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Te Tautiaki i nga tini a Tangaroa



New Zealand Fishes Volume 1

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



New Zealand Aquatic
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Cover photos:

Top – Snapper (*Pagrus auratus*), Malcolm Francis.

Centre – Catch of hoki (*Macruronus novaezelandiae*), Neil Bagley (NIWA).

Bottom – Orange roughy (*Hoplostethus atlanticus*), NIWA.

**New Zealand fishes. Volume 1: A field guide to common species
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This series continues the
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DISCLAIMER

This photographic field guide to New Zealand fishes has been developed from the most up-to-date information available to the Ministry of Fisheries at the time of publication and includes species commonly caught by trawling, but also some that may be caught by other methods such as bottom longline. The taxonomic status and naming of species, the adoption of species into the Quota Management System (QMS), and the modification of species and reporting codes are ongoing processes that will continue to change after publication. This field guide is therefore not the sole definitive source for compliance or taxonomic purposes, and the guide does not affect the species names and codes provided in legislation. For further guidance on the identification of fish species or any other information contained in this guide, or if you find any information you believe may be inaccurate, please contact Ministry of Fisheries Chief Scientist, pamela.mace@fish.govt.nz.

PURPOSE OF THE GUIDE

This guide to identification of the more commonly caught bottom and midwater New Zealand fishes is intended for field use by non-specialists – fishers, fisheries observers, and others. A second guide deals with fishes commonly caught by surface fishing, and a third guide covers some less commonly caught bottom and midwater fishes. Technical terms are kept to a minimum, and identification features are mostly those that can be readily observed on freshly caught specimens without dissection or microscopic examination. The guide covers 252 species from 97 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”. For each species there is 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, distribution, depth, similar species, biology and ecology, and references. This is the first edition of this field guide. Further editions will be published as new information accumulates.

Ready identification in the field is important for reporting fish catches, the analysis of fish distribution, abundance and ecology, for fisheries management, and for assessment of biodiversity. Field guides are not however a substitute for more comprehensive taxonomic guides where identification remains uncertain. There are several additional identification guides to New Zealand fishes that can be consulted. The most comprehensive New Zealand fishes identification guide available (Paulin et al. 1989) covers 1008 species but is now outdated for some species and is in the process of republication by Museum of New Zealand Te Papa Tongarewa. Some other New Zealand species identification guides include: Paul (2000) covers about 265 marine fishes or groups of fishes with some colour images and small line drawings, Francis (2001) lists 171 coastal species including a colour image, Hirt-Chabbert (2006) covers 110 of the main commercial species including a colour image, and Banks et al. (2007) cover and illustrate about 80 of the main commercial species of cartilaginous and bony fishes. The expansion of deepwater commercial fishing in New Zealand in the 1980s resulted in increased fisheries research and specimen collecting. Consequently our knowledge of some groups of fishes, e.g., rattails, ghost sharks and shortnose chimaeras, has expanded considerably over recent years and it is now possible to compile a guide to the common species in these groups.

ORGANISATION OF THE GUIDE

The guide has four main sections.

1. **External features of fishes.** Illustrations of some of the technical terms used to identify fishes are provided as an introduction to the main identification sections.
2. **Guide to families.** Recognising the family to which a species belongs is often the first step in identification. The family guide provides distinguishing features for each of the families covered here, plus a small image of an example species from each family.
3. **Guide to species.** This section makes up most of the guide, and consists of detailed species accounts.

4. **References, and indexes** for species common and scientific names, Ministry of Fisheries three-letter reporting and research codes, and family common and scientific names.

METHODS USED FOR THE FAMILY AND SPECIES GUIDES

(a) Guide to families

Families are arranged in taxonomic order following Nelson (2006) “Fishes of the World”, so for example the first family listed is the hagfishes (Myxinidae), a group of primitive jaw-less fishes. Family scientific names and most of the family common names are also taken from Nelson (2006). Family names are also 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), and Nelson (2006). An „example species’ image for each family is provided as a quick visual guide to general body shape, although naturally there is considerable variation within a family. We have followed other researchers who have elevated subfamilies to family level in two cases. We use Narkidae as a family and have numbered it 43b, compared with Nelson (2006) who listed it as a subfamily of 43 Narcinidae. We also use Rajidae 48a and Arhynchobatidae 48b as families rather than the subfamilies of Nelson (2006). We follow Nelson (2006) who treats the rhombosoleid flounders as a separate family 497 Rhombosoleidae, distinct from the righteye flounders 493 Pleuronectidae. We follow Nelson (2006) and Eschmeyer (2008) and retain Cheilodactylidae (morwongs) and Latridae (trumpeters) as separate families, but note that Burrige & Smolenski (2004) recommended that cheilodactylids (except for two South African species) be placed in the Latridae.

(b) Guide to species

Species within each family are arranged alphabetically by scientific name, i.e., by genus name then by species name. Selection of species for this guide was mainly based on the number of captures in an extract of all fishes recorded in the Ministry of Fisheries research trawl (*trawl*) database. Most records were from bottom trawl and the remainder from midwater trawl. The number of occurrences of each species was ranked from highest to lowest. Available resources limited the number of species included to about 250. Occurrences of species caught by midwater trawl were also compiled from the Ministry of Fisheries observer (*obs*) database and any additional species frequently caught were added to the master draft list. This list was then compared with the list of Quota Management System species in the 2006 plenary report (Ministry of Fisheries, Science Group (Comps.) 2006). It was also compared with the list of fishes covered in Anderson et al. (1998), and with the midwater trawl species listed in Bagley et al. (2000). All protected species likely to be caught by bottom and midwater fishing are included in this guide.

The species guide contains the following fields:

1. **Species common name.** These were extracted from the Ministry of Fisheries database of research species codes. For some species there is no common name and the scientific name is used instead.
2. **Species scientific name.** These were extracted from the Ministry of Fisheries database of research species codes, and were then checked using Eschmeyer (2008) to determine if this was the most recent name, and as a check on spelling. The names of fishes in the

list compiled by King et al. (2009) were also examined for any other changes. In some cases the individual researchers preparing the species accounts for this guide made decisions about the appropriate scientific name based on their own knowledge of the literature, and in some cases these names differ from those used by Eschmeyer (2008). A number of species require further taxonomic study to establish their valid scientific name.

3. **Family scientific name.** Eschmeyer (2008) and Nelson (2006) were used as the source of most family names, but in a few cases individual researchers used their own knowledge of the recent literature to establish the family name. Family name numbers were largely those of Nelson (2006) supplemented by 'a' or 'b' where subfamilies listed by Nelson (2006) were elevated to family in the guide.
4. **Family common name.** Mostly from Nelson (2006).
5. **Maori names.** 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. n.a. indicates that we were unable to locate a Maori name.
6. **Other names.** Other common names used in New Zealand and overseas. n.a. indicates that we were unable to locate another relevant common name.
7. **Ministry of Fisheries reporting code.** MFish 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. **Ministry of Fisheries research code.** Three letter codes used for research surveys. In some cases these differ from the QMS reporting codes; and in particular, they distinguish related species.
9. **Species image.** Where possible a new colour image of each species was taken and adjusted, sized and 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. In some cases images had to be sourced from specimens that were purchased or caught locally, and from previous photographs sourced from inside and outside NIWA. 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 are provided.
11. **Colour.** The colours of live or freshly caught fish are described.
12. **Size.** The approximate maximum size was obtained from research length records and literature sources. FL fork length, TL total length, SL standard length, all in centimetres.
13. **Distribution – text.** Based on literature records of the species from New Zealand and overseas, with comments on the fisheries data records.
14. **Distribution – map.** Maps were prepared using position data from research survey and commercial fisheries records, and are therefore not verified with museum voucher specimens. Most species in this guide are caught by trawling and therefore the unique start position (latitude and longitude) of the tow where one or more specimens were taken was extracted from the *trawl* database and plotted. Some of the species are also taken using surface fishing methods and for those the latitude and longitude where the species was captured or observed were extracted from the tuna longline (*l_line*), aerial sightings (*aer_sight*), and tagging (*tag*) databases and these records plus the *trawl*

records were plotted on the map. For *l_line* the unique start position of the longline set where one or more specimens were taken was plotted. For *aer_sight* the position where the species was observed and identified from the air was plotted. For *tag*, the release site for species identified and tagged was plotted. These maps are therefore an indication of where the species has been reported as caught or sighted in the past, and they are not meant to be a definitive New Zealand distribution. Red dots show the capture location, and the EEZ boundary and 1000 m contour are also plotted. Similar maps were produced by Anderson et al. (1998) and Bagley et al. (2000).

15. **Depth.** The commonly encountered depth range (m) from fisheries and literature records is listed, rather than the extreme depth records.
16. **Similar species.** The distinguishing features of similar species are given to enable comparison with the species initially identified. Similar species include many that are not covered in this guide.
17. **Biology and ecology.** Data on mode of life such as spawning season, area, behaviour, feeding are given where these are known.
18. **References.** The literature used to compile the record is listed alphabetically by author (year). The full references (author, year, title, journal, book, etc) are listed at the end of the species guide.

DATA STORAGE AND RETRIEVAL

Text, distribution maps, and images for this guide are stored in a relational database (*Species*) created and maintained by NIWA. A web application built on top of the database allows the stored data to be retrieved in a specified format; the report that generates each species identification sheet was designed specifically for this project. Its advantages include easy editing of text or images and distribution maps, addition of new fields or tables, addition or deletion of species, and on-line access to the database.

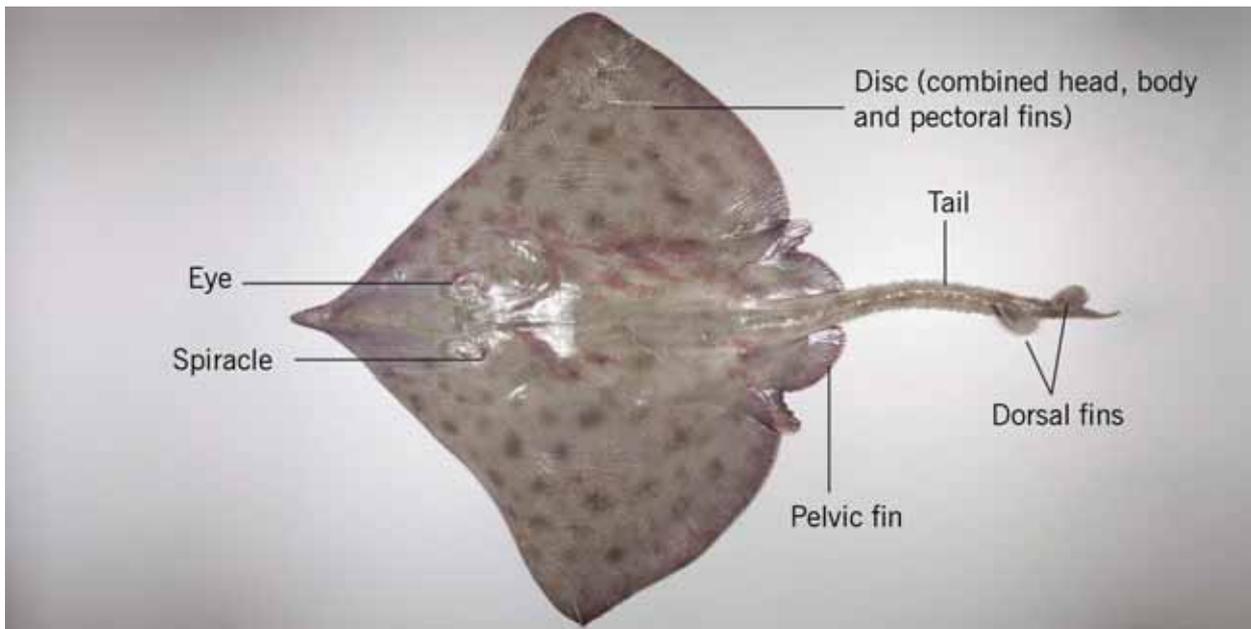
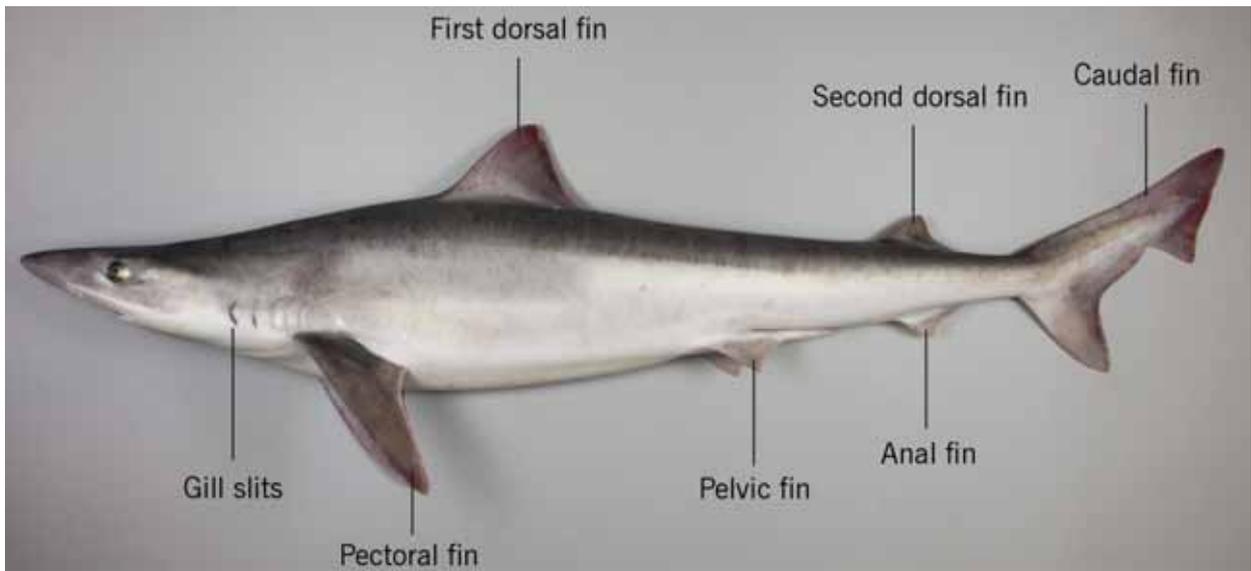
Requests for access to Ministry of Fisheries databases can be made through RDM@fish.govt.nz. Note that all observer databases referred to in this document are now stored in the Centralised Observer Database (COD).

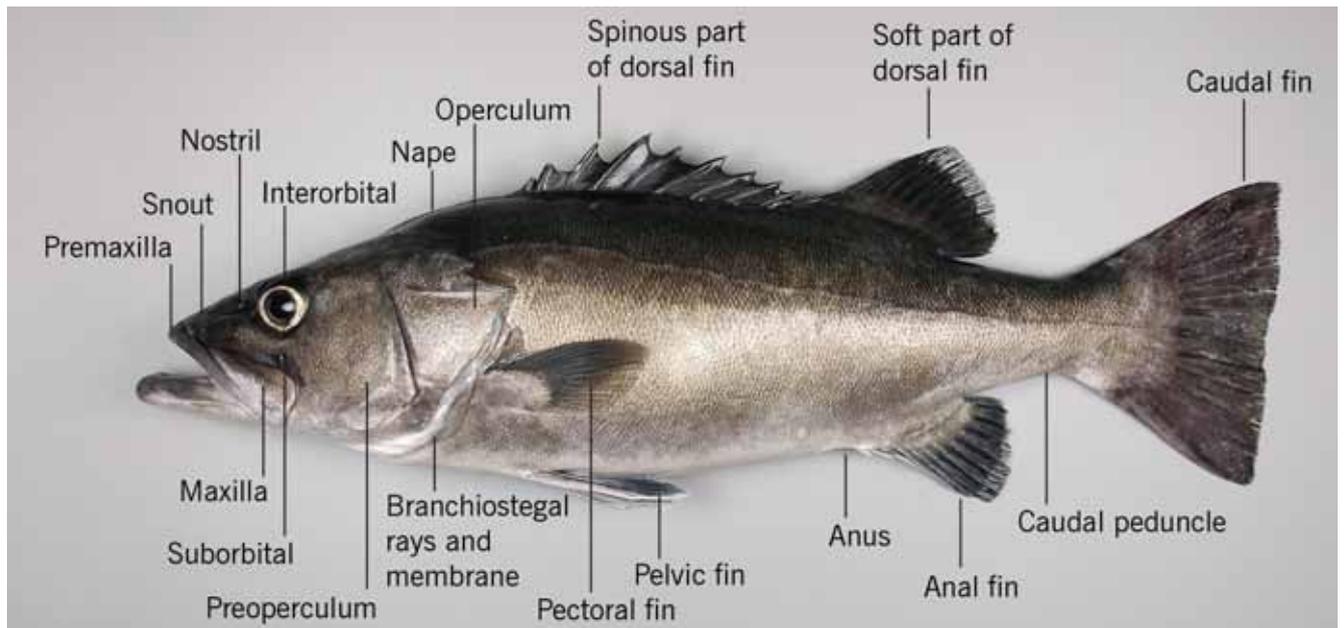
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SECTION 1. EXTERNAL FEATURES OF FISHES

The three illustrations below are labelled to show the principal features of sharks, skates/rays, and bony fishes that are used in their identification.





GLOSSARY

Adapted from May & Maxwell (1986) and 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.

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.

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 fin on the dorsal surface of the tail, i.e., excludes the long tail filament found in many chimaeras and ghost sharks.

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.

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.

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*).

Gill raker. A bony tooth-like or brush-like projection on the gill arch, pointing into the throat cavity.

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).

Interorbital width. The shortest distance between the eyes.

Isthmus. Fleishy (often scaled) part of the body on underside of the head that separates the right and left side gill chambers.

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.

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 part of the head behind the eyes.

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.

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.

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.

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., black slickhead (*Xenodermichthys copei*).

Striated. Covered in lines, ridges or furrows.

Suborbital ridge. The ridge below the eye and running along the head, sometimes from the snout to near the rear of the lower head. May be armed with scutes or spines.

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.

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.

SECTION 2. GUIDE TO FAMILIES

1. Myxinidae (hagfishes)

Eel-like body, 1–16 small gill slits on side of head, skeleton cartilaginous, jawless mouth, degenerate eyes, single nostril, barbels on snout, no paired fins, median fins without rays, no scales.



5. Callorhynchidae (ploughnose chimaeras)

Single gill opening, large spine in front of the first of two dorsal fins, hoe-shaped proboscis-like snout



6. Rhinochimaeridae (longnose chimaeras)

Single gill opening, a large spine in front of the first of two dorsal fins, long pointed snout.



7. Chimaeridae (shortnose chimaeras, ratfishes)

Single gill opening, a large spine in front of the first of two dorsal fins, short fleshy rounded snout.



16. Odontaspididae (sand tiger sharks)

Two large similar sized dorsal fins without spines, anal fin, tail fin less than about half body length (excluding tail), 5 long gill openings before pectoral fin origin, teeth with long central and 1 or 2 lateral cusp.



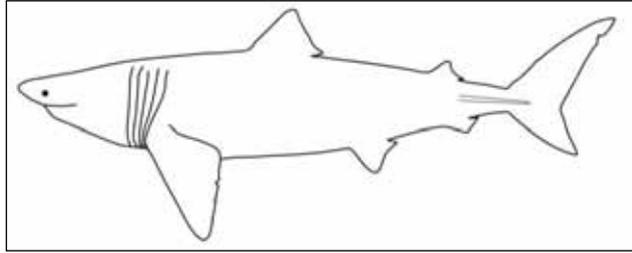
20. Alopiidae (thresher sharks)

Upper lobe of caudal fin enormously enlarged and may exceed body length (excluding tail), very small second dorsal fin.



21. Cetorhinidae (basking sharks)

Very large gill openings extending onto dorsal and ventral surfaces of head, hair-like gill rakers on gill arches, 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 extending below pectoral fin origin, minute second dorsal fin, eyes lack nictitating membrane, lateral keel on caudal peduncle.



23. Scyliorhinidae (cat sharks)

Fifth gill slits over or behind pectoral fin origin, small multi-cuspid teeth with several series functional, anal fin and spiracle present, caudal fin without keels or pits, caudal fin axis only slightly elevated.



25. Pseudotriakidae (false cat sharks)

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



27. Triakidae (hound sharks, smoothhounds, topes)

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



30. Sphyrnidae (hammerhead and bonnethead sharks)

Anterior of head much flattened and widely expanded to form a hammer shape with eyes and nostrils at the outer edges.



31. Chlamydoselachidae (frill sharks)

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



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

Six or seven pairs of long gill slits with the first pair not connected across throat, single 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)

Five gill slits all anterior to pectoral fins, spiracles always present, eyes without nictitating eyelids, two dorsal fins with spines, no anal fin.



35. Centrophoridae (gulper sharks)

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



37. Somniosidae (sleeper sharks)

Dorsal fins usually without spines, no anal fin, lateral ridge present on abdomen between pectoral and pelvic fins.



38. Oxynotidae (rough sharks)

Body very high and laterally compressed, triangular in cross section, dorsal fins very high, each with a large spine, no anal fin, lateral ridge present on abdomen between pectoral and pelvic fins, skin very rough.



39. Dalatiidae (kitefin sharks)

Dorsal fins without spines, no anal fin. Luminous organs present appearing as black dots mainly on ventral surface.



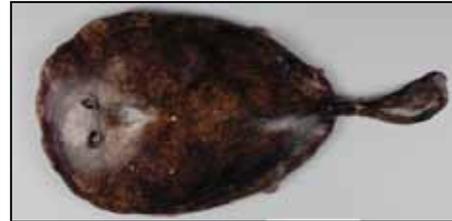
42. Torpedinidae (torpedo electric rays)

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



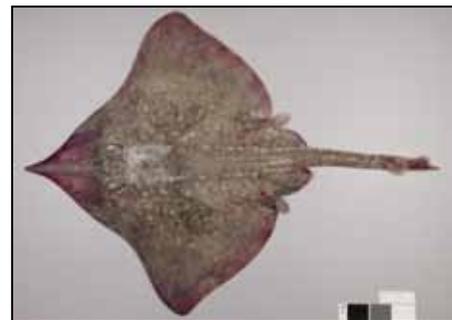
43b. Narkidae (sleeper rays)

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 stout rostral cartilage in most species, broad disc with narrow slender tail, sharp hooked denticles or thorns on dorsal surface, no barbed sting on tail, five small ventral gill openings, oral teeth small rounded-oval shape, usually two small dorsal fins present.



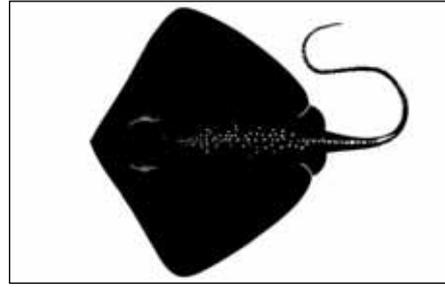
48b. Arhynchobatidae (softnose skates)

Snout supported by reduced soft slender rostral cartilage in most species, large broad flat disc with narrow slender tail, usually denticles or thorns on dorsal surface, no barbed sting on tail, five small ventral gill openings, oral teeth small rounded-oval shape, usually two small dorsal fins.



55. Dasyatidae (whiptail stingrays)

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



58a. Myliobatidae (eagle rays)

Large rhomboidal wing-like disc and slender whip-like tail, prominent barbed sting on dorsal tail, single dorsal fin on tail base, caudal fin absent.



72. Halosauridae (halosaurs)

Snout projecting in front of mouth, long anal fin along ventral tail to rear tip, 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 reduced to a series of short sharp spines and lateral line closer to dorsal than ventral profile of body.



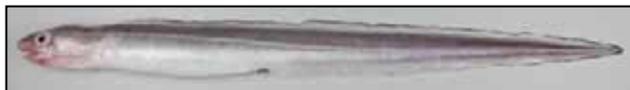
80. Synphobranchidae (cutthroat eels)

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



86. Congridae (conger eels)

Eye well developed, sometimes very large, dorsal fin begins over or slightly behind pectoral fins, always 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.



95. Engraulidae (anchovies)

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



97. Clupeidae (herrings)

Terminal mouth, series of scutes along the abdomen (belly), single dorsal fin, scales cycloid, no lateral line.



99. Gonorynchidae (beaked sandfishes)

Body and head completely covered with ctenoid scales, snout with a median scaleless barbel, pectoral and pelvic fins with fleshy axillary process, no pored scales on lateral line.



166. Argentinidae (argentines, herring smelts)

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



171. Alepocephalidae (slickheads)

Dorsal and anal fins usually on posterior third of body, adipose fin absent, pelvic fins abdominal, head usually scaleless.



184. Paraulopidae (cucumber fishes)

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



197. Bathysauridae (deepsea lizardfishes)

Head depressed (flattened), upper jaw long and extending past rear of eye, scales along lateral line enlarged.



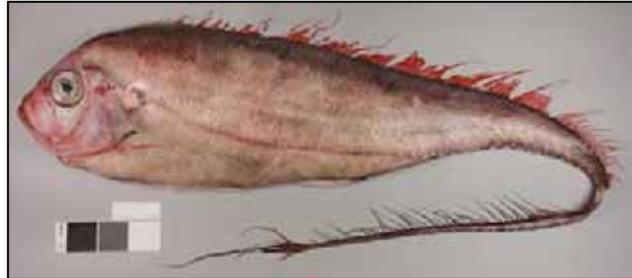
202. Lampridae (opahs)

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



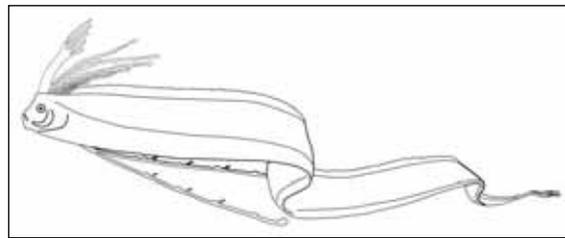
206. Trachipteridae (ribbonfishes)

Anterior dorsal fin elements with 4–8 elongate flexible spines just above eye, anal fin absent, skin usually covered with bony raised tubercles, scales absent except for lateral line scales.



207. Regalacidae (oarfishes)

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



214. Eulichthyidae (Eucla cod)

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



215. Macrouridae (grenadiers, rattails)

Elongate tapering tail, chin barbel usually present, two dorsal fins first with the front two rays spinous, exposed part of body scales usually covered with spinules.



216. Moridae (deepsea cods)

No spines in fins, two or three dorsal fins, first dorsal fin short, second (and third if present) long, caudal fin separate from dorsal and anal fins.



218. Merlucciidae (merluccid hakes)

Two dorsal fins, no chin barbel, large terminal mouth with long teeth.



220. Gadidae (cods)

Three dorsal fins and two anal fins.



222. Ophidiidae (cusk-eels)

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



223. Bythitidae (viviparous brotulas)

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



232. Chaunacidae (coffinfishes, sea toads)

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



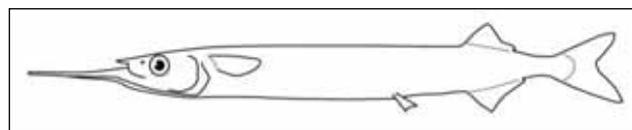
245. Mugilidae (mulletts)

Head often broad and flattened dorsally, eyes often partly covered by adipose eyelid, two well separated short dorsal fins, lateral line absent, flanks of body silvery.



254. Hemiramphidae (halfbeaks)

Very long lower jaw and short triangular upper jaw.



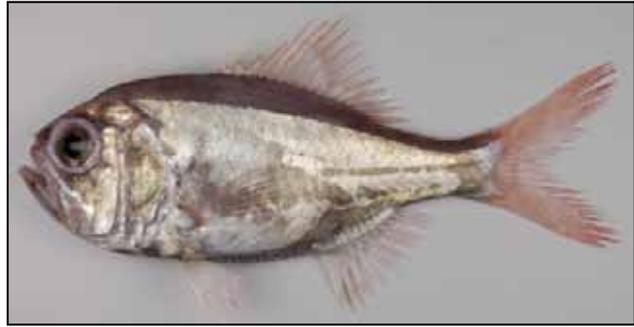
277. Diretmidae (spinyfins)

Eyes very large and much longer than snout length, jaws not extending 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, one dorsal fin, enlarged scales along mid-ventral part of belly between pelvic and anal fins forming a row of scutes.



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 and greater than snout length, large oblique mouth, jaws not extending back beyond eye, one dorsal fin.



283. Cyttidae (lookdown dories)

Body very deep and laterally compressed (thin), no large thick scales carrying a spine present 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.



298. Macroramphosidae (snipefishes)

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



304. Scorpaenidae (scorpionfishes, rockfishes)

Most species with numerous head spines, dorsal fin with strong spinous part connected to soft rayed part, suborbital ridge extending backwards across the cheek and usually firmly bound to operculum.



309. Congiopodidae (racehorses, pigfishes, horsefishes)

Snout relatively long with small terminal mouth, leathery skin on body without scales, dorsal fins joined and long.



310. Triglididae (searobins, gurnards)

Large bony head with a pair of 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 but a row of spiny scutes along lateral line covering much of back and upper half of sides.



325. Psychrolutidae (fathead sculpins)

Body tadpole shaped, skin smooth and loosely covering body plus the dorsal and anal fins.



337. Polyprionidae (wreckfishes)

Operculum with a horizontal ridge on upper rear ending in a short spine, dorsal fin with 11–12 strong spines and 11–12 soft rays.



338. Serranidae (sea basses)

Operculum with 2–3 (usually 3) flat spines, lower rear margin of preoperculum serrate, mouth large and terminal, maxilla exposed when mouth closed.



353. Epigonidae (deepwater cardinalfishes)

Eyes large, mouth large and oblique, maxilla narrow and not reaching beyond level of middle of eye, two dorsal fins first with spines, second with one spine and 8–11 soft rays, lateral line complete and extending onto caudal fin.



364. Carangidae (jacks, pompanos)

Two dorsal fins first with spines, second with one 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), single dorsal fin, caudal fin of adults strongly forked, maxilla scaled. Snout, lower jaw, opercular, and pre-opercular margins lack scales.



369. Emmelichthyidae (rovers)

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



378. Sparidae (porgies)

Upper jaw never reaching backward beyond vertical line through middle of eye, hind tip of premaxilla overlapping maxilla, jaw teeth prominent including either conical or flattened and often rounded forms. Pelvic fin with an axillary scale at the base.



382. Mullidae (goatfishes)

Two long barbels under lower jaw, two widely separated short-based dorsal fins.



389. Arripidae (Australasian salmon, kahawai)

Head conical, maxilla reaching back to below centre of eye, dorsal fin usually with 9 spines, noticeably higher than soft rayed portion with 15–18 rays.



391. Kyphosidae (sea chubs)

Robust oval-shaped body, posterior tips of dorsal and anal fins pointed, dorsal fin usually with 11 spines.



396. Pentacerotidae (armorheads)

Deep-bodied, head encased in rough striated bone.



405. Cheilodactylidae (morwongs)

Lower 4–7 pectoral fin rays unbranched, thickened and elongated, mouth small, terminal to slightly inferior, with thick lips in adults, continuous dorsal fin.



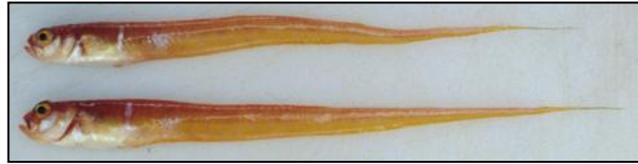
406. Latridae (trumpeters)

Lower pectoral fin rays normal, i.e., not thickened or elongated, small body scales, dorsal and anal fins with numerous spines and soft rays, caudal fin forked.



407. Cepolidae (bandfishes)

Tapering body and tail, continuous long dorsal fin, large oblique mouth, lateral line running immediately below the dorsal fin base.



412. Labridae (wrasses)

Mouth terminal usually with prominent lips, mouth protrusible, teeth usually separate with canine-like front one or two pairs often enlarged and directed forward, single long-based dorsal fin, scales cycloid.



413. Odacidae (cales)

Mouth not protrusible, teeth fused to form a parrot-like beak, one spine and four rays in pelvic fin.



427. Nototheniidae (cod icefishes)

Body scaled, gill membranes forming a fold across the isthmus, spinous dorsal fin with 3–11 spines, 1–3 lateral lines.



435. Pinguipedidae (sandperches)

Curved canine-like teeth in an outer row at front of jaws, long dorsal fin with the soft portion clearly higher than the spinous.



439. Percophidae (duckbills)

Two separated dorsal fins, the first with 2–6 spines and second with 13–23 soft rays, pelvic fins with 1 spine and 5 soft rays in front of pectoral fin and with a wide space between the fins at their base.



443. Uranoscopidae (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.



473. Gempylidae (snake mackerels)

Two clearly separate dorsal fins with spinous first part longer than soft second part (excluding finlets), 2 nostrils on each side of head, pelvic fins usually small and often reduced to single spine with a few or no soft rays.



474. Trichiuridae (cutlassfishes)

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



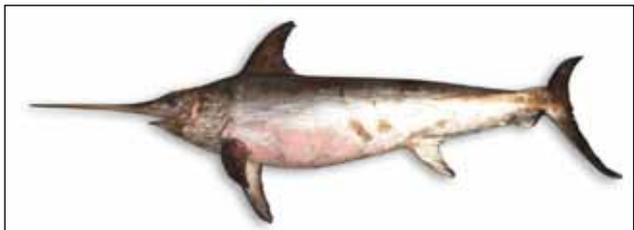
475. Scombridae (mackerels, tunas)

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 forming a long bill, 2 widely separate dorsal fins in adults, large keel present on each side of caudal peduncle, large and deep notch on both upper and lower profiles of caudal peduncle, pelvic fins absent.



479. Centrolophidae (medusafishes)

Lower jaw often shorter than upper and tucking inside it when closed, very small teeth in jaws, in single series, no teeth on roof of mouth, dorsal fin long, scales lacking from head, head usually covered with small pores that may spread back onto trunk.



482. Tetragonuridae (squatetails)

Very elongate almost rounded body, caudal peduncle long and almost square in cross section with two prominent scaly lateral keels on each side, teeth in lower jaw large, flattened 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 a high arch over pectoral fin.



497. Rhombosoleidae (rhombosoleid 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 equally developed on both sides of body.



498. Achiropsettidae (southern flounders)

Eyes on left side of head, pectoral fin tiny (juveniles) or absent (adults), lateral line on eyed side and straight.



506. Monacanthidae (filefishes)

First dorsal fin a prominent spine which can be locked upright by a second very small spine, leather-like skin, pelvic fins reduced to a bony knob on ventral body.



509. Tetraodontidae (puffers)

Body inflatable and naked or with short prickles, two fused teeth in each jaw (upper and lower), single dorsal fin with soft rays, most have a lethal toxin associated with the internal organs and skin.



510. Diodontidae (porcupinefishes)

Body inflatable and covered with massive spines which may be long, strong beak-like teeth fused and without a gap separating upper and lower jaws into left and right halves.



SECTION 3. GUIDE TO SPECIES

Hagfish

Eptatretus cirrhatus

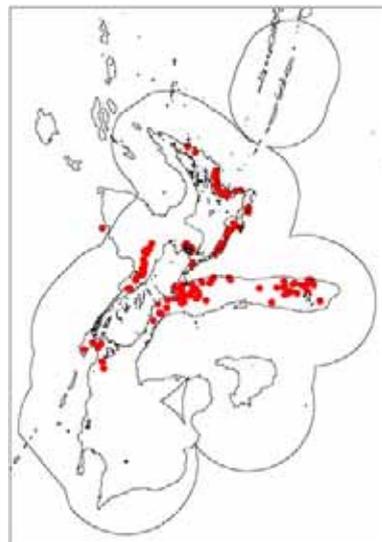
Family: 1. Myxiniidae (hagfishes)

Maori names: Napia, pia, tuare, tuere

Other names: n.a.

MFish reporting code: HAG

MFish research code: HAG



Distinguishing features: No dorsal fin, no externally obvious eyes (eyespot present), barbels around the mouth. 7 pairs of external gill openings on the side of the body. Pale rings around the gill openings and slime pores.

Colour: Greyish-brown, often with a pinkish or bluish tinge.

Size: To at least 83 cm TL.

Distribution: Widespread in New Zealand but more abundant south of Hawke Bay. Australia (NSW to Tas).

Depth: 0 to 1100 m.

Similar species: Other hagfishes known from New Zealand include *Eptatretus goliath* which has 7 pairs of gill openings, but lacks pale rings around the gill openings and slime pores, and also has distinctive dental characters that require a microscope. *E. eos* has 5 pairs of gill openings and is known from one "fluorescent pink" specimen. *Nemamyxine elongata* and *Neomyxine biniplicata* both have a single pair of gill openings, but the former is known from only 2 specimens.

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.

References

McMillan & Wisner (1984), Mincarone & Stewart (2006).

Elephantfish

Callorhinchus milii

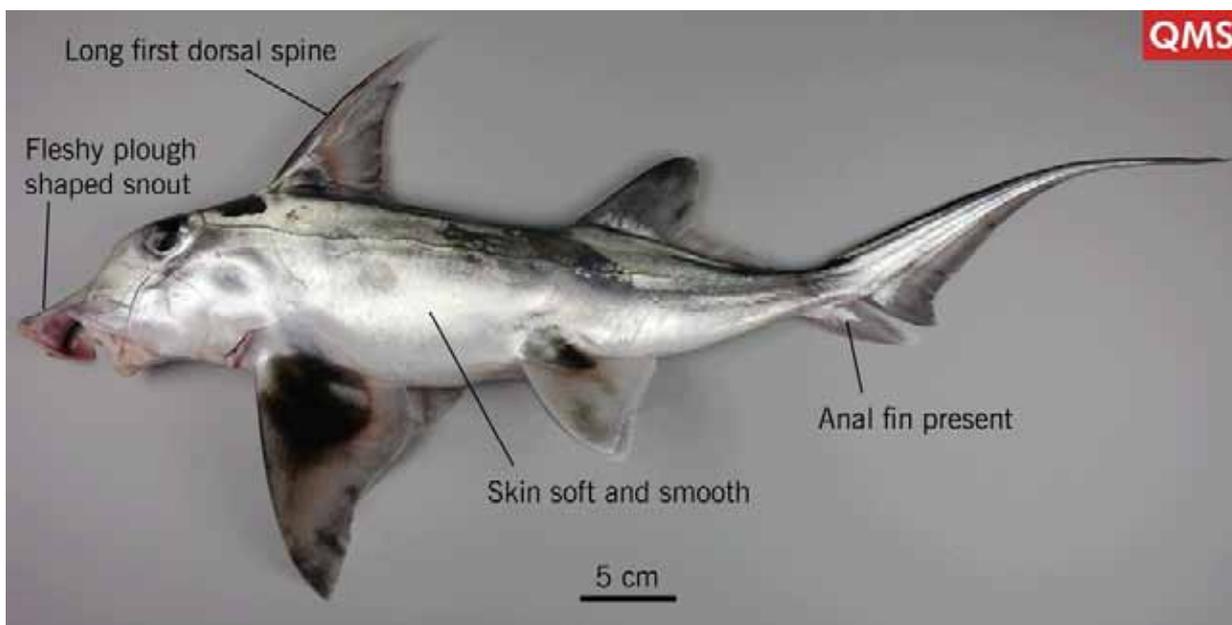
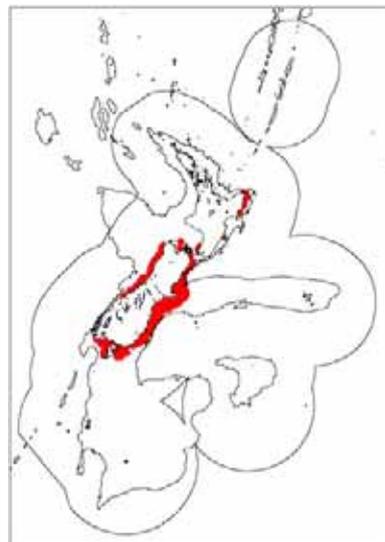
Family: 5. Callorhinchidae (ploughnose chimaeras)

Maori names: Reperepe

Other names: n.a.

MFish reporting code: ELE

MFish research 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.

Distribution: Eastern Bay of Plenty to the Snares Shelf, possibly also as far north as Kaipara Harbour. Also occurs in southeast Australia.

Depth: 0 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.

References

Last & Stevens (2009), Paul (2000), Paulin et al. (1989).

Longnose spookfish

Harriotta raleighana

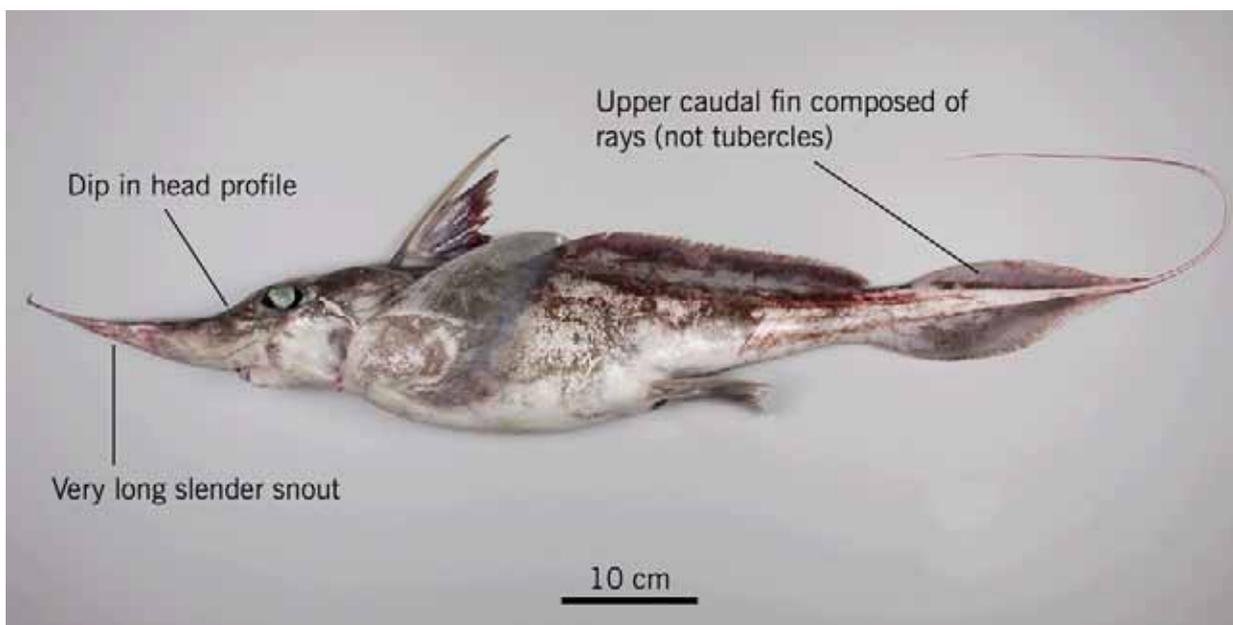
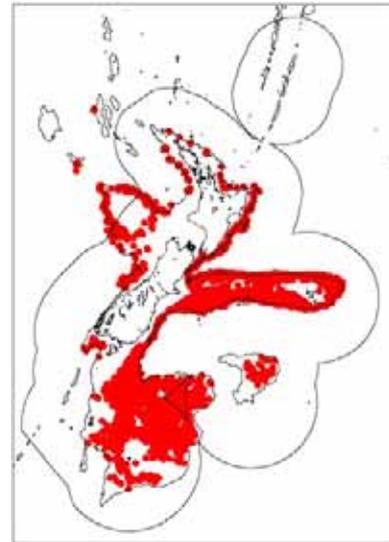
Family: 6. Rhinochimaeridae (longnose chimaeras)

Maori names: n.a.

Other names: Long-nosed chimaera

MFish reporting code: LCH

MFish research code: LCH



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

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

Size: To 120 cm chimaera length (excl. tail filament), possibly longer.

Distribution: Norfolk Ridge to Campbell Plateau, but not yet recorded from the Kermadec Ridge. Worldwide but patchy distribution.

Depth: 400 to 1300 m.

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

Biology & ecology: Demersal.

References

Garrick (1971), Last & Stevens (2009), Paulin et al. (1989).

Pacific spookfish

Rhinochimaera pacifica

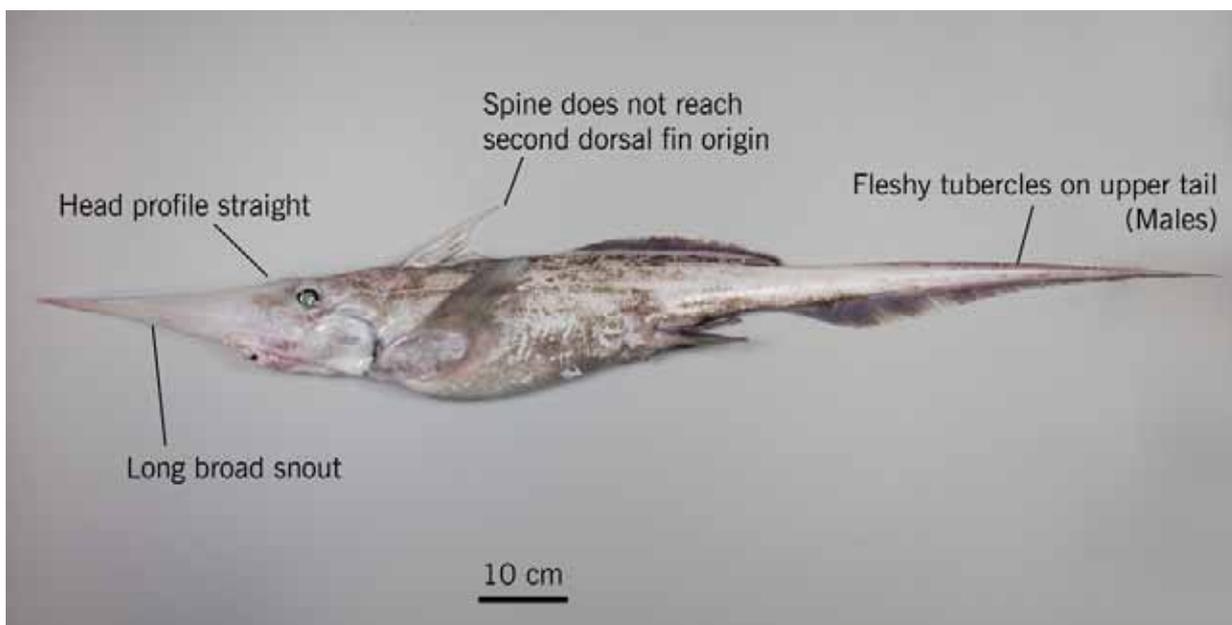
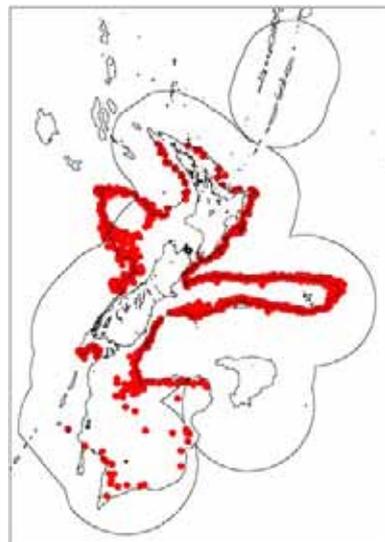
Family: 6. Rhinochimaeridae (longnose chimaeras)

Maori names: n.a.

Other names: Widenosed chimaera

MFish reporting code: RCH

MFish research 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 has been abraded), tooth plates black.

Size: To 165 cm chimaera length (end of the tail in this species).

Distribution: North Cape to Campbell Plateau. Scattered distribution in the Pacific and eastern Indian Oceans.

Depth: 400 to 1300 m.

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

Biology & ecology: Demersal.

References

Didier & Nakaya (1999), Last & Stevens (2009), Paulin et al. (1989).

Giant chimaera

Chimaera lignaria

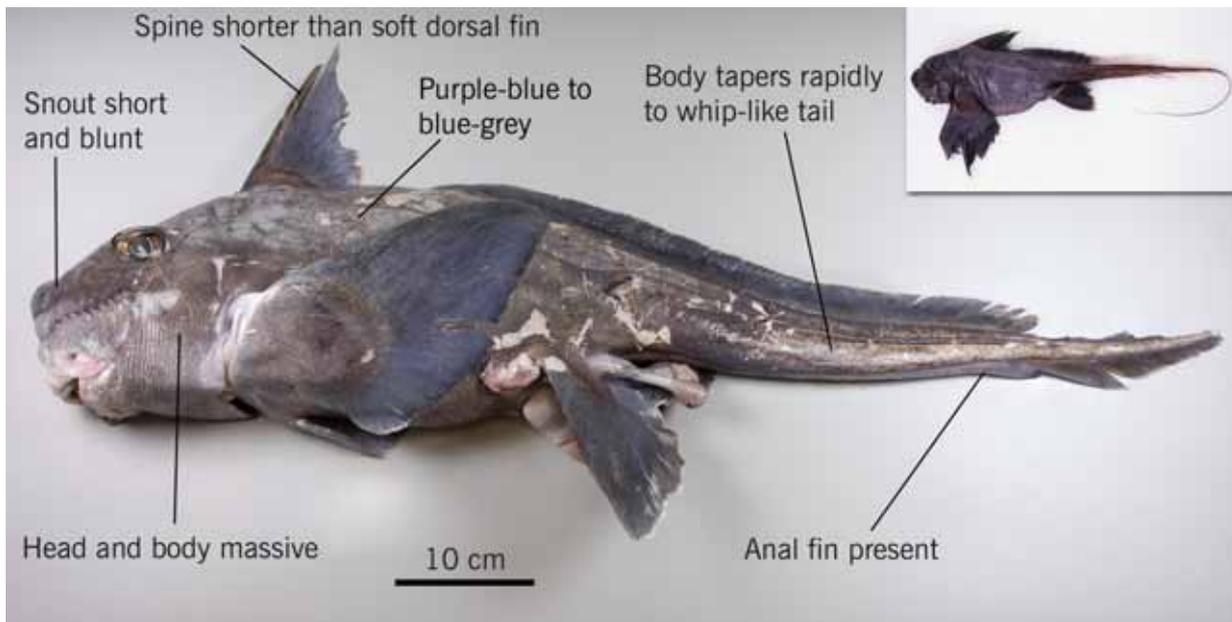
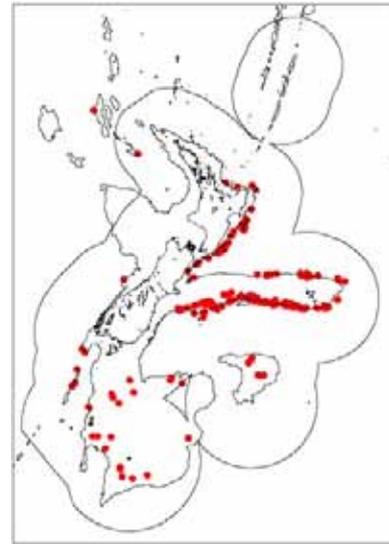
Family: 7. Chimaeridae (shortnose chimaeras, ratfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: CHG

MFish research code: CHG



Distinguishing features: Anal fin present, head massive 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, posterior half of second dorsal fin and anal and tail fins are white.

Size: To 140 cm chimaera length (excl. tail filament).

Distribution: Throughout New Zealand from Norfolk Ridge to Campbell Plateau, but not yet recorded from the Kermadec Ridge. Also occurs in 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.

References

Didier (2002), Last & Stevens (2009).

Brown chimaera

Chimaera sp. C

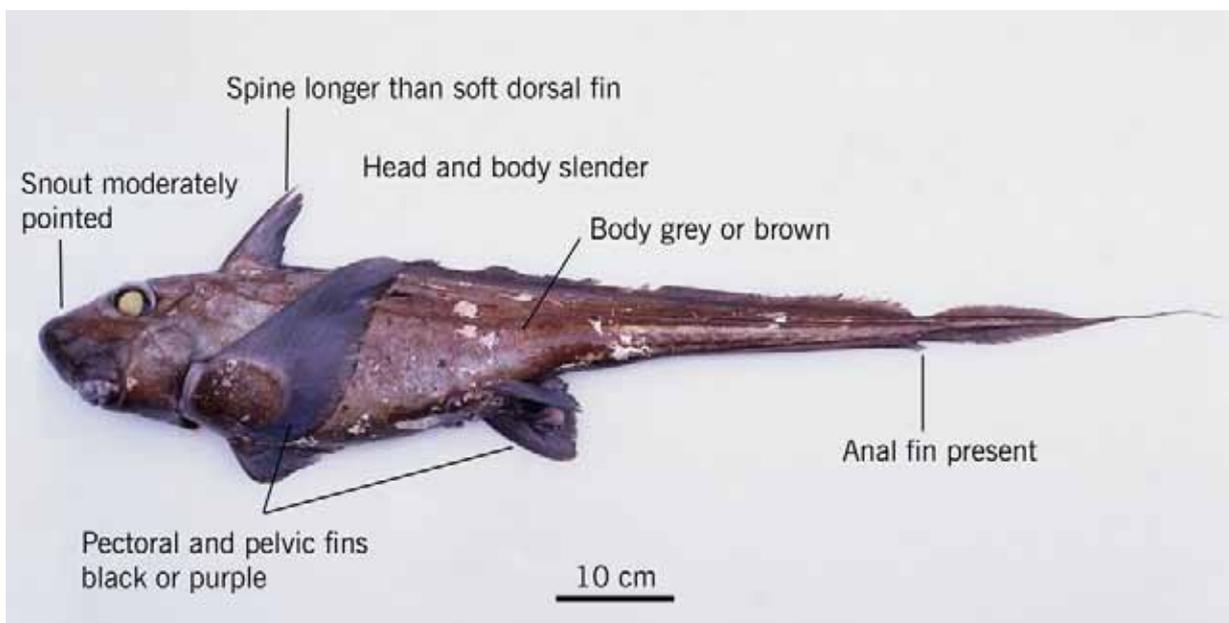
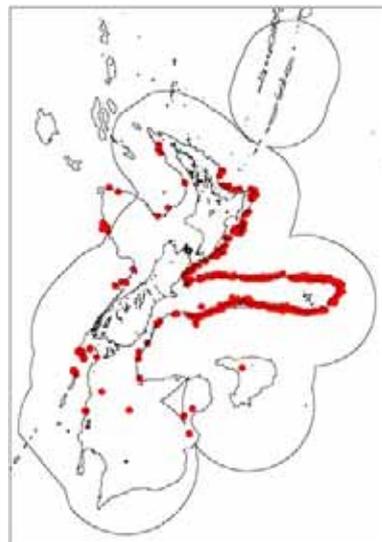
Family: 7. Chimaeridae (shortnose chimaeras, ratfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: CHP

MFish research 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 105 cm chimaera length (excl. tail filament).

Distribution: North Cape to Snares Islands with a few records from the northern Campbell Plateau. Also possibly occurs in Australia.

Depth: 800 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 first dorsal spine length relative to dorsal fin height. *C. macrospina* known from off Queensland to New South Wales and Western Australia may be the same or a very similar species.

Biology & ecology: Demersal. Uncommon.

References

Last & Stevens (2009), Paulin et al. (1989) (as *Chimaera* sp. C).

Pale ghost shark

Hydrolagus bemisi

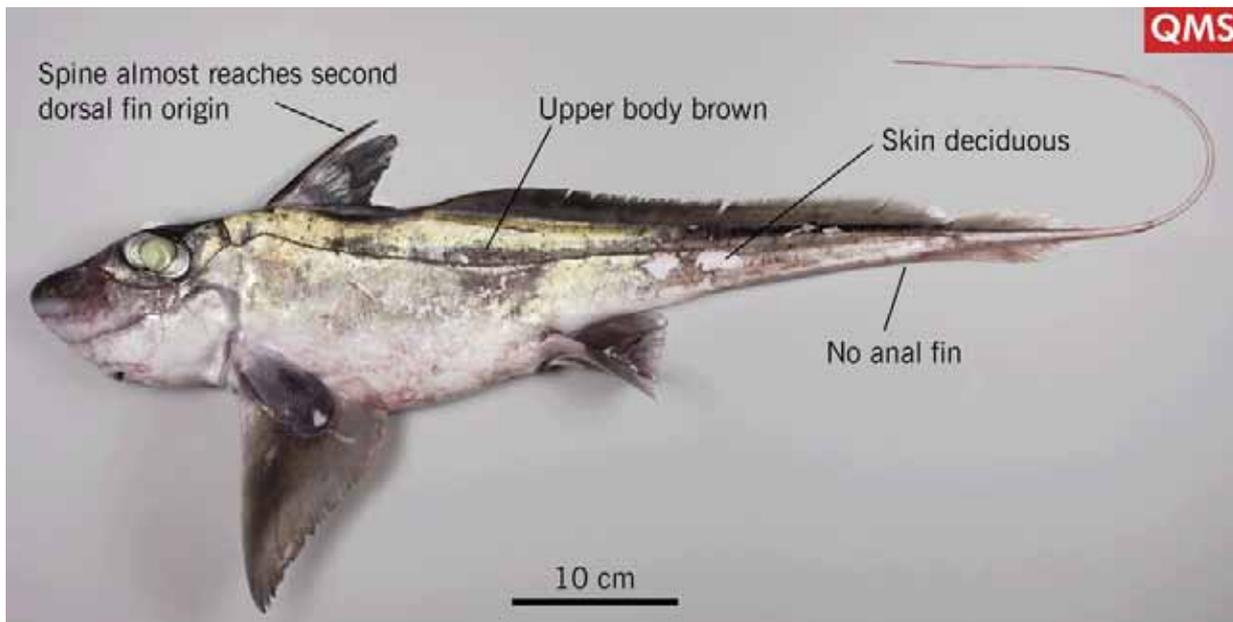
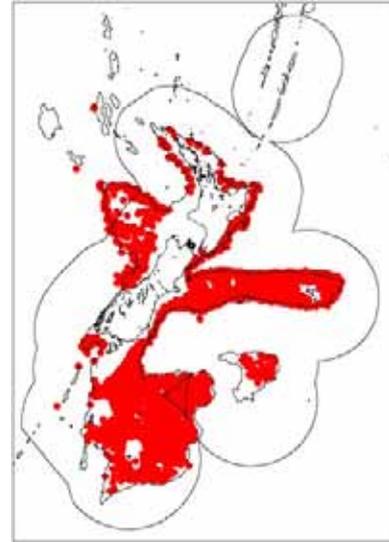
Family: 7. Chimaeridae (shortnose chimaeras, ratfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: GSP

MFish research 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 90 cm chimaera length (excl. tail filament).

Distribution: North Cape to the Campbell Plateau, Chatham Rise and Bounty Plateau. Also southern Norfolk Ridge and southern Lord Howe Rise. Known only from New Zealand.

Depth: 400 to 1200 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.

References

Didier (2002), Francis et al. (1998), Paul (2000), Paulin et al. (1989).

Black ghost shark

Hydrolagus homonycteris

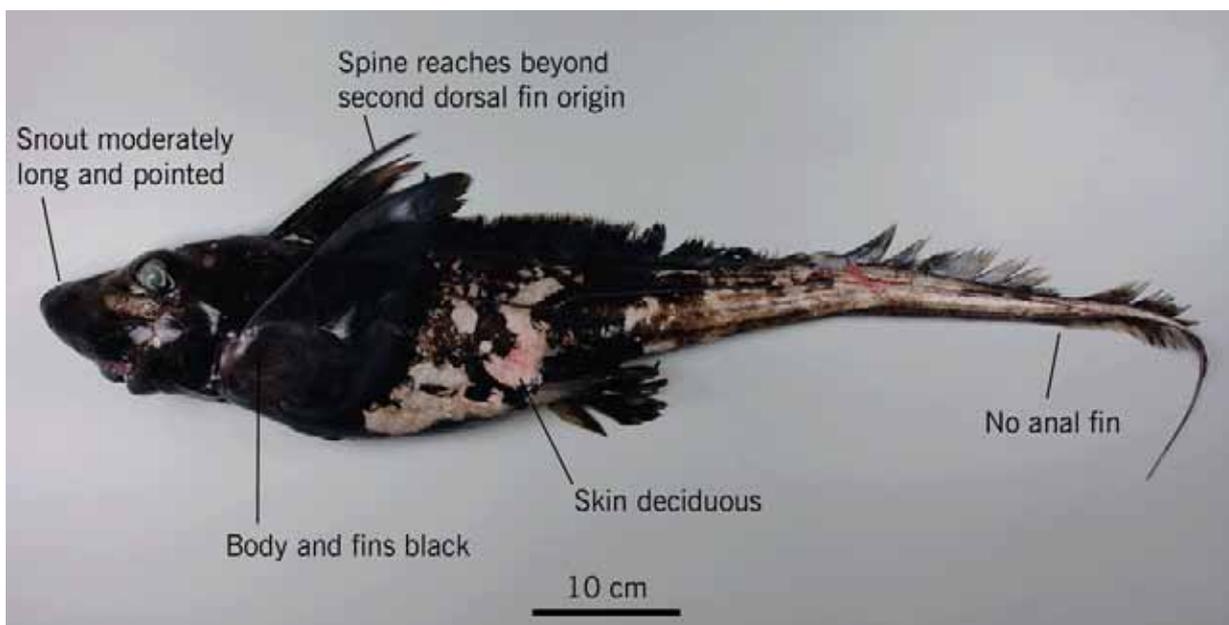
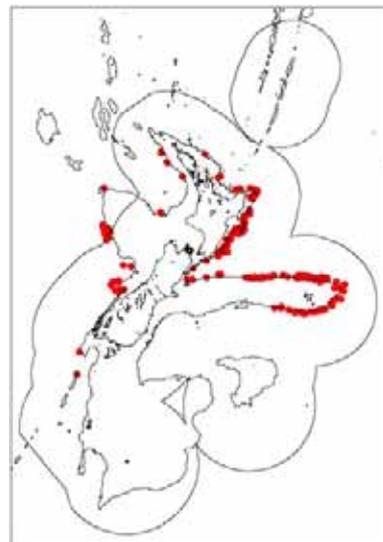
Family: 7. Chimaeridae (shortnose chimaeras, ratfishes)

Maori names: n.a.

Other names: Little black ghost shark

MFish reporting code: HYD

MFish research code: HYB



Distinguishing features: Anal fin absent, body and fins black, first dorsal fin spine reaches beyond origin of second dorsal fin, 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 100 cm chimaera length (excl. tail filament), and probably longer.

