yellow/orange and red markings on fins, head, and body, hence name opalfishes.

Size: To about 23 cm FL depending on species.

Length measurement method: Fork length

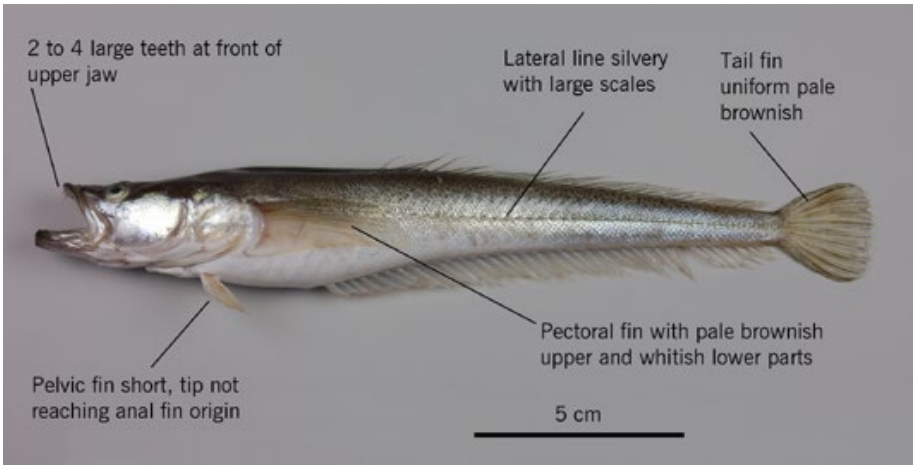
Distribution: 5 species of *Hemerocoetes* (*H. artus, H. macrophthalmus, H. monopterygius, H. morelandi, and H. pauciradiatus)* are known only from New Zealand. Each species has a discrete geographical and depth distribution. Most common species, *H. monopterygius*, from North Cape to Snares Island shelf and Chatham Island at a few to about 120 m.

Depth: A few to about 550 m depending on species.

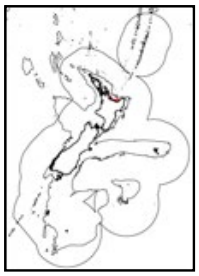
Similar species: Very small (to about 8 cm TL) and rarely seen sandburrowers (Family Creediidae) have knob on inside tip of lower jaw, small cirri (filaments) on lower jaw, and lateral line that descends to near ventral body posteriorly.

Biology & ecology: Demersal. Usually encountered as prey items of other fishes or marine mammals or caught bottom trawling with fine mesh.

Slender stargazer *Crapatalus angusticeps*



Family: 440. Leptoscopidae (Southern sandfishes, stargazers)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: SLZ



Distinguishing features: Pelvic fin short, tip does not reach back to anal fin origin. 2 to 4 large teeth near front of upper jaw. Tail fin uniformly pigmented, pale brownish and semi-translucent. Pectoral fin with pale brownish upper and whitish lower parts. Sides of body including lateral line silvery. Obvious scales on side of head and body including lateral line. Eyes on top of head, long dorsal fin without spines.

Colour: Upper body and head olive-greyish with many small dark spots closely spaced on head, underside whitish. Side of body and head silvery. Tail fin uniformly pale brownish. Pectoral fin with pale brownish upper and whitish lower parts. Dorsal fin pale brownish, pelvic fin whitish, anal fin colourless.

Size: To about 40 cm TL.

Length measurement method: Total length

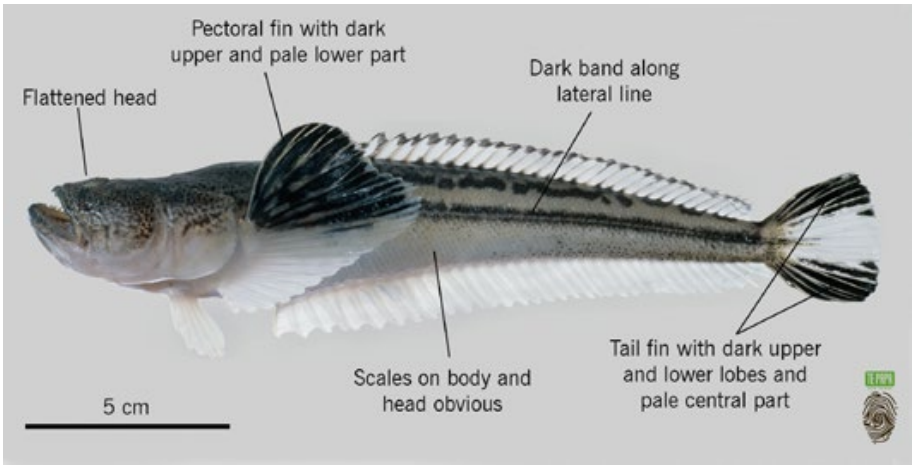
Distribution: Widespread but uncommon in New Zealand from Bay of Plenty to Otago. Known only from New Zealand.

Depth: About 1 to 60 m.

Similar species: Sand stargazer (*Crapatalus novaezelandiae*) has long pelvic fin with tip reaching past origin of anal fin, and uniformly sized teeth in upper jaw. Estuary stargazer (*Leptoscopus macropygus*) has tail fin with dark upper and lower lobes and central pale area, pectoral fin with dark upper and pale lower parts, and bold dark band along lateral line. Other stargazers (Uranoscopidae) have very large spines behind head above pectoral fin base, anal fin origin behind dorsal fin origin.

Biology & ecology: Poorly known. Probably confined to shallow coastal water, especially near river mouths. Benthic.

Estuary stargazer *Leptoscopus macropygus*



Family: 440. Leptoscopidae (Southern sandfishes, stargazers)

Maori names:

Other names:

FishNZ reporting code: ESZ

FishNZ research/observer code: ESZ

Distinguishing features: Flattened upper head with protruding eyes. Tail fin has dark upper and lower lobes with central pale area. Pectoral fin with dark upper and pale lower parts. Bold dark band along lateral line. Scales on side of head obvious.

Colour: Dark olive-grey spots on upper head and blotches and lines on upper body down to near lateral line. Bold dark band along lateral line. Tail fin has dark upper and lower lobes with pale central area. Pectoral fin with dark upper and pale lower parts.

Size: To about 50 cm TL.

Length measurement method: Total length

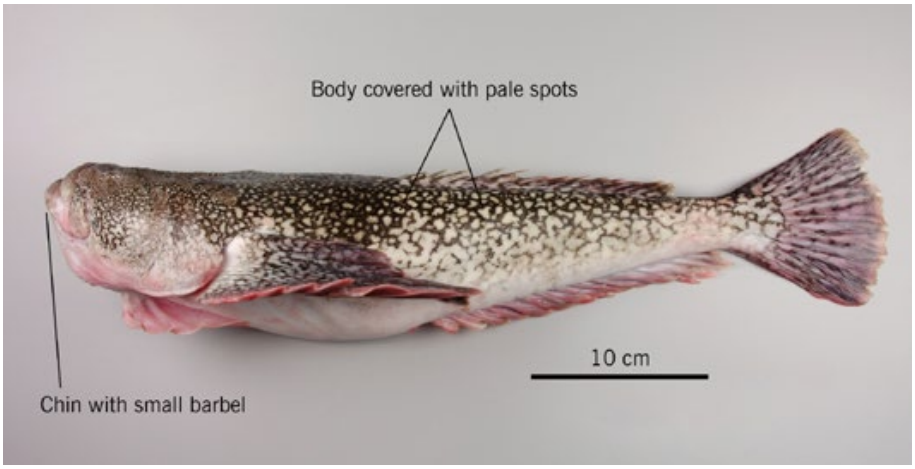
Distribution: Widespread in New Zealand coastal waters with most records north of Cook Strait. Known only from New Zealand.

Depth: 1 to about 60 m.

Similar species: Slender stargazer (*Crapatalus angusticeps*) and sand stargazer (*C. novaezelandiae*) have tail and pectoral fins uniformly pigmented pale brownish, and silvery lateral line. Other stargazers (Uranoscopidae) have very large spines behind head, and most lack obvious scales.

Biology & ecology: Coastal, river estuaries, and lowland reaches of gently flowing rivers. Freshwater phase may be short, younger fish. Predator of small fishes, crabs, marine worms.

Spotted stargazer *Genyagnus monopterygius*



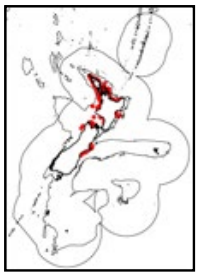
Family: 443. Uranoscopidae (Armourhead stargazers)

Maori names: Kourepoua

Other names:

FishNZ reporting code: SPZ

FishNZ research/observer code: SPZ



Distinguishing features: Upper head and body with cream spots on brownish-green background. Small fleshy barbel on chin. 16 to 20 dorsal fin rays.

Colour: Upper head and body with cream spots on brownish-green background. Slightly darker saddle on upper body between origin of dorsal fin and pectoral fin base. Lower body and head whitish. Pectoral, dorsal and caudal fins with cream spots. Anal and pelvic fins whitish.

Size: To about 50 cm TL.

Length measurement method: Total length

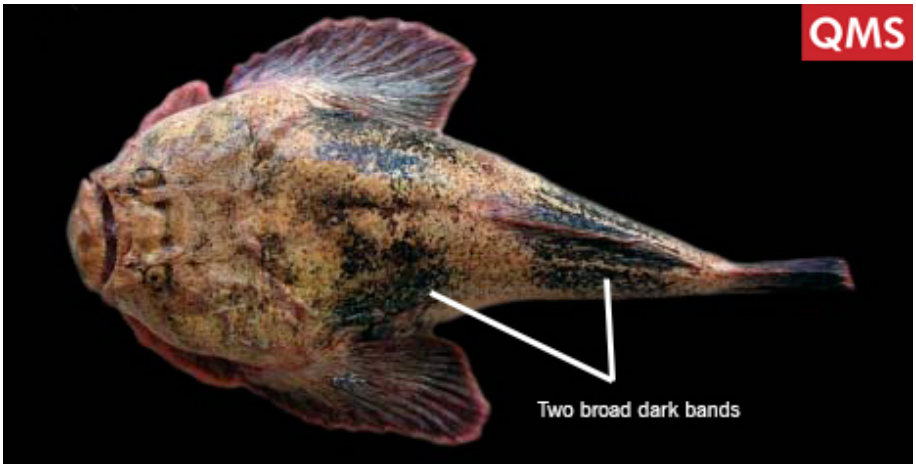
Distribution: Widespread in New Zealand from off Northland to Fiordland. Known only from New Zealand.

Depth: A few to 200 m.

Similar species: Other stargazers lack cream spots on upper head and body and brownish-green background, and small fleshy barbel on chin.

Biology & ecology: Demersal/benthic in near-shore waters. Predatory. Spawn in spring or early summer.

Banded stargazer *Kathetostoma binigrasella*



Family: 443. Uranoscopidae (Armourhead stargazers)
Maori names:
Other names:
FishNZ reporting code: STA
FishNZ research/observer code: BGZ

Distinguishing features: Body with 2 broad dark saddle-like bands when viewed from above. Head wide, about or less than three times into TL. 15 to 17 dorsal, and 14 to 16 anal fin rays.

Colour: Body with 2 broad dark saddle-like bands, first behind rear of operculum to about rear tip of pectoral fin, second behind origin of dorsal fin to about rear base of dorsal fin. Rest of upper head and body speckled greenish or brownish, paler below. Dorsal, caudal, and pectoral fins with whitish margins.

Size: To about 79 cm TL.

Length measurement method: Total length

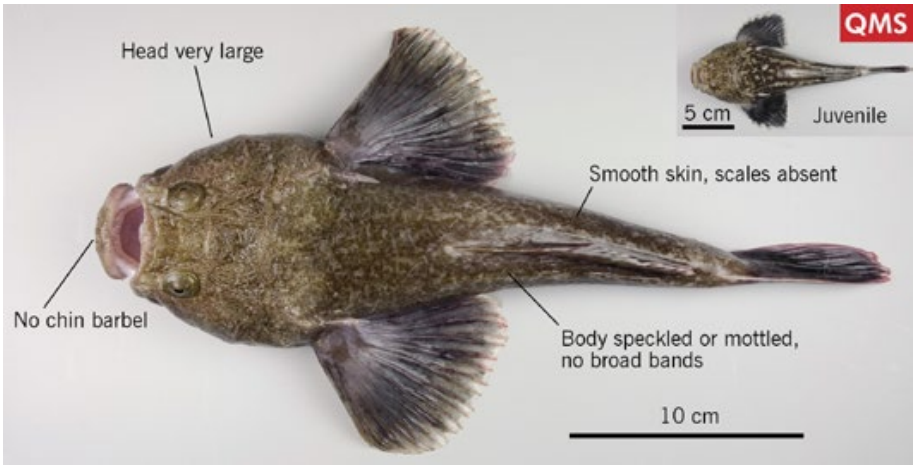
Distribution: Widespread in New Zealand from Kermadec Island and southern Norfolk Ridge to Campbell Plateau including Chatham Rise. Known only from New Zealand.

Depth: 10 to 500 m.

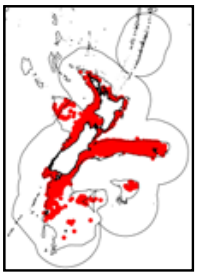
Similar species: Giant stargazer (*Kathetostoma giganteum*) lacks the 2 broad dark saddle-like bands on the back and sides, is more slender with head width greater than three times into TL, and has 17 to 19 dorsal, and 17 to 18 anal fin rays.

Biology & ecology: Benthic ambush predator, lies buried in sediment with just eyes protruding.

Giant stargazer *Kathetostoma giganteum*



Family: 443. Uranoscopidae (Armourhead stargazers)
Maori names:
Other names: Monkfish
FishNZ reporting code: STA
FishNZ research/observer code: GIZ



Distinguishing features: Sides and upper body speckled or mottled olive-greenish and cream, without 2 broad dark saddle-like bands. Relatively long-bodied with head width greater than three times into TL. 17 to 19 dorsal, and 17 to 18 anal fin rays.

Colour: Sides and upper body speckled or mottled olive-greenish and cream, without 2 broad dark saddle-like bands. Ventrally off white. Pectoral, dorsal and caudal fins darker than upper body. In juveniles the body patterning is more blotchy with off-white markings that can almost form longitudinal stripes.

Size: To about 86 cm TL.

Length measurement method: Total length

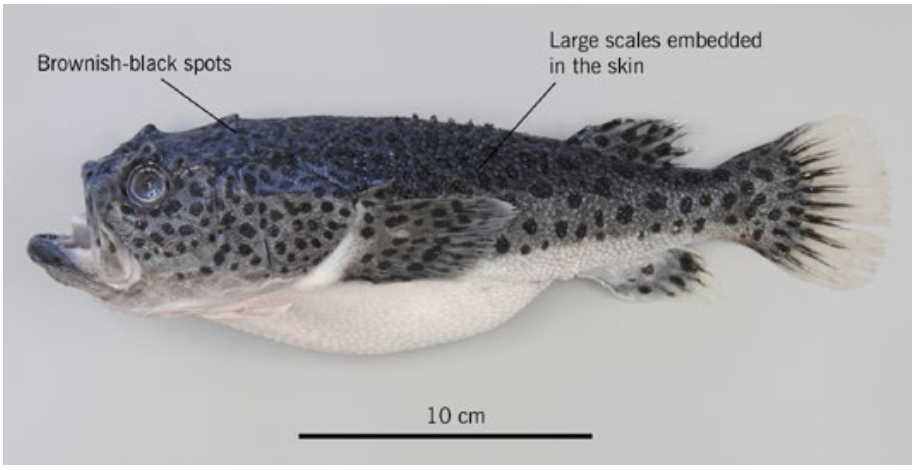
Distribution: Widespread in New Zealand from off Northland to Campbell Plateau. Known only from New Zealand.

Depth: 100 to 900 m.

Similar species: Banded stargazer (*Kathetostoma binigrasella*) has two broad dark saddle-like bands on upper body and sides (best viewed from above), stout body with wide head, about or less than three times into TL, 15 to 17 dorsal, and 14 to 16 anal fin rays.

Biology & ecology: Benthic ambush predator, lies buried in sediment with just eyes protruding.

Scaly stargazer *Pleuroscopus pseudodorsalis*



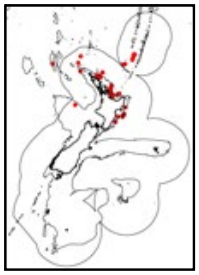
Family: 443. Uranoscopidae (Armourhead stargazers)

Maori names:

Other names:

FishNZ reporting code: PLZ

FishNZ research/observer code: PLZ



Distinguishing features: Large body scales embedded in skin of upper body. Bluish-grey upper head and body with small brownish-black spots and mottling. Spinous first dorsal fin reduced to 8 to 10 (usually 9 or 10) low bony protruberances in front of soft dorsal fin.

Colour: Adults bluish-grey upper head and body with dark spots and mottling. Lower head and body pale, whitish. Spots/mottling on base of pectoral, dorsal and caudal fins. Small fish (see image) with dark blue upper body, many small black spots, white or grey lower sharply demarcated from the dark upper body.

Size: To at least 70 cm TL.

Length measurement method: Total length

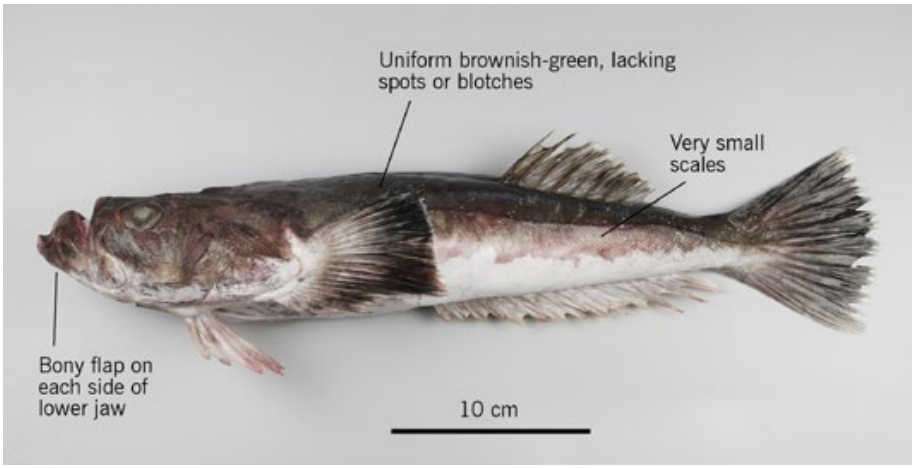
Distribution: Northern New Zealand south to about 41 S. Off Brazil, Namibia, Atlantic and Indian Ocean coasts South Africa, and southern Australia.

Depth: 200 to 800 m.

Similar species: Other stargazers lack large body scales embedded in skin, bluish-grey upper head and body with small brownish-black spots and mottling, and spinous first dorsal fin reduced to 8 to 10 (usually 9 or 10) low bony protruberances in front of soft dorsal fin.

Biology & ecology: Small individuals live in near-surface waters, i.e., are pelagic. Larger individuals are found on the seafloor.

Brown stargazer *Xenocephalus armatus*



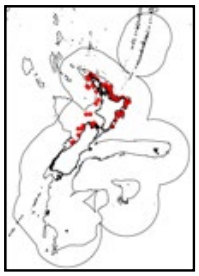
Family: 443. Uranoscopidae (Armourhead stargazers)

Maori names:

Other names:

FishNZ reporting code: BRZ

FishNZ research/observer code: BRZ



Distinguishing features: Uniform brownish-green upper head and body, cream below. Lower edges of lower jaw with a pair of prominent flattened bony flaps curved forwards and inwards, leaving a space between flaps and chin. Deeply embedded scales on body. Single short-based dorsal fin without spines, 12 to 13 soft fin rays.

Colour: Adults uniform brownish-green upper head and body without spots or blotches, cream below. Dorsal, caudal and pectoral fins dark brownish with narrow pale pinkish-white margin. Anal and pelvic fins pinkish-white. Very small individuals (about 3 cm TL) are blue on the upper body with large dark spots.

Size: To about 50 cm TL.

Length measurement method: Total length

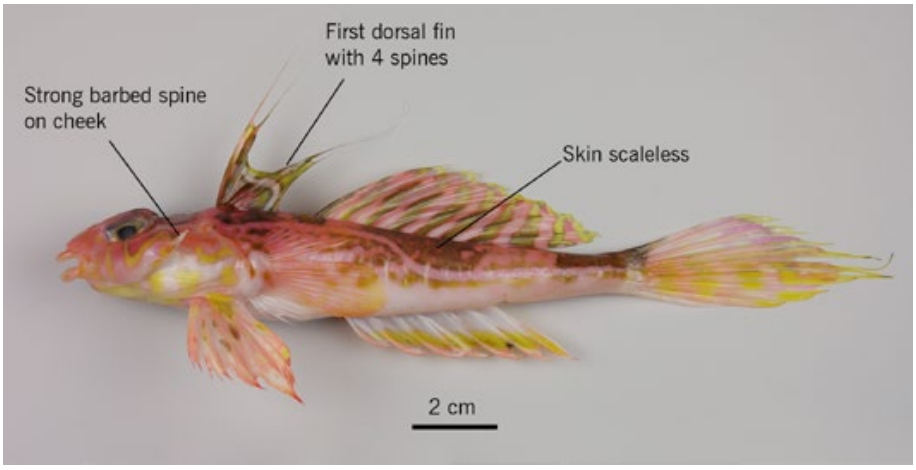
Distribution: Central and northern New Zealand. Southeast Australia.

Depth: 30 to 400 m.

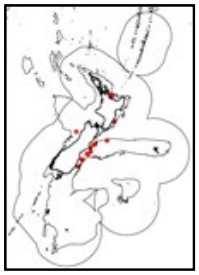
Similar species: Other stargazers lack the prominent flattened bony flaps on the lower jaw, leaving a space between flaps and chin, and the uniform brownish-green upper head and body without spots or blotches.

Biology & ecology: Benthic ambush predator.

Orange dragonet *Foetorepus* cf. *phasis*



Family: 453 Callionymidae (Dragonets)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: FOE



Distinguishing features: Gill opening restricted to a small pore. Strong barbed spine (preopercular) on cheek. Skin lacks scales. First dorsal fin with 4 spines. Second dorsal fin with 8 soft rays. Anal fin similar and opposite to second dorsal fin. Small protrusible mouth opening forward and down. Eyes on top of head.

Colour: Head and body orange to pink dorsally, with orange-brown blotches. Ventral body whitish. First dorsal fin with brownish blotch near base, darker in males. Second dorsal fin with 7 to 8 pinkish vertical stripes. Caudal fin pinkish upper, with yellow spots on lower part. Anal fin with pale base and yellowish stripe running along outer edge.

Size: To about 26 cm TL.

Length measurement method: Total length

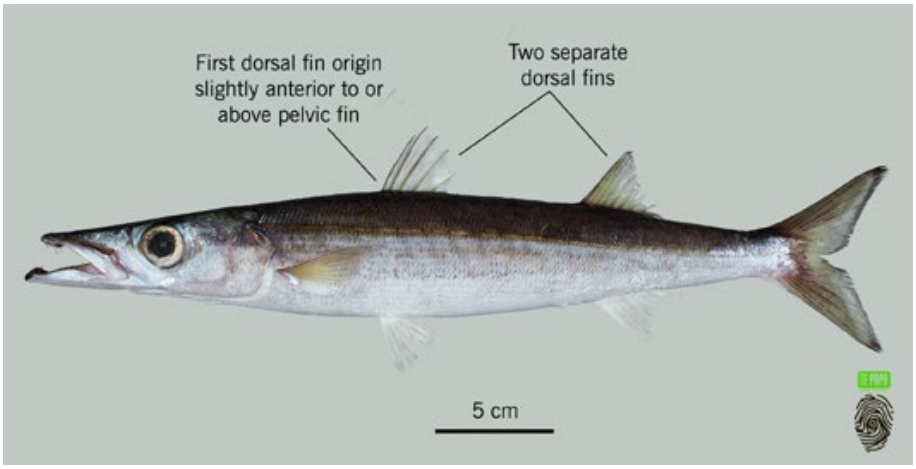
Distribution: Widespread in New Zealand from top of North Island to Snares Island shelf and Chatham Island.

Depth: 90 to 520 m.

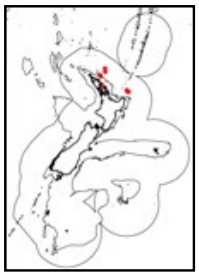
Similar species: Two other dragonets recorded from the New Zealand region (Kermadec Islands and Norfolk Ridge) are rare.

Biology & ecology: Benthic and found on sandy or muddy substrates.

Kermadec barracuda *Sphyraena* sp. A



Family: 472. Sphyraenidae (Barracudas)
Maori names:
Other names:
FishNZ reporting code: BDA
FishNZ research/observer code: BDA



Distinguishing features: Two short-based widely separated dorsal fins, first armed with spines, and second with soft rays. First dorsal fin origin slightly anterior to or above pelvic fin origin. Rear tip of pectoral fin does not reach vertical through origin of first dorsal fin. Long pointed rear tip of second dorsal fin. Single gill raker at corner of first gill arch.

Colour: Body olive-green dorsally, silvery laterally. 2 faint yellowish lines running along body below lateral line.

Size: To about 42 cm FL.

Length measurement method: Fork length

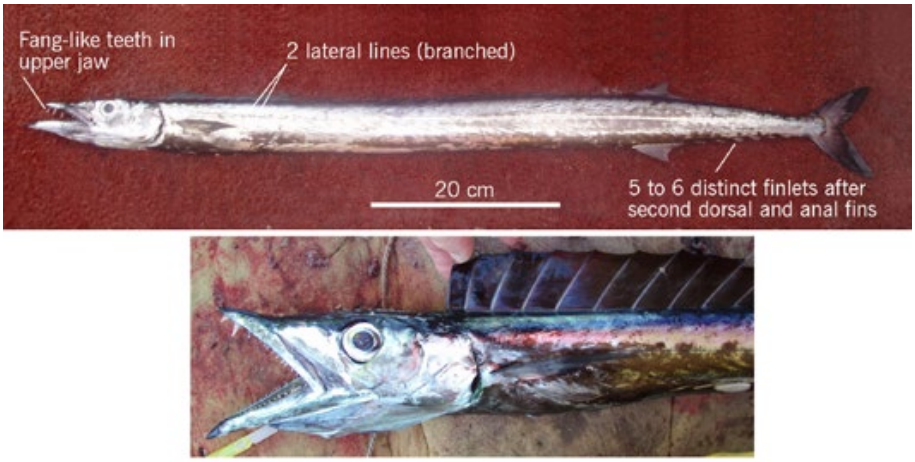
Distribution: Recorded from Kermadec Islands and Northland to Bay of Plenty in New Zealand. May be confined to the New Zealand region.

Depth: A few to 100 m.

Similar species: Blackfin barracuda (*Sphyraena qenie*), known from 1 New Zealand specimen, has about 18 dark vertical bars on side of body.

Biology & ecology: Pelagic, but probably associated with reefs.

Snake mackerel *Gempylus serpens*



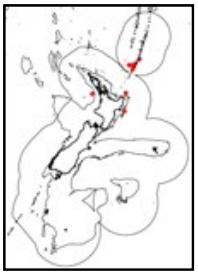
Family: 473. Gempylidae (Snake mackerels, gemfishes)

Maori names:

Other names:

FishNZ reporting code: GSE

FishNZ research/observer code: GSE



Distinguishing features: Very elongate body. Long-based spiny first dorsal fin and short second dorsal fin followed by 5 to 6 finlets. Anal fin also followed by 6 to 7 finlets. Double lateral lines branched below first dorsal fin spine, upper line follows dorsal profile, lower descends to midline of body. Paired nostrils on each side of snout (family character).

Colour: Body uniformly dark brown dorsally, silvery sides. First dorsal fin dark.

Size: To 112 cm FL.

Length measurement method: Fork length

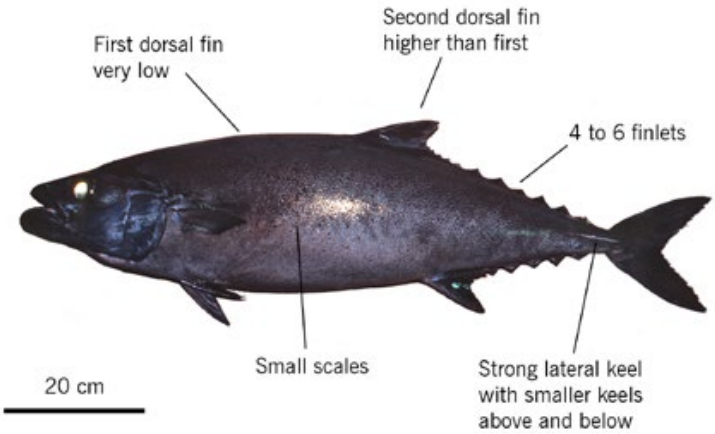
Distribution: Recorded from Kermadec Ridge, northeast North Island and off Hokitika in New Zealand. Worldwide in tropical and subtropical seas, but adults sometimes in temperate waters.

Depth: A few to 200 m.

Similar species: Black barracouta (*Nesiarchus nasutus*) has a single, mostly straight, lateral line. Frostfish (*Lepidopus caudatus*) has a very long, flatter body with a smaller forked tail fin, strongly arched profile of head with ridge near origin of the dorsal fin, single lateral line, and a single nostril.

Biology & ecology: Rare in New Zealand waters. Oceanic, pelagic. Adults migrate to surface at night. Spawns in tropical waters. Juveniles stay at surface only during the day.

Escolar *Lepidocybium flavobrunneum*



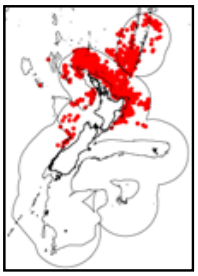
Family: 473. Gempylidae (Snake mackerels, gemfishes)

Maori names:

Other names:

FishNZ reporting code: LEP

FishNZ research/observer code: LEP



Distinguishing features: Prominent lateral keel on caudal peduncle, flanked by smaller accessory keels above and below. Single undulating lateral line. First dorsal fin very low, with higher second dorsal fin followed by 4 to 6 finlets. Body scales small so skin relatively smooth. Lateral line faint but highly sinuous. Paired nostrils on each side of snout (family character).

Colour: Head blackish. Body, mottled greyish or brownish, almost black in large fish.

Size: To about 200 cm FL.

Length measurement method: Fork length

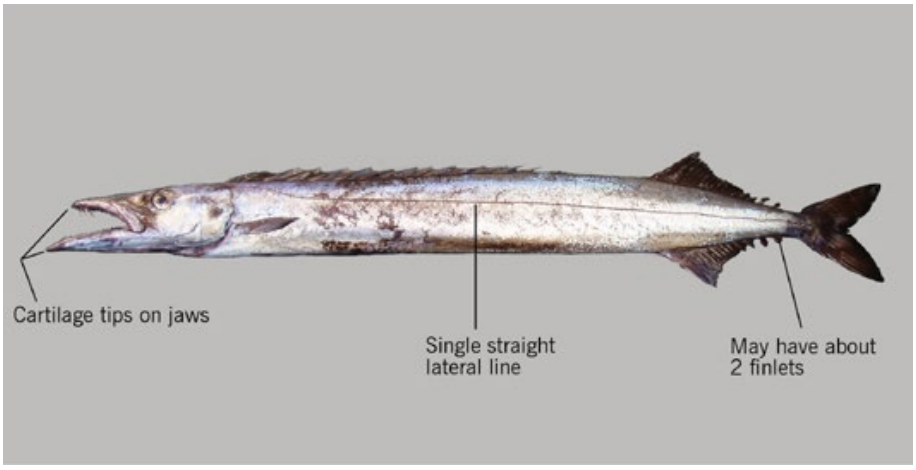
Distribution: Most records are from around North Island and waters north of New Zealand including Kermadec Ridge. Widespread in all tropical, subtropical and warm-temperate seas of the world, except north Indian Ocean.

Depth: Near surface to about 300 m.

Similar species: Oilfish (*Ruvettus pretiosus*) has skin covered with spinous bony tubercles (very rough), second dorsal fin is followed by 2 finlets, and lacks keels on caudal peduncle.

Biology & ecology: Pelagic, oceanic, mostly over continental slope, migrates towards surface at night.

Black barracouta *Nesiarchus nasutus*



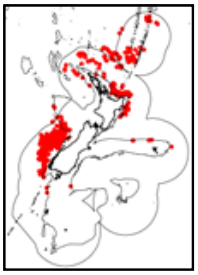
Family: 473. Gempylidae (Snake mackerels, gemfishes)

Maori names:

Other names: Black gemfish

FishNZ reporting code: BBA

FishNZ research/observer code: BBA



Distinguishing features: Cartilaginous projection on both jaws. Single lateral line mostly straight. Long-based first dorsal (spinous) and short-based second dorsal fin. Pelvic fin reduced but with distinct spine and soft rays. Up to 3 (second dorsal) or 4 (anal) finlets behind fins. Paired nostrils on each side of snout (family character).

Colour: Body dark brown with violet tint dorsally (fades on death), silvery sides. Fin membranes black.

Size: To 130 cm FL.

Length measurement method: Fork length

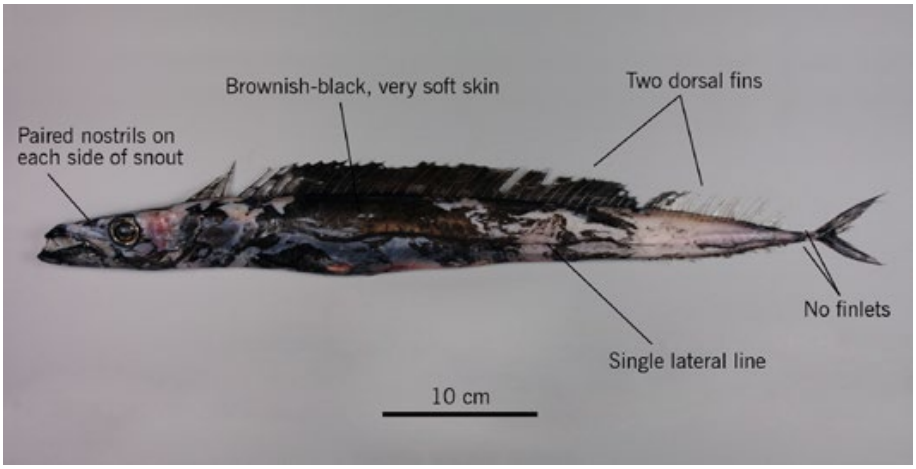
Distribution: From Kermadec Ridge, North Island and lower West Coast South Island in New Zealand. Widespread in all tropical to warm-temperate seas except east Pacific and North Indian Ocean.

Depth: About 200 to 1200 m.

Similar species: Barracouta (*Thyrsites atun*) lacks cartilaginous projection on lower jaw, has single lateral line running from behind head along upper body and dropping to mid-body near rear of spinous dorsal fin, 5 to 7 finlets behind second dorsal and 6 to 7 behind anal fin. Snake mackerel (*Gempylus serpens*) has branched (double) lateral line, more finlets (5 to 7) and is more elongate.

Biology & ecology: Adults pelagic, oceanic, over continental slope. Larvae and juveniles pelagic, and found only in tropics.

False frostfish *Paradiplospinus gracilis*



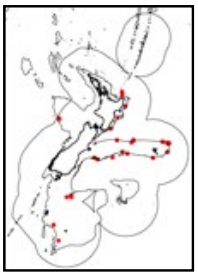
Family: 473. Gempylidae (Snake mackerels, gemfishes)

Maori names:

Other names: Slender escolar

FishNZ reporting code: PDS

FishNZ research/observer code: PDS



Distinguishing features: Elongate body with long-based first dorsal fin and short-based second dorsal fin. No finlets behind the second dorsal and anal fins. Single lateral line. Very soft, dark brownish-black skin which may be lost. Paired nostrils on each side of snout (family character).

Colour: Body of adults brownish-black over a silvery layer, juveniles silvery.

Size: To about 59 cm FL.

Length measurement method: Fork length

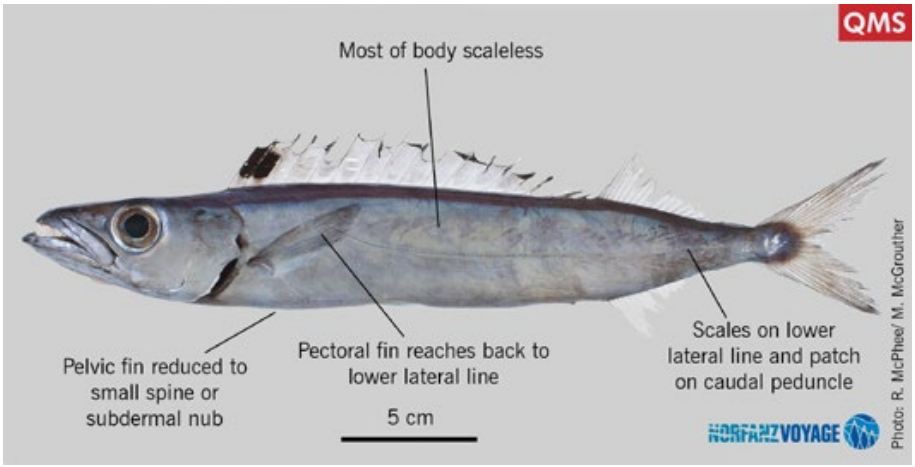
Distribution: Most records from central and southern New Zealand, from Challenger to Campbell Plateau including Chatham Rise. Fisheries records from New Zealand are uncertain and may include other snake mackerels and cutlassfishes (Trichiuridae).

Depth: About 30 to 1000 m.

Similar species: Scabbardfish (*Benthodesmus* spp.) have short-based first dorsal fin, longer second dorsal fin (twice length of first dorsal fin), and single nostril. Frostfish (*Lepidopus caudatus*) has single nostril on each side of snout, and strongly arched profile of head near origin of dorsal fin. Black barracouta (*Nesiarchus nasutus*) and snake mackerel (*Gempylus serpens*) have finlets behind second dorsal and anal fins.

Biology & ecology: Midwater over upper continental slope. Juveniles pelagic.

Longfin gemfish *Rexea antefurcata*



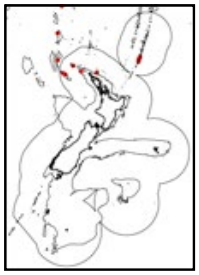
Family: 473. Gempylidae (Snake mackerels, gemfishes)

Maori names:

Other names:

FishNZ reporting code: SKI

FishNZ research/observer code: LFG



Distinguishing features: Pelvic fin absent (small knob below skin) for fish greater than 25 cm FL, 1 spine for smaller fish. Body scaleless except for wedge from caudal peduncle (wide) forward along lower lateral line (narrow), a few scales on posterior end of upper lateral line. Base of first dorsal fin about 3 times length of second dorsal fin (including finlets at rear). Lower lateral line starts below 4th to 5th spine of first dorsal fin. Long pectoral fin with tip extending back past curved lower limb of lateral line. Paired nostrils on each side of snout (family character).

Colour: Body greyish-silver. First 2 membranes of first dorsal fin jet-black sometimes with clear base, rest of fin pale or greyish. Pectoral fins greyish posteriorly.

Size: To about 73 cm FL.

Length measurement method: Fork length

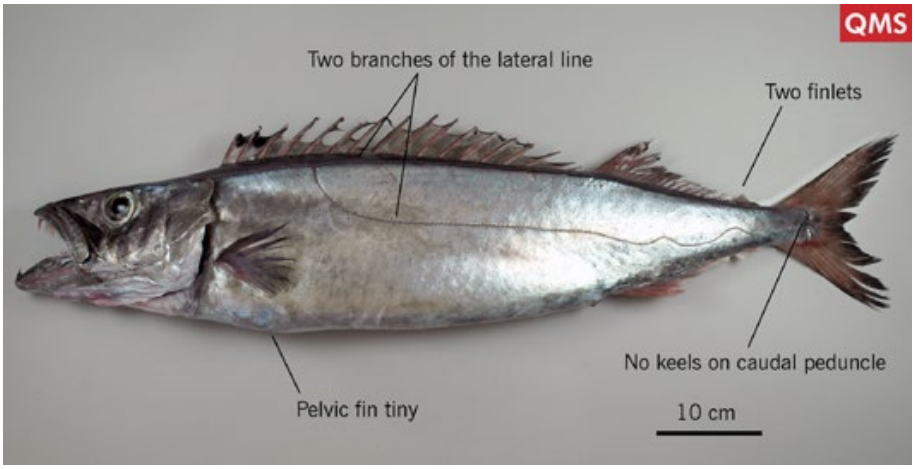
Distribution: Northern New Zealand from Kermadec and Norfolk Ridges and off Northland. East coast of Australia, southern Fiji, Easter Island and southeast Pacific.

Depth: 150 to 800 m

Similar species: Gemfish (*Rexea solandri*) has shorter pectoral fin with tip that does not reach back to lower limb of lower lateral line, pelvic fin with 1 spine and 2 to 3 tiny rays, and body entirely covered with very small scales (fish more than 25 cm FL).

Biology & ecology: Demersal. Predator of fishes, prawns, squids. Matures at about 25 cm FL.

Gemfish *Rexea solandri*



Family: 473. Gempylidae (Snake mackerels, gemfishes)

Maori names: Tikati, makataharaki, makatikati

Other names:

FishNZ reporting code: SKI

FishNZ research/observer code: RSO

Distinguishing features: Two dorsal and anal finlets behind fins. Very small pelvic fin with 1 spine and 2 to 3 soft rays. No keels on caudal peduncle. One lateral line branches into two at about fifth dorsal spine. Upper branch ends near rear of second dorsal fin and lower branch undulates near mid-body towards caudal peduncle. Very small scales on body.

Colour: Body iridescent blue above, silvery on side and below. Large black blotch at front of first dorsal fin.

Size: To about 135 cm FL.

Length measurement method: Fork length

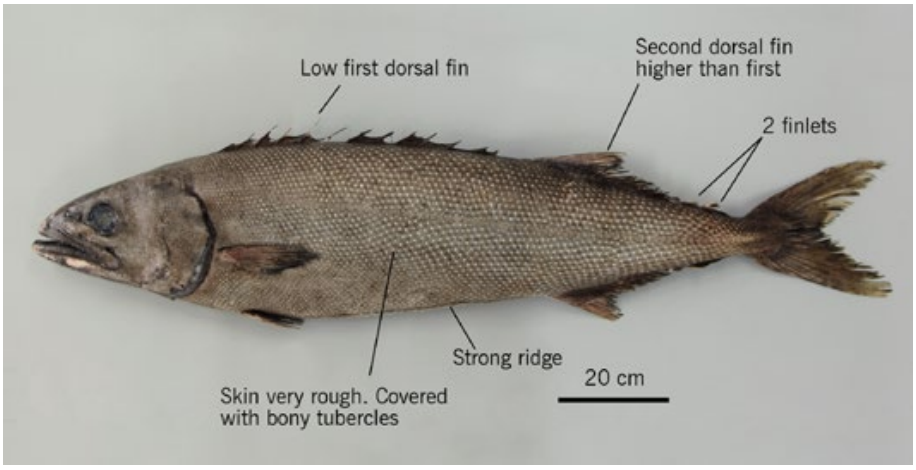
Distribution: Widespread in New Zealand from Norfolk Ridge to Snares Island slope including parts of Chatham Rise, and Challenger Plateau. Southern Australia.

Depth: 50 to 600 m.

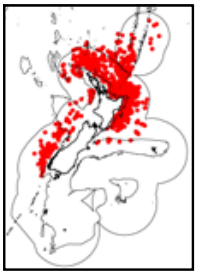
Similar species: Barracouta (*Thyrsites atun*) has single lateral line, large pelvic fin, 5 to 7 finlets behind second dorsal and anal fins, black webbing between spines of first dorsal fin. Rare northern longfin gemfish (*Rexea antefurcata*) has mostly naked body with patch of scales on caudal peduncle, long pectoral fins reaching back to lower lateral line and pelvic fins reduced to a nub.

Biology & ecology: Demersal, but midwater at times. Predator of fishes. Migrates to spawning grounds and probably spawns in midwinter (July). Attains at least 17 years of age.

Oilfish *Ruvettus pretiosus*



Family: 473. Gempylidae (Snake mackerels, gemfishes)
Maori names:
Other names:
FishNZ reporting code: OFH
FishNZ research/observer code: OFH



Distinguishing features: Skin covered with spinous bony tubercles and very rough to the touch. First dorsal fin low, with higher second dorsal fin followed by two finlets. Strong ridge on mid-line of belly. Single lateral line. Paired nostrils on each side of snout (family character).

Colour: Body uniformly brown to dark brown. Tips of the pectoral and pelvic fins black. Margins of second dorsal and anal fins white in young specimens.

Size: To about 300 cm FL.

Length measurement method: Fork length

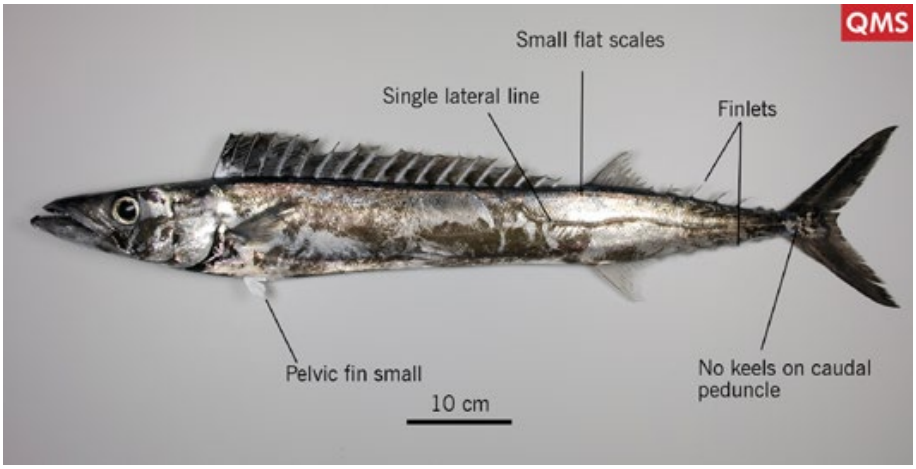
Distribution: Central and northern New Zealand from subtropical convergence north. Widespread in tropical and temperate oceans of the world.

Depth: 100 to 700 m.

Similar species: Escolar (*Lepidocybium flavobrunneum*) has smoothskin and 3 keels on caudal peduncle.

Biology & ecology: Oceanic, demersal on continental shelf and upper slope. Flesh contains gempylotoxin which may cause diarrhoea.

Barracouta *Thyrsites atun*



Family: 473. Gempylidae (Snake mackerels, gemfishes)
Maori names: Mangaa, makaa
Other names:
FishNZ reporting code: BAR
FishNZ research/observer code: BAR

Distinguishing features: 5 to 7 finlets behind second dorsal and anal fins. Pelvic fin with one spine and 5 soft rays. No fleshy keels on caudal peduncle. Single lateral line from behind head along upper body, drops to mid-body near rear of spinous dorsal fin. Small scales on body.

Colour: Body dark silvery-blue above, silvery on side and below. Webbing between spines of first dorsal fin blackish. Pelvic fin whitish.

Size: To about 135 cm FL.

Length measurement method: Fork length

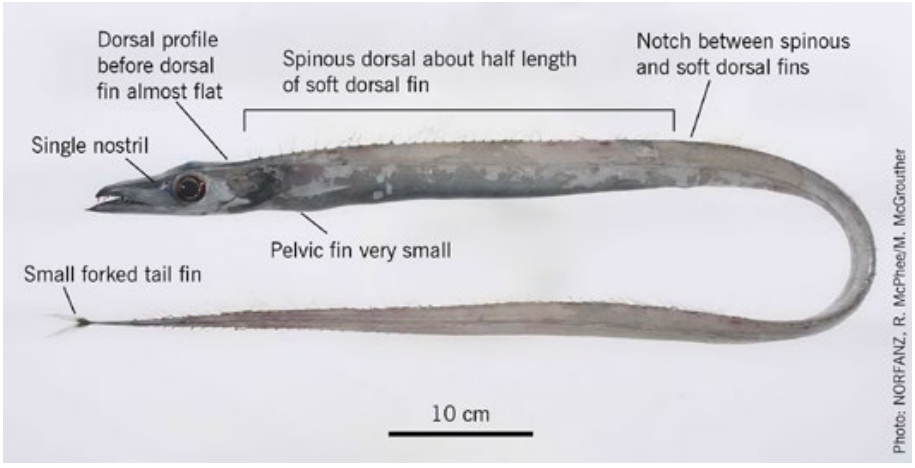
Distribution: Widespread in New Zealand from Three Kings to Auckland Islands slope including parts of Chatham Rise. Widespread in temperate to subantarctic southern hemisphere including southern Australia.

Depth: A few to 400 m.

Similar species: Gemfish (*Rexea solandri*) has branched lateral line, very small pelvic fin, 2 finlets behind second dorsal and anal fins, and black blotch at front of first dorsal fin.

Biology & ecology: Demersal but ranges in water column. Predator of crustaceans and small schooling fishes. Attains at least 10 years of age. Spawns late winter to summer and may migrate to spawning grounds.

Scabbardfish *Benthodesmus* spp.



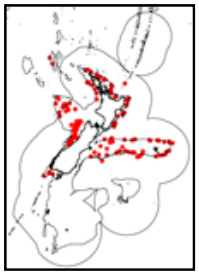
Family: 474. Trichiuridae (Cutlassfishes, scabbardfishes)

Maori names:

Other names:

FishNZ reporting code: BEN

FishNZ research/observer code: BEN



Distinguishing features: Spinous first part of dorsal fin about half length of soft second part. Dorsal head profile almost flat from snout to dorsal fin with only a slight rise above eyes. Notch between spinous and soft parts of dorsal fin. Small forked tail fin. Pelvic fin very small. Single nostril on each side of head (family character).

Colour: Silvery greyish head and body.

Size: To about 130 cm FL.

Length measurement method: Fork length

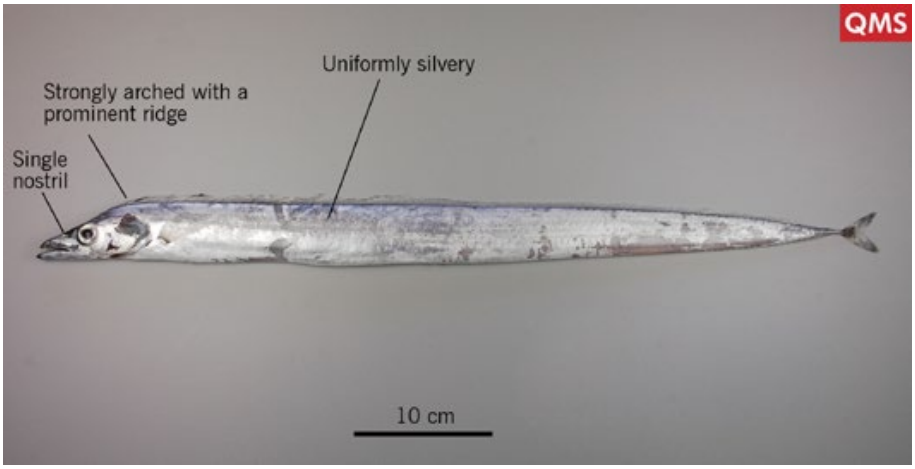
Distribution: Most records are for *Benthodesmus elongatus* (**BNE**) which is widespread in New Zealand from Lord Howe Rise and Norfolk Ridge to Campbell Plateau. Widespread in southern hemisphere south of about 10 S. Other 2 species are rarer and from about Gisborne north.

Depth: About 200 to 900 m.

Similar species: *Benthodesmus elongatus* (**BNE**, illustrated) is common and has pelvic fin inserted behind pectoral fin base. *B. tenuis* (**BNT**) and *B. tuckeri* have pelvic fin inserted below or anterior to pectoral fin base. Frostfish (*Lepidopus caudatus*) has strongly arched dorsal head profile near dorsal fin origin, and continuous dorsal fin without a notch between short spinous and long soft parts. False frostfish (*Paradiplospinus gracilis*) has long-based first dorsal fin and short-based second dorsal fin and paired nostrils on each side of snout.

Biology & ecology: Predator of crustaceans, small fishes, and squids.

Frostfish *Lepidopus caudatus*



Family: 474. Trichiuridae (Cutlassfishes, scabbardfishes)

Maori names: Hikau, paara, taharangi

Other names:

FishNZ reporting code: FRO

FishNZ research/observer code: FRO

Distinguishing features: Body uniformly silvery. Very long body with small forked tail fin. Profile of head strongly arched with prominent ridge near origin of dorsal fin. Strong teeth in jaws, fang-like at front of upper jaw. Pelvic fin very small. Single lateral line slightly closer to lower side near rear of body. Single nostril on each side of snout (family character).

Colour: Body uniformly silvery. Upper margin of membrane near front of first dorsal fin may be black. Lobes of caudal fin dusky.

Size: To about 200 cm FL.

Length measurement method: Fork length

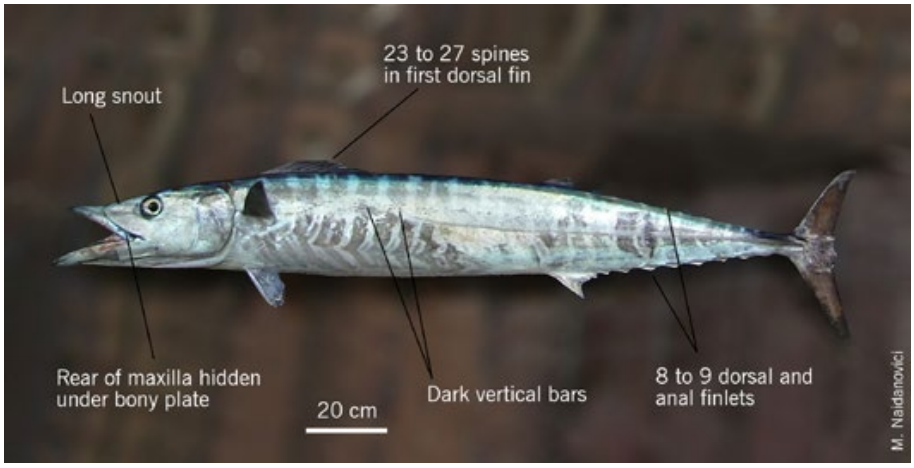
Distribution: Widespread in central and northern New Zealand. Older fisheries records from southern and northern New Zealand are uncertain and may include other species of snake mackerels (gempylids) and cutlassfishes (trichiurids). Widespread including North Atlantic Ocean and Mediterranean to off South Africa, southern Indian Ocean, and southern Australia.

Depth: 50 to 600 m.

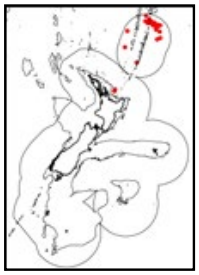
Similar species: Scabbardfishes (*Benthodesmus* spp.) head profile rises gently from tip of snout to origin of dorsal fin. Snake mackerels (gempylids) have pair of nostrils on each side of snout.

Biology & ecology: Demersal but move into midwater at night to feed on small crustaceans, fishes, and squids. Spawn during summer and autumn.

Wahoo *Acanthocybium solandri*



Family: 475. Scombridae (Mackerels, tunas)
Maori names:
Other names:
FishNZ reporting code: WAH
FishNZ research/observer code: WAH



Distinguishing features: Elongate body and long snout (about half of head length). Numerous dark vertical bars on body. No gill rakers. Posterior end of maxilla hidden under bony plate. Two dorsal fins, first with 23 to 27 spines and second with 12 to 16 rays, followed by 8 to 9 finlets. Single lateral line curves abruptly down under middle of first dorsal fin. Central keel flanked by 2 smaller keels on caudal peduncle.

Colour: Body blue-green on dorsal surface, silvery-white on belly with series of 24 to 30 blue vertical bars which extend below lateral line, some double or y-shaped. Bars become dusky-grey after death.

Size: To about 210 cm FL.

Length measurement method: Fork length

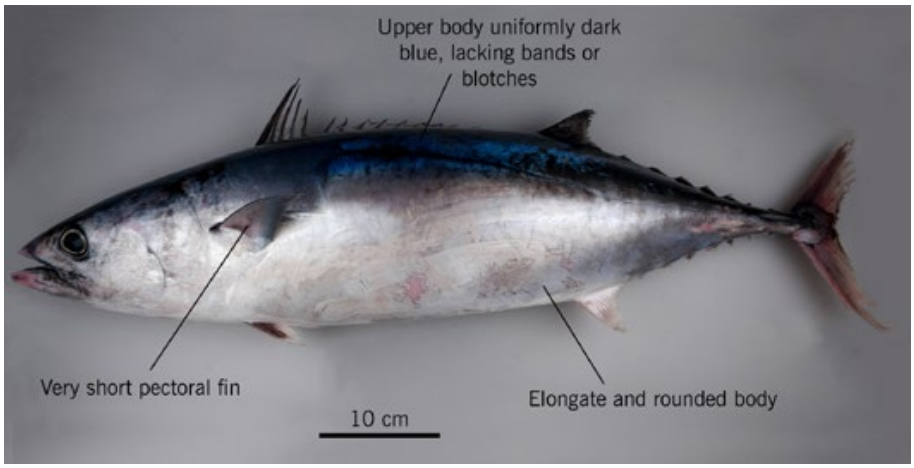
Distribution: Recorded from Kermadec Ridge and northeast North Island in New Zealand. Tropical and subtropical waters of all oceans.

Depth: A few to 250 m.

Similar species: Escolar (*Lepidocybium flavobrunneum*) has mottled dark brown body, undulating lateral line, 4 to 6 finlets behind second dorsal, and gill rakers. Oilfish (*Ruvettus pretiosus*) has skin covered with spinous bony tubercles (very rough), second dorsal fin followed by 2 finlets, has gill rakers, and lacks keels on caudal peduncle.

Biology & ecology: Pelagic, oceanic, highly migratory.

Slender tuna *Allothunnus fallai*



Family: 475. Scombridae (Mackerels, tunas)
Maori names:
Other names:
FishNZ reporting code: STU
FishNZ research/observer code: STU

Distinguishing features: Relatively small with an elongate and rounded body. Pectoral fins very short (about 50% of head length). Many (70 to 80) fine gill rakers on first gill arch. Body dark blue dorsally, silver or whitish ventrally. One central keel and two smaller lateral keels on caudal peduncle.

Colour: Body dark blue dorsally, lacking dark bands or blotches, lower sides and belly silver or whitish.

Size: To about 106 cm FL.

Length measurement method: Fork length

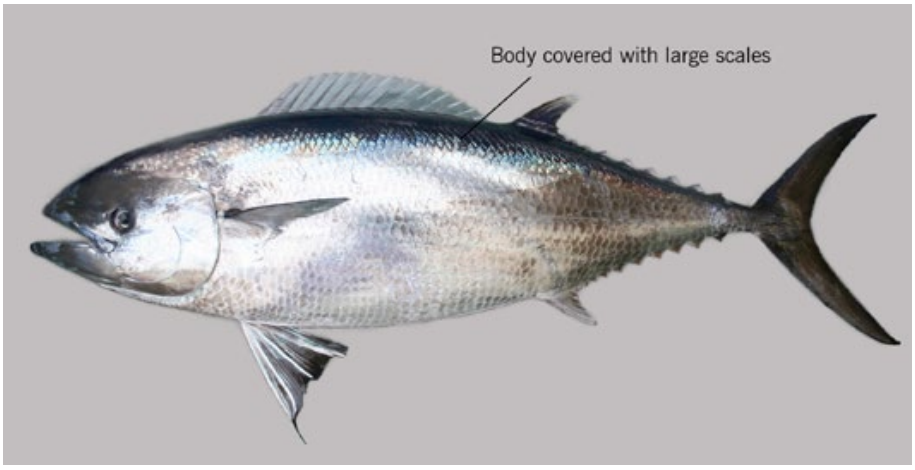
Distribution: Off Northland to Auckland Islands in New Zealand. Circumglobal in southern hemisphere between about 20 and 54 S.

Depth: Near surface to about 200 m.

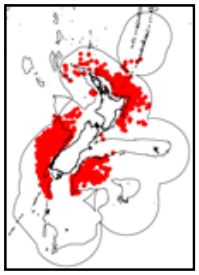
Similar species: No other tuna has combination of slender elongated body, dark blue dorsal body, very short pectoral fin, and high number of gill rakers.

Biology & ecology: Pelagic, oceanic.

Butterfly tuna *Gasterochisma melampus*



Family: 475. Scombridae (Mackerels, tunas)
Maori names:
Other names: Butterfly kingfish
FishNZ reporting code: BTU
FishNZ research/observer code: BTU



Distinguishing features: Head dorsal profile high and rounded. Large body scales. Pelvic fins relatively larger in juveniles and still large in adults, with distinctive fan-like appearance, fitting into groove on belly. Two small keels on caudal peduncle.

Colour: Deep bluish above, silvery below, without stripes or markings.

Size: To 191 cm FL

Length measurement method: Fork length

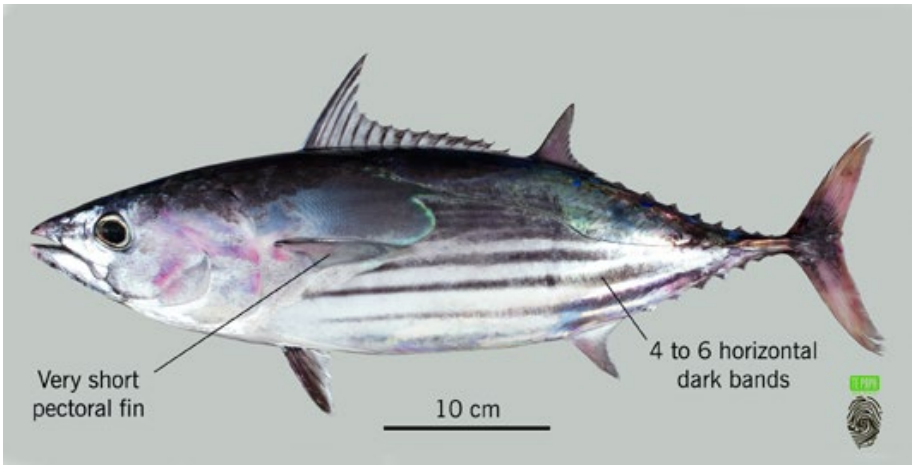
Distribution: Widespread in New Zealand from off Northland to Snares Island slope (east and west), few north of 35 S. Widespread in southern temperate waters mostly between 35 and 50 S.

Depth: Near surface to about 250 m.

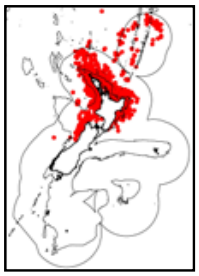
Similar species: Other tunas lack an arched head, large body scales and large fan-like pelvic fin.

Biology & ecology: Pelagic, oceanic, highly migratory. May make periodic deep dives or have diurnal patterns similar to other tunas, but this is not known. Found in waters of 11.5 to 14.5 C.

Skipjack tuna *Katsuwonus pelamis*



Family: 475. Scombridae (Mackerels, tunas)
Maori names:
Other names: Striped tuna
FishNZ reporting code: SKJ
FishNZ research/observer code: SKJ



Distinguishing features: 4 to 6 conspicuous horizontal dark bands on sides and lower body. Very short pectoral fins. Small conical teeth in jaws. 1 large median keel and 2 small lateral keels on caudal peduncle.

Colour: Body dark purplish-blue on dorsal surface, paler below, with 4 to 6 longitudinal dark bands.

Size: To about 100 cm FL.

Length measurement method: Fork length

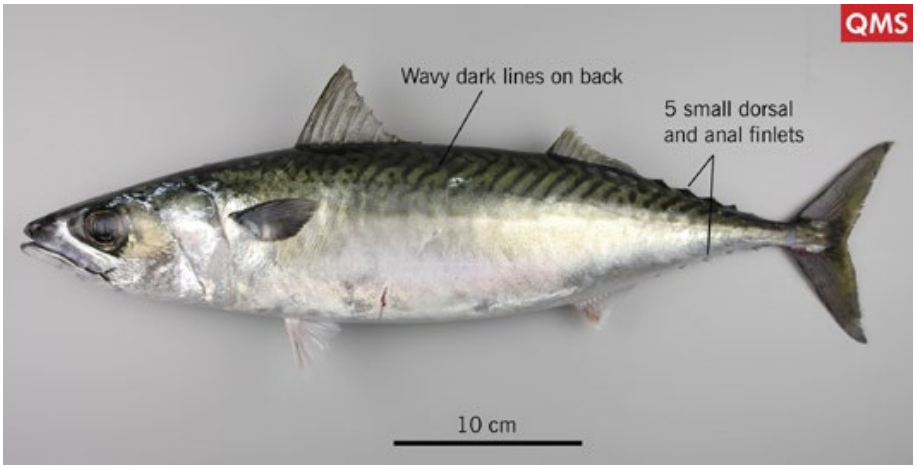
Distribution: Summer migrant in northern New Zealand from Kermadec Ridge to about Cook Strait but mostly north of 40 S. Circumglobal in all tropical and warm-temperate oceans except Black Sea.

Depth: Surface to 260 m during day, and surface waters at night.

Similar species: Australian bonito (*Sarda australis*) has numerous (more than 6) horizontal dark bands on upper, mid, and lower body, and has large conical teeth in both jaws.

Biology & ecology: Pelagic, oceanic, highly migratory. Favours temperatures of 15 to 30 C. Schools in surface waters.

Blue mackerel *Scomber australasicus*



Family: 475. Scombridae (Mackerels, tunas)
Maori names: Tawatawa
Other names: English mackerel, Pacific mackerel
FishNZ reporting code: EMA
FishNZ research/observer code: EMA

Distinguishing features: Wavy oblique dark lines across back, and lighter coloured markings along sides and belly. 5 small dorsal and anal finlets in front of tail fin. Front and rear of eye covered with adipose eyelid. 2 small keels on caudal perduncle.

Colour: Body mid to dark blue-green above with many oblique dark wavy lines, sides and belly silvery-white with lighter dots and bars.

Size: To about 55 cm FL.

Length measurement method: Fork length

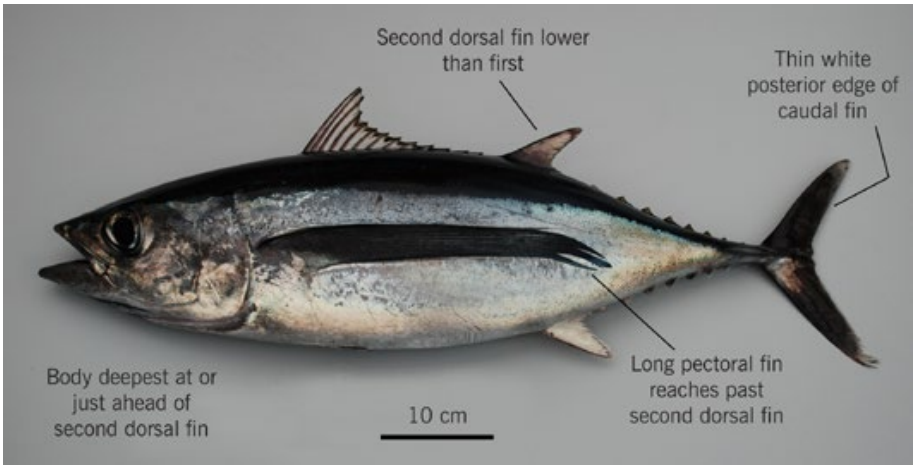
Distribution: Off Northland to Otago in New Zealand, probably more common in north. Widespread in Indo-Pacific including Red Sea, Persian Gulf, Japan, Australia, Hawaiian Islands.

Depth: Surface to 150 m.

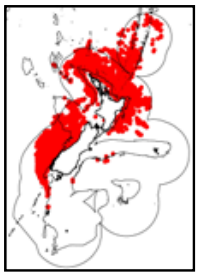
Similar species: Jack mackerel species (*Trachurus* spp.) have enlarged scales (scutes) along lateral line, no oblique wavy dark bars on upper body, and 2 stout anal fin spines. Frigate tuna (*Auxis thazard*) has 15 or more narrow, oblique to nearly horizontal, dark wavy lines in scaleless area above lateral line, 8 finlets behind second dorsal fin, and 6 to 8 finlets behind anal fin.

Biology & ecology: Pelagic over continental shelf.

Albacore tuna *Thunnus alalunga*



Family: 475. Scombridae (Mackerels, tunas)
Maori names:
Other names: Albacore
FishNZ reporting code: ALB
FishNZ research/observer code: ALB



Distinguishing features: Pectoral fins very long, at least 30% of FL, and reaching beyond second dorsal fin origin. Second dorsal lower than first dorsal fin. Body deepest at or just anterior to second dorsal fin. Posterior margin of caudal fin white. Ventral surface of liver striated. 1 large and 2 small keels on caudal

Colour: Body dark bluish on dorsal surface, whitish below. Posterior margin of caudal fin white. Dorsal and anal fins yellow.

Size: To about 130 cm FL.

Length measurement method: Fork length

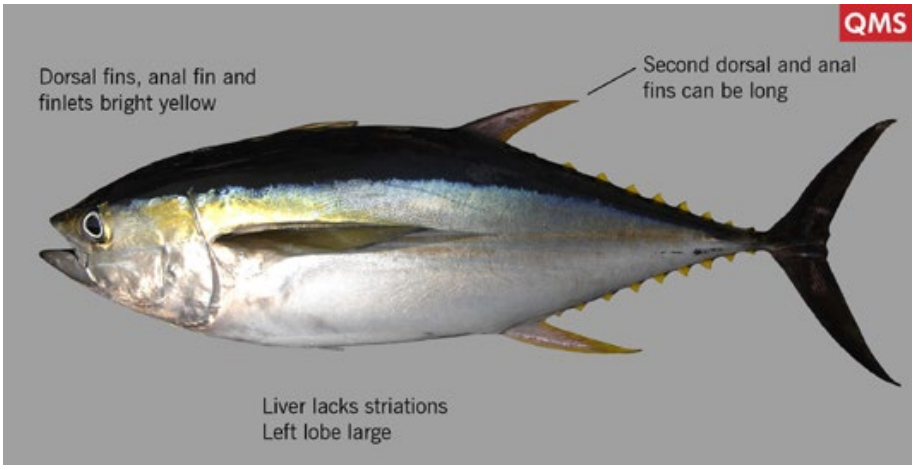
Distribution: In New Zealand throughout the year in northern areas and in summer from Kermadec Ridge to West Coast South Island, sometimes to about 48 S. Tropical and temperate waters of all oceans from 50 N to 50 S.

Depth: Surface to about 500 m.

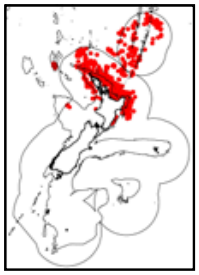
Similar species: Small bigeye tuna (*Thunnus obesus*) has greatest body depth near middle of first dorsal fin, second dorsal fin is higher than first, lacks white posterior margin of caudal fin. Other tunas lack very long pectoral fins.

Biology & ecology: Pelagic, oceanic, highly migratory. Favoured depth depends on vertical thermal structure and oxygen content. Prefer temperatures of 15 to 19 C and migrate over great distances. Small albacore occur closer to surface than larger fish.

Yellowfin tuna *Thunnus albacares*



Family: 475. Scombridae (Mackerels, tunas)
Maori names:
Other names:
FishNZ reporting code: YFN
FishNZ research/observer code: YFN



Distinguishing features: Body deepest near middle of first dorsal fin. Dorsal and anal fins and finlets bright yellow. Large specimens may have very long second dorsal and second anal fins. Second dorsal fin higher than first. Ventral surface of liver not striated. 1 large and 2 small keels on caudal peduncle.

Colour: Body dark bluish on dorsal surface, whitish below, belly may have about 20 broken, nearly vertical pale lines. Dorsal and anal fins and finlets bright yellow.

Size: To 208 cm FL.

Length measurement method: Fork length

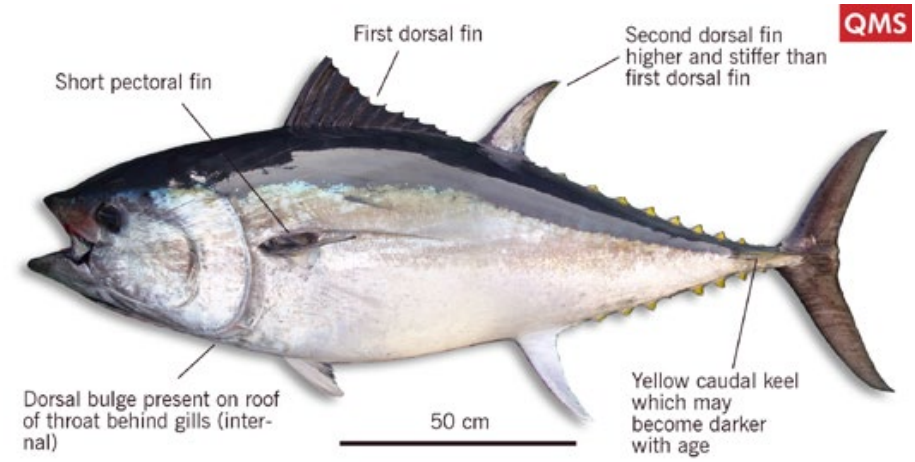
Distribution: Summer migrant to northern New Zealand from Kermadec Ridge to off Hawke Bay (about 40 S). Worldwide in tropical and subtropical seas from 40 N to 40 S, but absent from Mediterranean Sea.

Depth: Surface to 100 m.

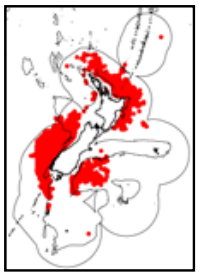
Similar species: Bigeye tuna (*Thunnus obesus*) and all other *Thunnus* species have striations on the ventral surface of the liver. Bigeye tuna have a long pectoral fin (22 to 31% of FL) in large specimens (over 110 cm FL) and very long in smaller specimens.

Biology & ecology: Pelagic, oceanic, highly migratory. Favoured depth is closely related to thermocline structure. Mostly in top 90 m during day. Close to surface at night. Found in temperatures of 18 to 31 C.

Southern bluefin tuna *Thunnus maccoyii*



Family: 475. Scombridae (Mackerels, tunas)
Maori names:
Other names: Bluefin, southern bluefin
FishNZ reporting code: STN
FishNZ research/observer code: STN



Distinguishing features: Body deepest near middle of first dorsal fin. Pectoral fins short (less than 80% of head length). Second dorsal fin higher than first. Prominent bulge on roof of throat (dorsal bulge) behind gills which may only be obvious when gills are removed. Ventral surface of liver striated. 1 large and 2 small keels on caudal peduncle.

Colour: Bluish-black above and silvery-white below, yellow finlets, caudal keel usually yellow but can become dark with age.

Size: To 225 cm FL.

Length measurement method: Fork length

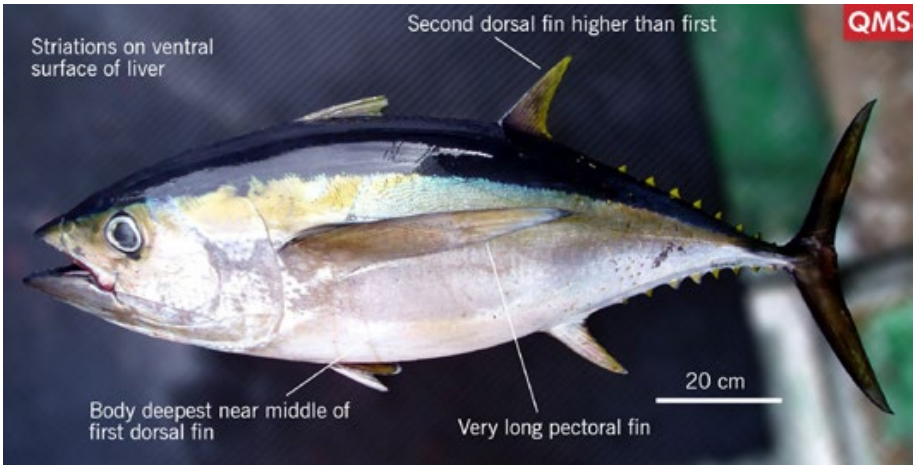
Distribution: Widespread in New Zealand from off Northland to Snares Island slope (49 S). Adults widespread in southern oceans from 30 to 60 S, including South Atlantic, Indian and southwest Pacific.

Depth: Near surface to 40 m with dawn and dusk dives and occasional deep dives to about 900 m.

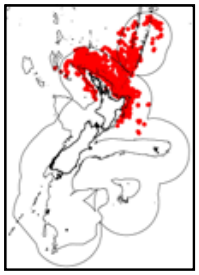
Similar species: Pacific bluefin tuna (*Thynnus orientalis*) is very similar in external appearance, but has a reduced, narrow internal dorsal bulge.

Biology & ecology: Pelagic, oceanic in cold temperate waters generally below 15 C (except for spawning fish and larvae). Highly migratory. Adults undergo seasonal migration to spawning grounds. Usually caught beyond continental shelf in New Zealand. Young fish are caught over continental shelf in Australia.

Bigeye tuna *Thunnus obesus*



Family: 475. Scombridae (Mackerels, tunas)
Maori names:
Other names:
FishNZ reporting code: BIG
FishNZ research/observer code: BIG



Distinguishing features: Body deepest near middle of first dorsal fin. Large eyes. Long pectoral fin (22 to 31% of FL) in large specimens (over 110 cm FL) and very long in smaller specimens. Second dorsal higher than first dorsal fin. Ventral surface of liver striated. 1 large and 2 small keels on caudal peduncle.

Colour: Body dark bluish on dorsal surface, whitish below. First dorsal fin yellow, second dorsal and anal fins light yellow, finlets bright yellow edged with black.

Size: To 250 cm FL.

Length measurement method: Fork length

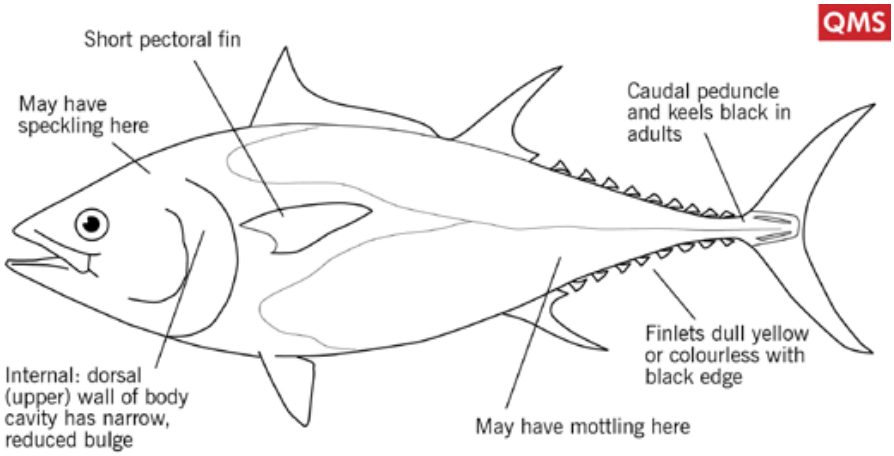
Distribution: In summer months from Kermadec Ridge to off Hawke Bay in New Zealand region, mostly north of 40 S. Worldwide in tropical and subtropical seas between 40 N and 40 S.

Depth: Near surface to 50 m.

Similar species: Southern bluefin tuna (*Thunnus maccoyii*) has small eye and short pectoral fin. Yellowfin tuna (*T. albacares*) has bright yellow dorsal and anal fins and finlets, often very long second dorsal and anal fins, and lacks striations on ventral surface of liver. Albacore tuna (*T. alalunga*) has second dorsal lower than first dorsal fin, and white posterior margin of caudal fin.

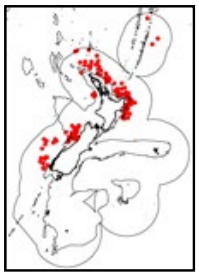
Biology & ecology: Pelagic, oceanic, highly migratory. Favoured depth is closely related to thermocline. In top 100 m at night and move to greater depths during day, often around 200 m and down to 500 m. The optimum temperature range is 18 to 22 C.