Distribution: North Cape to the Chatham Rise and Puysegur. Also occurs in southern Australia.

Depth: 900 m to 1500 m.

Similar species: *Chimaera* species have an anal fin. The giant black ghost shark (*Hydrolagus* sp. D) is much larger, reaching over 100 cm chimaera length, and lacks a rounded pelvic fin. 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.

References

Didier (2008), Last & Stevens (2009).

Ghost shark (dark ghost shark)

Hydrolagus novaezealandiae

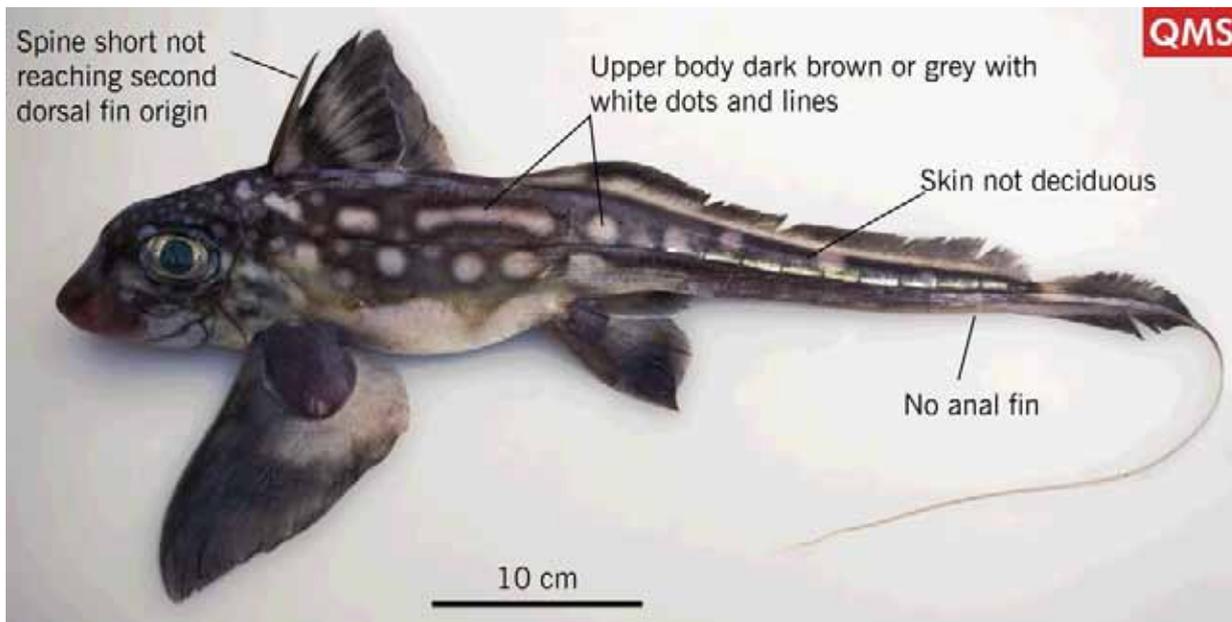
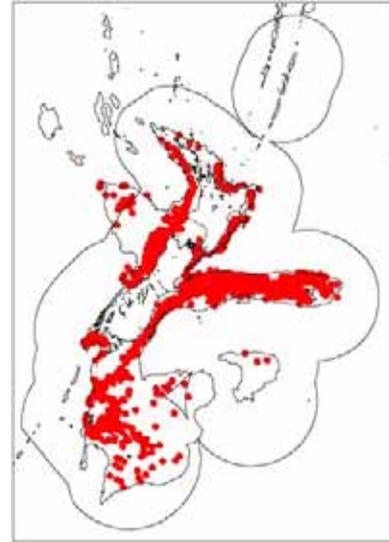
Family: 7. Chimaeridae (shortnose chimaeras, ratfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: GSH

MFish research 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 80 cm chimaera length (excl. tail filament).

Distribution: North Cape to the Campbell Plateau, Chatham Rise and Bounty Plateau. Also southern Norfolk Ridge and southern Lord Howe Rise. Known only from New Zealand.

Depth: 100 to 600 m.

Similar species: *Chimaera* species lack 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.

References

Francis et al. (1998), Paul (2000), Paulin et al. (1989).

Pointynose blue ghost shark

Hydrolagus trolli

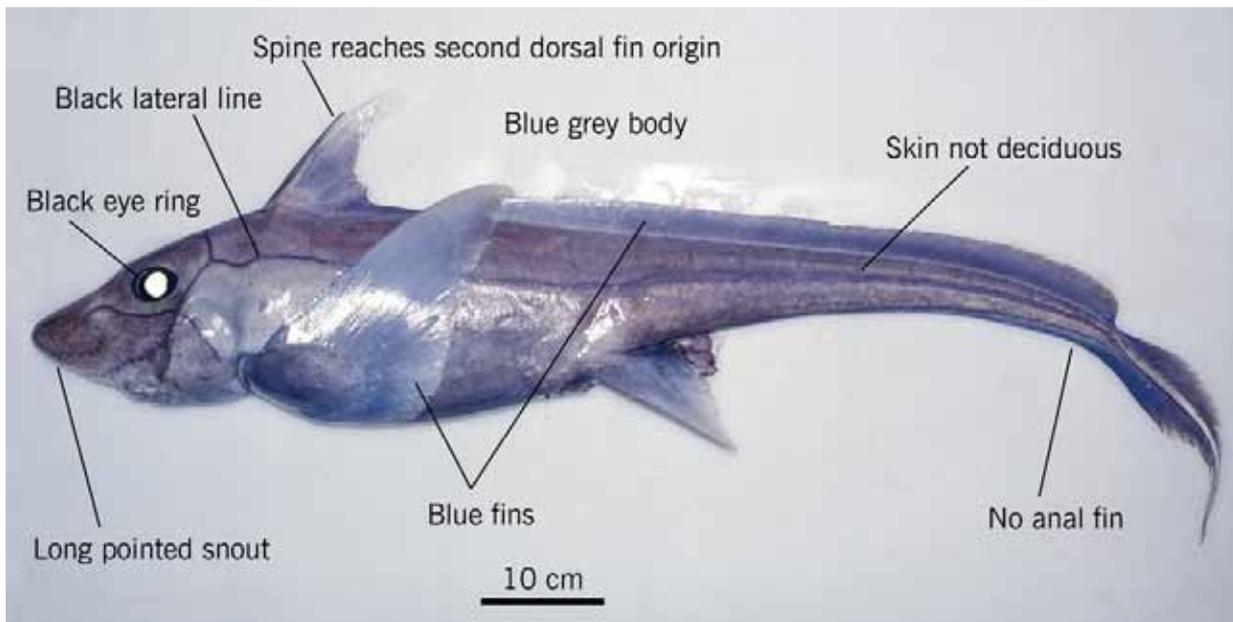
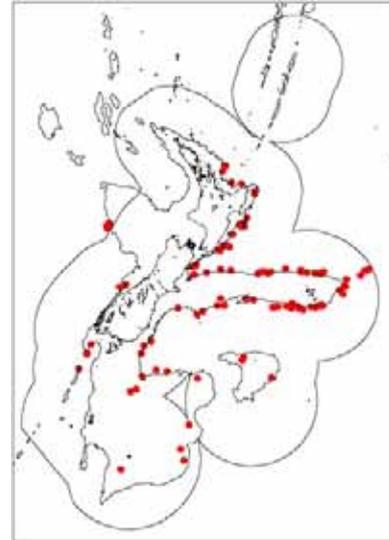
Family: 7. Chimaeridae (shortnose chimaeras, ratfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: HYP

MFish research 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, fins blue, black ring around eye.

Size: To about 120 cm chimaera length (excl. tail filament).

Distribution: North Cape to Campbell Plateau and Chatham Rise. Also recorded from New Caledonia, and probably occurs on the Norfolk Ridge.

Depth: 600 m to over 1700 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. Uncommon.

References

Didier & Seret (2002).

Smalltooth sand tiger shark

Odontaspis ferox

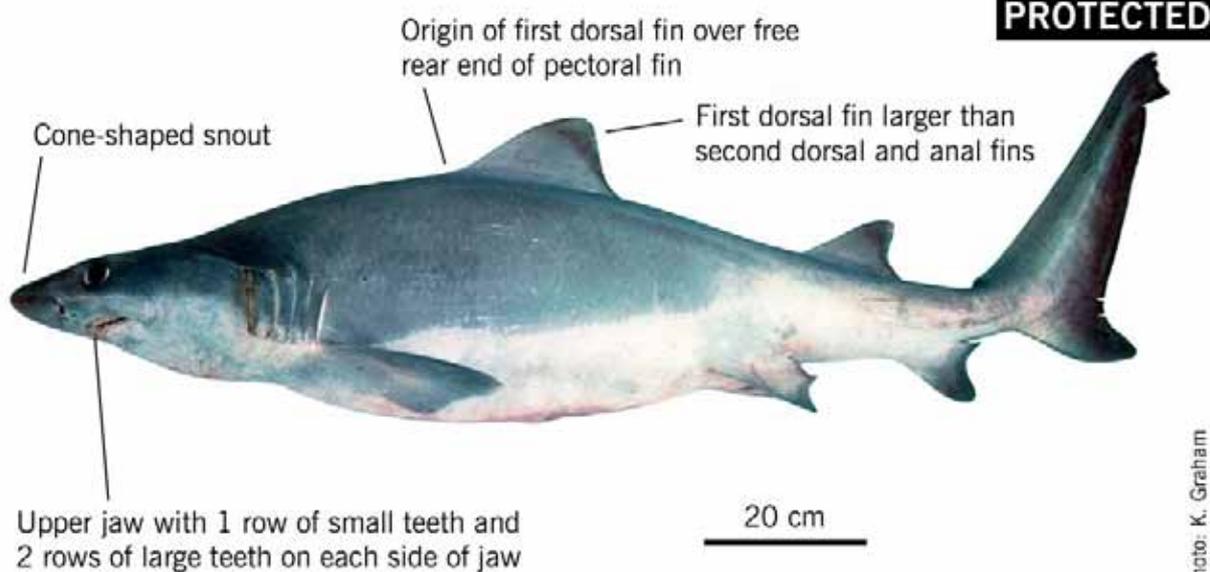
Family: 16. Odontaspidae (sand tiger sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: ODO

MFish research 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.

Distribution: Widespread but known only from relatively few scattered localities in tropical and warm temperate seas, including New Zealand.

Depth: 13 to at least 880 m.

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

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.

References

Compagno (2001), Gomon et al. (2008), Last & Stevens (2009).

Thresher shark

Alopias vulpinus

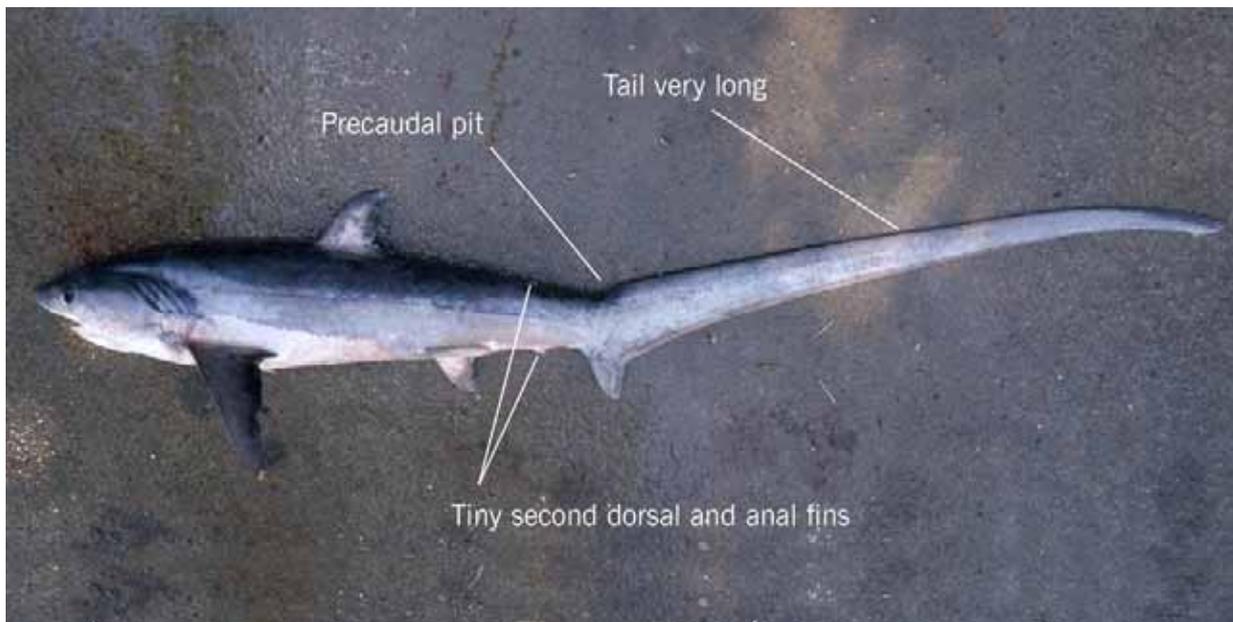
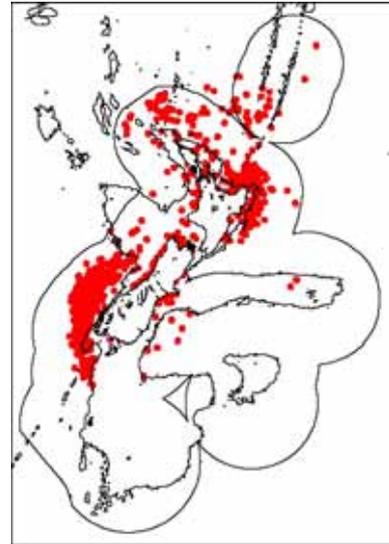
Family: 20. Alopiidae (thresher sharks)

Maori names: Mango-ripi

Other names: n.a.

MFish reporting code: THR

MFish research code: THR



Distinguishing features: Tail extremely long, about half of total length. Eyes large but not extending on to top of head. Pale ventral colour extending above the pectoral fin base. Second dorsal and anal fins tiny. Precaudal pit present.

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

Size: To about 550 cm TL, possibly longer.

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

Depth: 0 to 200 m over depths of a few metres to thousands of metres.

Similar species: Big-eye thresher (*Alopias superciliosus*) occasionally occurs in northern NZ. It has huge eyes that extend on to the top of head, a deep V-shaped groove running from between the eyes back above the gill slits, and the pale ventral colour does not extend above pectoral fin base.

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

References

Chapman et al. (2006), Compagno (2001), Compagno et al. (2005), Last & Stevens (2009), Paul (2000), Paulin et al. (1989).

Basking shark

Cetorhinus maximus

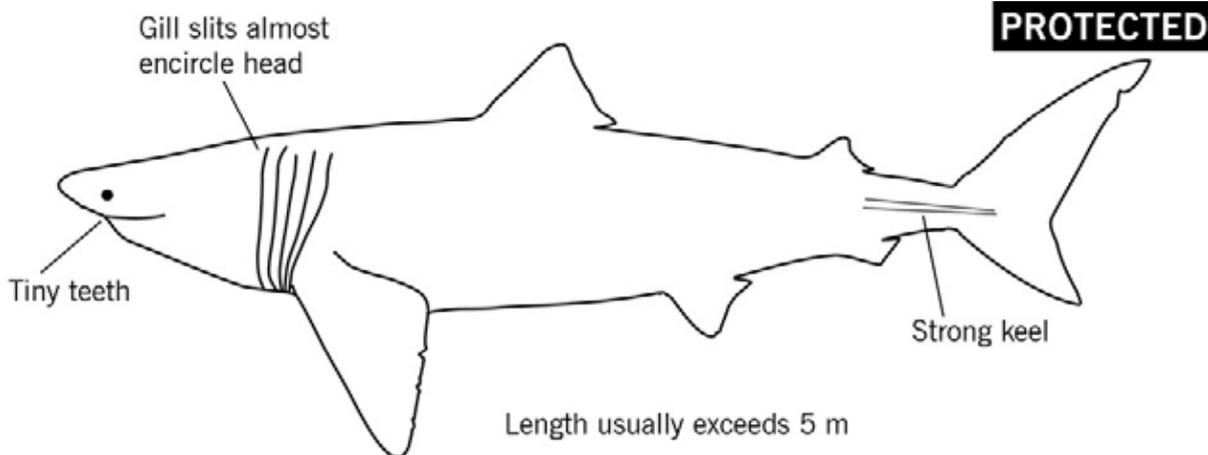
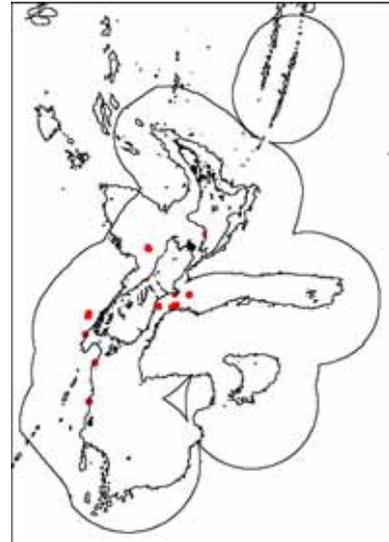
Family: 21. Cetorhinidae (basking sharks)

Maori names: Reremai

Other names: n.a.

MFish reporting code: BSK

MFish research 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 at least 1000 cm TL.

Distribution: Throughout New Zealand, but most common around South Island and Snares-Auckland Islands. Worldwide in temperate waters over the continental shelf and slope, but some records from the open ocean.

Depth: 0 to 900 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.

References

Chapman et al. (2006), Compagno (2001), Compagno et al. (2005), Last & Stevens (2009), Paul (2000), Paulin et al. (1989).

White pointer shark (great white)

Carcharodon carcharias

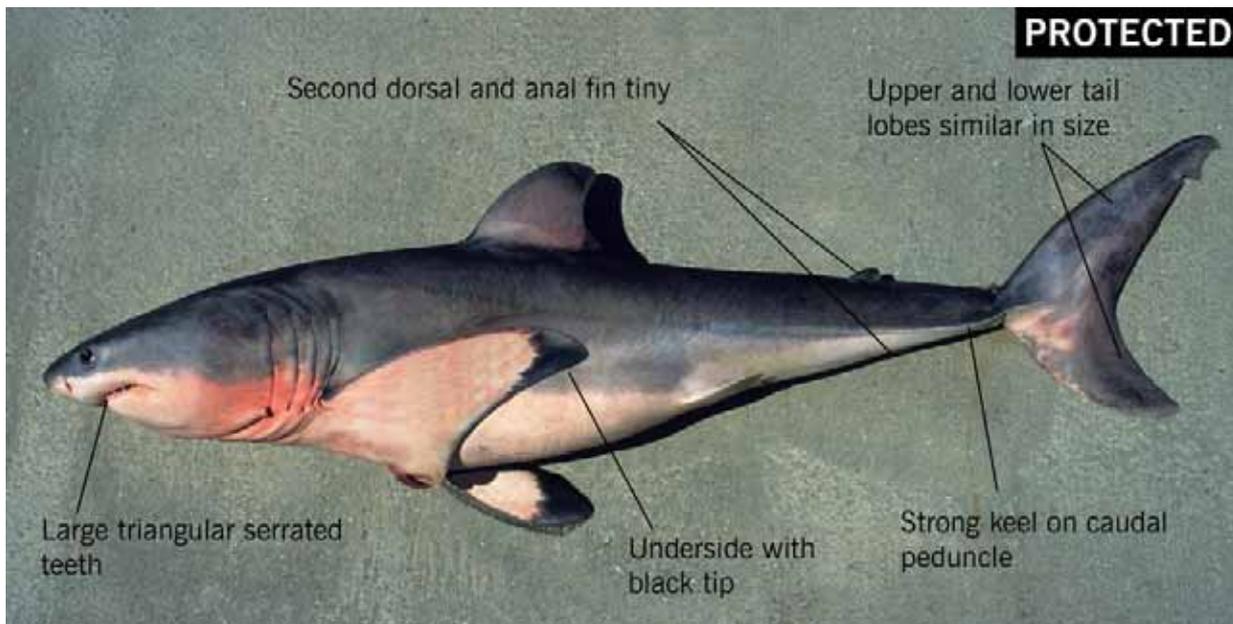
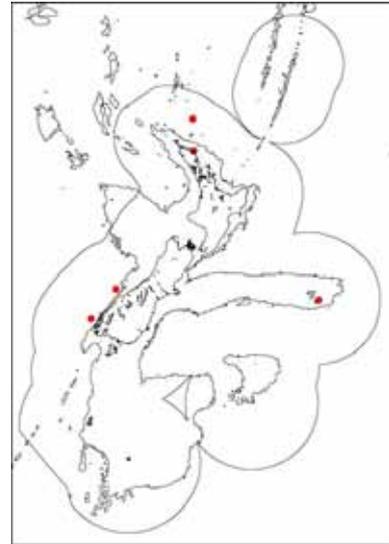
Family: 22. Lamnidae (mackerel sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: WPS

MFish research 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 at least 600 cm TL.

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

Depth: 0 to 1000 m over depths of a few metres to thousands of metres.

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 the inner continental shelf, but it is also pelagic as it migrates thousands of kilometres through open ocean and makes deep dives to at least 1000 m.

References

Chapman et al. (2006), Compagno (2001), Compagno et al. (2005), Last & Stevens (2009), Paul (2000), Paulin et al. (1989).

Mako shark

Isurus oxyrinchus

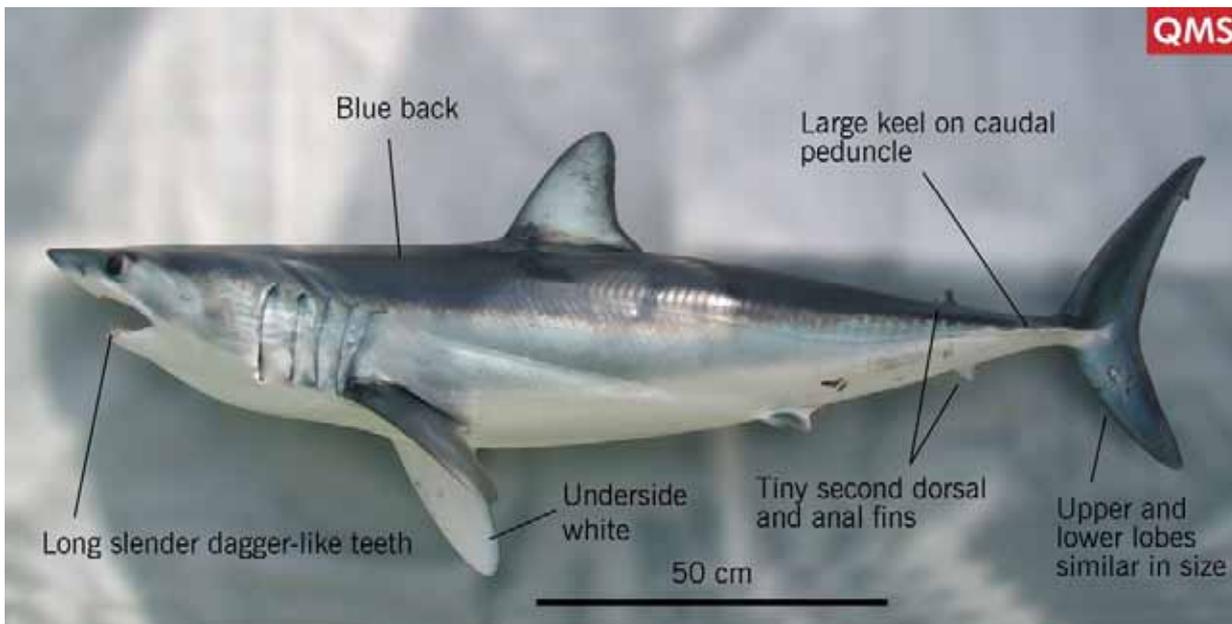
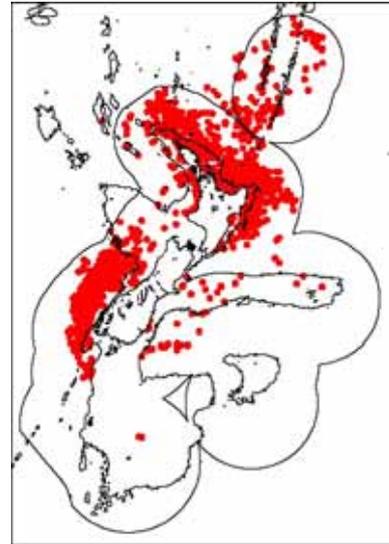
Family: 22. Lamnidae (mackerel sharks)

Maori names: Mako

Other names: Shortfin mako shark

MFish reporting code: MAK

MFish research 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: More than 400 cm TL.

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

Depth: 0 to 500 m over depths of a few metres to thousands of metres.

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 the continental shelf and in the open ocean. Migrates between New Zealand and tropical South Pacific islands.

References

Chapman et al. (2006), Compagno (2001), Compagno et al. (2005), Last & Stevens (2009), Paul (2000), Paulin et al. (1989).

Porbeagle shark

Lamna nasus

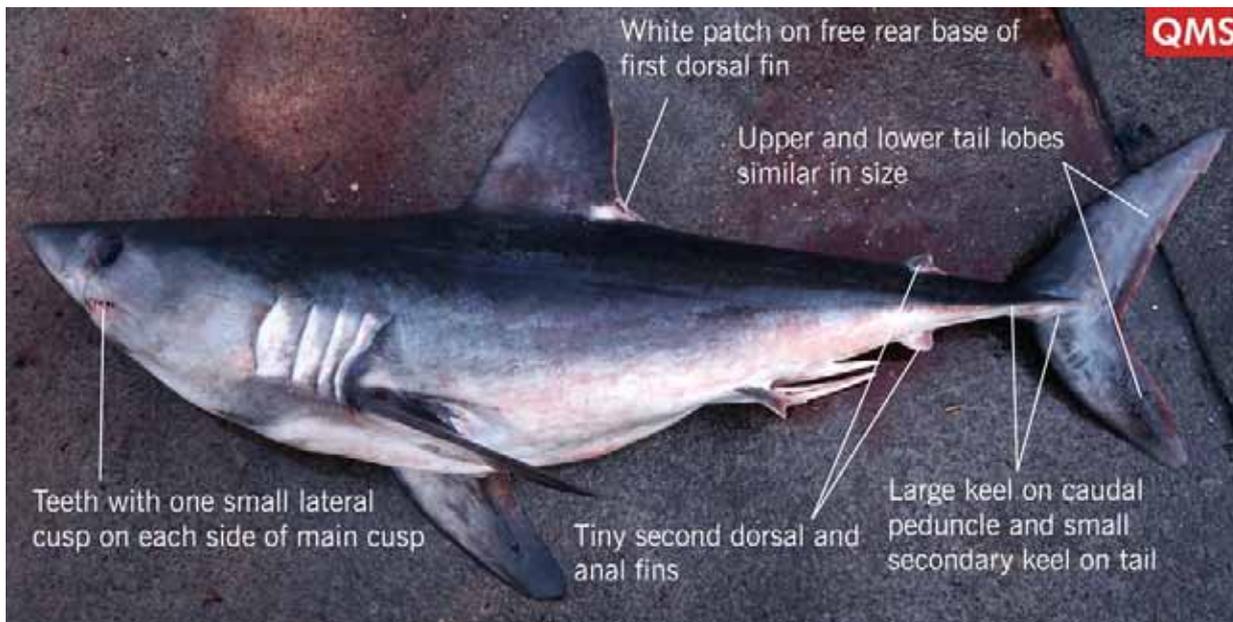
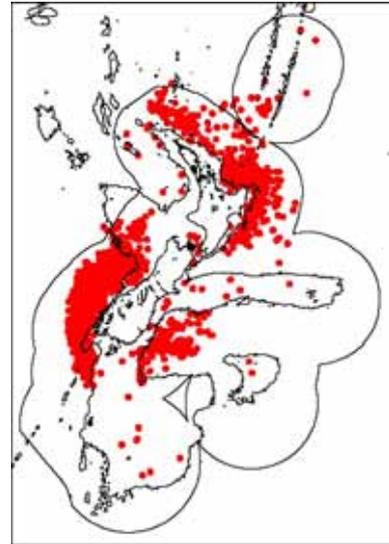
Family: 22. Lamnidae (mackerel sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: POS

MFish research code: POS



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

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

Size: To at least 300 cm TL.

Distribution: Kermadec Islands to about 60° S. Circumglobal in temperate and subantarctic waters of the southern hemisphere, and also in the North Atlantic.

Depth: 0 to 370 m over depths of a few metres to thousands of metres.

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

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

References

Compagno (2001), Compagno et al. (2005), Last & Stevens (2009), Paul (2000), Paulin et al. (1989).

Catshark

Apristurus spp.

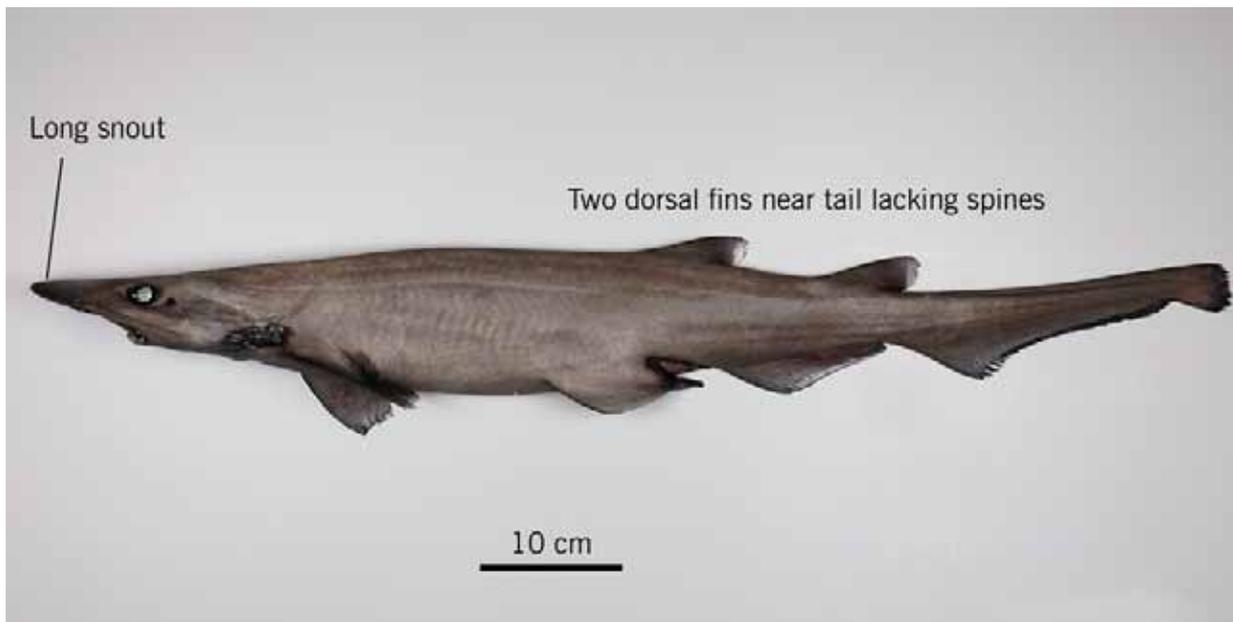
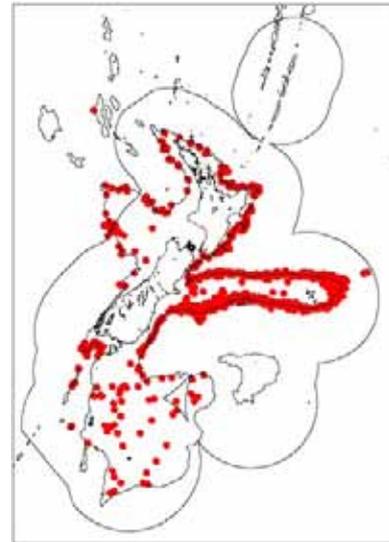
Family: 23. Scyliorhinidae (cat sharks)

Maori names: n.a.

Other names: Demon cat sharks

MFish reporting code: APR

MFish research code: APR



Distinguishing features: Small, usually slender and soft-bodied, with a flat extended snout, two small rounded dorsal fins lacking spines near the tail, and a rounded or long anal fin almost joined to the lower tail lobe. At least 7 species have been recorded from New Zealand.

Colour: Uniformly grey or brown, from pale to dark (depending on species). The fins are often darker.

Size: Most species reach between 50 and 80 cm TL.

Distribution: Widespread around New Zealand, but the distribution here (and elsewhere) of individual species is very poorly known.

Depth: Deeper than about 600 m, with separate species likely to have different depth ranges.

Similar species: Deepwater squaloid dogfishes all lack an anal fin. Other deepwater cat sharks in New Zealand (*Bythaelurus*, *Parmaturus*) have a shorter anal fin clearly distinct from the lower tail lobe, and a shorter and rounder snout. False cat sharks (*Gollum*, *Pseudotriakis*) have the first dorsal fin near the centre of the body rather than near the tail.

Biology & ecology: Presumed to be demersal.

References

Compagno (1984b), Cox & Francis (1997), Kyne & Simpfendorfer (2007), Last & Stevens (2009), Nakaya (1991), Paulin et al. (1989), Sato et al. (1999).

Dawson's cat shark

Bythaelurus dawsoni

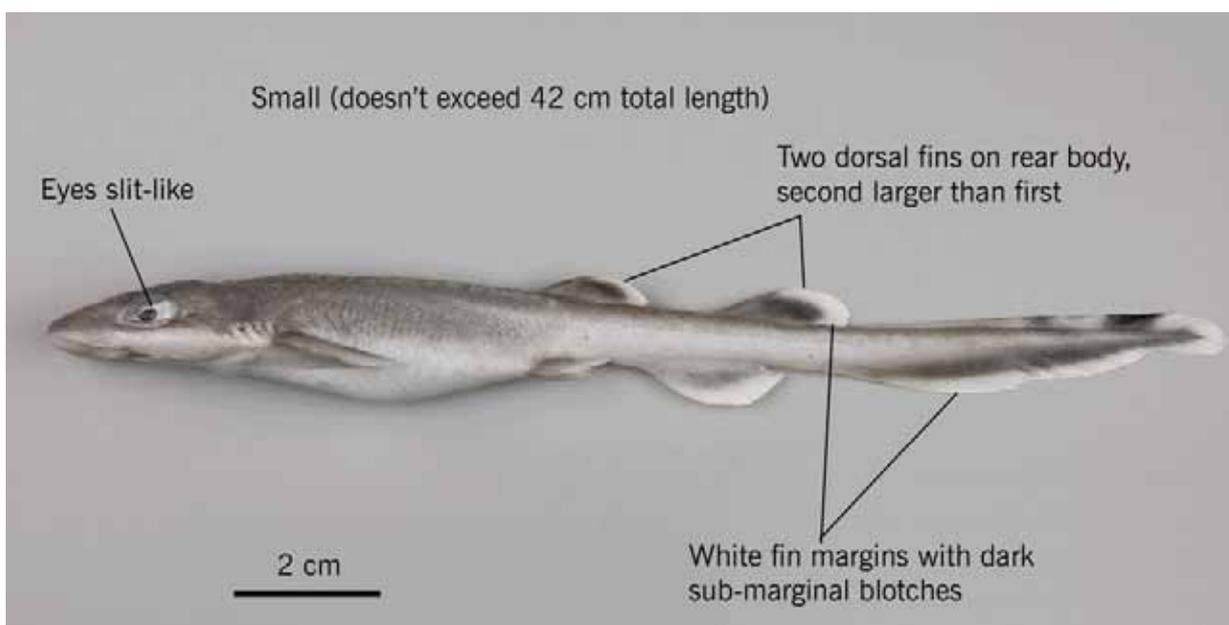
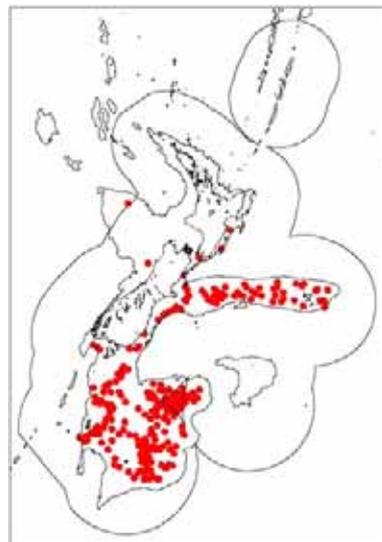
Family: 23. Scyliorhinidae (cat sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: DCS

MFish research 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.

Distribution: Challenger Plateau and 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 isabellum*) has dark blotchy body and fin markings and is a larger.

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

References

Compagno (1984b), Compagno et al. (2005), Paul (2000), Paulin et al. (1989).

Carpet shark

Cephaloscyllium isabellum

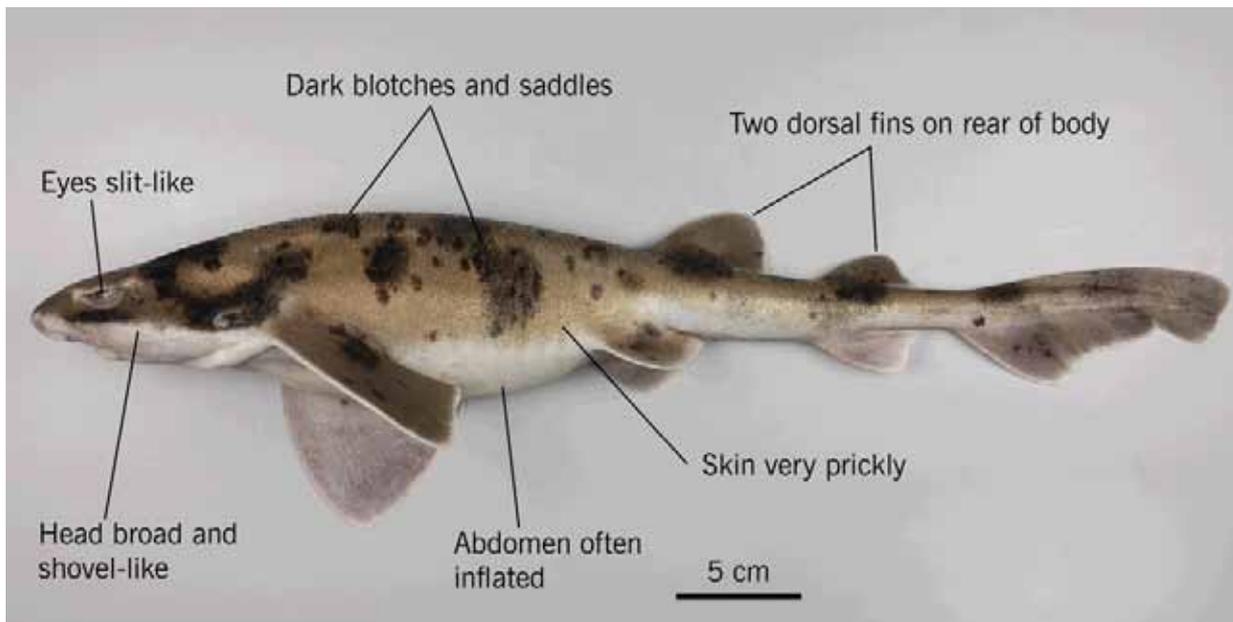
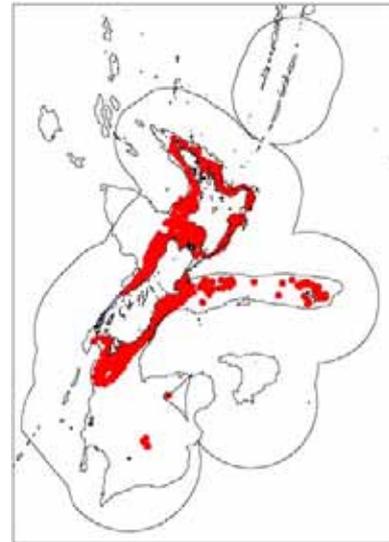
Family: 23. Scyliorhinidae (cat sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: CAR

MFish research 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 200 cm but this is doubtful.

Distribution: Cape Reinga to Snares Islands, Chatham Rise and Chatham Islands. Known only from New Zealand.

Depth: 0 to 500 m.

Similar species: Dawson's cat shark (*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.

References

Compagno (1984b), Compagno et al. (2005), Francis (2001), Paul (2000), Paulin et al. (1989).

Slender smooth-hound

Gollum attenuatus

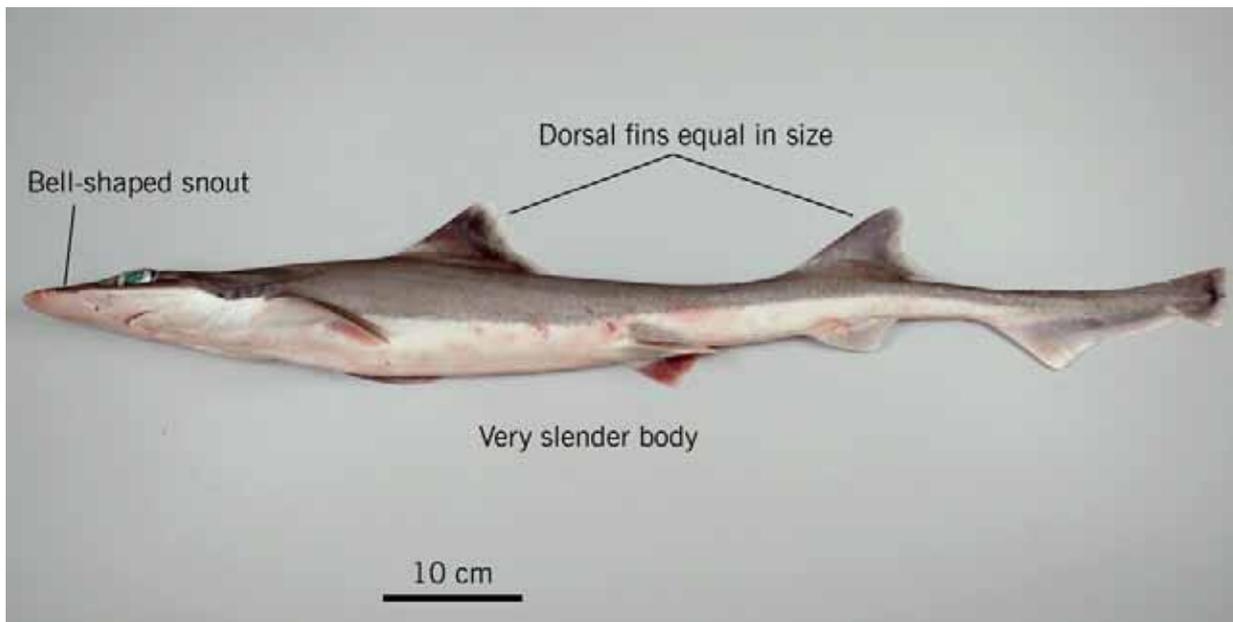
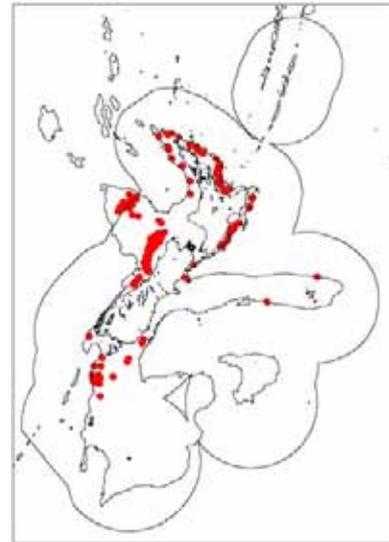
Family: 25. Pseudotriakidae (false cat sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SSH

MFish research 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 tailing edges. A line of small white dots runs along the posterior lateral line.

Size: To 110 cm TL.

Distribution: Three Kings Islands to the Snares Shelf. Records from the Chatham Rise are not confirmed. Most common off the west coast of South Island. Probably also extends to seamounts and rises north and west of New Zealand.

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. Uncommon.

References

Compagno (1984b), Compagno et al. (2005), Garrick (1954a), Paul (2000), Paulin et al. (1989).

School shark

Galeorhinus galeus

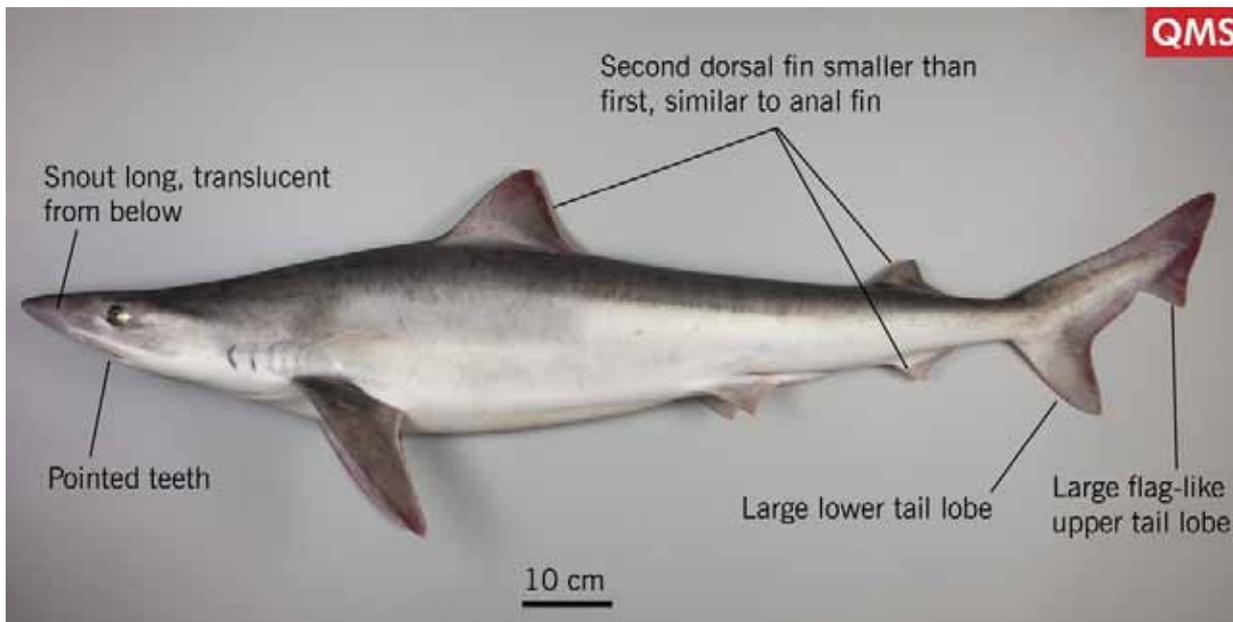
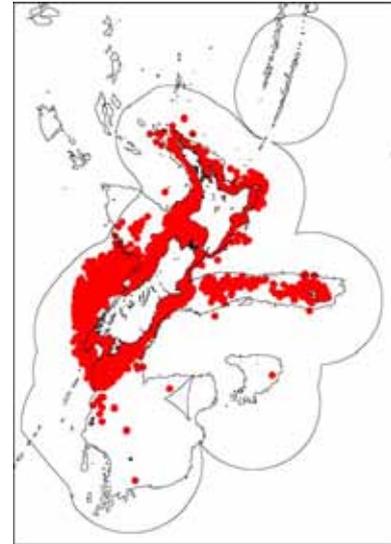
Family: 27. Triakidae (hound sharks)

Maori names: Kapeta, mangoo, manga

Other names: Grey boy, tope

MFish reporting code: SCH

MFish research 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 in New Zealand (larger elsewhere).

Distribution: Three Kings Islands to Campbell Island and the Chatham Islands, and oceanic waters of the EEZ. Widespread but patchy distribution in temperate waters worldwide.

Depth: 0 to 800 m over depths of a few metres to thousands of metres.

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.

References

Compagno (1984b), Compagno et al. (2005), Paul (2000), Paulin et al. (1989).

Rig

Mustelus lenticulatus

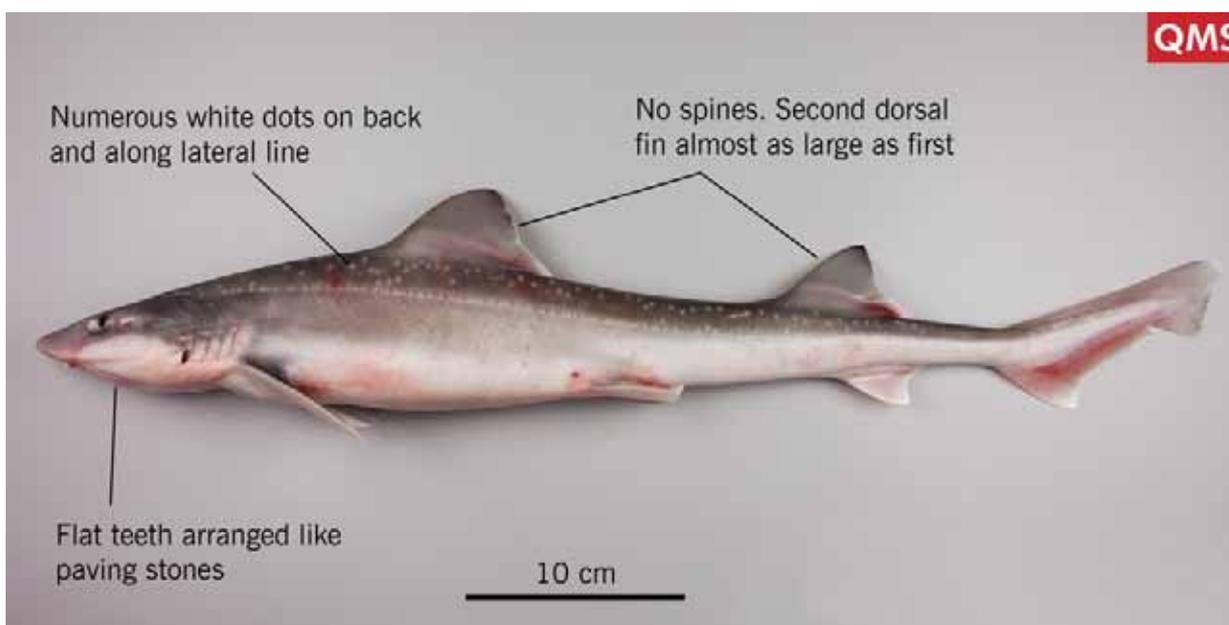
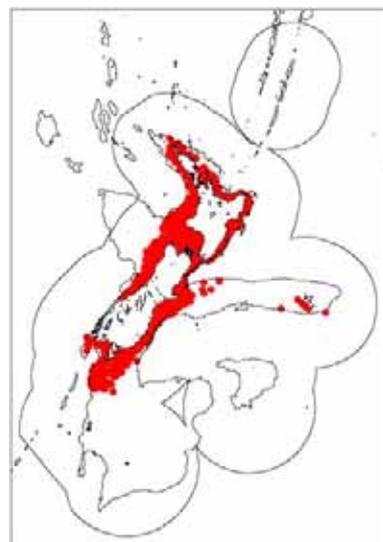
Family: 27. Triakidae (hound sharks)

Maori names: Pioke

Other names: Spotted dogfish

MFish reporting code: SPO

MFish research 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.

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

Depth: 0 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. Another species of *Mustelus* from the Kermadec and Norfolk Ridges has a more slender caudal peduncle and more vertebrae.

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

References

Compagno (1984b), Compagno et al. (2005), Paul (2000), Paulin et al. (1989).

Bronze whaler shark

Carcharhinus brachyurus

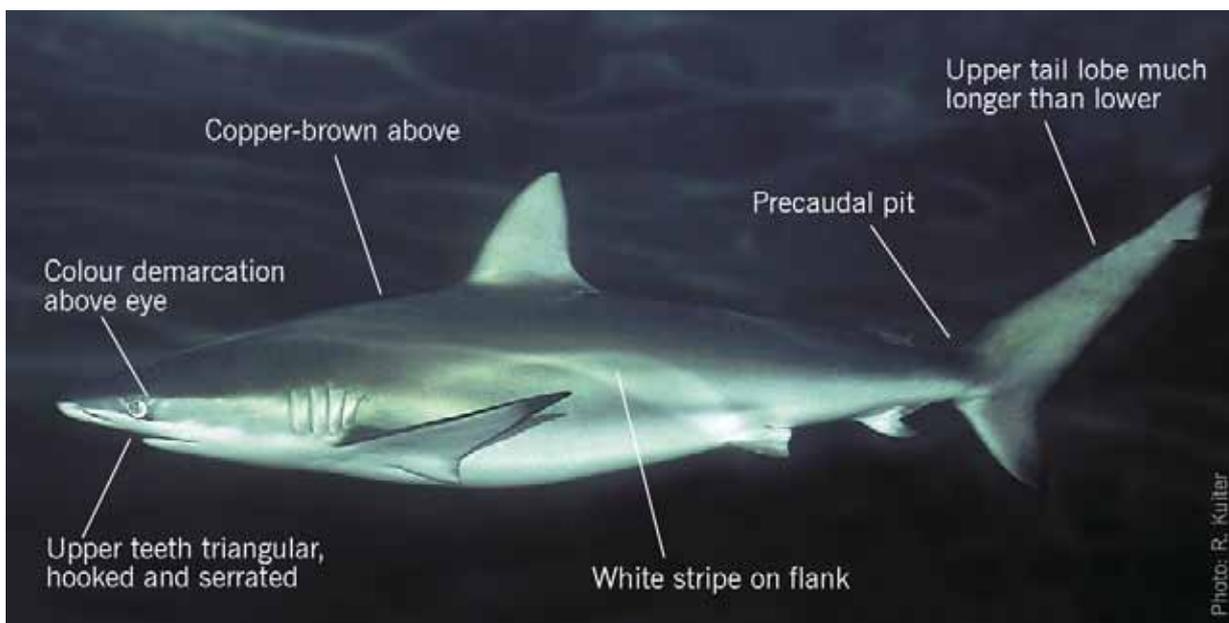
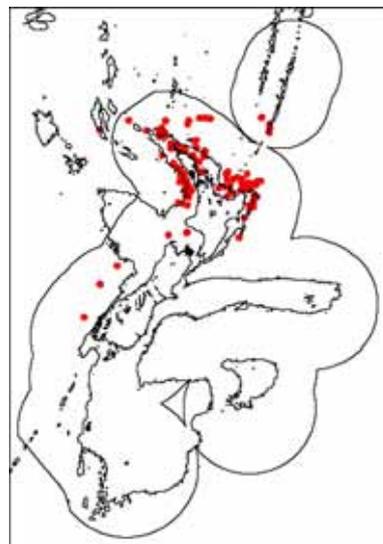
Family: 29. Carcharhinidae (requiem sharks)

Maori names: Toiki, matawhaa, mau ngengero, tuatini

Other names: n.a.

MFish reporting code: BWH

MFish research 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 295 cm TL.

Distribution: Three Kings Islands to Tasman Bay and the Marlborough Sounds, possibly also straggles to the rest of the South Island. Occurs worldwide in warm temperate waters, and some tropical areas.

Depth: 0 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. Most common around the northern North Island where it enters very shallow inshore waters in summer and autumn.

References

Chapman et al. (2006), Compagno (1984b), Compagno et al. (2005), Francis (2001), Last & Stevens (2009), Paul (2000), Paulin et al. (1989).

Blue shark

Prionace glauca

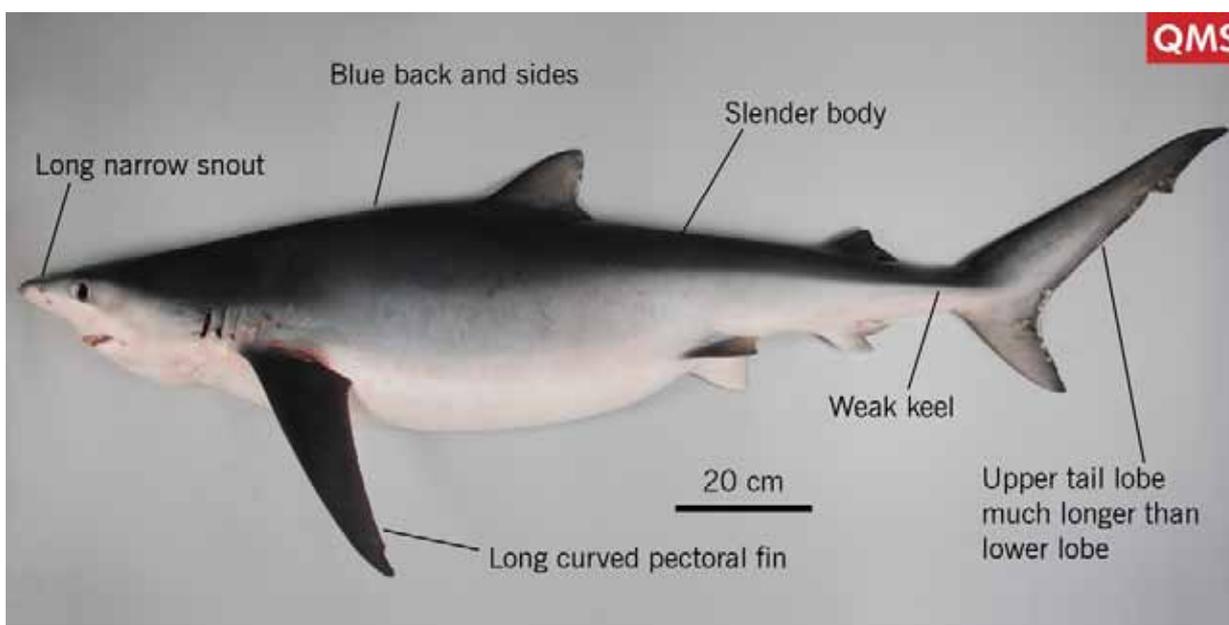
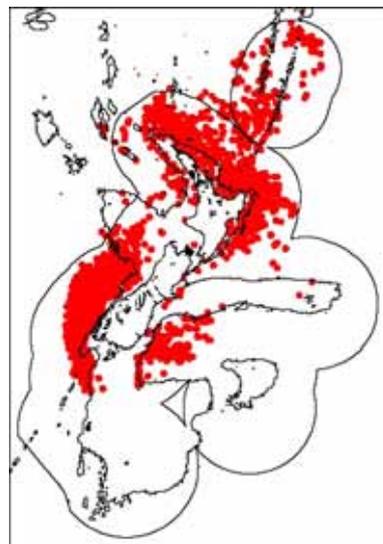
Family: 29. Carcharhinidae (requiem sharks)

Maori names: Mango-pounamu, poutini

Other names: n.a.

MFish reporting code: BWS

MFish research 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 at least 380 cm TL.

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

Depth: 0 to 1000 m over depths of a few metres to thousands of metres.

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.

References

Chapman et al. (2006), Compagno (1984b), Compagno et al. (2005), Last & Stevens (2009), Paul (2000), Paulin et al. (1989).

Hammerhead shark

Sphyrna zygaena

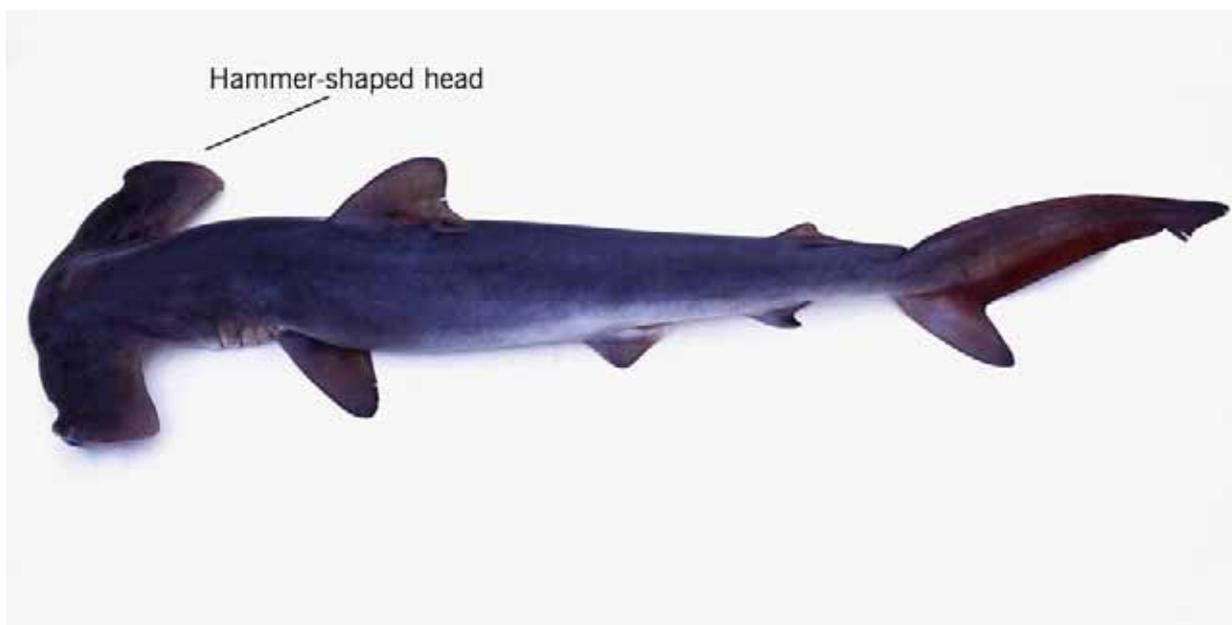
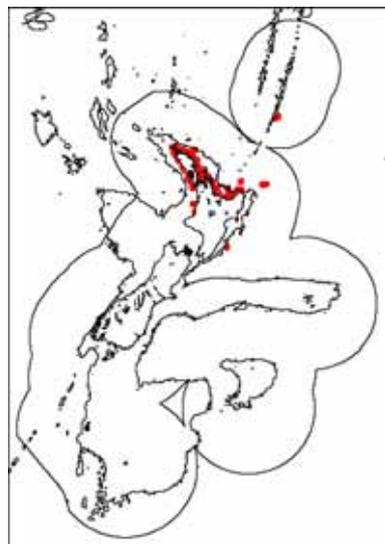
Family: 30. Sphyrnidae (hammerhead sharks)

Maori names: Mango-pare

Other names: Smooth hammerhead shark

MFish reporting code: HHS

MFish research 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 at least 370 cm TL, possibly as large as 400 cm.

Distribution: Kermadec Islands to northern South Island (possibly further south). Uncommon south of about Hawke Bay on the east and Cape Egmont on the west coast. Worldwide in temperate and tropical waters.

Depth: 0 to 200 m, possibly deeper.

Similar species: No other species of hammerhead shark are confirmed from New Zealand, but may occasionally appear in the north.

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.

References

Chapman et al. (2006), Compagno (1984a), Compagno et al. (2005), Paul (2000), Paulin et al. (1989).

Frill shark

Chlamydoselachus anguineus

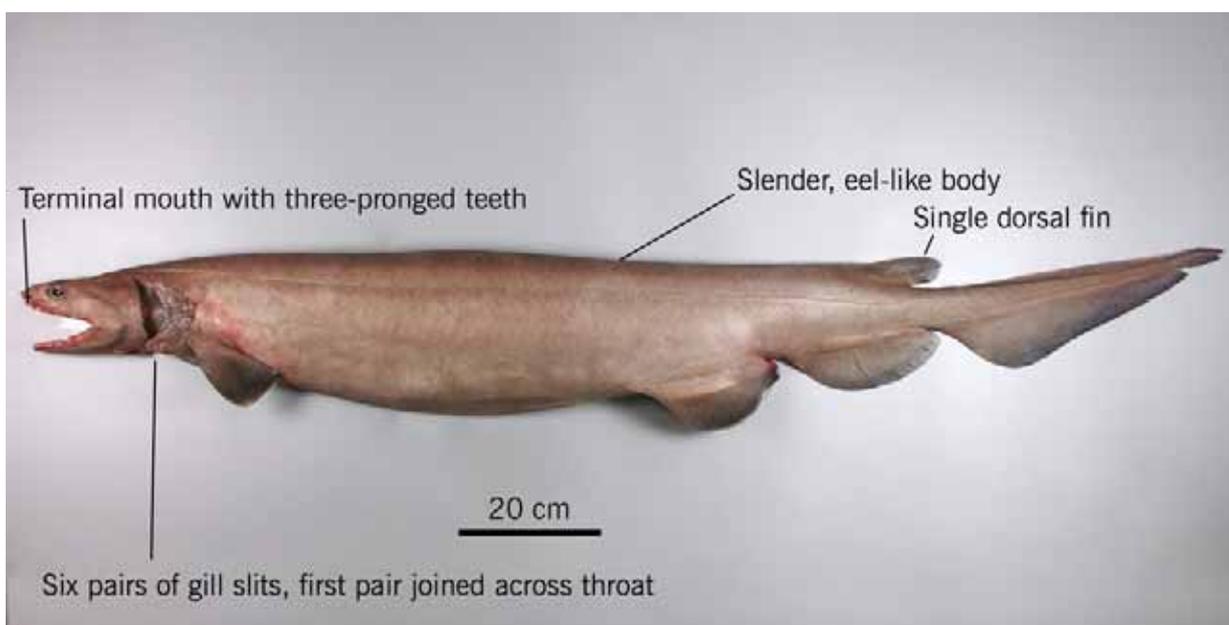
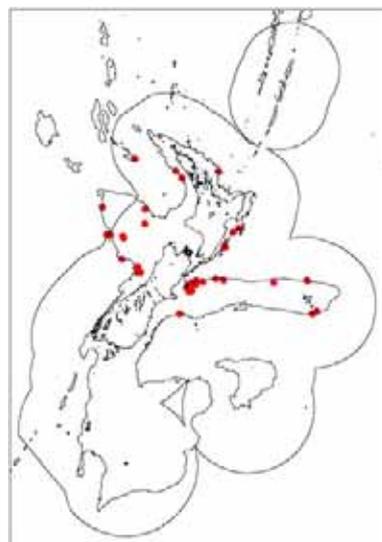
Family: 31. Chlamydoselachidae (frill sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: FRS

MFish research 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. Single dorsal fin and large anal fin near the tail.

Colour: Usually a rich chocolate brown, sometimes greyish, occasionally slightly paler below.

Size: To about 200 cm TL.

Distribution: Widespread but uncommon from Chatham Rise northward. Almost worldwide in distribution, but recorded in any numbers only at a few localities, mainly in areas of nutrient-rich upwelling.

Depth: 700 to 1500 m off New Zealand, recorded both shallower and deeper elsewhere.

Similar species: Distinctive shark, with no similar species.

Biology & ecology: Demersal. Although usually taken on or near the seafloor it is also known from midwater and near the surface.

References

Amaoka et al. (1990), Compagno (1984a), Compagno et al. (2005), Cox & Francis (1997), Kubota et al. 1991), Kyne & Simpfendorfer (2007), Last & Stevens (2009), Nakaya & Bass (1978), Paulin et al. (1989), Stewart (2000), Tanaka et al. (1990).

Sharpnose sevengill shark

Heptanchias perlo

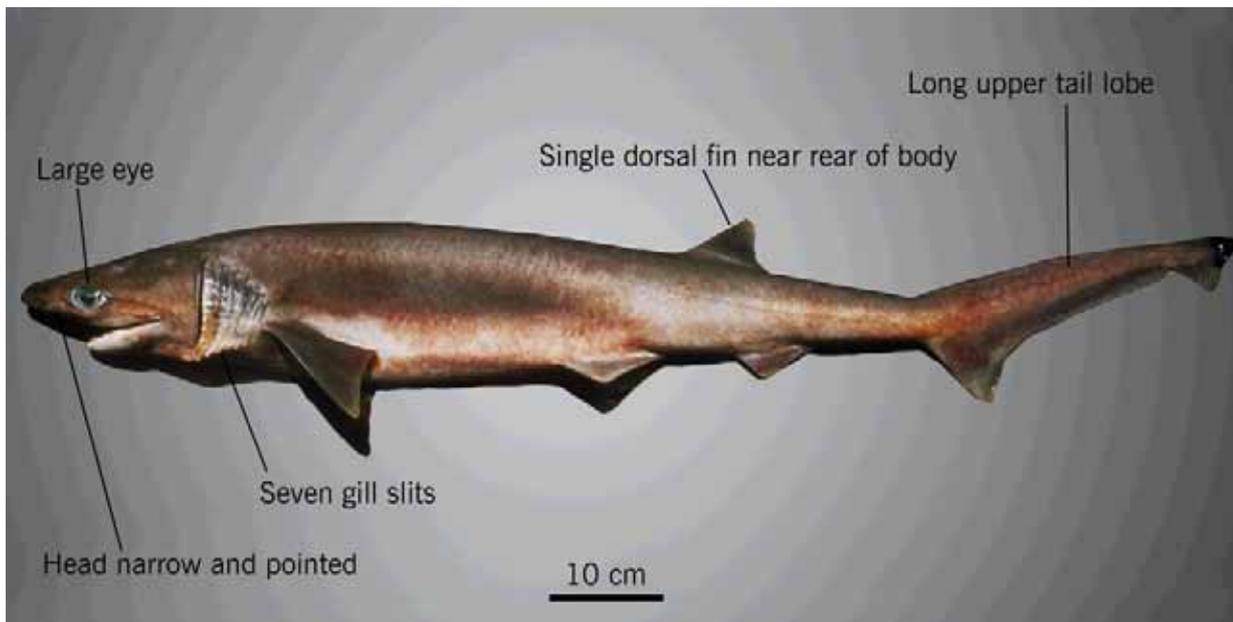
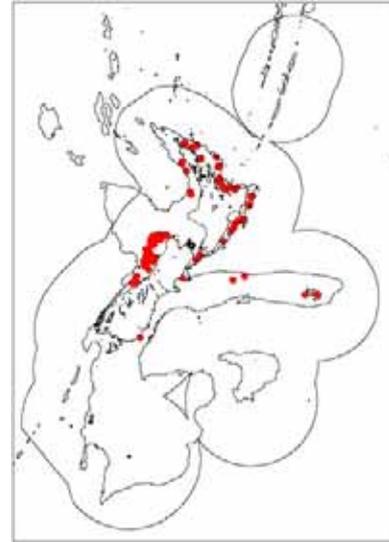
Family: 32. Hexanchidae (cow sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: HEP

MFish research 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: Greyish above, paler to whitish below.

Size: To about 140 cm TL.

Distribution: Mainly off northern and central New Zealand. Worldwide in tropical and temperate waters except the northeast Pacific.

Depth: 100 to 600 m, recorded to 1000 m elsewhere.

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

Biology & ecology: Demersal, but midwater at times.

References

Compagno (1984a), Compagno et al. (2005), Garrick & Paul (1971), Last & Stevens (2009), Paulin et al. (1989).

Sixgill shark

Hexanchus griseus

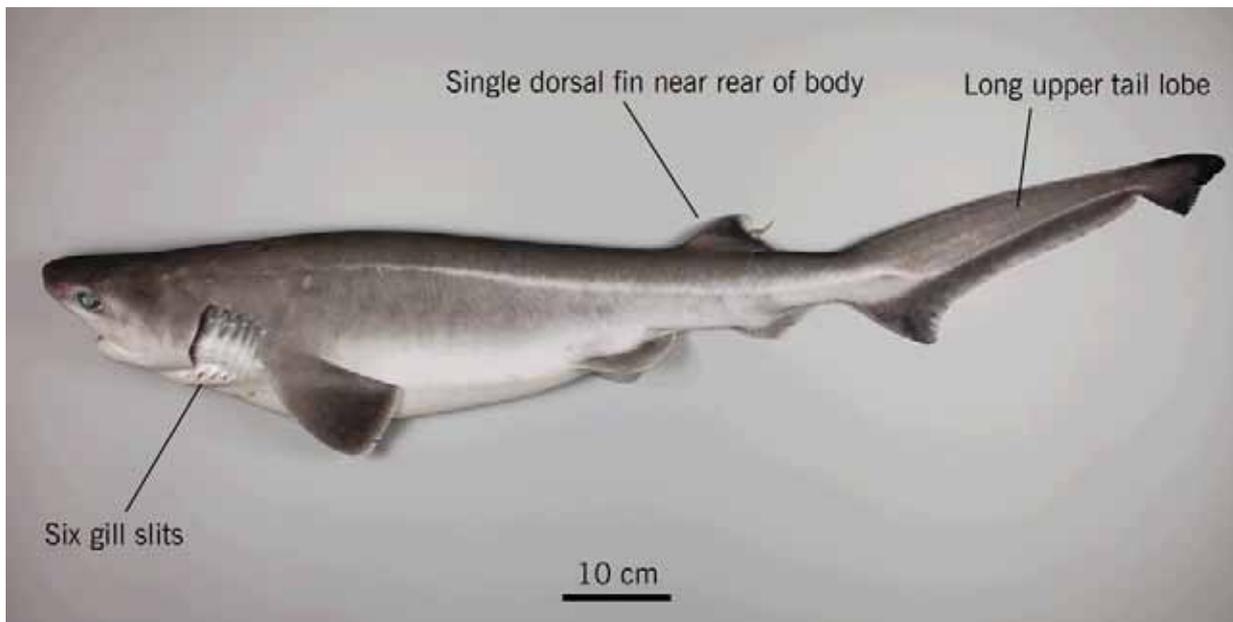
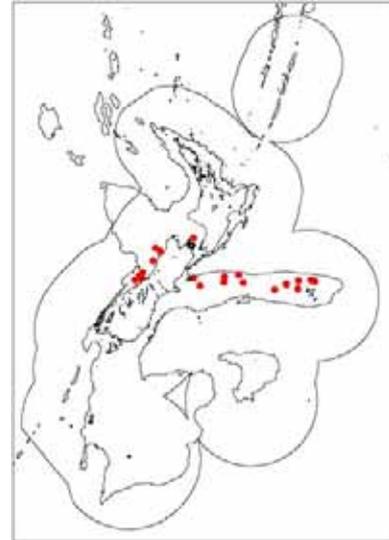
Family: 32. Hexanchidae (cow sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: HEX

MFish research 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 at least 480 cm and possibly to 550 cm TL.

Distribution: Probably widespread in New Zealand, but most records are from northern South Island and the Chatham Rise. Worldwide in tropical and temperate waters.

Depth: 100 to about 2000 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.

References

Compagno (1984a), Compagno et al. (2005), Last & Stevens (2009), Paul (2000), Paulin et al. (1989).

Broadnose sevengill shark

Notorynchus cepedianus

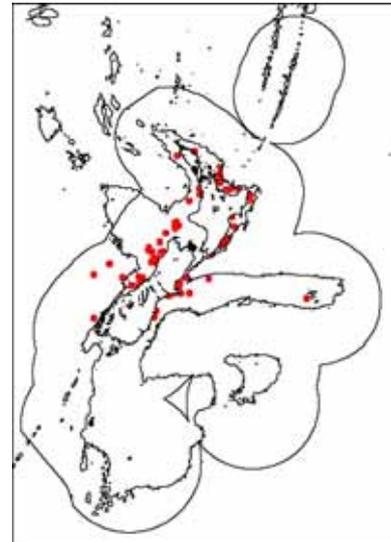
Family: 32. Hexanchidae (cow sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SEV

MFish research 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, possibly larger.

Distribution: Throughout mainland New Zealand. Worldwide in temperate waters except the North Atlantic.

Depth: 0 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.

References

Compagno (1984a), Compagno et al. (2005), Last & Stevens (2009), Paulin et al. (1989).

Spiny dogfish

Squalus acanthias

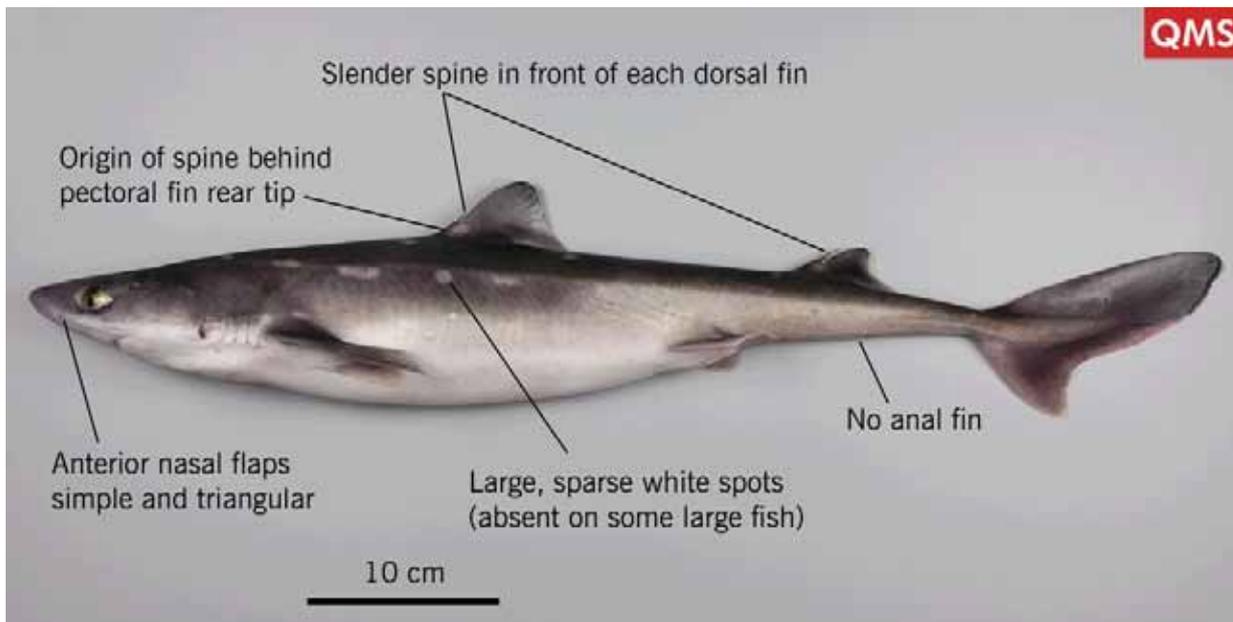
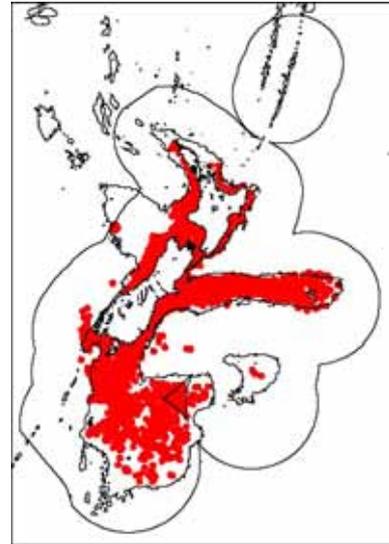
Family: 34. Squalidae (dogfish sharks)

Maori names: Kaaraerae, koinga, mangohapu

Other names: n.a.

MFish reporting code: SPD

MFish research 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 in New Zealand (much larger elsewhere).

Distribution: North Cape to the Campbell Plateau and Chatham Rise, most abundant around South Island and on Chatham Rise. Worldwide in cool temperate waters.

Depth: 0 to 700 m.

Similar species: Northern spiny dogfish (*Squalus griffini*) has the first dorsal fin further forward, a secondary lobe on the nasal flap, stouter dorsal fin spines, a large green eye, and lacks white spots.

Biology & ecology: Demersal and midwater.

References

Compagno (1984a), Compagno et al. (2005), Paul (2000), Paulin et al. (1989).

Northern spiny dogfish

Squalus griffini

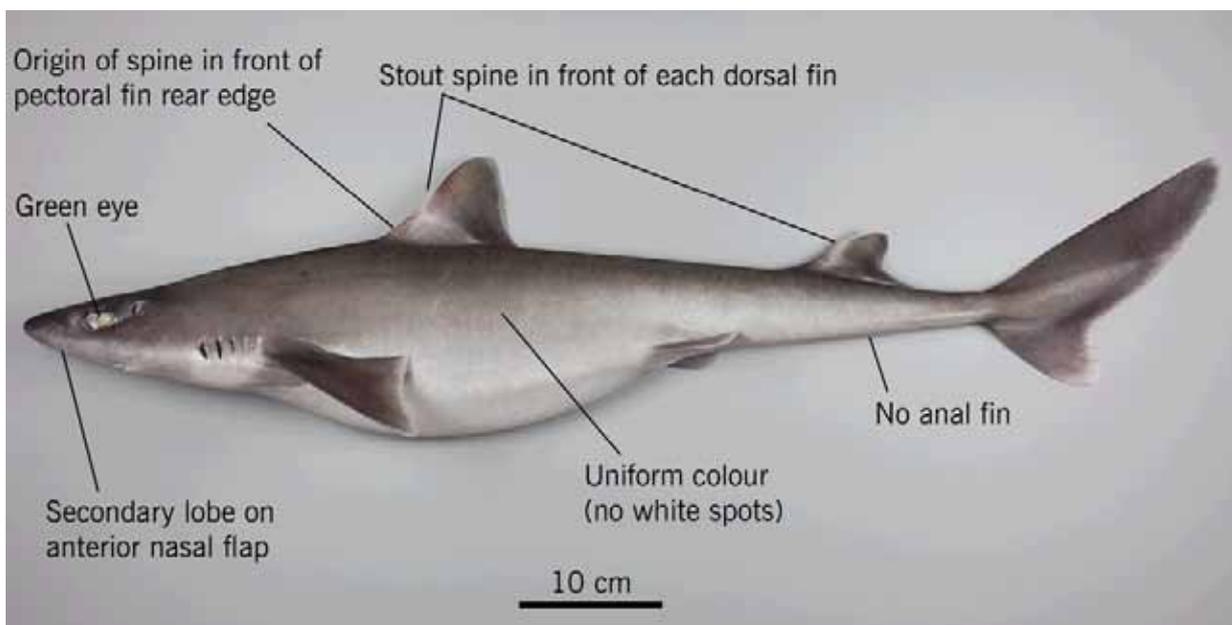
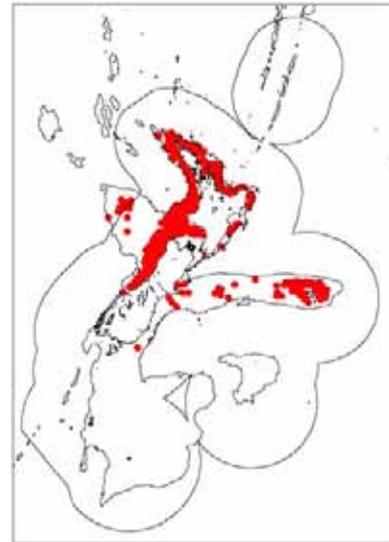
Family: 34. Squalidae (dogfish sharks)

Maori names: Koinga, oke, okeoke

Other names: Green-eyed dogfish

MFish reporting code: NSD

MFish research 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 at least 110 cm TL.

Distribution: Kermadec Islands to Hokitika and the Chatham Rise, most common off the west coast of North and South Islands and near the Chatham Islands. Also southern Norfolk Ridge and Louisville Seamount Chain.

Depth: 100 to 500 m.

Similar species: Spiny dogfish (*Squalus acanthias*) has the first dorsal fin further back, lacks a secondary lobe on the nasal flap, and has slender dorsal fin spines and (usually) white spots.

Biology & ecology: Demersal and midwater.

References

Compagno (1984a), Compagno et al. (2005), Duffy & Last (2007), Paul (2000), Paulin et al. (1989).

Leafscale gulper shark

Centrophorus squamosus

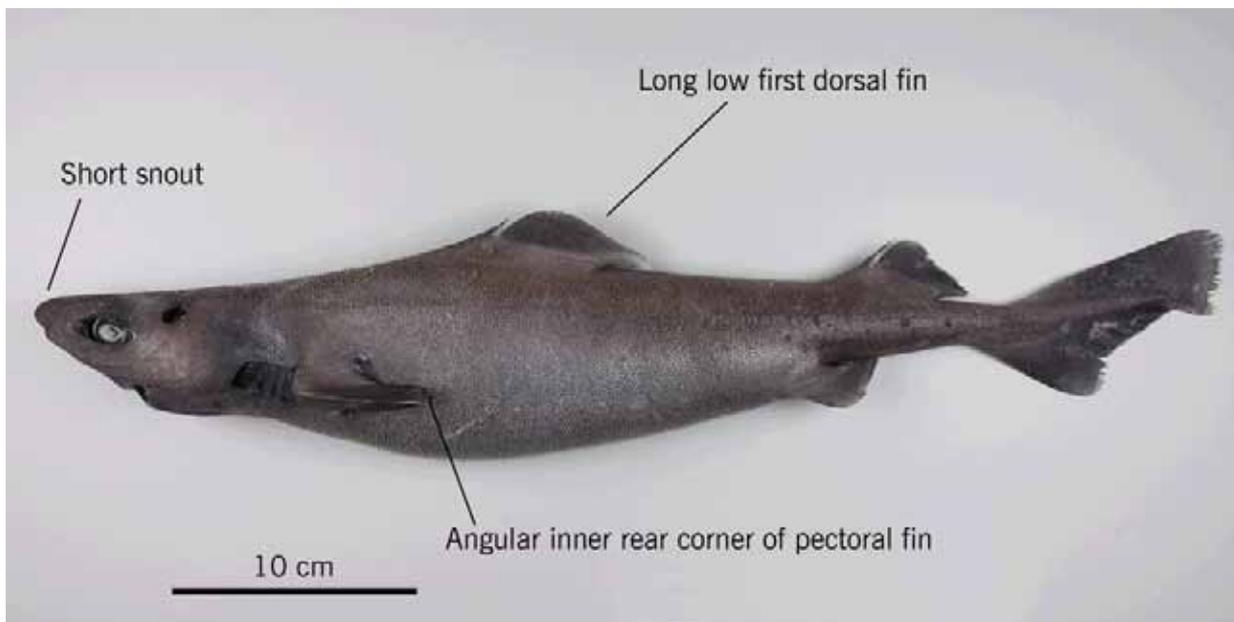
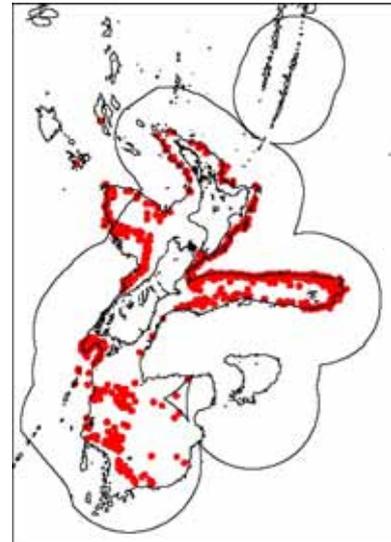
Family: 35. Centrophoridae (gulper sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: CSQ

MFish research code: CSQ



Distinguishing features: Moderate sized, with a short snout, long low first dorsal fin and triangular second dorsal, strong fin spines, rough skin with leaf-shaped denticles, and inner rear corner of pectoral fin angular or pointed (not rounded) but not elongated.

Colour: Uniformly greyish-brown.

Size: To about 160 cm TL.

Distribution: Widespread around New Zealand, also present off southeast Australia, in parts of the Indo-Pacific, the eastern Atlantic Ocean, and around southern Africa.

Depth: 500 to 1500 m off New Zealand, deeper elsewhere.

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

Biology & ecology: Demersal and midwater.

References

Amaoka et al. (1990), Blackwell & Stevenson (2003), Clarke et al. (2002a), Compagno (1984a), Compagno et al. (2005), Cox & Francis (1997), Duffy (2007), Garrick (1959a), Kyne & Simpfendorfer (2007), Last & Stevens (2009), Paulin et al. (1989).

Shovelnose dogfish

Deania calcea

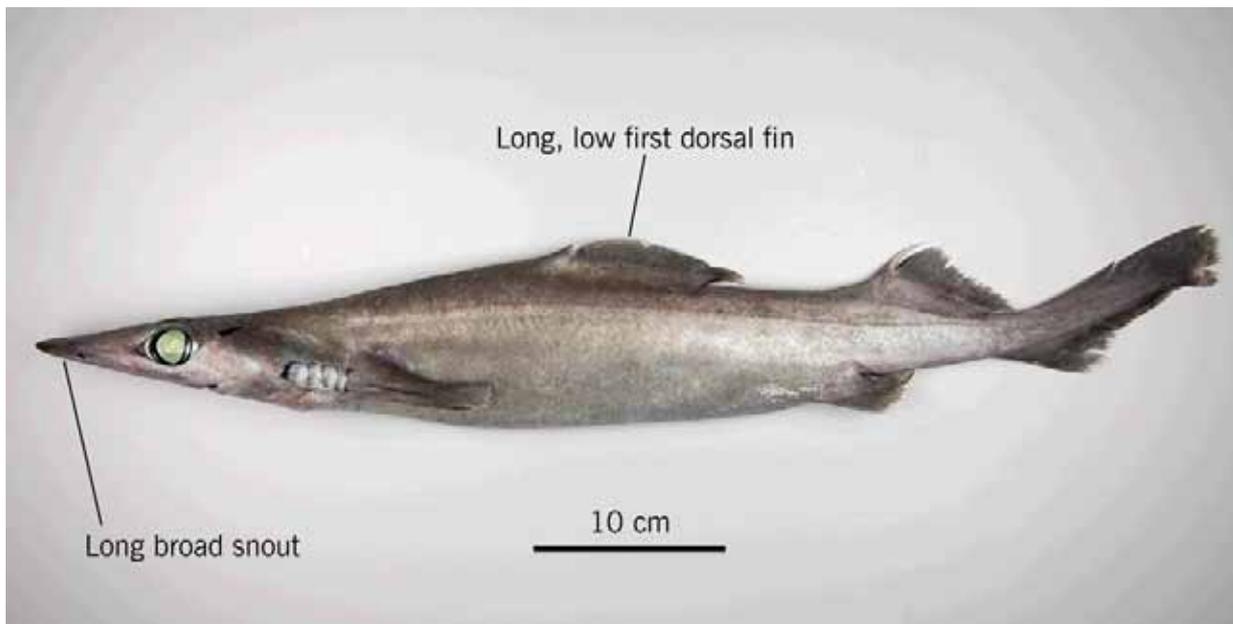
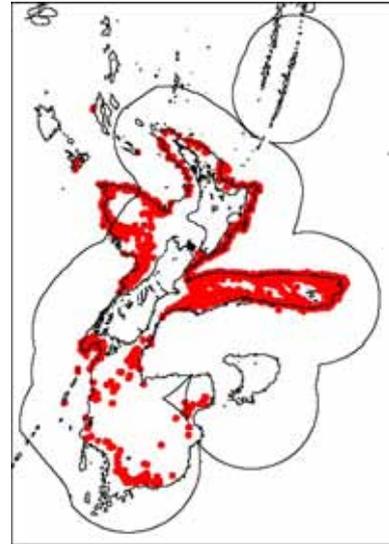
Family: 35. Centrophoridae (gulper sharks)

Maori names: n.a.

Other names: Brier shark (Aus.)

MFish reporting code: SND

MFish research code: SND



Distinguishing features: Slender bodied with an elongated, flattened snout. The first dorsal fin is longer and lower than the second dorsal fin. The skin is soft, and patches are often lost on trawl-caught fish.

Colour: Usually uniform mid grey-brown, but may be darker or lighter. Slightly darker fins.

Size: To about 120 cm TL.

Distribution: Widespread around New Zealand. Also occurs around southern Australia, Japan, off Chile, and in the eastern Atlantic (Iceland to northwest Africa, South Africa).

Depth: 400 to 1400 m.

Similar species: The much less common longsnout dogfish (*D. quadrispinosum*) has a first dorsal fin very similar in size to the second dorsal, and much longer inter-dorsal length. Longnose velvet dogfish (*Centroscymnus crepidater*) has a similar flattened snout but is dark brown or black.

Biology & ecology: Demersal, but also feeds in midwater.

References

Amaoka et al. (1990), Blackwell & Stevenson (2003), Clark & King (1989). Clarke et al. (2002b), Compagno (1984a), Compagno et al. (2005), Cox & Francis (1997), Garrick (1960), Kyne & Simpfendorfer (2007), Last & Stevens (2009), Paulin et al. (1989), Wetherbee (2000).

Baxter's dogfish

Etmopterus baxteri

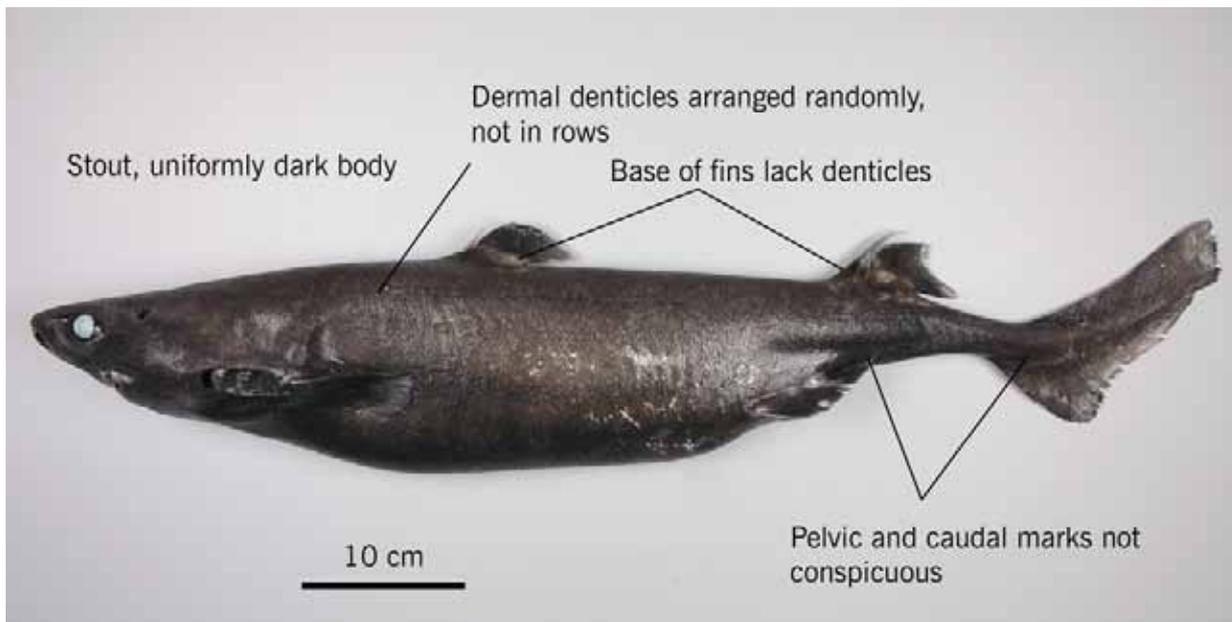
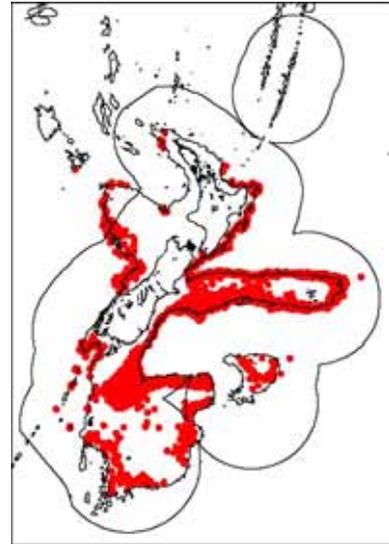
Family: 36. Etmopteridae (lantern sharks)

Maori names: n.a.

Other names: Giant lanternshark, New Zealand lanternshark

MFish reporting code: ETB

MFish research code: ETB



Distinguishing features: Stout-bodied, uniformly dark and with randomly spaced dermal denticles giving a slightly roughened skin. Bases of first and second dorsal fins naked (no denticles).

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

Size: To about 85 cm TL.

Distribution: Widespread around New Zealand. May occur widely around southern hemisphere continents (especially southern Australia and South Africa) and oceanic islands, but there are identification problems.

Depth: 500 to 1500 m

Similar species: Lucifer dogfish (*E. lucifer*) is paler above with a linear arrangement of denticles. The uncommon smooth lanternshark (*E. pusillus*) is uniformly mid to dark brown and has a smooth skin. There is some uncertainty over the relationship between *E. baxteri* and the more widespread *E. granulosus*, and also the poorly known *E. tasmaniensis*.

Biology & ecology: Demersal, but probably feeds in midwater at times.

References

Blackwell & Stevenson (2003), Compagno (1984a), Compagno et al. (2005), Cox & Francis (1997), Garrick (1957a, 1960), Irvine et al. (2006b), Last & Stevens (2009), Paulin et al. (1989), Wetherbee (1996, 2000).

Lucifer dogfish

Etmopterus lucifer

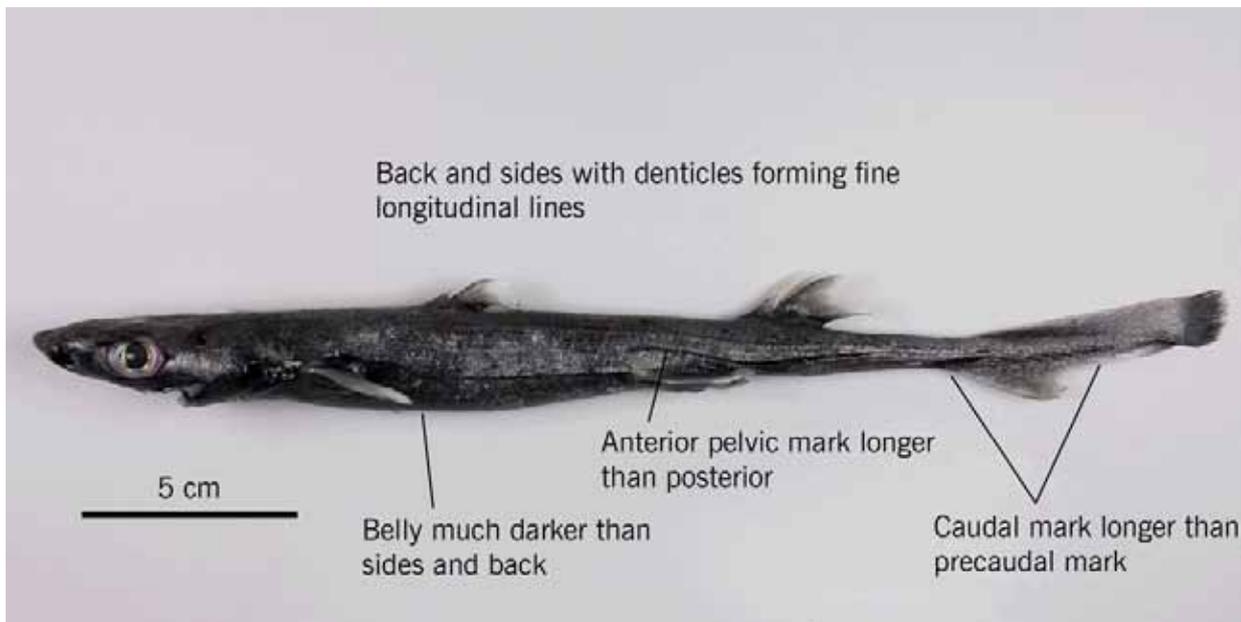
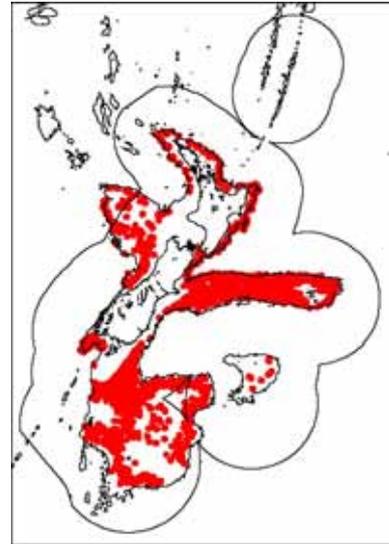
Family: 36. Etmopteridae (lantern sharks)

Maori names: n.a.

Other names: Blackbelly lanternshark

MFish reporting code: ETL

MFish research code: ETL



Distinguishing features: Small and slender, pale above with fine dark longitudinal lines, black below. The anterior branch of the pelvic flank mark is longer than the posterior branch.

Colour: Silvery-grey to pale brown above, black below, with a black mark and line above the pelvic fins, and short black lines on the lower tail base and near the tail tip. Dermal denticles on flank and back arranged in regular rows from snout to tail, giving a fine-striped appearance.

Size: To about 45 cm TL.

Distribution: Widespread around New Zealand. Present around most southern continents and in the Indo-Pacific, but there is some uncertainty because of confusion with similar species.

Depth: 400 to 900 m.

Similar species: Baxter's dogfish (*E. baxteri*) is uniform dark brown to blackish and has a random arrangement of rough dermal denticles. *E. pusillus* is uniform mid to dark brown and has smooth, randomly arranged denticles. In the much less common *E. molleri* the posterior branch of the pelvic flank mark is longer than the anterior branch.

Biology & ecology: Demersal, sometimes in midwater.

References

Amaoka et al. (1990), Compagno (1984a), Compagno et al. (2005), Cox & Francis (1997), Garrick (1960), Last & Stevens (2009), Paulin et al. (1989), Yamakawa et al. (1986).

Smooth lanternshark

Etmopterus pusillus

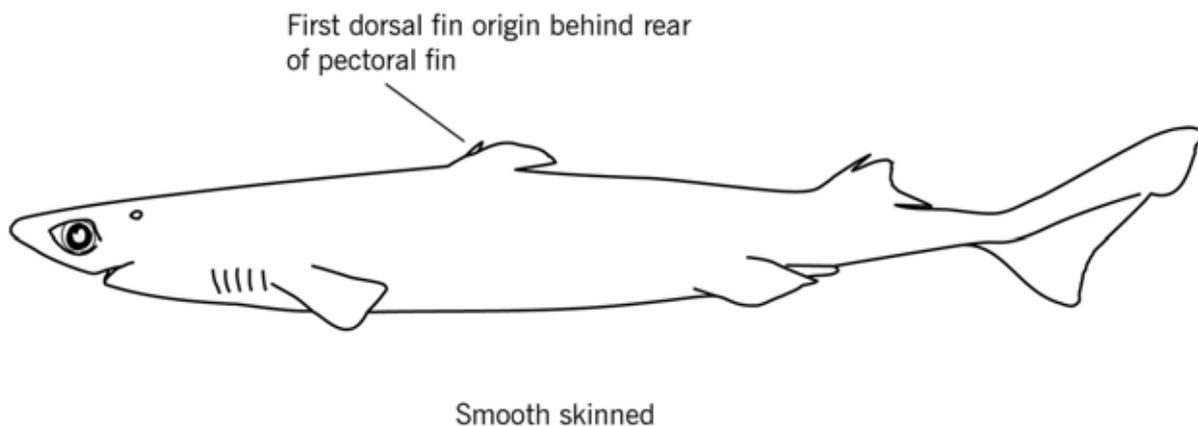
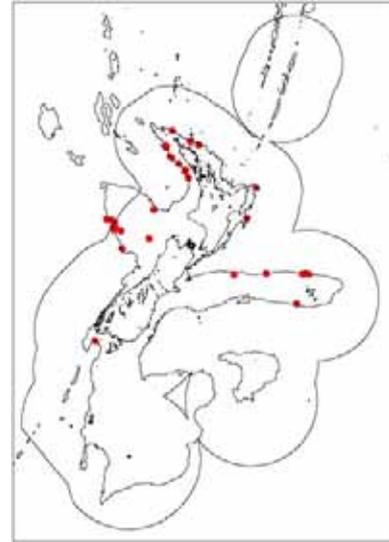
Family: 36. Etmopteridae (lantern sharks)

Maori names: n.a.

Other names: Slender lanternshark (Aus.)

MFish reporting code: ETP

MFish research code: ETP



Distinguishing features: Elongated rear lower part of second dorsal fin. Uniform mid to dark brown, small, firm-bodied, and smooth-skinned. The dermal denticles are barely visible, smooth, and not arranged in rows. The small first dorsal fin is rectangular, and originates a short distance (at least one eye width) behind the rear edge of the pectoral fin.

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

Size: To at least 50 cm TL.

Distribution: Uncertain distribution around New Zealand, with numerous unconfirmed records. There are identified records from around the North Island held in museum collections. Present off southeast Australia and in parts of the Indo-Pacific, widespread in the Atlantic Ocean.

Depth: Probably deeper than 1000 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 part of the second dorsal fin. Some very similar, rare, and possibly undescribed species may be present, and misidentification is possible.

Biology & ecology: Demersal.

References

Compagno (1984a), Compagno et al. (2005), Cox & Francis (1997), Last & Stevens (2009), Paulin et al. (1989), Shirai & Tachikawa (1993).

Portuguese dogfish

Centroscymnus coelolepis

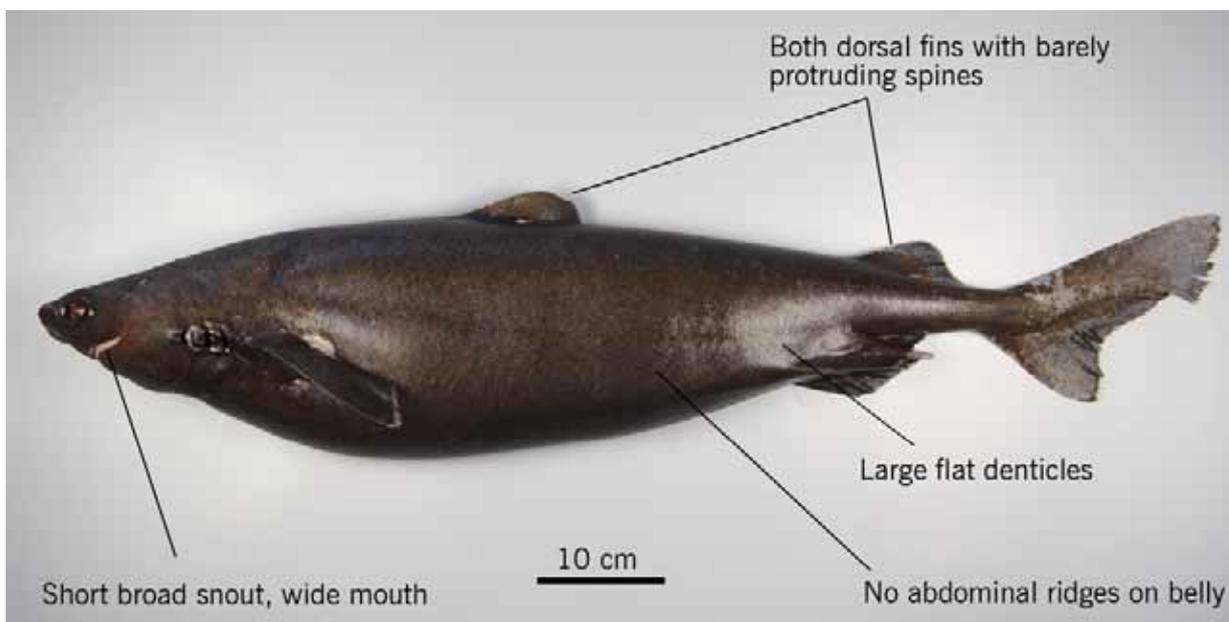
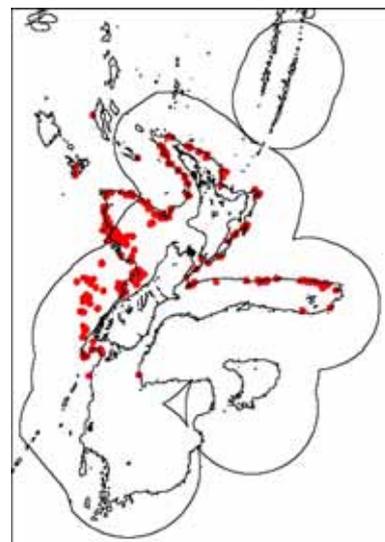
Family: 37. Somniosidae (sleeper sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: CYL

MFish research code: CYL



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

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

Size: To about 120 cm TL.

Distribution: Widespread mostly around northern New Zealand. Occurs widely in the Pacific, Atlantic, and Indian Oceans.

Depth: From depths of 500 m and greater off New Zealand, to depths of 3700 m elsewhere.

Similar species: Seal shark (*Dalatias licha*) is blacker, has a very short snout, and lacks dorsal fin spines. Owston's dogfish (*Centroscymnus owstoni*) has distinct abdominal ridges. Longnose velvet dogfish (*Centroscymnus crepidater*) has a very elongated snout. Plunket's shark (*Proscymnodon plunketi*) has a body which tapers much more rapidly from behind the pectoral fin, small roughened dermal denticles, and a first dorsal fin which extends forward as a ridge to above the rear edge of the pectoral fin. Sleeper shark (*Somniosus*) lacks fin spines.

Biology & ecology: Demersal and midwater.

References

Compagno (1984a), Compagno et al. (2005), Cox & Francis (1997), Kyne & Simpfendorfer (2007), Last & Stevens (2009), Paulin et al. (1989).

Longnose velvet dogfish

Centroscymnus crepidater

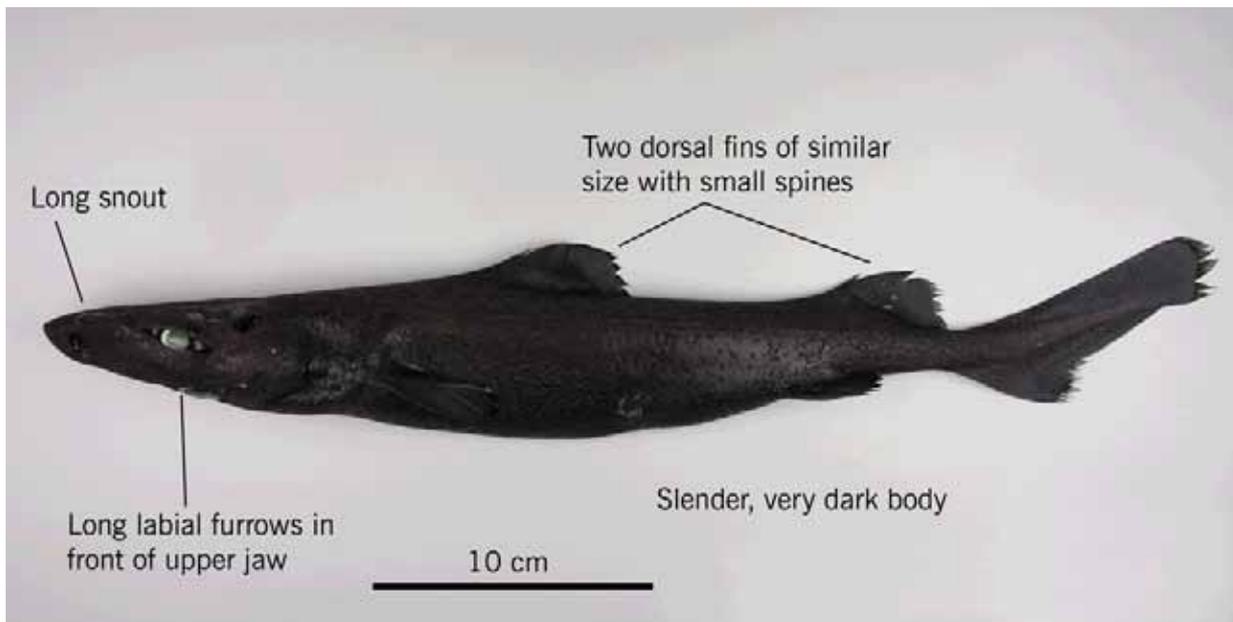
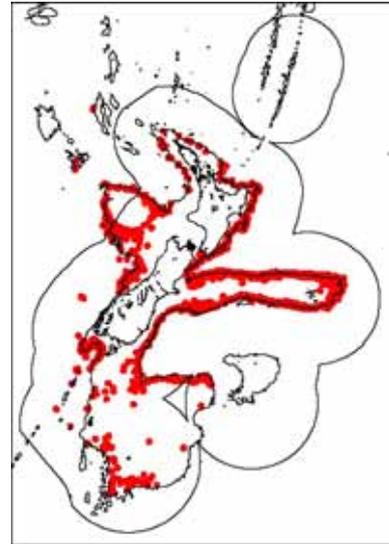
Family: 37. Somniosidae (sleeper sharks)

Maori names: n.a.

Other names: Golden dogfish (Aus.)

MFish reporting code: CYP

MFish research 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, small dorsal fin spines, and 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.

Distribution: Widespread around New Zealand, also present off southeast Australia, Japan, and in the eastern Atlantic Ocean.

Depth: 500 to 1500 m off New Zealand, deeper elsewhere.

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

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

References

Blackwell & Stevenson (2003), Compagno (1984a), Compagno et al. (2005), Cox & Francis (1997), Daley et al. (2002), Irvine et al. (2006a), Kyne & Simpfendorfer (2007), Last & Stevens (2009), Paulin et al. (1989), Wetherbee (2000).

Owston's dogfish

Centroscymnus owstoni

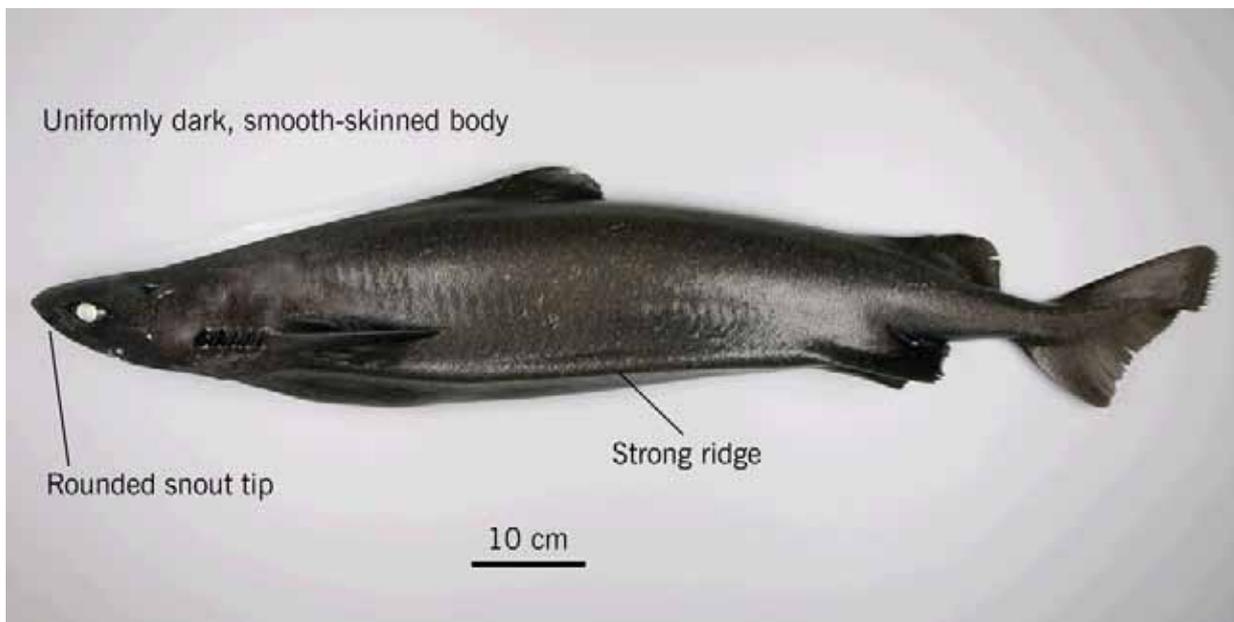
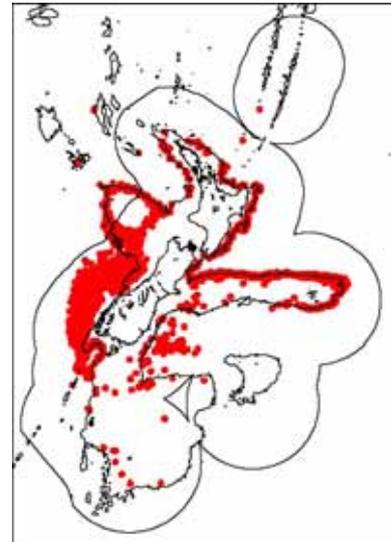
Family: 37. Somniosidae (sleeper sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: CYO

MFish research code: CYO



Distinguishing features: Moderate-sized with a stocky body. Strong abdominal ridges between pectoral and pelvic fin bases. Snout length about equal to mouth width, rounded to slightly pointed. Teeth near centre of lower jaw distinctly oblique. Second dorsal fin base longer than space between it and upper caudal fin origin. Smooth dermal denticles.

Colour: Uniformly dark brown to black.

Size: To about 120 cm TL.

Distribution: Widespread in New Zealand, but relatively more common from Chatham Rise northwards. Elsewhere, present off southern Australia and in several regions of the Pacific and Atlantic Oceans.

Depth: 500 to 1500 m.

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

Biology & ecology: Demersal and midwater.

References

Blackwell & Stevenson (2003), Compagno (1984a), Compagno et al. (2005), Cox & Francis (1997), Daley et al. (2002), Kyne & Simpfendorfer (2007), Last & Stevens (2009), Paulin et al. (1989), Wetherbee (2000).

Plunket's shark

Proscymnodon plunketi

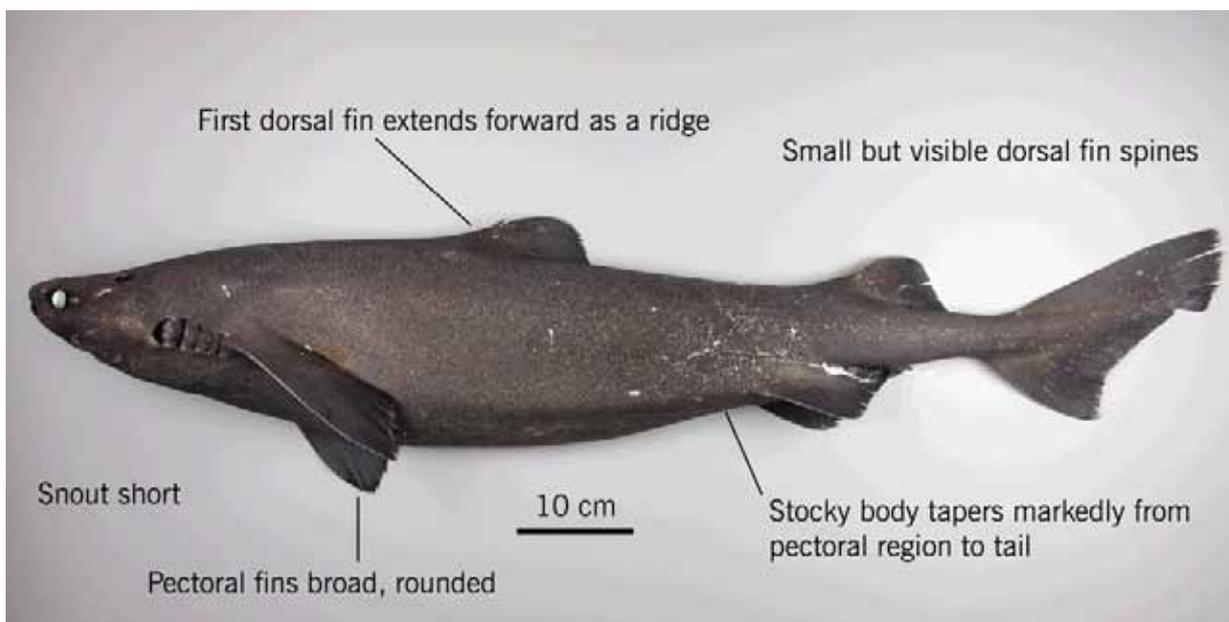
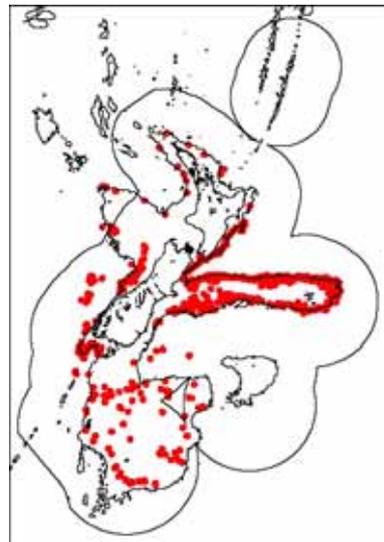
Family: 37. Somniosidae (sleeper sharks)

Maori names: n.a.

Other names: Plunket's dogfish

MFish reporting code: PLS

MFish research code: PLS



Distinguishing features: Moderate-sized, stocky anterior to the pectoral region, tapering rapidly from behind the pectoral fins to the tail. Short broad head and snout. First dorsal fin extends forwards as a ridge. Dorsal fin spines small, but do protrude. Pectoral fins broad and rounded. Dermal denticles only moderate in size, ridged.

Colour: Uniformly brownish-black, smaller specimens paler.

Size: Males to 130 cm, females to 170 cm TL.

Distribution: Widespread around New Zealand, also occurs off southeast Australia and in the southern Indian Ocean.

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, greyish-brown. Seal shark (*Dalatias licha*) lacks dorsal fin spines. Owston's dogfish (*Centroscymnus owstoni*) has strong abdominal ridges. Portuguese dogfish (*Centroscymnus coelolepis*) has large flat smooth dermal denticles.

Biology & ecology: Demersal and midwater.

References

Amaoka et al. (1990), Compagno (1984a), Compagno et al. (2005), Cox & Francis (1997), Garrick (1959b), Kyne & Simpfendorfer (2007), Last & Stevens (2009), Paulin et al. (1989).

Velvet dogfish

Zameus squamulosus

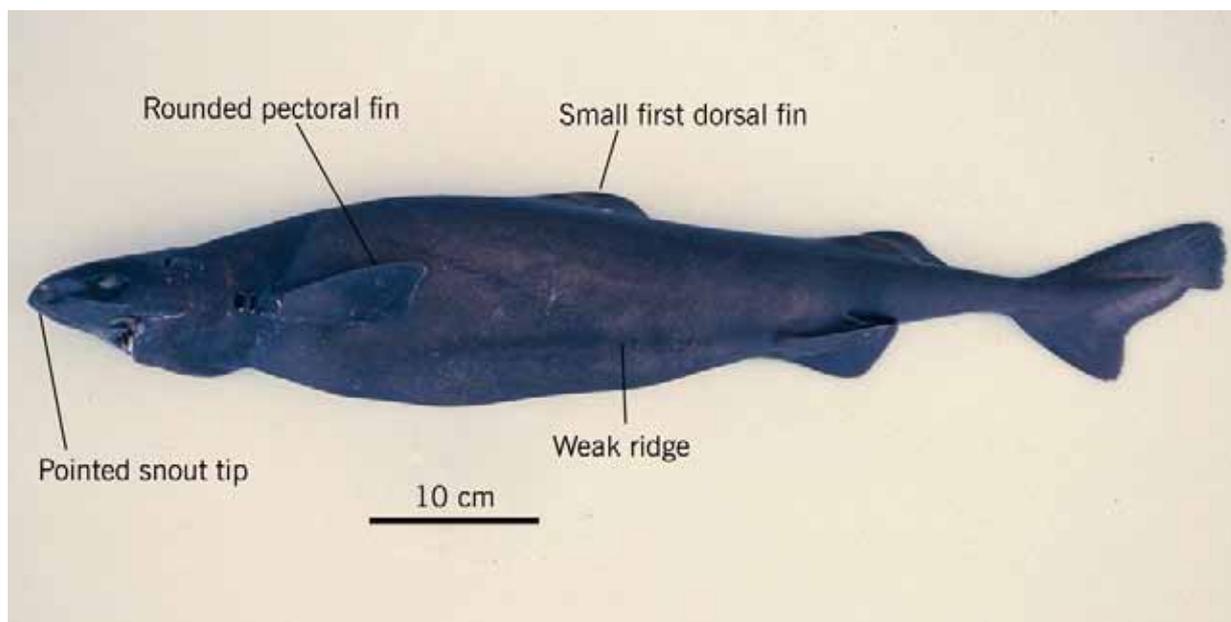
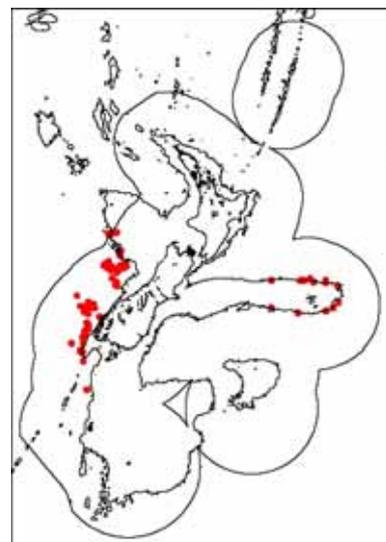
Family: 37. Somniosidae (sleeper sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: OSD

MFish research 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. Teeth near centre of lower jaw erect or only slightly oblique. Small (low) first dorsal fin. Rounded pectoral fins. Second dorsal fin base shorter than distance between it and upper caudal fin origin.