Pacific bluefin tuna *Thunnus orientalis*



QMS

Family: 475. Scombridae (Mackerels, tunas)
Maori names:
Other names: Northern bluefin tuna
FishNZ reporting code: TOR
FishNZ research/observer code: TOR



Distinguishing features: Body deepest near middle of first dorsal fin. Short pectoral fin (less than 80% of head length). Second dorsal fin higher than first. Dorsal wall of body cavity has narrow reduced bulge. Ventral surface of liver striated. 1 large and 2 small keels on caudal peduncle. Caudal peduncle and keels dark or black in adults.

Colour: Body dark bluish on dorsal surface, whitish below but darker body coloration in some fish. May have speckling around head and operculum and may have mottled pattern on ventral surface behind anal fin. Caudal peduncle and keels dark or black in adults.

Size: To 300 cm FL.

Length measurement method: Fork length

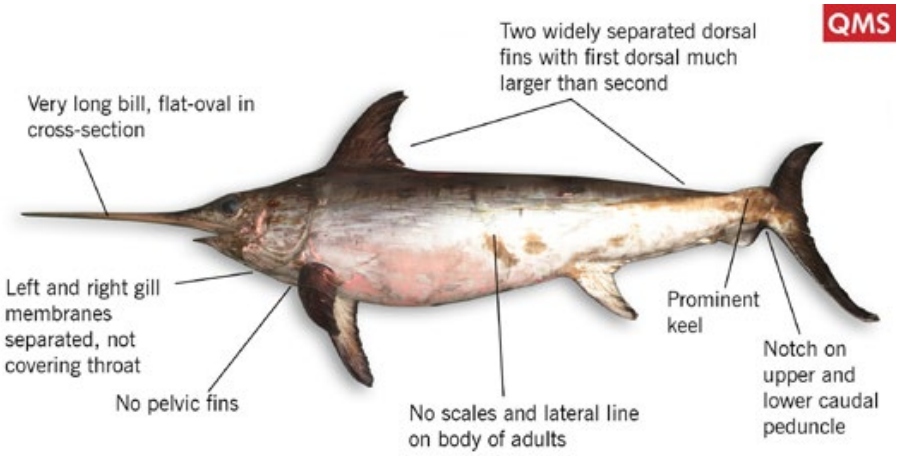
Distribution: Widespread in New Zealand from Kermadec Ridge to bottom of South Island, 48 S, but most common in north. Northern Pacific to Australia, New Zealand and southeast Pacific Ocean.

Depth: Near surface to 100 m.

Similar species: Southern bluefin tuna (*Thunnus maccoyii*) has prominent bulge on roof of throat (dorsal bulge) behind gills.

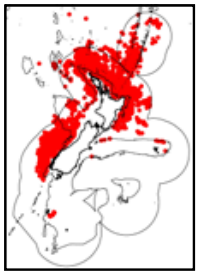
Biology & ecology: Pelagic, oceanic, highly migratory. Favoured depth is closely related to thermocline. Spend more than 80% of time in top 40 m but may make occasional short dives to 300 m. Also diurnal and seasonal patterns of vertical movements, closely related to water temperature. Swim closer to surface at night and also at sunrise and sunset. Undergo extensive long distance migrations, e.g., to northern spawning grounds. Mainly northern but has wide temperature tolerance.

Swordfish *Xiphias gladius*



QMS

Family: 476. Xiphiidae (Swordfishes)
Maori names: Paea
Other names: Broadbill swordfish, broadbill
FishNZ reporting code: SWO
FishNZ research/observer code: SWO



Distinguishing features: Upper jaw prolonged into long bill, flat-oval in cross section. Left and right gill membranes separated and not covering the throat. Two widely separated dorsal fins with first much larger than second in adults. No pelvic fins. One large caudal keel. Notch on upper and lower caudal peduncle. Juveniles less than about 130 cm LJFL have scales, teeth, lateral line, and continuous dorsal fin. Teeth and lateral line disappear with growth.

Colour: Blackish-brown/blackish-blue above, pale brown to whitish below, with blackish-brown fins.

Size: To 445 cm LJFL.

Length measurement method: Lower jaw tip to fork length, J

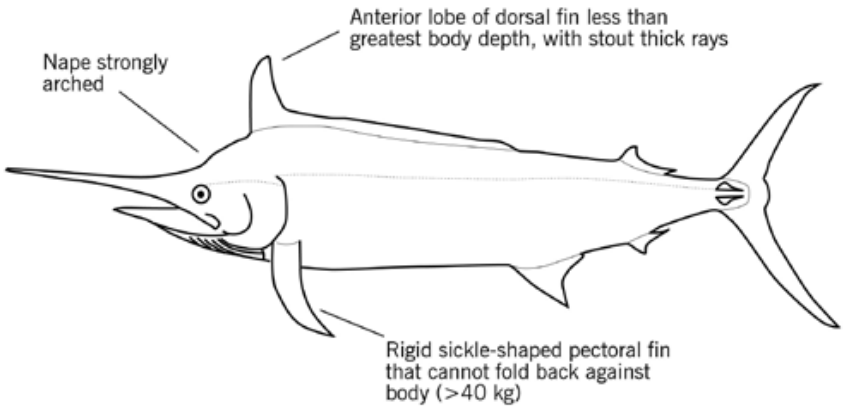
Distribution: Widespread in New Zealand in and north of subtropical convergence, probably more abundant north of about 43 S. Worldwide in tropical and temperate seas.

Depth: Near Surface to about 1000 m.

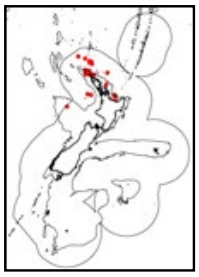
Similar species: Billfishes (Istiophoridae) have shorter bills that are round in cross section, have pelvic fins, left and right gill membranes joined and covering most of throat, and two caudal keels on caudal peduncle.

Biology & ecology: Pelagic, (in water warmer than 13 C, but tolerate 5 to 27 C), Highly migratory, undergoes long distance migrations. Usually caught beyond continental shelf. Near surface during night, and deeper during the day, with occasional deep dives possibly to about 1000 m.

Black marlin *Istiompax indica*



Family: 477. Istiophoridae (Billfishes)
Maori names: Taketonga
Other names:
FishNZ reporting code: BKM
FishNZ research/observer code: BKM



Distinguishing features: First dorsal fin with anterior lobe about half body depth. Nape strongly arched. Branchiostegal membrane (frill) long, extends back to almost level with posterior margin of operculum. Pectoral fin rigid, sickle-shaped, will not fold back against body. Pelvic fins short, slender, shorter than pectoral fins, depressible into ventral grooves. Origin of second dorsal fin slightly anterior to origin of second anal fin.

Colour: Body dark blue dorsally, silver-white ventrally, without bars or markings (colour becomes dark grey after death). First dorsal fin blackish to dark blue, other fins dark brown.

Size: To about 450 cm LJFL.

Length measurement method: Lower jaw tip to fork length, J

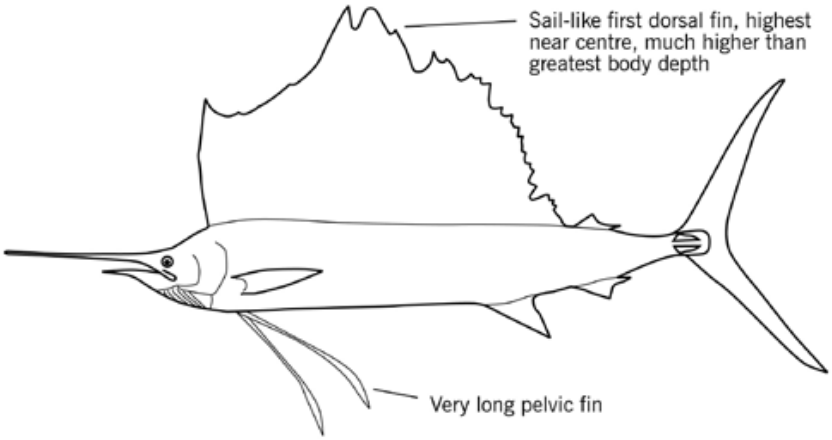
Distribution: Northern North Island in New Zealand. Tropical and subtropical waters of Pacific and Indian Oceans, occasionally enters temperate waters.

Depth: Near surface to about 240 m.

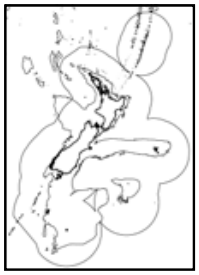
Similar species: Blue marlin (*Makaira nigricans*) has pectoral fin that folds back against body, looped lateral line. Striped marlin (*Kajikia audax*) has pectoral fin that folds back against body, high first dorsal fin with anterior lobe equal to or higher than body depth, about 15 vertical cobalt-blue bars (remain after death).

Biology & ecology: Least abundant marlin in NZ. Pelagic, oceanic, highly migratory. Mostly near-surface, often top 10 m, with occasional brief deep dives. Often in nearshore waters of islands, and coral reefs. Undergo seasonal north-south migrations.

Sailfish *Istiophorus platypterus*



Family: 477. Istiophoridae (Billfishes)
Maori names:
Other names:
FishNZ reporting code: SAI
FishNZ research/observer code: SAI



Distinguishing features: First dorsal fin sail-like and much higher than greatest body depth, greatest height near centre of body. Pelvic fins very long, almost reaching anus, and depressible into groove. Single visible lateral line.

Colour: Body dark blue dorsally, sides light blue splattered with brown, about 20 vertical light blue bars, dorsal fin dark blue, other fins brownish.

Size: To about 380 cm LJFL.

Length measurement method: Lower jaw tip to fork length, J

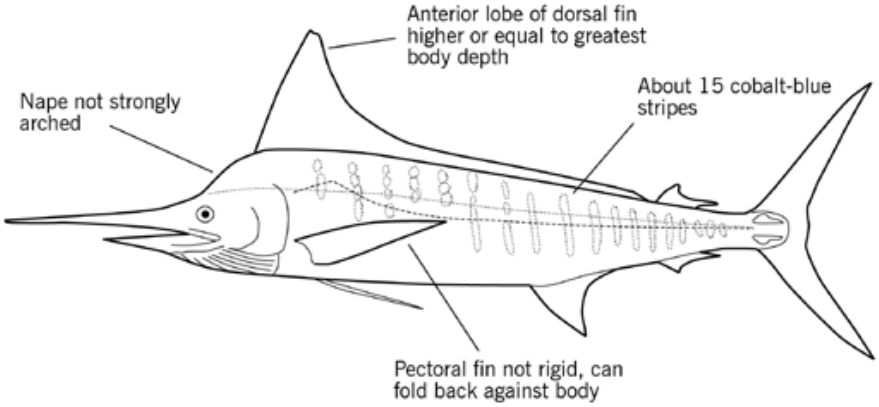
Distribution: Only very occasionally found off northern North Island in New Zealand. Tropical and warm-temperate parts of all oceans.

Depth: Near surface to about 200 m.

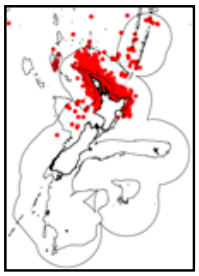
Similar species: Other billfishes lack the sail-like dorsal fin.

Biology & ecology: Pelagic, highly migratory, oceanic, usually found above the thermocline. Spend more than 85% of time above 90 m depth, mostly in the top 10 m, with occasional brief deep dives to 200 m, probably limited by temperature. Tends to approach continental coasts, islands, and reefs.

Striped marlin *Kajikia audax*



Family: 477. Istiophoridae (Billfishes)
Maori names: Takaketonga
Other names:
FishNZ reporting code: STM
FishNZ research/observer code: STM



Distinguishing features: First dorsal fin high, with anterior lobe equal to or higher than body depth. Branchiostegal membrane long, extends back to almost level with posterior margin of operculum. Pectoral fin flexible can be folded back against body. Pelvic fins long and slender, and almost equal in length to pectoral fins.

Colour: Body dark blue-black dorsally, silver-white ventrally, with about 15 vertical cobalt-blue bars (colour and stripes remain after death). First dorsal fin membrane blue-black, other fins brownish.

Size: To about 400 cm LJFL.

Length measurement method: Lower jaw tip to fork length, J

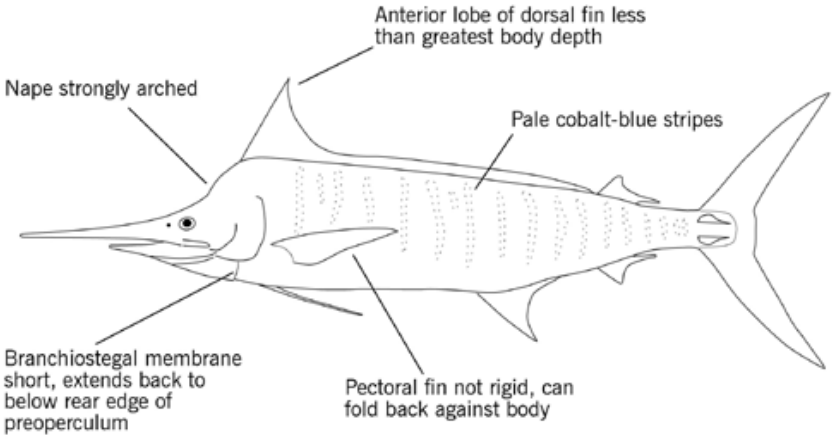
Distribution: North Island, mostly north of 40 S, and Kermadec Ridge in New Zealand over summer months. Tropical and subtropical Pacific and Indian Oceans as far south as about 45 S in southwest Pacific Ocean.

Depth: A few to 200 m.

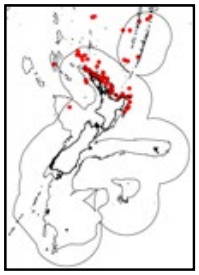
Similar species: Blue marlin (*Makaira nigricans*) has branchiostegal membrane (frill) short, extending to preoperculum rear margin, anterior lobe of first dorsal fin lower than body depth, strongly arched nape, origin of second dorsal fin slightly behind origin of second anal fin. Black marlin (*Istiompax indica*) has low first dorsal fin with anterior lobe about half body depth, strongly arched nape, and rigid, sickle-shaped pectoral fin, which can't be folded back against body.

Biology & ecology: Pelagic, oceanic, highly migratory. Spend more than 85% of the time above 90 m depth, mostly in top 10 m, with occasional brief dives down to about 200 m. Deep dives are probably limited by temperature rather than depth. Usually found above thermocline, and generally bounded by 20 and 25 C isotherms in western Pacific. Undergo long distance migrations. Mostly caught beyond 1000 m depth contour.

Blue marlin *Makaira nigricans*



Family: 477. Istiophoridae (Billfishes)
Maori names:
Other names: Indo-Pacific blue marlin
FishNZ reporting code: BEM
FishNZ research/observer code: BEM



Distinguishing features: Branchiostegal membrane (frill) short, extends back to just below rear of preoperculum. First dorsal fin with anterior lobe lower than body depth. Nape strongly arched. Pectoral fin flexible, folds back against body. Pelvic fins slender, shorter than pectoral fins, depressible into ventral grooves. Origin of second dorsal fin slightly behind origin of second anal fin. Lateral line single.

Colour: Dorsal body blue-black, ventral silver-white with about 15 obscure vertical cobalt-blue bars (body dark after death). First dorsal fin membrane blue-black, other fins dark brown.

Size: To about 450 cm LJFL.

Length measurement method: Lower jaw tip to fork length, J

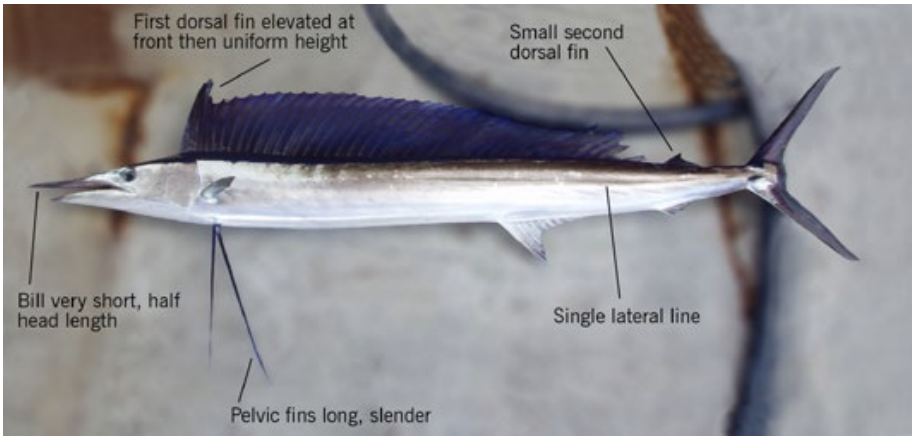
Distribution: Northern North Island and Kermadec Ridge in New Zealand over summer months. Worldwide in tropical and subtropical oceans. Often near equator, but as far south as about 38 S in Southwest Pacific Ocean.

Depth: Near surface to about 210 m.

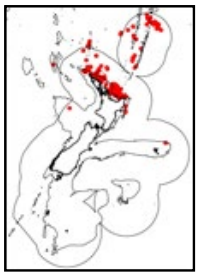
Similar species: Striped marlin (*Kajikia audax*) has high first dorsal fin with anterior lobe equal to or higher than body depth. One lateral line, and about 15 vertical cobalt-blue bars (remain after death). Black marlin (*Makaira indica*) has rigid, sickle-shaped pectoral fin, which does not fold back against body, and long branchiostegal membrane (frill) that almost extends back to below posterior margin of operculum.

Biology & ecology: Pelagic, oceanic, highly migratory. About half of time in top 10 m, with brief deep dives. Prefers seas warmer than 24 C at surface. Seasonal north-south migrations. Usually not close to land.

Shortbill spearfish *Tetrapturus angustirostris*



Family: 477. Istiophoridae (Billfishes)
Maori names:
Other names:
FishNZ reporting code: SSF
FishNZ research/observer code: SSF



Distinguishing features: Bill very short, usually less than 15% of body length, equal to or shorter than head length. First dorsal fin highest at anterior end (higher than body depth) then decreases and maintains uniform height, second dorsal fin small. Pelvic fins long and slender, about twice length of pectoral fins. Single visible lateral line.

Colour: Body dark blue dorsally, silver-white ventrally, without bars or markings. First dorsal fin dark blue, other fins brownish.

Size: To about 200 cm LJFL.

Length measurement method: Lower jaw tip to fork length, J

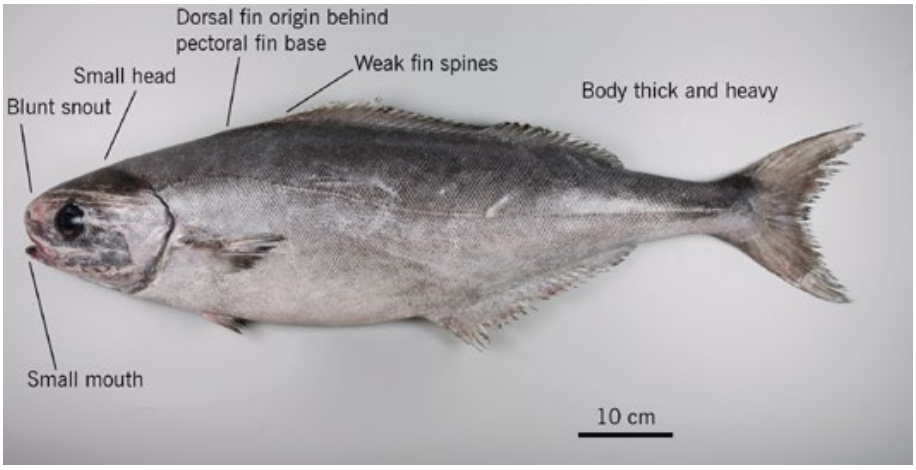
Distribution: Northern North Island, mostly north of about 40 S, and Kermadec Ridge in New Zealand. Tropical and subtropical Pacific and Indian Oceans.

Depth: Surface to about 350 m.

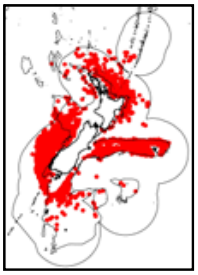
Similar species: Other billfishes have much longer bills.

Biology & ecology: Pelagic, oceanic, highly migratory, usually found well offshore, beyond 1000 m depth contour. Spend most time in top 80 m, with some deep dives to about 350 m. Reportedly caught deeper, with claims that catch rates are highest at greater depths.

Rudderfish *Centrolophus niger*



Family: 479. Centrolophidae (Warehous, medusafishes)
Maori names:
Other names:
FishNZ reporting code: RUD
FishNZ research/observer code: RUD



Distinguishing features: Body thick and heavy. Small head, blunt snout, small mouth. Weak fin spines, with long, low dorsal and anal fins. Dorsal fin origin behind pectoral fin bases, and very small pelvic fins. Scales absent on upper head from tip of snout to about rear edge of eyes and from pre-operculum. Long, oval (cross section) caudal peduncle.

Colour: Adults mid to dark brown, paler below. Juveniles have two broad dark vertical bands on body.

Size: To about 130 cm FL.

Length measurement method: Fork length

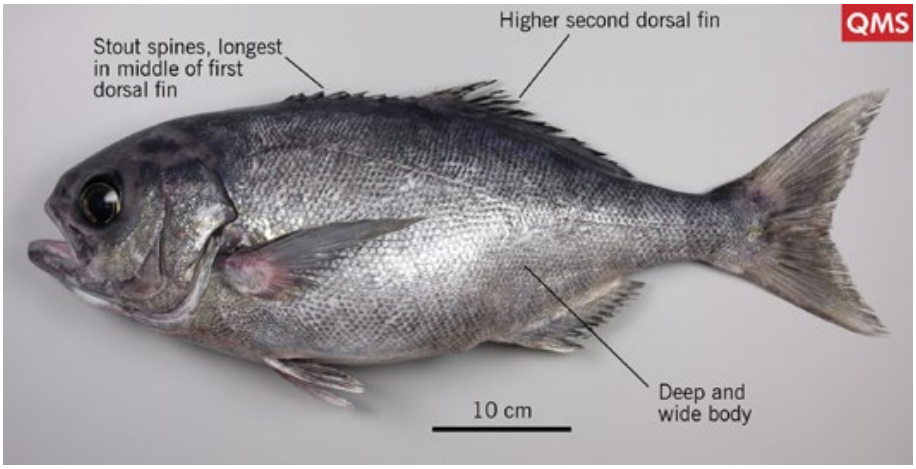
Distribution: Widespread in New Zealand from Kermadec Ridge to Campbell Plateau. Worldwide, bi-polar, in temperate Atlantic, Indian and South Pacific Oceans.

Depth: 400 to about 900 m.

Similar species: Tasmanian ruffe (T*ubbia tasmanica*) and bigeye ruffe (*T. stewarti*) have dorsal origin over pectoral fin base and oblique rows of 8 to 10 pores below dorsal fin and above anal fin. Ragfish (*Pseudoicichthys australis*) is limp bodied and has a short snout.

Biology & ecology: Pelagic, in temperate waters.

Bluenose *Hyperoglyphe antarctica*



Family: 479. Centrolophidae (Warehous, medusafishes)
Maori names: Matiri
Other names:
FishNZ reporting code: BNS
FishNZ research/observer code: BNS

Distinguishing features: Two dorsal fins, first low with 8 to 9 stout spines, second higher with 18 to 21 rays. Middle spines in first dorsal fin longer than others. Nape scaleless except for small ovate patch of scales on each side above and behind eye. Anal fin short with 13 to 16 soft rays. Deep and wide body. Lateral line arched just behind head then curves down to reach midline of body at about middle of anal fin.

Colour: Dark greyish-blue above and greyish-silvery on sides and belly. Fins greyish, paler below.

Size: To about 137 cm FL.

Length measurement method: Fork length

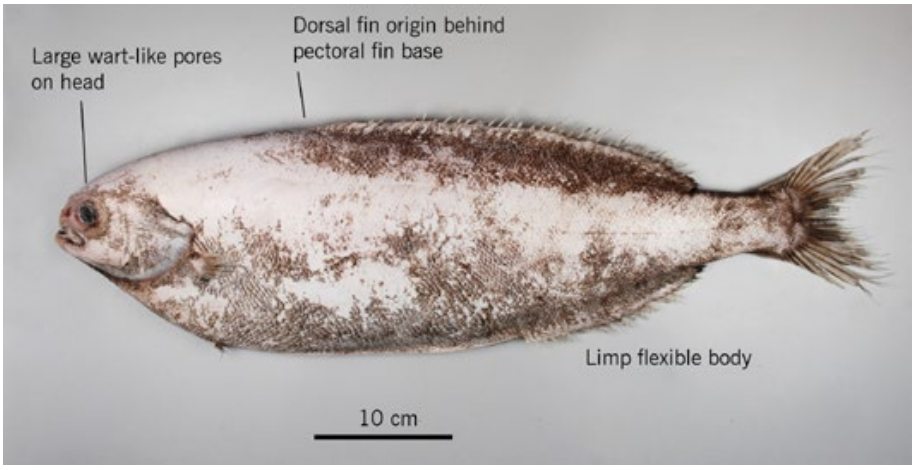
Distribution: Widespread in New Zealand from Kermadec Ridge to southern edge of Stewart/Snares Island shelf, and Chatham Rise. Southern hemisphere east Atlantic, Indian, and southwest Pacific Oceans including Australia, New Caledonia and New Zealand.

Depth: 200 to 800 m.

Similar species: Silver (*S. punctata*) and common warehou (*S. brama*) have dark blotches above pectoral fin base. White warehou (*S. caerulea*) is pale, with undulating lateral line. Ocean blue-eye (*Seriolella labyrinthica*) is rare, northern and has 7 to 9 short spines in first dorsal fin that increase in length posteriorly, 26 to 29 dorsal fin soft rays, and 18 to 19 anal fin soft rays.

Biology & ecology: Adults demersal over deep rocky reefs and rises. Juveniles may be near-surface for about 2 years (to about 47 cm FL). Attain ages of at least 60 years. No distinct spawning grounds known. Probably spawn mid-late summer.

Ragfish *Pseudoicichthys australis*



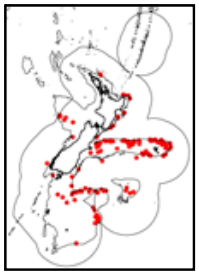
Family: 479. Centrolophidae (Warehous, medusafishes)

Maori names:

Other names: Southern driftfish

FishNZ reporting code: RAG

FishNZ research/observer code: RAG



Distinguishing features: Soft-bodied with small head, blunt snout with wart-like pores, and small mouth. Head including snout, operculum and cheeks scaled. Single long-based dorsal fin. Dorsal fin origin well behind pectoral fin base. Small pelvic fin.

Colour: Body uniformly brown to blackish. Tips of each fin and gill membrane tinged with black.

Size: To about 80 cm FL.

Length measurement method: Fork length

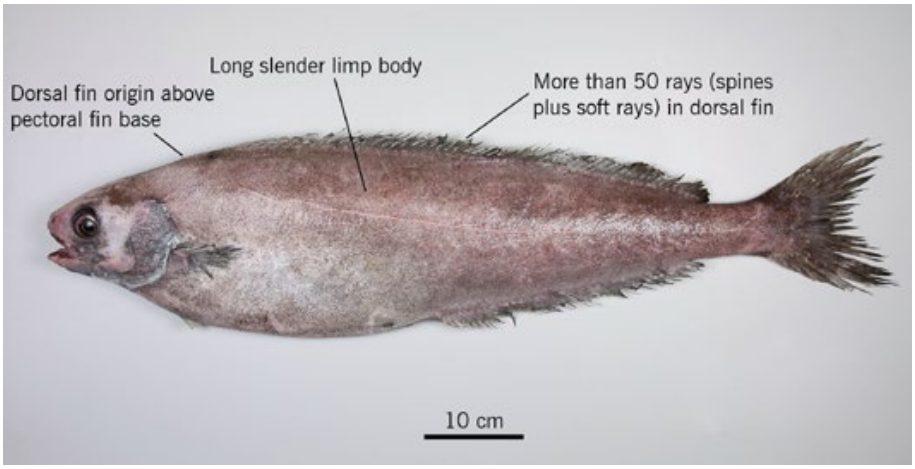
Distribution: Verified New Zealand records are from Chatham Rise south to Campbell Plateau. Fisheries records are unreliable due to mis-identifications. Widespread in cool southern hemisphere including the Southern Ocean down to 67 S.

Depth: Adults 300 to 900 m. Juveniles near the surface to about 300 m.

Similar species: Slender ragfish (*Schedophilus huttoni*) has elongate, thin body, dorsal fin origin above pectoral fin base, single large pore at base of each dorsal fin ray. Tasmanian ruffe (*Tubbia tasmanica*) and bigeye ruffe (*T. stewarti*) have dorsal fin origin above pectoral fin base and an oblique row of 8 to 10 small pores at the base of each dorsal fin ray. Rudderfish (*Centrolophus niger*) has robust body, lacks scales on snout and pre-operculum (cheek), snout length is longer than eye diameter. Pelagic butterfish (*Schedophilus maculatus*) has robust body and series of single pores at base of each dorsal fin ray running along body.

Biology & ecology: Rare in New Zealand. A deep, cool water species.

Slender ragfish *Schedophilus huttoni*



Family: 479. Centrolophidae (Warehous, medusafishes)

Maori names:

Other names:

FishNZ reporting code: CPD

FishNZ research/observer code: SUH

Distinguishing features: Body elongate, laterally compressed, limp. Dorsal fin long, more than 50 (57 to 60) spines plus soft rays, origin above pectoral fin base, anterior spines short and soft. 35 to 41 rays in anal fin.

Colour: Adults have dark brownish body, top of head and fins. Sides of head iridescent greyish. Belly greyish or blackish. Juveniles have dark pigment bars on dorsal fin which extend onto

Size: To about 80 cm FL.

Length measurement method: Fork length

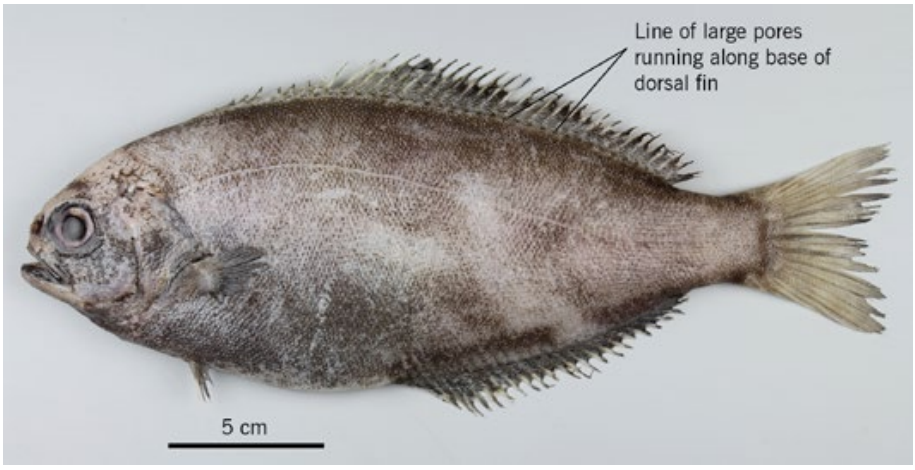
Distribution: Verified New Zealand records are widespread from Lord Howe Rise to Puysegur including Chatham Rise. Fisheries records are unreliable due to mis-identifications. Widespread in temperate southern Pacific and possibly Indian Ocean off South Africa.

Depth: 300 to 1100 m.

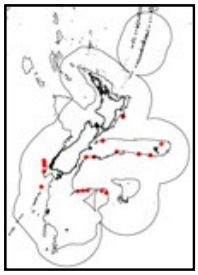
Similar species: Rudderfish (*Centrolophus niger*) has stout thick body, origin of first dorsal fin behind pectoral fin base, short dorsal fin with 37 to 42 rays (spines plus soft rays). Ragfish (*Pseudoicichthys australis*) has large wart-like pores on top of head, dorsal fin origin behind pectoral fin base. Tasmanian ruffe (*Tubbia tasmanica*) and bigeye ruffe (*T. stewarti*) have oblique row of 8 to 10 small pores at base of each dorsal fin ray, i.e., parallel to fin ray.

Biology & ecology: Poorly known. Adults appear to be demersal but juveniles are probably midwater.

Pelagic butterfish *Schedophilus maculatus*



Family: 479. Centrolophidae (Warehous, medusafishes)
Maori names:
Other names:
FishNZ reporting code: SUM
FishNZ research/observer code: SUM



Distinguishing features: Single line of large pores running along base of dorsal fin. Dorsal fin short with 35 to 38 rays (spines plus soft rays), and anal fin short with 26 to 28 rays.

Colour: Adults have dark brownish body, darker fins. Juveniles have large dark blotches on head, body and fins.

Size: To about 64 cm FL.

Length measurement method: Fork length

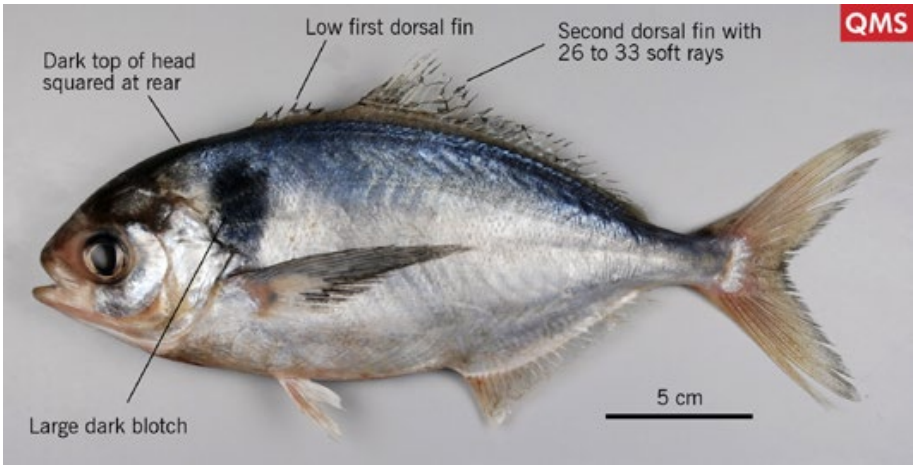
Distribution: Verified New Zealand region records are widespread from Kermadec Ridge to Campbell Plateau. Fisheries records are unreliable due to mis-identifications. Possibly confined to southern hemisphere.

Depth: Adults 400 to 1100 m. Juveniles less than 100 m.

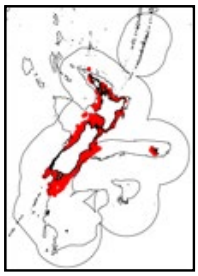
Similar species: Tasmanian ruffe (*Tubbia tasmanica*) and bigeye ruffe (*T. stewarti*) have oblique row of 8 to 10 small pores at base of each dorsal fin ray, i.e., parallel to fin ray. Ragfish (*Pseudoicichthys australis*) has large wart-like pores on top of head, dorsal fin origin behind pectoral fin base. Slender ragfish (*Schedophilus huttoni*) has long body, long dorsal (57 to 60 spines plus soft rays) and anal fins (35 to 41 rays).

Biology & ecology: Poorly known. Few adults are known. Juveniles are from midwater.

Common warehou *Seriolella brama*



Family: 479. Centrolophidae (Warehous, medusafishes)
Maori names: Warehou
Other names: Warehou, blue warehou
FishNZ reporting code: WAR
FishNZ research/observer code: WAR



Distinguishing features: Dark area on top of head does not form a point at rear of head. Large dark blotch on side of body behind head. Distinct low first dorsal fin with 6 to 8 spines followed by short second dorsal fin with 26 to 33 soft rays. Long sickle-shaped pectoral fin. Larger individuals may have a low keel on the mid-lateral caudal peduncle.

Colour: Body steely-blue to greenish-grey above, paler silvery sides and belly. Large blackish blotch on side of body behind head extending from pectoral fin base towards top of body.

Size: To about 90 cm FL.

Length measurement method: Fork length

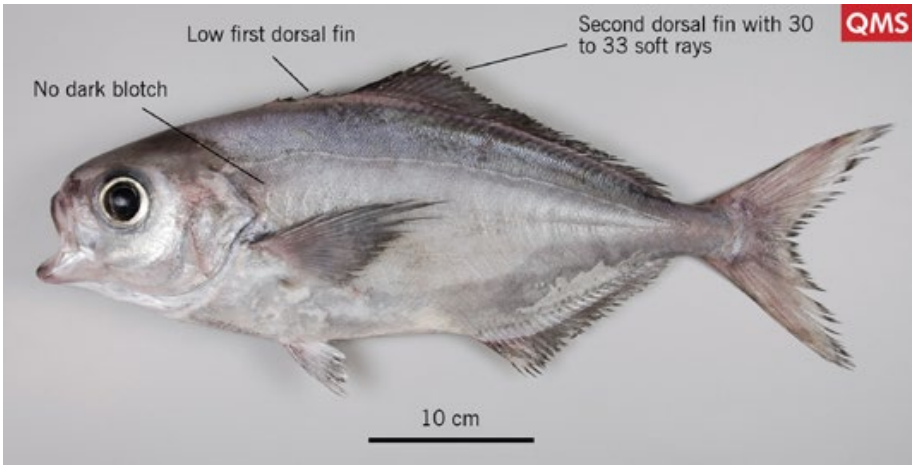
Distribution: Widespread in central and southern New Zealand coastal waters, with patchy distribution on west coast North Island, uncommon or rare on northeast coast North Island. Offshore NZ fisheries records are uncertain or erroneous. Southern Australia.

Depth: 5 to 250 m.

Similar species: Silver warehou (*S. punctata*) has dark area on top of head extending back to form a point at rear of head, and more second dorsal fin rays (35 to 38). White warehou (*S. caerulea*) lacks dark blotch on side of body behind head.

Biology & ecology: Demersal. Feeds on plankton organisms, mainly salps. Reaches at least 22 years of age

White warehou *Seriolella caerulea*



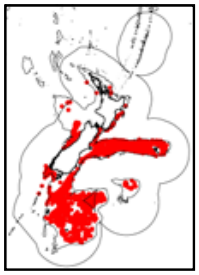
Family: 479. Centrolophidae (Warehous, medusafishes)

Maori names:

Other names:

FishNZ reporting code: WWA

FishNZ research/observer code: WWA



Distinguishing features: Dark area on top of head does not form a point at rear of head. No dark blotch on side of body behind head. Distinct low first dorsal fin with 7 spines followed by second dorsal fin with 30 to 33 soft rays. Lateral line undulates.

Colour: Adults silvery-grey to creamy-white with no distinctive markings on head or body. Juveniles may have distinctive wavy pale and dark grey stripes running along body which disappear with growth.

Size: To about 69 cm FL.

Length measurement method: Fork length

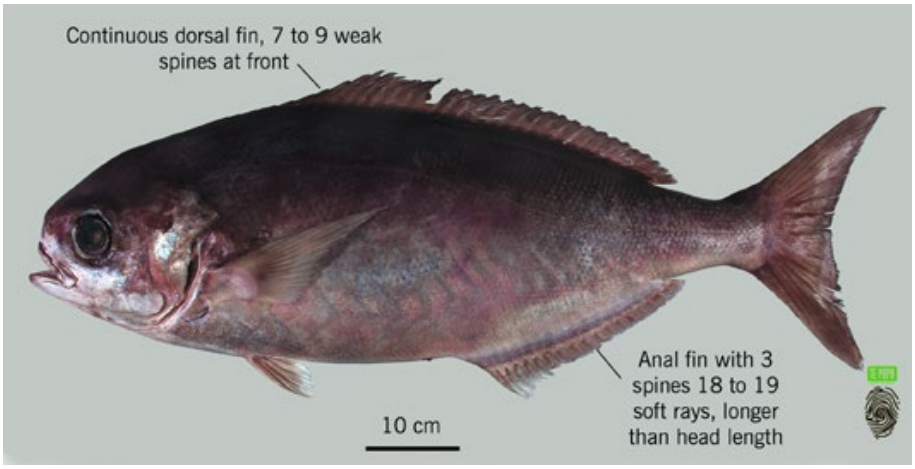
Distribution: Widespread in central and southern New Zealand, including east and west coasts of South Island, Campbell and Bounty Plateaus, and Chatham Rise. Widespread in southern temperate Pacific from southest Australia to South America.

Depth: 200 to 700 m.

Similar species: Silver warehou (*S. punctata*) has dark area on top of head extending back to form a point at rear of head, small dark blotch on side of body behind head, and more second dorsal fin rays (34 to 38). Common warehou (*S. brama*) has a large dark blotch on side of body behind head, fewer soft rays in second dorsal fin (26 to 33), and a long sickle-shaped pectoral fin.