Colour: Uniformly very dark brown to black.

Size: To about 85 cm TL.

Distribution: In New Zealand reported mainly from the eastern Chatham Rise. Probably worldwide, but not recorded from the eastern Pacific Ocean.

Depth: 550 to at least 1500 m, and has been taken at or near the surface over deep water.

Similar species: Owston's dogfish (*Centroscymnus owstoni*) 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.

References

Compagno (1984a), Compagno et al. (2005), Cox & Francis (1997), Last & Stevens (2009), Paulin et al. (1989), Taniuchi & Garrick (1986).

Prickly dogfish

Oxynotus bruniensis

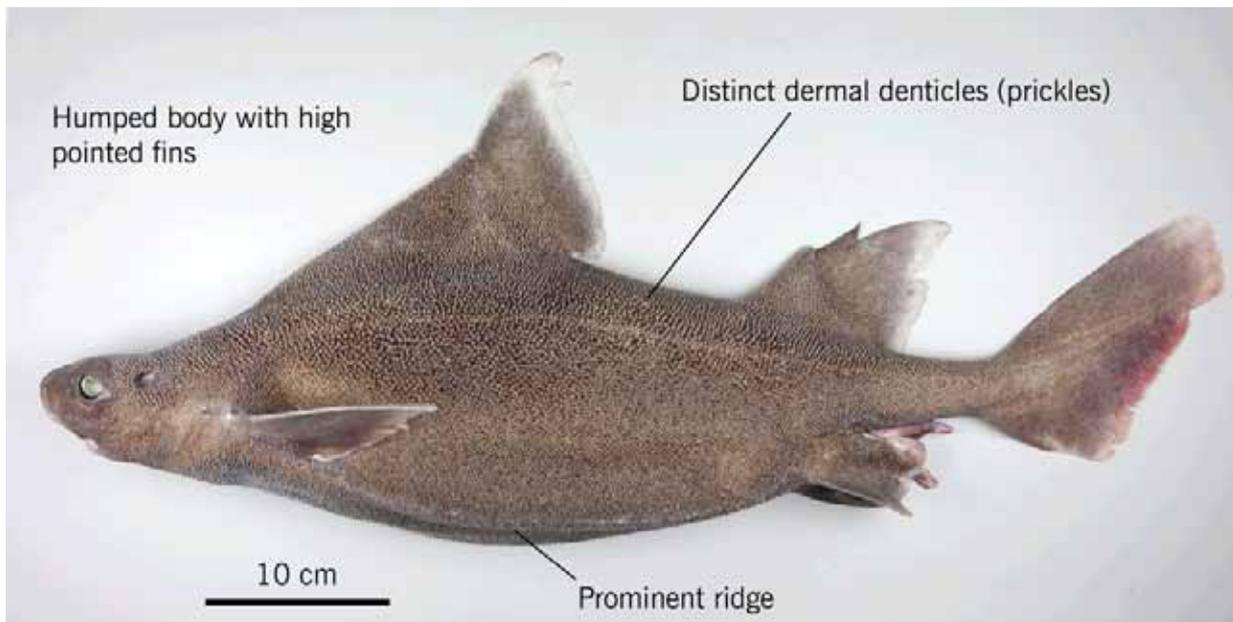
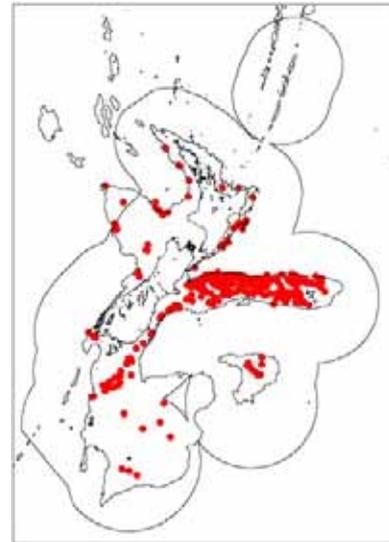
Family: 38. Oxynotidae (rough sharks)

Maori names: n.a.

Other names: n.a.

MFish reporting code: PDG

MFish research 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.

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

Size: To about 70 cm TL.

Distribution: Widespread around New Zealand. Occurs less commonly off southeast Australia.

Depth: 200 to 1000 m.

Similar species: None.

Biology & ecology: Demersal.

References

Amaoka et al. (1990), Compagno (1984a), Compagno et al. (2005), Cox & Francis (1997), Garrick (1960), Last & Stevens (2009), Paulin et al. (1989).

Seal shark

Dalatias licha

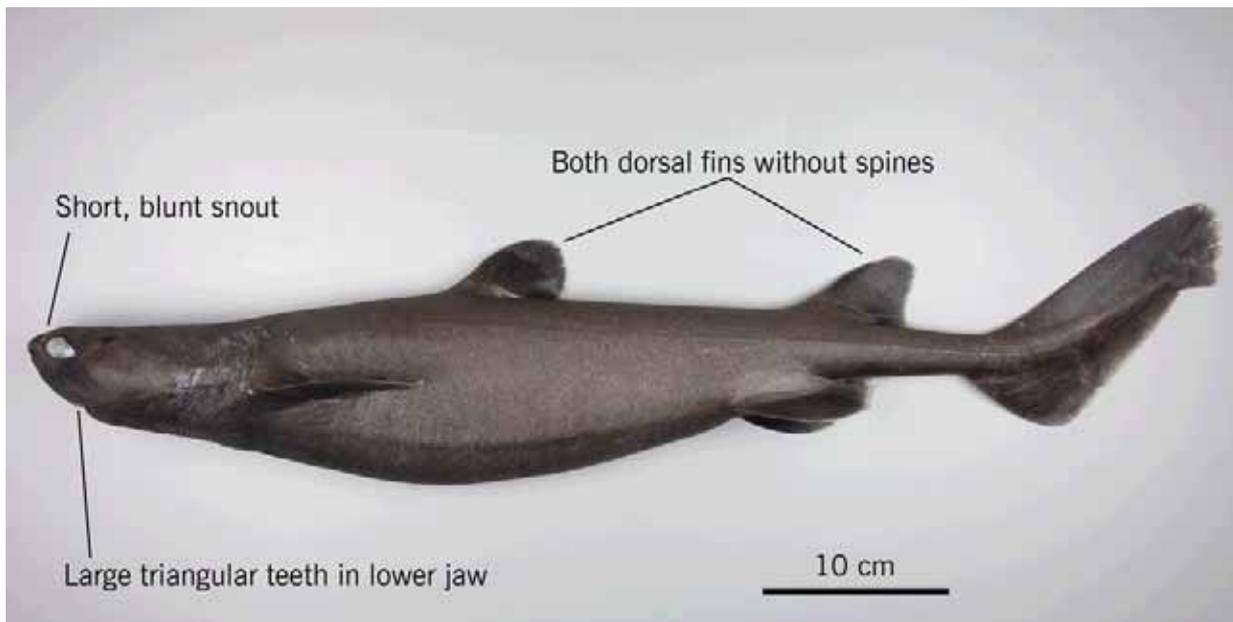
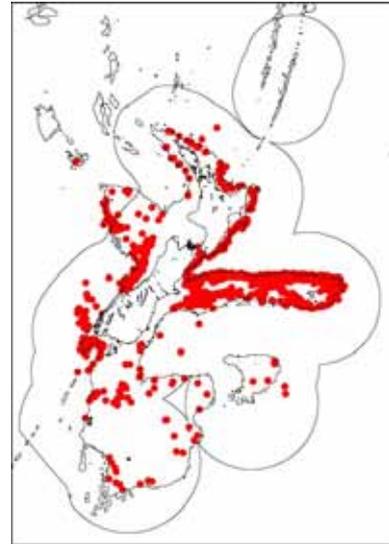
Family: 39. Dalatiidae (kitefin sharks)

Maori names: n.a.

Other names: Black shark

MFish reporting code: BSH

MFish research code: BSH



Distinguishing features: Moderate sized with a short blunt snout giving the head a “seal-like” appearance. First dorsal fin rounded, second more pointed, slightly larger; both without fin spines. Thick lips. Teeth in lower jaw large, triangular, serrated.

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

Size: To about 160 cm TL.

Distribution: Widespread around New Zealand, and widely distributed in the Pacific, Indian, and Atlantic Oceans.

Depth: 400 to 1000 m.

Similar species: Portuguese dogfish (*Centroscymnus coelolepis*) and Owston's dogfish (*C. owstoni*) have slightly longer snouts, and small dorsal fin spines.

Biology & ecology: Demersal, sometimes feeding in midwater.

References

Amaoka et al. (1990), Blackwell & Stevenson (2003), Compagno (1984a), Compagno et al. (2005), Cox & Francis (1997), Garrick (1960), Kyne & Simpfendorfer (2007), Last & Stevens (2009), Paulin et al. (1989).

Electric ray

Torpedo fairchildi

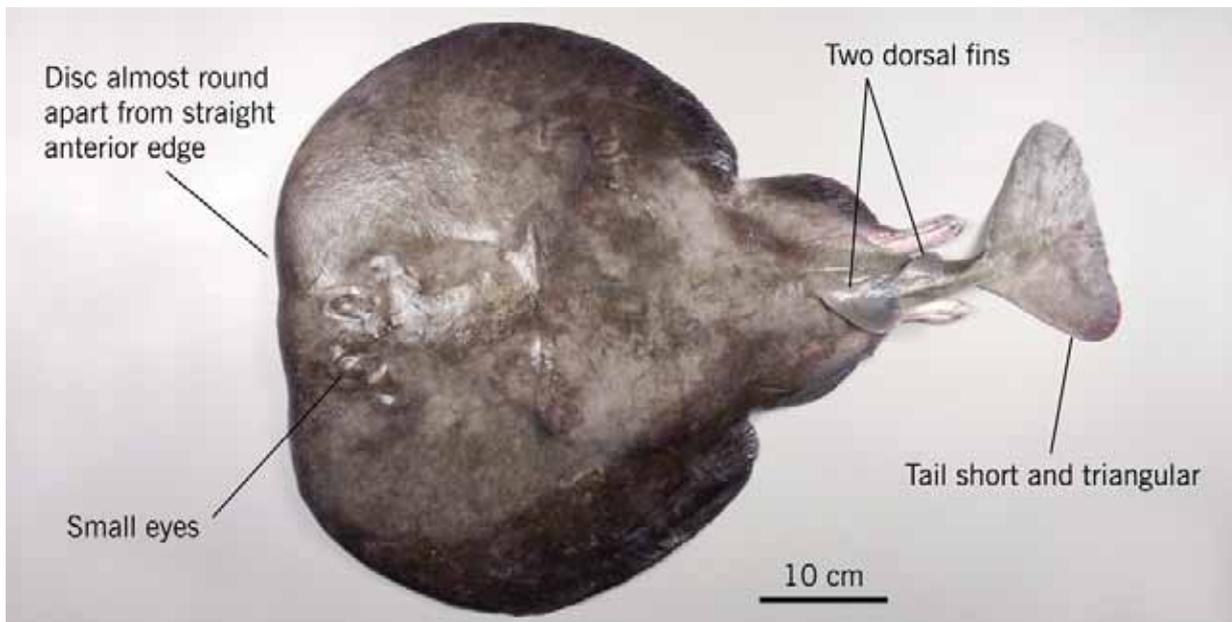
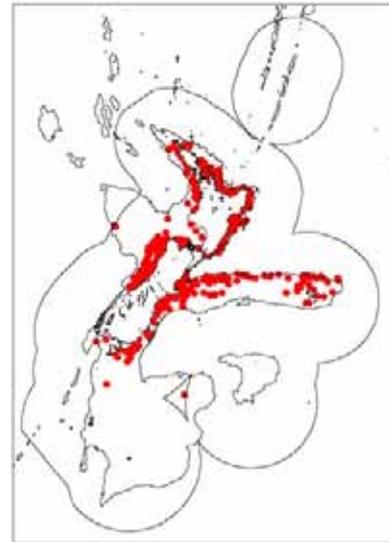
Family: 42. Torpedinidae (torpedo electric rays)

Maori names: n.a.

Other names: n.a.

MFish reporting code: ERA

MFish research code: ERA



Distinguishing features: Disc almost round apart from straight anterior edge, tail short and triangular, eyes small, two dorsal fins.

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

Size: To about 120 cm TL, and probably longer.

Distribution: North Cape to Stewart Island. Known only from New Zealand.

Depth: 0 to 500 m.

Similar species: Two species of sleeper rays (*Typhlonarke* spp.) lack eyes, have a single dorsal fin and a more rounded tail, are chocolate-brown above, and are much smaller.

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

References

Paul (2000), Paulin et al. (1989).

Numbfish

Typhlonarke spp.

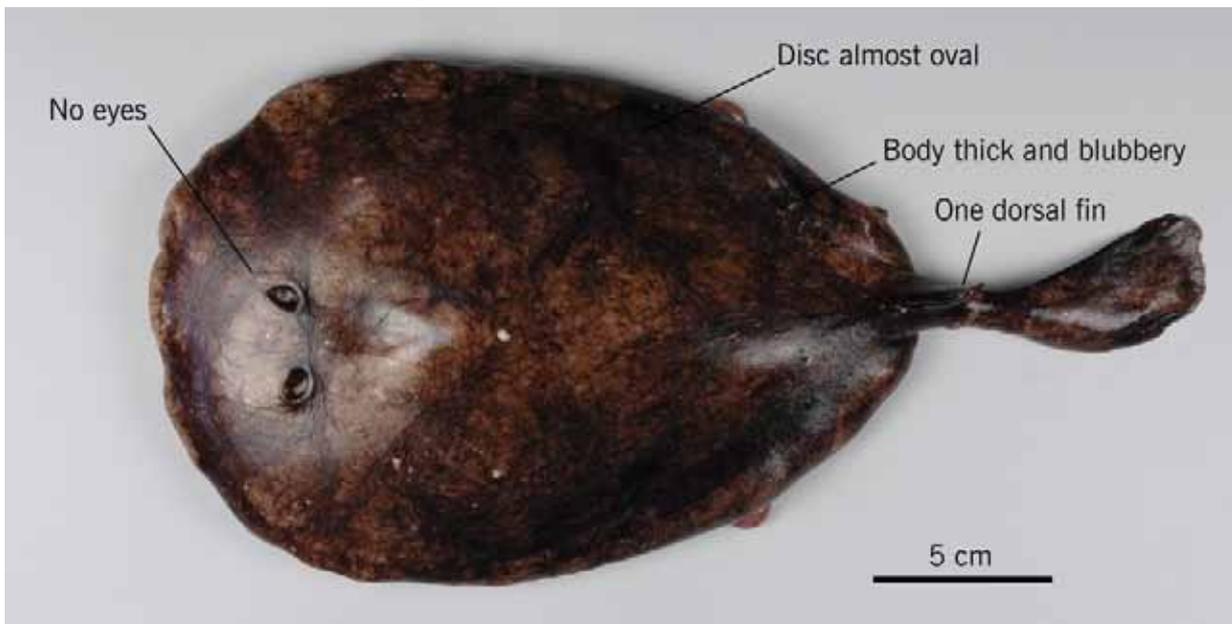
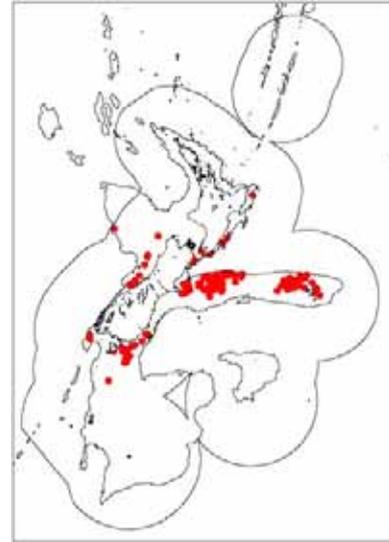
Family: 43b. Narkidae (sleeper rays)

Maori names: n.a.

Other names: Blind electric ray

MFish reporting code: BER

MFish research code: BER



Distinguishing features: No eyes, one dorsal fin, body thick and blubbery.

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

Size: To about 40 cm TL.

Distribution: East Cape to Snares Shelf (rare north of Cook Strait).

Depth: 50 to 600 m.

Similar species: Two species of *Typhlonarke* are recorded. *T. tarakea* (TTA) has a slightly elongate disc without a notch under the tail, and the pelvic fins reach back to or just beyond disc margin. *T. aysoni* (TAY) has a more circular disc with a notch in the disc under the tail, and shorter pelvic fins not reaching back to the disc margin. The electric ray (*Torpedo fairchildi*) has eyes, two dorsal fins, a triangular tail and grows much larger.

Biology & ecology: Demersal.

References

Garrick (1951), Paulin et al. (1989).

Deepwater spiny skate

Amblyraja cf. hyperborea

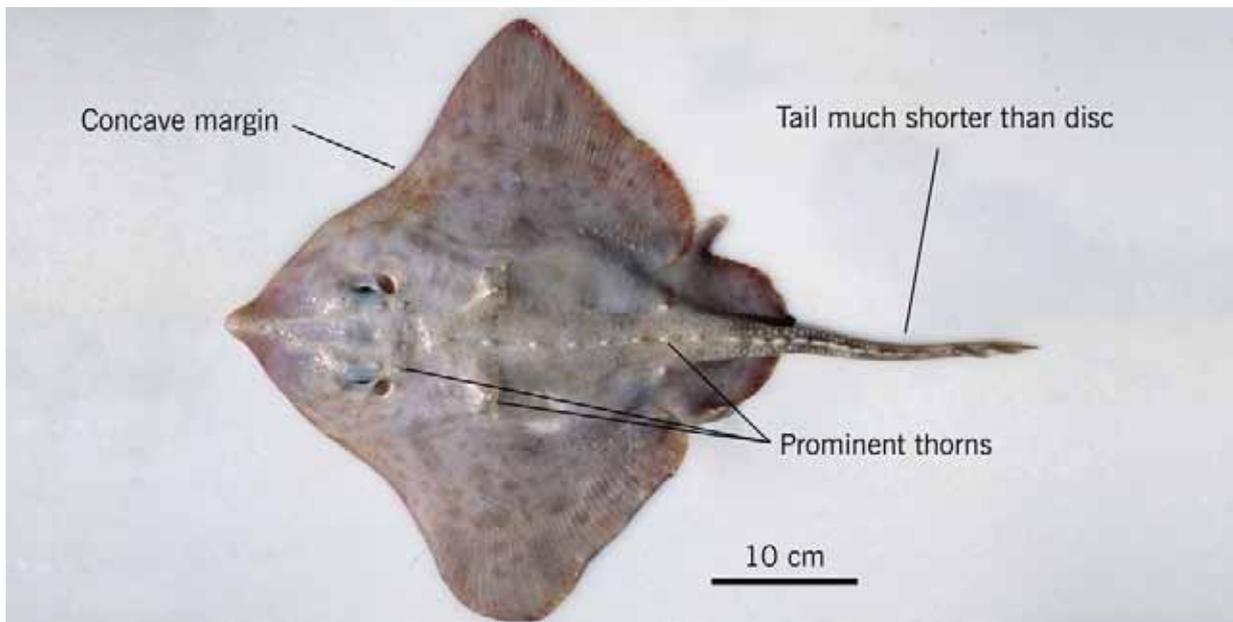
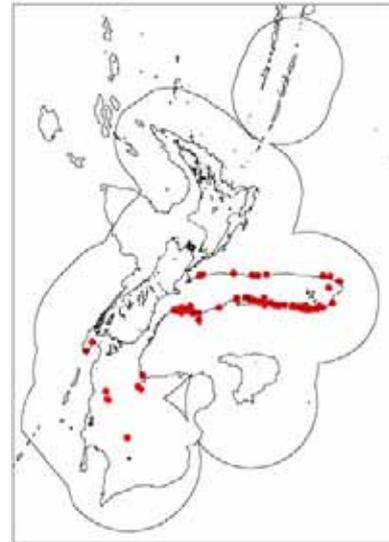
Family: 48a. Rajidae (skates)

Maori names: n.a.

Other names: n.a.

MFish reporting code: DSK

MFish research code: DSK



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

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

Size: To at least 110 cm TL.

Distribution: Chatham Rise to the Campbell Plateau. Widely distributed in temperate waters of the Atlantic and Pacific Oceans.

Depth: 500 m to over 1500 m.

Similar species: Other skates lack the combination of short tail, prominent thorns along the midline, and concave anterior disc margin. Softnose skate (*Arhynchobatis asperrimus*) has one dorsal fin.

Biology & ecology: Demersal.

References

Last & Stevens (2009).

Smooth skate

Dipturus innominatus

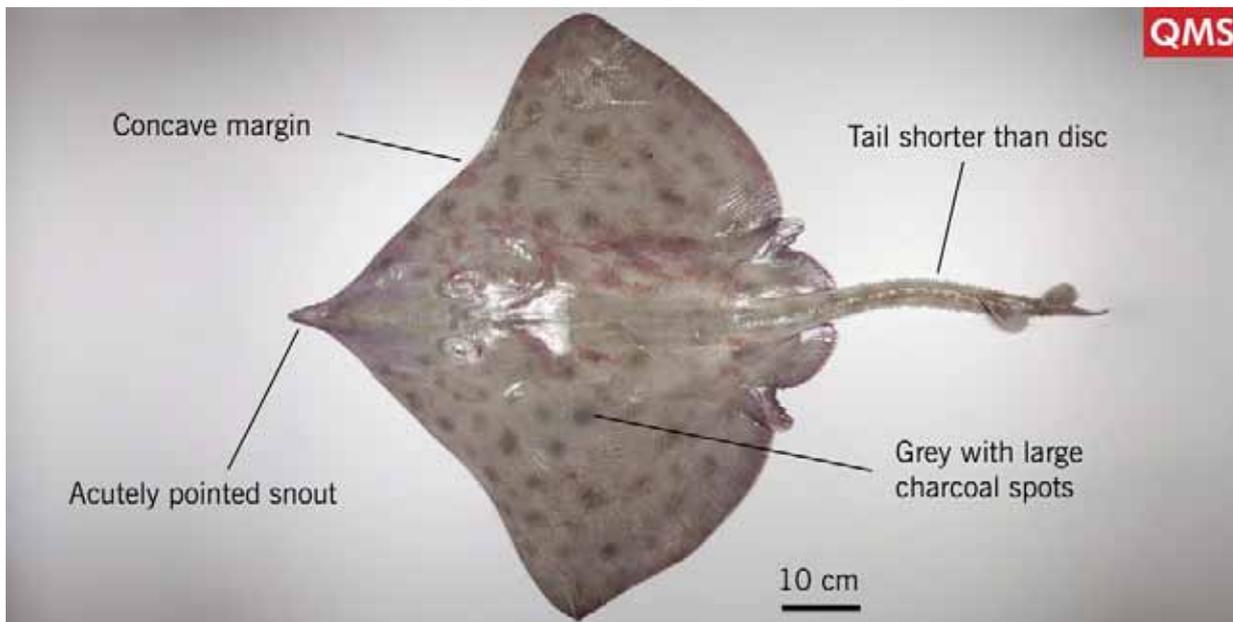
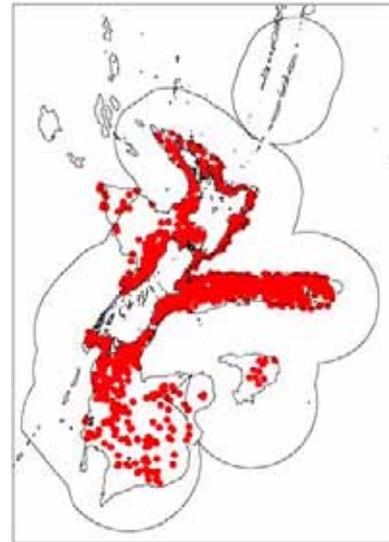
Family: 48a. Rajidae (skates)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SSK

MFish research code: SSK



Distinguishing features: Tail much shorter than disc. Grey above with large charcoal spots. Snout acutely pointed, anterior disc margin concave.

Colour: Grey above with large charcoal spots which are sometimes inconspicuous, underside variable, part whitish, plus blotchy light grey to brownish.

Size: To about 240 cm TL.

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

Depth: 0 to 800 m.

Similar species: Other skates lack the combination of short tail, concave anterior disc margin, and disc colour pattern.

Biology & ecology: Demersal.

References

Garrick & Paul (1974), Paul (2000), Paulin et al. (1989).

Rough skate

Zearaja nasuta

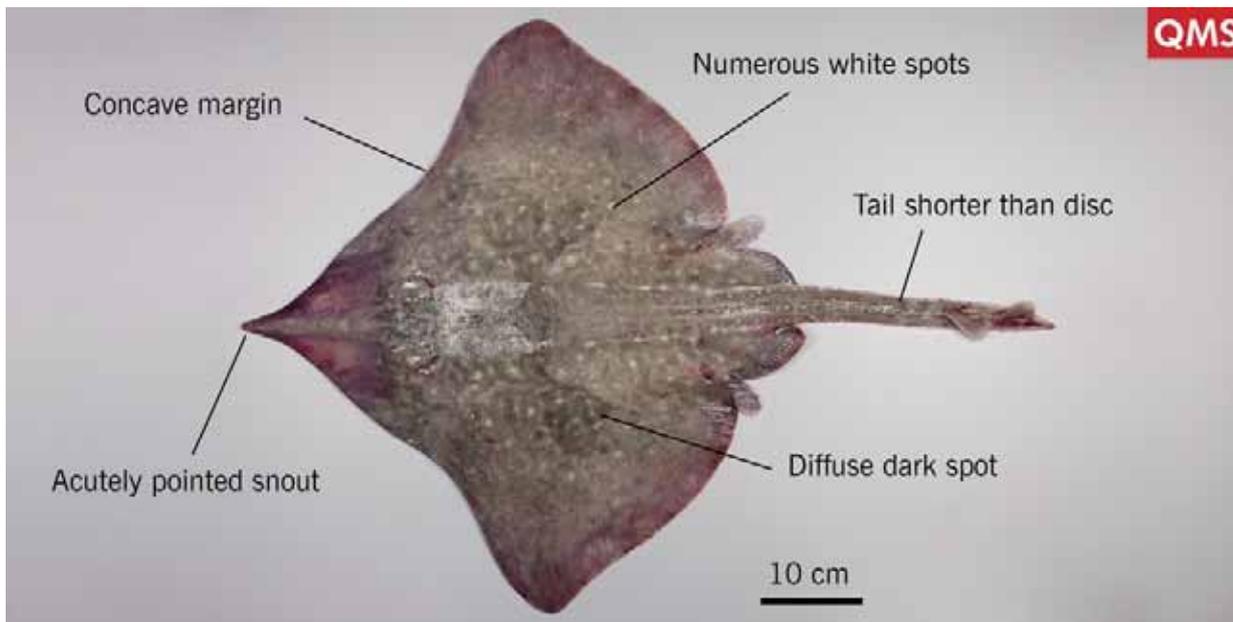
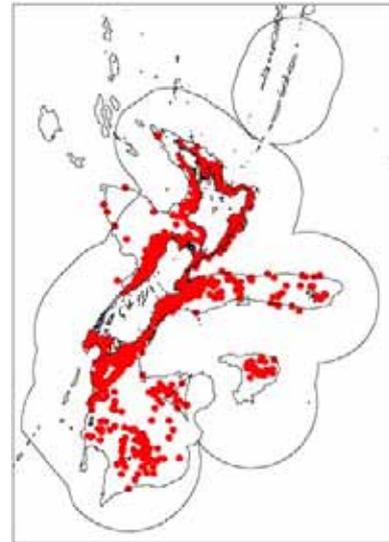
Family: 48a. Rajidae (skates)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RSK

MFish research code: RSK



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

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

Size: To about 120 cm TL.

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

Depth: 0 to 600 m.

Similar species: Other skates lack the combination of short tail, concave anterior disc margin, and disc colour pattern.

Biology & ecology: Demersal.

References

Garrick & Paul (1974), Last & Gledhill (2007), Paul (2000), Paulin et al. (1989).

Softnose skate (longtail skate)

Arhynchobatis asperimus

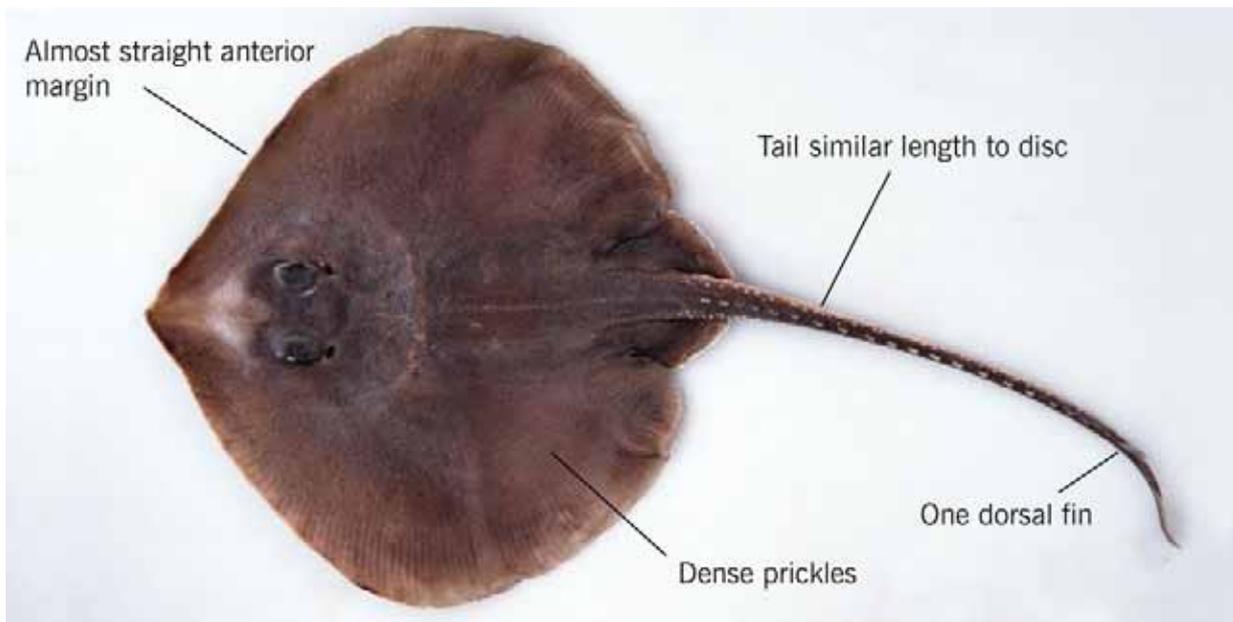
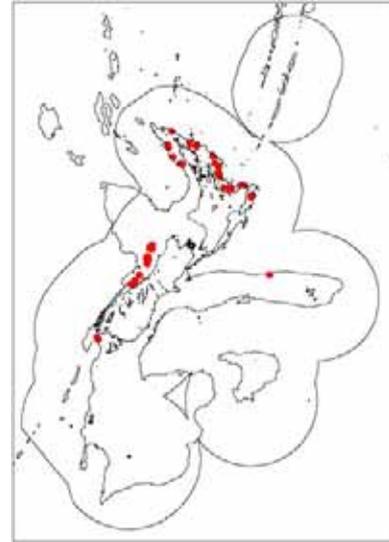
Family: 48b. Arhynchobatidae (softnose skates)

Maori names: n.a.

Other names: n.a.

MFish reporting code: LSK

MFish research code: LSK



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

Colour: Grey to brown above, pale below.

Size: To at least 75 cm TL.

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

Depth: 100 to 700 m.

Similar species: Other skates have two dorsal fins.

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

References

Garrick (1954b, 1957b), Garrick & Paul (1974), Paulin et al. (1989).

Longnose deepsea skate

Bathyraja shuntovi

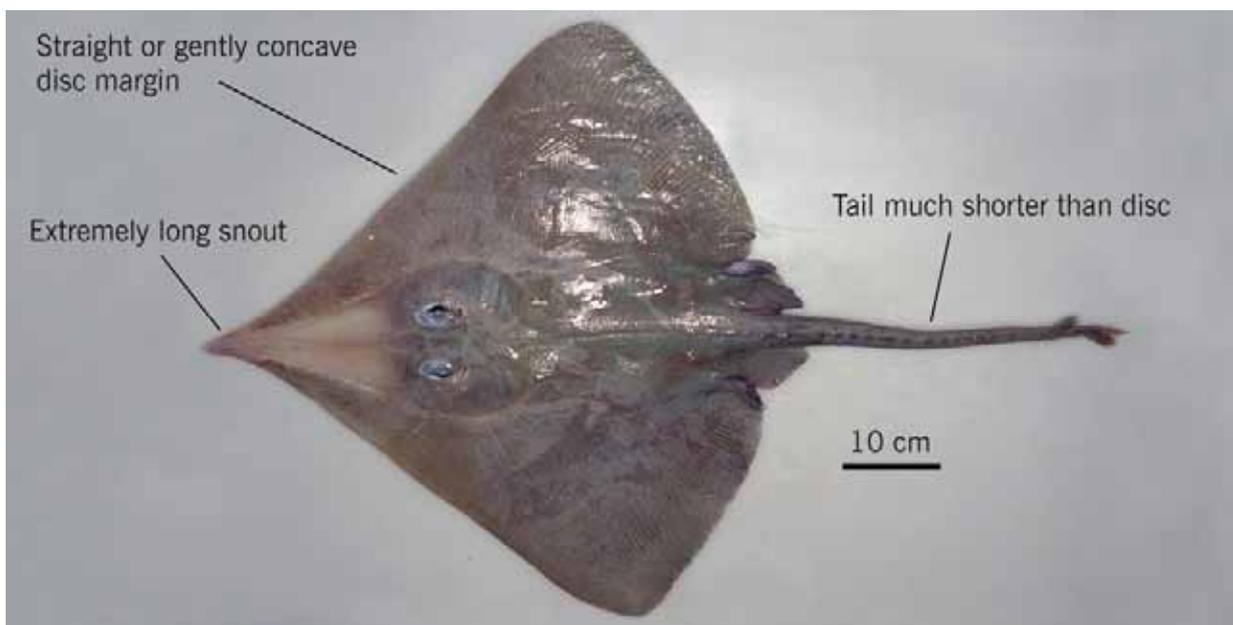
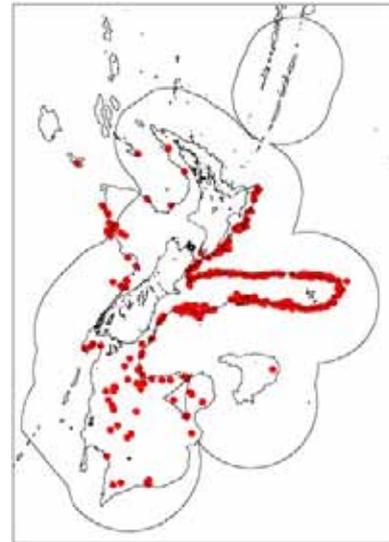
Family: 48b. Arhynchobatidae (softnose skates)

Maori names: n.a.

Other names: n.a.

MFish reporting code: PSK

MFish research code: PSK



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

Colour: Grey to brown above, pale below.

Size: To about 140 cm TL.

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

Depth: 500 to over 1500 m.

Similar species: Other skates lack a short tail and extremely long snout. Softnose skate (*Arhynchobatis asperrimus*) has one dorsal fin.

Biology & ecology: Demersal.

References

Paulin et al. (1989).

Smooth deepsea skate

Brochiraja asperula

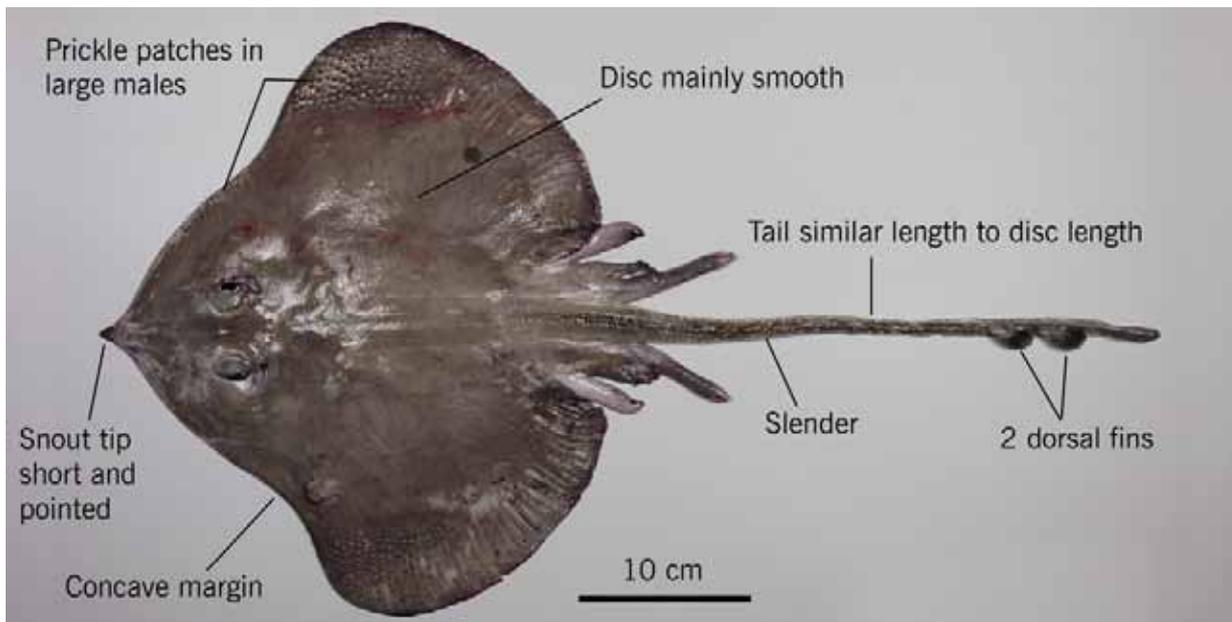
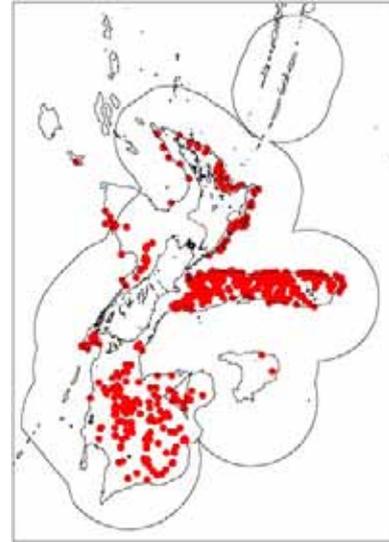
Family: 48b. Arhynchobatidae (softnose skates)

Maori names: n.a.

Other names: n.a.

MFish reporting code: OSK

MFish research code: BTA



Distinguishing features: Tail similar length to disc length, very slender. Disc mainly smooth except for prickly patches on body midline, and on wing tips and cheeks in males. Anterior wing margin with concave 'notch'. Snout tip short and sharply pointed.

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

Size: To at least 57 cm TL.

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

Depth: 200 to 1200 m.

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

Biology & ecology: Demersal.

References

Garrick & Paul (1974), Last & McEachran (2006).

Prickly deepsea skate

Brochiraja spinifera

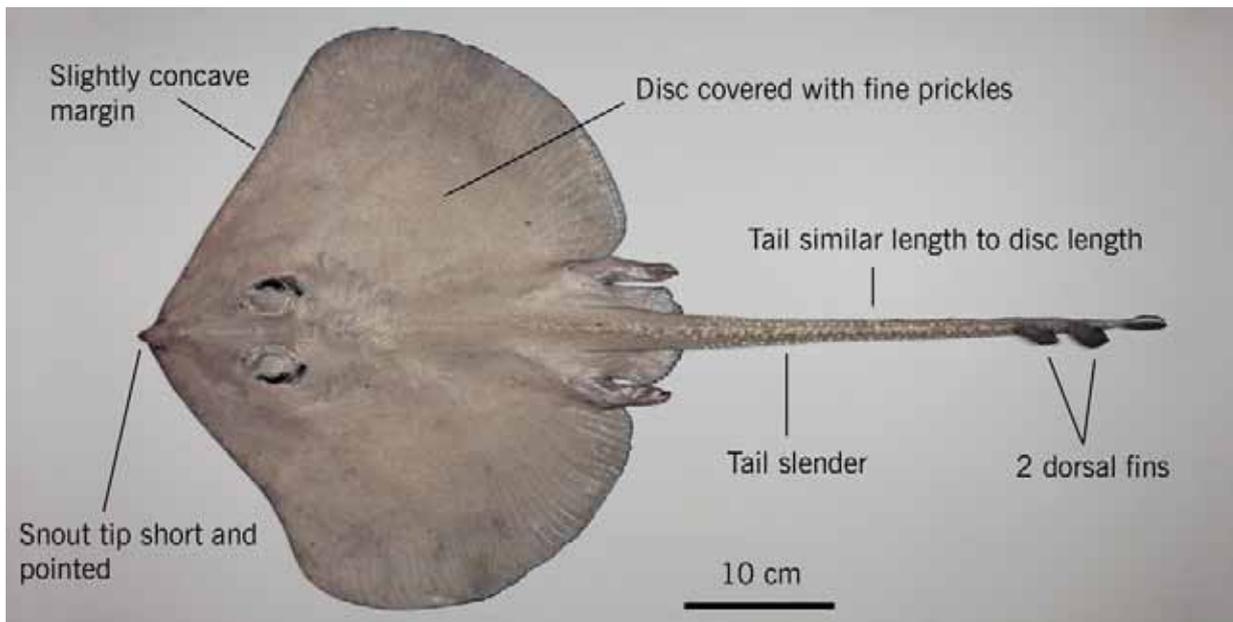
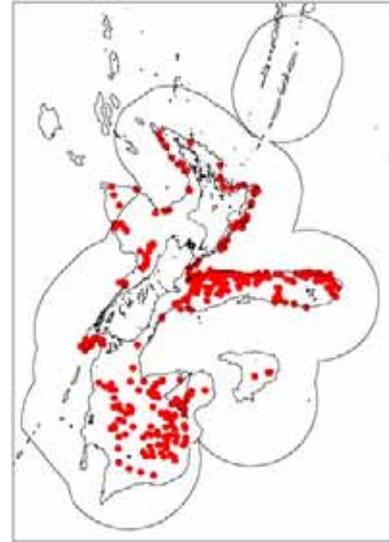
Family: 48b. Arhynchobatidae (softnose skates)

Maori names: n.a.

Other names: n.a.

MFish reporting code: OSK

MFish research code: BTS



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

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

Size: To at least 80 cm TL.

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

Depth: 200 to 1200 m.

Similar species: Dwarf spiny skate (*B. microspinifera*) also has fine prickles on the upper disc but upper and lower sides of disc are dark brown, reaches only about 325 mm TL, and is known only from the North Island. Other skates lack the combination of long tail, disc covered with prickles, and slightly concave anterior disc margin. Softnose skate (*Arhynchobatis asperrimus*) has one dorsal fin.

Biology & ecology: Demersal.

References

Garrick & Paul (1974), Last & McEachran (2006).

Short-tailed black ray

Dasyatis brevicaudata

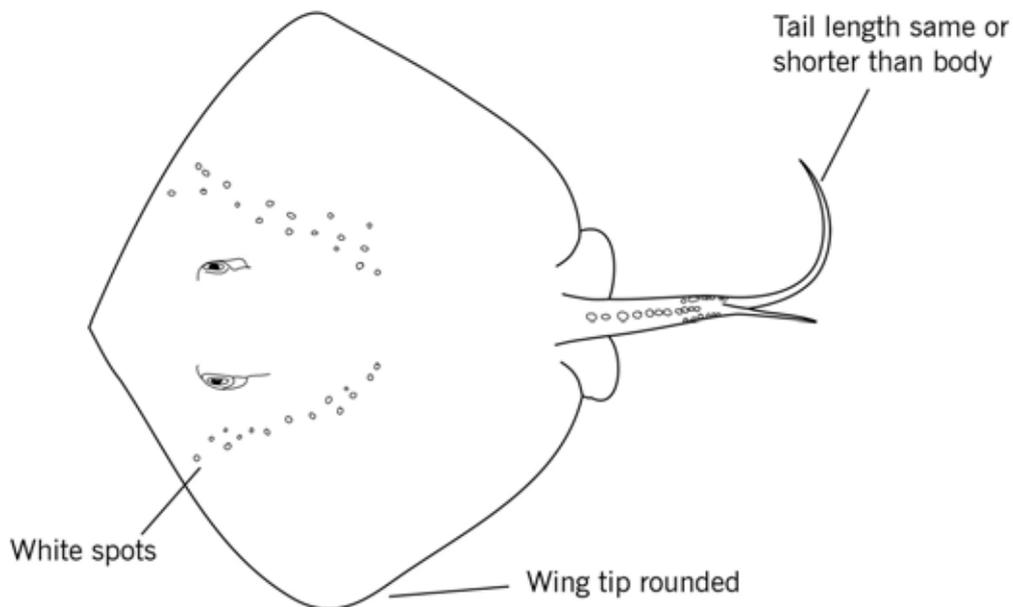
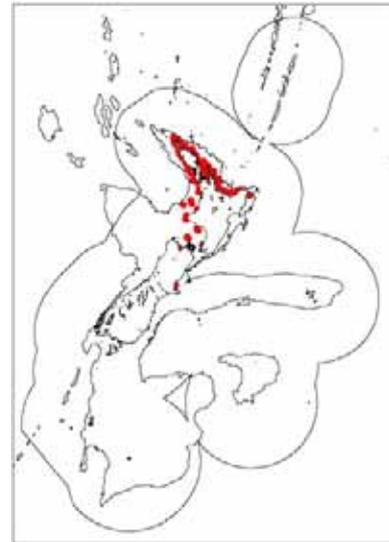
Family: 55. Dasyatidae (whiptail stingrays)

Maori names: Oru, paakaurua, roha, whai repo

Other names: Short-tailed stingray

MFish reporting code: BRA

MFish research code: BRA



Distinguishing features: Tail same length or shorter than body, row of white spots along each wing, wing tips rounded. Underside with a "flying-gull" shaped crease between the rear gill slits.

Colour: Dark grey or black above with row of white spots (sometimes faint) along each wing, white below with broad grey margin.

Size: To 430 cm TL.

Distribution: Kermadec Islands to Foveaux Strait and the Chatham Islands, but appears to be more common in the north. Also occurs in Australia and South Africa.

Depth: 0 to 200 m.

Similar species: Long-tailed stingray (*Dasyatis thetidis*) has a longer tail (if undamaged) up to twice as long as body, and lacks white spots on wings. 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. Inshore.

References

Anderson et al. (1998), Francis (2001), Last & Stevens (2009), Paul (2000), Paulin et al. (1989).

Long-tailed stingray

Dasyatis thetidis

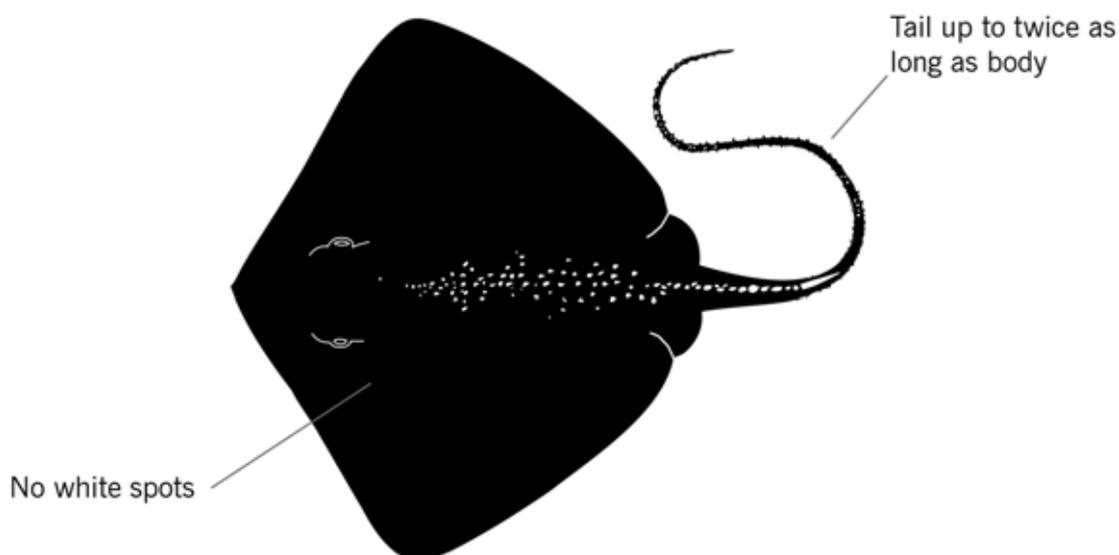
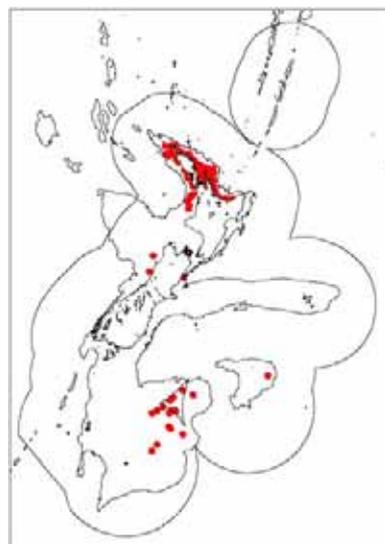
Family: 55. Dasyatidae (whiptail stingrays)

Maori names: Oru, paakaurua, roha, whai repo

Other names: n.a.

MFish reporting code: WRA

MFish research code: WRA



Distinguishing features: Tail (if undamaged) up to twice as long as body, no white spots on wings, but two short rows of white spots near tail base, wing tips rounded.

Colour: Dark olive-green to black above without white spots on wings, but two short rows of white spots near tail base, white below.

Size: To 400 cm TL.

Distribution: Three Kings Islands to Cook Strait. Records from offshore on the Campbell and Bounty Plateaus are not this species. Also occurs in Australia and South Africa.

Depth: 0 to 100m.

Similar species: Short-tailed stingray (*Dasyatis brevicaudata*) has a tail the same length or shorter than body, row of white spots along each wing, underside with a "flying-gull" shaped crease between the 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. Inshore.

References

Anderson et al. (1998), Francis (2001), Last & Stevens (2009), Paul (2000), Paulin et al. (1989).

Eagle ray

Myliobatis tenuicaudatus

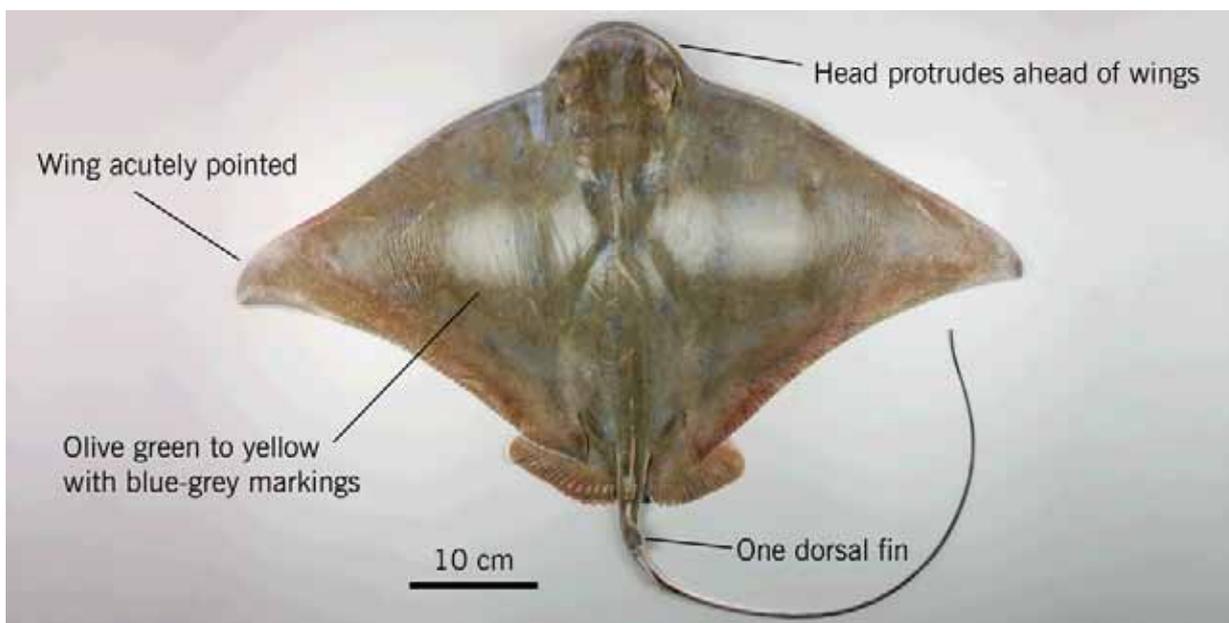
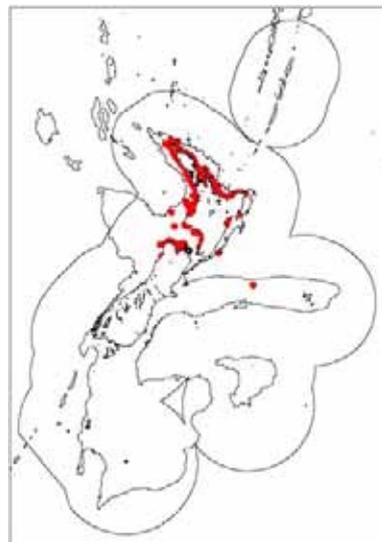
Family: 58a. Myliobatidae (eagle rays)

Maori names: Whai repo

Other names: n.a.

MFish reporting code: EGR

MFish research 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 200 cm TL.

Distribution: North and central New Zealand.

Depth: 0 to 75 m.

Similar species: Short-tailed and long-tailed stingrays (*Dasyatis brevicaudata* and *D. thetidis*) lack acutely pointed wing tips, a protruding head, and a dorsal fin.

Biology & ecology: Demersal.

References

Francis (2001), Paul (2000), Paulin et al. (1989).

Abyssal halosaur

Halosauropsis macrochir

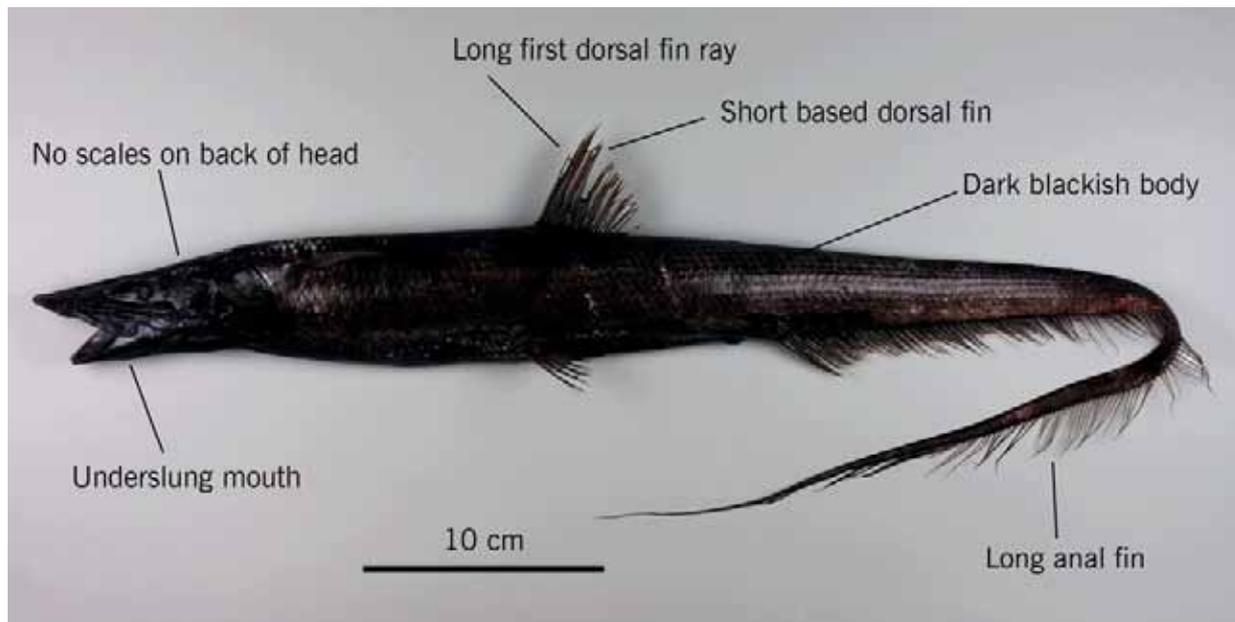
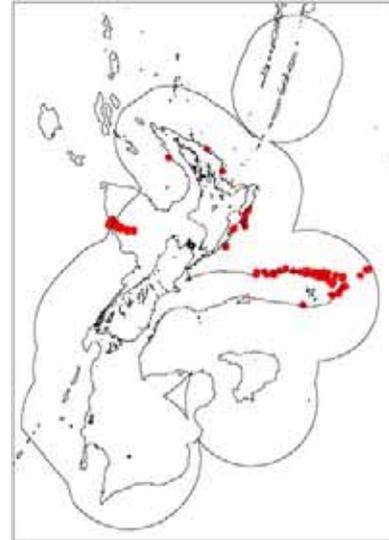
Family: 72. Halosauridae (halosaurs)

Maori names: n.a.

Other names: n.a.

MFish reporting code: UNI

MFish research code: HAL



Distinguishing features: 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. Body blackish-brown. No scales on the top of the head behind the eyes. Long first ray in dorsal fin. 14 lateral line scales from the origin behind the head to the pelvic fin.

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

Size: To at least 80 cm TL.

Distribution: Central and northern New Zealand. Australia (Vic, Tas, SA), Atlantic, northeast Pacific and subantarctic Indian Oceans.

Depth: 1000 to 3200 m.

Similar species: *Aldrovandia affinis* has a very short first ray in the 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 behind the eyes.

Biology & ecology: Demersal.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989).

Common halosaur

Halosaurus pectoralis

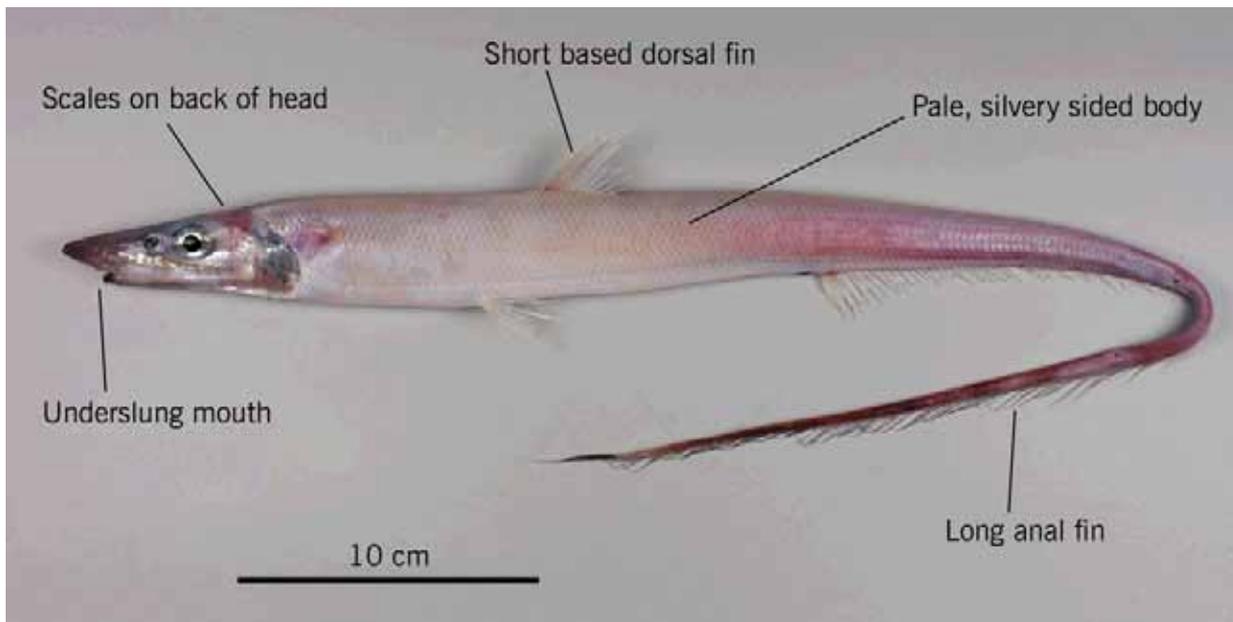
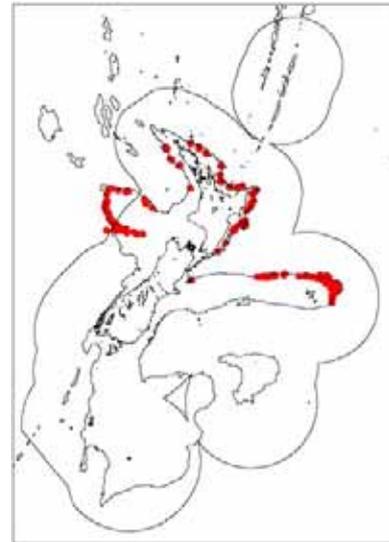
Family: 72. Halosauridae (halosaurs)

Maori names: n.a.

Other names: n.a.

MFish reporting code: UNI

MFish research code: HPE



Distinguishing features: 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. Body pale with silvery sides and belly. Scales present on the top of the head behind the eyes.

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.

Distribution: Central and northern New Zealand. Australia (NSW, Vic, Tas, SA, WA).

Depth: 700 to 1000 m.

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

Biology & ecology: Demersal.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989).