Biology & ecology: Demersal. Feeds on plankton organisms, mainly salps. Reaches about 21 years of age.

Ocean blue-eye *Seriolella labyrinthica*



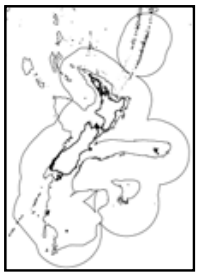
Family: 479 Centrolophidae (Warehous, medusafishes)

Maori names:

Other names:

FishNZ reporting code: SEL

FishNZ research/observer code: SEL



Distinguishing features: Continuous dorsal fin, 7 to 9 weak spines, shortest at front, merge into 26 to 29 longer soft rays. Anal fin with 3 weak spines, 18 to 19 soft rays, anal fin base longer than head length.

Colour: Greyish-blue dorsal, sometimes with broad dark vertical bars, and blotches, whitish ventral body, bars fade to greyish on death. Juveniles with small black spots on body.

Size: To about 93 cm FL.

Length measurement method: Fork length

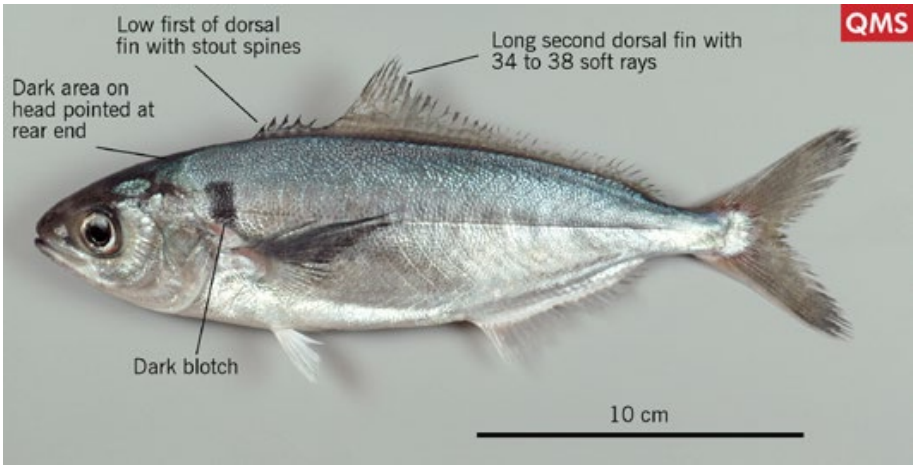
Distribution: Northern New Zealand, Challenger Plateau, Hawke's Bay, to Kermadec Islands. Southern Pacific Ocean from Easter Island to eastern Australia.

Depth: 1 to about 400 m.

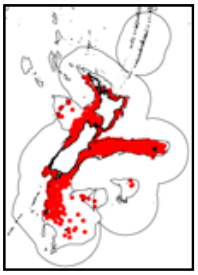
Similar species: Bluenose (*Hyperoglyphe antarctica*) has separate spinous dorsal fin with strong spines, short at front and rear, longest in middle, and short anal fin, 3 spines and 13 to 16 soft rays, anal fin base shorter than head length.

Biology & ecology: Seen near floating material, structures, offshore. Caught by hook and line on deep reefs in Pacific Islands, e.g., off Tonga.

Silver warehou *Seriolella punctata*



Family: 479. Centrolophidae (Warehous, medusafishes)
Maori names:
Other names:
FishNZ reporting code: SWA
FishNZ research/observer code: SWA



Distinguishing features: Slender body and pointed snout. Dark area on top of head extends back to form a point at rear of head. Small dark blotch on side of body behind head. Distinct low first dorsal fin with 6 to 8 stout spines followed by long second dorsal fin with 34 to 38 soft rays.

Colour: Body silvery-blue to grey above, paler sides, and silvery-white below. Small dark blotch on side of the body behind head. Head dark grey-brown above extending back to form a point at rear of head.

Size: To about 66 cm FL.

Length measurement method: Fork length

Distribution: Widespread in New Zealand from off Ninety Mile Beach (juveniles) to south of Campbell Island, most common in central and southern New Zealand including Chatham Rise, and west and east coasts of South Island down to Auckland Island.

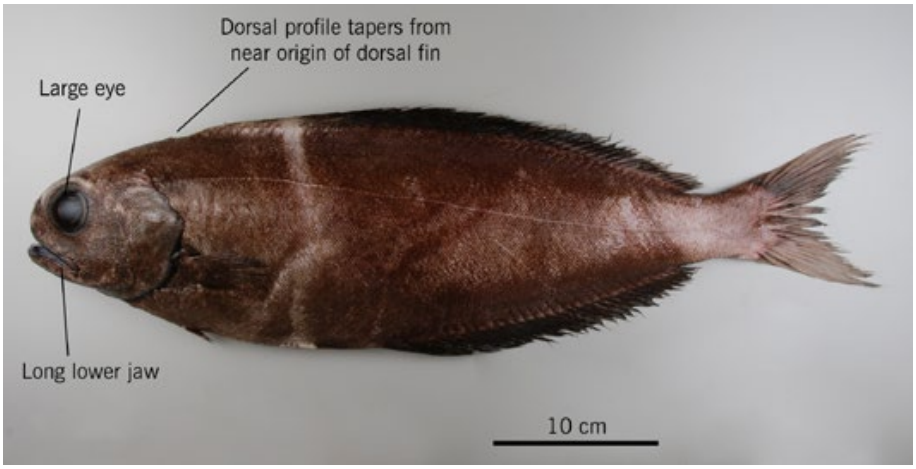
Widespread in southern temperate Pacific from southern Australia to South America.

Depth: Juveniles 50 to 150 m. Adults 200 to 800 m.

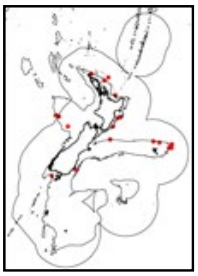
Similar species: Common warehou (*S. brama*) has dark area on top of head that does not form a point at rear of head, fewer soft rays in second dorsal fin (26 to 33), much longer pectoral fin, and larger dark blotch on side of body behind head. White warehou (*S. caerulea*) has dark area on top of head that does not form a point at rear of head, and lacks a dark blotch on side of body behind head.

Biology & ecology: Demersal. Forms feeding and spawning aggregations. Feeds mainly on salps. Reaches at least 23 years of age.

Bigeye ruffe *Tubbia stewarti*



Family: 479 Centrolophidae (Warehous, medusafishes)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: TUS



Distinguishing features: Oblique rows of 8 to 10 pores below dorsal fin and above anal fin. Relatively long body, long head, large eye, and long lower jaw. Dorsal profile of body tapers from near anterior of dorsal fin with a low curve back to caudal peduncle.

Colour: Head and body chocolate brown, fins blackish.

Size: To about 63 cm FL.

Length measurement method: Fork length

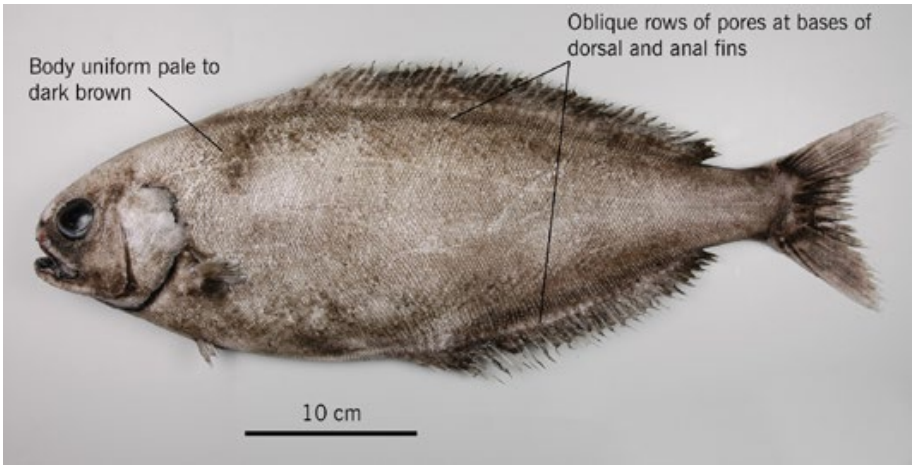
Distribution: Central and northern New Zealand. Data plotted on map includes only Te Papa specimens and does not include any fisheries records. Also southern Australia but possibly more widespread.

Depth: 500 to 1400 m.

Similar species: Tasmanian ruffe (*Tubbia tasmanica*) is a stouter fish with relatively short head, small eye and short lower jaw. The dorsal profile of the body tapers from near mid-body, with a marked curve back to the caudal peduncle. The two species of *Tubbia* show clear separation from vertebral counts and genetic markers.

Biology & ecology: Young may be pelagic but adults appear to live near the seafloor.

Tasmanian ruffe *Tubbia tasmanica*



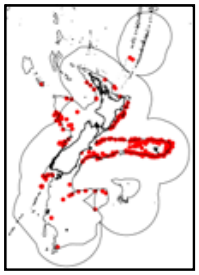
Family: 479. Centrolophidae (Warehous, medusafishes)

Maori names:

Other names:

FishNZ reporting code: TUB

FishNZ research/observer code: TUB



Distinguishing features: Numerous oblique rows of 8 to 10 pores below dorsal fin and above anal fin. Head, body, and fins dull mid-dark brown without distinctive markings. Dorsal fin origin above or just behind pectoral fin bases. Single long low dorsal fin. Very small pelvic fins. Head almost completely scaled.

Colour: Head, body, and fins dull mid-dark brown without distinctive markings.

Size: To about 52 cm FL.

Length measurement method: Fork length

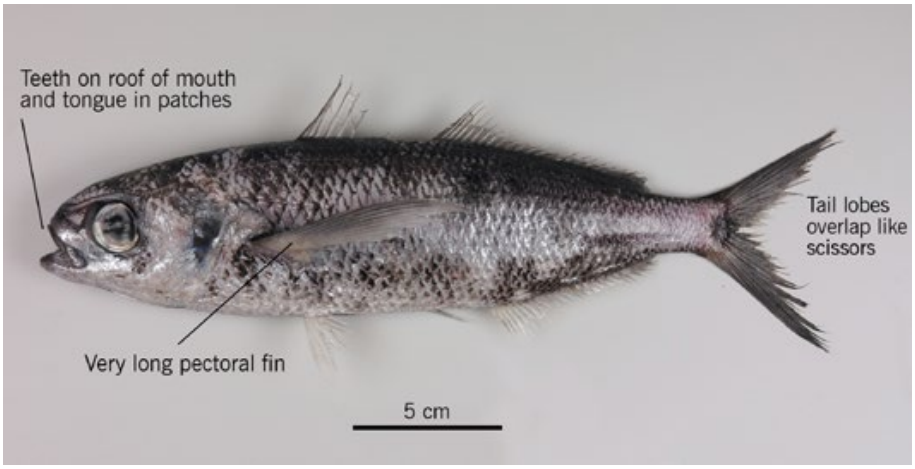
Distribution: Widespread in New Zealand. Widespread in cool temperate southern hemisphere including South Africa, southern Australia, and New Zealand.

Depth: 400 to 1200 m.

Similar species: Bigeye ruffe (*Tubbia stewarti*) has much larger eye, and body and fins are darker. Rudderfish (*Centrolophus niger*) lacks rows of pores at bases of dorsal and anal fins, lacks scales on snout and cheek, attains about 100 cm FL. Ragfish (*Pseudoicichthys australis*) has very small mouth and snout, and small eye. Slender ragfish (*Schedophilus huttoni*) is very limp-bodied, elongated, pale. Pelagic butterfish (*S. maculatus*) has single pore at base of each dorsal fin ray.

Biology & ecology: Young are probably pelagic, but adults appear to be living near the seafloor.

Cubehead *Cubiceps* spp.



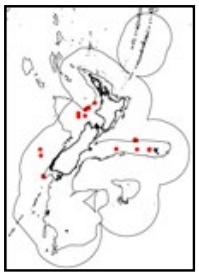
Family: 480. Nomeidae (Cubeheads, driftfishes)

Maori names:

Other names: Scissortail

FishNZ reporting code: CUB

FishNZ research/observer code: CUB



Distinguishing features: Elongate cylindrical body with large and rounded head (about 30% of length). Large eye, and long pectoral fins. Two distinctly separate dorsal fins, first folds into groove. Teeth on roof of mouth and tongue.

Colour: Black cubehead is blue-grey to violet brown, blue cubehead is dull brownish-black to blue, and Cape cubehead deep blue-black with violet sheen but colours fade on death.

Size: Black cubehead attains about 45 cm and blue cubehead about 33 cm FL.

Length measurement method: Fork length

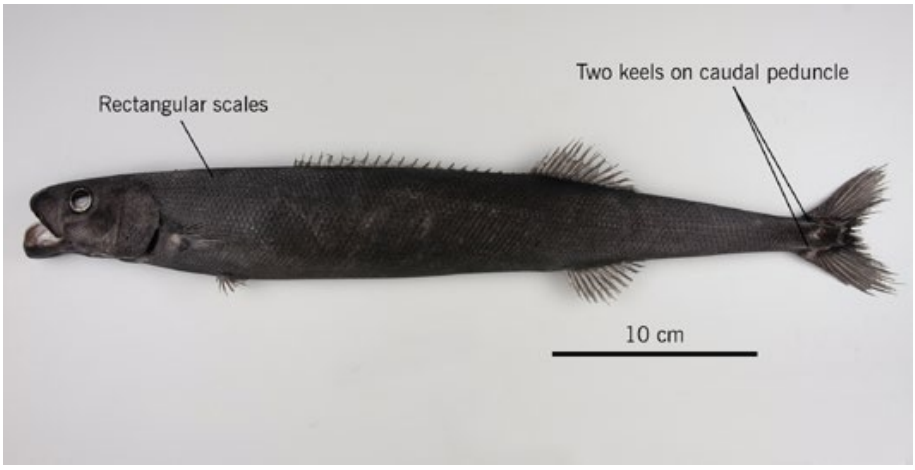
Distribution: Black cubehead is recorded from central and northern New Zealand, and is widespread in Indian and Pacific Oceans. Blue cubehead is widespread in New Zealand as far south as about 53 S, and is widespread in southern hemisphere. Cape cubehead is recorded from northern New Zealand.

Depth: A few to over 1000 m.

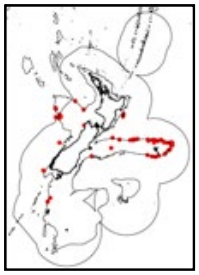
Similar species: Black cubehead (*Cubiceps baxteri*, **CBX**) has single row of teeth on roof of mouth (vomer) and on tongue, and top of head is scaled behind nostrils. Blue cubehead (*C. caeruleus*, **CCA**) has oval patch of teeth on roof of mouth and on tongue. The rarer Cape cubehead (*Cubiceps capensis*, **CCP**) has single row of teeth on roof of mouth (vomer) and on tongue and top of head is scaleless from snout tip to just before eyes.

Biology & ecology: Midwater. Blue cubehead form schools in open sea.

Squaretail *Tetragonurus cuvieri*



Family: 482. Tetragonuridae (Squaretails)
Maori names:
Other names:
FishNZ reporting code: TET
FishNZ research/observer code: TET



Distinguishing features: Elongate rounded body covered in firmly attached rectangular scales arranged in spiralling rows. Large lower jaw, concealed by upper jaw when closed, but bearing a curved row of blade-like teeth. Two prominent keels on each side of the caudal peduncle.

Colour: Head, body, and fins uniformly brownish-black in adults.

Size: To about 70 cm FL.

Length measurement method: Fork length

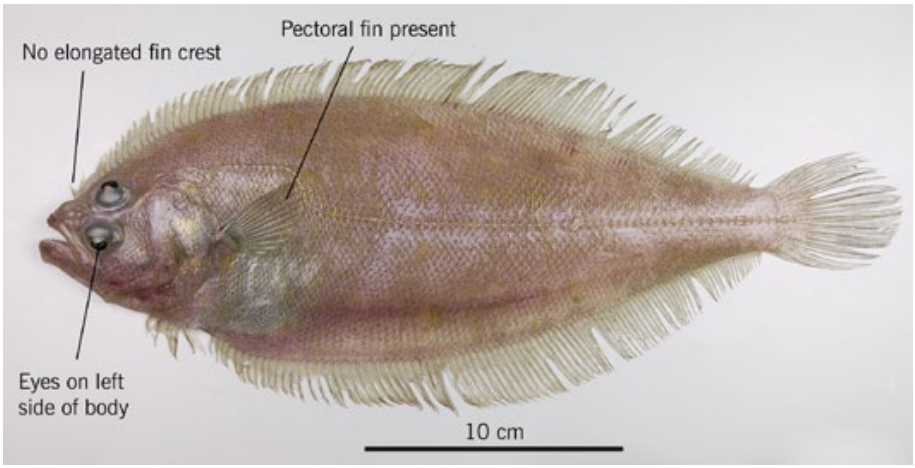
Distribution: Widespread in New Zealand from Reinga Ridge to Campbell Plateau, including Chatham Rise. Widespread in subtropical and temperate seas.

Depth: 400 to 1300 m.

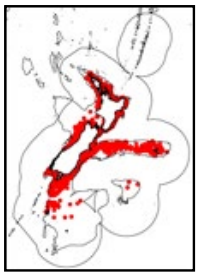
Similar species: Other fishes lack combination of body shape, body scale pattern, lower jaw teeth, and keels on caudal peduncle.

Biology & ecology: Oceanic fishes and probably capable of fast swimming. Presumably adults live in midwater. Distinctive jaws and teeth are possibly adapted for feeding on soft bodied invertebrates such as ctenophores and jellyfishes.

Witch *Arnoglossus scapha*



Family: 494. Bothidae (Lefteye flounders)
Maori names: Mehue
Other names:
FishNZ reporting code: WIT
FishNZ research/observer code: WIT



Distinguishing features: Eyes on left side of body (with head facing away from viewer), pectoral fin present, without anterior dorsal fin rays elongated into a crest, and without accessory lateral line above eye.

Colour: Body light greyish brown, with numerous very small black spots. Underside light coloured.

Size: To about 40 cm TL.

Length measurement method: Total length

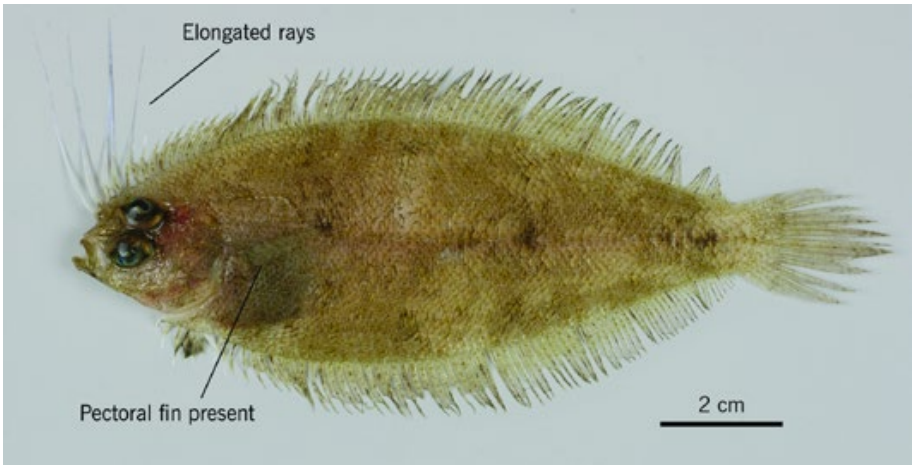
Distribution: New Zealand only, but widely distributed.

Depth: 5 to 500 m.

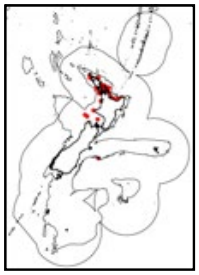
Similar species: Crested flounder (*Lophonectes mongonuiensis*) has anterior rays of dorsal fin elongated into a crest.

Biology & ecology: Found around most of New Zealand but more common around South Island.

Crested flounder *Lophonectes mongonuiensis*



Family: 494. Bothidae (Lefteye flounders)
Maori names:
Other names:
FishNZ reporting code: BOT
FishNZ research/observer code: CFL



Distinguishing features: Small with eyes on left side of the body (with head facing away from viewer), pectoral fin present, and anterior dorsal fin rays elongated into a crest which can be easily overlooked, but which is longer in males than females. In males about 5 rays are prolonged to about twice the head length, whereas in females about 3 rays extend to only about half the head length.

Colour: Body light greyish-brown with the pelvic fin on the eyed side usually black.

Size: To about 20 cm TL.

Length measurement method: Total length

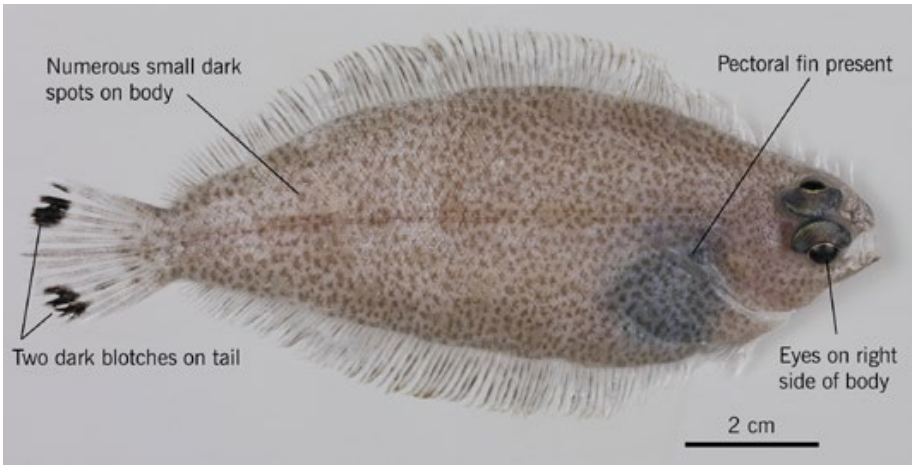
Distribution: Known only from central and northern New Zealand. A similar species occurs in southern and eastern Australia.

Depth: 10 to 100 m.

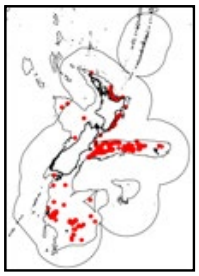
Similar species: Witch (Arnoglossus scapha) lacks elongatedanterior dorsal fin rays and is usually larger, up to 40 cm TL.

Biology & ecology: Demersal.

Spotted flounder *Azygopus flemingi*



Family: 497. Rhombosoleidae (Southern righteye flounders)
Maori names:
Other names:
FishNZ reporting code: SDF
FishNZ research/observer code: SDF



Distinguishing features: Small (to about 20 cm TL) with eyes on right side of body (with head facing away from viewer). Distinctive colour pattern with numerous small dark spots on body and 2 large dark blotches on rear of tail fin. Pectoral fin present.

Colour: Body light brown with numerous small dark spots, and 2 large dark blotches on rear of tail fin. Underside white.

Size: To about 20 cm TL.

Length measurement method: Total length

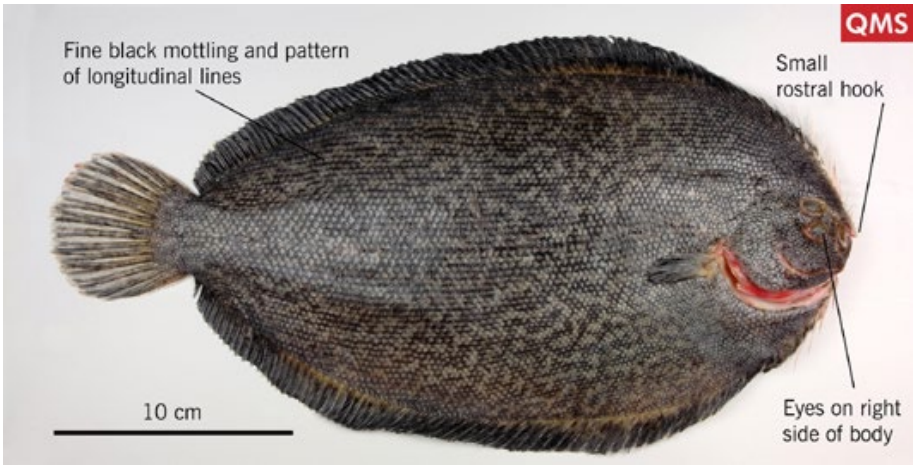
Distribution: Known only from and widespread around New Zealand. A similar species occurs around southern Australia.

Depth: 200 to 800 m.

Similar species: Other flatfishes lack 2 large dark blotches on tail fin.

Biology & ecology: Demersal.

Brill *Colistium guntheri*



Family: 497. Rhombosoleidae
Maori names: Paatiki-nui
Other names:
FishNZ reporting code: BRI (effort), FLA (landing)
FishNZ research/observer code: BRI

Distinguishing features: Right-eyed with oval body. Dark greenish-grey on eyed side with fine black mottling and pattern of longitudinal lines. Underside with an apricot tinge and dark fin membranes.

Colour: Body dark greenish-grey on eyed side with fine black mottling superimposed on a pattern of longitudinal lines caused by a dark edge on each scale. Underside with an apricot tinge and dark fin membranes.

Size: To about 95 cm TL.

Length measurement method: Total length

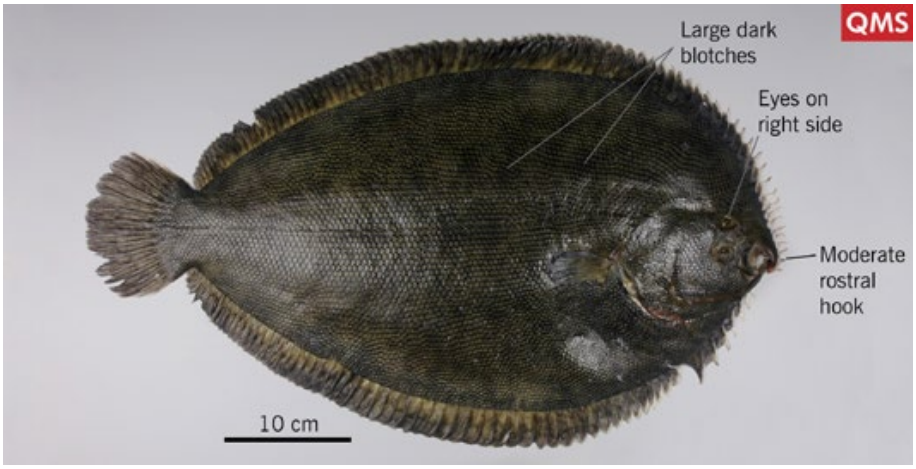
Distribution: Known only from central and southern New Zealand. Older fisheries records from west and east coasts near top of North Island were likely to be turbot (*Colistium nudipinnis*).

Depth: A few to 100 m.

Similar species: Turbot (*Colistium nudipinnis*) has larger darkblotches on eyed side, a longer rostral hook reaching beyond posterior end of maxillary on eyed side, and a deeper and thicker body.

Biology & ecology: Demersal.

Turbot *Colistium nudipinnis*



Family: 497. Rhombosoleidae
Maori names: Paatiki
Other names:
FishNZ reporting code: TUR (effort), FLA (landing)
FishNZ research/observer code: TUR

Distinguishing features: Right-eyed with thick oval body. Dark greenish-grey on eyed side with faint large blotches. Underside whitish, sometimes with small dark blotches.

Colour: Body dark greenish-grey on eyed side with faint large blotches. Underside whitish or yellowish sometimes with small dark blotches, and pale fin membranes.

Size: To about 100 cm TL.

Length measurement method: Total length

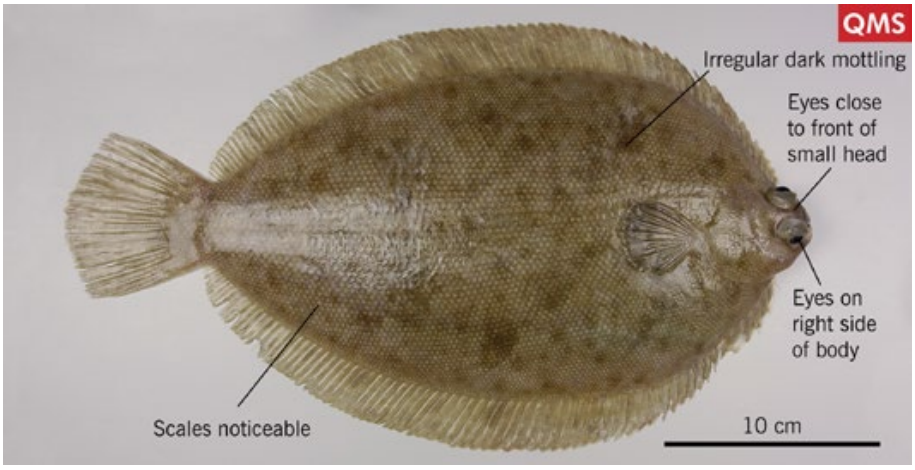
Distribution: Most common on west coast of South Island. Known only from New Zealand.

Depth: A few to 100 m.

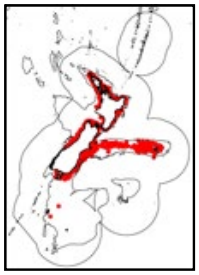
Similar species: Brill (*Colistium guntheri*) has fine black mottling in longitudinal lines on eyed side, a shorter rostral hook not reaching posterior end of maxillary on eyed side, and body is more slender and thinner.

Biology & ecology: Demersal.

Lemon sole *Pelotretis flavilatus*



Family: 497. Rhombosoleidae
Maori names:
Other names:
FishNZ reporting code: LSO (effort), FLA (landing)
FishNZ research/observer code: LSO



Distinguishing features: Eyes on right side of body (with head facing away from viewer), small head with eyes close to the edge of the slightly protruding snout, body brownish-green with irregular darker mottling. Scales obvious.

Colour: Body brownish-green with irregular darker mottling. Underside whitish.

Size: To about 50 cm TL.

Length measurement method: Total length

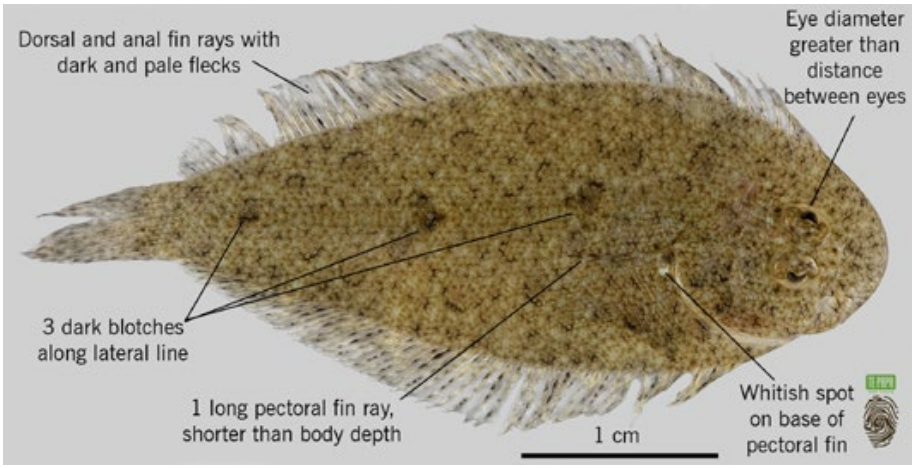
Distribution: From Stewart Island to North Cape, also Chatham Rise. Known only from New Zealand.

Depth: 20 to 500 m.

Similar species: New Zealand sole (*Peltorhamphus novaezeelandiae*) has a rounded head. Sand flounder (*Rhombosolea plebeia*) has a diamond shaped body.

Biology & ecology: Demersal.

Speckled sole *Peltorhamphus latus*



Family: 497 Rhombosoleidae (Southern righteye flounders)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: SPS

Distinguishing features: Whitish spot on base of pectoral fin. Eye diameter greater than distance between the eyes, dorsal and anal fin rays with alternating dark and pale flecks along many rays, upper (eyed) body with up to 3 darkish blotches along the lateral line, plus other less distinct scattered dark blotches. Pectoral fin with one elongated ray, which is shorter than body depth. Elongated, curved upper jaw (rostral hook) covering mouth when viewed from eyed side.

Colour: Dorsal and anal fin rays with alternating dark and pale flecks along many rays, upper (eyed) body with up to 3 darkish blotches along the lateral line, plus other less distinct scattered dark blotches. Whitish spot on base of pectoral fin. Inner lining of operculum on upper (eyed) side and roof of mouth black. Underside of body whitish.

Size: To about 18 cm TL.

Length measurement method: Total length

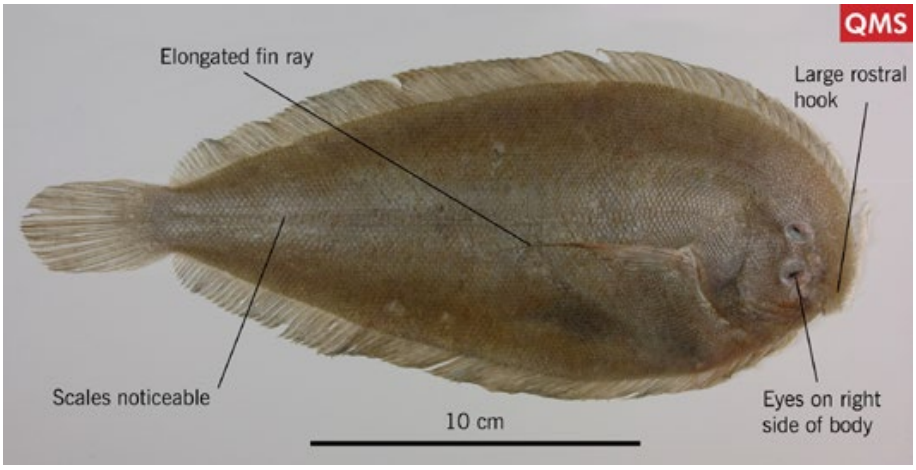
Distribution: Widespread, but known only from New Zealand. Data plotted on map includes only Te Papa specimens and does not include any fisheries records.

Depth: Less than 1 to about 60 m.

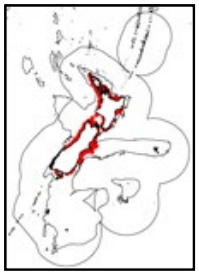
Similar species: New Zealand sole (*Peltorhamphus novaezeelandiae*) lacks marking on the body and fins, and grows to a much larger size, longer than 18 cm TL. Slender sole (*Peltorhamphus tenuis*) has a very long pectoral fin ray, usually longer than body depth (dorsal to anal distance) and whitish roof of the mouth. Grey sole (*Peltorhamphus* sp. A) lacks whitish spot on base of pectoral fin, is small (to about 18 cm TL), but is only known from east coast, South Island, from about Akaroa south.

Biology & ecology: Demersal.

New Zealand sole *Peltorhamphus novaezeelandiae*



Family: 497. Rhombosoleidae
Maori names: Paatiki-rore
Other names:
FishNZ reporting code: ESO (effort), FLA (landing)
FishNZ research/observer code: ESO



Distinguishing features: Elongated curved upper jaw (rostral hook) covering mouth when viewed from eyed side, second pectoral fin ray on eyed side elongated, widest section of oval body well forward of centre. Scales obvious.

Colour: Body greenish-grey above, underside whitish.

Size: To about 55 cm TL.

Length measurement method: Total length

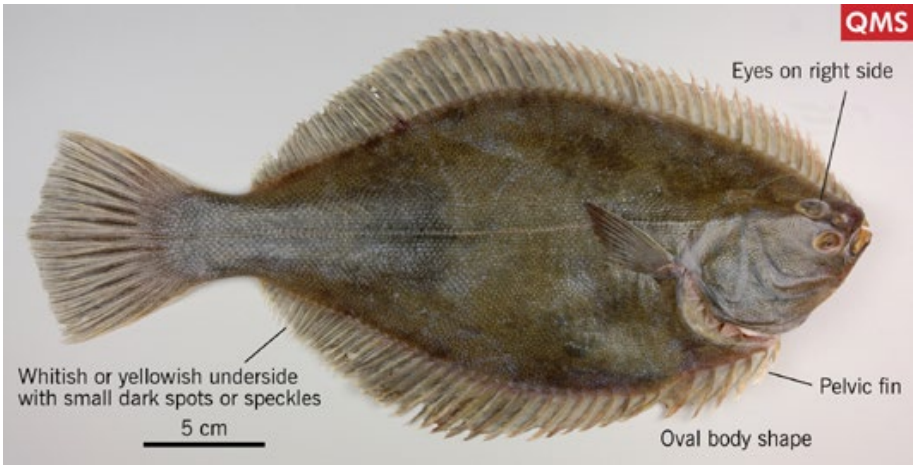
Distribution: Widespread but more common around the South Island. Known only from New Zealand

Depth: A few to 100 m.

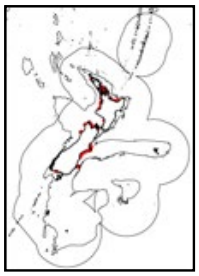
Similar species: Three dwarf species of *Peltorhamphus* grow no larger than about 20 cm total length. Speckled sole (*P. latus*) has dark and pale bands on many dorsal and anal fin rays, whitish spot on base of pectoral fin, elongated pectoral ray shorter than body depth, and black roof of the mouth. Slender sole (*P. tenuis*) lacks banded anal and dorsal fin rays, has elongated pectoral fin ray longer than body depth, and whitish roof of the mouth. Grey sole (*Peltorhamphus* sp. A) lacks whitish spot on base of pectoral fin and is only known from east coast, South Island, from about Akaroa south.

Biology & ecology: Demersal, including shallow bays and estuaries.

Yellowbelly flounder *Rhombosolea leporina*



Family: 497. Rhombosoleidae
Maori names: Paatiki-totara
Other names:
FishNZ reporting code: YBF (effort), FLA (landing)
FishNZ research/observer code: YBF



Distinguishing features: Eyes on right side of body (with head facing away from viewer). Body oval, yellowish and whitish underside, with small dark spots or speckles. Scales very small - body feels smooth.

Colour: Body greenish-brown above, yellowish and whitish underside with scattered small dark spots or speckles.

Size: To about 50 cm TL.

Length measurement method: Total length

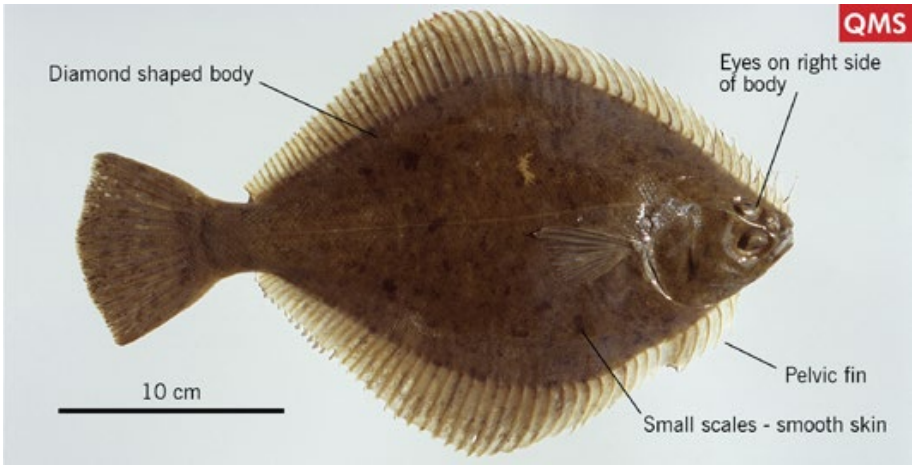
Distribution: Known only from New Zealand.

Depth: A few to 50 m.

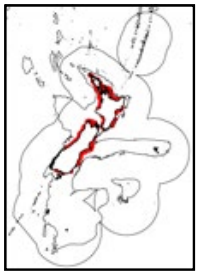
Similar species: The four species of *Rhombosolea* in New Zealand waters can be distinguished from all other flatfish because they have only one pelvic fin - on the body margin in front of the anal fin. Black flounder (*R. retiaria*) has red-brown spots on the eyed surface, greenback flounder (*R. tapirina*) has a dark green upper body and a prominent pointed fleshy snout, and sand flounder (*R. plebeia*) has a diamond-shaped body.

Biology & ecology: Demersal, especially in sheltered bays, harbours, and estuaries.