Spineback

Notacanthus sexspinis

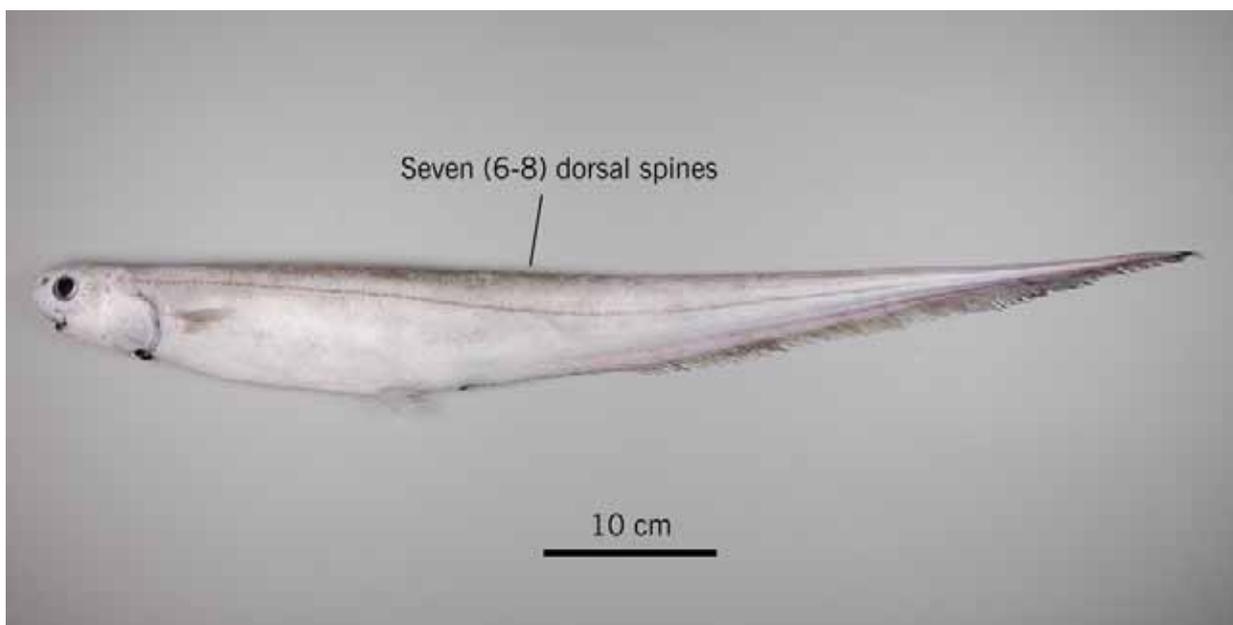
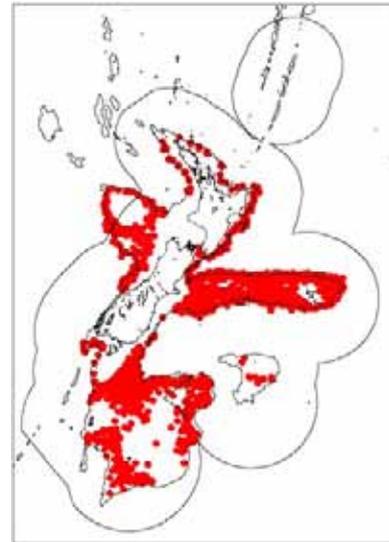
Family: 73. Notacanthidae (spiny eels)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SBK

MFish research 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.

Distribution: Widespread in New Zealand. Australia (Vic, Tas, SA, WA), widespread in Indian and Pacific Oceans.

Depth: 300 to 1100 m.

Similar species: *Notacanthus chemnitzii* has 8 to 12 dorsal spines, more than one row of teeth in the lower jaw and more than one row of palatine teeth on the roof of the mouth, and is larger (to 110 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.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989).

Basketwork eel

Diastobranchus capensis

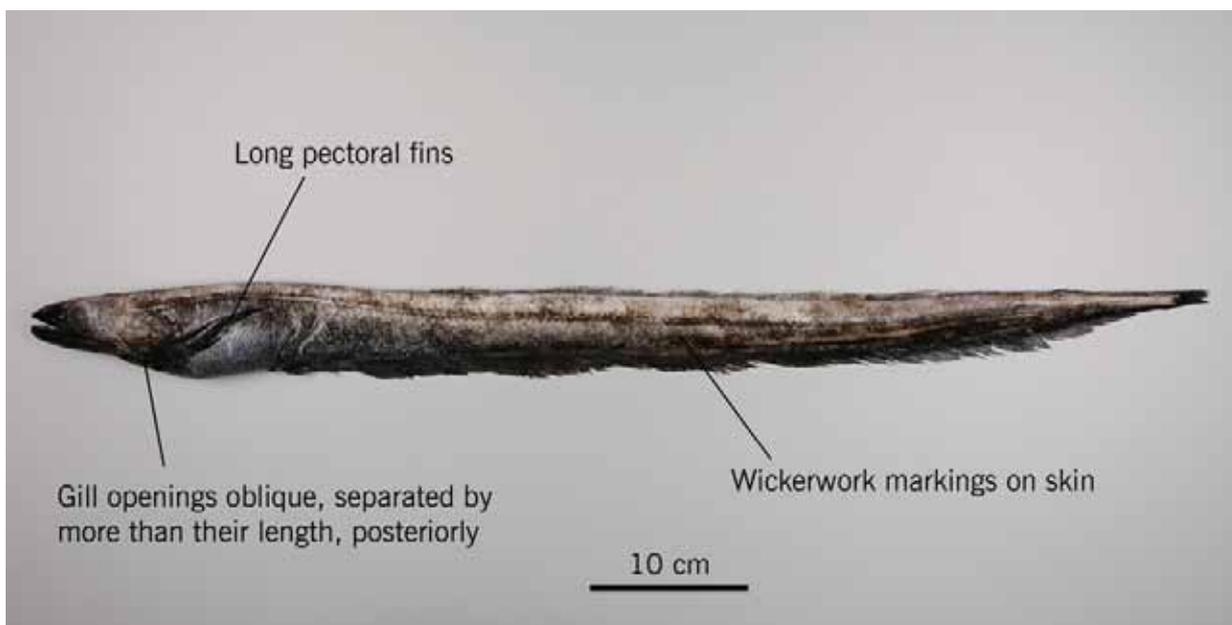
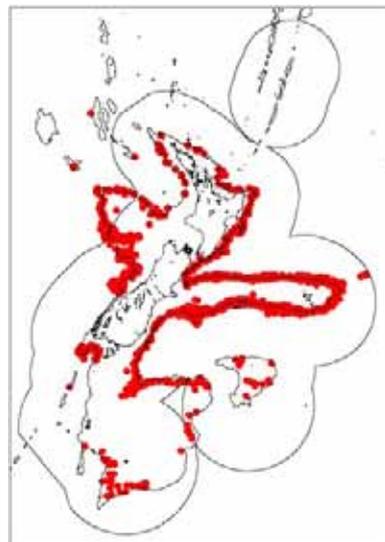
Family: 80. Synphobranchidae (cutthroat eels)

Maori names: n.a.

Other names: n.a.

MFish reporting code: BEE

MFish research code: BEE



Distinguishing features: Gill openings (ahead of pectoral fin base) oblique. Long pectoral fins, about two-thirds of head length. Body covered with a fine pattern of cross-hatched pale and dark lines giving the skin a wickerwork appearance - hence the common name basketwork eel.

Colour: Body dark brownish in larger and greyish-blue in smaller individuals, covered with a fine pattern of cross-hatched pale and dark lines giving a wickerwork appearance. Snout, lower jaw, pectoral, and anal fins dark. Dorsal fins dusky.

Size: To about 144 cm TL.

Distribution: Widely distributed in New Zealand. Australia (southern coast, Tas), southern Africa.

Depth: 700 to 1500 m.

Similar species: Grey cutthroat eel (*Synphobranchus affinis*) is uniform dark grey and has tiny scales forming a fine mosaic pattern on the skin. Other cutthroat eels lack the combination of wickerwork skin pattern, oblique angle of the 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.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989).

Snubnosed eel

Simenchelys parasitica

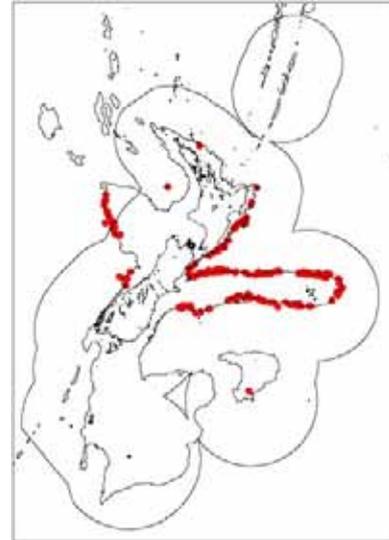
Family: 80. Synaphobranchidae (cutthroat eels)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SNE

MFish research 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 about 59 cm TL.

Distribution: Central and northern New Zealand. South Africa, central East and West Atlantic, Japan.

Depth: 800 to 1500 m.

Similar species: Other cutthroat 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.

References

Anderson et al. (1998), Carpenter & Niem (1999), Paulin et al. (1989), Smith & Heemstra (1986).

Swollenhead conger

Bassanago bulbiceps

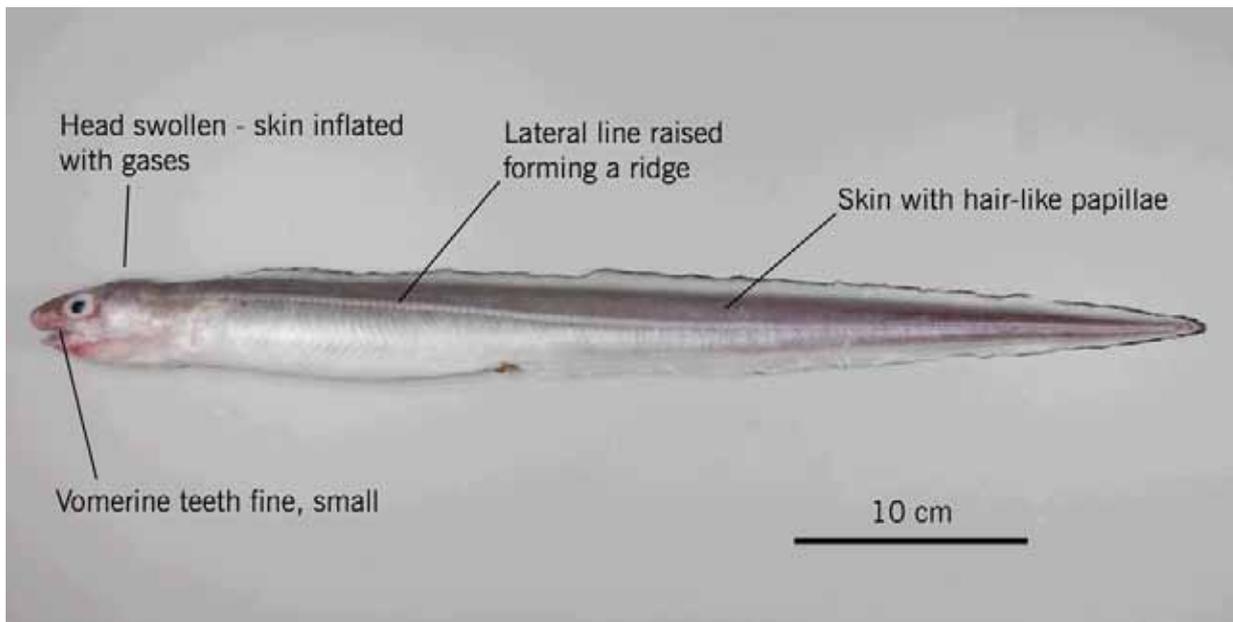
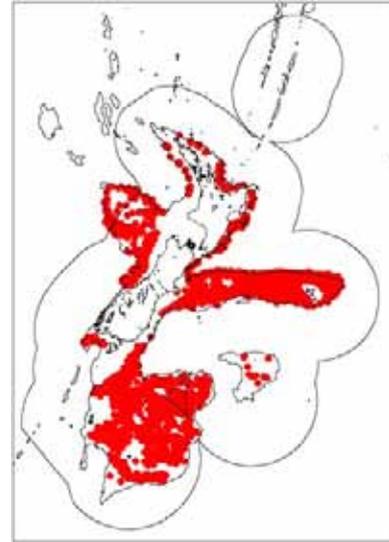
Family: 86. Congridae (conger eels)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SCO

MFish research 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 the base of the pectoral fin. Skin covered with hair-like papillae.

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.

Size: To about 106 cm TL.

Distribution: Widespread in New Zealand. Australia (east coast and Bass Strait).

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), appear to be more slender-bodied, and has 39 to 44 pores along lateral line. Other reported differences between these species require more detailed examination, e.g., dorsal rays 306 to 319 versus 327 to 363, anal rays 204 to 222 versus 240 to 261 (hairy conger versus swollenhead conger respectively).

Biology & ecology: Demersal.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989).

Hairy conger

Bassanago hirsutus

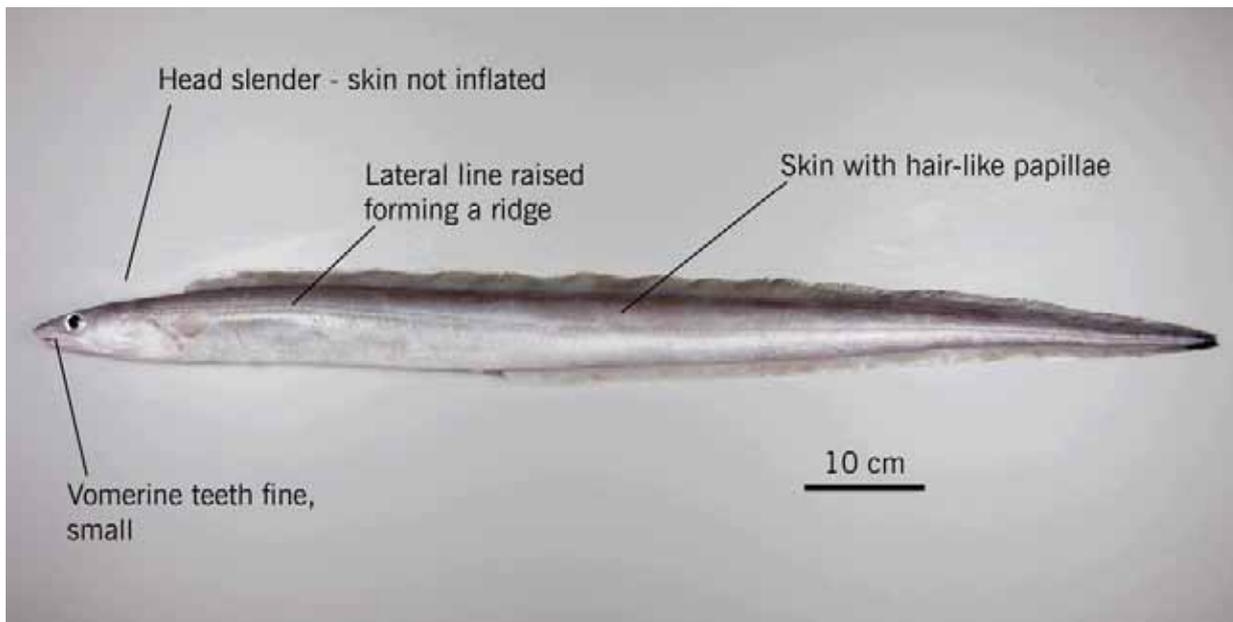
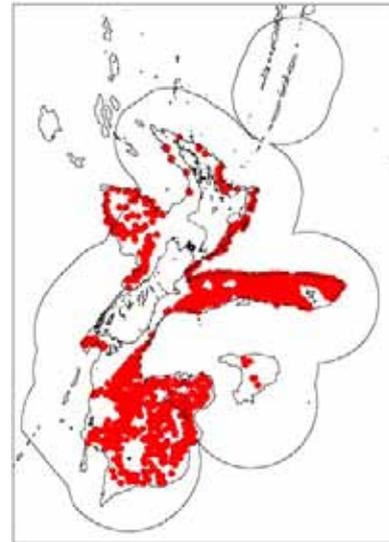
Family: 86. Congridae (conger eels)

Maori names: n.a.

Other names: n.a.

MFish reporting code: HCO

MFish research 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 the base of the pectoral fin. Skin covered with hair-like papillae.

Colour: Body and head pale greyish-brown, paler below. Fins dusky.

Size: To about 107 cm TL.

Distribution: Widespread in New Zealand. Australia (Vic, Tas).

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. Other differences require more detailed examination, e.g., dorsal rays 327 to 363 versus 306 to 319, anal rays 240 to 261 versus 204 to 222 (swollenhead versus hairy conger respectively).

Biology & ecology: Demersal.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989).

Southern conger

Conger verreauxi

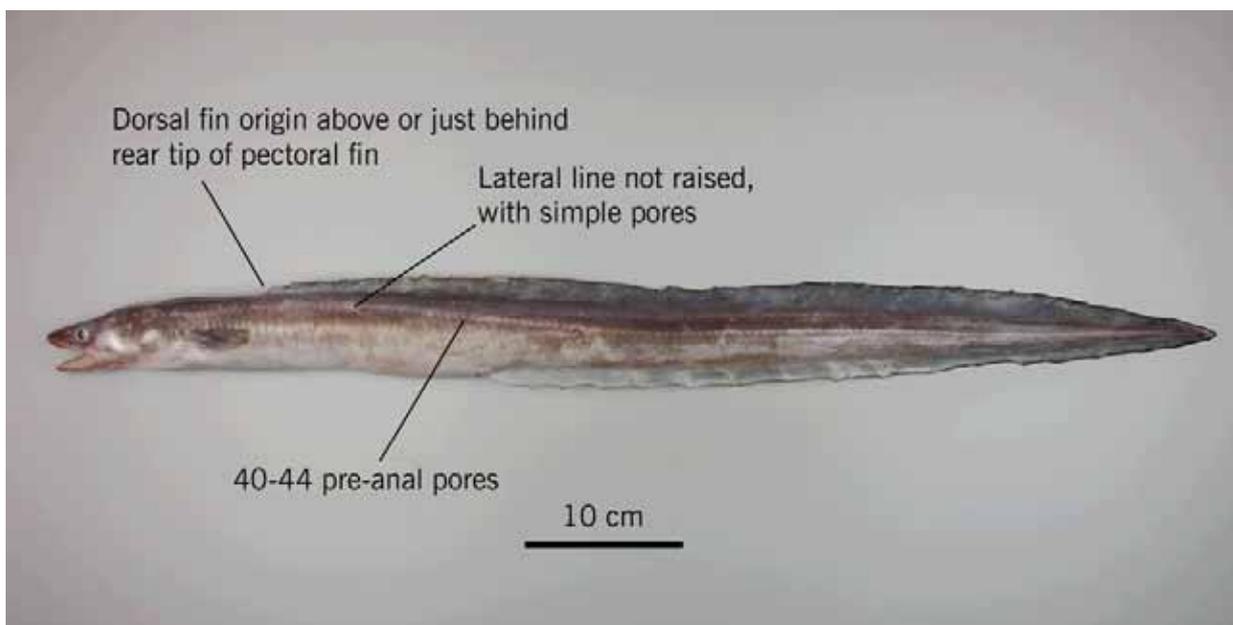
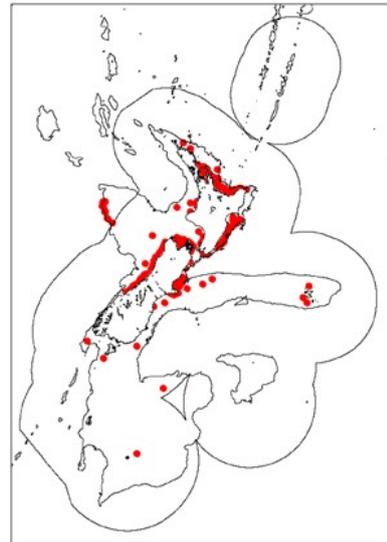
Family: 86. Congridae (conger eels)

Maori names: Koiro, ngoio, ngoiro

Other names: Common conger eel

MFish reporting code: CON

MFish research code: CVR



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

Distribution: Three Kings to the Snares Islands but mostly found in central and southern localities around New Zealand close to land. Also Australia (Vic, Tas, SA). The distribution map above used records of *Conger* spp. (species code CON) but most records are likely to be of *C. verreauxi*. Records from deeper, offshore waters are other unidentified congers.

Depth: 0 to 200 m.

Similar species: The much less common northern conger (*Conger wilsoni*) has a more slender body, origin of the dorsal fin behind the rear end of the pectoral fin by about half the length of the pectoral fin, 36 to 41 pores in the lateral line between the head and the anus, and reaches about 100 cm TL. Conger eels as a group have the dorsal fin origin about level with or not far behind the gill openings, pectoral fins present, a prominent lateral line, and bands of small teeth in the upper and lower jaws and on the roof of mouth.

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

References

Anderson et al. (1998), Francis (2001), Gomon et al. (2008), Paulin et al. (1989).

Silver conger

Gnathophis habenatus

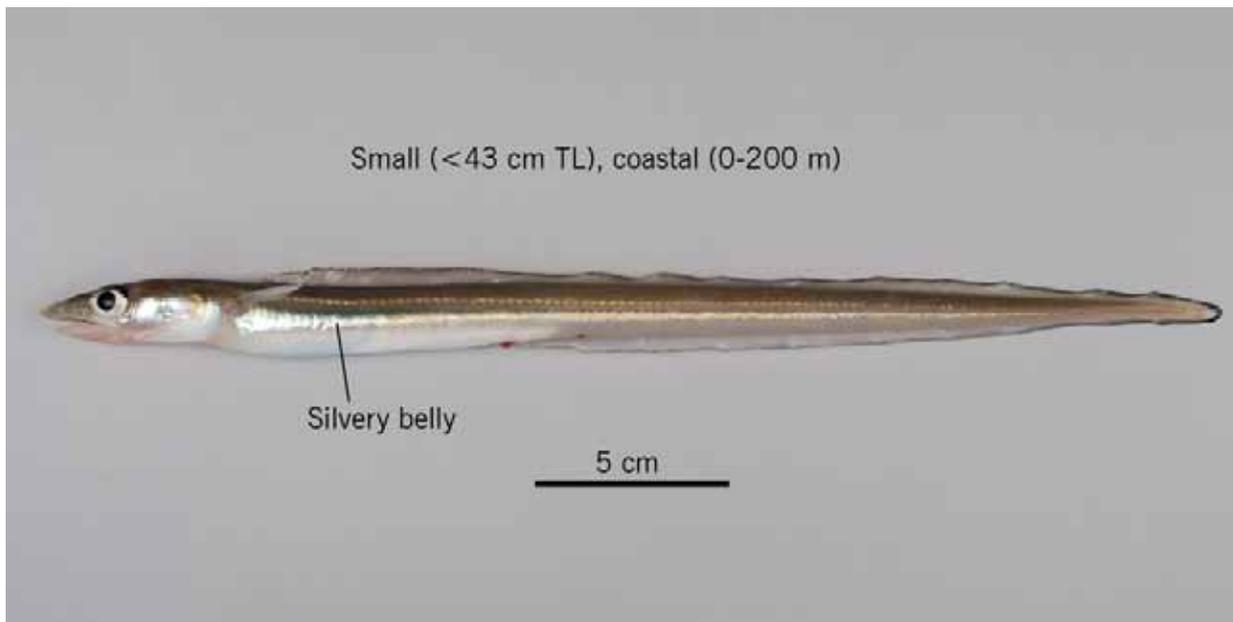
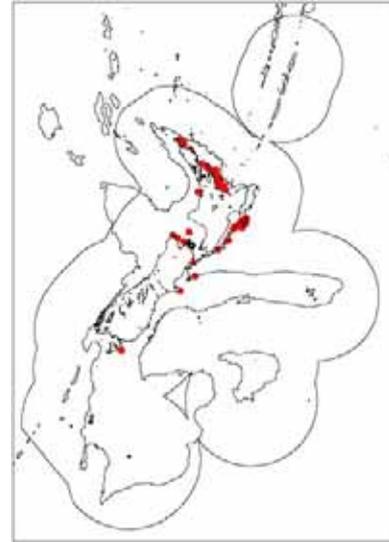
Family: 86. Congridae (conger eels)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SEE

MFish research code: SEE



Distinguishing features: Small (to about 43 cm TL), coastal (0 to 200 m) species with silvery belly. Tooth patch at the tip of the upper jaw (intermaxillary) hidden by the lower jaw when the mouth is closed. Stomach and anterior half of the intestine dark brown or black, posterior half of intestine pale. Second pore on the lateral line very slightly elevated. 36 to 38 pores on the lateral line from behind the head to level with the anus.

Colour: Greyish upper and paler side with silvery belly. Dorsal and anal fins with a black margin. Stomach and anterior half of the intestine dark brown or black.

Size: To about 43 cm TL.

Distribution: Confined to New Zealand, most often reported from northern and central coastal waters.

Depth: 0 to 200 m.

Similar species: Umbrella conger (*Gnathophis umbrellabius*) has an exposed tooth patch at tip of upper jaw when the mouth is closed, entire length of the intestine is pale, 34 to 38 lateral line pores before the anus. Southern conger (*Conger verreauxi*) has 40 to 44 and northern conger (*C. wilsoni*) 36 to 41 lateral line pores before the anus, and both these species are much larger and tend to be dull greyish.

Biology & ecology: Demersal.

References

Anderson et al. (1998), Karmovskaya & Paxton (2000).

Anchovy

Engraulis australis

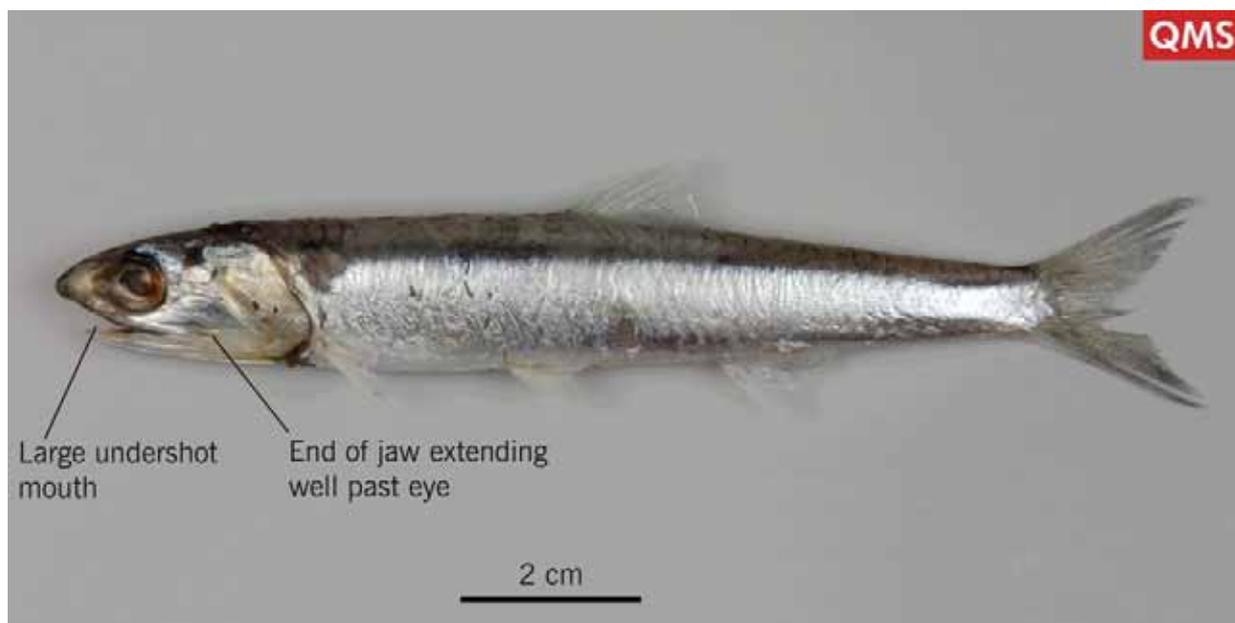
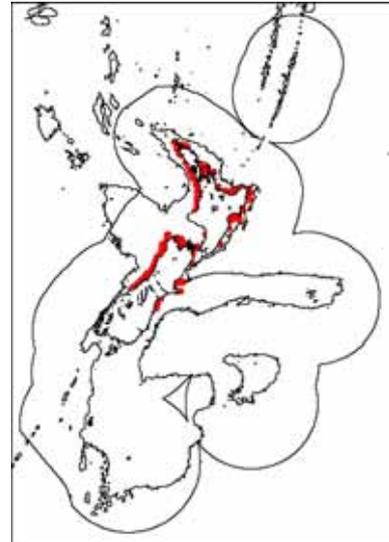
Family: 95. Engraulidae (anchovies)

Maori names: Kokowhaawhaa, korowhaawhaa

Other names: n.a.

MFish reporting code: ANC

MFish research code: ANC



Distinguishing features: Small pelagic schooling fish with large undershot mouth and single dorsal fin.

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

Size: To about 15 cm FL.

Distribution: Common around northern and central New Zealand. Also southern Australia.

Depth: 0 to 100 m.

Similar species: Only one species of anchovy occurs in New Zealand waters. Other small pelagic species lack the 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.

References

Hirt-Chabbert (2006), May & Maxwell (1986), Paul (2000), Paulin et al. (1989).

Pilchard

Sardinops sagax

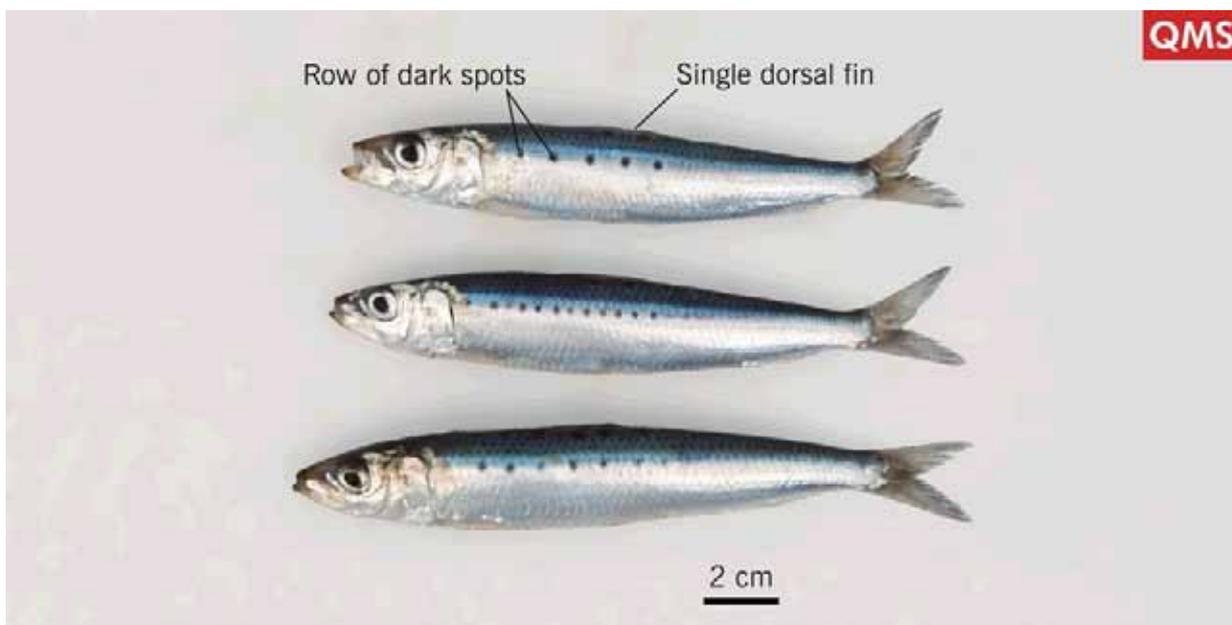
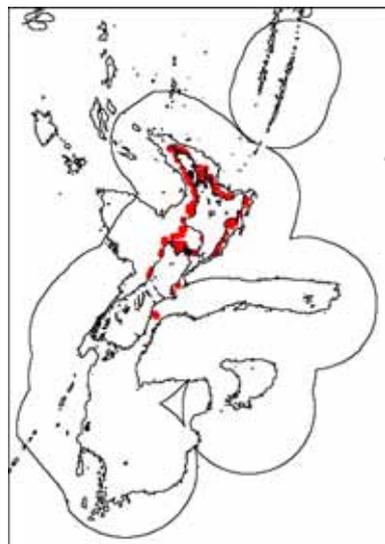
Family: 97. Clupeidae (herrings)

Maori names: Mohimohi

Other names: Sardine

MFish reporting code: PIL

MFish research code: PIL



Distinguishing features: Small inshore pelagic schooling fish 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.

Distribution: Around northern and central New Zealand. Also southern Australia.

Depth: 0 to 200 m.

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

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

References

Chapman et al. (2006), Hirt-Chabbert (2006), May & Maxwell (1986), Paul (2000), Paulin et al. (1989).

Slender sprat

Sprattus antipodum

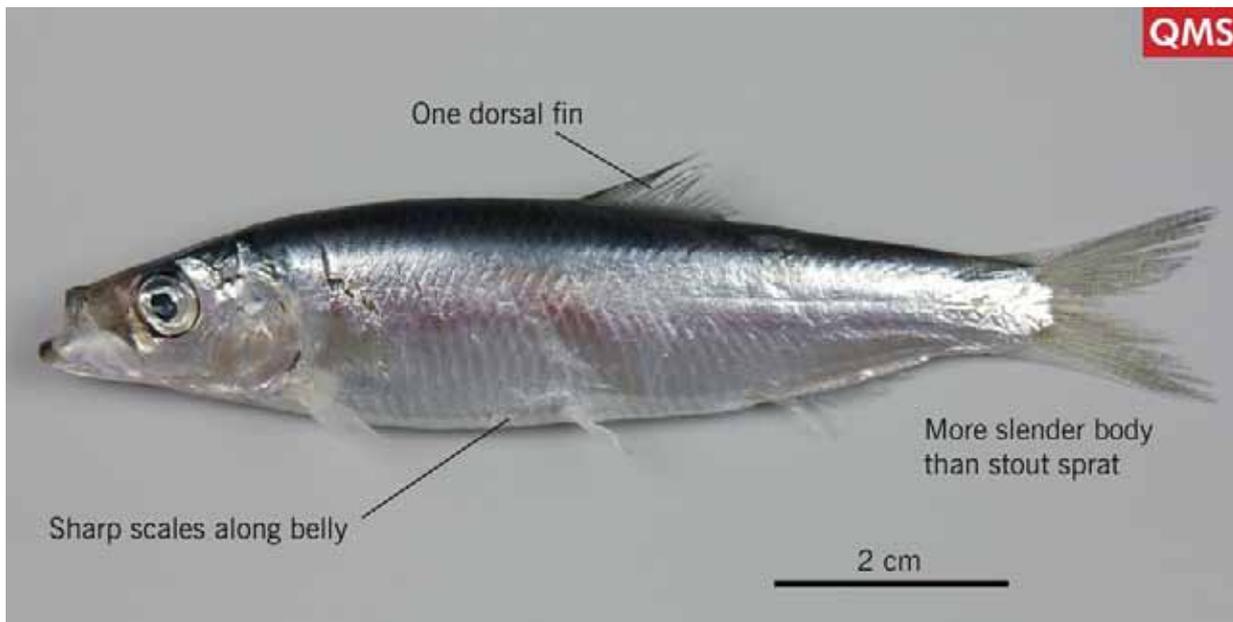
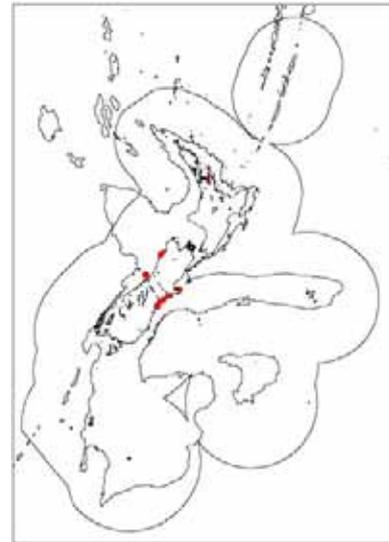
Family: 97. Clupeidae (herrings)

Maori names: Kuupae

Other names: New Zealand blueback sprat, sardine

MFish reporting code: SPR

MFish research code: SPA



Distinguishing features: The single dorsal fin, laterally compressed body, and row of serrated scales along the belly midline distinguish sprats from other pelagic fishes. 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.

Distribution: Known only from New Zealand.

Depth: 0 to 110 m.

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

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

References

Froese & Pauly (2007), Hirt-Chabbert (2006), Paul (2000), Paulin et al. (1989), Whitehead et al. (1985).

Stout sprat

Sprattus muelleri

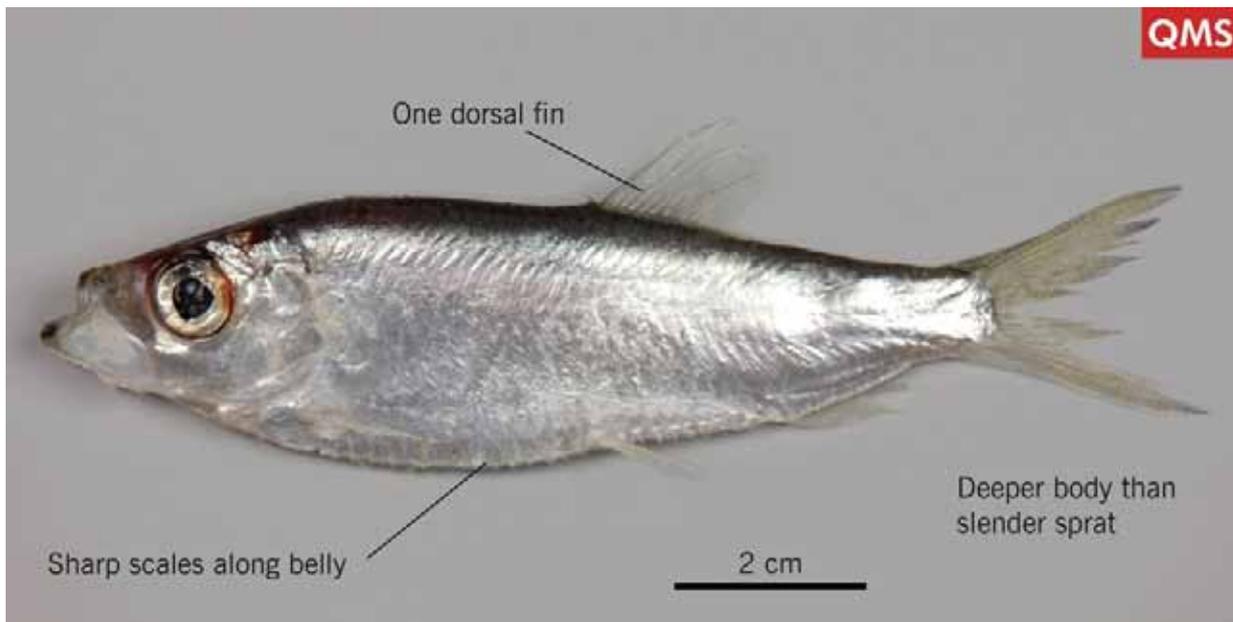
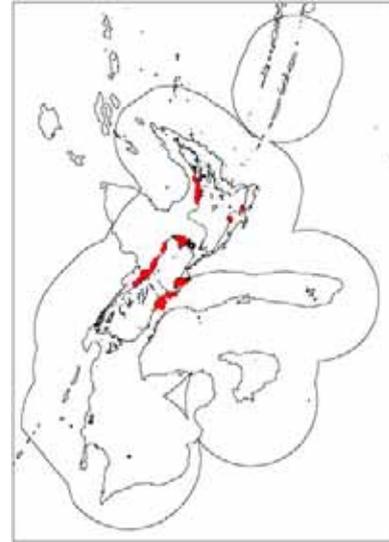
Family: 97. Clupeidae (herrings)

Maori names: Kuupae

Other names: New Zealand sprat, sardine

MFish reporting code: SPR

MFish research code: SPM



Distinguishing features: The single dorsal fin, laterally compressed body, and row of serrated scales along the belly midline distinguish sprats from other pelagic fishes. Body depth greater than or about the same as head length.

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

Size: To about 15 cm FL.

Distribution: Known only from New Zealand.

Depth: 0 to 110 m.

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

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

References

Froese & Pauly (2007), Hirt-Chabbert (2006), Paul (2000), Paulin et al. (1989), Whitehead et al. (1985).

Sandfish

Gonorynchus forsteri & *G. greyi*

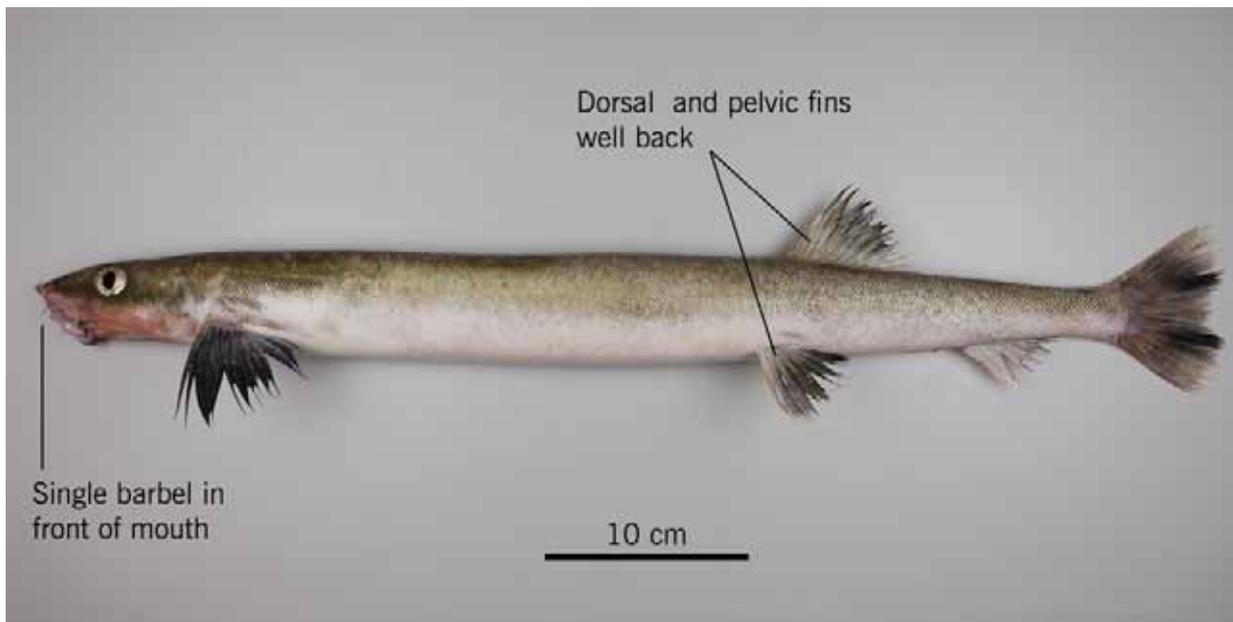
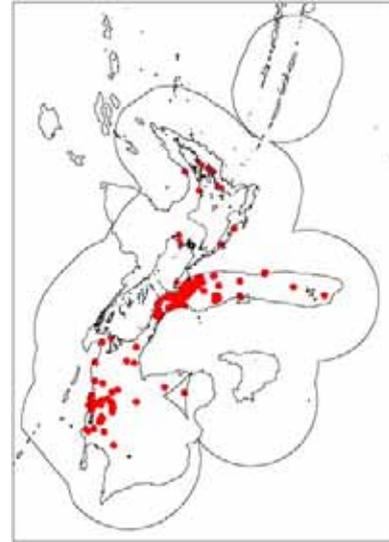
Family: 99. Gonorynchidae (beaked sandfishes)

Maori names: n.a.

Other names: Beaked salmon, sand eel

MFish reporting code: GON

MFish research code: GON



Distinguishing features: Elongated eel-like body with dorsal and pelvic fins posteriorly placed. Single barbel on the underside of the snout in front of the upper jaw.

Colour: Body brownish dorsally and pale cream to pinkish ventrally. Pectoral fins dark, dorsal, pelvic and anal fins dark-dusky. Caudal fin with a dark stripe on the upper and lower lobes.

Size: To about 55 cm SL.

Distribution: *Gonorynchus forsteri* and *G. greyi* are both recorded from New Zealand but most specimens are *G. forsteri* and that species appears to extend further south than *G. greyi*.

Depth: 0 to 1200 m.

Similar species: The two species of *Gonorynchus* cannot be separated easily except by vertebral counts. Northern New Zealand specimens should be retained for the Museum of New Zealand Te Papa Tongarewa.

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.

References

Anderson et al. (1998), Grande (1999), Roberts (1998), Roberts & Grande (1999).

Silverside

Argentina elongata

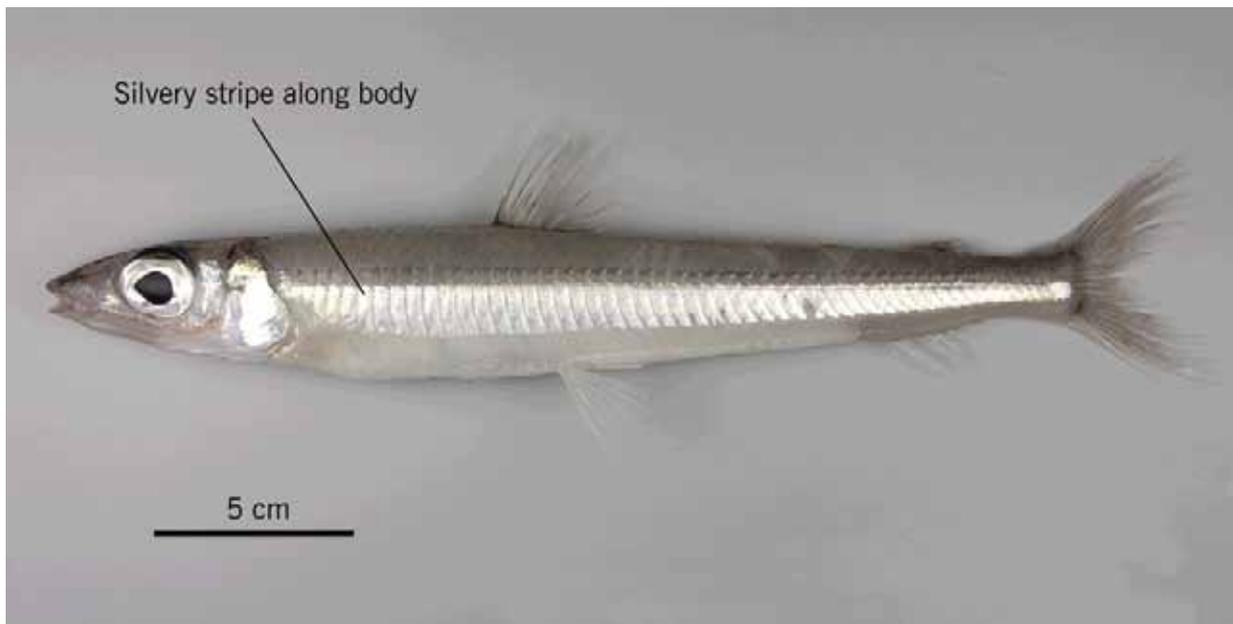
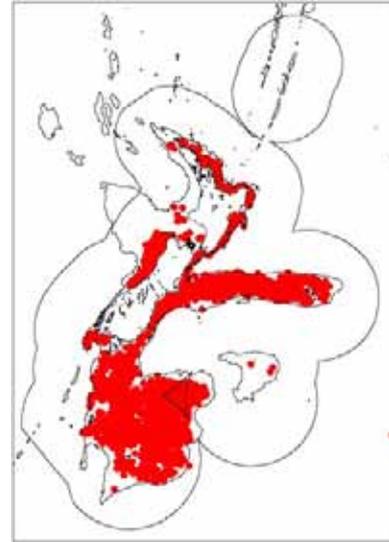
Family: 166. Argentinidae (argentines, herring smelts)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SSI

MFish research 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 the side of the head and body.

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

Size: To about 37 cm FL.

Distribution: 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.

References

Anderson et al. (1998), Paulin et al. (1989).

Smallscaled brown slickhead

Alepocephalus antipodius

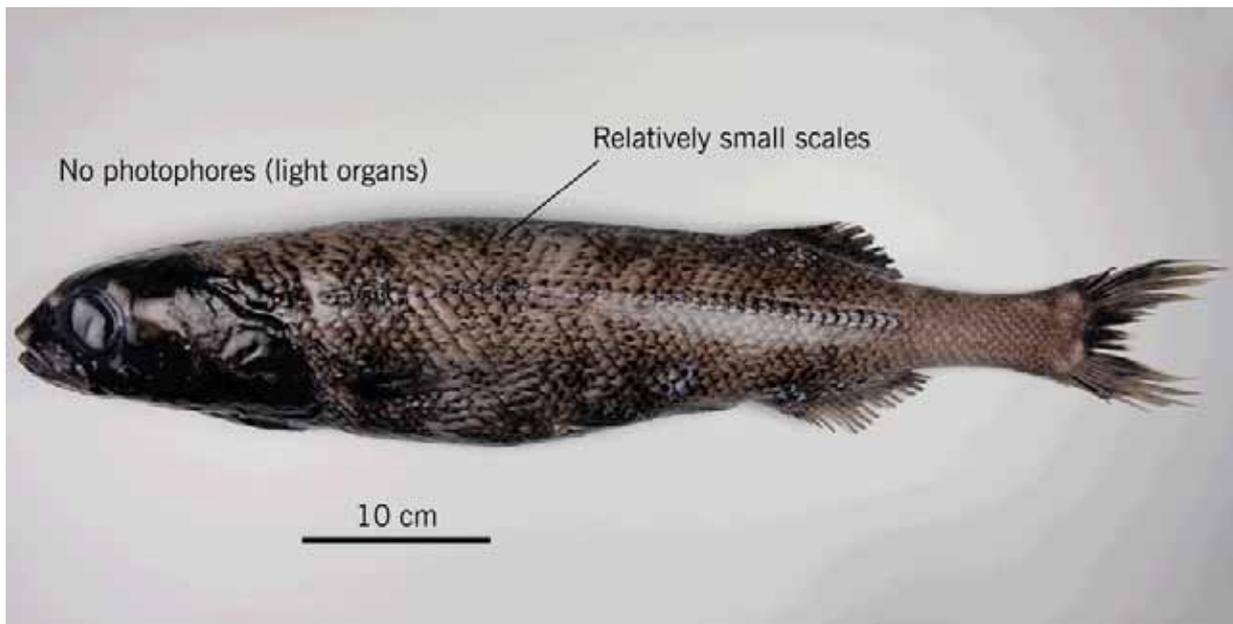
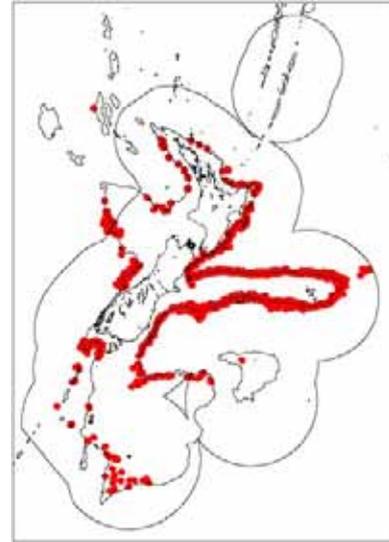
Family: 171. Alepocephalidae (slickheads)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SSM

MFish research code: SSM



Distinguishing features: Body covered in relatively small deciduous scales, 55 to 73 scales along body midline adjacent to lateral line from behind head to tail. Head scaleless. No light organs. Dorsal and anal fins about the 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.

Distribution: Widespread in New Zealand. Both sides of the South Atlantic Ocean from subtropical and temperate seas (South Africa, Madagascar, etc) and from the Indian Ocean to the subantarctic. Also many records from the South Pacific Ocean. This or a similar species is also found in the northeast and northwest Atlantic Ocean.

Depth: 600 to at least 1500 m.

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

Biology & ecology: Probably demersal. Has large eggs which may be demersal. Abundant and widely distributed.

References

Anderson et al. (1998), Paulin et al. (1989), Sazonov & Williams (2001).

Bigscaled brown slickhead

Alepocephalus australis

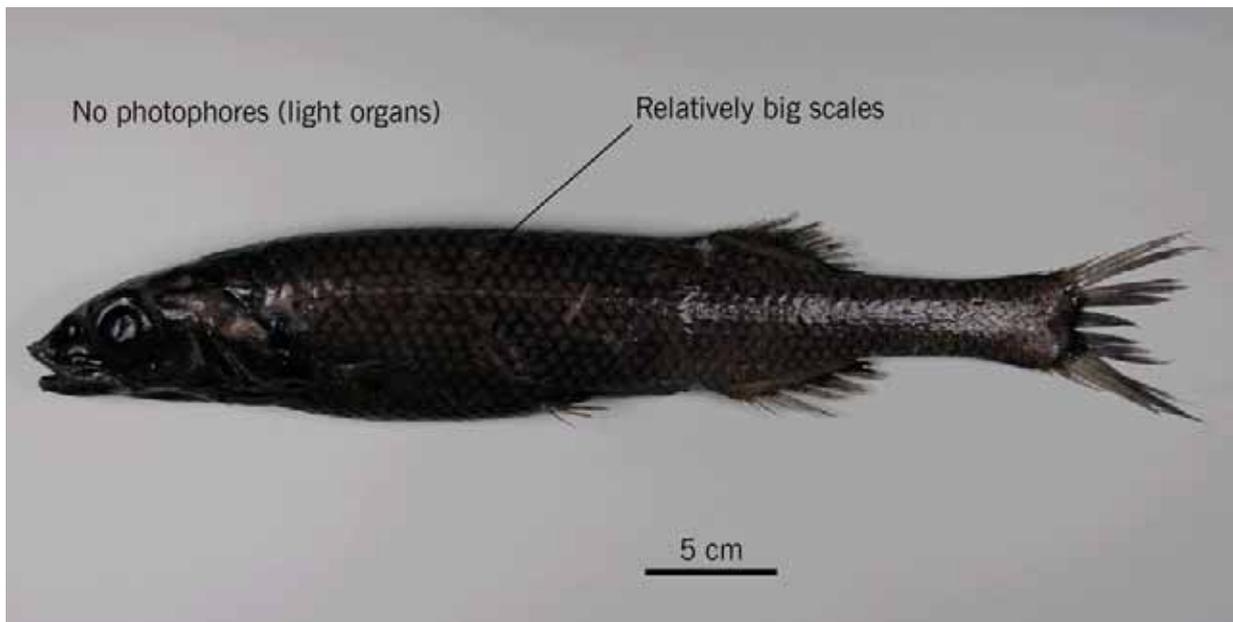
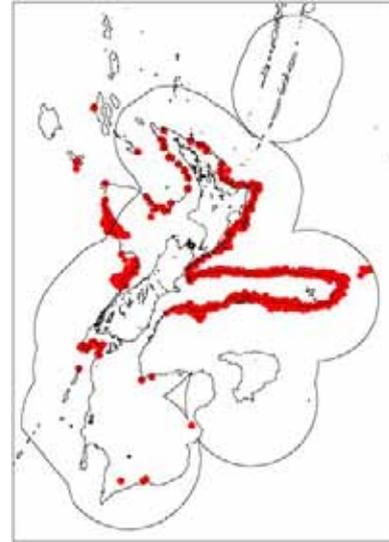
Family: 171. Alepocephalidae (slickheads)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SBI

MFish research code: SBI



Distinguishing features: Body covered in relatively big deciduous scales, 47 to 56 scales along body midline adjacent to lateral line from behind head to tail. Head scaleless. No light organs. Snout longer than eye diameter. Dorsal and anal fins about the 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.

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

Depth: 600 to 1500 m.

Similar species: Smallscaled brown slickhead (*Alepocephalus antipodians*) has smaller scales with 55 to 73 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. Abundant and widely distributed.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989), Sazonov & Williams (2001).

Talismania longifilis

Talismania longifilis

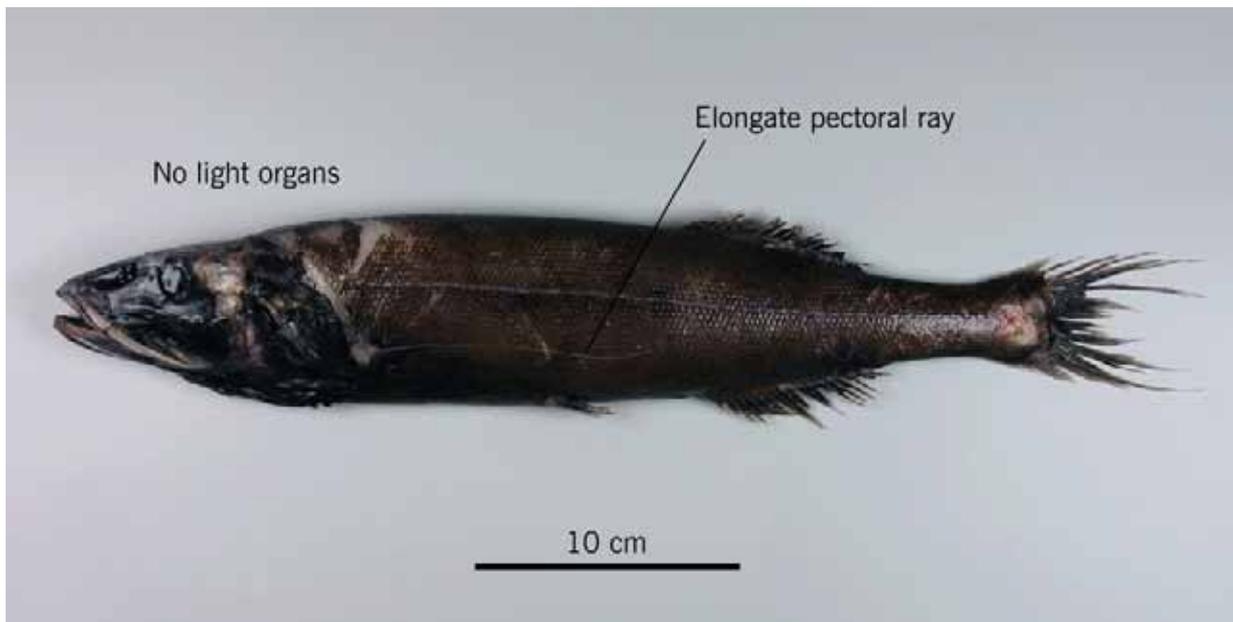
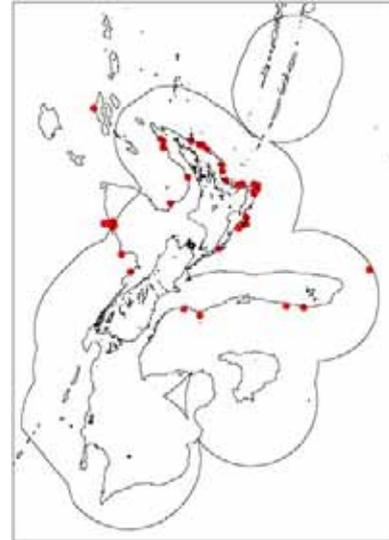
Family: 171. Alepocephalidae (slickheads)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SLK

MFish research code: TAL



Distinguishing features: Very long ray in the pectoral fin, much longer than head length. Body covered in relatively small deciduous scales, 95 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 47 cm SL.

Distribution: Central and northern New Zealand. Southern Australia. 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. antipodius*) both lack an elongated ray in the pectoral fin, and have larger scales compared to *Talismania longifilis*. Species of *Rouleina* have a dark body and lack body scales.

Biology & ecology: Unknown. Probably demersal.

References

Anderson et al. (1998), Paulin et al. (1989), Sazonov & Williams (2001).

Black slickhead

Xenodermichthys copei

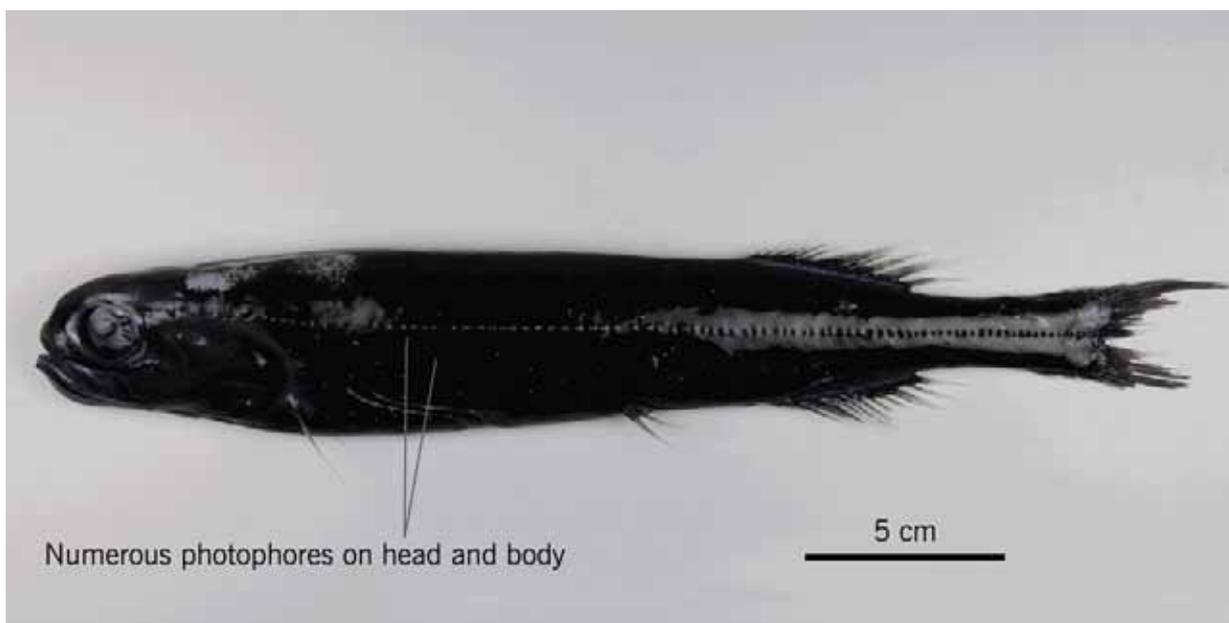
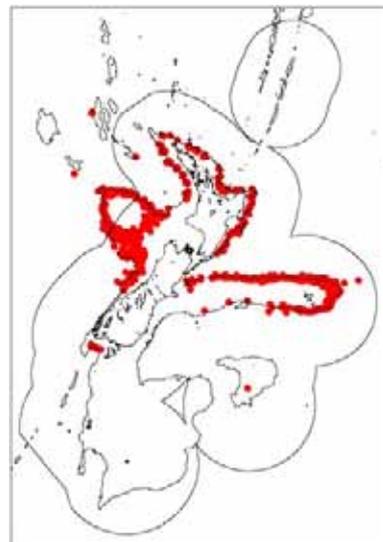
Family: 171. Alepocephalidae (slickheads)

Maori names: n.a.

Other names: n.a.

MFish reporting code: BSL

MFish research code: BSL



Distinguishing features: Blue-black shiny scaleless skin covered with small raised light organs (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.

Distribution: Central and northern New Zealand. It appears to be absent from the cooler waters of the south Chatham Rise, southeast coast of the South Island, Campbell and Bounty Plateaus. Probably circum-continental in Australia. Circum-tropical except for the eastern Pacific.

Depth: 600 to 1100 m.

Similar species: Other slickheads lack the shiny black scaleless skin, body peppered with light organs, and short blunt snout. Species of *Rouleina* also lack scales on the body but have small teeth on the maxilla.

Biology & ecology: Probably demersal. Has large eggs, which are probably demersal. Abundant and widely distributed.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989), Sazonov & Williams (2001).

Cucumber fish

Paraulopus nigripinnis

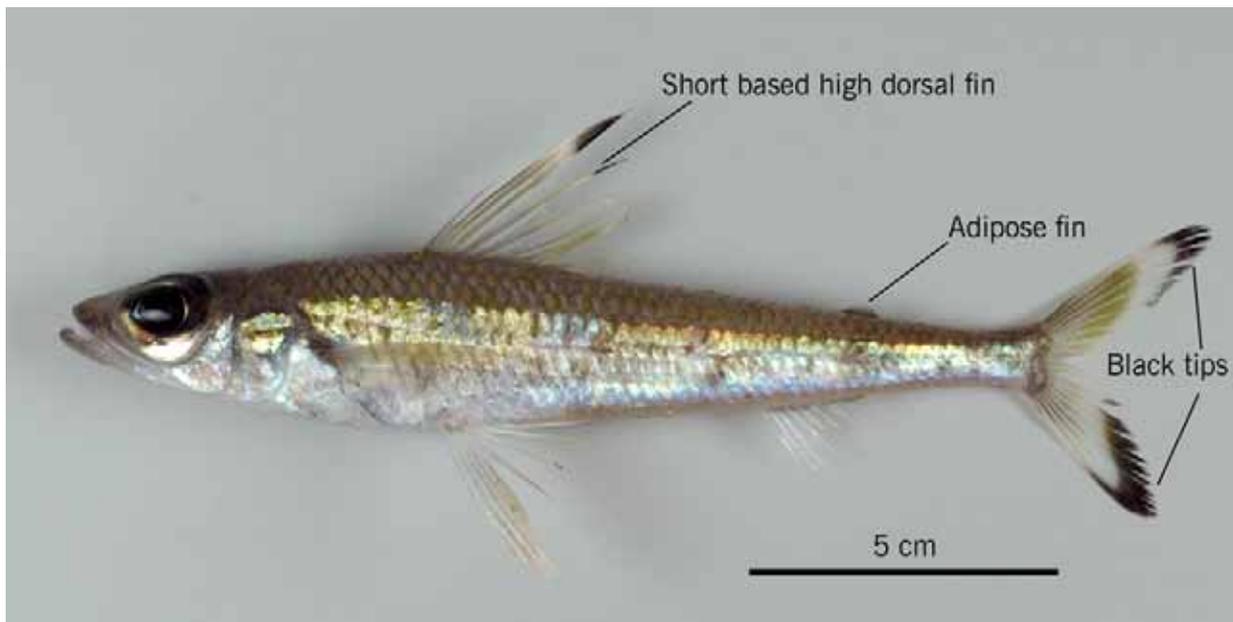
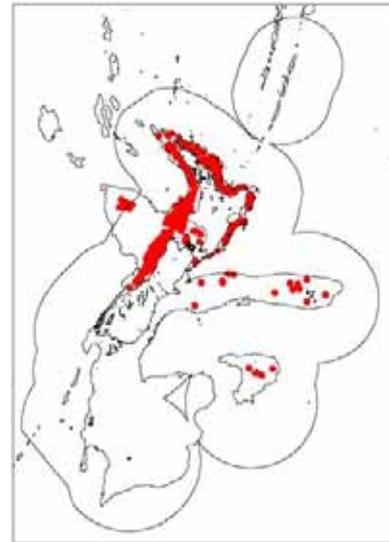
Family: 184. Paraulopidae (cucumber fishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: CUC

MFish research code: CUC



Distinguishing features: Caudal fin mostly pale but with black upper and lower tips. Usually 16 pectoral rays and 14 predorsal scales.

Colour: Dull (non-reflective) brownish upper body and head with irregular blackish-brown blotches on sides of body. Sides mostly silvery including cheeks, plus the belly and throat. Dark tipped dorsal fin. Posterior margins of upper and lower lobes of caudal fin black.

Size: To about 25 cm FL.

Distribution: Central and northern New Zealand including the Kermadec Is. Fisheries records from the Bounty Plateau are probably misidentified, possibly silverside. Australia (NSW, Vic, Tas, SA, WA).

Depth: 50 to 500 m.

Similar species: Two other species are known from the NZ region. *P. okamurai* has mostly dark caudal fin with black upper and white lower tip, 17 pectoral rays and 17 predorsal scales (northern NZ and southeast Australia). *P. novaeseelandiae* has mostly whitish caudal fin with faint black posterior margin of upper lobe and short dark oblique band on lower lobe, usually 18 pectoral rays and 18 predorsal scales (Challenger Pl. and Norfolk I.). Silverside (*Argentina elongata*) lacks dark tipped dorsal and caudal fin markings and has a very small mouth.

Biology & ecology: Demersal.

References

Anderson et al. (1998), Gomon et al. (2008), Sato & Nakabo (2002).

Deepsea lizardfish

Bathysaurus ferox

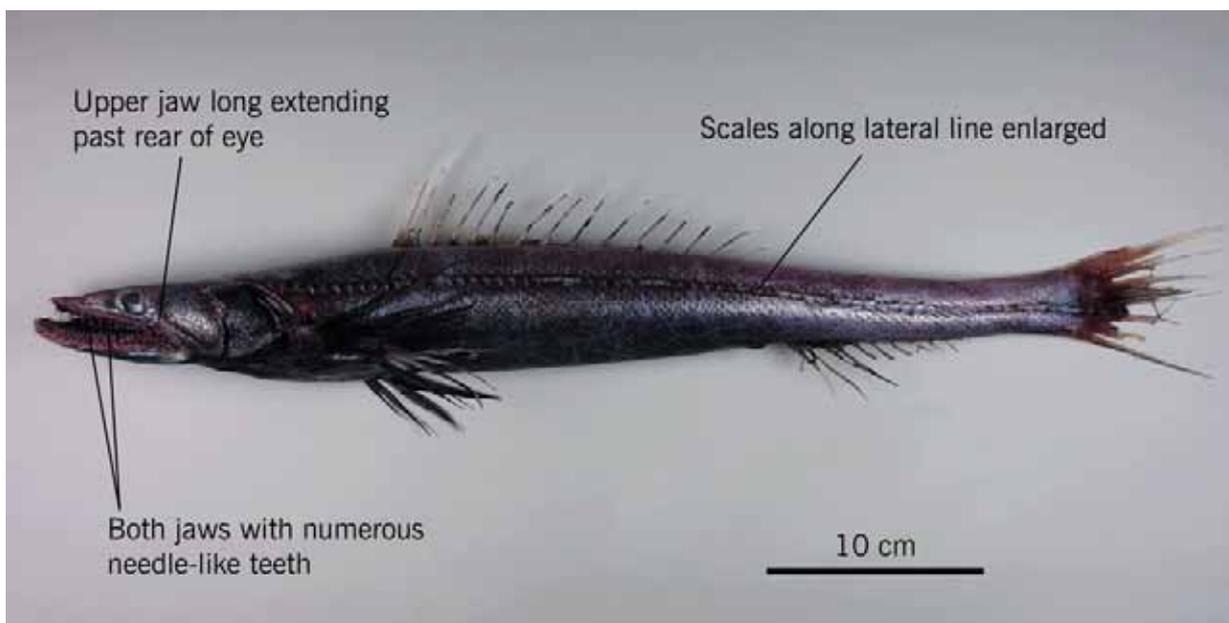
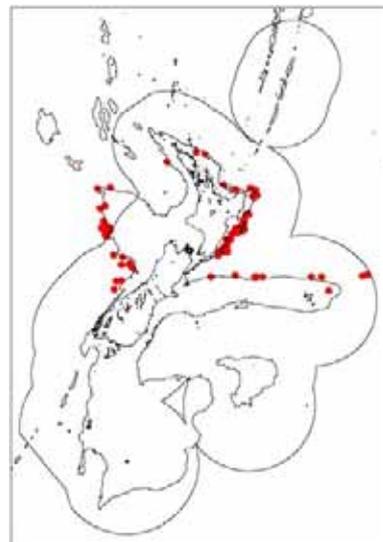
Family: 197. Bathysauridae (deepsea lizardfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: BFE

MFish research 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 70 cm SL.

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 a 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 the same fish. Pelagic larva settling on the seafloor at about 15 cm SL.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989), Smith & Heemstra (1986), Stewart (2003).

Moonfish

Lampris guttatus

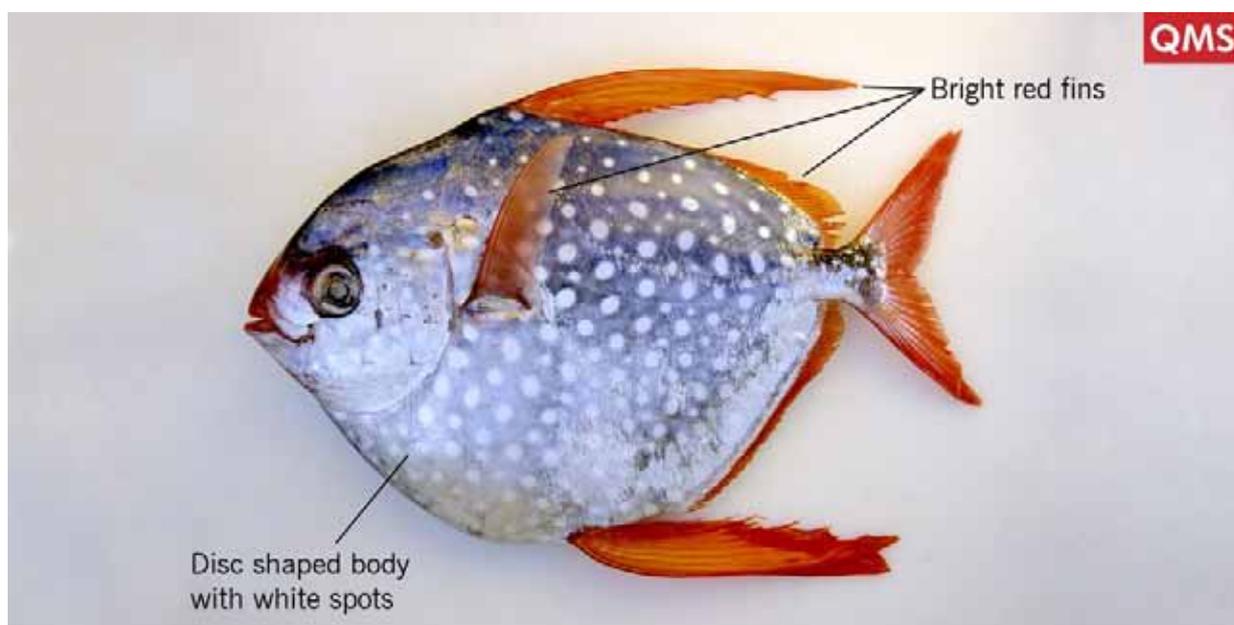
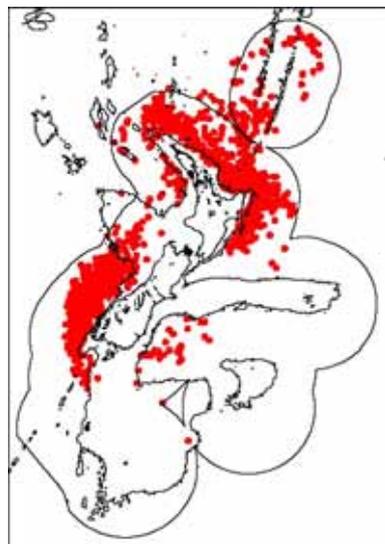
Family: 202. Lampridae (opahs)

Maori names: n.a.

Other names: Opah

MFish reporting code: MOO

MFish research code: MOO



Distinguishing features: Disc-shaped fish 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 180 cm.

Distribution: Widely distributed around New Zealand, including the Kermadec region, Chatham Rise and the Subantarctic region. Occurs in tropical and temperate waters of all of the major oceans.

Depth: To about 500 m.

Similar species: Opah (*Lampris immaculatus*) is more elongate and lacks spots. Fisheries records indicate that moonfish is sometimes incorrectly recorded as opah.

Biology & ecology: Pelagic.

References

Bagley et al. (2000), Chapman et al. (2006), Francis et al. (1999), Parin & Kukuyev (1983), Paul (2000), Roberts & Stewart (1998).

Dealfish

Trachipterus trachipterus

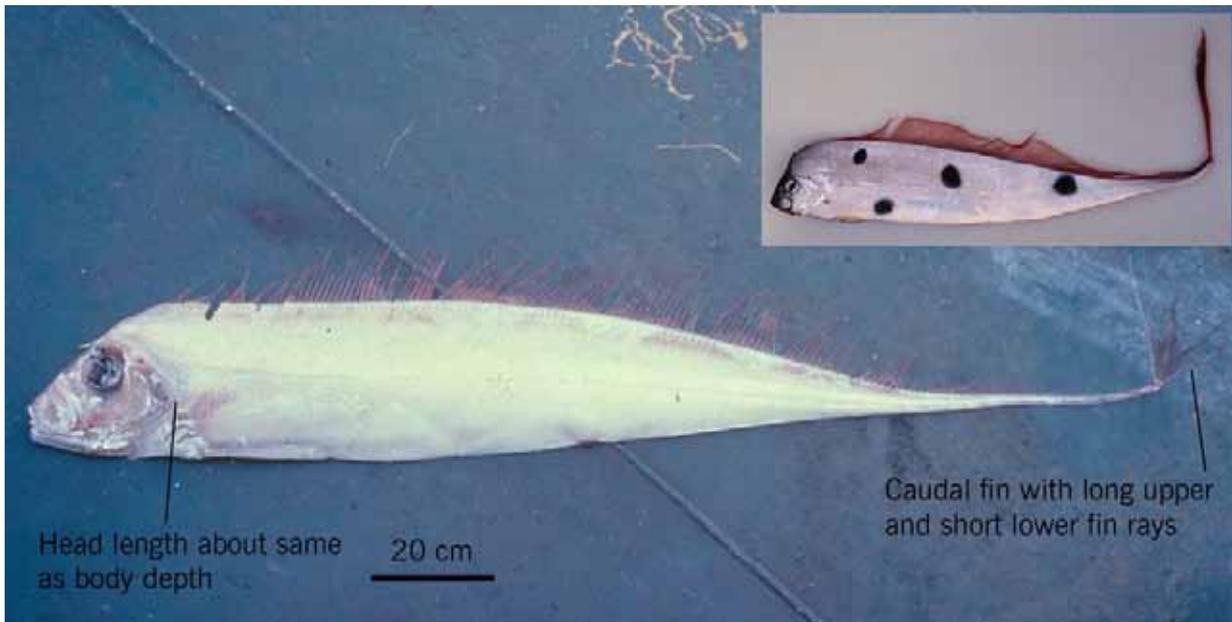
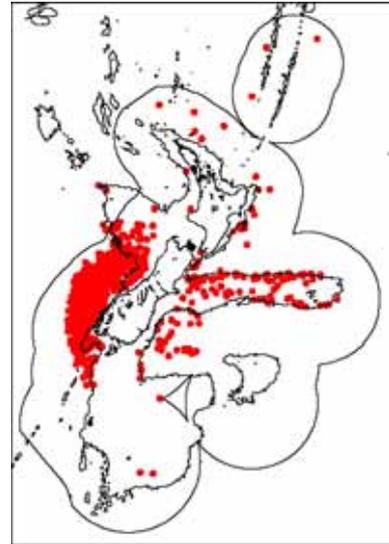
Family: 206. Trachipteridae (ribbonfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: DEA

MFish research code: DEA



Distinguishing features: Elongate silvery sided body with red dorsal and caudal fins. Head length about the same as body depth in adults. Anal fin absent. Pelvic fin with 5 to 7 rays often elongate in juveniles. Scales absent except for lateral line scales that are tubular and bear sharp spines.

Colour: Head and body silvery, but dull brownish if the skin has been rubbed off. Fins crimson-red. Small specimens have 4 black spots on the body.

Size: To about 2 m.

Distribution: Probably widespread in New Zealand. Worldwide in all oceans.

Depth: Not known. 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 bands and spots on the sides of the body and grows to a much larger size (about 17 m). Scalloped dealfish (*Zu elongatus*) has a scalloped (undulating) ventral body margin between the pelvic fin bases and beginning of the tail.

Biology & ecology: Unknown. Probably lives in midwater. Juveniles sometimes strand.

References

Bagley et al. (2000), Carpenter & Niem (1999), May & Maxwell (1986), Paulin et al. (1989), Stewart (1995).

Ribbonfish

Agrostichthys parkeri

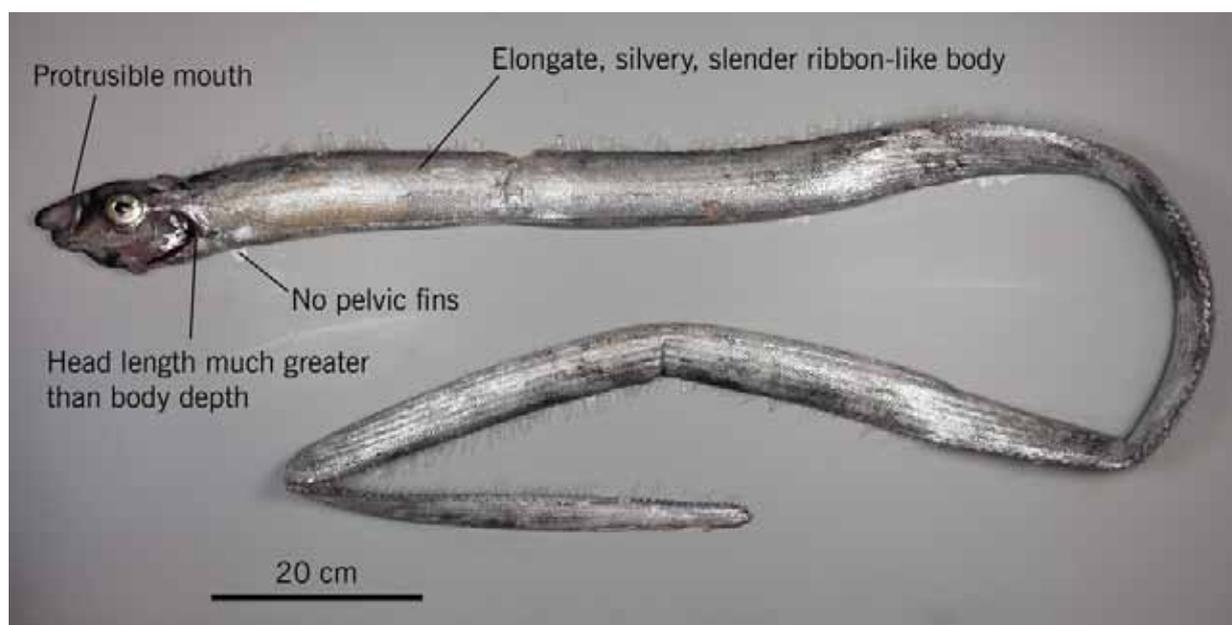
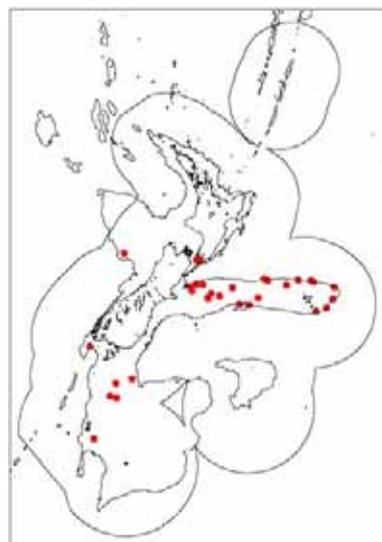
Family: 207. Regalacidae (oarfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: AGR

MFish research 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 brilliant silver.

Size: To about 300 cm SL.

Distribution: Probably widespread in New Zealand. Worldwide in all oceans.

Depth: Not known. Captured at 500 to 1000 m in NZ waters.

Similar species: Oarfish (*Regalecus glesne*) has black spots and blotches on the sides of the body, a very steep (almost vertical) head profile, and grows to a much larger size (about 17 m).

Biology & ecology: Unknown. Probably lives in midwater.

References

Bagley et al. (2000), May & Maxwell (1986), McDowall & Stewart (1999), Paulin et al. (1989), Stewart (1995).

Oarfish

Regalecus glesne

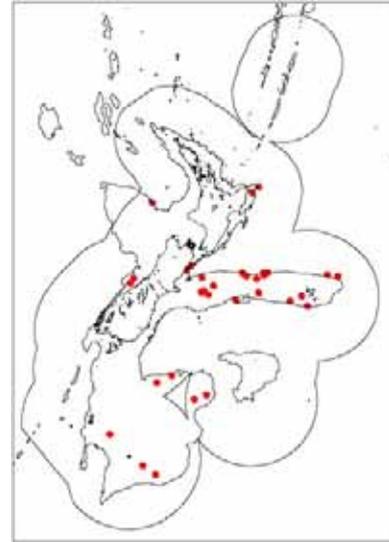
Family: 207. Regalacidae (oarfishes)

Maori names: n.a.

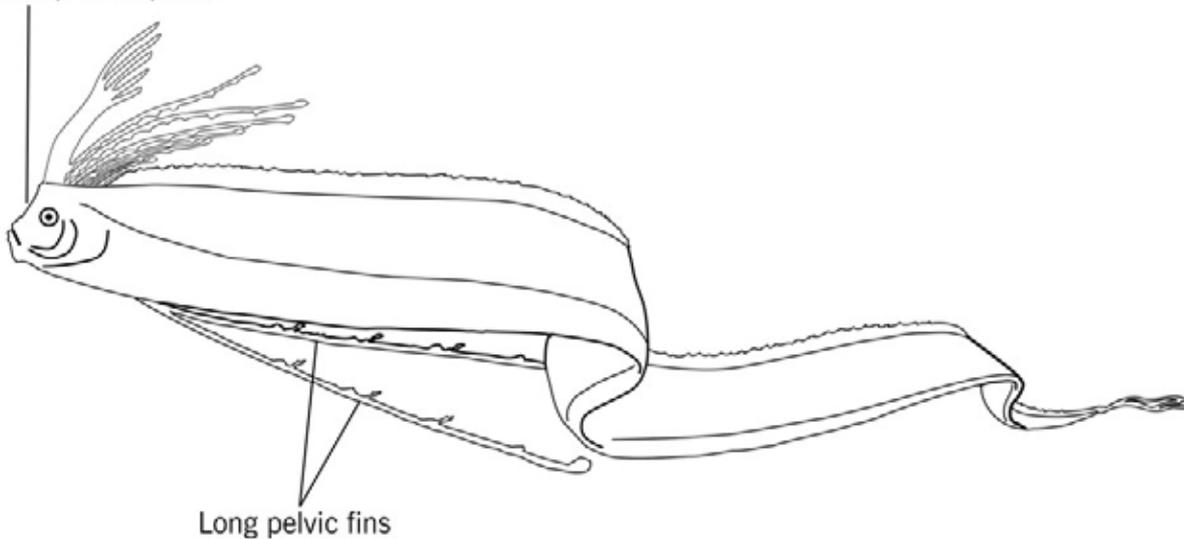
Other names: n.a.

MFish reporting code: OAR

MFish research code: OAR



Steep head profile



Distinguishing features: Elongate silvery body with black spots and blotches, fins crimson-red. First 8 to 10 dorsal fin rays and the single pelvic fin ray extremely elongate. Head profile very steep, almost vertical. Protrusible upper jaw. Scales absent except for tubular lateral-line scales.

Colour: Body brilliant silver with black spots and blotches. Elongate dorsal fin rays and single pelvic fin ray crimson-red.

Size: To about 17 m.

Distribution: Probably widespread in New Zealand. Worldwide in all oceans.

Depth: Not known. Captured in 500 to 900 m in NZ waters.

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. Probably lives in midwater. They swim with the body oriented vertically, head up, propelled by undulation of the dorsal fin.

References

Bagley et al. (2000), Carpenter & Niem (1999), May & Maxwell (1986), Paulin et al. (1989), Stewart (1995),

Eucla cod

Euclichthys polynemus

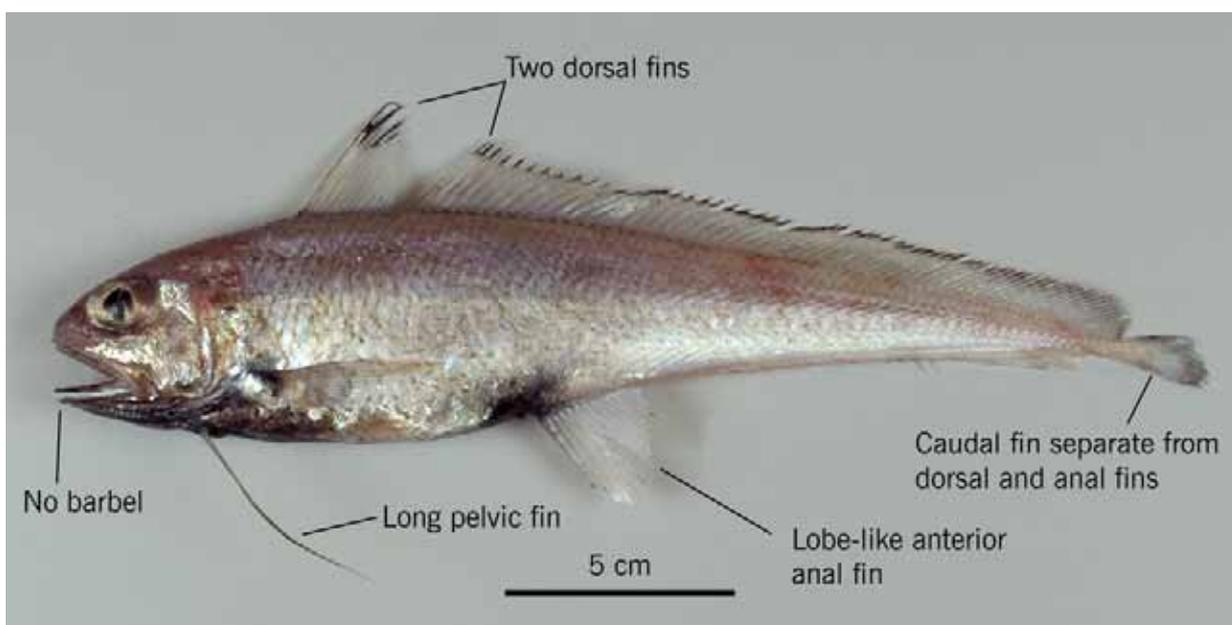
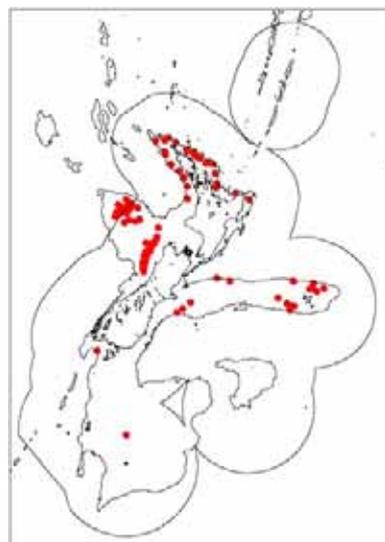
Family: 214. Euclichthyidae (eucla cod)

Maori names: n.a.

Other names: n.a.

MFish reporting code: EUC

MFish research code: EUC



Distinguishing features: Two dorsal fins, the first short and high, the second long, extending back to, but separate from, the small caudal fin. Anal fin with a big anterior lobe followed by a long low portion that extends back to but is separate from the 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.

Distribution: Central and northern New Zealand. Records from the Campbell Plateau and deep water on the Chatham Rise are probably erroneous. Australian records are from Queensland around southern Australia to the northwest shelf.

Depth: 250 to 800 m.

Similar species: Morids (deepsea cods) lack the lobe-like anterior part of the anal fin and very long four-rayed pelvic fin.

Biology & ecology: Unknown. Probably lives near the bottom. Never abundant.

References

Anderson et al. (1998), Cohen et al. (1990).

Codheaded rattail

Bathygadus cottoides

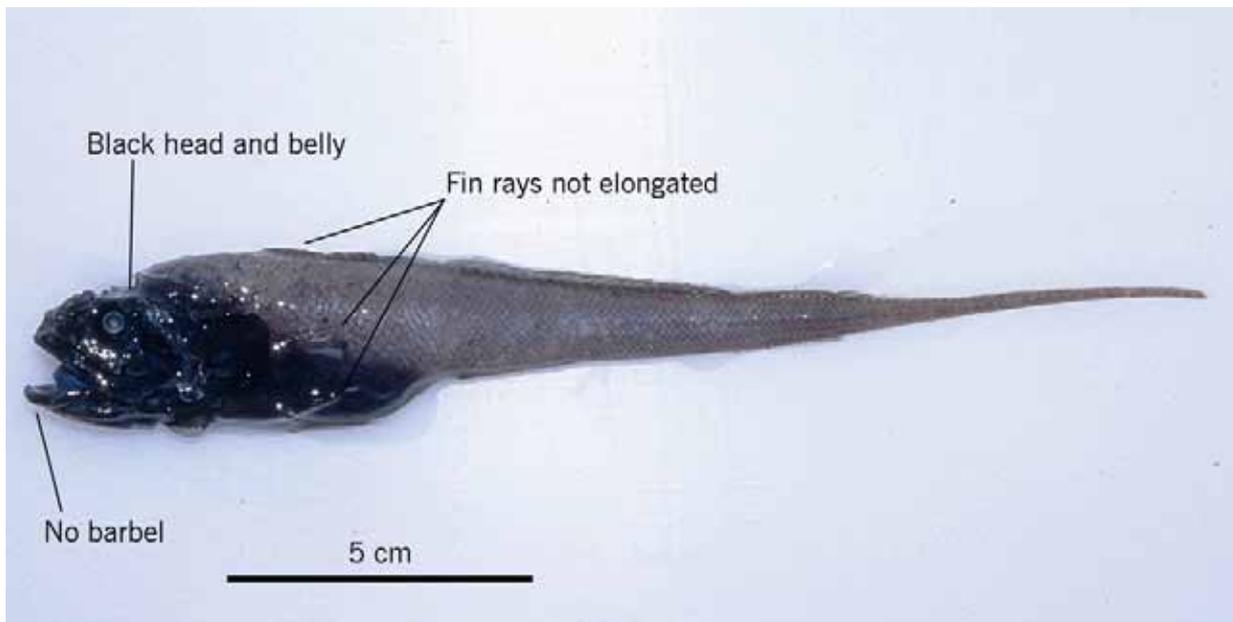
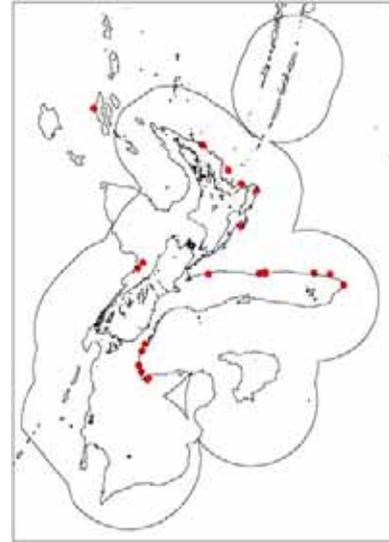
Family: 215. Bathygadidae (grenadiers, bathygadids, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: BAC

MFish research 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 30 cm TL.

Distribution: Northern and central New Zealand including Chatham Rise and Challenger Plateau. Also southern Australia and subtropical and tropical Atlantic Ocean including South Africa.

Depth: Usually greater than about 1100 m.

Similar species: Other macrouroids lack the combination of small adult size, dark body coloration, lack of chin barbel, and lack of elongated rays in the first dorsal, pectoral and anal fins. *Melanonus* spp. have a single dorsal fin, an anal fin, and well developed teeth in the upper and lower jaws.

Biology & ecology: Largely unknown. Probably demersal. May be relatively common at specific depths in some areas, but are probably not retained in nets with large mesh size (100 mm). Soft-bodied and easily damaged.

References

Gomon et al. (2008), Iwamoto & Graham (2001).

Globosehead rattail

Cetonus crassiceps

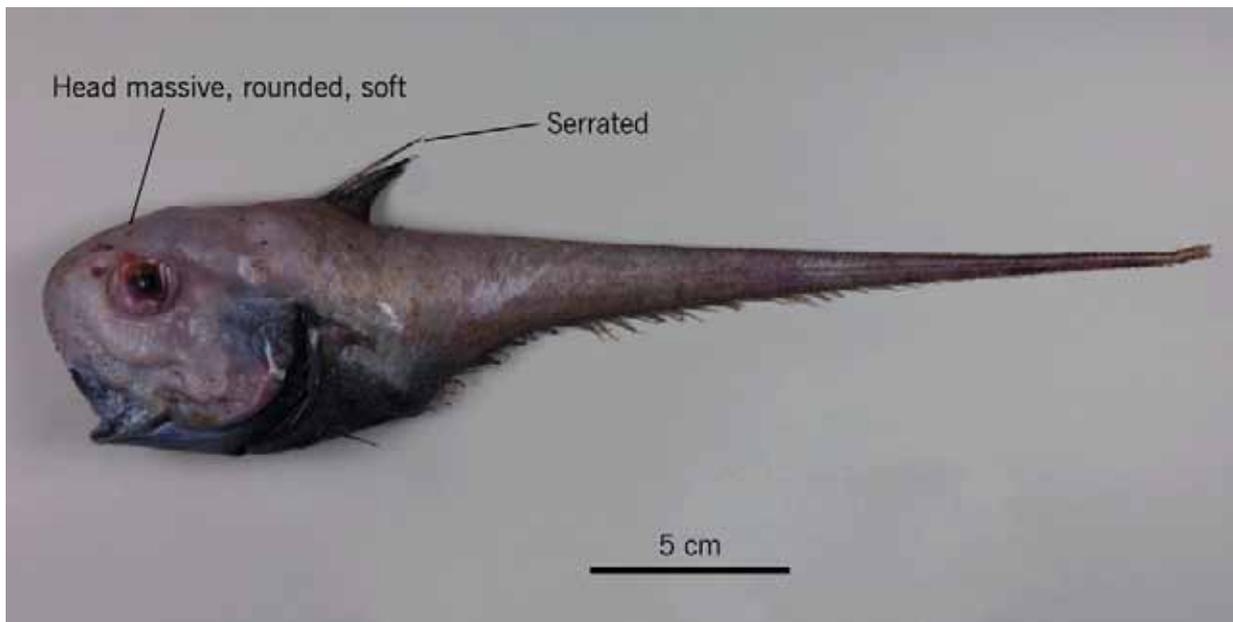
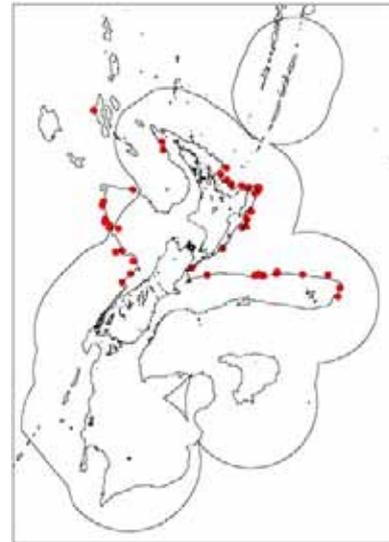
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: CCR



Distinguishing features: Head massive, rounded, soft, with ridges lacking thick modified scales. Serrated leading edge of spinous ray in first dorsal fin. Body scales tiny, lateral line indistinct.

Colour: Body greyish-brown. Mouth and gill cavity dark blue-black. First dorsal and pelvic fins dark brown.

Size: To about 44 cm TL.

Distribution: Northern and central New Zealand including north Chatham Rise and Challenger Plateau. Widely distributed in the southern hemisphere, including southwest Pacific, Hawaiian Islands, central and South Atlantic and southeast Pacific Oceans, but so far not known from the Indian Ocean.

Depth: 900 to 1400 m.

Similar species: Other macrouroids lack the combination of large, soft, rounded head, pale greyish-brown head and body, serrated leading edge of first dorsal spine. There is taxonomic confusion between *C. crassiceps* and the very similar *C. globiceps*.

Biology & ecology: Unknown. Probably demersal.

References

Anderson et al. (1998), Iwamoto & Graham (2001), Iwamoto & Williams (1999), Paulin et al. (1989).

Spotty faced rattail

Coelorinchus acanthiger

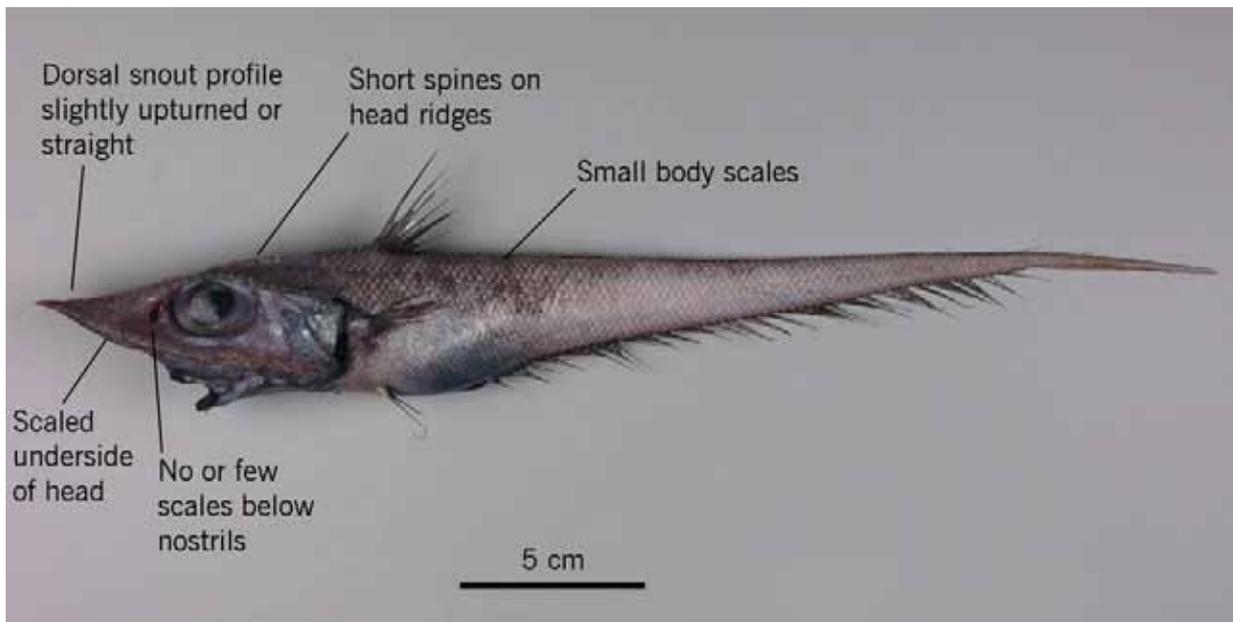
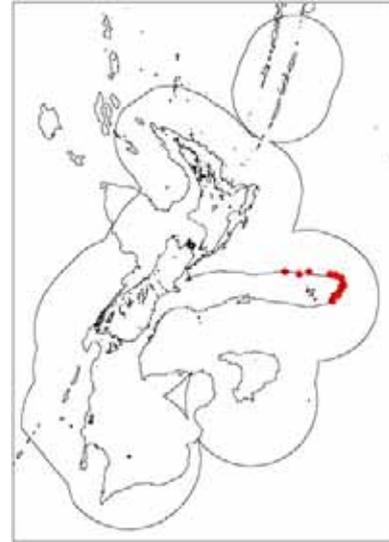
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research 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 7 (usually 6) between middle of first 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.

Distribution: Widespread on the Chatham Rise, Challenger Plateau, and around the North Island, but difficult to identify and consequently there are only a few good records plotted on the map. Widespread in the southern hemisphere from southern Africa to Australia (NSW, Vic, Tas, SA, WA).

Depth: 800 to 1300 m.

Similar species: Roughhead rattail (*C. trachycarus*) has long spines on the ridges on the top of head, and larger body scales, 4 to 6 (usually 5) scales between middle of first dorsal fin and lateral line. Upturned snout rattail (*C. mycterismus*) has a 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.

References

Iwamoto & Anderson (1994), Iwamoto & Graham (2001), Iwamoto et al. (1999).

Oblique banded rattail

Coelorinchus aspercephalus

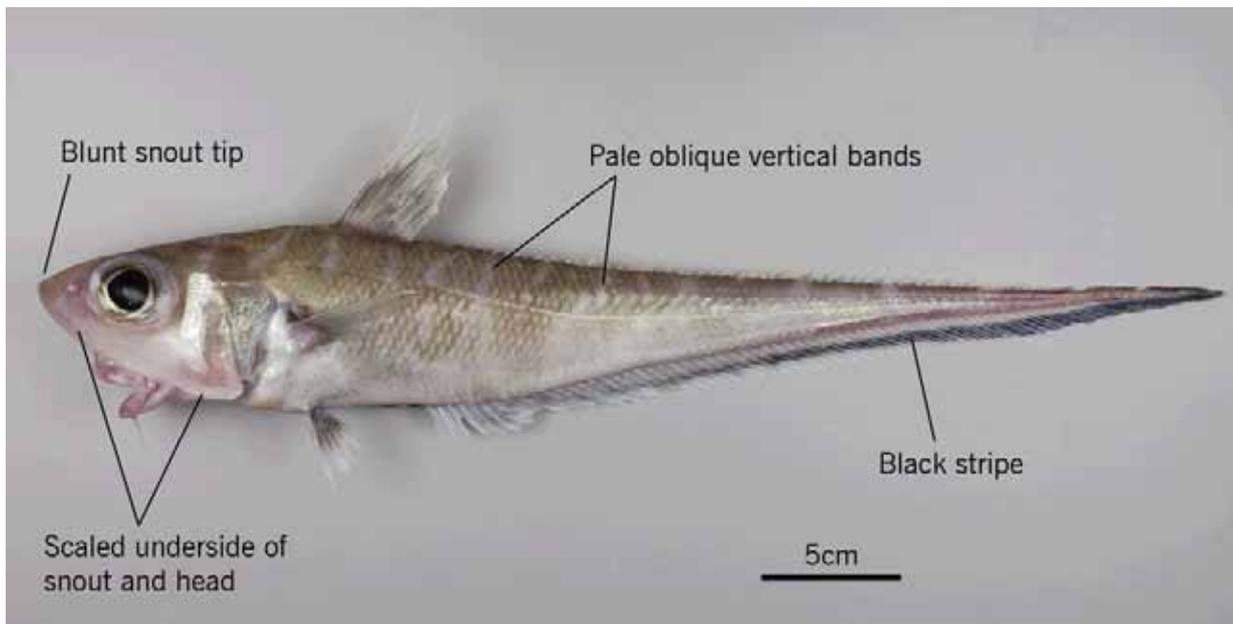
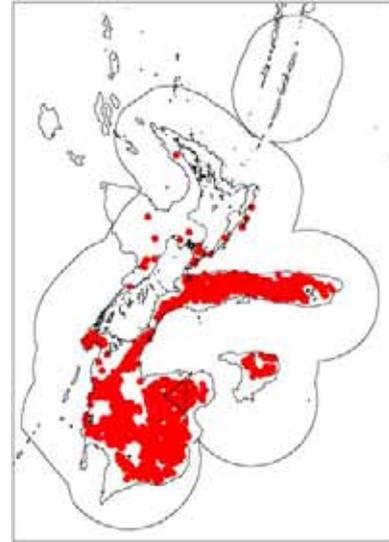
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: CAS



Distinguishing features: Series of pale oblique and vertical bands on the top and sides of the body. Underside of snout and head completely covered in small scales. Snout blunt and short. Black stripe running along the anal fin with the base and tip of the anal rays pale. Gap between the first and second dorsal fins about the same length or less than the length of the first dorsal fin base.

Colour: Series of pale oblique and vertical bands on the top and sides of the body. Body and head pale brownish-grey with silvery sides and belly. Black stripe running along the anal fin with the base and tip of the anal rays pale. Dorsal and pelvic fins with dusky/dark base and paler outer part.

Size: To about 56 cm TL.

Distribution: Mainly recorded from central and southern New Zealand including Chatham Rise, east and west coasts of the South Island and Southern Plateau. Known only from New Zealand.

Depth: 30 to 600 m.

Similar species: Two saddle rattail (*C. biclinozonalis*) has a series of dark saddle-like bands on the top and sides of the body with the bands in front of the first dorsal fin and near the front of the second dorsal fin darker than the others, a more pointed snout, and the gap between the first and second dorsal fins about twice the length of the first dorsal fin base.

Biology & ecology: Demersal. Males are much smaller than females, and consequently trawl catches may be dominated by females, probably because the males escape through the meshes of the net.

References

Arai & McMillan (1982), Paulin et al. (1989).

Two saddle rattail

Coelorinchus biclinozonalis

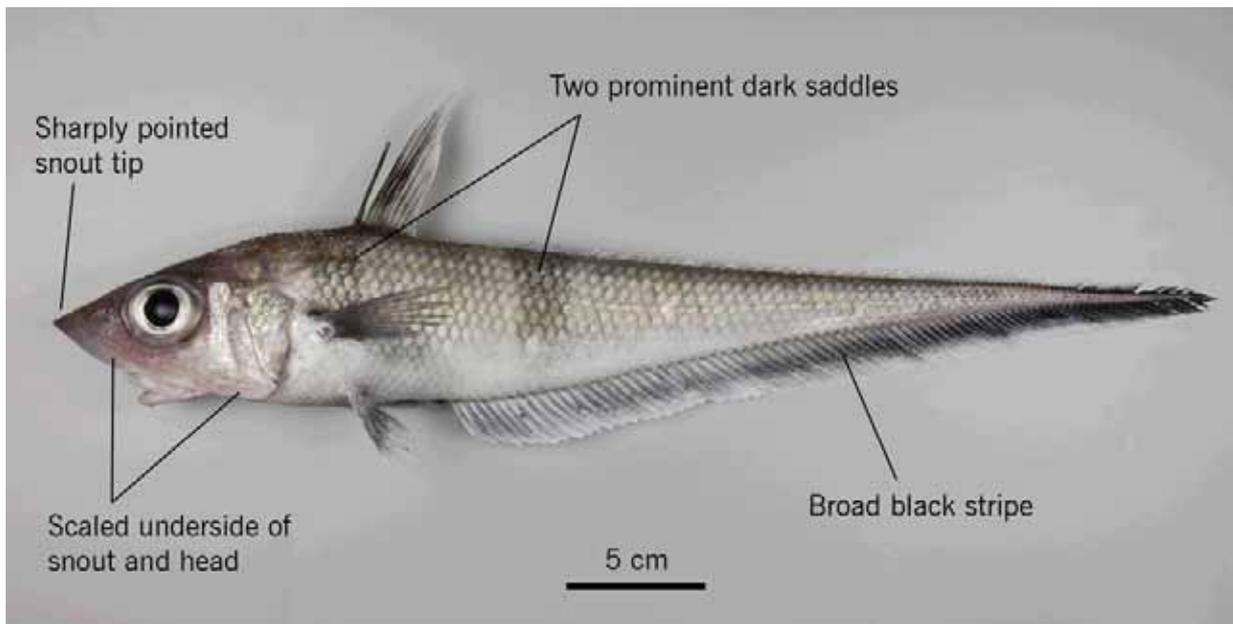
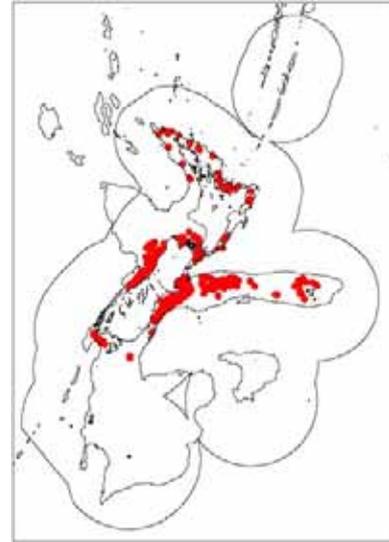
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: CBI



Distinguishing features: Series of dark saddle-like bands on the top and sides of the body with the bands in front of the first dorsal fin and near the front of the second dorsal fin darker than the others. Underside of snout and head completely covered in scales. Snout pointed and moderate in length. Thick black stripe running along the anal fin. Gap between the first and second dorsal fins about twice the length of the 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 the 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.

Distribution: North and South Islands, the west end of the Chatham Rise and possibly near Chatham Island at suitable depths. 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 the top and sides of the body, a blunter snout, and gap between the first and second dorsal fins is about the same or less than the length of the first dorsal fin base.

Biology & ecology: Demersal. It has been recorded from shallow waters, such as Wellington Harbour, and this is very unusual for a macrourid.

References

Arai & McMillan (1982), Paulin et al. (1989).

Bollons's rattail

Coelorinchus bollonsi

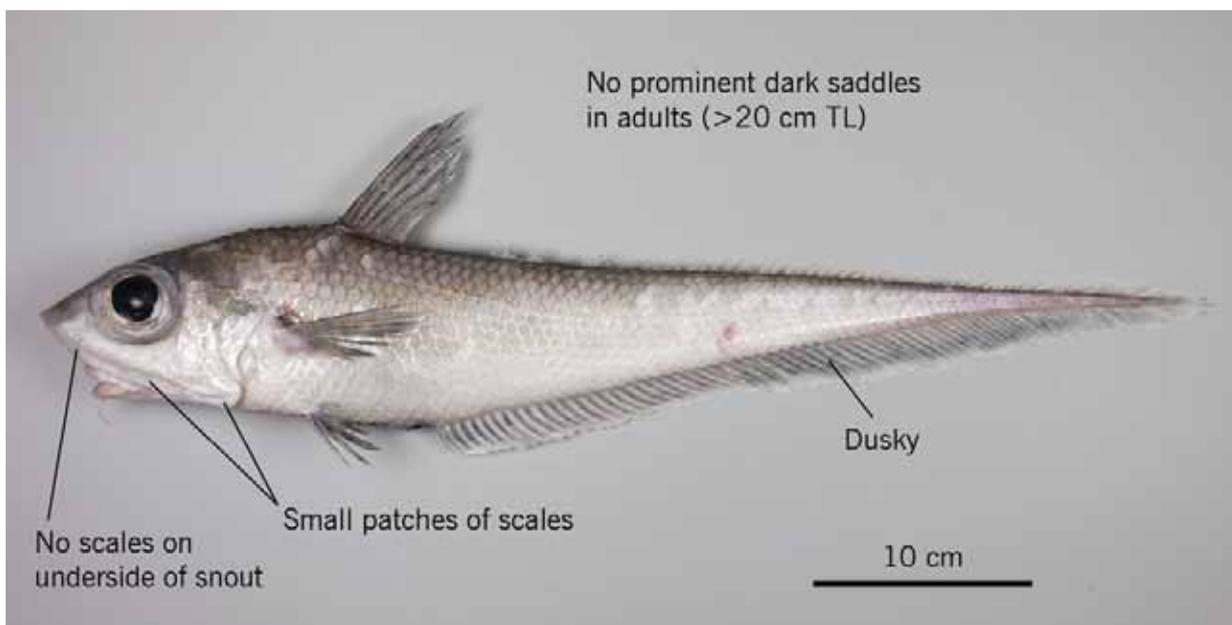
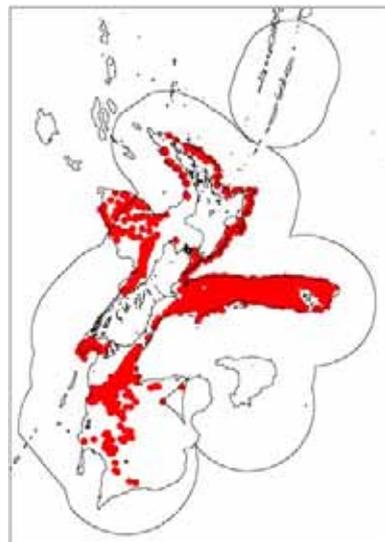
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: CBO

MFish research code: CBO



Distinguishing features: Uniform brown or grey on the upper body with no dark saddle marks or bands on the body in adults (greater than about 20 cm TL). Underside of snout and head lacking scales except for small patches adjacent to the rear end of the lower jaw and at the rear end of the head. Anal fin mostly dark or dusky without a 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 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.

Distribution: Widespread in New Zealand but apparently absent from Bounty Plateau. Known only from New Zealand.

Depth: 300 to 700 m.

Similar species: Banded rattail (*C. fasciatus*) has dark saddle marks and an enlarged scale in front of the first dorsal fin. Small banded rattail (*C. parvifasciatus*) has pale bands on the upper tail, pale grey anal fin, and large ventral light organ. Dark banded rattail (*C. maurofasciatus*) has dark saddle marks on the body and a dark stripe along the anal fin. Cook's rattail (*C. cookianus*) has very dark saddle marks on the body and no scales on the underside of the head.

Biology & ecology: Largely unknown. Probably demersal. A very abundant species on Chatham Rise.

References

McMillan & Paulin (1993), Paulin et al. (1989).

Black lip rattail

Coelorinchus celaenostomus

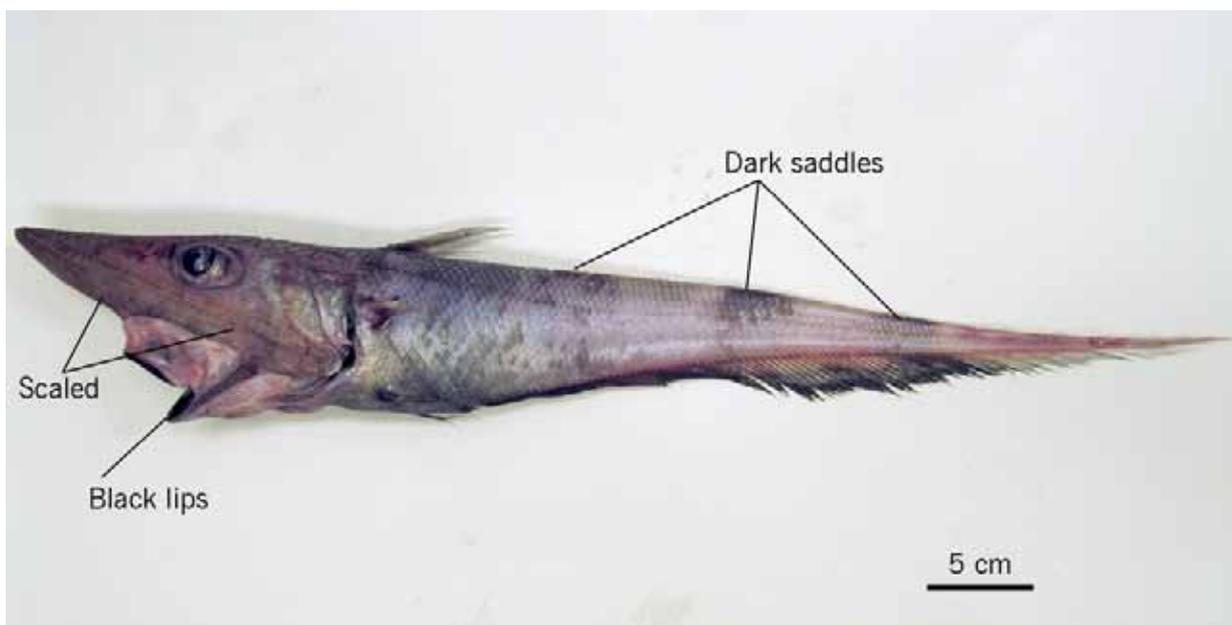
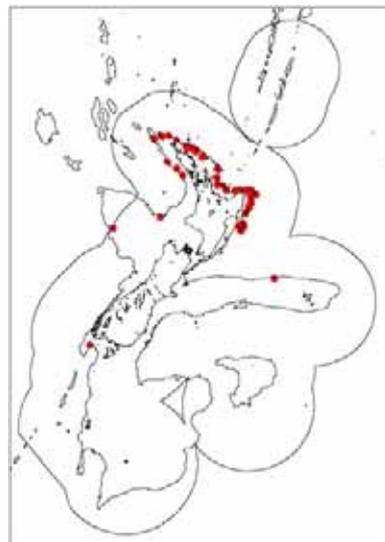
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: CEX



Distinguishing features: Black lips, a series of dark saddle marks on the dorsal surface and sides, a thick black stripe along the anal fin, long snout, underside of the snout completely scaled, inconspicuous light organ before anus.

Colour: Black lips, a series of dark bands on the dorsal surface and sides, a thick black stripe along the anal fin. Other fins dusky.

Size: To about 83 cm TL.

Distribution: Recorded from northern New Zealand including Norfolk Ridge. Records from the north Chatham Rise and Puysegur area are uncertain.

Depth: 600 to 1000 m.

Similar species: Supanose rattail (*C. supernasutus*) lacks black markings on the lips, body and fins.

Biology & ecology: Unknown. Demersal.

References

McMillan & Paulin (1993).

Cook's rattail

Coelorinchus cookianus

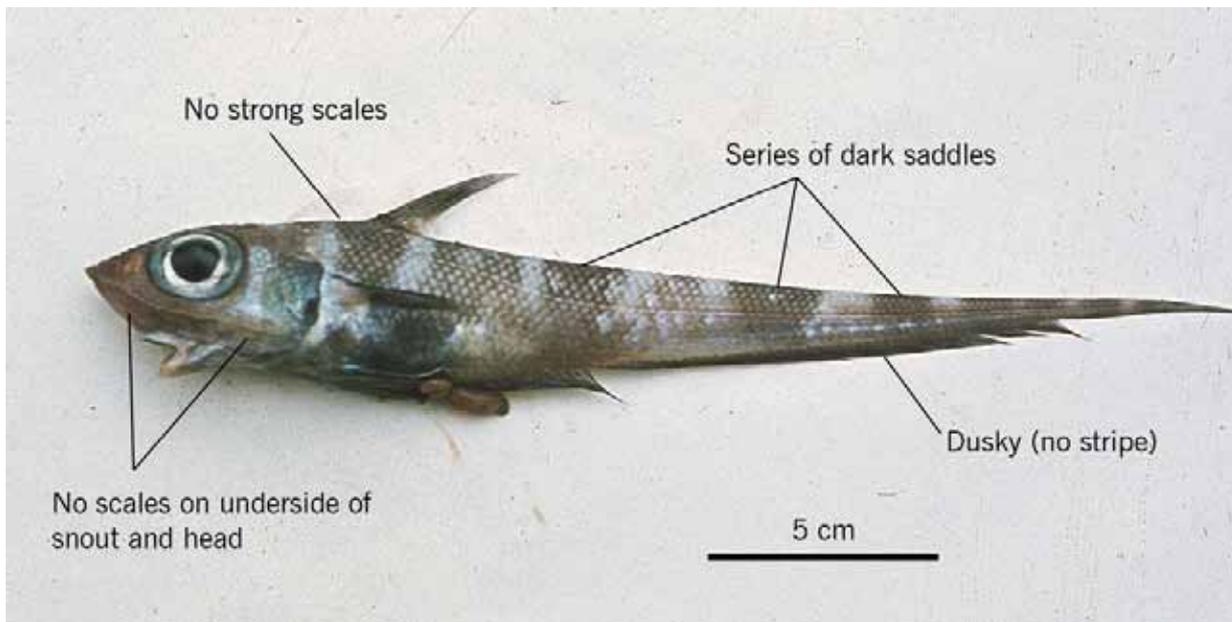
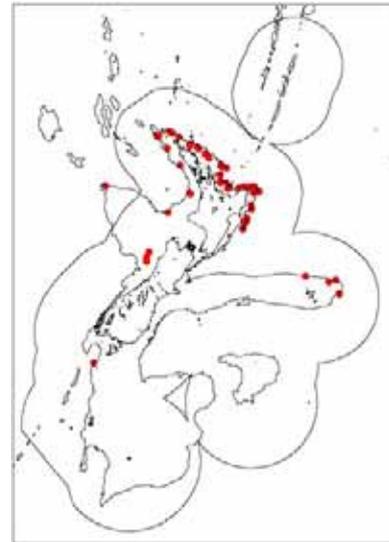
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: CCO



Distinguishing features: Series of dark saddle-like bands on the top and sides of the body. No scales on underside of snout. No enlarged or raised scales on the midline ahead of the first dorsal fin. Anal fin dusky without a narrow dark stripe.

Colour: Series of dark saddle-like bands on the top and sides of the body. Anal fin dusky without a narrow dark stripe. Other fins dusky without distinctive markings.

Size: To about 30 cm TL.

Distribution: Mainly recorded from northern North Island waters. Some records from the north Chatham Rise may be legitimate, but South Island records seem improbable. Known only from New Zealand.

Depth: 500 to 800 m.

Similar species: Bollons's 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 an 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 a dark stripe along the anal fin, and dark upper two-thirds of first dorsal fin.

Biology & ecology: Unknown. Demersal.

References

McMillan & Paulin (1993), Paulin et al. (1989).