Sand flounder *Rhombosolea plebeia*



Family: 497. Rhombosoleidae
Maori names: Paatiki
Other names:
FishNZ reporting code: SFL (effort), FLA (landing)
FishNZ research/observer code: SFL



Distinguishing features: Eyes on right side of body (with head facing away from viewer). Body diamond-shaped and greenish-brown above. Scales very small - body feels smooth.

Colour: Body greenish-brown above, whitish underside.

Size: To about 45 cm TL.

Length measurement method: Total length

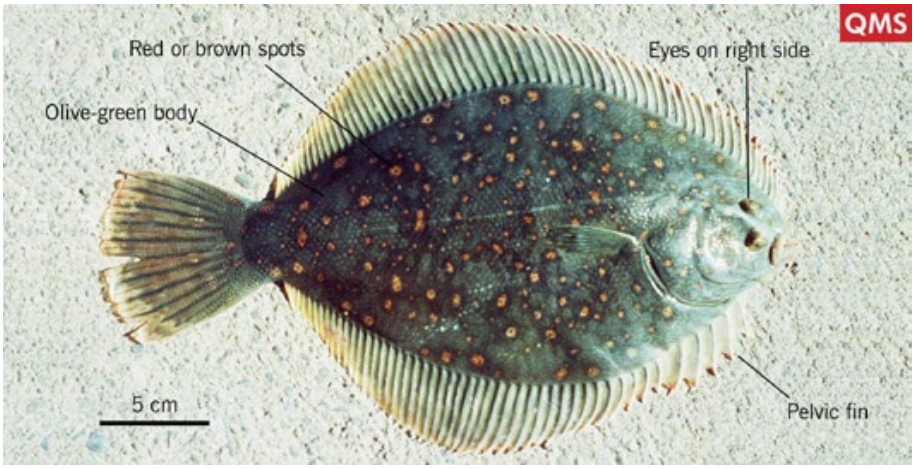
Distribution: Widespread. Known only from New Zealand.

Depth: A few to 75 m.

Similar species: The four species of *Rhombosolea* in New Zealand waters can be distinguished from all other flatfish because they have only one pelvic fin - on the body margin in front of the anal fin. Black flounder (*R. retiaria*) has red-brown spots on the eyed surface, greenback flounder (*R. tapirina*) has a dark green upper body and a prominent pointed fleshy snout. Yellowbelly flounder (*R. leporina*) has yellowish markings and scattered black spots on the underside. Yellowbelly and black flounders are also more oval in shape.

Biology & ecology: Demersal.

Black flounder *Rhombosolea retiaria*



Family: 497. Rhombosoleidae
Maori names: Patiki-mohoao
Other names:
FishNZ reporting code: BFL (effort), FLA (landing)
FishNZ research/observer code: BFL

Distinguishing features: Eyes on right side of body (with head facing away from viewer). Body oval and with prominent red or brown spots on the eyed surface. Scales very small.

Colour: Body is dark olive on eyed side with prominent red or brown spots, greyish underside sometimes with dark blotches.

Size: To about 45 cm TL.

Length measurement method: Total length

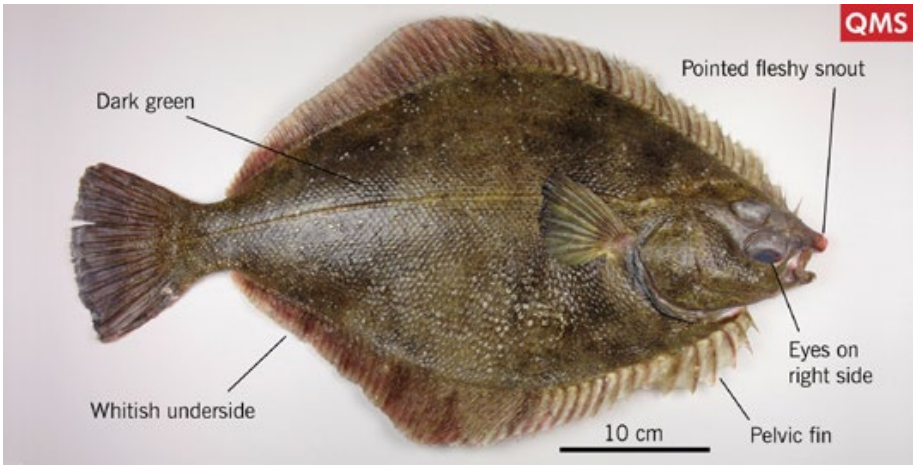
Distribution: Known only from New Zealand.

Depth: A few to 50 m.

Similar species: The four species of *Rhombosolea* in New Zealand waters can be distinguished from all other flatfish because they have only one pelvic fin - on the body margin in front of the anal fin. Greenback flounder (*R. tapirina*) has a dark green upper body and a prominent pointed fleshy snout. Yellowbelly flounder (*R. leporina*) has yellowish markings and scattered black spots on the underside. Sand flounder (*R. plebeia*) is more diamond-shaped and lacks the red or brown spots on the eyed side of the body.

Biology & ecology: Demersal in brackish waters, venturing into rivers and coastal marine waters at times.

Greenback flounder *Rhombosolea tapirina*



Family: 497. Rhombosoleidae
Maori names:
Other names:
FishNZ reporting code: GFL (effort), FLA (landing)
FishNZ research/observer code: GFL

Distinguishing features: Eyes on right side of body (with head facing away from viewer). Prominent pointed snout with fleshy extension, which is often whitish. Body dark green on eyed surface, whitish underside.

Colour: Body dark green on eyed surface, whitish underside.

Size: To about 50 cm TL.

Length measurement method: Total length

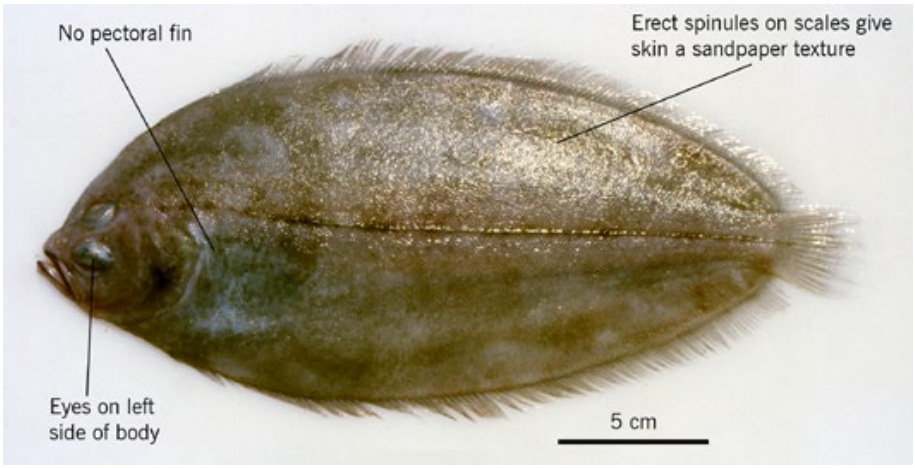
Distribution: Southern New Zealand, including around Auckland and Campbell Islands. The same or a very similar species occurs in southern Australia.

Depth: A few to 460 m.

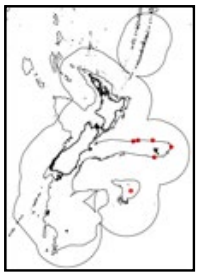
Similar species: The four species of *Rhombosolea* in New Zealand waters can be distinguished from all other flatfish because they have only one pelvic fin - on the body margin in front of the anal fin. Sand flounder (*R. plebeia*) lacks a pointed fleshy snout. Yellowbelly flounder (*R. leporina*) has a yellowish and whitish underside with scattered black spots and speckles and lacks a pointed fleshy snout. Black flounder (*R. retiaria*) has red-brown spots on the eyed surface.

Biology & ecology: Demersal.

Prickly flounder *Achiropsetta tricholepis*



Family: 498. Achiropsettidae (Finless flounders)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: ACT



Distinguishing features: Pectoral fin absent. Eyes on left side of body. Body scales have erect spinules giving skin a sandpaper-like texture (moving from head to tail).

Colour: Body brownish or greyish sometimes with darker mottling. Usually a dark horizontal line along midbody, flanked by less distinct dark horizontal lines or mottling. Underside whitish.

Size: To about 30 cm TL.

Length measurement method: Total length

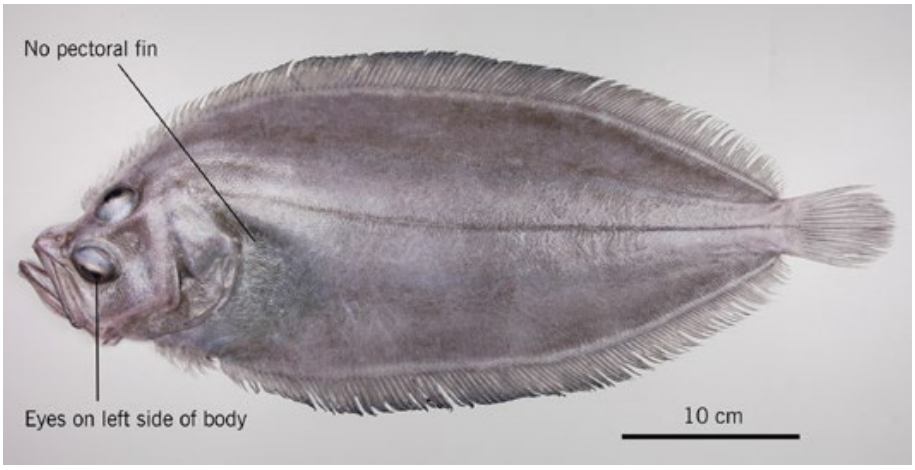
Distribution: Off east and south of South Island in New Zealand including Chatham Rise, Canterbury/Otago, Bounty and Campbell Plateau. Subantarctic off southern South America, Falkland, Kerguelen and Crozet Islands.

Depth: About 500 to 1200 m.

Similar species: Finless flounder (*Neoachiropsetta milfordi*) and *Mancopsetta maculata* have body scales that lack erect spinules giving skin a smooth texture (moving from head to tail).

Biology & ecology: Demersal.

Finless flounder *Neoachiropsetta milfordi*



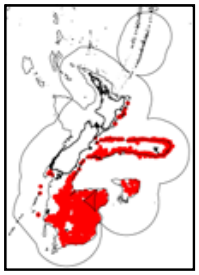
Family: 498. Achiropsettidae (Finless flounders)

Maori names:

Other names: Armless flounder

FishNZ reporting code: MAN

FishNZ research/observer code: MAN



Distinguishing features: Body scales lack erect spines giving skin smooth texture (moving from head to tail). Pectoral fin absent and eyes on left side of body (with head facing away from viewer).

Colour: Body brownish-grey, sometimes with blackish spots, median fins darker.

Size: To about 60 cm TL.

Length measurement method: Total length

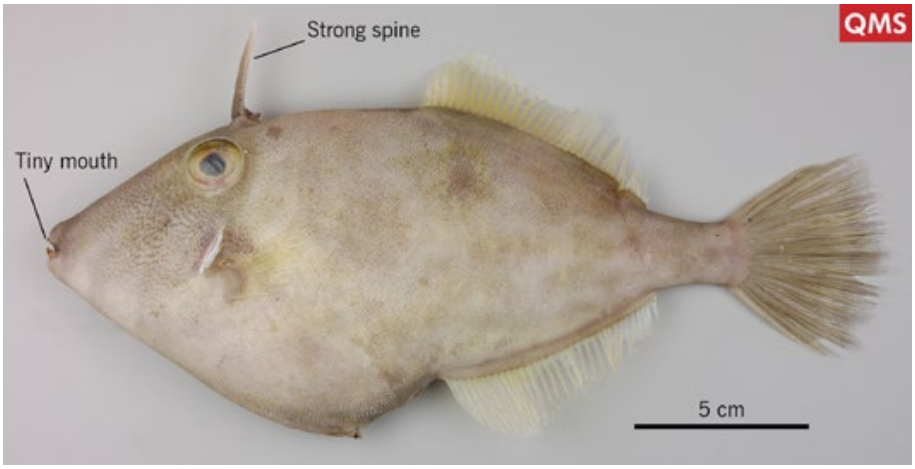
Distribution: Mainly central and southern New Zealand from Bay of Plenty to Campbell Plateau including Chatham Rise and Bounty Plateau. Subantarctic waters off South Africa, Australia, Chile, Argentina, and seamounts and hills in Southern Ocean.

Depth: 400 to 1000 m.

Similar species: Prickly flounder (*Achiropsetta tricholepis*) has erect spines on body scales giving skin a sandpaper-like texture.

Biology & ecology: Demersal.

Leatherjacket *Meuschenia scaber*



Family: 506. Monacanthidae (Leatherjackets, filefishes)

Maori names: Hiriri, kookiri

Other names:

FishNZ reporting code: LEA

FishNZ research/observer code: LEA

Distinguishing features: Elongated body, small terminal mouth with nipping jaws, strong dorsal spine (first dorsal fin). Fin rays near front of second dorsal and anal fins longer (higher) than rays at rear of fin, especially males.

Colour: Body of males pale brown, greyish or whitish, often with dark blotches on sides and 2 or 3 oblique dark bars from eye to underside of head, all fins yellowish or yellowish-green, tail with black crescent-shaped vertical line near rear border. Females similar but lack black vertical line on tail.

Size: To about 34 cm TL.

Length measurement method: Total length

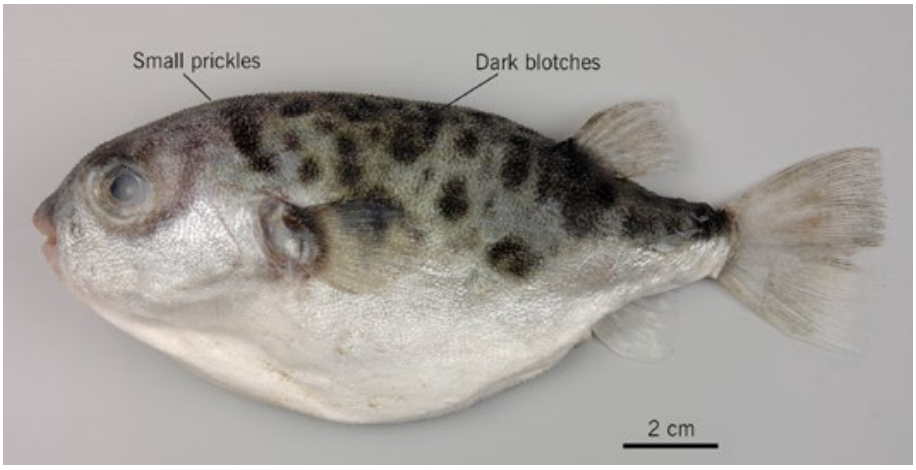
Distribution: Coastal New Zealand from North Cape to Stewart Island and Chatham Island, but more abundant in central and northern areas. Widespread in southwest Pacific including southern Australia.

Depth: A few to 300 m.

Similar species: Rare tropical or subtropical species are caught infrequently in northern New Zealand. Smooth leatherjacket (*Aluterus monoceros*) has slender body and very small dorsal spine, small eye and may have indistinct small dark spots and blotches on upper body.

Biology & ecology: Demersal. Common on reefs in northern New Zealand but also present on flat ground and caught by trawlers. Spawn in winter and lay eggs on bottom. May live for at least 7 years. Feed on encrusting animals such as sponges and ascidians but also eat planktonic animals such as salps and comb jellies.

Globefish *Contusus richei*



Family: 509. Tetraodontidae (Puffers)
Maori names:
Other names:
FishNZ reporting code: UNI
FishNZ research/observer code: GLB

Distinguishing features: Skin with minute prickles. Greyish-brown above with dark blotches, white below.

Colour: Body greyish-brown above with dark blotches, white below.

Size: To about 25 cm TL.

Length measurement method: Total length

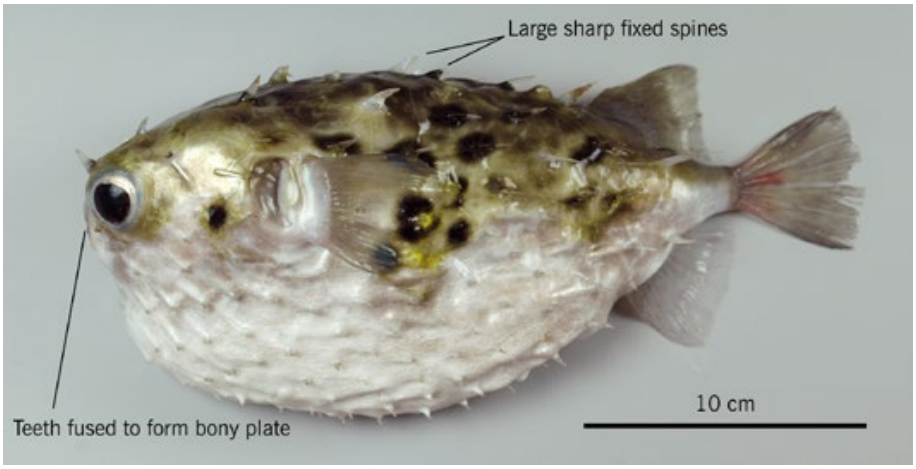
Distribution: Widespread but patchy in New Zealand. Southern Australia.

Depth: A few to 50 m.

Similar species: Starry toado (*Arothron filamentum*) has a dark upper body with small whitish spots. Balloonfish (*Sphoeroides pachygaster*) has smooth skin and indistinct dark spots on upper body.

Biology & ecology: Sporadically present in sheltered sandy bays and harbours. Puffers are known to have deadly toxins in certain body tissues. Can inflate body when disturbed.

Porcupine fish *Allomycterus pilatus*



Family: 510. Diodontidae (Porcupinefishes)
Maori names:
Other names: Southern burrfish
FishNZ reporting code: POP
FishNZ research/observer code: POP

Distinguishing features: Inflatable globular body covered with prominent fixed spines. Teeth fused into beak-like jaws. Interorbital region (between eyes) mostly lacks spines but spines present are short and fixed.

Colour: Olive brown above, white below. Blackish blotches about size of eyes or smaller on upper surface and sides. Yellowish blotches on sides in front of pectoral fin base, behind pectoral fin, and below dorsal fin.

Size: To about 50 cm TL.

Length measurement method: Total length

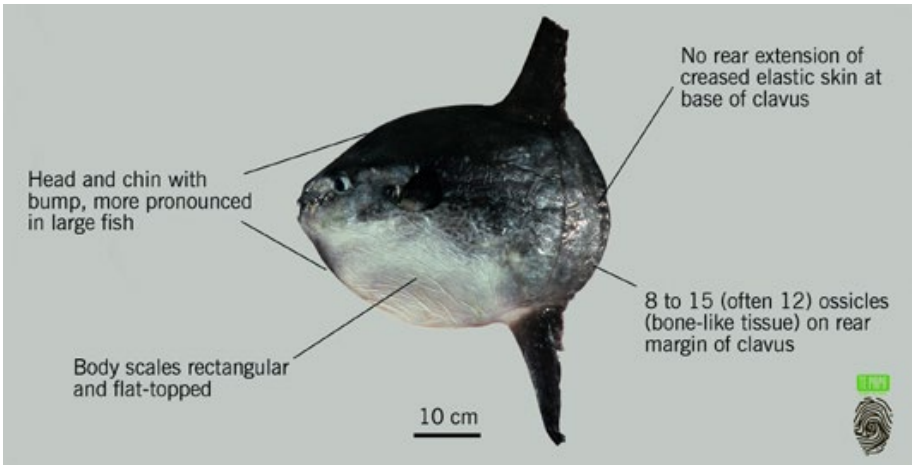
Distribution: Widespread in coastal New Zealand. Southern Australia.

Depth: 5 to 320 m.

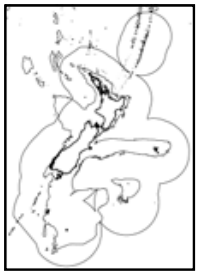
Similar species: *Diodon hystrix* has large erectile (not fixed) spines and adults have small spots on body and fins, and *Chilomycterus reticulatus* has fixed spines and adults have small spots on fins but records of both species from New Zealand are rare, and only from the far north.

Biology & ecology: Unknown. Presumed to live near seafloor but observed in schools near the surface, e.g., in Wellington Harbour.

Bumphead sunfish *Mola alexandrini*



Family: 511. Molidae (Sunfishes, molas)
Maori names:
Other names:
FishNZ reporting code: SUN
FishNZ research/observer code: MOI



Distinguishing features: Head profile with bump, chin with bump (more pronounced in larger fish), body scales rectangular and flat-topped, without short rear extension of creased elastic skin at anterior base of clavus; clavus rounded, with 8 to 15 (often 12) ossicles on rear margin, 14 to 24 (mode 17) clavus fin rays.

Colour: Bluish-grey to brown, paler ventrally with variable spots and blotches.

Size: To about 277 cm TL.

Length measurement method: Total length

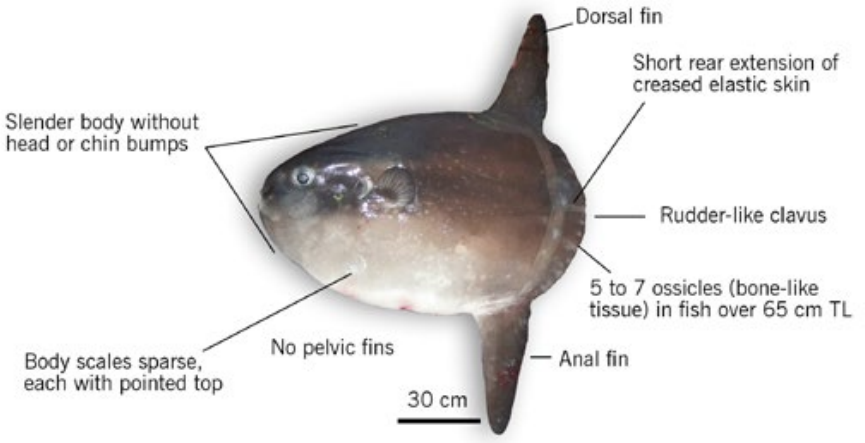
Distribution: Probably widespread in New Zealand usually north of Cook Strait but south to Foveaux Strait. Widespread in world's oceans including off Japan, Taiwan, Galápagos Islands, New Zealand, Australia, Turkey, Oman, and Spain but not recorded from polar seas.

Depth: Near surface to 600 m.

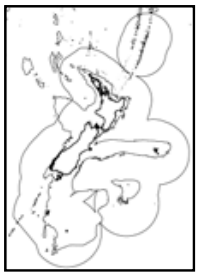
Similar species: Hoodwinker sunfish (*Mola tecta*) has slender body shape without head or chin bump (larger fish), sparse body scales with pointed top, short rear extension of creased elastic skin at anterior base of clavus, dividing clavus into smaller upper and larger lower portion, 5 to 7 ossicles on rear margin of clavus. Sunfish (*Mola mola*) has protruding snout in large individuals, without or with moderate head bump, without or with small chin bump, dense body scales with branching tips, 8 to 9 ossicles on rear margin of clavus which may be covered with skin in large fish.

Biology & ecology: Pelagic and oceanic. Highly fecund and produce up to 300 million eggs. Feed on soft-bodied invertebrates. Captured on tuna surface longline hooks. Predators include sharks and sea lions.

Hoodwinker sunfish *Mola tecta*



Family: 511. Molidae (Sunfishes, molas)
Maori names:
Other names:
FishNZ reporting code: SUN
FishNZ research/observer code: MOT



Distinguishing features: Slender body shape without head or chin bump (larger fish), sparse body scales with pointed top, short rear extension of creased elastic skin at anterior base of clavus dividing clavus into smaller upper and larger lower portion, 5 to 7 ossicles on rear margin of clavus (specimens over 65 cm TL), 15 to 17 clavus fin rays.

Colour: Grey or dark brown with dusky white, mottled spots and patterns, darker dorsally, lighter ventrally.

Size: To about 242 cm TL.

Length measurement method: Total length

Distribution: Probably widespread in New Zealand from Kermadec and Colville Ridges to Snares Island shelf. Widespread in temperate southern hemisphere, rare in northern hemisphere.

Depth: Near surface to unknown depth.

Similar species: Bumphead sunfish (*Mola alexandrini*) has head and chin profile with bump, body scales rectangular and flat-topped, lacks short rear extension of creased elastic skin at anterior base of clavus, 8 to 15 ossicles on rear margin of clavus. Sunfish (*Mola mola*) has protruding snout (large fish), without or with moderate head bump, without or with small chin bump, dense body scales with branching tips, 8 to 9 ossicles on rear margin of clavus.

Biology & ecology: Pelagic and oceanic. Probably similar to bumphead sunfish. Captured on tuna surface longline hooks.

SECTION 4. Indexes

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Index 2 – Alphabetical list of family common names		
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Anchovies	Engraulidae	83
Armoreye dories	Zeniontidae	172
Armourhead stargazers	Uranoscopidae	223
Balloonhead rattails	Macrouroididae	119
Bandfishes	Cepolidae	213
Barbeled dragonfishes	Stomiidae	94
Barracudas	Sphyraenidae	226
Barracudinas	Paralepididae	103
Basking sharks	Cetorhinidae	43
Bigscalefishes	Melamphaidae	163
Billfishes	Istiophoridae	237
Black seadevils	Melanocetidae	157
Blackchins	Neoscopelidae	104
Boarfishes, armorheads	Pentacerotidae	207
Bonnetmouths, rovers	Emmelichthyidae	203
Bristlemouths	Gonostomatidae	91
Cat sharks	Scyliorhinidae	45
Codhead rattails	Bathygadidae	118
Cods	Gadidae	154
Coffinfishes	Chaunacidae	157
Conger eels	Congridae	78
Cow sharks	Hexanchidae	53
Crestfishes	Lophotidae	115
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Cucumberfishes	Paraulopidae	99
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Cutthroat eels	Synaphobranchidae	75
Damselfishes	Pomacentridae	214
Dealfishes	Trachipteridae	115
Deepsea cardinalfishes	Epigonidae	191
Deepsea cods	Moridae	144
Deepsea lizardfishes	Bathysauridae	104
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Deepsea tripod fishes	Ipnopidae	100
Devil rays, eagle rays, manta rays	Myliobatidae	72
Dogfish sharks	Squalidae	54
Dolphinfishes	Coryphaenidae	194
Dories	Zeidae	173
Dragonets	Callionymidae	226
Duckbill eels	Nettastomatidae	81
Eel cods	Muraenolepididae	117
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Elephant fishes, ploughnose chimaeras	Callorhinchidae	35
Eucla cods	Euclichthyidae	118
False cat sharks	Pseudotriakidae	49
Fangtooths	Anoplogastridae	164
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Gulpers or pelican eels	Eurypharyngidae	82
Hagfishes	Myxinidae	34
Halfbeaks	Hemiramphidae	162
Halosaurs	Halosauridae	73
Hammerhead sharks	Sphyrnidae	52
Hammerjaw	Omosudidae	102
Hardnose skates	Rajidae	65
Herrings	Clupeidae	83
Hound sharks	Triakidae	49
Ice cods, cod icefishes	Nototheniidae	218
Jacks, trevallies	Carangidae	195
Kahawai, Australian salmon	Arripidae	205
Kitefin sharks	Dalatiidae	63
Leatherjackets, filefishes	Monacanthidae	253
Lancetfishes	Alepisauridae	101
Lantern sharks	Etmopteridae	57
Lanternfishes	Myctophidae	105
Lefteye flounders	Bothidae	246
Leftvents	Linophrynidae	160
Lightfishes	Phosichthyidae	93
Longnose chimaeras	Rhinochimaeridae	35
Lookdown dories	Cyttidae	169
Mackerel sharks	Lamnidae	43
Mackerels, tunas	Scombridae	232
Manefishes	Caristiidae	202
Marblefishes	Aplodactylidae	209
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Acanthocybium solandri	Wahoo	WAH	WAH	232
Achiropsetta tricholepis	Prickly flounder	UNI	ACT	252
Agrostichthys parkeri	Ribbonfish	AGR	AGR	116
Aldrichetta forsteri	Yelloweye mullet	YEM	YEM	160
Alepisaurus brevirostris	Shortsnout lancetfish	ABR	ABR	101
Alepisaurus ferox	Longsnout lancetfish	LAT	LAT	102
Alepocephalus antipodianus	Smallscale brown slickhead	SSM	SSM	88
Alepocephalus australis	Bigscale brown slickhead	SBI	SBI	88
Alertichthys blacki	Alert pigfish	API	API	179
Allocyttus niger	Black oreo	BOE (effort), OEO (landing)	BOE	170
Allocyttus verrucosus	Warty oreo	WOE (effort), OEO (landing)	WOE	170
Allomycterus pilatus	Porcupine fish	POP	POP	254
Allothunnus fallai	Slender tuna	STU	STU	232
Alopias superciliosus	Bigeye thresher shark	BET	BET	42
Alopias vulpinus	Thresher shark	THR	THR	42
Amblyraja hyperborea	Deepwater spiny skate	DSK	DSK	65
Ambophthalmos angustus	Pale toadfish	TOP	TOP	182
Anoplogaster cornuta	Fangtooth	UNI	ANO	164
Antimora rostrata	Violet cod	VCO	VCO	144
Aplodactylus arctidens	Marblefish	GTR	GTR	209
Apristurus ampliceps	Roundfin catshark	APR	AAM	45
Apristurus cf sinesis	Freckled catshark	APR	ASI	47
Apristurus exsanguis	New Zealand catshark	APR	AEX	45
Apristurus garricki	Garrick's catshark	APR	AGK	46
Apristurus melanoasper	Fleshynose catshark	APR	AML	46
Apristurus pinguis	Bulldog catshark	APR	APN	47
Argentina elongata	Silverside	SSI	SSI	85
Argyropelecus gigas	Giant hatchetfish	UNI	AGI	91
Argyropelecus hemigymnus	Common hatchetfish	UNI	AHE	92
Arhynchobatis asperrimus	Longtail skate	LSK	LSK	67
Arnoglossus scapha	Witch	WIT	WIT	246
Arripis trutta	Kahawai	KAH	ATT	205
Astronesthes spp.	Snaggletooths	UNI	ASE	94
Auchenoceros punctatus	Ahuru	MOD	PCO	144
Avocettina paucipora	Fewpore snipe eel	DWE	APA	77
Azygopus flemingi	Spotted flounder	SDF	SDF	247
Bassanago bulbiceps	Swollenhead conger	SCO	SCO	78
Bassanago hirsutus	Hairy conger	HCO	HCO	79
Bathygadus cottoides	Codhead rattail	BAC	BAC	118
Bathylagichthys parini	Parin's deepsea smelt	UNI	BPA	86
Bathypterois longifilis	Feelerfish	TRI	BLO	100
Bathyraja shuntovi	Longnose deepsea skate	PSK	PSK	67
Bathysaurus ferox	Deepsea lizardfish	BFE	BFE	104
Bathytoshia brevicaudata	Short-tail stingray	BRA	BRA	70
Bathytoshia lata	Long-tail stingray	WRA	WRA	71
Benthodesmus spp.	Scabbardfish	BEN	BEN	231
Beryx decadactylus	Longfinned beryx	BYX	BYD	167
Beryx splendens	Alfonsino	BYX	BYS	168
Bodianus flavipinnis	Foxfish	FOX	FOX	214
Bodianus unimaculatus	Red pigfish	RPI	RPI	215
Bolinichthys supralateralis	Stubby lanternfish	LAN	BOS	105
Borostomias antarcticus	Southern snaggletooth	BAN	BAN	95
Brama australis	Southern bream	UNI	SRB	198

Brama brama	Ray's bream	RBM	RBM	199
Brochiraja asperula	Smooth deepsea skate	OSK	BTA	68
Brochiraja leviveneta	Blue skate	OSK	BRL	68
Brochiraja microspinifera	Dwarf skate	OSK	BMI	69
Brochiraja spinifera	Prickly deepsea skate	OSK	BTS	69
Brotulotaenia nigra	Blue cuskeel	BCR	BCR	155
Bythaelurus dawsoni	Dawson's cat shark	DCS	DCS	48
Caesioperca lepidoptera	Butterfly perch	BPE	BPE	186
Callanthias allporti	Southern splendid perch	SPP	SDP	190
Callanthias australis	Northern splendid perch	NSP	NSP	190
Callorhinchus milii	Elephantfish	ELE	ELE	35
Caprodon longimanus	Pink maomao	PMA	PMA	186
Capromimus abbreviatus	Capro dory	CDO	CDO	172
Carcharhinus brachyurus	Bronze whaler shark	BWH	BWH	50
Carcharhinus longimanus	Oceanic whitetip shark	OSD	OWS	51
Carcharodon carcharias	White pointer shark (great white)	WPS	WPS	43
Caristius meridionalis	Largemouth manefish	UNI	PLA	202
Cataetyx chthamalorhynchus	White brotula	CAX	CAX	156
Cataetyx niki	Brown brotula	CAN	CAN	156
Centriscops humerosus	Banded bellowsfish	BBE	BBE	175
Centroberyx affinis	Red snapper	RSN	RSN	168
Centrolophus niger	Rudderfish	RUD	RUD	240
Centrophorus squamosus	Leafscale gulper shark	CSQ	CSQ	56
Centroscymnus coelolepis	Portuguese dogfish	CYL	CYL	60
Centroscymnus owstonii	Owston's dogfish	CYO	CYO	60
Centroselachus crepidater	Longnose velvet dogfish	CYP	CYP	61
Cephaloscyllium isabella	Carpet shark	CAR	CAR	48
Cepola haastii	Red bandfish	UNI	CEP	213
Ceratias spp.	Seadevils	UNI	CER	158
Cetonurus crassiceps	Thickhead rattail	RAT	CCR	121
Cetorhinus maximus	Basking shark	BSK	BSK	43
Chauliodus sloani	Viperfish	CHA	CHA	95
Chaunax russatus	Pink frogmouth	CHX	CHX	157
Cheilodactylus spectabilis	Red moki	RMO	RMO	209
Cheilopogon pinnatibarbatus	Barbeled flying fish	FLY	CPB	161
Chelidonichthys kumu	Red gurnard	GUR	GUR	180
Chiasmodon microcephalus	Black swallower	UNI	CML	220
Chimaera carophila	Brown chimaera	CHP	CHP	37
Chimaera lignaria	Giant chimaera	CHG	CHG	37
Chimaera panthera	Leopard chimaera	CHI	CPN	38
Chlamydoselachus anguineus	Frill shark	FRS	FRS	52
Chromis dispila	Twospot demoiselle	UNI	TSD	214
Chrysophrys auratus	Snapper	SNA	SNA	204
Cirrhigaleus australis	Southern mandarin dogfish	OSD	MSH	54
Coelorinchus acanthiger	Spottyface rattail	RAT	CTH	122
Coelorinchus aspercephalus	Obliquebanded rattail	RAT	CAS	122
Coelorinchus biclinozonalis	Two saddle rattail	RAT	CBI	123
Coelorinchus bollonsi	Bollons' rattail	CBO	CBO	123
Coelorinchus celaenostomus	Blacklip rattail	RAT	CEX	124
Coelorinchus cookianus	Cook's rattail	RAT	CCO	124
Coelorinchus fasciatus	Banded rattail	CFA	CFA	125
Coelorinchus horribilis	Horrible rattail	RAT	CXH	125
Coelorinchus infuscus	Dusky rattail	RAT	CGX	126
Coelorinchus innotabilis	Notable rattail	RAT	CIN	126
Coelorinchus kaiyomaru	Kaiyomaru rattail	RAT	CKA	127
Coelorinchus kermadecus	Kermadec rattail	RAT	CKE	127

Coelorinchus matamua	Mahia rattail	CMA	CMA	128
Coelorinchus maurofasciatus	Darkbanded rattail	RAT	CDX	128
Coelorinchus mycterismus	Upturnedsnout rattail	RAT	CJX	129
Coelorinchus mystax	Patterned rattail	RAT	CIX	129
Coelorinchus oliverianus	Oliver's rattail	COL	COL	130
Coelorinchus parvifasciatus	Smallbanded rattail	RAT	CCX	130
Coelorinchus supernasutus	Supanose rattail	RAT	CFX	131
Coelorinchus trachycarus	Roughhead rattail	RAT	CHY	131
Colistium guntheri	Brill	BRI (effort), FLA (landing)	BRI	248
Colistium nudipinnis	Turbot	TUR (effort), FLA (landing)	TUR	248
Conger verreauxi	Southern conger	CON	CVR	79
Congiopodus coriaceus	Deepsea pigfish	DSP	DSP	179
Congiopodus leucopaecilus	Pigfish	PIG	PIG	180
Contusus richei	Globefish	UNI	GLB	254
Coryphaena hippurus	Dolphinfish	DOF	DOF	194
Coryphaenoides armatus	Cosmopolitan rattail	COM	COM	132
Coryphaenoides dossenus	Humpback rattail	RAT	CBA	132
Coryphaenoides filicauda	Finetail rattail	RAT	CFI	133
Coryphaenoides mcmillani	McMillan's rattail	RAT	CMX	133
Coryphaenoides microstomus	Small mouth rattail	RAT	CMI	134
Coryphaenoides murrayi	Murray's rattail	RAT	CMU	134
Coryphaenoides rudis	Bighead rattail	RAT	CRD	135
Coryphaenoides serrulatus	Serrulate rattail	RAT	CSE	135
Coryphaenoides striaturus	Striate rattail	RAT	CTR	136
Coryphaenoides subserrulatus	Four-ray rattail	RAT	CSU	136
Cottunculus nudus	Bonyskull toadfish	COT	COT	183
Crapatalus angusticeps	Slender stargazer	UNI	SLZ	222
Cryptopsaras couesii	Warty seadevil	SDE	SDE	159
Cubiceps spp.	Cubehead	CUB	CUB	245
Cynomacrurus piriei	Dogtooth rattail	RAT	CPI	137
Cyttus novaezealandiae	Silver dory	SDO	SDO	169
Cyttus traversi	Lookdown dory	LDO	LDO	169
Dalatias licha	Seal shark	BSH	BSH	63
Deania calcea	Shovelnose dogfish	SND	SND	56
Decapterus koheru	Koheru	KOH	KOH	195
Diaphus danae	Dana lanternfish	LAN	DDA	105
Diaphus hudsoni	Hudson's lanternfish	LAN	DHU	106
Diaphus ostenfeldi	Ostenfeld's lanternfish	LAN	DOE	106
Diastobranchus capensis	Basketwork eel	BEE	BEE	75
Diplophos rebainsi	Rebain's portholefish	UNI	DRB	90
Dipturus innominatus	Smooth skate	SSK	SSK	66
Diretmichthys parini	Spinyfin	SFN	SFN	164
Diretmus argenteus	Discfish	DIS	DIS	165
Dissostichus eleginoides	Patagonian toothfish	PTO	PTO	218
Echiodon cryomargarites	Common messmate	UNI	ECR	154
Electrona	Electrona lanternfishes	LAN	ELT	107
Emmelichthys nitidus	Redbait	RBT	RBT	203
Engraulis australis	Anchovy	ANC	ANC	83
Epigonus denticulatus	White cardinalfish	EPD	EPD	191
Epigonus lenimen	Bigeye cardinalfish	EPL	EPL	191
Epigonus machaera	Swordtongue cardinalfish	UNI	EPM	192
Epigonus robustus	Robust cardinalfish	ERB	ERB	192
Epigonus telescopus	Deepsea cardinalfish	CDL	EPT	193
Epinephelus daemelii	Spotted black grouper	SBG	SBG	187
Epinephelus lanceolatus	Giant grouper	GGP	GGP	187
Epinephelus octofasciatus	Convict grouper	CGR	CGR	188

Eptatretus cirrhatus	Hagfish	HAG	HAG	34
Etmopterus granulosus	Baxter's dogfish	ETB	ETB	57
Etmopterus lucifer	Lucifer dogfish	ETL	ETL	57
Etmopterus molleri	Moller's lanternshark	EMO	EMO	58
Etmopterus pusillus	Smooth lanternshark	ETP	ETP	58
Etmopterus unicolor	Shortspine lanternshark	OSD	ETU	59
Etmopterus viator	Blue-eye lanternshark	OSD	EVI	59
Euclichthys polynemus	Eucla cod	EUC	EUC	118
Eurypharynx pelecanoides	Gulper eel	GUL	GUL	82
Evermannella balbo	Brown sabretooth	UNI	EVB	101
Foetorepus cf. phasis	Orange dragonet	UNI	FOE	226
Gadomus aoteanus	Filamentous rattail	RAT	GAO	119
Galeorhinus galeus	School shark	SCH	SCH	49
Gasterochisma melampus	Butterfly tuna	BTU	BTU	233
Gempylus serpens	Snake mackerel	GSE	GSE	227
Genyagnus monopterygius	Spotted stargazer	SPZ	SPZ	223
Genypterus blacodes	Ling	LIN	LIN	155
Gigantactis spp.	Whipnose anglers	BAF	GIG	159
Girella tricuspidata	Parore	PAR	PAR	205
Gnathophis habenatus	Silver conger	SEE	SEE	80
Gnathophis umbrellabius	Umbrella conger	DWE	UEE	80
Gollum attenuatus	Slender smooth-hound	SSH	SSH	49
Gonorynchus forsteri	Sandfish	GON	GFO	85
Guttigadus globiceps	Codling	MOD	GGC	145
Gymnoscopelus piabilis	Southern blacktip lanternfish	LAN	GYP	107
Halargyreus johnsonii	Johnson's cod	HJO	HJC	145
Halargyreus sp. *A*	Australasian slender cod	HJO	HAS	146
Halosauropsis macrochir	Black halosaur	UNI	HAL	73
Halosaurus pectoralis	Common halosaur	UNI	HPE	74
Haplomacrourus nudirostris	Naked snout rattail	RAT	HAN	137
Haplophryne mollis	Phantom angler	UNI	LPH	160
Harriotta haeckeli	Smallspine spookfish	UNI	HHA	35
Harriotta raleighana	Longnose spookfish	LCH	LCH	36
Helicolenus barathri	Bigeye sea perch	SPE	HBA	177
Helicolenus percoides	Sea perch	SPE	HPC	177
Hemerocoetes spp.	Opalfishes	OPA	OPA	222
Heptranchias perlo	Sharpnose sevengill shark	HEP	HEP	53
Hexanchus griseus	Sixgill shark	HEX	HEX	53
Himantolophus	Prickly anglerfishes	BAF	HIM	158
Hoplichthys cf. haswelli	Deepsea flathead	FHD	FHD	182
Hoplostethus atlanticus	Orange roughy	ORH	ORH	165
Hoplostethus mediterraneus	Silver roughy	SRH	SRH	166
Hydrolagus bemisi	Pale ghost shark	GSP	GSP	38
Hydrolagus homonycteris	Black ghost shark	HYD	HYB	39
Hydrolagus novaezealandiae	Dark ghost shark (ghost shark)	GSH	GSH	39
Hydrolagus trolli	Pointynose blue ghost shark	HYP	HYP	40
Hygophum	Hygophum lanternfishes	LAN	HYG	108
Hyperoglyphe antarctica	Bluenose	BNS	BNS	240
Hypoplectrodes huntii	Red banded perch	RBP	RBP	188
Hyporhamphus ihi	Garfish	GAR	GAR	162
Idiacanthus atlanticus	Common black dragonfish	UNI	IAT	96
Idiolophorhynchus andriashevi	Pineapple rattail	RAT	PIN	120
Isistius brasiliensis	Cookie-cutter shark	OSD	IBR	64
Istiompax indica	Black marlin	BKM	BKM	237
Istiophorus platypterus	Sailfish	SAI	SAI	238
Isurus oxyrinchus	Mako shark	MAK	MAK	44

Kajikia audax	Striped marlin	STM	STM	238
Kathetostoma binigrasella	Banded stargazer	STA	BGZ	224
Kathetostoma giganteum	Giant stargazer	STA	GIZ	224
Katsuwonus pelamis	Skipjack tuna	SKJ	SKJ	233
Kuronezumia bubonis	Bulbous rattail	RAT	NBU	138
Kuronezumia leonis	Starnose black rat	RAT	NPU	138
Lamna nasus	Porbeagle shark	POS	POS	44
Lampadena notialis	Notal lanternfish	LAN	LNT	108
Lampadena speculigera	Mirror lanternfish	LAN	LSP	109
Lampanyctodes hectoris	Hector's lanternfish	LAN	LHE	109
Lampanyctus australis	Austral lanternfish	LAN	LAU	110
Lampanyctus intricarius	Intricate lanternfish	LAN	LIT	110
Lampanyctus macdonaldi	MacDonald's lanternfish	LAN	LMD	111
Lampichthys procerus	Blackhead lanternfish	LAN	LPR	111
Lampris guttatus	Moonfish	MOO	MOO	114
Lampris immaculatus	Opah	PAH	PAH	114
Latridopsis ciliaris	Moki	MOK	MOK	211
Latridopsis forsteri	Copper moki	CMO	CMO	212
Latris lineata	Trumpeter	TRU	TRU	212
Lepidion inosimae	Roundtooth cod	LEG	LPI	146
Lepidion microcephalus	Smallhead cod	SMC	SMC	147
Lepidion schmidti	Schmidt's cod	LEG	LPS	147
Lepidocybium flavobrunneum	Escolar	LEP	LEP	227
Lepidoperca aurantia	Orange perch	OPE	OPE	189
Lepidoperca tasmanica	Red lined perch	WLP	WLP	189
Lepidopus caudatus	Frostfish	FRO	FRO	231
Lepidorhynchus denticulatus	Javelinfish	JAV	JAV	139
Lepidotrigla brachyoptera	Scaly gurnard	SCG	SCG	181
Leptoscopus macropygus	Estuary stargazer	ESZ	ESZ	223
Lophonectes mongonuiensis	Crested flounder	BOT	CFL	247
Lophotus capellei	Unicornfish	LCA	LCA	115
Lucigadus nigromaculatus	Blackspot rattail	RAT	VNI	139
Lyconus pinnatus	Fangtooth hake	LYC	LYC	152
Macroparalepis macrogeneion	Headband barracudina	UNI	MMA	103
Macroramphosus scolopax	Snipefish	SNI	SNI	175
Macrourus carinatus	Carinate rattail	MCA	MCA	140
Macruronus novaezelandiae	Hoki	HOK	HOK	153
Magnisudis prionosa	Giant barracudina	BCA	BCA	103
Makaira nigricans	Blue marlin	BEM	BEM	239
Malacocephalus laevis	Smoothhead rattail	RAT	MLA	140
Malacosteus australis	Southern loosejaw	UNI	MAU	96
Maurolicus australis	Pearlside	UNI	MMU	92
Melanocetus johnsonii	Humpback anglerfish	BAF	MEJ	157
Melanolagus bericoides	Bigscale blacksmelt	UNI	MEB	86
Melanonus gracilis	Smalltooth pelagic cod	UNI	MEL	151
Melanonus zugmayeri	Largetooth pelagic cod	UNI	MEZ	152
Melanostigma gelatinosum	Limp eelpout	UNI	EPO	218
Melanostomias niger	Black dragonfish	MST	MNG	97
Mendosoma lineatum	Telescope fish	TEL	TEL	213
Merluccius australis	Hake	HAK	HAK	153
Mesobius antipodum	Black javelinfish	RAT	BJA	141
Metelectrona	Metelectrona lanternfishes	LAN	MET	112
Meuschenia scaber	Leatherjacket	LEA	LEA	253
Micromesistius australis	Southern blue whiting	SBW	SBW	154
Mitsukurina owstoni	Goblin shark	OSD	GOB	41
Mobula birostris	Manta ray	RMB	RMB	72

Mobula mobular	Spinetail devil ray	MJA	MJA	72
Mola alexandrini	Bumphead sunfish	SUN	MOI	255
Mola tecta	Hoodwinker sunfish	SUN	MOT	255
Mora moro	Ribaldo	RIB	RIB	148
Mugil cephalus	Grey mullet	GMU	GMU	161
Muraenolepis orangiensis	Eel cod	MRL	MWO	117
Mustelus lenticulatus	Rig	SPO	SPO	50
Myliobatis tenuicaudatus	Eagle ray	EGR	EGR	73
Nannobrachium achirus	Cripplefin lanternfish	LAN	LAC	112
Naucrates ductor	Pilotfish	UNI	PIF	195
Nemadactylus douglasii	Porae	POR	POR	210
Nemadactylus macropterus	Tarakihi	TAR	NMP	210
Nemadactylus sp. *A*	King tarakihi	TAR	KTA	211
Nemichthys curvirostris	Snipe eel	DWE	NCU	78
Neoachiropsetta milfordi	Finless flounder	MAN	MAN	253
Neocaristius heemstrai	Veilfin manefish	CST	CST	202
Neocyttus rhomboidalis	Spiky oreo	SOR (effort), OEO (landing)	SOR	171
Neomyxine caesiovitta	Blueband hagfish	UNI	NCV	34
Neophrynichthys heterospilos	Variable spotted toadfish	TOA	VST	183
Neophrynichthys latus	Dark toadfish	TOD	TOD	184
Neoscopelus macrolepidotus	Largescale blackchin	UNI	NML	104
Nesiarchus nasutus	Black barracouta	BBA	BBA	228
Nettastoma parviceps	Duckbill eel	DWE	NET	81
Nezumia coheni	Cohen's rattail	RAT	NZC	141
Nezumia kapala	Kapala rattail	RAT	NZK	142
Nezumia namatahi	Squashed face marlinspike	RAT	NNA	142
Normichthys yahganorum	Cloaked tubeshoulder	UNI	NOR	87
Notacanthus chemnitzii	Giant spineback	DWE	NOC	74
Notacanthus sexspinis	Spineback	SBK	SBK	75
Notolabrus celidotus	Spotty	STY	STY	215
Notolabrus cinctus	Girdled wrasse	GPF	GPF	216
Notolabrus fucicola	Banded wrasse	BPF	BPF	216
Notophycis marginata	Dwarf cod	MOD	DCO	148
Notopogon lilliei	Crested bellowsfish	CBE	CBE	176
Notopogon xenosoma	Orange bellowsfish	UNI	NOF	176
Notoraja alisae	Velcro skate	OSK	NAL	70
Notorynchus cepedianus	Broadnose sevengill shark	SEV	SEV	54
Notothenia angustata	Maori chief	NOT	MCH	219
Notothenia microlepidota	Smallscale cod	SCD	SCD	219
Odax pullus	Butterfish	BUT	BUT	217
Odontaspis ferox	Smalltooth sand tiger shark	ODO	ODO	41
Odontomacrurus murrayi	Large fang rattail	RAT	OMU	143
Omosudis lowii	Hammerjaw	UNI	OMO	102
Ophisurus serpens	Snake eel	OSE	OSE	77
Opostomias micripnus	Giant black dragonfish	MST	OMI	97
Optivus elongatus	Slender roughy	SLR	SLR	166
Oreosoma atlanticum	Oxeye oreo	UNI	OXO	171
Oxynotus bruniensis	Prickly dogfish	PDG	PDG	63
Paradiplospinus gracilis	False frostfish	PDS	PDS	228
Paranotothenia magellanica	Black cod	BCD	BCD	220
Parapercis colias	Blue cod	BCO	BCO	221
Parapercis gilliesii	Yellow cod	YCO	YCO	221
Paratrachichthys trailli	Common roughy	RHY	RHY	167
Paraulopus nigripinnis	Cucumberfish	CUC	CUC	99
Paristiopterus labiosus	Giant boarfish	BOA	BOA	207
Pelotretis flavilatus	Lemon sole	LSO (effort), FLA (landing)	LSO	249

Peltorhamphus latus	Speckled sole	UNI	SPS	249
Peltorhamphus novaezeelandiae	New Zealand sole	ESO (effort), FLA (landing)	ESO	250
Pentaceros decacanthus	Yellow boarfish	YBO	YBO	207
Pentaceros richardsoni	Southern boarfish	SBO	SBO	208
Persparsia kopua	Common tubeshoulder	PER	PER	87
Phosichthys argenteus	Lighthousefish	PHO	PHO	93
Physiculus luminosa	Luminous cod	MOD	PLU	149
Plagiogeneion rubiginosum	Rubyfish	RBY	RBY	203
Pleuroscopus pseudodorsalis	Scaly stargazer	PLZ	PLZ	225
Polyprion americanus	Bass	BAS (effort), HPB (landing)	BAS	185
Polyprion oxygeneios	Hapuku	HAP (effort), HPB (landing)	HAP	185
Poromitra atlantica	Common bigscalefish	UNI	CBS	163
Prionace glauca	Blue shark	BWS	BWS	51
Protomyctophum	Protomyctophum lanternfishes	LAN	PRO	113
Pseudocaranx georgianus	Trevally	TRE	TRE	196
Pseudocyttus maculatus	Smooth oreo	SSO (effort), OEO (landing)	SSO	172
Pseudoicichthys australis	Ragfish	RAG	RAG	241
Pseudolabrus miles	Scarlet wrasse	SPF	SPF	217
Pseudophycis bachus	Red cod	RCO	RCO	149
Pseudophycis barbata	Southern bastard cod	SBR	SBR	150
Pseudophycis breviuscula	Northern bastard cod	BRC	BRC	150
Psychrolutes microporos	Blobfish	PSY	PSY	184
Pteraclis velifera	Wingfish	WIN	WIN	199
Pteroplatytrygon violacea	Pelagic stingray	DAS	DAS	71
Pterycombus petersii	Fanfish	FAN	FAN	200
Pterygotrigla andertoni	Spotted gurnard	JGU	JGU	181
Regalecus glesne	Oarfish	OAR	OAR	117
Remora remora	Common remora	UNI	REO	194
Rexea antefurcata	Longfin gemfish	SKI	LFG	229
Rexea solandri	Gemfish	SKI	RSO	229
Rhincodon typus	Whale shark	WSH	WSH	40
Rhinochimaera pacifica	Pacific spookfish	RCH	RCH	36
Rhombosolea leporina	Yellowbelly flounder	YBF (effort), FLA (landing)	YBF	250
Rhombosolea plebeia	Sand flounder	SFL (effort), FLA (landing)	SFL	251
Rhombosolea retiaria	Black flounder	BFL (effort), FLA (landing)	BFL	251
Rhombosolea tapirina	Greenback flounder	GFL (effort), FLA (landing)	GFL	252
Rosenblattia robusta	Robust pelagic basslet	UNI	ROS	193
Rouleina guentheri	Bordello slickhead	SLK	RGN	89
Ruvettus pretiosus	Oilfish	OFH	OFH	230
Sardinops sagax	Pilchard	PIL	PIL	83
Schedophilus huttoni	Slender ragfish	CPD	SUH	241
Schedophilus maculatus	Pelagic butterfish	SUM	SUM	242
Scomber australasicus	Blue mackerel	EMA	EMA	234
Scomberesox saurus	Saury	SAU	SAU	162
Scopelarchoides kreffti	Krefft's pearleye	UNI	SKR	100
Scopelosaurus spp.	Waryfishes	SPL	SPL	99
Scorpaena papillosa	Dwarf scorpionfish	RSC	RSC	178
Scorpis lineolata	Sweep	SWE	SWE	206
Scorpis violacea	Blue maomao	BMA	BMA	206
Scymnodon plunketi	Plunket's shark	PLS	PLS	61
Seriola lalandi	Kingfish	KIN	KIN	196
Seriolella brama	Common warehou	WAR	WAR	242
Seriolella caerulea	White warehou	WWA	WWA	243
Seriolella labyrinthica	Ocean blue-eye	SEL	SEL	243
Seriolella punctata	Silver warehou	SWA	SWA	244
Serrivomer samoensis	Common sawtooth eel	DWE	SSA	82

Sigmops bathyphilus	Black lightfish	UNI	GBT	91
Simenchelys parasitica	Snubnosed eel	SNE	SNE	76
Sio nordenskjoldii	Black bigscalefish	UNI	SNO	163
Solegnathus spinosissimus	Spiny seadragon	SDR	SDR	174
Somniosus antarcticus	Southern sleeper shark	OSD	SSS	62
Sphyraena sp. *A*	Kermadec barracuda	BDA	BDA	226
Sphyrna zygaena	Hammerhead shark	HHS	HHS	52
Sprattus antipodum	Slender sprat	SPR	SPA	84
Sprattus muelleri	Stout sprat	SPR	SPM	84
Squalogadus modificatus	Balloonhead rattail	RAT	SQM	119
Squalus acanthias	Spiny dogfish	SPD	SPD	55
Squalus griffini	Northern spiny dogfish	NSD	NSD	55
Sternoptyx pseudodiaphana	False oblique hatchetfish	UNI	SPU	93
Stomias boa	Scaly dragonfish	UNI	SBB	98
Symbolophorus boops	Bogue lanternfish	LAN	SBP	113
Synaphobranchus affinis	Grey cutthroat eel	SYN	SAF	76
Talismania longifilis	Talismania longifilis	SLK	TAL	89
Taractes asper	Flathead pomfret	TAS	TAS	200
Taractichthys longipinnis	Big-scale pomfret	BSP	BSP	201
Tetragonurus cuvieri	Squaretail	TET	TET	246
Tetrapturus angustirostris	Shortbill spearfish	SSF	SSF	239
Tetronarce nobiliana	Electric ray	ERA	ERA	64
Thunnus alalunga	Albacore tuna	ALB	ALB	234
Thunnus albacares	Yellowfin tuna	YFN	YFN	235
Thunnus maccoyii	Southern bluefin tuna	STN	STN	235
Thunnus obesus	Bigeye tuna	BIG	BIG	236
Thunnus orientalis	Pacific bluefin tuna	TOR	TOR	236
Thyrsites atun	Barracouta	BAR	BAR	230
Trachipterus trachypterus	Dealfish	DEA	DEA	115
Trachonurus gagates	Velvet rattail	RAT	TRX	143
Trachurus declivis	Greenback jack mackerel	JMA	JMD	197
Trachurus murphyi	Slender jack mackerel	JMA	JMM	197
Trachurus novaezelandiae	Yellowtail jack mackerel	JMA	JMN	198
Trachyrincus aphyodes	White rattail	WHX	WHX	120
Trachyrincus longirostris	Unicorn rattail	WHR	WHR	121
Trachyscorpia eschmeyeri	Cape scorpionfish	TRS	TRS	178
Trigonolampa miriceps	Starburst dragonfish	UNI	TMI	98
Tripterophycis gilchristi	Grenadier cod	GRC	GRC	151
Tubbia stewarti	Bigeye ruffe	UNI	TUS	244
Tubbia tasmanica	Tasmanian ruffe	TUB	TUB	245
Typhlonarke	Numbfish	BER	BER	65
Upeneichthys porosus	Goatfish	RMU	RMU	204
Venefica proboscidea	Periscope duckbill eel	DWE	VEN	81
Woodsia meyerwaardeni	Austral lightfish	UNI	WMY	94
Xenobrama microlepis	Bronze bream	UNI	BBR	201
Xenocephalus armatus	Brown stargazer	BRZ	BRZ	225
Xenodermichthys copei	Black slickhead	BSL	BSL	90
Xiphias gladius	Swordfish	SWO	SWO	237
Zameus squamulosus	Velvet dogfish	OSD	ZAS	62
Zanclistius elevatus	Longfin boarfish	LFB	LFB	208
Zearaja nasuta	Rough skate	RSK	RSK	66
Zenion sp. *A*	Zenion dory	UNI	ZDO	173
Zenopsis nebulosa	Mirror dory	MDO	MDO	173
Zeus faber	John dory	JDO	JDO	174
Zu elongatus	Scalloped dealfish	UNI	ZEL	116

Index 4 – Alphabetical list of species common names				
Common name	**Scientific name**	**FishNZ reporting code**	**FishNZ research/ observer code**	**Page**
Ahuru	*Auchenoceros punctatus*	MOD	PCO	144
Albacore tuna	*Thunnus alalunga*	ALB	ALB	234
Alert pigfish	*Alertichthys blacki*	API	API	179
Alfonsino	*Beryx splendens*	BYX	BYS	168
Anchovy	*Engraulis australis*	ANC	ANC	83
Austral lanternfish	*Lampanyctus australis*	LAN	LAU	110
Austral lightfish	*Woodsia meyerwaardeni*	UNI	WMY	94
Australasian slender cod	*Halargyreus* sp. *A*	HJO	HAS	146
Balloonhead rattail	*Squalogadus modificatus*	RAT	SQM	119
Banded bellowsfish	*Centriscops humerosus*	BBE	BBE	175
Banded rattail	*Coelorinchus fasciatus*	CFA	CFA	125
Banded stargazer	*Kathetostoma binigrasella*	STA	BGZ	224
Banded wrasse	*Notolabrus fucicola*	BPF	BPF	216
Barbeled flying fish	*Cheilopogon pinnatibarbatus*	FLY	CPB	161
Barracouta	*Thyrsites atun*	BAR	BAR	230
Basketwork eel	*Diastobranchus capensis*	BEE	BEE	75
Basking shark	*Cetorhinus maximus*	BSK	BSK	43
Bass	*Polyprion americanus*	BAS (effort), HPB (landing)	BAS	185
Baxter's dogfish	*Etmopterus granulosus*	ETB	ETB	57
Big-scale pomfret	*Taractichthys longipinnis*	BSP	BSP	201
Bigeye cardinalfish	*Epigonus lenimen*	EPL	EPL	191
Bigeye ruffe	*Tubbia stewarti*	UNI	TUS	244
Bigeye sea perch	*Helicolenus barathri*	SPE	HBA	177
Bigeye thresher shark	*Alopias superciliosus*	BET	BET	42
Bigeye tuna	*Thunnus obesus*	BIG	BIG	236
Bighead rattail	*Coryphaenoides rudis*	RAT	CRD	135
Bigscale blacksmelt	*Melanolagus bericoides*	UNI	MEB	86
Bigscale brown slickhead	*Alepocephalus australis*	SBI	SBI	88
Black barracouta	*Nesiarchus nasutus*	BBA	BBA	228
Black bigscalefish	*Sio nordenskjoldii*	UNI	SNO	163
Black cod	*Paranotothenia magellanica*	BCD	BCD	220
Black dragonfish	*Melanostomias niger*	MST	MNG	97
Black flounder	*Rhombosolea retiaria*	BFL (effort), FLA (landing)	BFL	251
Black ghost shark	*Hydrolagus homonycteris*	HYD	HYB	39
Black halosaur	*Halosauropsis macrochir*	UNI	HAL	73
Black javelinfish	*Mesobius antipodum*	RAT	BJA	141
Black lightfish	*Sigmops bathyphilus*	UNI	GBT	91
Black marlin	*Istiompax indica*	BKM	BKM	237
Black oreo	*Allocyttus niger*	BOE (effort), OEO (landing)	BOE	170
Black slickhead	*Xenodermichthys copei*	BSL	BSL	90
Black swallower	*Chiasmodon microcephalus*	UNI	CML	220
Blackhead lanternfish	*Lampichthys procerus*	LAN	LPR	111
Blacklip rattail	*Coelorinchus celaenostomus*	RAT	CEX	124
Blackspot rattail	*Lucigadus nigromaculatus*	RAT	VNI	139
Blobfish	*Psychrolutes microporos*	PSY	PSY	184
Blue cod	*Parapercis colias*	BCO	BCO	221
Blue cuskeel	*Brotulotaenia nigra*	BCR	BCR	155
Blue mackerel	*Scomber australasicus*	EMA	EMA	234
Blue maomao	*Scorpis violacea*	BMA	BMA	206
Blue marlin	*Makaira nigricans*	BEM	BEM	239
Blue shark	*Prionace glauca*	BWS	BWS	51
Blue skate	*Brochiraja leviveneta*	OSK	BRL	68
Blue-eye lanternshark	*Etmopterus viator*	OSD	EVI	59

Blueband hagfish	*Neomyxine caesiovitta*	UNI	NCV	34
Bluenose	*Hyperoglyphe antarctica*	BNS	BNS	240
Bogue lanternfish	*Symbolophorus boops*	LAN	SBP	113
Bollons' rattail	*Coelorinchus bollonsi*	CBO	CBO	123
Bonyskull toadfish	*Cottunculus nudus*	COT	COT	183
Bordello slickhead	*Rouleina guentheri*	SLK	RGN	89
Brill	*Colistium guntheri*	BRI (effort), FLA (landing)	BRI	248
Broadnose sevengill shark	*Notorynchus cepedianus*	SEV	SEV	54
Bronze bream	*Xenobrama microlepis*	UNI	BBR	201
Bronze whaler shark	*Carcharhinus brachyurus*	BWH	BWH	50
Brown brotula	*Cataetyx niki*	CAN	CAN	156
Brown chimaera	*Chimaera carophila*	CHP	CHP	37
Brown sabretooth	*Evermannella balbo*	UNI	EVB	101
Brown stargazer	*Xenocephalus armatus*	BRZ	BRZ	225
Bulbous rattail	*Kuronezumia bubonis*	RAT	NBU	138
Bulldog catshark	*Apristurus pinguis*	APR	APN	47
Bumphead sunfish	*Mola alexandrini*	SUN	MOI	255
Butterfish	*Odax pullus*	BUT	BUT	217
Butterfly perch	*Caesioperca lepidoptera*	BPE	BPE	186
Butterfly tuna	*Gasterochisma melampus*	BTU	BTU	233
Cape scorpionfish	*Trachyscorpia eschmeyeri*	TRS	TRS	178
Capro dory	*Capromimus abbreviatus*	CDO	CDO	172
Carinate rattail	*Macrourus carinatus*	MCA	MCA	140
Carpet shark	*Cephaloscyllium isabella*	CAR	CAR	48
Cloaked tubeshoulder	*Normichthys yahganorum*	UNI	NOR	87
Codhead rattail	*Bathygadus cottoides*	BAC	BAC	118
Codling	*Guttigadus globiceps*	MOD	GGC	145
Cohen's rattail	*Nezumia coheni*	RAT	NZC	141
Common bigscalefish	*Poromitra atlantica*	UNI	CBS	163
Common black dragonfish	*Idiacanthus atlanticus*	UNI	IAT	96
Common halosaur	*Halosaurus pectoralis*	UNI	HPE	74
Common hatchetfish	*Argyropelecus hemigymnus*	UNI	AHE	92
Common messmate	*Echiodon cryomargarites*	UNI	ECR	154
Common remora	*Remora remora*	UNI	REO	194
Common roughy	*Paratrachichthys trailli*	RHY	RHY	167
Common sawtooth eel	*Serrivomer samoensis*	DWE	SSA	82
Common tubeshoulder	*Persparsia kopua*	PER	PER	87
Common warehou	*Seriolella brama*	WAR	WAR	242
Convict grouper	*Epinephelus octofasciatus*	CGR	CGR	188
Cook's rattail	*Coelorinchus cookianus*	RAT	CCO	124
Cookie-cutter shark	*Isistius brasiliensis*	OSD	IBR	64
Copper moki	*Latridopsis forsteri*	CMO	CMO	212
Cosmopolitan rattail	*Coryphaenoides armatus*	COM	COM	132
Crested bellowsfish	*Notopogon lilliei*	CBE	CBE	176
Crested flounder	*Lophonectes mongonuiensis*	BOT	CFL	247
Cripplefin lanternfish	*Nannobrachium achirus*	LAN	LAC	112
Cubehead	*Cubiceps* spp.	CUB	CUB	245
Cucumberfish	*Paraulopus nigripinnis*	CUC	CUC	99
Dana lanternfish	*Diaphus danae*	LAN	DDA	105
Dark ghost shark (ghost shark)	*Hydrolagus novaezealandiae*	GSH	GSH	39
Dark toadfish	*Neophrynichthys latus*	TOD	TOD	184
Darkbanded rattail	*Coelorinchus maurofasciatus*	RAT	CDX	128
Dawson's cat shark	*Bythaelurus dawsoni*	DCS	DCS	48
Dealfish	*Trachipterus trachypterus*	DEA	DEA	115
Deepsea cardinalfish	*Epigonus telescopus*	CDL	EPT	193
Deepsea flathead	*Hoplichthys cf. haswelli*	FHD	FHD	182

Deepsea lizardfish	*Bathysaurus ferox*	BFE	BFE	104
Deepsea pigfish	*Congiopodus coriaceus*	DSP	DSP	179
Deepwater spiny skate	*Amblyraja hyperborea*	DSK	DSK	65
Discfish	*Diretmus argenteus*	DIS	DIS	165
Dogtooth rattail	*Cynomacrurus piriei*	RAT	CPI	137
Dolphinfish	*Coryphaena hippurus*	DOF	DOF	194
Duckbill eel	*Nettastoma parviceps*	DWE	NET	81
Dusky rattail	*Coelorinchus infuscus*	RAT	CGX	126
Dwarf cod	*Notophycis marginata*	MOD	DCO	148
Dwarf scorpionfish	*Scorpaena papillosa*	RSC	RSC	178
Dwarf skate	*Brochiraja microspinifera*	OSK	BMI	69
Eagle ray	*Myliobatis tenuicaudatus*	EGR	EGR	73
Eel cod	*Muraenolepis orangiensis*	MRL	MWO	117
Electric ray	*Tetronarce nobiliana*	ERA	ERA	64
Electrona lanternfishes	*Electrona*	LAN	ELT	107
Elephantfish	*Callorhinchus milii*	ELE	ELE	35
Escolar	*Lepidocybium flavobrunneum*	LEP	LEP	227
Estuary stargazer	*Leptoscopus macropygus*	ESZ	ESZ	223
Eucla cod	*Euclichthys polynemus*	EUC	EUC	118
False frostfish	*Paradiplospinus gracilis*	PDS	PDS	228
False oblique hatchetfish	*Sternoptyx pseudodiaphana*	UNI	SPU	93
Fanfish	*Pterycombus petersii*	FAN	FAN	200
Fangtooth hake	*Lyconus pinnatus*	LYC	LYC	152
Fangtooth	*Anoplogaster cornuta*	UNI	ANO	164
Feelerfish	*Bathypterois longifilis*	TRI	BLO	100
Fewpore snipe eel	*Avocettina paucipora*	DWE	APA	77
Filamentous rattail	*Gadomus aoteanus*	RAT	GAO	119
Finetail rattail	*Coryphaenoides filicauda*	RAT	CFI	133
Finless flounder	*Neoachiropsetta milfordi*	MAN	MAN	253
Flathead pomfret	*Taractes asper*	TAS	TAS	200
Fleshynose catshark	*Apristurus melanoasper*	APR	AML	46
Four-ray rattail	*Coryphaenoides subserrulatus*	RAT	CSU	136
Foxfish	*Bodianus flavipinnis*	FOX	FOX	214
Freckled catshark	*Apristurus cf sinesis*	APR	ASI	47
Frill shark	*Chlamydoselachus anguineus*	FRS	FRS	52
Frostfish	*Lepidopus caudatus*	FRO	FRO	231
Garfish	*Hyporhamphus ihi*	GAR	GAR	162
Garrick's catshark	*Apristurus garricki*	APR	AGK	46
Gemfish	*Rexea solandri*	SKI	RSO	229
Giant barracudina	*Magnisudis prionosa*	BCA	BCA	103
Giant black dragonfish	*Opostomias micripnus*	MST	OMI	97
Giant boarfish	*Paristiopterus labiosus*	BOA	BOA	207
Giant chimaera	*Chimaera lignaria*	CHG	CHG	37
Giant grouper	*Epinephelus lanceolatus*	GGP	GGP	187
Giant hatchetfish	*Argyropelecus gigas*	UNI	AGI	91
Giant spineback	*Notacanthus chemnitzii*	DWE	NOC	74
Giant stargazer	*Kathetostoma giganteum*	STA	GIZ	224
Girdled wrasse	*Notolabrus cinctus*	GPF	GPF	216
Globefish	*Contusus richei*	UNI	GLB	254
Goatfish	*Upeneichthys porosus*	RMU	RMU	204
Goblin shark	*Mitsukurina owstoni*	OSD	GOB	41
Greenback flounder	*Rhombosolea tapirina*	GFL (effort), FLA (landing)	GFL	252
Greenback jack mackerel	*Trachurus declivis*	JMA	JMD	197
Grenadier cod	*Tripterophycis gilchristi*	GRC	GRC	151
Grey cutthroat eel	*Synaphobranchus affinis*	SYN	SAF	76
Grey mullet	*Mugil cephalus*	GMU	GMU	161

Gulper eel	*Eurypharynx pelecanoides*	GUL	GUL	82
Hagfish	*Eptatretus cirrhatus*	HAG	HAG	34
Hairy conger	*Bassanago hirsutus*	HCO	HCO	79
Hake	*Merluccius australis*	HAK	HAK	153
Hammerhead shark	*Sphyrna zygaena*	HHS	HHS	52
Hammerjaw	*Omosudis lowii*	UNI	OMO	102
Hapuku	*Polyprion oxygeneios*	HAP (effort), HPB (landing)	HAP	185
Headband barracudina	*Macroparalepis macrogeneion*	UNI	MMA	103
Hector's lanternfish	*Lampanyctodes hectoris*	LAN	LHE	109
Hoki	*Macruronus novaezelandiae*	HOK	HOK	153
Hoodwinker sunfish	*Mola tecta*	SUN	MOT	255
Horrible rattail	*Coelorinchus horribilis*	RAT	CXH	125
Hudson's lanternfish	*Diaphus hudsoni*	LAN	DHU	106
Humpback anglerfish	*Melanocetus johnsonii*	BAF	MEJ	157
Humpback rattail	*Coryphaenoides dossenus*	RAT	CBA	132
Hygophum lanternfishes	*Hygophum*	LAN	HYG	108
Intricate lanternfish	*Lampanyctus intricarius*	LAN	LIT	110
Javelinfish	*Lepidorhynchus denticulatus*	JAV	JAV	139
John dory	*Zeus faber*	JDO	JDO	174
Johnson's cod	*Halargyreus johnsonii*	HJO	HJC	145
Kahawai	*Arripis trutta*	KAH	ATT	205
Kaiyomaru rattail	*Coelorinchus kaiyomaru*	RAT	CKA	127
Kapala rattail	*Nezumia kapala*	RAT	NZK	142
Kermadec barracuda	*Sphyraena* sp. *A*	BDA	BDA	226
Kermadec rattail	*Coelorinchus kermadecus*	RAT	CKE	127
King tarakihi	*Nemadactylus* sp. *A*	TAR	KTA	211
Kingfish	*Seriola lalandi*	KIN	KIN	196
Koheru	*Decapterus koheru*	KOH	KOH	195
Krefft's pearleye	*Scopelarchoides kreffti*	UNI	SKR	100
Large fang rattail	*Odontomacrurus murrayi*	RAT	OMU	143
Largemouth manefish	*Caristius meridionalis*	UNI	PLA	202
Largescale blackchin	*Neoscopelus macrolepidotus*	UNI	NML	104
Largetooth pelagic cod	*Melanonus zugmayeri*	UNI	MEZ	152
Leafscale gulper shark	*Centrophorus squamosus*	CSQ	CSQ	56
Leatherjacket	*Meuschenia scaber*	LEA	LEA	253
Lemon sole	*Pelotretis flavilatus*	LSO (effort), FLA (landing)	LSO	249
Leopard chimaera	*Chimaera panthera*	CHI	CPN	38
Lighthousefish	*Phosichthys argenteus*	PHO	PHO	93
Limp eelpout	*Melanostigma gelatinosum*	UNI	EPO	218
Ling	*Genypterus blacodes*	LIN	LIN	155
Long-tail stingray	*Bathytoshia lata*	WRA	WRA	71
Longfin boarfish	*Zanclistius elevatus*	LFB	LFB	208
Longfin gemfish	*Rexea antefurcata*	SKI	LFG	229
Longfinned beryx	*Beryx decadactylus*	BYX	BYD	167
Longnose deepsea skate	*Bathyraja shuntovi*	PSK	PSK	67
Longnose spookfish	*Harriotta raleighana*	LCH	LCH	36
Longnose velvet dogfish	*Centroselachus crepidater*	CYP	CYP	61
Longsnout lancetfish	*Alepisaurus ferox*	LAT	LAT	102
Longtail skate	*Arhynchobatis asperrimus*	LSK	LSK	67
Lookdown dory	*Cyttus traversi*	LDO	LDO	169
Lucifer dogfish	*Etmopterus lucifer*	ETL	ETL	57
Luminous cod	*Physiculus luminosa*	MOD	PLU	149
MacDonald's lanternfish	*Lampanyctus macdonaldi*	LAN	LMD	111
Mahia rattail	*Coelorinchus matamua*	CMA	CMA	128
Mako shark	*Isurus oxyrinchus*	MAK	MAK	44
Manta ray	*Mobula birostris*	RMB	RMB	72

Maori chief	*Notothenia angustata*	NOT	MCH	219
Marblefish	*Aplodactylus arctidens*	GTR	GTR	209
McMillan's rattail	*Coryphaenoides mcmillani*	RAT	CMX	133
Metelectrona lanternfishes	*Metelectrona*	LAN	MET	112
Mirror dory	*Zenopsis nebulosa*	MDO	MDO	173
Mirror lanternfish	*Lampadena speculigera*	LAN	LSP	109
Moki	*Latridopsis ciliaris*	MOK	MOK	211
Moller's lanternshark	*Etmopterus molleri*	EMO	EMO	58
Moonfish	*Lampris guttatus*	MOO	MOO	114
Murray's rattail	*Coryphaenoides murrayi*	RAT	CMU	134
Naked snout rattail	*Haplomacrourus nudirostris*	RAT	HAN	137
New Zealand catshark	*Apristurus exsanguis*	APR	AEX	45
New Zealand sole	*Peltorhamphus novaezeelandiae*	ESO (effort), FLA (landing)	ESO	250
Northern bastard cod	*Pseudophycis breviuscula*	BRC	BRC	150
Northern spiny dogfish	*Squalus griffini*	NSD	NSD	55
Northern splendid perch	*Callanthias australis*	NSP	NSP	190
Notable rattail	*Coelorinchus innotabilis*	RAT	CIN	126
Notal lanternfish	*Lampadena notialis*	LAN	LNT	108
Numbfish	*Typhlonarke*	BER	BER	65
Oarfish	*Regalecus glesne*	OAR	OAR	117
Obliquebanded rattail	*Coelorinchus aspercephalus*	RAT	CAS	122
Ocean blue-eye	*Seriolella labyrinthica*	SEL	SEL	243
Oceanic whitetip shark	*Carcharhinus longimanus*	OSD	OWS	51
Oilfish	*Ruvettus pretiosus*	OFH	OFH	230
Oliver's rattail	*Coelorinchus oliverianus*	COL	COL	130
Opah	*Lampris immaculatus*	PAH	PAH	114
Opalfishes	*Hemerocoetes* spp.	OPA	OPA	222
Orange bellowsfish	*Notopogon xenosoma*	UNI	NOF	176
Orange dragonet	*Foetorepus cf. phasis*	UNI	FOE	226
Orange perch	*Lepidoperca aurantia*	OPE	OPE	189
Orange roughy	*Hoplostethus atlanticus*	ORH	ORH	165
Ostenfeld's lanternfish	*Diaphus ostenfeldi*	LAN	DOE	106
Owston's dogfish	*Centroscymnus owstonii*	CYO	CYO	60
Oxeye oreo	*Oreosoma atlanticum*	UNI	OXO	171
Pacific bluefin tuna	*Thunnus orientalis*	TOR	TOR	236
Pacific spookfish	*Rhinochimaera pacifica*	RCH	RCH	36
Pale ghost shark	*Hydrolagus bemisi*	GSP	GSP	38
Pale toadfish	*Ambophthalmos angustus*	TOP	TOP	182
Parin's deepsea smelt	*Bathylagichthys parini*	UNI	BPA	86
Parore	*Girella tricuspidata*	PAR	PAR	205
Patagonian toothfish	*Dissostichus eleginoides*	PTO	PTO	218
Patterned rattail	*Coelorinchus mystax*	RAT	CIX	129
Pearlside	*Maurolicus australis*	UNI	MMU	92
Pelagic butterfish	*Schedophilus maculatus*	SUM	SUM	242
Pelagic stingray	*Pteroplatytrygon violacea*	DAS	DAS	71
Periscope duckbill eel	*Venefica proboscidea*	DWE	VEN	81
Phantom angler	*Haplophryne mollis*	UNI	LPH	160
Pigfish	*Congiopodus leucopaecilus*	PIG	PIG	180
Pilchard	*Sardinops sagax*	PIL	PIL	83
Pilotfish	*Naucrates ductor*	UNI	PIF	195
Pineapple rattail	*Idiolophorhynchus andriashevi*	RAT	PIN	120
Pink frogmouth	*Chaunax russatus*	CHX	CHX	157
Pink maomao	*Caprodon longimanus*	PMA	PMA	186
Plunket's shark	*Scymnodon plunketi*	PLS	PLS	61
Pointynose blue ghost shark	*Hydrolagus trolli*	HYP	HYP	40
Porae	*Nemadactylus douglasii*	POR	POR	210