Banded rattail

Coelorinchus fasciatus

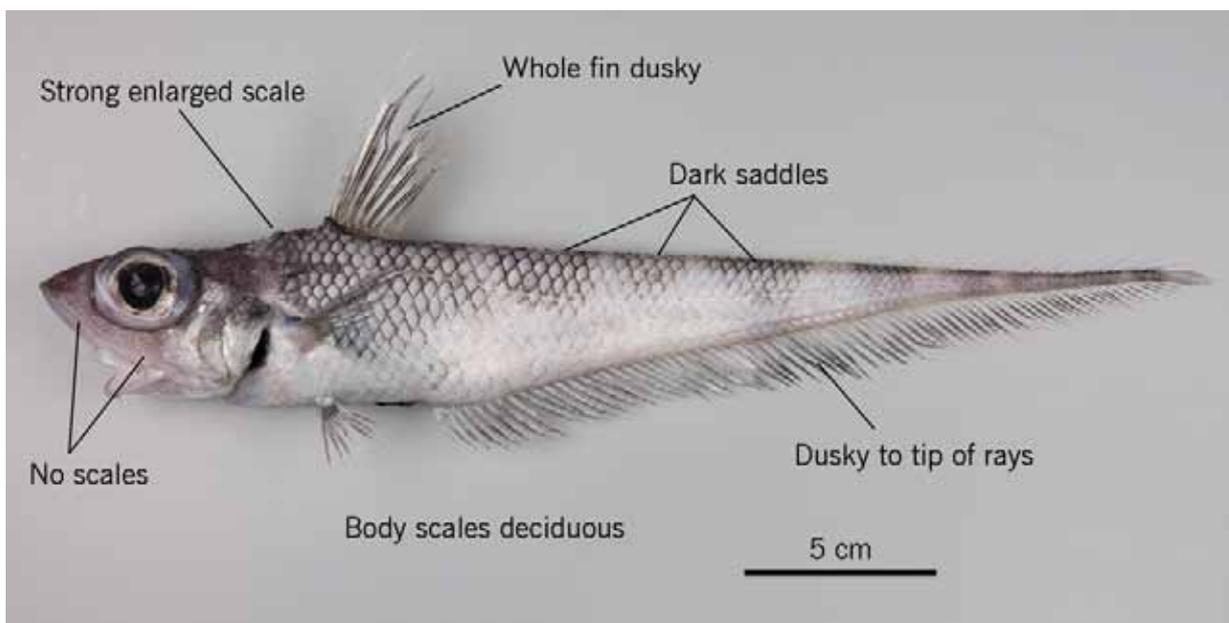
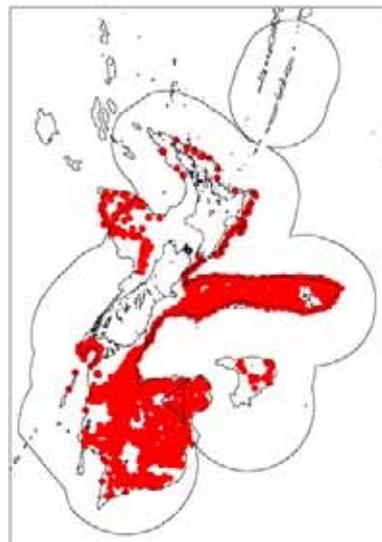
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: CFA

MFish research code: CFA



Distinguishing features: Series of dark saddle-like bands on the top and sides of the body. No scales on underside of snout. One or two enlarged or raised scales on the midline ahead of the first dorsal fin. Body scales deciduous. Anal fin dusky without a narrow dark stripe.

Colour: Series of dark saddle-like bands on the top and sides of the body. Rest of body creamy especially the belly. Anal fin dusky (sometimes rays pale near base) without a narrow dark stripe. Other fins dusky.

Size: To about 40 cm TL.

Distribution: Widespread in New Zealand. The same or a similar species in Southeast Australia, South America.

Depth: 500 to 1000 m.

Similar species: Bollons's rattail (*C. bollonsi*) has small patches of scales on underside of head, and lacks dark saddle marks on the 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 a narrow dark stripe along anal fin, and lacks dark upper two-thirds of first dorsal fin. Dark banded rattail (*C. maurofasciatus*) has a dark stripe along anal fin, and dark upper two-thirds of first dorsal fin.

Biology & ecology: Unknown. Demersal.

References

Iwamoto & Graham (2001), McMillan & Paulin (1993).

Horrible rattail

Coelorinchus horribilis

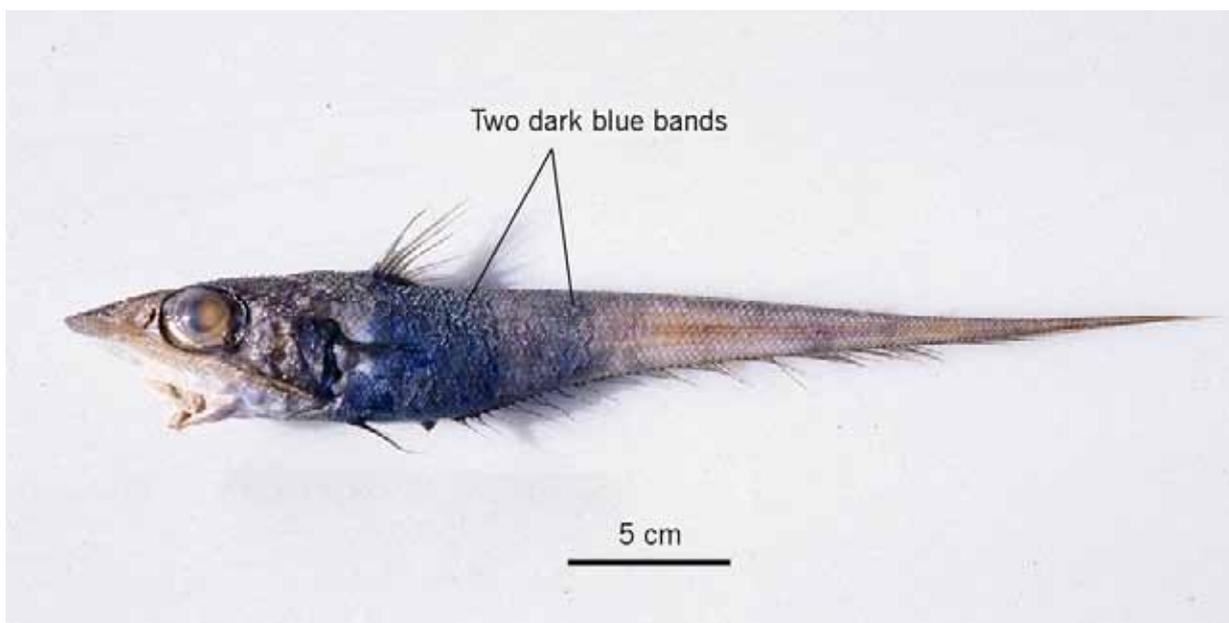
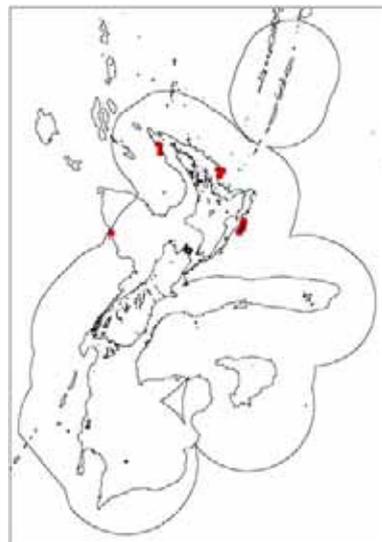
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: CXH



Distinguishing features: Two dark bluish bands extending from the dorsal to ventral surface of the body. Thin dark rim around the eye. Moderately long snout. No scales on the underside of head except for strong scales just under tip of snout.

Colour: Two dark bluish bands extending from the dorsal to ventral surface of the body, rest of body and fins greyish-brown. Thin dark rim around the eye.

Size: To about 35 cm TL.

Distribution: Recorded only from northern New Zealand.

Depth: 900 to 1200 m.

Similar species: Kaiyomaru rattail (*C. kaiyomaru*) has only one wide dark blue band on the body, and lacks scales on the underside of head at the tip of the snout.

Biology & ecology: Unknown. Demersal.

References

McMillan & Paulin (1993), Paulin et al. (1989).

Notable rattail

Coelorinchus innotabilis

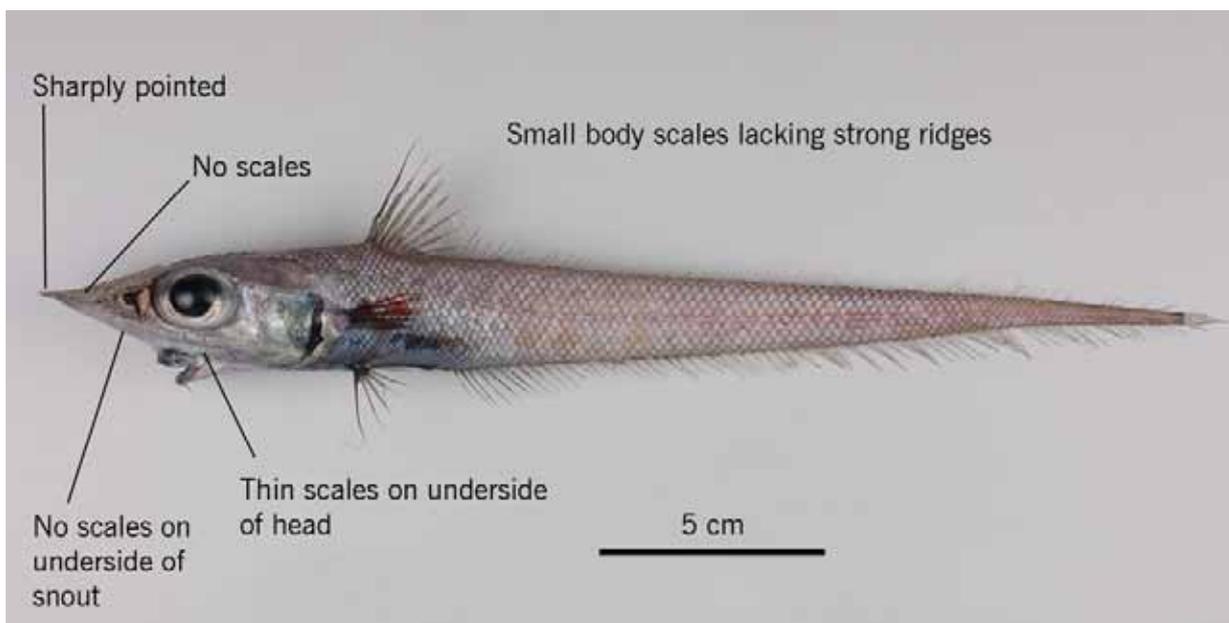
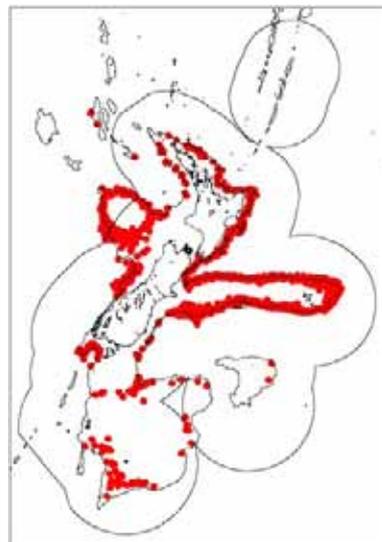
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research 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 the mouth. Body scales small without strong raised ridges.

Colour: Body pale greyish without any obvious markings. All fins greyish.

Size: To about 41 cm TL.

Distribution: Widespread in New Zealand. Southern Australia (NSW, Vic, Tas, SA, WA). The same or a very similar species is also found off southern Africa.

Depth: 500 to 1100 m.

Similar species: Other *Coelorinchus* species lack the 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.

References

Iwamoto & Graham (2001), McMillan & Paulin (1993).

Kaiyomaru rattail

Coelorinchus kaiyomaru

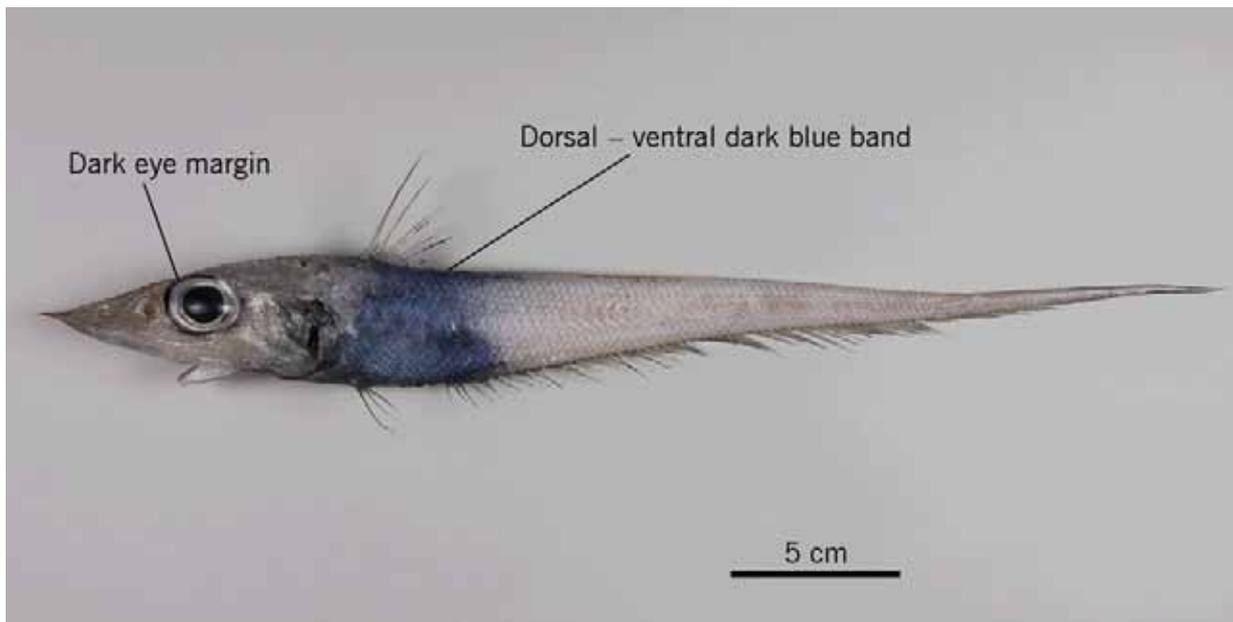
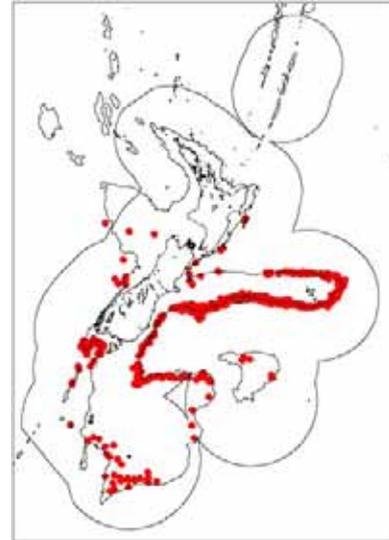
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: CKA



Distinguishing features: Dark blue abdominal band extending from the dorsal to ventral surface of the body. Dark rim around the eye. Moderately long snout. No scales on the underside of head.

Colour: Dark blue abdominal band extending from dorsal to ventral surface of the body, rest of body and fins pale greyish-brown. Dark rim around the eye, darker anteriorly.

Size: To about 45 cm TL.

Distribution: Recorded from Chatham Rise and southern New Zealand waters. Widespread patchy southern hemisphere distribution including Australia (NSW, Vic, Tas), South Atlantic off Falkland Islands, Gough Island, Discovery Tablemount, South Africa.

Depth: 800 to 1200 m.

Similar species: Horrible rattail (*C. horribilis*) has two dark bluish bands on the body, and strong scales on the underside of head at the tip of the snout.

Biology & ecology: Unknown. Demersal.

References

Arai & Iwamoto (1979), Iwamoto & Anderson (1994), Iwamoto & Graham (2001), McMillan & Paulin (1993).

Mahia rattail

Coelorinchus matamua

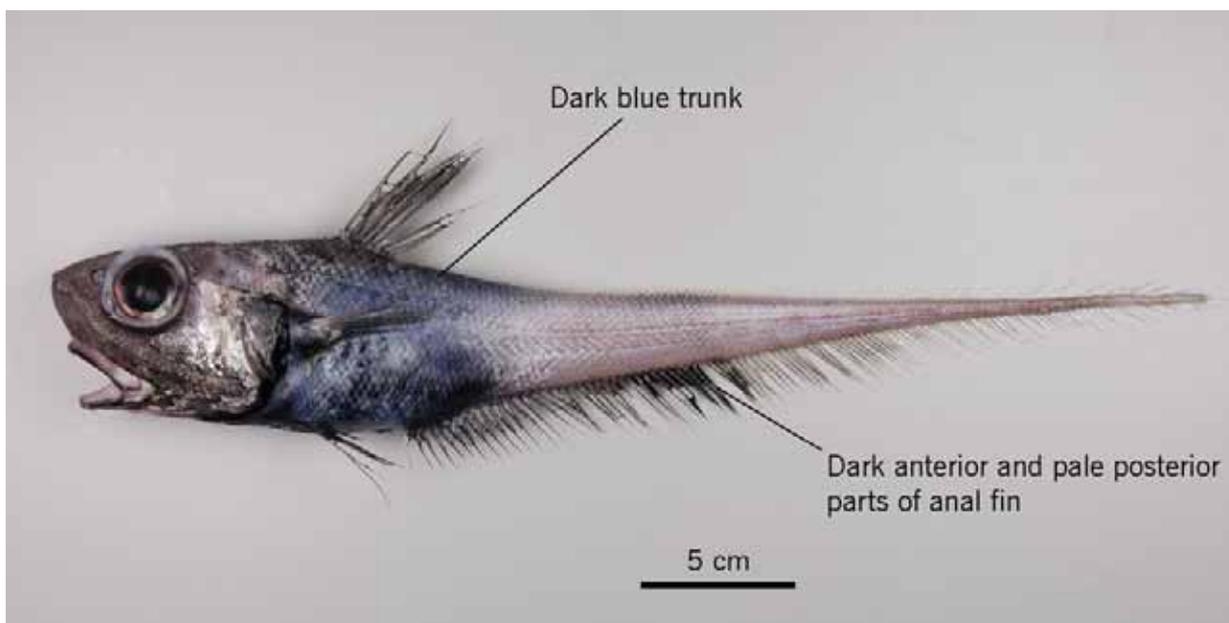
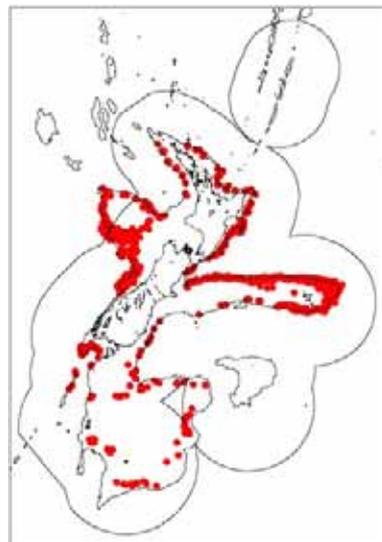
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: CMA

MFish research code: CMA



Distinguishing features: Wide dark blue abdominal band extending from the dorsal to ventral surface of the body. Front half of the 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 the dorsal to ventral surface of the body. Front half of the anal fin dark (black), rear half of fin pale. Other fins dark/dusky.

Size: To about 86 cm TL.

Distribution: Widespread in New Zealand but not recorded from Bounty Plateau. Widespread in the southern hemisphere, i.e., southern Africa, southern Australia, New Zealand.

Depth: 600 to 1000 m.

Similar species: Other species of *Coelorinchus* lack the combination of dark blue abdomen, dark anterior and pale posterior parts of the anal fin, scaled underside of head.

Biology & ecology: Unknown. Demersal.

References

Iwamoto & Anderson (1994), Iwamoto & Graham (2001), McMillan & Paulin (1993).

Dark banded rattail

Coelorinchus maurofasciatus

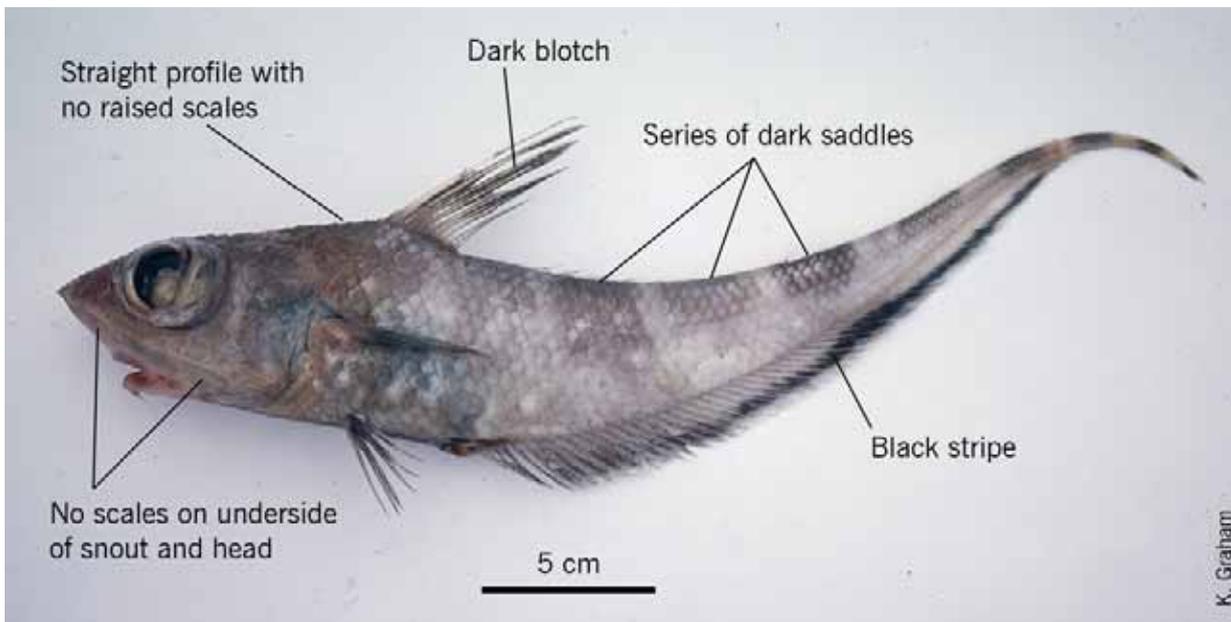
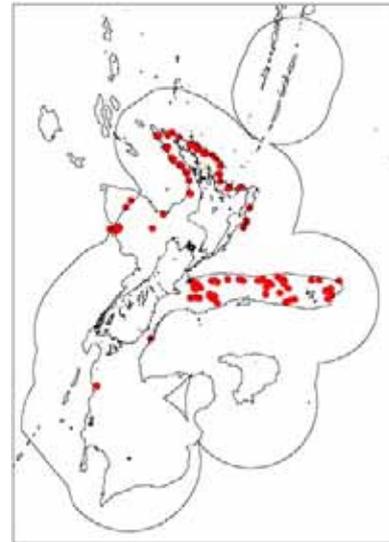
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: CDX



Distinguishing features: Series of dark saddle-like bands on the top and sides of the body. No scales on underside of snout. No enlarged or raised scales on the midline ahead of the first dorsal fin. Anal fin with a narrow dark stripe. Upper two-thirds of first dorsal fin dark/black, base pale.

Colour: Series of dark saddle-like bands on the top and sides of the body. Anal fin with a narrow dark stripe. Upper two-thirds of first dorsal fin dark/black, base pale.

Size: To about 50 cm TL.

Distribution: Northern and central New Zealand with records from the Chatham Rise, Challenger Plateau and around the North Island. Also southern Australia (NSW, Vic, Tas, SA, WA).

Depth: 300 to 800 m.

Similar species: Bollons's rattail (*C. bollonsi*) has small patches of scales on underside of head and lacks dark saddle marks on the body in fish greater than about 20 cm TL. Banded rattail (*C. fasciatus*) has an 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 a dark stripe along the anal fin, and lacks the dark upper two thirds of the first dorsal fin.

Biology & ecology: Unknown. Demersal.

References

Iwamoto & Graham (2001), McMillan & Paulin (1993).

Upturned snout rattail

Coelorinchus mycterismus

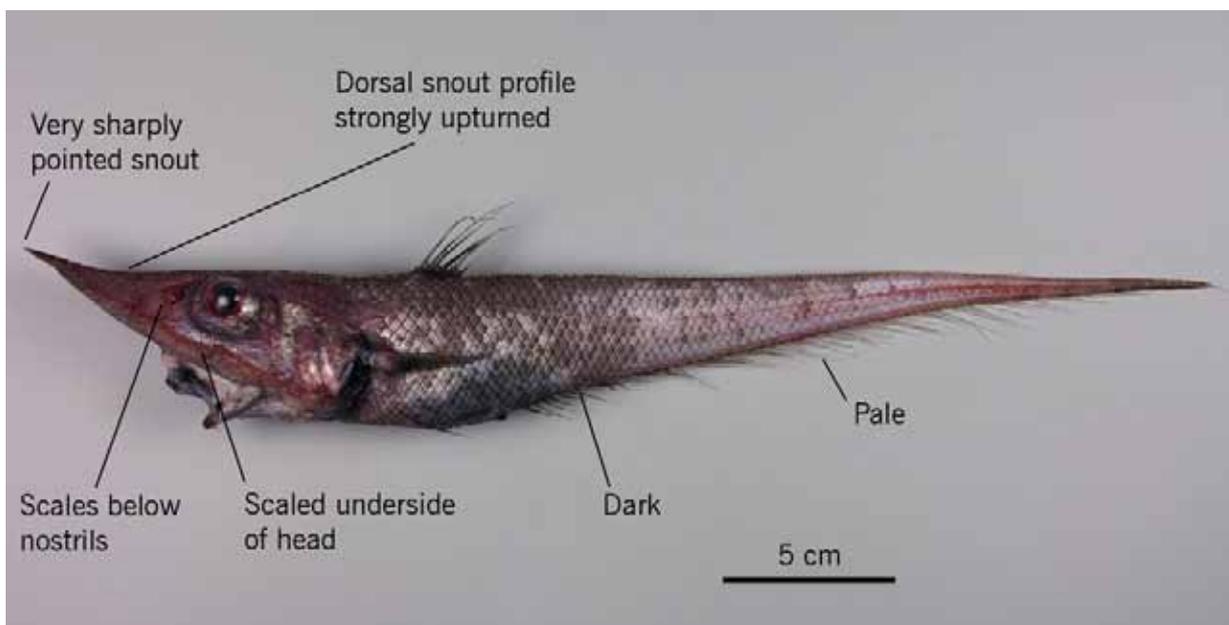
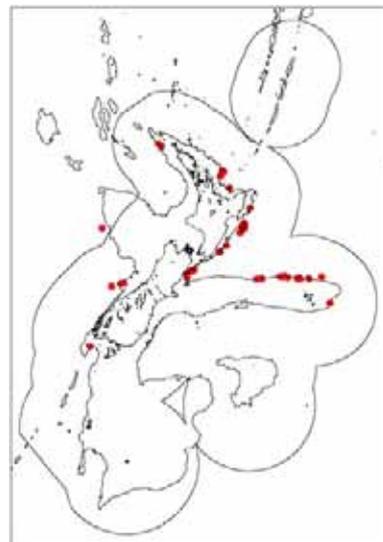
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research 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 50 cm TL.

Distribution: Recorded from the Challenger Plateau, north Chatham Rise and North Island of New Zealand. Also Norfolk Ridge and Australia (NSW, WA).

Depth: 800 to 1200 m.

Similar species: Spotty faced rattail (*C. acanthiger*) has a straight snout, no or a few scales below nostrils, dusky anal fin. Roughhead rattail (*C. trachycarus*) has large coarse spines on the ridges on top of head, no or a few scales below nostrils, anal fin black. Kermadec rattail (*C. kermadecus*) has a straight snout of moderate length, scaled skin below nostrils, anal fin dusky along entire length.

Biology & ecology: Unknown. Demersal.

References

Iwamoto & Graham (2001), Iwamoto & Williams (1999), McMillan & Paulin (1993).

Oliver's rattail

Coelorinchus oliverianus

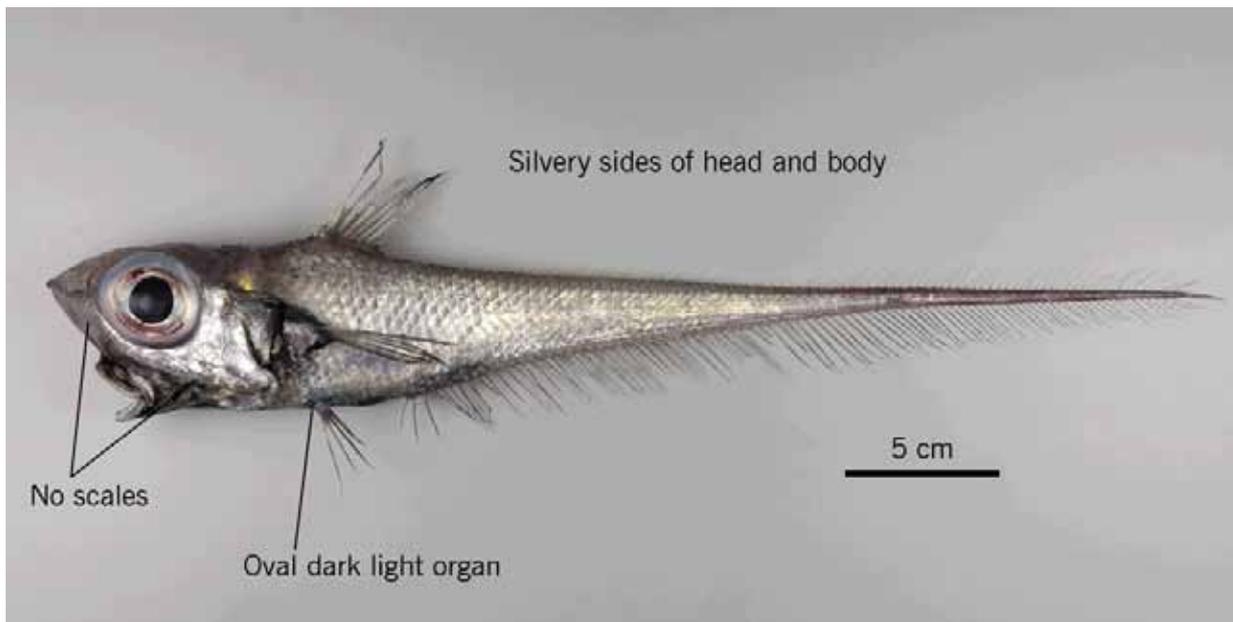
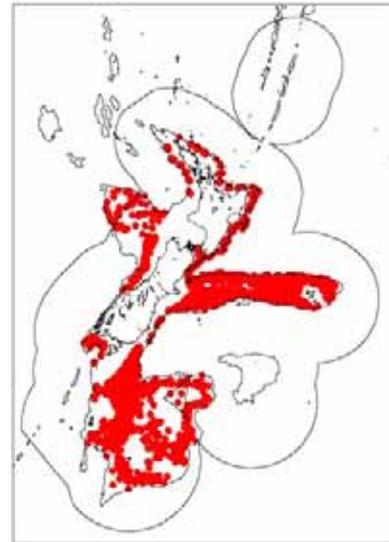
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: COL

MFish research code: COL



Distinguishing features: Sides of body and head silvery with black underside of head around the mouth and belly. Black oval light organ between the bases of the pelvic fins on the 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 the mouth and belly. Upper half of first dorsal fin blackish, other fins dusky.

Size: To about 44 cm TL.

Distribution: Widespread. Known only from New Zealand.

Depth: 600 to 1000 m.

Similar species: Other species of *Coelorinchus* lack the combination of silvery body and sides, light organ between the pelvic fin bases, large eye, short snout.

Biology & ecology: Unknown. Demersal.

References

McMillan & Paulin (1993), Paulin et al. (1989).

Small banded rattail

Coelorinchus parvifasciatus

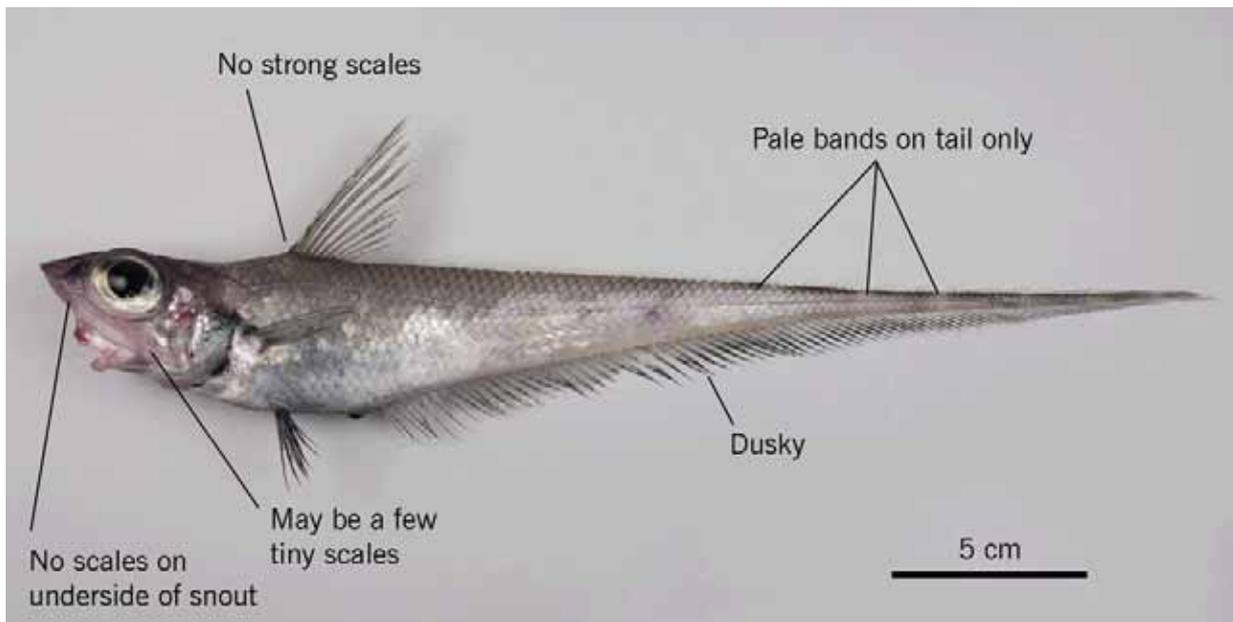
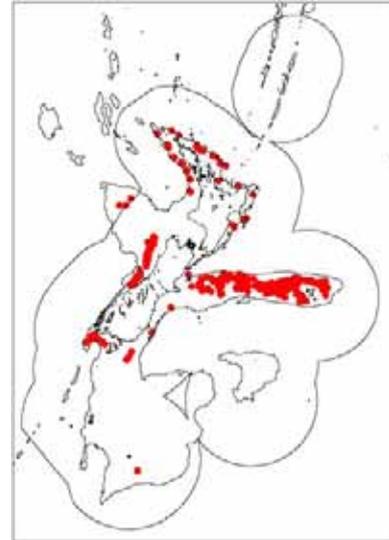
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: CCX



Distinguishing features: Series of pale vertical bands on the tail, best viewed dorsally. Underside of snout and head lacking scales except that a few tiny scales may be present adjacent to posterior end of lower jaw. Anal fin pale or slightly dusky lacking a narrow dark stripe. Large tear-shaped dark window of the light organ on the belly ahead of the anus.

Colour: Series of pale vertical bands on the tail, rest of body pale grey-brown. Anal fin pale to slightly dusky, lacking a narrow dark stripe. Other fins pale or slightly dusky.

Size: To about 30 cm TL.

Distribution: Widespread in New Zealand, although a record from the Campbell Plateau is uncertain. Known only from New Zealand.

Depth: 300 to 800 m.

Similar species: Small Bollons's rattail (*C. bollonsi*) has a dark body with faint saddle marks, and very dark fins, especially anal fin. Banded rattail (*C. fasciatus*) has dark saddle marks and an enlarged scale in front of the first dorsal fin. Dark banded rattail (*C. maurofasciatus*) has dark saddle marks on the body and a narrow dark stripe along anal fin. Cook's rattail (*C. cookianus*) has very dark saddle marks on the body and no scales on the underside of the head.

Biology & ecology: Unknown. Demersal.

References

McMillan & Paulin (1993), Paulin et al. (1989).

Supanose rattail

Coelorinchus supernasutus

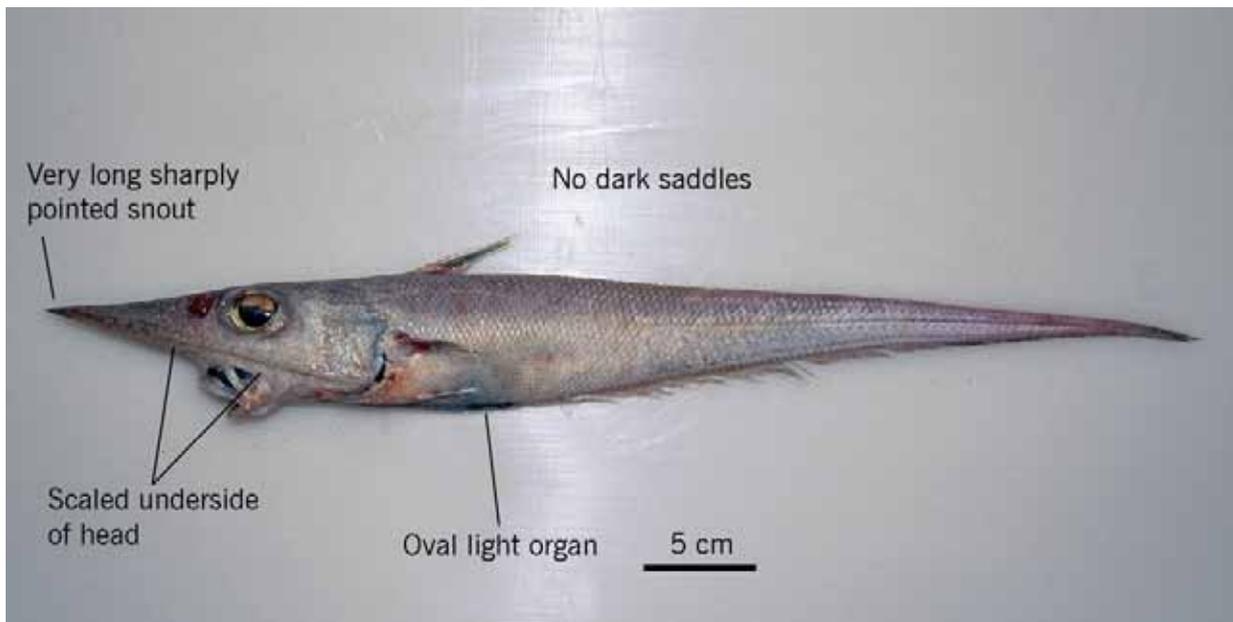
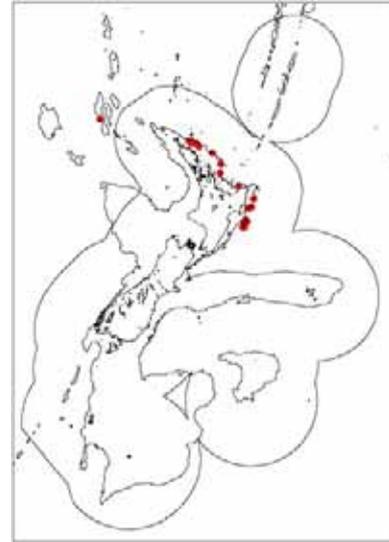
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research 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.

Distribution: Recorded from around the North Island and the Norfolk Ridge. Also Australia (NSW).

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 a straight snout, scaled skin below nostrils, anal fin dusky.

Biology & ecology: Unknown. Demersal.

References

Iwamoto & Graham (2001), McMillan & Paulin (1993).

Roughhead rattail

Coelorinchus trachycarus

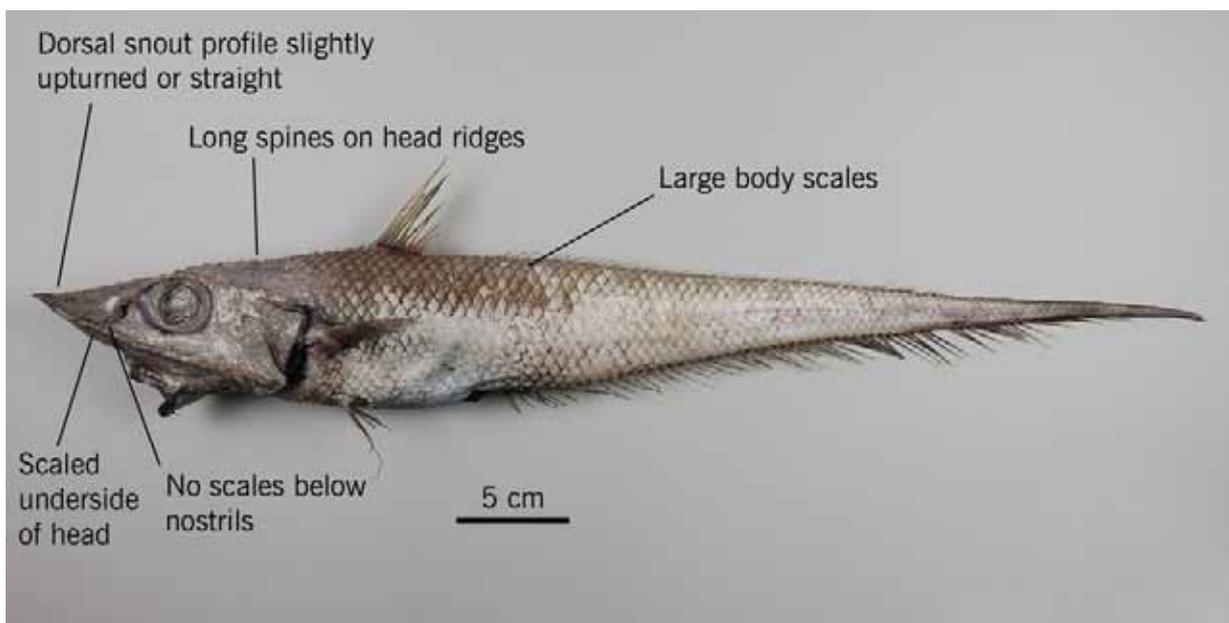
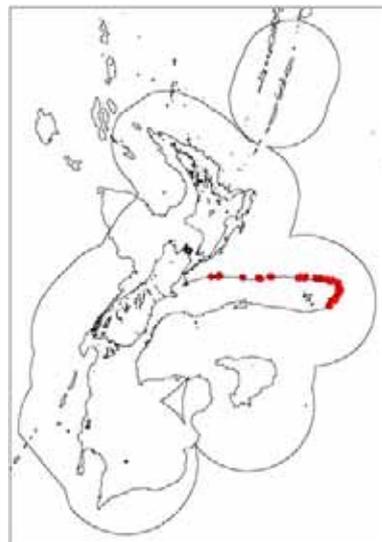
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research 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, 4 to 6 (usually 5) between middle of first 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 56 cm TL.

Distribution: Recorded from Chatham Rise, Challenger Plateau and North Island but difficult to identify. Norfolk Ridge, Australia (Vic, Tas, SA, WA).

Depth: 800 to 1300 m.

Similar species: Spotty faced rattail (*C. acanthiger*) has short spines on the head ridges and smaller body scales, 5 to 7 (usually 6) scales between middle of first dorsal fin and lateral line. Upturned snout rattail (*C. mycterismus*) has a strongly upturned snout, dark anterior and pale posterior parts of anal fin. Kermadec rattail (*C. kermadecus*) has scaled skin below the nostrils, and pale brown body.

Biology & ecology: Unknown. Demersal.

References

Iwamoto & Graham (2001), Iwamoto et al. (1999).

Humpback rattail

Coryphaenoides dossenus

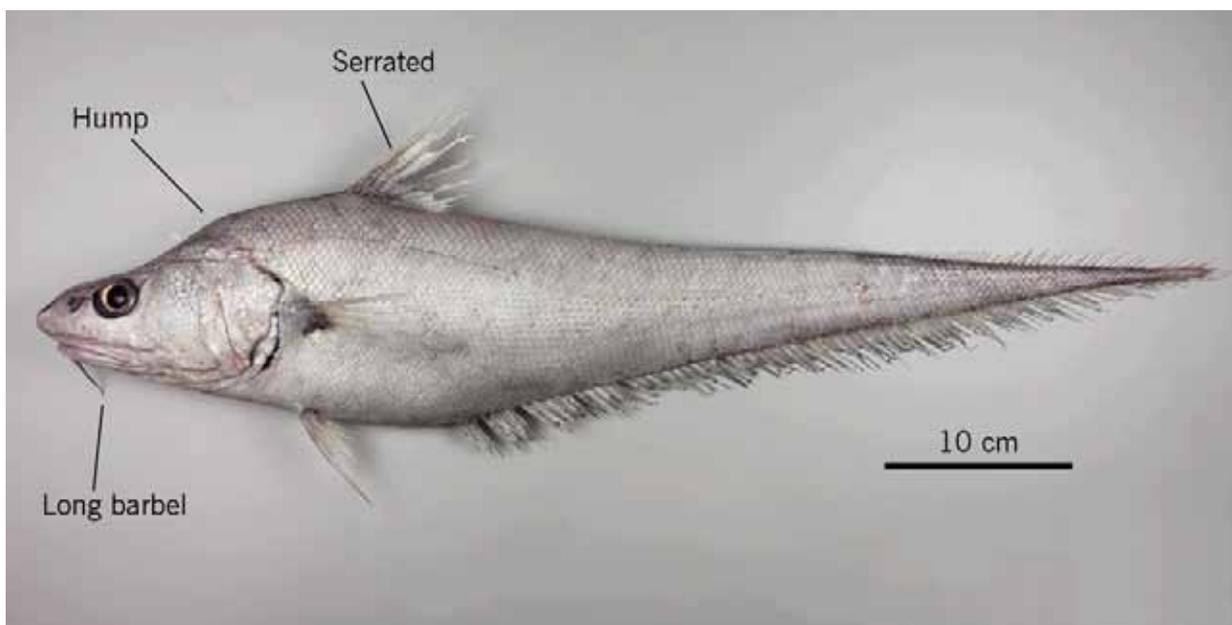
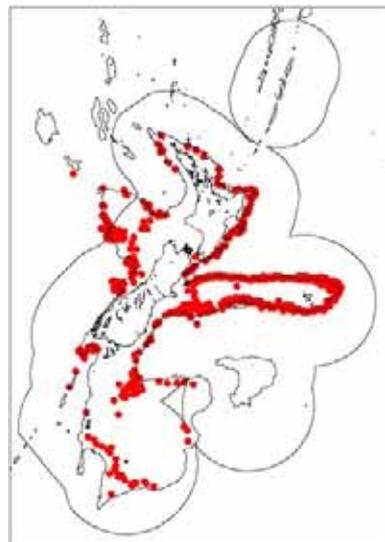
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: Slender rattail (male)

MFish reporting code: RAT

MFish research code: CBA



Distinguishing features: Marked dorsal hump on the body behind the 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 a 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.

Distribution: Widespread in New Zealand but not recorded from the Bounty Plateau. Also southern Australia, Indian Ocean, southern Africa, Atlantic Ocean to the Gulf of Guinea.

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.

References

McMillan (1999).

McMillan's rattail

Coryphaenoides mcmillani

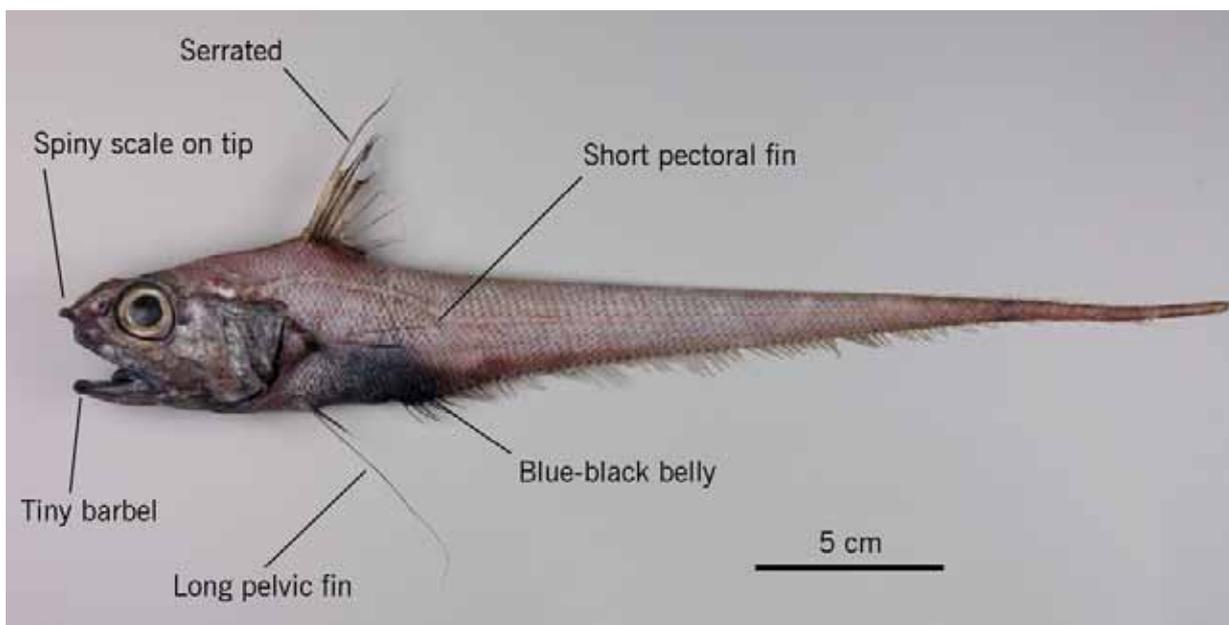
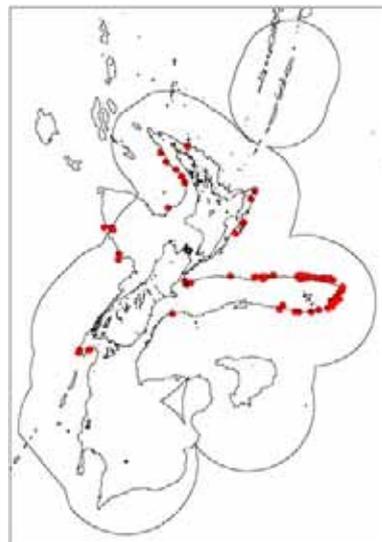
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research 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 the 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 39 cm TL.

Distribution: Recorded from Chatham Rise, Challenger Plateau and around the North Island. Puysegur records are uncertain but lack of records from Campbell and Bounty Plateaus may be due to inadequate sampling at suitable depth. Widely distributed in the southern hemisphere from southern Africa to New Zealand, including Australia (NSW, Tas, SA).

Depth: 900 to 1500 m.

Similar species: Serrulate rattail (*C. serrulatus*) has pectoral and pelvic fin rays that are shorter than the head length, and a moderate length chin barbel, less than the eye diameter. Four-rayed rattail (*C. subserrulatus*) has pectoral and pelvic fins that are extremely long, much longer than the head length, and a tiny (rudimentary) chin barbel.

Biology & ecology: Largely unknown. Demersal.

References

Iwamoto & Anderson (1994), Iwamoto & Graham (2001).

Murray's rattail

Coryphaenoides murrayi

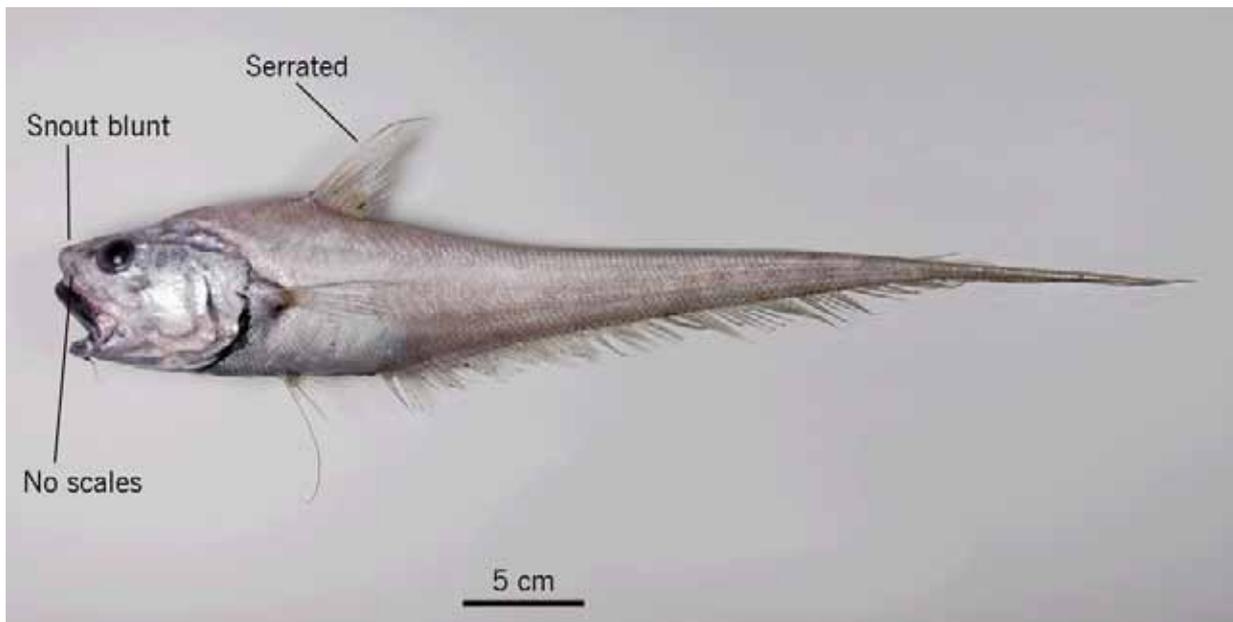
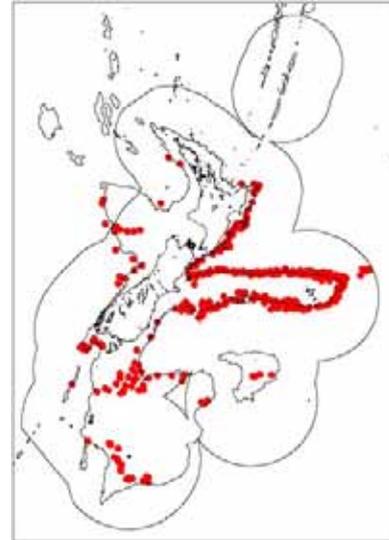
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: CMU



Distinguishing features: Tip of snout not armed with a 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 81 cm TL.

Distribution: Widespread in New Zealand. Western Indian Ocean to southeast Australia (NSW, Vic) and Fiji.

Depth: 700 to at least 2300 m.

Similar species: Striate rattail (*Coryphaenoides striaturus*) has a scaled underside of the snout.

Biology & ecology: Demersal.

References

Anderson et al. (1998), Iwamoto & Graham (2001), Iwamoto & Shcherbachev (1991).

Serrulate rattail

Coryphaenoides serrulatus

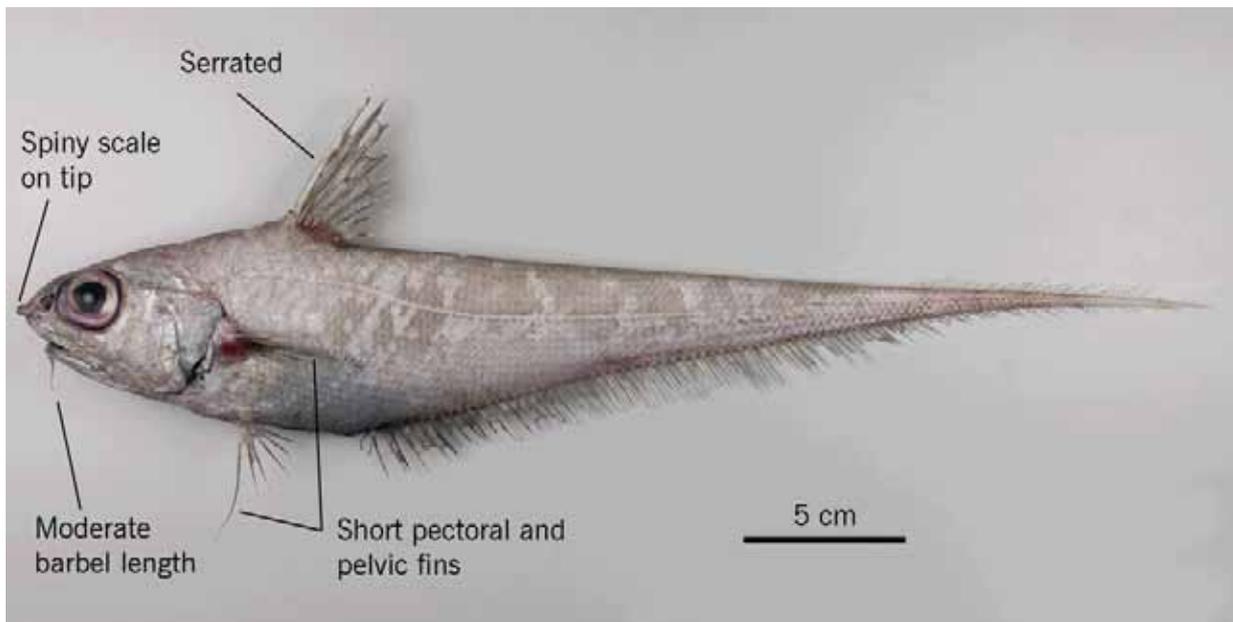
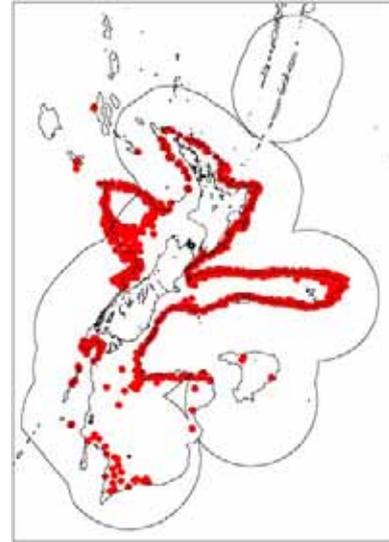
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research 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 the 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.

Distribution: Widespread in New Zealand. Australia (NSW, Tas, Vic, SA, WA) and Indian Ocean seamounts.

Depth: 600 to 1200 m.

Similar species: Four-rayed rattail (*C. subserrulatus*) has pectoral and pelvic fins that are extremely long, much longer than the head length, and a tiny (rudimentary) chin barbel. McMillan's rattail (*C. mcmillani*) has a pectoral fin that is shorter than the head length, and pelvic fin that is usually longer or about the same as the head length, and a tiny chin barbel.

Biology & ecology: Largely unknown. Demersal. A very abundant species with numerous records.

References

Iwamoto & Graham (2001), Iwamoto & Williams (1999).

Striate rattail

Coryphaenoides striaturus

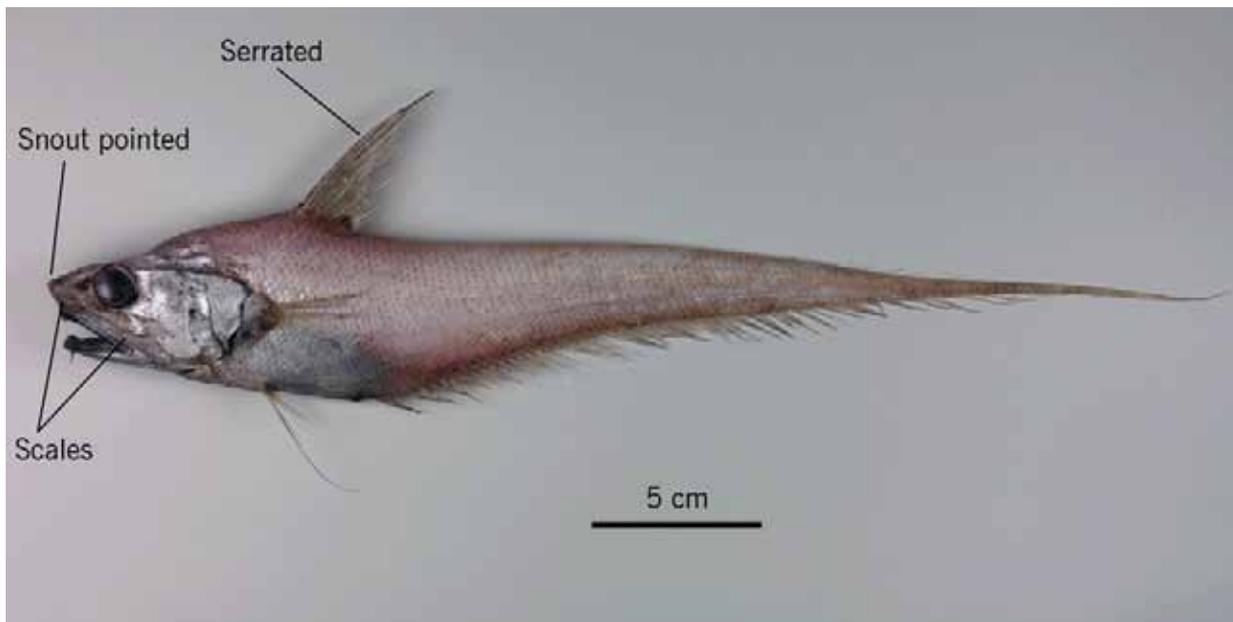
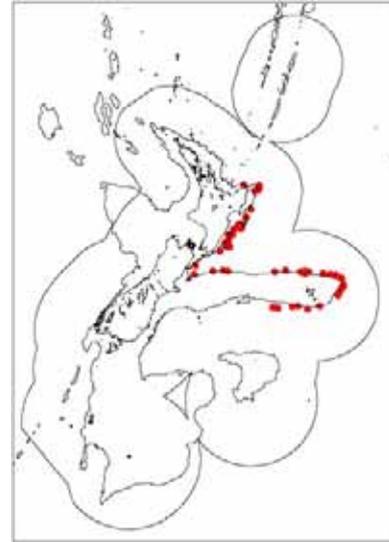
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: CTR



Distinguishing features: Tip of snout not armed with a 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.

Distribution: Mainly recorded from central and northern New Zealand but this reflects sampling. Australia (Qld, NSW, Vic, Tas, SA, WA). Widespread in Southern Hemisphere.

Depth: 800 to at least 2000 m.