Porbeagle shark	*Lamna nasus*	POS	POS	44
Porcupine fish	*Allomycterus pilatus*	POP	POP	254
Portuguese dogfish	*Centroscymnus coelolepis*	CYL	CYL	60
Prickly anglerfishes	*Himantolophus*	BAF	HIM	158
Prickly deepsea skate	*Brochiraja spinifera*	OSK	BTS	69
Prickly dogfish	*Oxynotus bruniensis*	PDG	PDG	63
Prickly flounder	*Achiropsetta tricholepis*	UNI	ACT	252
Protomyctophum lanternfishes	*Protomyctophum*	LAN	PRO	113
Ragfish	*Pseudoicichthys australis*	RAG	RAG	241
Ray's bream	*Brama brama*	RBM	RBM	199
Rebain's portholefish	*Diplophos rebainsi*	UNI	DRB	90
Red banded perch	*Hypoplectrodes huntii*	RBP	RBP	188
Red bandfish	*Cepola haastii*	UNI	CEP	213
Red cod	*Pseudophycis bachus*	RCO	RCO	149
Red gurnard	*Chelidonichthys kumu*	GUR	GUR	180
Red lined perch	*Lepidoperca tasmanica*	WLP	WLP	189
Red moki	*Cheilodactylus spectabilis*	RMO	RMO	209
Red pigfish	*Bodianus unimaculatus*	RPI	RPI	215
Red snapper	*Centroberyx affinis*	RSN	RSN	168
Redbait	*Emmelichthys nitidus*	RBT	RBT	203
Ribaldo	*Mora moro*	RIB	RIB	148
Ribbonfish	*Agrostichthys parkeri*	AGR	AGR	116
Rig	*Mustelus lenticulatus*	SPO	SPO	50
Robust cardinalfish	*Epigonus robustus*	ERB	ERB	192
Robust pelagic basslet	*Rosenblattia robusta*	UNI	ROS	193
Rough skate	*Zearaja nasuta*	RSK	RSK	66
Roughhead rattail	*Coelorinchus trachycarus*	RAT	CHY	131
Roundfin catshark	*Apristurus ampliceps*	APR	AAM	45
Roundtooth cod	*Lepidion inosimae*	LEG	LPI	146
Rubyfish	*Plagiogeneion rubiginosum*	RBY	RBY	203
Rudderfish	*Centrolophus niger*	RUD	RUD	240
Sailfish	*Istiophorus platypterus*	SAI	SAI	238
Sand flounder	*Rhombosolea plebeia*	SFL (effort), FLA (landing)	SFL	251
Sandfish	*Gonorynchus forsteri*	GON	GFO	85
Saury	*Scomberesox saurus*	SAU	SAU	162
Scabbardfish	*Benthodesmus* spp.	BEN	BEN	231
Scalloped dealfish	*Zu elongatus*	UNI	ZEL	116
Scaly dragonfish	*Stomias boa*	UNI	SBB	98
Scaly gurnard	*Lepidotrigla brachyoptera*	SCG	SCG	181
Scaly stargazer	*Pleuroscopus pseudodorsalis*	PLZ	PLZ	225
Scarlet wrasse	*Pseudolabrus miles*	SPF	SPF	217
Schmidt's cod	*Lepidion schmidti*	LEG	LPS	147
School shark	*Galeorhinus galeus*	SCH	SCH	49
Sea perch	*Helicolenus percoides*	SPE	HPC	177
Seadevils	*Ceratias* spp.	UNI	CER	158
Seal shark	*Dalatias licha*	BSH	BSH	63
Serrulate rattail	*Coryphaenoides serrulatus*	RAT	CSE	135
Sharpnose sevengill shark	*Heptranchias perlo*	HEP	HEP	53
Short-tail stingray	*Bathytoshia brevicaudata*	BRA	BRA	70
Shortbill spearfish	*Tetrapturus angustirostris*	SSF	SSF	239
Shortsnout lancetfish	*Alepisaurus brevirostris*	ABR	ABR	101
Shortspine lanternshark	*Etmopterus unicolor*	OSD	ETU	59
Shovelnose dogfish	*Deania calcea*	SND	SND	56
Silver conger	*Gnathophis habenatus*	SEE	SEE	80
Silver dory	*Cyttus novaezealandiae*	SDO	SDO	169
Silver roughy	*Hoplostethus mediterraneus*	SRH	SRH	166

Silver warehou	*Seriolella punctata*	SWA	SWA	244
Silverside	*Argentina elongata*	SSI	SSI	85
Sixgill shark	*Hexanchus griseus*	HEX	HEX	53
Skipjack tuna	*Katsuwonus pelamis*	SKJ	SKJ	233
Slender jack mackerel	*Trachurus murphyi*	JMA	JMM	197
Slender ragfish	*Schedophilus huttoni*	CPD	SUH	241
Slender roughy	*Optivus elongatus*	SLR	SLR	166
Slender smooth-hound	*Gollum attenuatus*	SSH	SSH	49
Slender sprat	*Sprattus antipodum*	SPR	SPA	84
Slender stargazer	*Crapatalus angusticeps*	UNI	SLZ	222
Slender tuna	*Allothunnus fallai*	STU	STU	232
Small mouth rattail	*Coryphaenoides microstomus*	RAT	CMI	134
Smallbanded rattail	*Coelorinchus parvifasciatus*	RAT	CCX	130
Smallhead cod	*Lepidion microcephalus*	SMC	SMC	147
Smallscale brown slickhead	*Alepocephalus antipodianus*	SSM	SSM	88
Smallscale cod	*Notothenia microlepidota*	SCD	SCD	219
Smallspine spookfish	*Harriotta haeckeli*	UNI	HHA	35
Smalltooth pelagic cod	*Melanonus gracilis*	UNI	MEL	151
Smalltooth sand tiger shark	*Odontaspis ferox*	ODO	ODO	41
Smooth deepsea skate	*Brochiraja asperula*	OSK	BTA	68
Smooth lanternshark	*Etmopterus pusillus*	ETP	ETP	58
Smooth oreo	*Pseudocyttus maculatus*	SSO (effort), OEO (landing)	SSO	172
Smooth skate	*Dipturus innominatus*	SSK	SSK	66
Smoothhead rattail	*Malacocephalus laevis*	RAT	MLA	140
Snaggletooths	*Astronesthes* spp.	UNI	ASE	94
Snake eel	*Ophisurus serpens*	OSE	OSE	77
Snake mackerel	*Gempylus serpens*	GSE	GSE	227
Snapper	*Chrysophrys auratus*	SNA	SNA	204
Snipe eel	*Nemichthys curvirostris*	DWE	NCU	78
Snipefish	*Macroramphosus scolopax*	SNI	SNI	175
Snubnosed eel	*Simenchelys parasitica*	SNE	SNE	76
Southern bastard cod	*Pseudophycis barbata*	SBR	SBR	150
Southern blacktip lanternfish	*Gymnoscopelus piabilis*	LAN	GYP	107
Southern blue whiting	*Micromesistius australis*	SBW	SBW	154
Southern bluefin tuna	*Thunnus maccoyii*	STN	STN	235
Southern boarfish	*Pentaceros richardsoni*	SBO	SBO	208
Southern bream	*Brama australis*	UNI	SRB	198
Southern conger	*Conger verreauxi*	CON	CVR	79
Southern loosejaw	*Malacosteus australis*	UNI	MAU	96
Southern mandarin dogfish	*Cirrhigaleus australis*	OSD	MSH	54
Southern sleeper shark	*Somniosus antarcticus*	OSD	SSS	62
Southern snaggletooth	*Borostomias antarcticus*	BAN	BAN	95
Southern splendid perch	*Callanthias allporti*	SPP	SDP	190
Speckled sole	*Peltorhamphus latus*	UNI	SPS	249
Spiky oreo	*Neocyttus rhomboidalis*	SOR (effort), OEO (landing)	SOR	171
Spineback	*Notacanthus sexspinis*	SBK	SBK	75
Spinetail devil ray	*Mobula mobular*	MJA	MJA	72
Spiny dogfish	*Squalus acanthias*	SPD	SPD	55
Spiny seadragon	*Solegnathus spinosissimus*	SDR	SDR	174
Spinyfin	*Diretmichthys parini*	SFN	SFN	164
Spotted black grouper	*Epinephelus daemelii*	SBG	SBG	187
Spotted flounder	*Azygopus flemingi*	SDF	SDF	247
Spotted gurnard	*Pterygotrigla andertoni*	JGU	JGU	181
Spotted stargazer	*Genyagnus monopterygius*	SPZ	SPZ	223
Spottyface rattail	*Coelorinchus acanthiger*	RAT	CTH	122
Spotty	*Notolabrus celidotus*	STY	STY	215

Squaretail	*Tetragonurus cuvieri*	TET	TET	246
Squashed face marlinspike	*Nezumia namatahi*	RAT	NNA	142
Starburst dragonfish	*Trigonolampa miriceps*	UNI	TMI	98
Starnose black rat	*Kuronezumia leonis*	RAT	NPU	138
Stout sprat	*Sprattus muelleri*	SPR	SPM	84
Striate rattail	*Coryphaenoides striaturus*	RAT	CTR	136
Striped marlin	*Kajikia audax*	STM	STM	238
Stubby lanternfish	*Bolinichthys supralateralis*	LAN	BOS	105
Supanose rattail	*Coelorinchus supernasutus*	RAT	CFX	131
Sweep	*Scorpis lineolata*	SWE	SWE	206
Swollenhead conger	*Bassanago bulbiceps*	SCO	SCO	78
Swordfish	*Xiphias gladius*	SWO	SWO	237
Swordtongue cardinalfish	*Epigonus machaera*	UNI	EPM	192
Talismania longifilis	*Talismania longifilis*	TAR	TAL	89
Tarakihi	*Nemadactylus macropterus*	NMP	NMP	210
Tasmanian ruffe	*Tubbia tasmanica*	TUB	TUB	245
Telescope fish	*Mendosoma lineatum*	TEL	TEL	213
Thickhead rattail	*Cetonurus crassiceps*	RAT	CCR	121
Thresher shark	*Alopias vulpinus*	THR	THR	42
Trevally	*Pseudocaranx georgianus*	TRE	TRE	196
Trumpeter	*Latris lineata*	TRU	TRU	212
Turbot	*Colistium nudipinnis*	TUR (effort), FLA (landing)	TUR	248
Two saddle rattail	*Coelorinchus biclinozonalis*	RAT	CBI	123
Twospot demoiselle	*Chromis dispila*	UNI	TSD	214
Umbrella conger	*Gnathophis umbrellabius*	DWE	UEE	80
Unicorn rattail	*Trachyrincus longirostris*	WHR	WHR	121
Unicornfish	*Lophotus capellei*	LCA	LCA	115
Upturnedsnout rattail	*Coelorinchus mycterismus*	RAT	CJX	129
Variable spotted toadfish	*Neophrynichthys heterospilos*	TOA	VST	183
Veilfin manefish	*Neocaristius heemstrai*	CST	CST	202
Velcro skate	*Notoraja alisae*	OSK	NAL	70
Velvet dogfish	*Zameus squamulosus*	OSD	ZAS	62
Velvet rattail	*Trachonurus gagates*	RAT	TRX	143
Violet cod	*Antimora rostrata*	VCO	VCO	144
Viperfish	*Chauliodus sloani*	CHA	CHA	95
Wahoo	*Acanthocybium solandri*	WAH	WAH	232
Warty oreo	*Allocyttus verrucosus*	WOE (effort), OEO (landing)	WOE	170
Warty seadevil	*Cryptopsaras couesii*	SDE	SDE	159
Waryfishes	*Scopelosaurus* spp.	SPL	SPL	99
Whale shark	*Rhincodon typus*	WSH	WSH	40
Whipnose anglers	*Gigantactis* spp.	BAF	GIG	159
White brotula	*Cataetyx chthamalorhynchus*	CAX	CAX	156
White cardinalfish	*Epigonus denticulatus*	EPD	EPD	191
White pointer shark (great white)	*Carcharodon carcharias*	WPS	WPS	43
White rattail	*Trachyrincus aphyodes*	WHX	WHX	120
White warehou	*Seriolella caerulea*	WWA	WWA	243
Wingfish	*Pteraclis velifera*	WIN	WIN	199
Witch	*Arnoglossus scapha*	WIT	WIT	246
Yellow boarfish	*Pentaceros decacanthus*	YBO	YBO	207
Yellow cod	*Parapercis gilliesii*	YCO	YCO	221
Yellowbelly flounder	*Rhombosolea leporina*	YBF (effort), FLA (landing)	YBF	250
Yelloweye mullet	*Aldrichetta forsteri*	YEM	YEM	160
Yellowfin tuna	*Thunnus albacares*	YFN	YFN	235
Yellowtail jack mackerel	*Trachurus novaezelandiae*	JMA	JMN	198
Zenion dory	*Zenion* sp. *A*	UNI	ZDO	173

Index 5 – Alphabetical list of FishNZ research codes				
FishNZ research/ observer code	**FishNZ reporting code**	**Common name**	**Scientific name**	**Page**
AAM	APR	Roundfin catshark	*Apristurus ampliceps*	45
ABR	ABR	Shortsnout lancetfish	*Alepisaurus brevirostris*	101
ACT	UNI	Prickly flounder	*Achiropsetta tricholepis*	252
AEX	APR	New Zealand catshark	*Apristurus exsanguis*	45
AGI	UNI	Giant hatchetfish	*Argyropelecus gigas*	91
AGK	APR	Garrick's catshark	*Apristurus garricki*	46
AGR	AGR	Ribbonfish	*Agrostichthys parkeri*	116
AHE	UNI	Common hatchetfish	*Argyropelecus hemigymnus*	92
ALB	ALB	Albacore tuna	*Thunnus alalunga*	234
AML	APR	Fleshynose catshark	*Apristurus melanoasper*	46
ANC	ANC	Anchovy	*Engraulis australis*	83
ANO	UNI	Fangtooth	*Anoplogaster cornuta*	164
APA	DWE	Fewpore snipe eel	*Avocettina paucipora*	77
API	API	Alert pigfish	*Alertichthys blacki*	179
APN	APR	Bulldog catshark	*Apristurus pinguis*	47
ASE	UNI	Snaggletooths	*Astronesthes* spp.	94
ASI	APR	Freckled catshark	*Apristurus cf sinesis*	47
ATT	KAH	Kahawai	*Arripis trutta*	205
BAC	BAC	Codhead rattail	*Bathygadus cottoides*	118
BAN	BAN	Southern snaggletooth	*Borostomias antarcticus*	95
BAR	BAR	Barracouta	*Thyrsites atun*	230
BAS	BAS (effort), HPB (landing)	Bass	*Polyprion americanus*	185
BBA	BBA	Black barracouta	*Nesiarchus nasutus*	228
BBE	BBE	Banded bellowsfish	*Centriscops humerosus*	175
BBR	UNI	Bronze bream	*Xenobrama microlepis*	201
BCA	BCA	Giant barracudina	*Magnisudis prionosa*	103
BCD	BCD	Black cod	*Paranotothenia magellanica*	220
BCO	BCO	Blue cod	*Parapercis colias*	221
BCR	BCR	Blue cuskeel	*Brotulotaenia nigra*	155
BDA	BDA	Kermadec barracuda	*Sphyraena* sp. *A*	226
BEE	BEE	Basketwork eel	*Diastobranchus capensis*	75
BEM	BEM	Blue marlin	*Makaira nigricans*	239
BEN	BEN	Scabbardfish	*Benthodesmus* spp.	231
BER	BER	Numbfish	*Typhlonarke*	65
BET	BET	Bigeye thresher shark	*Alopias superciliosus*	42
BFE	BFE	Deepsea lizardfish	*Bathysaurus ferox*	104
BFL	BFL (effort), FLA (landing)	Black flounder	*Rhombosolea retiaria*	251
BGZ	STA	Banded stargazer	*Kathetostoma binigrasella*	224
BIG	BIG	Bigeye tuna	*Thunnus obesus*	236
BJA	RAT	Black javelinfish	*Mesobius antipodum*	141
BKM	BKM	Black marlin	*Istiompax indica*	237
BLO	TRI	Feelerfish	*Bathypterois longifilis*	100
BMA	BMA	Blue maomao	*Scorpis violacea*	206
BMI	OSK	Dwarf skate	*Brochiraja microspinifera*	69
BNS	BNS	Bluenose	*Hyperoglyphe antarctica*	240
BOA	BOA	Giant boarfish	*Paristiopterus labiosus*	207
BOE	BOE (effort), OEO (landing)	Black oreo	*Allocyttus niger*	170
BOS	LAN	Stubby lanternfish	*Bolinichthys supralateralis*	105
BPA	UNI	Parin's deepsea smelt	*Bathylagichthys parini*	86
BPE	BPE	Butterfly perch	*Caesioperca lepidoptera*	186
BPF	BPF	Banded wrasse	*Notolabrus fucicola*	216
BRA	BRA	Short-tail stingray	*Bathytoshia brevicaudata*	70
BRC	BRC	Northern bastard cod	*Pseudophycis breviuscula*	150

BRI	BRI (effort), FLA (landing)	Brill	*Colistium guntheri*	248
BRL	OSK	Blue skate	*Brochiraja leviveneta*	68
BRZ	BRZ	Brown stargazer	*Xenocephalus armatus*	225
BSH	BSH	Seal shark	*Dalatias licha*	63
BSK	BSK	Basking shark	*Cetorhinus maximus*	43
BSL	BSL	Black slickhead	*Xenodermichthys copei*	90
BSP	BSP	Big-scale pomfret	*Taractichthys longipinnis*	201
BTA	OSK	Smooth deepsea skate	*Brochiraja asperula*	68
BTS	OSK	Prickly deepsea skate	*Brochiraja spinifera*	69
BTU	BTU	Butterfly tuna	*Gasterochisma melampus*	233
BUT	BUT	Butterfish	*Odax pullus*	217
BWH	BWH	Bronze whaler shark	*Carcharhinus brachyurus*	50
BWS	BWS	Blue shark	*Prionace glauca*	51
BYD	BYX	Longfinned beryx	*Beryx decadactylus*	167
BYS	BYX	Alfonsino	*Beryx splendens*	168
CAN	CAN	Brown brotula	*Cataetyx niki*	156
CAR	CAR	Carpet shark	*Cephaloscyllium isabella*	48
CAS	RAT	Obliquebanded rattail	*Coelorinchus aspercephalus*	122
CAX	CAX	White brotula	*Cataetyx chthamalorhynchus*	156
CBA	RAT	Humpback rattail	*Coryphaenoides dossenus*	132
CBE	CBE	Crested bellowsfish	*Notopogon lilliei*	176
CBI	RAT	Two saddle rattail	*Coelorinchus biclinozonalis*	123
CBO	CBO	Bollons' rattail	*Coelorinchus bollonsi*	123
CBS	UNI	Common bigscalefish	*Poromitra atlantica*	163
CCO	RAT	Cook's rattail	*Coelorinchus cookianus*	124
CCR	RAT	Thickhead rattail	*Cetonurus crassiceps*	121
CCX	RAT	Smallbanded rattail	*Coelorinchus parvifasciatus*	130
CDO	CDO	Capro dory	*Capromimus abbreviatus*	172
CDX	RAT	Darkbanded rattail	*Coelorinchus maurofasciatus*	128
CEP	UNI	Red bandfish	*Cepola haastii*	213
CER	UNI	Seadevils	*Ceratias* spp.	158
CEX	RAT	Blacklip rattail	*Coelorinchus celaenostomus*	124
CFA	CFA	Banded rattail	*Coelorinchus fasciatus*	125
CFI	RAT	Finetail rattail	*Coryphaenoides filicauda*	133
CFL	BOT	Crested flounder	*Lophonectes mongonuiensis*	247
CFX	RAT	Supanose rattail	*Coelorinchus supernasutus*	131
CGR	CGR	Convict grouper	*Epinephelus octofasciatus*	188
CGX	RAT	Dusky rattail	*Coelorinchus infuscus*	126
CHA	CHA	Viperfish	*Chauliodus sloani*	95
CHG	CHG	Giant chimaera	*Chimaera lignaria*	37
CHP	CHP	Brown chimaera	*Chimaera carophila*	37
CHX	CHX	Pink frogmouth	*Chaunax russatus*	157
CHY	RAT	Roughhead rattail	*Coelorinchus trachycarus*	131
CIN	RAT	Notable rattail	*Coelorinchus innotabilis*	126
CIX	RAT	Patterned rattail	*Coelorinchus mystax*	129
CJX	RAT	Upturnedsnout rattail	*Coelorinchus mycterismus*	129
CKA	RAT	Kaiyomaru rattail	*Coelorinchus kaiyomaru*	127
CKE	RAT	Kermadec rattail	*Coelorinchus kermadecus*	127
CMA	CMA	Mahia rattail	*Coelorinchus matamua*	128
CMI	RAT	Small mouth rattail	*Coryphaenoides microstomus*	134
CML	UNI	Black swallower	*Chiasmodon microcephalus*	220
CMO	CMO	Copper moki	*Latridopsis forsteri*	212
CMU	RAT	Murray's rattail	*Coryphaenoides murrayi*	134
CMX	RAT	McMillan's rattail	*Coryphaenoides mcmillani*	133
COL	COL	Oliver's rattail	*Coelorinchus oliverianus*	130
COM	COM	Cosmopolitan rattail	*Coryphaenoides armatus*	132
COT	COT	Bonyskull toadfish	*Cottunculus nudus*	183

CPB	FLY	Barbeled flying fish	*Cheilopogon pinnatibarbatus*	161
CPI	RAT	Dogtooth rattail	*Cynomacrurus piriei*	137
CPN	CHI	Leopard chimaera	*Chimaera panthera*	38
CRD	RAT	Bighead rattail	*Coryphaenoides rudis*	135
CSE	RAT	Serrulate rattail	*Coryphaenoides serrulatus*	135
CSQ	CSQ	Leafscale gulper shark	*Centrophorus squamosus*	56
CST	CST	Veilfin manefish	*Neocaristius heemstrai*	202
CSU	RAT	Four-ray rattail	*Coryphaenoides subserrulatus*	136
CTH	RAT	Spottyface rattail	*Coelorinchus acanthiger*	122
CTR	RAT	Striate rattail	*Coryphaenoides striaturus*	136
CUB	CUB	Cubehead	*Cubiceps* spp.	245
CUC	CUC	Cucumberfish	*Paraulopus nigripinnis*	99
CVR	CON	Southern conger	*Conger verreauxi*	79
CXH	RAT	Horrible rattail	*Coelorinchus horribilis*	125
CYL	CYL	Portuguese dogfish	*Centroscymnus coelolepis*	60
CYO	CYO	Owston's dogfish	*Centroscymnus owstonii*	60
CYP	CYP	Longnose velvet dogfish	*Centroselachus crepidater*	61
DAS	DAS	Pelagic stingray	*Pteroplatytrygon violacea*	71
DCO	MOD	Dwarf cod	*Notophycis marginata*	148
DCS	DCS	Dawson's cat shark	*Bythaelurus dawsoni*	48
DDA	LAN	Dana lanternfish	*Diaphus danae*	105
DEA	DEA	Dealfish	*Trachipterus trachypterus*	115
DHU	LAN	Hudson's lanternfish	*Diaphus hudsoni*	106
DIS	DIS	Discfish	*Diretmus argenteus*	165
DOE	LAN	Ostenfeld's lanternfish	*Diaphus ostenfeldi*	106
DOF	DOF	Dolphinfish	*Coryphaena hippurus*	194
DRB	UNI	Rebain's portholefish	*Diplophos rebainsi*	90
DSK	DSK	Deepwater spiny skate	*Amblyraja hyperborea*	65
DSP	DSP	Deepsea pigfish	*Congiopodus coriaceus*	179
ECR	UNI	Common messmate	*Echiodon cryomargarites*	154
EGR	EGR	Eagle ray	*Myliobatis tenuicaudatus*	73
ELE	ELE	Elephantfish	*Callorhinchus milii*	35
ELT	LAN	Electrona lanternfishes	*Electrona*	107
EMA	EMA	Blue mackerel	*Scomber australasicus*	234
EMO	EMO	Moller's lanternshark	*Etmopterus molleri*	58
EPD	EPD	White cardinalfish	*Epigonus denticulatus*	191
EPL	EPL	Bigeye cardinalfish	*Epigonus lenimen*	191
EPM	UNI	Swordtongue cardinalfish	*Epigonus machaera*	192
EPO	UNI	Limp eelpout	*Melanostigma gelatinosum*	218
EPT	CDL	Deepsea cardinalfish	*Epigonus telescopus*	193
ERA	ERA	Electric ray	*Tetronarce nobiliana*	64
ERB	ERB	Robust cardinalfish	*Epigonus robustus*	192
ESO	ESO (effort), FLA (landing)	New Zealand sole	*Peltorhamphus novaezeelandiae*	250
ESZ	ESZ	Estuary stargazer	*Leptoscopus macropygus*	223
ETB	ETB	Baxter's dogfish	*Etmopterus granulosus*	57
ETL	ETL	Lucifer dogfish	*Etmopterus lucifer*	57
ETP	ETP	Smooth lanternshark	*Etmopterus pusillus*	58
ETU	OSD	Shortspine lanternshark	*Etmopterus unicolor*	59
EUC	EUC	Eucla cod	*Euclichthys polynemus*	118
EVB	UNI	Brown sabretooth	*Evermannella balbo*	101
EVI	OSD	Blue-eye lanternshark	*Etmopterus viator*	59
FAN	FAN	Fanfish	*Pterycombus petersii*	200
FHD	FHD	Deepsea flathead	*Hoplichthys cf. haswelli*	182
FOE	UNI	Orange dragonet	*Foetorepus cf. phasis*	226
FOX	FOX	Foxfish	*Bodianus flavipinnis*	214
FRO	FRO	Frostfish	*Lepidopus caudatus*	231

FRS	FRS	Frill shark	*Chlamydoselachus anguineus*	52
GAO	RAT	Filamentous rattail	*Gadomus aoteanus*	119
GAR	GAR	Garfish	*Hyporhamphus ihi*	162
GBT	UNI	Black lightfish	*Sigmops bathyphilus*	91
GFL	GFL (effort), FLA (landing)	Greenback flounder	*Rhombosolea tapirina*	252
GFO	GON	Sandfish	*Gonorynchus forsteri*	85
GGC	MOD	Codling	*Guttigadus globiceps*	145
GGP	GGP	Giant grouper	*Epinephelus lanceolatus*	187
GIG	BAF	Whipnose anglers	*Gigantactis* spp.	159
GIZ	STA	Giant stargazer	*Kathetostoma giganteum*	224
GLB	UNI	Globefish	*Contusus richei*	254
GMU	GMU	Grey mullet	*Mugil cephalus*	161
GOB	OSD	Goblin shark	*Mitsukurina owstoni*	41
GPF	GPF	Girdled wrasse	*Notolabrus cinctus*	216
GRC	GRC	Grenadier cod	*Tripterophycis gilchristi*	151
GSE	GSE	Snake mackerel	*Gempylus serpens*	227
GSH	GSH	Dark ghost shark (ghost shark)	*Hydrolagus novaezealandiae*	39
GSP	GSP	Pale ghost shark	*Hydrolagus bemisi*	38
GTR	GTR	Marblefish	*Aplodactylus arctidens*	209
GUL	GUL	Gulper eel	*Eurypharynx pelecanoides*	82
GUR	GUR	Red gurnard	*Chelidonichthys kumu*	180
GYP	LAN	Southern blacktip lanternfish	*Gymnoscopelus piabilis*	107
HAG	HAG	Hagfish	*Eptatretus cirrhatus*	34
HAK	HAK	Hake	*Merluccius australis*	153
HAL	UNI	Black halosaur	*Halosauropsis macrochir*	73
HAN	RAT	Naked snout rattail	*Haplomacrourus nudirostris*	137
HAP	HAP (effort), HPB (landing)	Hapuku	*Polyprion oxygeneios*	185
HAS	HJO	Australasian slender cod	*Halargyreus* sp. *A*	146
HBA	SPE	Bigeye sea perch	*Helicolenus barathri*	177
HCO	HCO	Hairy conger	*Bassanago hirsutus*	79
HEP	HEP	Sharpnose sevengill shark	*Heptranchias perlo*	53
HEX	HEX	Sixgill shark	*Hexanchus griseus*	53
HHA	UNI	Smallspine spookfish	*Harriotta haeckeli*	35
HHS	HHS	Hammerhead shark	*Sphyrna zygaena*	52
HIM	BAF	Prickly anglerfishes	*Himantolophus*	158
HJC	HJO	Johnson's cod	*Halargyreus johnsonii*	145
HOK	HOK	Hoki	*Macruronus novaezelandiae*	153
HPC	SPE	Sea perch	*Helicolenus percoides*	177
HPE	UNI	Common halosaur	*Halosaurus pectoralis*	74
HYB	HYD	Black ghost shark	*Hydrolagus homonycteris*	39
HYG	LAN	Hygophum lanternfishes	*Hygophum*	108
HYP	HYP	Pointynose blue ghost shark	*Hydrolagus trolli*	40
IAT	UNI	Common black dragonfish	*Idiacanthus atlanticus*	96
IBR	OSD	Cookie-cutter shark	*Isistius brasiliensis*	64
JAV	JAV	Javelinfish	*Lepidorhynchus denticulatus*	139
JDO	JDO	John dory	*Zeus faber*	174
JGU	JGU	Spotted gurnard	*Pterygotrigla andertoni*	181
JMD	JMA	Greenback jack mackerel	*Trachurus declivis*	197
JMM	JMA	Slender jack mackerel	*Trachurus murphyi*	197
JMN	JMA	Yellowtail jack mackerel	*Trachurus novaezelandiae*	198
KIN	KIN	Kingfish	*Seriola lalandi*	196
KOH	KOH	Koheru	*Decapterus koheru*	195
KTA	TAR	King tarakihi	*Nemadactylus* sp. *A*	211
LAC	LAN	Cripplefin lanternfish	*Nannobrachium achirus*	112
LAT	LAT	Longsnout lancetfish	*Alepisaurus ferox*	102
LAU	LAN	Austral lanternfish	*Lampanyctus australis*	110

LCA	LCA	Unicornfish	*Lophotus capellei*	115
LCH	LCH	Longnose spookfish	*Harriotta raleighana*	36
LDO	LDO	Lookdown dory	*Cyttus traversi*	169
LEA	LEA	Leatherjacket	*Meuschenia scaber*	253
LEP	LEP	Escolar	*Lepidocybium flavobrunneum*	227
LFB	LFB	Longfin boarfish	*Zanclistius elevatus*	208
LFG	SKI	Longfin gemfish	*Rexea antefurcata*	229
LHE	LAN	Hector's lanternfish	*Lampanyctodes hectoris*	109
LIN	LIN	Ling	*Genypterus blacodes*	155
LIT	LAN	Intricate lanternfish	*Lampanyctus intricarius*	110
LMD	LAN	MacDonald's lanternfish	*Lampanyctus macdonaldi*	111
LNT	LAN	Notal lanternfish	*Lampadena notialis*	108
LPH	UNI	Phantom angler	*Haplophryne mollis*	160
LPI	LEG	Roundtooth cod	*Lepidion inosimae*	146
LPR	LAN	Blackhead lanternfish	*Lampichthys procerus*	111
LPS	LEG	Schmidt's cod	*Lepidion schmidti*	147
LSK	LSK	Longtail skate	*Arhynchobatis asperrimus*	67
LSO	LSO (effort), FLA (landing)	Lemon sole	*Pelotretis flavilatus*	249
LSP	LAN	Mirror lanternfish	*Lampadena speculigera*	109
LYC	LYC	Fangtooth hake	*Lyconus pinnatus*	152
MAK	MAK	Mako shark	*Isurus oxyrinchus*	44
MAN	MAN	Finless flounder	*Neoachiropsetta milfordi*	253
MAU	UNI	Southern loosejaw	*Malacosteus australis*	96
MCA	MCA	Carinate rattail	*Macrourus carinatus*	140
MCH	NOT	Maori chief	*Notothenia angustata*	219
MDO	MDO	Mirror dory	*Zenopsis nebulosa*	173
MEB	UNI	Bigscale blacksmelt	*Melanolagus bericoides*	86
MEJ	BAF	Humpback anglerfish	*Melanocetus johnsonii*	157
MEL	UNI	Smalltooth pelagic cod	*Melanonus gracilis*	151
MET	LAN	Metelectrona lanternfishes	*Metelectrona*	112
MEZ	UNI	Largetooth pelagic cod	*Melanonus zugmayeri*	152
MJA	MJA	Spinetail devil ray	*Mobula mobular*	72
MLA	RAT	Smoothhead rattail	*Malacocephalus laevis*	140
MMA	UNI	Headband barracudina	*Macroparalepis macrogeneion*	103
MMU	UNI	Pearlside	*Maurolicus australis*	92
MNG	MST	Black dragonfish	*Melanostomias niger*	97
MOI	SUN	Bumphead sunfish	*Mola alexandrini*	255
MOK	MOK	Moki	*Latridopsis ciliaris*	211
MOO	MOO	Moonfish	*Lampris guttatus*	114
MOT	SUN	Hoodwinker sunfish	*Mola tecta*	255
MSH	OSD	Southern mandarin dogfish	*Cirrhigaleus australis*	54
MWO	MRL	Eel cod	*Muraenolepis orangiensis*	117
NAL	OSK	Velcro skate	*Notoraja alisae*	70
NBU	RAT	Bulbous rattail	*Kuronezumia bubonis*	138
NCU	DWE	Snipe eel	*Nemichthys curvirostris*	78
NCV	UNI	Blueband hagfish	*Neomyxine caesiovitta*	34
NET	DWE	Duckbill eel	*Nettastoma parviceps*	81
NML	UNI	Largescale blackchin	*Neoscopelus macrolepidotus*	104
NMP	TAR	Tarakihi	*Nemadactylus macropterus*	210
NNA	RAT	Squashed face marlinspike	*Nezumia namatahi*	142
NOC	DWE	Giant spineback	*Notacanthus chemnitzii*	74
NOF	UNI	Orange bellowsfish	*Notopogon xenosoma*	176
NOR	UNI	Cloaked tubeshoulder	*Normichthys yahganorum*	87
NPU	RAT	Starnose black rat	*Kuronezumia leonis*	138
NSD	NSD	Northern spiny dogfish	*Squalus griffini*	55
NSP	NSP	Northern splendid perch	*Callanthias australis*	190

NZC	RAT	Cohen's rattail	*Nezumia coheni*	141
NZK	RAT	Kapala rattail	*Nezumia kapala*	142
OAR	OAR	Oarfish	*Regalecus glesne*	117
ODO	ODO	Smalltooth sand tiger shark	*Odontaspis ferox*	41
OFH	OFH	Oilfish	*Ruvettus pretiosus*	230
OMI	MST	Giant black dragonfish	*Opostomias micripnus*	97
OMO	UNI	Hammerjaw	*Omosudis lowii*	102
OMU	RAT	Large fang rattail	*Odontomacrurus murrayi*	143
OPA	OPA	Opalfishes	*Hemerocoetes* spp.	222
OPE	OPE	Orange perch	*Lepidoperca aurantia*	189
ORH	ORH	Orange roughy	*Hoplostethus atlanticus*	165
OSE	OSE	Snake eel	*Ophisurus serpens*	77
OWS	OSD	Oceanic whitetip shark	*Carcharhinus longimanus*	51
OXO	UNI	Oxeye oreo	*Oreosoma atlanticum*	171
PAH	PAH	Opah	*Lampris immaculatus*	114
PAR	PAR	Parore	*Girella tricuspidata*	205
PCO	MOD	Ahuru	*Auchenoceros punctatus*	144
PDG	PDG	Prickly dogfish	*Oxynotus bruniensis*	63
PDS	PDS	False frostfish	*Paradiplospinus gracilis*	228
PER	PER	Common tubeshoulder	*Persparsia kopua*	87
PHO	PHO	Lighthousefish	*Phosichthys argenteus*	93
PIF	UNI	Pilotfish	*Naucrates ductor*	195
PIG	PIG	Pigfish	*Congiopodus leucopaecilus*	180
PIL	PIL	Pilchard	*Sardinops sagax*	83
PIN	RAT	Pineapple rattail	*Idiolophorhynchus andriashevi*	120
PLA	UNI	Largemouth manefish	*Caristius meridionalis*	202
PLS	PLS	Plunket's shark	*Scymnodon plunketi*	61
PLU	MOD	Luminous cod	*Physiculus luminosa*	149
PLZ	PLZ	Scaly stargazer	*Pleuroscopus pseudodorsalis*	225
PMA	PMA	Pink maomao	*Caprodon longimanus*	186
POP	POP	Porcupine fish	*Allomycterus pilatus*	254
POR	POR	Porae	*Nemadactylus douglasii*	210
POS	POS	Porbeagle shark	*Lamna nasus*	44
PRO	LAN	Protomyctophum lanternfishes	*Protomyctophum*	113
PSK	PSK	Longnose deepsea skate	*Bathyraja shuntovi*	67
PSY	PSY	Blobfish	*Psychrolutes microporos*	184
PTO	PTO	Patagonian toothfish	*Dissostichus eleginoides*	182
RAG	RAG	Ragfish	*Pseudoicichthys australis*	241
RBM	RBM	Ray's bream	*Brama brama*	199
RBP	RBP	Red banded perch	*Hypoplectrodes huntii*	188
RBT	RBT	Redbait	*Emmelichthys nitidus*	203
RBY	RBY	Rubyfish	*Plagiogeneion rubiginosum*	203
RCH	RCH	Pacific spookfish	*Rhinochimaera pacifica*	36
RCO	RCO	Red cod	*Pseudophycis bachus*	149
REO	UNI	Common remora	*Remora remora*	194
RGN	SLK	Bordello slickhead	*Rouleina guentheri*	89
RHY	RHY	Common roughy	*Paratrachichthys trailli*	167
RIB	RIB	Ribaldo	*Mora moro*	148
RMB	RMB	Manta ray	*Mobula birostris*	72
RMO	RMO	Red moki	*Cheilodactylus spectabilis*	209
RMU	RMU	Goatfish	*Upeneichthys porosus*	204
ROS	UNI	Robust pelagic basslet	*Rosenblattia robusta*	193
RPI	RPI	Red pigfish	*Bodianus unimaculatus*	215
RSC	RSC	Dwarf scorpionfish	*Scorpaena papillosa*	178
RSK	RSK	Rough skate	*Zearaja nasuta*	66
RSN	RSN	Red snapper	*Centroberyx affinis*	168

RSO	SKI	Gemfish	*Rexea solandri*	229
RUD	RUD	Rudderfish	*Centrolophus niger*	240
SAF	SYN	Grey cutthroat eel	*Synaphobranchus affinis*	76
SAI	SAI	Sailfish	*Istiophorus platypterus*	238
SAU	SAU	Saury	*Scomberesox saurus*	162
SBB	UNI	Scaly dragonfish	*Stomias boa*	98
SBG	SBG	Spotted black grouper	*Epinephelus daemelii*	187
SBI	SBI	Bigscale brown slickhead	*Alepocephalus australis*	88
SBK	SBK	Spineback	*Notacanthus sexspinis*	75
SBO	SBO	Southern boarfish	*Pentaceros richardsoni*	208
SBP	LAN	Bogue lanternfish	*Symbolophorus boops*	113
SBR	SBR	Southern bastard cod	*Pseudophycis barbata*	150
SBW	SBW	Southern blue whiting	*Micromesistius australis*	154
SCD	SCD	Smallscale cod	*Notothenia microlepidota*	219
SCG	SCG	Scaly gurnard	*Lepidotrigla brachyoptera*	181
SCH	SCH	School shark	*Galeorhinus galeus*	49
SCO	SCO	Swollenhead conger	*Bassanago bulbiceps*	78
SDE	SDE	Warty seadevil	*Cryptopsaras couesii*	159
SDF	SDF	Spotted flounder	*Azygopus flemingi*	247
SDO	SDO	Silver dory	*Cyttus novaezealandiae*	169
SDP	SPP	Southern splendid perch	*Callanthias allporti*	190
SDR	SDR	Spiny seadragon	*Solegnathus spinosissimus*	174
SEE	SEE	Silver conger	*Gnathophis habenatus*	80
SEL	SEL	Ocean blue-eye	*Seriolella labyrinthica*	243
SEV	SEV	Broadnose sevengill shark	*Notorynchus cepedianus*	54
SFL	SFL (effort), FLA (landing)	Sand flounder	*Rhombosolea plebeia*	251
SFN	SFN	Spinyfin	*Diretmichthys parini*	164
SKJ	SKJ	Skipjack tuna	*Katsuwonus pelamis*	233
SKR	UNI	Krefft's pearleye	*Scopelarchoides kreffti*	100
SLR	SLR	Slender roughy	*Optivus elongatus*	166
SLZ	UNI	Slender stargazer	*Crapatalus angusticeps*	222
SMC	SMC	Smallhead cod	*Lepidion microcephalus*	147
SNA	SNA	Snapper	*Chrysophrys auratus*	204
SND	SND	Shovelnose dogfish	*Deania calcea*	56
SNE	SNE	Snubnosed eel	*Simenchelys parasitica*	76
SNI	SNI	Snipefish	*Macroramphosus scolopax*	175
SNO	UNI	Black bigscalefish	*Sio nordenskjoldii*	163
SOR	SOR (effort), OEO (landing)	Spiky oreo	*Neocyttus rhomboidalis*	171
SPA	SPR	Slender sprat	*Sprattus antipodum*	84
SPD	SPD	Spiny dogfish	*Squalus acanthias*	55
SPF	SPF	Scarlet wrasse	*Pseudolabrus miles*	217
SPL	SPL	Waryfishes	*Scopelosaurus* spp.	99
SPM	SPR	Stout sprat	*Sprattus muelleri*	84
SPO	SPO	Rig	*Mustelus lenticulatus*	50
SPS	UNI	Speckled sole	*Peltorhamphus latus*	249
SPU	UNI	False oblique hatchetfish	*Sternoptyx pseudodiaphana*	93
SPZ	SPZ	Spotted stargazer	*Genyagnus monopterygius*	223
SQM	RAT	Balloonhead rattail	*Squalogadus modificatus*	119
SRB	UNI	Southern bream	*Brama australis*	198
SRH	SRH	Silver roughy	*Hoplostethus mediterraneus*	166
SSA	DWE	Common sawtooth eel	*Serrivomer samoensis*	82
SSF	SSF	Shortbill spearfish	*Tetrapturus angustirostris*	239
SSH	SSH	Slender smooth-hound	*Gollum attenuatus*	49
SSI	SSI	Silverside	*Argentina elongata*	85
SSK	SSK	Smooth skate	*Dipturus innominatus*	66
SSM	SSM	Smallscale brown slickhead	*Alepocephalus antipodianus*	88

SSO	SSO (effort), OEO (landing)	Smooth oreo	*Pseudocyttus maculatus*	172
SSS	OSD	Southern sleeper shark	*Somniosus antarcticus*	62
STM	STM	Striped marlin	*Kajikia audax*	238
STN	STN	Southern bluefin tuna	*Thunnus maccoyii*	235
STU	STU	Slender tuna	*Allothunnus fallai*	232
STY	STY	Spotty	*Notolabrus celidotus*	215
SUH	CPD	Slender ragfish	*Schedophilus huttoni*	241
SUM	SUM	Pelagic butterfish	*Schedophilus maculatus*	242
SWA	SWA	Silver warehou	*Seriolella punctata*	244
SWE	SWE	Sweep	*Scorpis lineolata*	206
SWO	SWO	Swordfish	*Xiphias gladius*	237
TAL	SLK	Talismania longifilis	*Talismania longifilis*	89
TAS	TAS	Flathead pomfret	*Taractes asper*	200
TEL	TEL	Telescope fish	*Mendosoma lineatum*	213
TET	TET	Squaretail	*Tetragonurus cuvieri*	246
THR	THR	Thresher shark	*Alopias vulpinus*	42
TMI	UNI	Starburst dragonfish	*Trigonolampa miriceps*	98
TOD	TOD	Dark toadfish	*Neophrynichthys latus*	184
TOP	TOP	Pale toadfish	*Ambophthalmos angustus*	218
TOR	TOR	Pacific bluefin tuna	*Thunnus orientalis*	236
TRE	TRE	Trevally	*Pseudocaranx georgianus*	196
TRS	TRS	Cape scorpionfish	*Trachyscorpia eschmeyeri*	178
TRU	TRU	Trumpeter	*Latris lineata*	212
TRX	RAT	Velvet rattail	*Trachonurus gagates*	143
TSD	UNI	Twospot demoiselle	*Chromis dispila*	214
TUB	TUB	Tasmanian ruffe	*Tubbia tasmanica*	245
TUR	TUR (effort), FLA (landing)	Turbot	*Colistium nudipinnis*	248
TUS	UNI	Bigeye ruffe	*Tubbia stewarti*	244
UEE	DWE	Umbrella conger	*Gnathophis umbrellabius*	80
VCO	VCO	Violet cod	*Antimora rostrata*	144
VEN	DWE	Periscope duckbill eel	*Venefica proboscidea*	81
VNI	RAT	Blackspot rattail	*Lucigadus nigromaculatus*	139
VST	TOA	Variable spotted toadfish	*Neophrynichthys heterospilos*	183
WAH	WAH	Wahoo	*Acanthocybium solandri*	232
WAR	WAR	Common warehou	*Seriolella brama*	242
WHR	WHR	Unicorn rattail	*Trachyrincus longirostris*	121
WHX	WHX	White rattail	*Trachyrincus aphyodes*	120
WIN	WIN	Wingfish	*Pteraclis velifera*	199
WIT	WIT	Witch	*Arnoglossus scapha*	246
WLP	WLP	Red lined perch	*Lepidoperca tasmanica*	189
WMY	UNI	Austral lightfish	*Woodsia meyerwaardeni*	94
WOE	WOE (effort), OEO (landing)	Warty oreo	*Allocyttus verrucosus*	170
WPS	WPS	White pointer shark (great white)	*Carcharodon carcharias*	43
WRA	WRA	Long-tail stingray	*Bathytoshia lata*	71
WSH	WSH	Whale shark	*Rhincodon typus*	40
WWA	WWA	White warehou	*Seriolella caerulea*	243
YBF	YBF (effort), FLA (landing)	Yellowbelly flounder	*Rhombosolea leporina*	250
YBO	YBO	Yellow boarfish	*Pentaceros decacanthus*	207
YCO	YCO	Yellow cod	*Parapercis gilliesii*	221
YEM	YEM	Yelloweye mullet	*Aldrichetta forsteri*	160
YFN	YFN	Yellowfin tuna	*Thunnus albacares*	235
ZAS	OSD	Velvet dogfish	*Zameus squamulosus*	62
ZDO	UNI	Zenion dory	*Zenion* sp. *A*	173
ZEL	UNI	Scalloped dealfish	*Zu elongatus*	116

Index 6 – Alphabetical list of FishNZ reporting codes				
FishNZ reporting code	**FishNZ research/ observer code**	**Common name**	**Scientific name**	**Page**
ABR	ABR	Shortsnout lancetfish	*Alepisaurus brevirostris*	101
AGR	AGR	Ribbonfish	*Agrostichthys parkeri*	116
ALB	ALB	Albacore tuna	*Thunnus alalunga*	234
ANC	ANC	Anchovy	*Engraulis australis*	83
API	API	Alert pigfish	*Alertichthys blacki*	179
APR	AAM	Roundfin catshark	*Apristurus ampliceps*	45
APR	ASI	Freckled catshark	*Apristurus cf sinesis*	47
APR	AEX	New Zealand catshark	*Apristurus exsanguis*	45
APR	AGK	Garrick's catshark	*Apristurus garricki*	46
APR	AML	Fleshynose catshark	*Apristurus melanoasper*	46
APR	APN	Bulldog catshark	*Apristurus pinguis*	47
BAC	BAC	Codhead rattail	*Bathygadus cottoides*	118
BAF	GIG	Whipnose anglers	Gigantactis spp.	159
BAF	HIM	Prickly anglerfishes	*Himantolophus*	158
BAF	MEJ	Humpback anglerfish	*Melanocetus johnsonii*	157
BAN	BAN	Southern snaggletooth	*Borostomias antarcticus*	95
BAR	BAR	Barracouta	*Thyrsites atun*	230
BAS (effort), HPB (landing)	BAS	Bass	*Polyprion americanus*	185
BBA	BBA	Black barracouta	*Nesiarchus nasutus*	228
BBE	BBE	Banded bellowsfish	*Centriscops humerosus*	175
BCA	BCA	Giant barracudina	*Magnisudis prionosa*	103
BCD	BCD	Black cod	*Paranotothenia magellanica*	220
BCO	BCO	Blue cod	*Parapercis colias*	221
BCR	BCR	Blue cuskeel	*Brotulotaenia nigra*	155
BDA	BDA	Kermadec barracuda	*Sphyraena sp. A*	226
BEE	BEE	Basketwork eel	*Diastobranchus capensis*	75
BEM	BEM	Blue marlin	*Makaira nigricans*	239
BEN	BEN	Scabbardfish	Benthodesmus spp.	231
BER	BER	Numbfish	*Typhlonarke*	65
BET	BET	Bigeye thresher shark	*Alopias superciliosus*	42
BFE	BFE	Deepsea lizardfish	*Bathysaurus ferox*	104
BFL (effort), FLA (landing)	BFL	Black flounder	*Rhombosolea retiaria*	251
BIG	BIG	Bigeye tuna	*Thunnus obesus*	236
BKM	BKM	Black marlin	*Istiompax indica*	237
BMA	BMA	Blue maomao	*Scorpis violacea*	206
BNS	BNS	Bluenose	*Hyperoglyphe antarctica*	240
BOA	BOA	Giant boarfish	*Paristiopterus labiosus*	207
BOE (effort), OEO (landing)	BOE	Black oreo	*Allocyttus niger*	170
BOT	CFL	Crested flounder	*Lophonectes mongonuiensis*	247
BPE	BPE	Butterfly perch	*Caesioperca lepidoptera*	186
BPF	BPF	Banded wrasse	*Notolabrus fucicola*	216
BRA	BRA	Short-tail stingray	*Bathytoshia brevicaudata*	70
BRC	BRC	Northern bastard cod	*Pseudophycis breviuscula*	150
BRI (effort), FLA (landing)	BRI	Brill	*Colistium guntheri*	248
BRZ	BRZ	Brown stargazer	*Xenocephalus armatus*	225
BSH	BSH	Seal shark	*Dalatias licha*	63
BSK	BSK	Basking shark	*Cetorhinus maximus*	43
BSL	BSL	Black slickhead	*Xenodermichthys copei*	90
BSP	BSP	Big-scale pomfret	*Taractichthys longipinnis*	201
BTU	BTU	Butterfly tuna	*Gasterochisma melampus*	233
BUT	BUT	Butterfish	*Odax pullus*	217
BWH	BWH	Bronze whaler shark	*Carcharhinus brachyurus*	50
BWS	BWS	Blue shark	*Prionace glauca*	51

BYX	BYD	Longfinned beryx	*Beryx decadactylus*	167
BYX	BYS	Alfonsino	*Beryx splendens*	168
CAN	CAN	Brown brotula	*Cataetyx niki*	156
CAR	CAR	Carpet shark	*Cephaloscyllium isabella*	48
CAX	CAX	White brotula	*Cataetyx chthamalorhynchus*	156
CBE	CBE	Crested bellowsfish	*Notopogon lilliei*	176
CBO	CBO	Bollons' rattail	*Coelorinchus bollonsi*	123
CDL	EPT	Deepsea cardinalfish	*Epigonus telescopus*	193
CDO	CDO	Capro dory	*Capromimus abbreviatus*	172
CFA	CFA	Banded rattail	*Coelorinchus fasciatus*	125
CGR	CGR	Convict grouper	*Epinephelus octofasciatus*	188
CHA	CHA	Viperfish	*Chauliodus sloani*	95
CHG	CHG	Giant chimaera	*Chimaera lignaria*	37
CHI	CPN	Leopard chimaera	*Chimaera panthera*	38
CHP	CHP	Brown chimaera	*Chimaera carophila*	37
CHX	CHX	Pink frogmouth	*Chaunax russatus*	157
CMA	CMA	Mahia rattail	*Coelorinchus matamua*	128
CMO	CMO	Copper moki	*Latridopsis forsteri*	212
COL	COL	Oliver's rattail	*Coelorinchus oliverianus*	130
COM	COM	Cosmopolitan rattail	*Coryphaenoides armatus*	132
CON	CVR	Southern conger	*Conger verreauxi*	79
COT	COT	Bonyskull toadfish	*Cottunculus nudus*	183
CPD	SUH	Slender ragfish	*Schedophilus huttoni*	241
CSQ	CSQ	Leafscale gulper shark	*Centrophorus squamosus*	56
CST	CST	Veilfin manefish	*Neocaristius heemstrai*	202
CUB	CUB	Cubehead	Cubiceps spp.	245
CUC	CUC	Cucumberfish	*Paraulopus nigripinnis*	99
CYL	CYL	Portuguese dogfish	*Centroscymnus coelolepis*	60
CYO	CYO	Owston's dogfish	*Centroscymnus owstonii*	60
CYP	CYP	Longnose velvet dogfish	*Centroselachus crepidater*	61
DAS	DAS	Pelagic stingray	*Pteroplatytrygon violacea*	71
DCS	DCS	Dawson's cat shark	*Bythaelurus dawsoni*	48
DEA	DEA	Dealfish	*Trachipterus trachypterus*	115
DIS	DIS	Discfish	*Diretmus argenteus*	165
DOF	DOF	Dolphinfish	*Coryphaena hippurus*	194
DSK	DSK	Deepwater spiny skate	*Amblyraja hyperborea*	65
DSP	DSP	Deepsea pigfish	*Congiopodus coriaceus*	179
DWE	APA	Fewpore snipe eel	*Avocettina paucipora*	77
DWE	UEE	Umbrella conger	*Gnathophis umbrellabius*	80
DWE	NCU	Snipe eel	*Nemichthys curvirostris*	78
DWE	NET	Duckbill eel	*Nettastoma parviceps*	81
DWE	NOC	Giant spineback	*Notacanthus chemnitzii*	74
DWE	SSA	Common sawtooth eel	*Serrivomer samoensis*	82
DWE	VEN	Periscope duckbill eel	*Venefica proboscidea*	81
EGR	EGR	Eagle ray	*Myliobatis tenuicaudatus*	73
ELE	ELE	Elephantfish	*Callorhinchus milii*	35
EMA	EMA	Blue mackerel	*Scomber australasicus*	234
EMO	EMO	Moller's lanternshark	*Etmopterus molleri*	58
EPD	EPD	White cardinalfish	*Epigonus denticulatus*	191
EPL	EPL	Bigeye cardinalfish	*Epigonus lenimen*	191
ERA	ERA	Electric ray	*Tetronarce nobiliana*	64
ERB	ERB	Robust cardinalfish	*Epigonus robustus*	192
ESO (effort), FLA (landing)	ESO	New Zealand sole	*Peltorhamphus novaezeelandiae*	250
ESZ	ESZ	Estuary stargazer	*Leptoscopus macropygus*	223
ETB	ETB	Baxter's dogfish	*Etmopterus granulosus*	57
ETL	ETL	Lucifer dogfish	*Etmopterus lucifer*	57

ETP	ETP	Smooth lanternshark	*Etmopterus pusillus*	58
EUC	EUC	Eucla cod	*Euclichthys polynemus*	118
FAN	FAN	Fanfish	*Pterycombus petersii*	200
FHD	FHD	Deepsea flathead	*Hoplichthys cf. haswelli*	182
FLY	CPB	Barbeled flying fish	*Cheilopogon pinnatibarbatus*	161
FOX	FOX	Foxfish	*Bodianus flavipinnis*	214
FRO	FRO	Frostfish	*Lepidopus caudatus*	231
FRS	FRS	Frill shark	*Chlamydoselachus anguineus*	52
GAR	GAR	Garfish	*Hyporhamphus ihi*	162
GFL (effort), FLA (landing)	GFL	Greenback flounder	*Rhombosolea tapirina*	252
GGP	GGP	Giant grouper	*Epinephelus lanceolatus*	187
GMU	GMU	Grey mullet	*Mugil cephalus*	161
GON	GFO	Sandfish	*Gonorynchus forsteri*	85
GPF	GPF	Girdled wrasse	*Notolabrus cinctus*	216
GRC	GRC	Grenadier cod	*Tripterophycis gilchristi*	151
GSE	GSE	Snake mackerel	*Gempylus serpens*	227
GSH	GSH	Dark ghost shark (ghost shark)	*Hydrolagus novaezealandiae*	39
GSP	GSP	Pale ghost shark	*Hydrolagus bemisi*	38
GTR	GTR	Marblefish	*Aplodactylus arctidens*	209
GUL	GUL	Gulper eel	*Eurypharynx pelecanoides*	82
GUR	GUR	Red gurnard	*Chelidonichthys kumu*	180
HAG	HAG	Hagfish	*Eptatretus cirrhatus*	34
HAK	HAK	Hake	*Merluccius australis*	153
HAP (effort), HPB (landing)	HAP	Hapuku	*Polyprion oxygeneios*	185
HCO	HCO	Hairy conger	*Bassanago hirsutus*	79
HEP	HEP	Sharpnose sevengill shark	*Heptranchias perlo*	53
HEX	HEX	Sixgill shark	*Hexanchus griseus*	53
HHS	HHS	Hammerhead shark	*Sphyrna zygaena*	52
HJO	HJC	Johnson's cod	*Halargyreus johnsonii*	145
HJO	HAS	Australasian slender cod	*Halargyreus sp. A*	146
HOK	HOK	Hoki	*Macruronus novaezelandiae*	153
HYD	HYB	Black ghost shark	*Hydrolagus homonycteris*	39
HYP	HYP	Pointynose blue ghost shark	*Hydrolagus trolli*	40
JAV	JAV	Javelinfish	*Lepidorhynchus denticulatus*	139
JDO	JDO	John dory	*Zeus faber*	174
JGU	JGU	Spotted gurnard	*Pterygotrigla andertoni*	181
JMA	JMD	Greenback jack mackerel	*Trachurus declivis*	197
JMA	JMM	Slender jack mackerel	*Trachurus murphyi*	197
JMA	JMN	Yellowtail jack mackerel	*Trachurus novaezelandiae*	198
KAH	ATT	Kahawai	*Arripis trutta*	205
KIN	KIN	Kingfish	*Seriola lalandi*	196
KOH	KOH	Koheru	*Decapterus koheru*	195
LAN	BOS	Stubby lanternfish	*Bolinichthys supralateralis*	105
LAN	DDA	Dana lanternfish	*Diaphus danae*	105
LAN	DHU	Hudson's lanternfish	*Diaphus hudsoni*	106
LAN	DOE	Ostenfeld's lanternfish	*Diaphus ostenfeldi*	106
LAN	ELT	Electrona lanternfishes	*Electrona*	107
LAN	GYP	Southern blacktip lanternfish	*Gymnoscopelus piabilis*	107
LAN	HYG	Hygophum lanternfishes	*Hygophum*	108
LAN	LNT	Notal lanternfish	*Lampadena notialis*	108
LAN	LSP	Mirror lanternfish	*Lampadena speculigera*	109
LAN	LHE	Hector's lanternfish	*Lampanyctodes hectoris*	109
LAN	LAU	Austral lanternfish	*Lampanyctus australis*	110
LAN	LIT	Intricate lanternfish	*Lampanyctus intricarius*	110
LAN	LMD	MacDonald's lanternfish	*Lampanyctus macdonaldi*	111
LAN	LPR	Blackhead lanternfish	*Lampichthys procerus*	111

LAN	MET	Metelectrona lanternfishes	*Metelectrona*	112
LAN	LAC	Cripplefin lanternfish	*Nannobrachium achirus*	112
LAN	PRO	Protomyctophum lanternfishes	*Protomyctophum*	113
LAN	SBP	Bogue lanternfish	*Symbolophorus boops*	113
LAT	LAT	Longsnout lancetfish	*Alepisaurus ferox*	102
LCA	LCA	Unicornfish	*Lophotus capellei*	115
LCH	LCH	Longnose spookfish	*Harriotta raleighana*	36
LDO	LDO	Lookdown dory	*Cyttus traversi*	169
LEA	LEA	Leatherjacket	*Meuschenia scaber*	253
LEG	LPI	Roundtooth cod	*Lepidion inosimae*	146
LEG	LPS	Schmidt's cod	*Lepidion schmidti*	147
LEP	LEP	Escolar	*Lepidocybium flavobrunneum*	227
LFB	LFB	Longfin boarfish	*Zanclistius elevatus*	208
LIN	LIN	Ling	*Genypterus blacodes*	155
LSK	LSK	Longtail skate	*Arhynchobatis asperrimus*	67
LSO (effort), FLA (landing)	LSO	Lemon sole	*Pelotretis flavilatus*	249
LYC	LYC	Fangtooth hake	*Lyconus pinnatus*	152
MAK	MAK	Mako shark	*Isurus oxyrinchus*	44
MAN	MAN	Finless flounder	*Neoachiropsetta milfordi*	253
MCA	MCA	Carinate rattail	*Macrourus carinatus*	140
MDO	MDO	Mirror dory	*Zenopsis nebulosa*	173
MJA	MJA	Spinetail devil ray	*Mobula mobular*	72
MOD	PCO	Ahuru	*Auchenoceros punctatus*	144
MOD	GGC	Codling	*Guttigadus globiceps*	145
MOD	DCO	Dwarf cod	*Notophycis marginata*	148
MOD	PLU	Luminous cod	*Physiculus luminosa*	149
MOK	MOK	Moki	*Latridopsis ciliaris*	211
MOO	MOO	Moonfish	*Lampris guttatus*	114
MRL	MWO	Eel cod	*Muraenolepis orangiensis*	117
MST	MNG	Black dragonfish	*Melanostomias niger*	97
MST	OMI	Giant black dragonfish	*Opostomias micripnus*	97
NOT	MCH	Maori chief	*Notothenia angustata*	219
NSD	NSD	Northern spiny dogfish	*Squalus griffini*	55
NSP	NSP	Northern splendid perch	*Callanthias australis*	190
OAR	OAR	Oarfish	*Regalecus glesne*	117
ODO	ODO	Smalltooth sand tiger shark	*Odontaspis ferox*	41
OFH	OFH	Oilfish	*Ruvettus pretiosus*	230
OPA	OPA	Opalfishes	Hemerocoetes spp.	222
OPE	OPE	Orange perch	*Lepidoperca aurantia*	189
ORH	ORH	Orange roughy	*Hoplostethus atlanticus*	165
OSD	OWS	Oceanic whitetip shark	*Carcharhinus longimanus*	51
OSD	MSH	Southern mandarin dogfish	*Cirrhigaleus australis*	54
OSD	ETU	Shortspine lanternshark	*Etmopterus unicolor*	59
OSD	EVI	Blue-eye lanternshark	*Etmopterus viator*	59
OSD	IBR	Cookie-cutter shark	*Isistius brasiliensis*	64
OSD	GOB	Goblin shark	*Mitsukurina owstoni*	41
OSD	SSS	Southern sleeper shark	*Somniosus antarcticus*	62
OSD	ZAS	Velvet dogfish	*Zameus squamulosus*	62
OSE	OSE	Snake eel	*Ophisurus serpens*	77
OSK	BTA	Smooth deepsea skate	*Brochiraja asperula*	68
OSK	BRL	Blue skate	*Brochiraja leviveneta*	68
OSK	BMI	Dwarf skate	*Brochiraja microspinifera*	69
OSK	BTS	Prickly deepsea skate	*Brochiraja spinifera*	69
OSK	NAL	Velcro skate	*Notoraja alisae*	70
PAH	PAH	Opah	*Lampris immaculatus*	114
PAR	PAR	Parore	*Girella tricuspidata*	205

PDG	PDG	Prickly dogfish	*Oxynotus bruniensis*	63
PDS	PDS	False frostfish	*Paradiplospinus gracilis*	228
PER	PER	Common tubeshoulder	*Persparsia kopua*	87
PHO	PHO	Lighthousefish	*Phosichthys argenteus*	93
PIG	PIG	Pigfish	*Congiopodus leucopaecilus*	180
PIL	PIL	Pilchard	*Sardinops sagax*	83
PLS	PLS	Plunket's shark	*Scymnodon plunketi*	61
PLZ	PLZ	Scaly stargazer	*Pleuroscopus pseudodorsalis*	225
PMA	PMA	Pink maomao	*Caprodon longimanus*	186
POP	POP	Porcupine fish	*Allomycterus pilatus*	254
POR	POR	Porae	*Nemadactylus douglasii*	210
POS	POS	Porbeagle shark	*Lamna nasus*	44
PSK	PSK	Longnose deepsea skate	*Bathyraja shuntovi*	67
PSY	PSY	Blobfish	*Psychrolutes microporos*	184
PTO	PTO	Patagonian toothfish	*Dissostichus eleginoides*	182
RAG	RAG	Ragfish	*Pseudoicichthys australis*	241
RAT	CCR	Thickhead rattail	*Cetonurus crassiceps*	121
RAT	CTH	Spottyface rattail	*Coelorinchus acanthiger*	122
RAT	CAS	Obliquebanded rattail	*Coelorinchus aspercephalus*	122
RAT	CBI	Two saddle rattail	*Coelorinchus biclinozonalis*	123
RAT	CEX	Blacklip rattail	*Coelorinchus celaenostomus*	124
RAT	CCO	Cook's rattail	*Coelorinchus cookianus*	124
RAT	CXH	Horrible rattail	*Coelorinchus horribilis*	125
RAT	CGX	Dusky rattail	*Coelorinchus infuscus*	126
RAT	CIN	Notable rattail	*Coelorinchus innotabilis*	126
RAT	CKA	Kaiyomaru rattail	*Coelorinchus kaiyomaru*	127
RAT	CKE	Kermadec rattail	*Coelorinchus kermadecus*	127
RAT	CDX	Darkbanded rattail	*Coelorinchus maurofasciatus*	128
RAT	CJX	Upturnedsnout rattail	*Coelorinchus mycterismus*	129
RAT	CIX	Patterned rattail	*Coelorinchus mystax*	129
RAT	CCX	Smallbanded rattail	*Coelorinchus parvifasciatus*	130
RAT	CFX	Supanose rattail	*Coelorinchus supernasutus*	131
RAT	CHY	Roughhead rattail	*Coelorinchus trachycarus*	131
RAT	CBA	Humpback rattail	*Coryphaenoides dossenus*	132
RAT	CFI	Finetail rattail	*Coryphaenoides filicauda*	133
RAT	CMX	McMillan's rattail	*Coryphaenoides mcmillani*	133
RAT	CMI	Small mouth rattail	*Coryphaenoides microstomus*	134
RAT	CMU	Murray's rattail	*Coryphaenoides murrayi*	134
RAT	CRD	Bighead rattail	*Coryphaenoides rudis*	135
RAT	CSE	Serrulate rattail	*Coryphaenoides serrulatus*	135
RAT	CTR	Striate rattail	*Coryphaenoides striaturus*	136
RAT	CSU	Four-ray rattail	*Coryphaenoides subserrulatus*	136
RAT	CPI	Dogtooth rattail	*Cynomacrurus piriei*	137
RAT	GAO	Filamentous rattail	*Gadomus aoteanus*	119
RAT	HAN	Naked snout rattail	*Haplomacrourus nudirostris*	137
RAT	PIN	Pineapple rattail	*Idiolophorhynchus andriashevi*	120
RAT	NBU	Bulbous rattail	*Kuronezumia bubonis*	138
RAT	NPU	Starnose black rat	*Kuronezumia leonis*	138
RAT	VNI	Blackspot rattail	*Lucigadus nigromaculatus*	139
RAT	MLA	Smoothhead rattail	*Malacocephalus laevis*	140
RAT	BJA	Black javelinfish	*Mesobius antipodum*	141
RAT	NZC	Cohen's rattail	*Nezumia coheni*	141
RAT	NZK	Kapala rattail	*Nezumia kapala*	142
RAT	NNA	Squashed face marlinspike	*Nezumia namatahi*	142
RAT	OMU	Large fang rattail	*Odontomacrurus murrayi*	143
RAT	SQM	Balloonhead rattail	*Squalogadus modificatus*	119

RAT	TRX	Velvet rattail	*Trachonurus gagates*	143
RBM	RBM	Ray's bream	*Brama brama*	199
RBP	RBP	Red banded perch	*Hypoplectrodes huntii*	188
RBT	RBT	Redbait	*Emmelichthys nitidus*	203
RBY	RBY	Rubyfish	*Plagiogeneion rubiginosum*	203
RCH	RCH	Pacific spookfish	*Rhinochimaera pacifica*	36
RCO	RCO	Red cod	*Pseudophycis bachus*	149
RHY	RHY	Common roughy	*Paratrachichthys trailli*	167
RIB	RIB	Ribaldo	*Mora moro*	148
RMB	RMB	Manta ray	*Mobula birostris*	72
RMO	RMO	Red moki	*Cheilodactylus spectabilis*	209
RMU	RMU	Goatfish	*Upeneichthys porosus*	204
RPI	RPI	Red pigfish	*Bodianus unimaculatus*	215
RSC	RSC	Dwarf scorpionfish	*Scorpaena papillosa*	178
RSK	RSK	Rough skate	*Zearaja nasuta*	66
RSN	RSN	Red snapper	*Centroberyx affinis*	168
RUD	RUD	Rudderfish	*Centrolophus niger*	240
SAI	SAI	Sailfish	*Istiophorus platypterus*	238
SAU	SAU	Saury	*Scomberesox saurus*	162
SBG	SBG	Spotted black grouper	*Epinephelus daemelii*	187
SBI	SBI	Bigscale brown slickhead	*Alepocephalus australis*	88
SBK	SBK	Spineback	*Notacanthus sexspinis*	75
SBO	SBO	Southern boarfish	*Pentaceros richardsoni*	208
SBR	SBR	Southern bastard cod	*Pseudophycis barbata*	150
SBW	SBW	Southern blue whiting	*Micromesistius australis*	154
SCD	SCD	Smallscale cod	*Notothenia microlepidota*	219
SCG	SCG	Scaly gurnard	*Lepidotrigla brachyoptera*	181
SCH	SCH	School shark	*Galeorhinus galeus*	49
SCO	SCO	Swollenhead conger	*Bassanago bulbiceps*	78
SDE	SDE	Warty seadevil	*Cryptopsaras couesii*	159
SDF	SDF	Spotted flounder	*Azygopus flemingi*	247
SDO	SDO	Silver dory	*Cyttus novaezealandiae*	169
SDR	SDR	Spiny seadragon	*Solegnathus spinosissimus*	174
SEE	SEE	Silver conger	*Gnathophis habenatus*	80
SEL	SEL	Ocean blue-eye	*Seriolella labyrinthica*	243
SEV	SEV	Broadnose sevengill shark	*Notorynchus cepedianus*	54
SFL (effort), FLA (landing)	SFL	Sand flounder	*Rhombosolea plebeia*	251
SFN	SFN	Spinyfin	*Diretmichthys parini*	164
SKI	LFG	Longfin gemfish	*Rexea antefurcata*	229
SKI	RSO	Gemfish	*Rexea solandri*	229
SKJ	SKJ	Skipjack tuna	*Katsuwonus pelamis*	233
SLK	RGN	Bordello slickhead	*Rouleina guentheri*	89
SLK	TAL	Talismania longifilis	*Talismania longifilis*	89
SLR	SLR	Slender roughy	*Optivus elongatus*	166
SMC	SMC	Smallhead cod	*Lepidion microcephalus*	147
SNA	SNA	Snapper	*Chrysophrys auratus*	204
SND	SND	Shovelnose dogfish	*Deania calcea*	56
SNE	SNE	Snubnosed eel	*Simenchelys parasitica*	76
SNI	SNI	Snipefish	*Macroramphosus scolopax*	175
SOR (effort), OEO (landing)	SOR	Spiky oreo	*Neocyttus rhomboidalis*	171
SPD	SPD	Spiny dogfish	*Squalus acanthias*	55
SPE	HBA	Bigeye sea perch	*Helicolenus barathri*	177
SPE	HPC	Sea perch	*Helicolenus percoides*	177
SPF	SPF	Scarlet wrasse	*Pseudolabrus miles*	217
SPL	SPL	Waryfishes	Scopelosaurus spp.	99
SPO	SPO	Rig	*Mustelus lenticulatus*	50

SPP	SDP	Southern splendid perch	*Callanthias allporti*	190
SPR	SPA	Slender sprat	*Sprattus antipodum*	84
SPR	SPM	Stout sprat	*Sprattus muelleri*	84
SPZ	SPZ	Spotted stargazer	*Genyagnus monopterygius*	223
SRH	SRH	Silver roughy	*Hoplostethus mediterraneus*	166
SSF	SSF	Shortbill spearfish	*Tetrapturus angustirostris*	239
SSH	SSH	Slender smooth-hound	*Gollum attenuatus*	49
SSI	SSI	Silverside	*Argentina elongata*	85
SSK	SSK	Smooth skate	*Dipturus innominatus*	66
SSM	SSM	Smallscale brown slickhead	*Alepocephalus antipodianus*	88
SSO (effort), OEO (landing)	SSO	Smooth oreo	*Pseudocyttus maculatus*	172
STA	BGZ	Banded stargazer	*Kathetostoma binigrasella*	224
STA	GIZ	Giant stargazer	*Kathetostoma giganteum*	224
STM	STM	Striped marlin	*Kajikia audax*	238
STN	STN	Southern bluefin tuna	*Thunnus maccoyii*	235
STU	STU	Slender tuna	*Allothunnus fallai*	232
STY	STY	Spotty	*Notolabrus celidotus*	215
SUM	SUM	Pelagic butterfish	*Schedophilus maculatus*	242
SUN	MOI	Bumphead sunfish	*Mola alexandrini*	255
SUN	MOT	Hoodwinker sunfish	*Mola tecta*	255
SWA	SWA	Silver warehou	*Seriolella punctata*	244
SWE	SWE	Sweep	*Scorpis lineolata*	206
SWO	SWO	Swordfish	*Xiphias gladius*	237
SYN	SAF	Grey cutthroat eel	*Synaphobranchus affinis*	76
TAR	NMP	Tarakihi	*Nemadactylus macropterus*	210
TAR	KTA	King tarakihi	*Nemadactylus sp. A*	211
TAS	TAS	Flathead pomfret	*Taractes asper*	200
TEL	TEL	Telescope fish	*Mendosoma lineatum*	213
TET	TET	Squaretail	*Tetragonurus cuvieri*	246
THR	THR	Thresher shark	*Alopias vulpinus*	42
TOA	VST	Variable spotted toadfish	*Neophrynichthys heterospilos*	183
TOD	TOD	Dark toadfish	*Neophrynichthys latus*	184
TOP	TOP	Pale toadfish	*Ambophthalmos angustus*	218
TOR	TOR	Pacific bluefin tuna	*Thunnus orientalis*	236
TRE	TRE	Trevally	*Pseudocaranx georgianus*	196
TRI	BLO	Feelerfish	*Bathypterois longifilis*	100
TRS	TRS	Cape scorpionfish	*Trachyscorpia eschmeyeri*	178
TRU	TRU	Trumpeter	*Latris lineata*	212
TUB	TUB	Tasmanian ruffe	*Tubbia tasmanica*	245
TUR (effort), FLA (landing)	TUR	Turbot	*Colistium nudipinnis*	248
UNI	ACT	Prickly flounder	*Achiropsetta tricholepis*	252
UNI	ANO	Fangtooth	*Anoplogaster cornuta*	164
UNI	AGI	Giant hatchetfish	*Argyropelecus gigas*	91
UNI	AHE	Common hatchetfish	*Argyropelecus hemigymnus*	92
UNI	ASE	Snaggletooths	Astronesthes spp.	94
UNI	BPA	Parin's deepsea smelt	*Bathylagichthys parini*	86
UNI	SRB	Southern bream	*Brama australis*	198
UNI	PLA	Largemouth manefish	*Caristius meridionalis*	202
UNI	CEP	Red bandfish	*Cepola haastii*	213
UNI	CER	Seadevils	Ceratias spp.	158
UNI	CML	Black swallower	*Chiasmodon microcephalus*	220
UNI	TSD	Twospot demoiselle	*Chromis dispila*	214
UNI	GLB	Globefish	*Contusus richei*	254
UNI	SLZ	Slender stargazer	*Crapatalus angusticeps*	222
UNI	DRB	Rebain's portholefish	*Diplophos rebainsi*	90
UNI	ECR	Common messmate	*Echiodon cryomargarites*	154

UNI	EPM	Swordtongue cardinalfish	*Epigonus machaera*	192
UNI	EVB	Brown sabretooth	*Evermannella balbo*	101
UNI	FOE	Orange dragonet	*Foetorepus cf. phasis*	226
UNI	HAL	Black halosaur	*Halosauropsis macrochir*	73
UNI	HPE	Common halosaur	*Halosaurus pectoralis*	74
UNI	LPH	Phantom angler	*Haplophryne mollis*	160
UNI	HHA	Smallspine spookfish	*Harriotta haeckeli*	35
UNI	IAT	Common black dragonfish	*Idiacanthus atlanticus*	96
UNI	MMA	Headband barracudina	*Macroparalepis macrogeneion*	103
UNI	MAU	Southern loosejaw	*Malacosteus australis*	96
UNI	MMU	Pearlside	*Maurolicus australis*	92
UNI	MEB	Bigscale blacksmelt	*Melanolagus bericoides*	86
UNI	MEL	Smalltooth pelagic cod	*Melanonus gracilis*	151
UNI	MEZ	Largetooth pelagic cod	*Melanonus zugmayeri*	152
UNI	EPO	Limp eelpout	*Melanostigma gelatinosum*	218
UNI	PIF	Pilotfish	*Naucrates ductor*	195
UNI	NCV	Blueband hagfish	*Neomyxine caesiovitta*	34
UNI	NML	Largescale blackchin	*Neoscopelus macrolepidotus*	104
UNI	NOR	Cloaked tubeshoulder	*Normichthys yahganorum*	87
UNI	NOF	Orange bellowsfish	*Notopogon xenosoma*	176
UNI	OMO	Hammerjaw	*Omosudis lowii*	102
UNI	OXO	Oxeye oreo	*Oreosoma atlanticum*	171
UNI	SPS	Speckled sole	*Peltorhamphus latus*	249
UNI	CBS	Common bigscalefish	*Poromitra atlantica*	163
UNI	REO	Common remora	*Remora remora*	194
UNI	ROS	Robust pelagic basslet	*Rosenblattia robusta*	193
UNI	SKR	Krefft's pearleye	*Scopelarchoides kreffti*	100
UNI	GBT	Black lightfish	*Sigmops bathyphilus*	91
UNI	SNO	Black bigscalefish	*Sio nordenskjoldii*	163
UNI	SPU	False oblique hatchetfish	*Sternoptyx pseudodiaphana*	93
UNI	SBB	Scaly dragonfish	*Stomias boa*	98
UNI	TMI	Starburst dragonfish	*Trigonolampa miriceps*	98
UNI	TUS	Bigeye ruffe	*Tubbia stewarti*	244
UNI	WMY	Austral lightfish	*Woodsia meyerwaardeni*	94
UNI	BBR	Bronze bream	*Xenobrama microlepis*	201
UNI	ZDO	Zenion dory	*Zenion sp. A*	173
UNI	ZEL	Scalloped dealfish	*Zu elongatus*	116
VCO	VCO	Violet cod	*Antimora rostrata*	144
WAH	WAH	Wahoo	*Acanthocybium solandri*	232
WAR	WAR	Common warehou	*Seriolella brama*	242
WHR	WHR	Unicorn rattail	*Trachyrincus longirostris*	121
WHX	WHX	White rattail	*Trachyrincus aphyodes*	120
WIN	WIN	Wingfish	*Pteraclis velifera*	199
WIT	WIT	Witch	*Arnoglossus scapha*	246
WLP	WLP	Red lined perch	*Lepidoperca tasmanica*	189
WOE (effort), OEO (landing)	WOE	Warty oreo	*Allocyttus verrucosus*	170
WPS	WPS	White pointer shark (great white)	*Carcharodon carcharias*	43
WRA	WRA	Long-tail stingray	*Bathytoshia lata*	71
WSH	WSH	Whale shark	*Rhincodon typus*	40
WWA	WWA	White warehou	*Seriolella caerulea*	243
YBF (effort), FLA (landing)	YBF	Yellowbelly flounder	*Rhombosolea leporina*	250
YBO	YBO	Yellow boarfish	*Pentaceros decacanthus*	207
YCO	YCO	Yellow cod	*Parapercis gilliesii*	221
YEM	YEM	Yelloweye mullet	*Aldrichetta forsteri*	160
YFN	YFN	Yellowfin tuna	*Thunnus albacares*	235