Similar species: Murray's rattail (*Coryphaenoides murrayi*) lacks scales on the underside of the snout.

Biology & ecology: Demersal.

References

Anderson et al. (1998), Iwamoto & Graham (2001), Iwamoto & Shcherbachev (1991).

Four-rayed rattail

Coryphaenoides subserrulatus

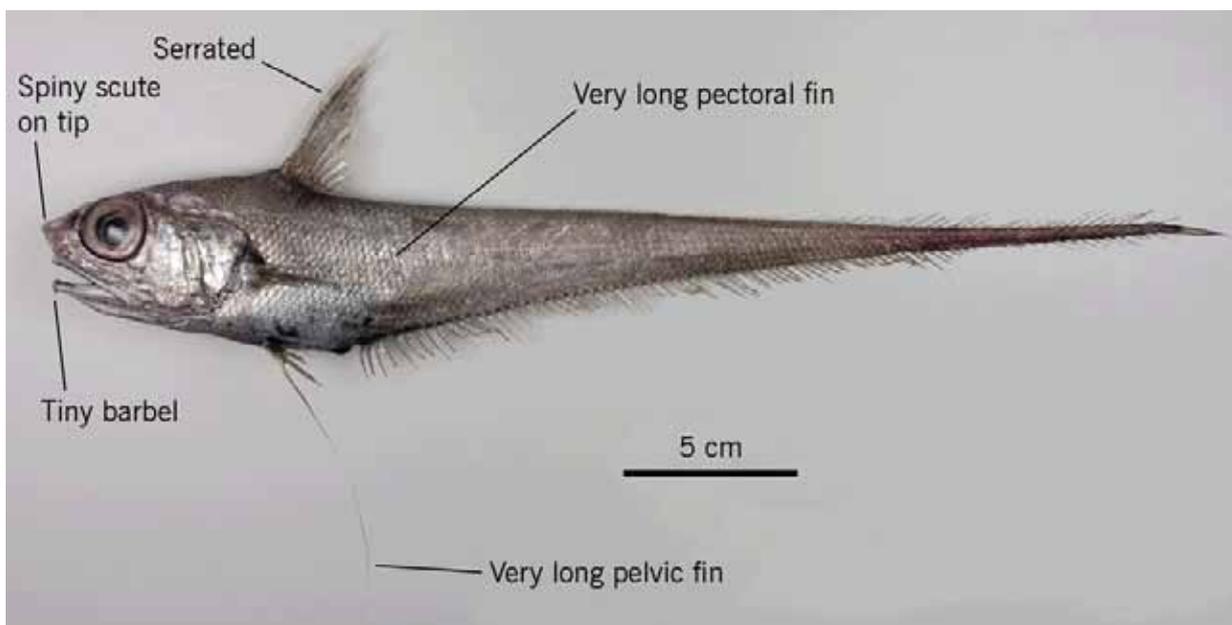
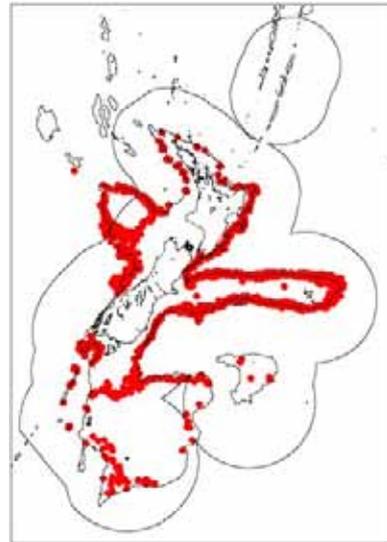
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research 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-silvery.

Colour: Body and head pale greyish-silver sometimes with greenish iridescence. Belly near anus greyish-silvery. All fins slightly dusky.

Size: To about 45 cm TL.

Distribution: Widespread in New Zealand. Southeast Australia (NSW, Tas, Vic), Chile, Argentina, South Africa.

Depth: 700 to 1200 m.

Similar species: Serrulate rattail (*C. serrulatus*) has pectoral and pelvic fins rays that are shorter than the head length, and a moderate length chin barbel, less than the eye diameter. McMillan's rattail (*C. mcmillani*) has a pectoral fin that is shorter than the head length, and pelvic fin that is usually longer or about the same as head length, and a tiny chin barbel.

Biology & ecology: Largely unknown. Demersal. A very abundant species with numerous records.

References

Iwamoto & Anderson (1994), Iwamoto & Graham (2001).

Filamentous rattail

Gadomus aoteanus

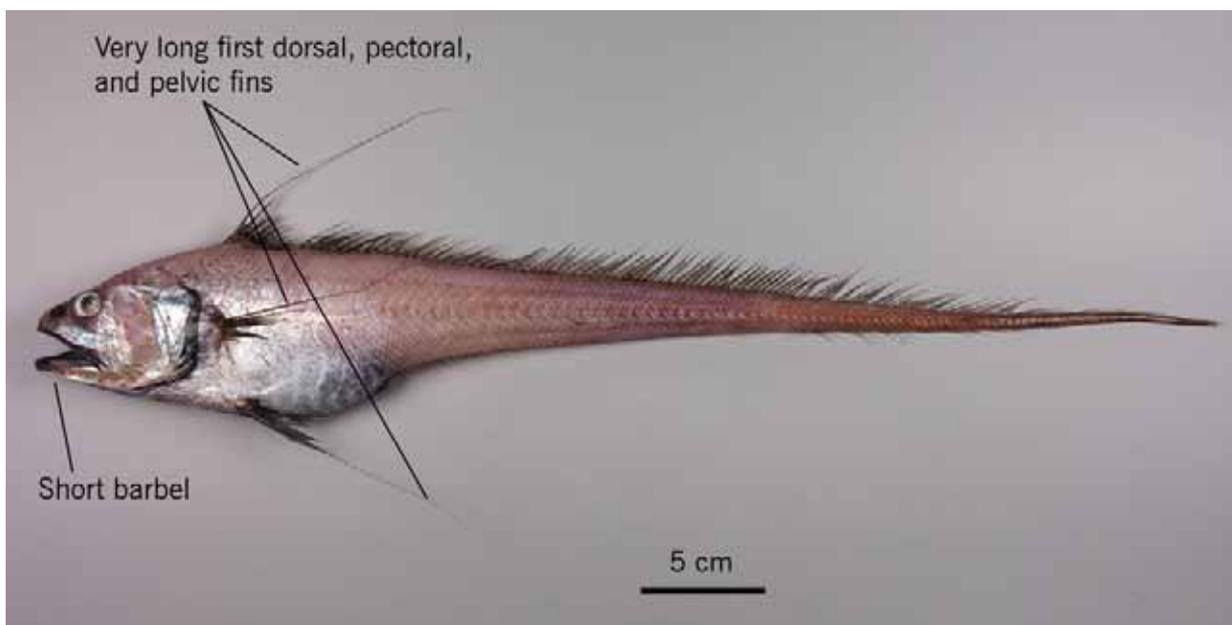
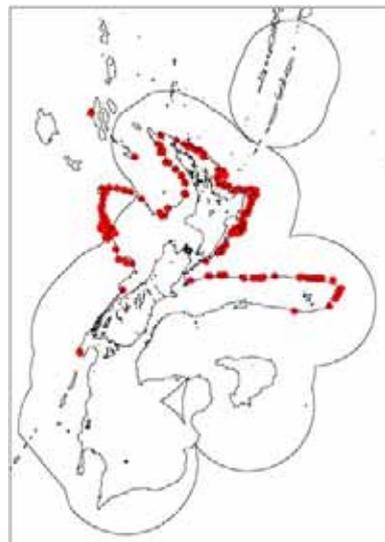
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: GAO



Distinguishing features: Very long rays in the first dorsal, pectoral, and pelvic fins. Second dorsal fin rays longer than the rays in the anal fin. Short chin barbel.

Colour: Sides of head and body pale silvery but brownish where the skin has been rubbed off. First dorsal, second dorsal, pectoral and pelvic fins dark/dusky.

Size: To about 50 cm TL.

Distribution: Central and northern New Zealand. Also Lord Howe Rise and southern Australia.

Depth: 1000 to 1400 m.

Similar species: Other macrouroid species lack the elongated rays in the first dorsal, pectoral, and pelvic fins, pale soft body with flat scales (usually lost) and weak ridges on the head.

Biology & ecology: Unknown. Probably demersal.

References

Anderson et al. (1998), Iwamoto & Williams (1999).

Pineapple rattail

Idiophorhynchus andriashevi

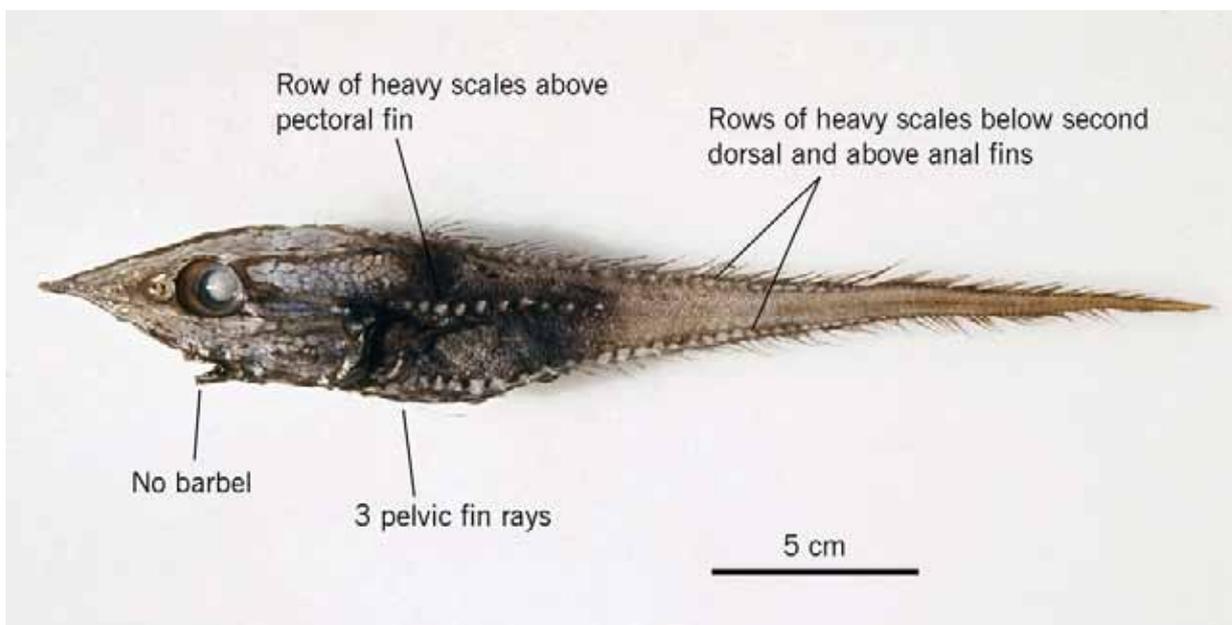
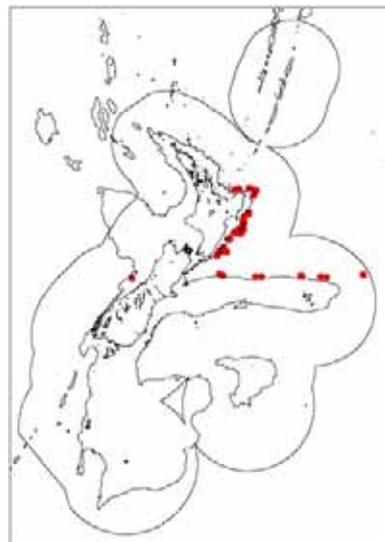
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: PIN



Distinguishing features: Rows of enlarged scutes along the bases of the dorsal and anal fins, and above the pectoral fin. Long pointed snout. Pelvic fin tiny with 3 rays. No chin barbel.

Colour: Body brownish black. All fins blackish.

Size: To about 30 cm TL.

Distribution: Central and northern New Zealand. Australia (SA, WA).

Depth: 1000 to at least 1580 m.

Similar species: White rattail (*Trachyrincus aphyodes*) and unicorn rattail (*T. longirostris*) both lack the horizontal line of scutes above the pectoral fin and both have 7 pelvic fin rays.

Biology & ecology: Unknown. Demersal.

References

McMillan (1995).

Bulbous rattail

Kuronezumia bubonis

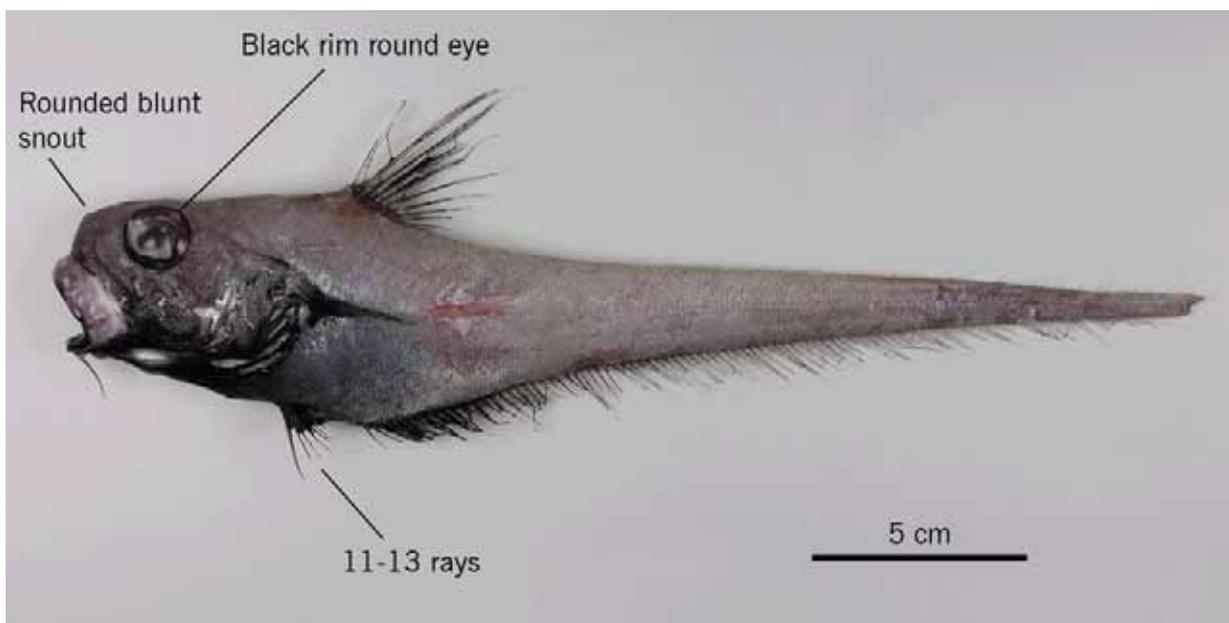
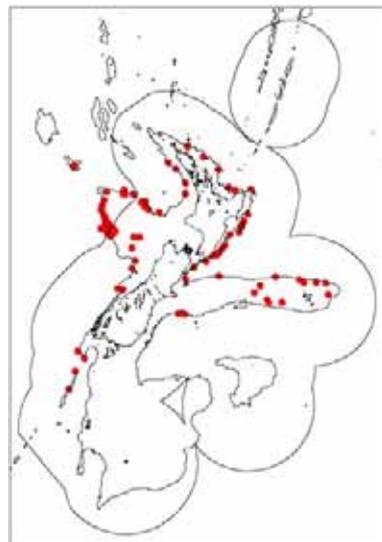
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: NBU



Distinguishing features: First dorsal fin spine serrated. Bulbous light organ between pelvic fin bases. Snout rounded and not protruding, lacking an obvious terminal scute. Ventral surface of the head scaled except for a naked margin of skin above the upper jaw. Dorsal, pectoral, and pelvic fins blackish.

Colour: Body brownish. All fins dark brown or black.

Size: To about 80 cm TL.

Distribution: Central and northern New Zealand. Australia (NSW), western Atlantic, Hawaii, South China Sea, southern Indian Ocean.

Depth: 500 to 1100 m.

Similar species: *Kuronezumia leonis* has a moderately protruding snout tipped with an enlarged button-like scute, and has greyish first dorsal, pectoral, and pelvic fins.

Biology & ecology: Demersal.

References

Iwamoto & Graham (2001), Shcherbachev et al. (1992).

Kuronezumia leonis

Kuronezumia leonis

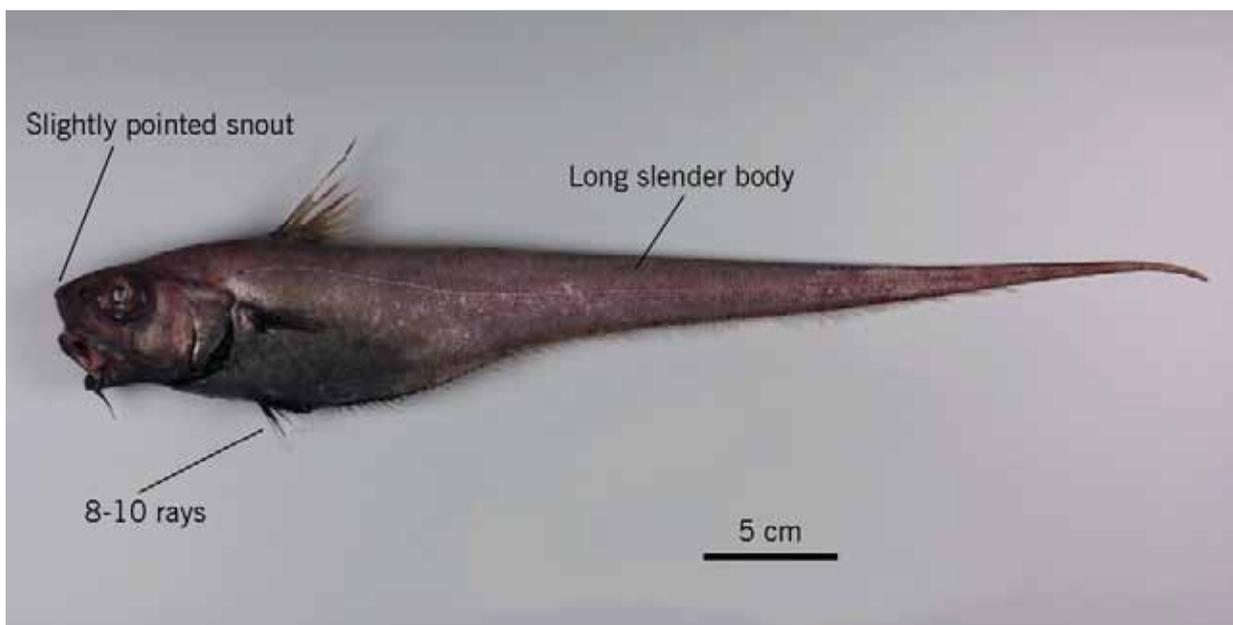
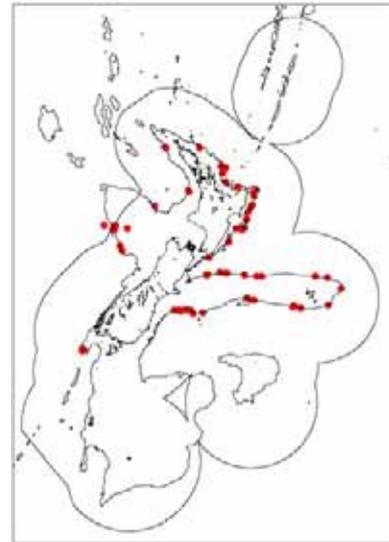
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: NPU



Distinguishing features: First dorsal fin spine serrated. Snout protruding and tipped with a 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 52 cm TL.

Distribution: Central and northern New Zealand. Australia (NSW, Vic, Tas, WA), South Atlantic, and southern Indian Oceans.

Depth: 700 to 1200 m.

Similar species: Bulbous rattail (*Kuronezumia bubonis*) has a rounded non-protruding snout not tipped with a scute, and has blackish first dorsal, pectoral, and pelvic fins.

Biology & ecology: Demersal.

References

Iwamoto & Graham (2001), Shcherbachev et al. (1992).

Javelinfish

Lepidorhynchus denticulatus

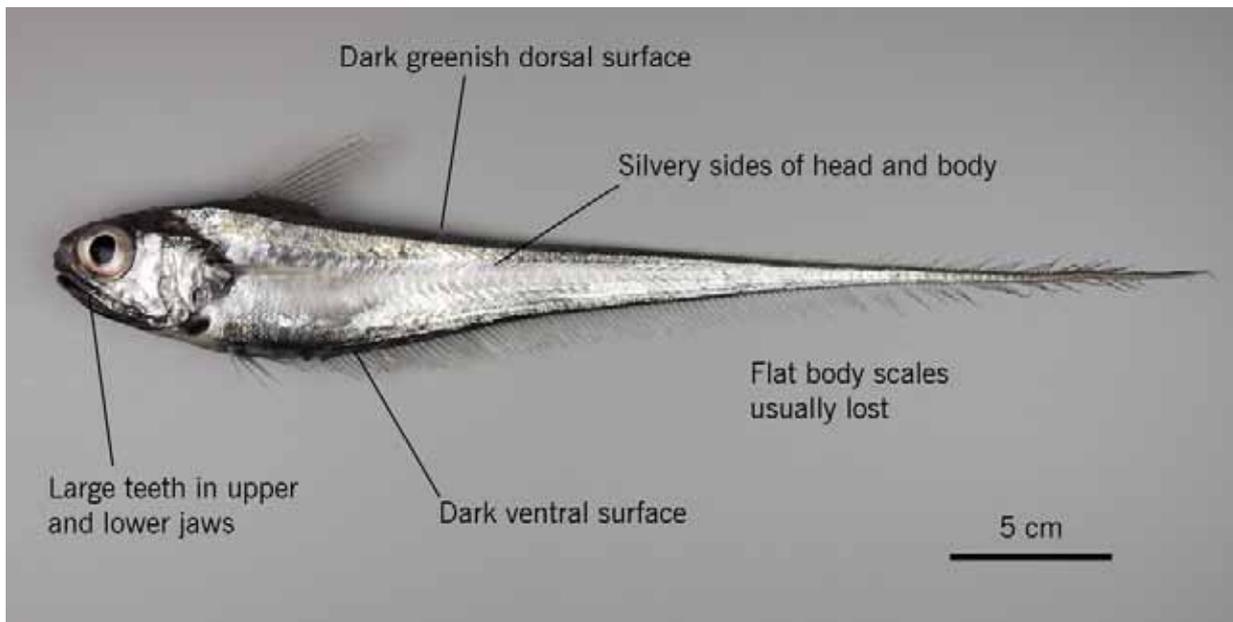
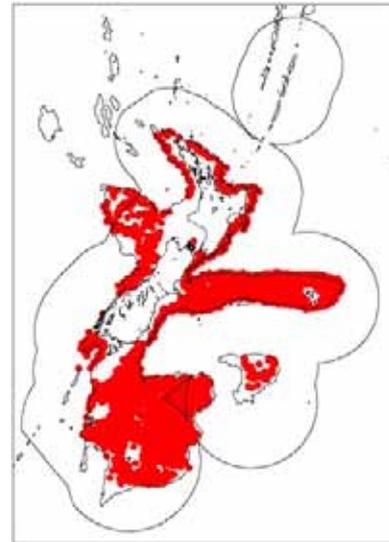
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: JAV

MFish research 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.

Distribution: Widespread in New Zealand. Australia (NSW, Tas, Vic, SA, WA) and Hawaii.

Depth: 250 to 1200 m.

Similar species: Other macrourids lack the silvery sided body, black ventral body surface, and the enlarged teeth in the jaws.

Biology & ecology: Probably demersal. Can be abundant in some areas such as the slopes of Chatham Rise and the east coast of the South Island.

References

Anderson et al. (1998), Iwamoto & Graham (2001).

Blackspot rattail

Lucigadus nigromaculatus

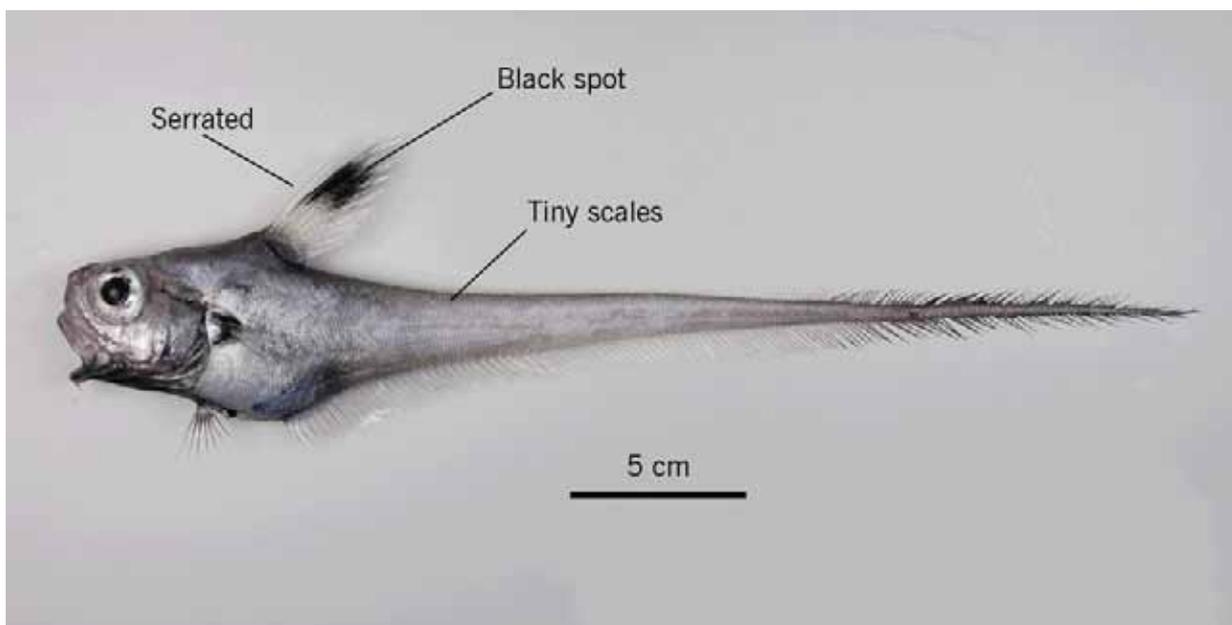
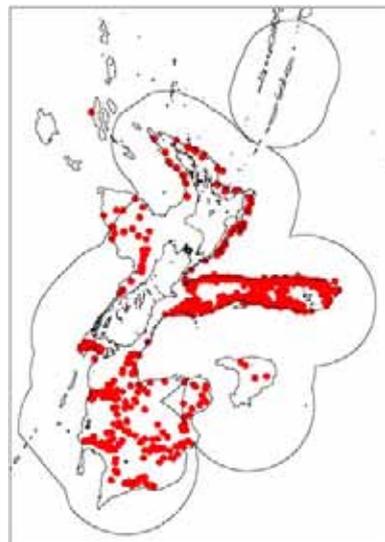
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: VNI



Distinguishing features: Large dark blotch on the top half of the first dorsal fin. Very short trunk with long slender tail, short rounded snout lacking strong ridges or spiny scutes. Serrated spine in the first dorsal fin. Small teeth in the jaws and very small body scales.

Colour: Head and body greyish, greyish-silver on the sides and belly. Underside of the head and throat dark. Large dark blotch on the top half of the first dorsal fin. Second dorsal and anal fins dusky posteriorly. Pectoral and pelvic and other parts of fins pale.

Size: To about 43 cm TL.

Distribution: Widespread in New Zealand. Australia (southern Qld, NSW, Vic, Tas), and Chile.

Depth: 400 to 800 m.

Similar species: Other macrourids lack the combination of serrated first dorsal fin spine, large dark blotch on the first dorsal fin, short rounded snout, and long slender tail.

Biology & ecology: Demersal.

References

Anderson et al. (1998), Iwamoto & Graham (2001).

Ridge scaled rattail

Macrourus carinatus

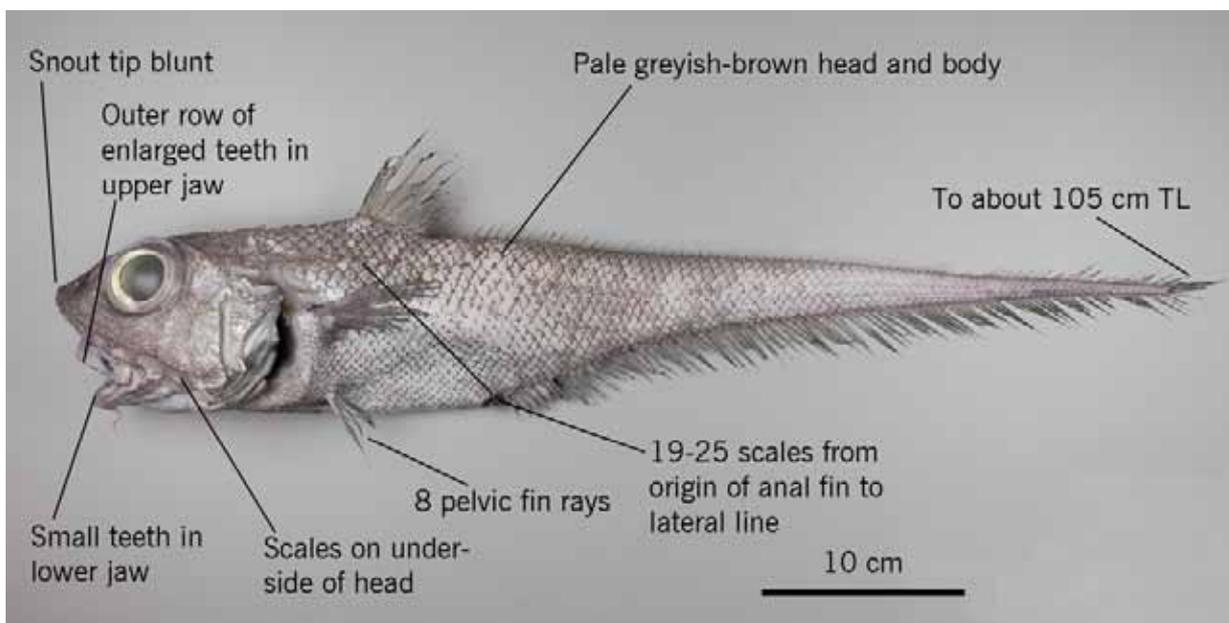
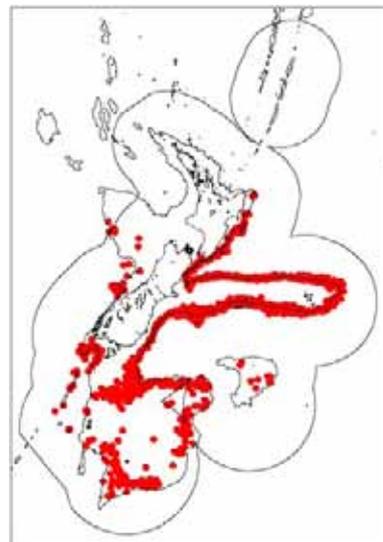
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: MCA

MFish research code: MCA



Distinguishing features: 8 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 a 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.

Distribution: South Atlantic Ocean, south Indian Ocean (Australia), south Pacific Ocean (New Zealand, Pacific-Antarctic Rise, South America). Probably widespread in temperate to subantarctic waters of the southern hemisphere from about 37 to 65 S.

Depth: About 400 to 1500 m.

Similar species: Bigeye grenadier (*M. holotrachys*) from subantarctic waters has no scales on underside of head. Whitson's grenadier (*Macrourus whitsoni*) from Antarctic waters has 1 row of slightly enlarged teeth in lower jaw, 36 to 45 scales from origin of anal fin to lateral line scale. CAML grenadier (*Macourus* sp. A) from Antarctic waters 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.

References

Anderson et al. (1998), Iwamoto (1990), Iwamoto & Anderson (1994).

Smooth headed rattail

Malacocephalus laevis

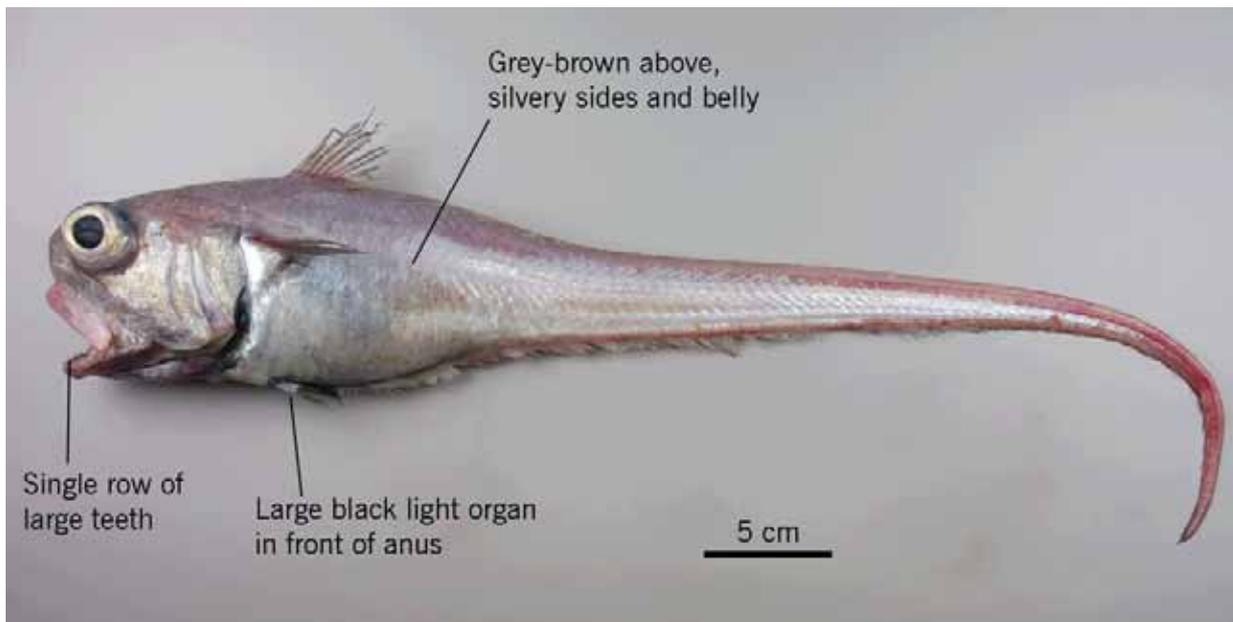
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: MLA



Distinguishing features: First dorsal fin spine smooth. Bean-shaped black light organ on the ventral body between the pelvic fin bases. Large mouth with two rows of teeth in upper jaw and a single row of canine-like teeth in lower jaw. Small body scales giving a velvety feel.

Colour: Dull brownish grey dorsal surface of body with silvery sides and pale ventrally.

Size: To at least 65 cm TL.

Distribution: North of about 40 S in New Zealand. Widely distributed in tropical and warm temperate waters of the Atlantic, Indian and Pacific Oceans.

Depth: 200 to 1000 m.

Similar species: Other macrourid species lack the large bean-shaped black light organ between the pelvic fin bases, and large mouth with large canine-like teeth in the lower jaw.

Biology & ecology: Demersal.

References

Iwamoto (1990), Iwamoto & Graham (2001).

Black javelinfish

Mesobius antipodum

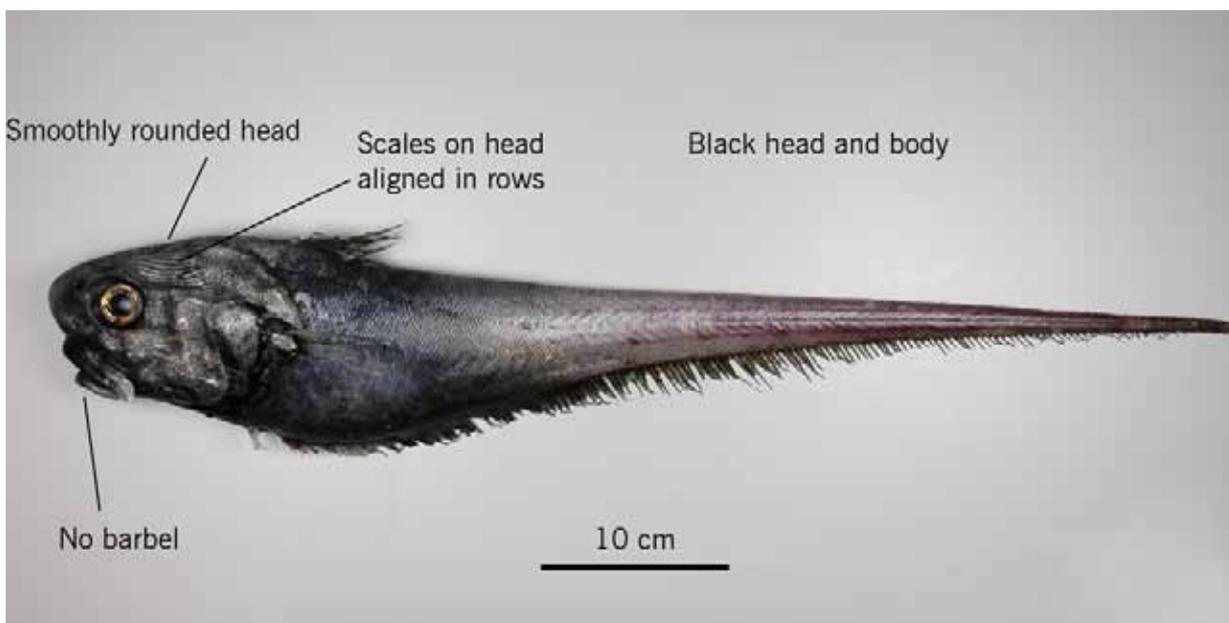
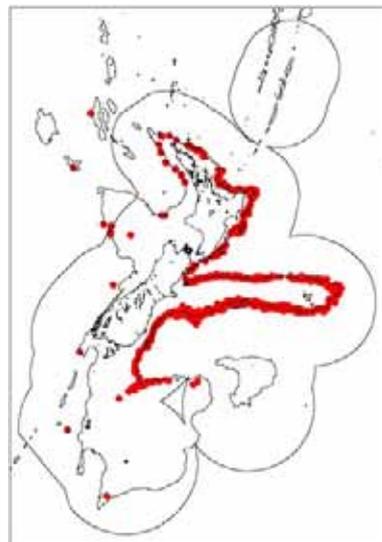
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: Black whiptail (Aus.)

MFish reporting code: RAT

MFish research code: BJA



Distinguishing features: Head smoothly rounded without spiny ridges and covered with distinctive elongated scales fused to the skin giving a combed pattern. Head and body black, fading to greyish brown on the tail. No chin barbel. Small black light organ between the pelvic fin bases.

Colour: Head and body black, fading to greyish brown on the tail. Fins black.

Size: To about 77 cm TL.

Distribution: Widespread in New Zealand. Elsewhere found in southern hemisphere in the Atlantic Ocean off South Africa through the Indian Ocean to New Zealand.

Depth: 700 to 1300 m.

Similar species: Other macrourid species lack the combination of large, soft, rounded head with distinctive elongated scales fused to the skin, black head and body fading to greyish brown on the tail.

Biology & ecology: Largely unknown. Demersal and in midwater. Common trawl catch in some areas, e.g., south Chatham Rise.

References

Gomon et al. (2008), Iwamoto & Graham (2001).

Nezumia namatahi

Nezumia namatahi

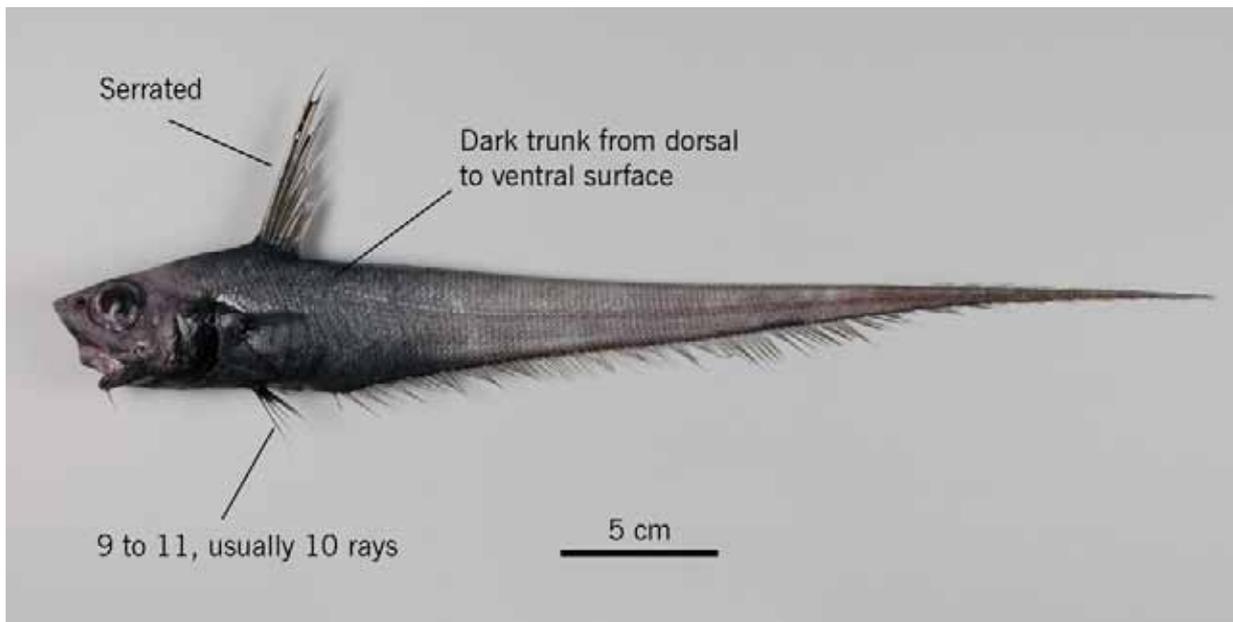
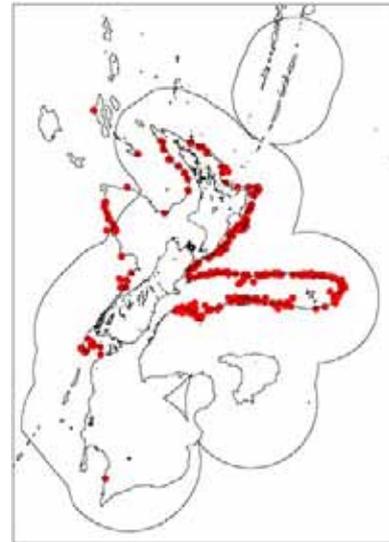
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research 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 40 cm TL.

Distribution: Central and northern New Zealand. Australia (NSW, Tas).

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 the anterior dermal window of the light organ between the rear bases of the pelvic fins, the abdominal area is not notably dark and does not extend to the dorsal surface, and has 11 pelvic fin rays.

Biology & ecology: Demersal.

References

Iwamoto & Graham (2001).

Odontomacrurus murrayi

Odontomacrurus murrayi

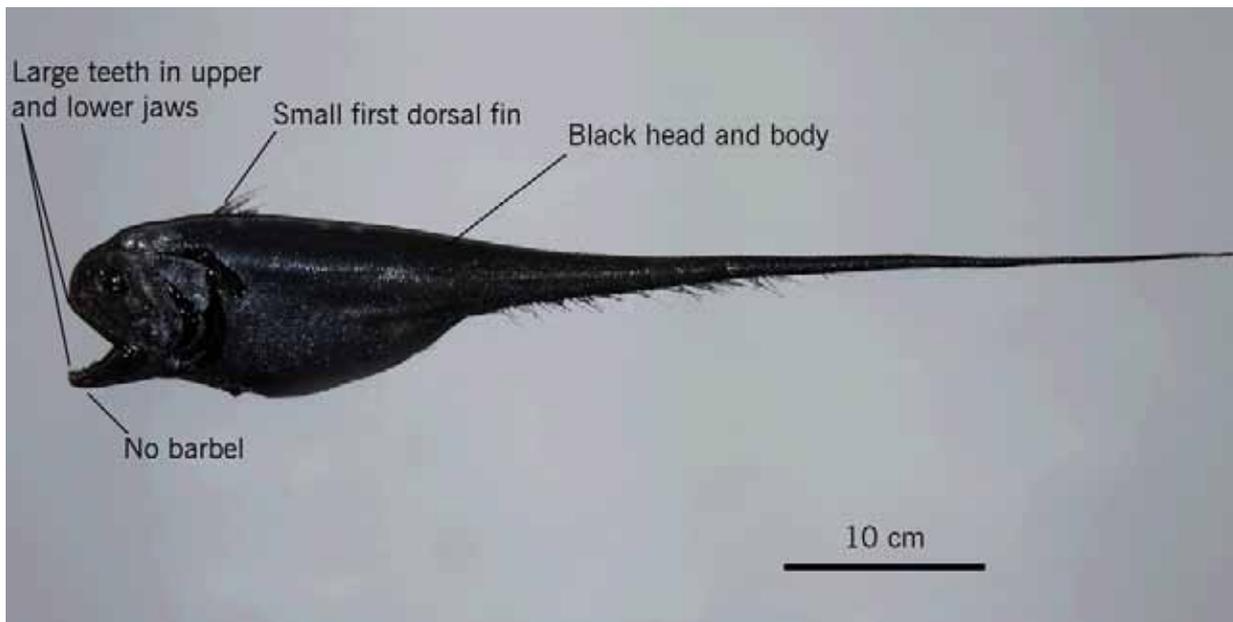
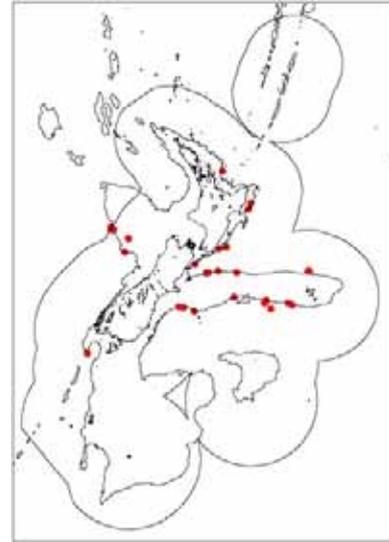
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: OMU



Distinguishing features: No chin barbel. Mouth large, both jaws armed with a 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 the head.

Colour: Body and all fins black or bluish-black.

Size: To at least 63 cm TL.

Distribution: Central and northern New Zealand. Worldwide in tropical and subtropical/warm temperate seas.

Depth: Usually deeper than about 800 m.

Similar species: Black javelinfinch (*Mesobius antipodum*) has bands of fine teeth in both jaws and smaller sensory pores on the head. Dogtooth rattail (*Cyanomacrurus piriei*) also has large teeth in both jaws, but has the anus close to the anal fin origin and 15 to 17 rays in the pectoral fin.

Biology & ecology: Largely unknown. Possibly midwater.

References

Iwamoto (1990), Iwamoto & Graham (2001).

Velvet rattail

Trachonurus gagates

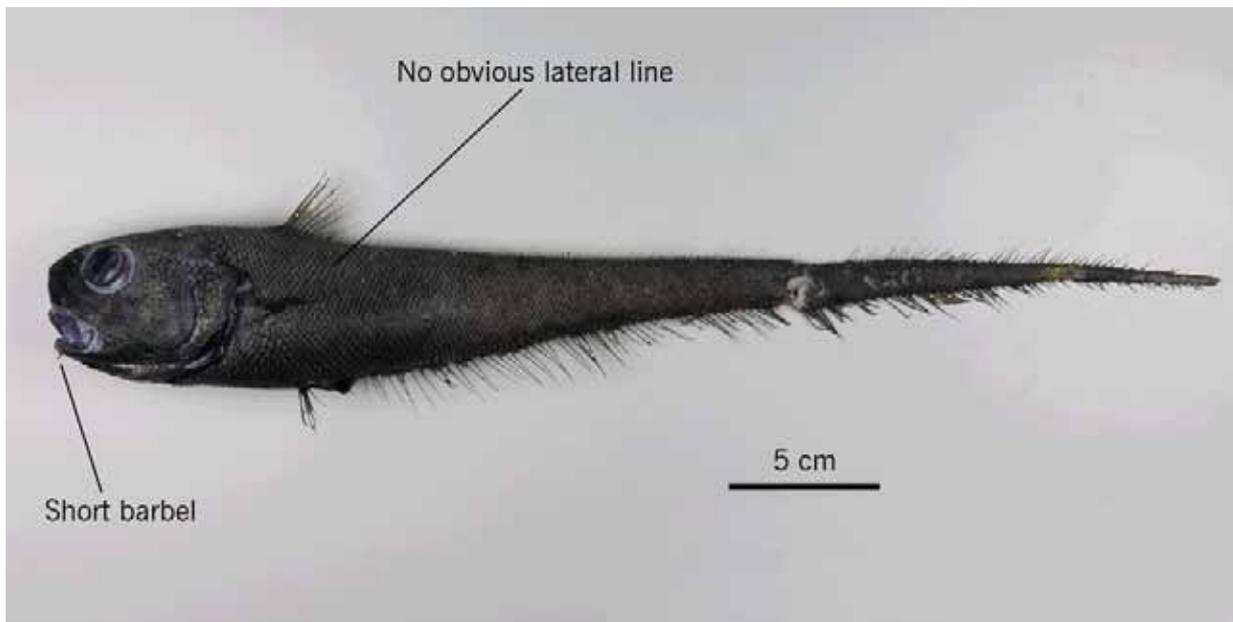
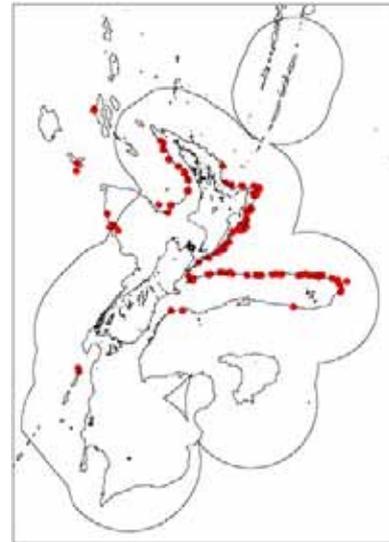
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RAT

MFish research code: TRX



Distinguishing features: Body dark brown or blackish, covered with small bristly scales. No lateral line of grooved scales on the 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 at least 48 cm TL.

Distribution: Central and northern New Zealand. Australia (Qld, NSW, Vic, SA, Tas, WA).

Depth: 435 to 1240 m.

Similar species: *Trachonurus villosus* has an obvious lateral line, and is pale greyish.

Biology & ecology: Demersal.

References

Anderson et al. (1998), Iwamoto & McMillan (1997), Sazonov & Iwamoto (1992).

White rattail

Trachyrincus aphyodes

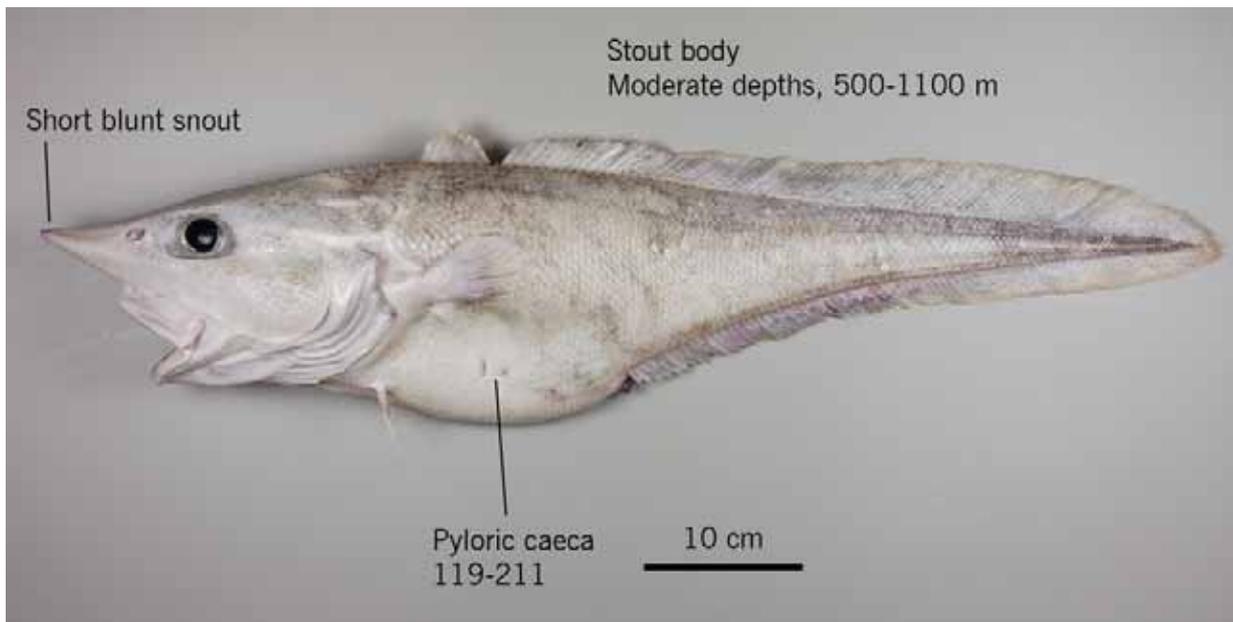
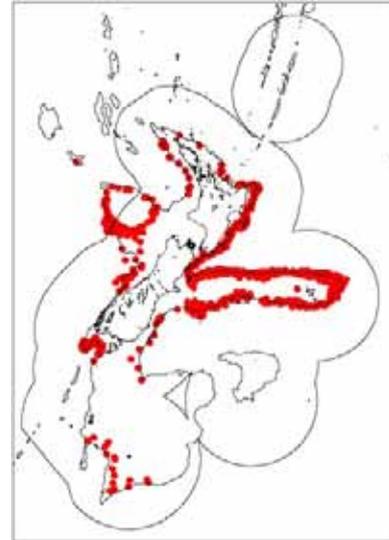
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: WHX

MFish research code: WHX



Distinguishing features: Rows of enlarged scutes along the bases of the dorsal and anal fins. Pit present on the upper-rear head (temporal pit). Long pointed snout. Pelvic fin with 6 to 7 rays. Small chin barbel present. 119 to 211 pyloric caeca (internal). Deep bodied with 3 rows of scales between lateral line and dorsal scutes.

Colour: Body pale cream. Fins pale to dusky, darker in small individuals.

Size: To about 96 cm TL.

Distribution: Widespread. Known only from New Zealand.

Depth: 737 to 1140 m.

Similar species: Unicorn rattail (*Trachyrincus longirostris*) has fewer pyloric caeca (35 to 62), is smaller and more elongate, and usually deeper living.

Biology & ecology: Demersal.

References

McMillan (1995).

Unicorn rattail

Trachyrincus longirostris

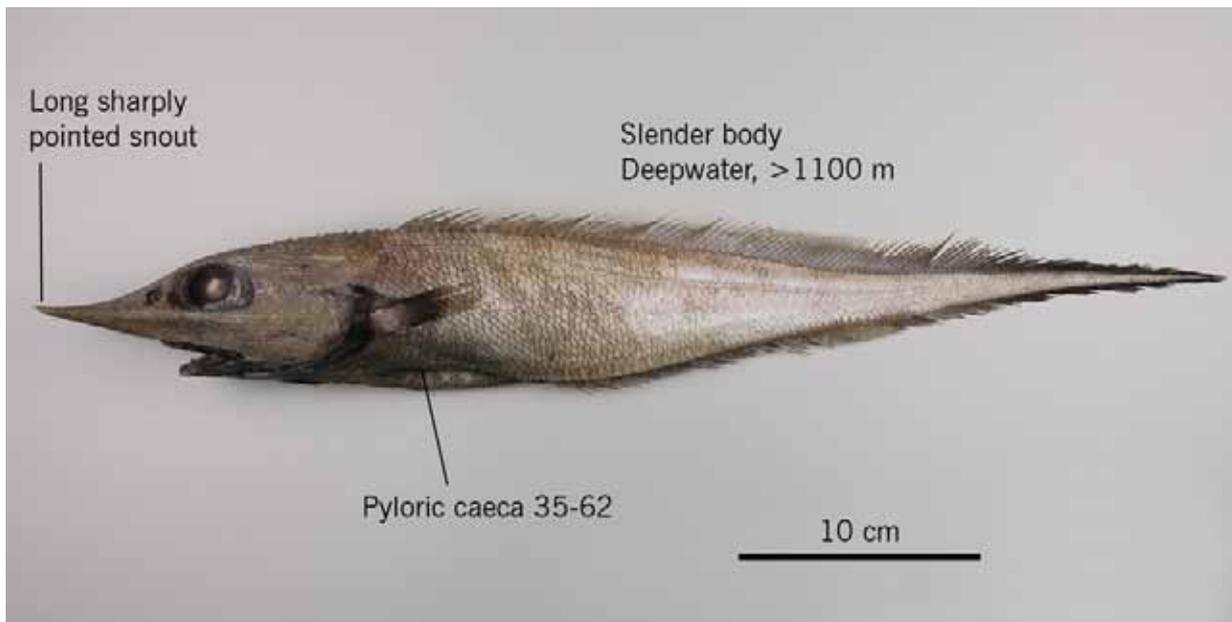
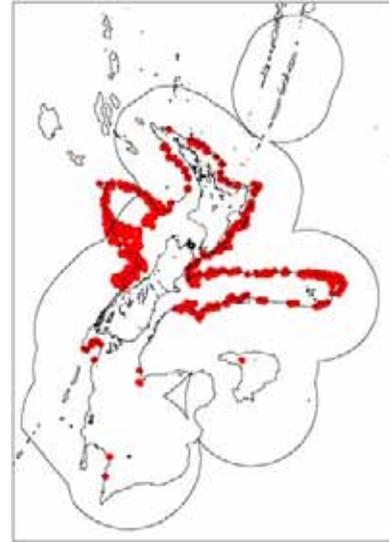
Family: 215. Macrouridae (grenadiers, rattails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: WHR

MFish research code: WHR



Distinguishing features: Rows of enlarged scutes along the bases of the dorsal and anal fins. Pit present on the upper-rear head (temporal pit). Long pointed snout. Pelvic fin with 6 to 7 rays. Small chin barbel present. 35 to 62 pyloric caeca (internal). Slender body with 2 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.

Distribution: Probably widespread in central and northern New Zealand. Australia (NSW, Vic). Southern Africa?

Depth: 1030 to 1400 m.

Similar species: White rattail (*Trachyrincus aphyodes*) has more pyloric caeca (119 to 211), is larger and stouter, and is usually at shallower depths.

Biology & ecology: Demersal.

References

McMillan (1995).

Violet cod

Antimora rostrata

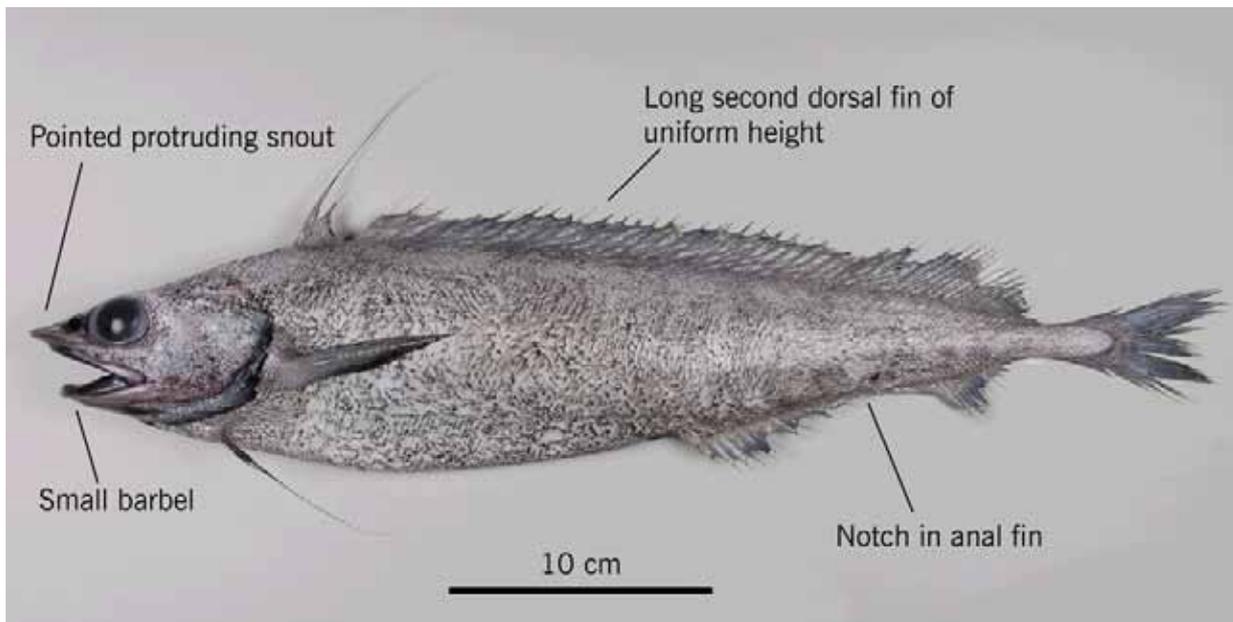
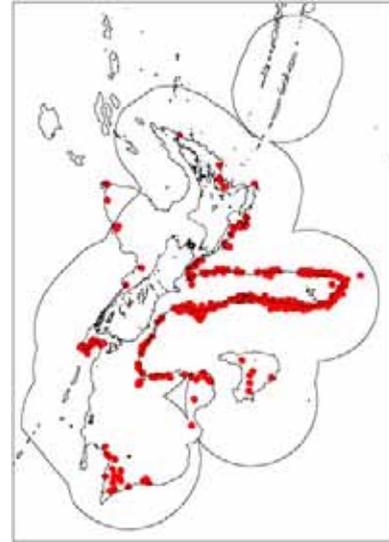
Family: 216. Moridae (deepsea cods)

Maori names: n.a.

Other names: n.a.

MFish reporting code: VCO

MFish research code: VCO



Distinguishing features: Elongated ray in the first dorsal fin that is about the same as head length. First dorsal fin short based with 5 or more rays. Small chin barbel present. Notch in the anal fin. Snout pointed and protruding in front of mouth, about the same length as the eye.

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.

Distribution: Widespread in New Zealand. Australia (SA, Vic, Tas). Widespread in the temperate and cooler waters of the southern and northern hemispheres.

Depth: 500 to at least 1500 m.

Similar species: Small-headed cod (*Lepidion microcephalus*) has a short blunt snout which is less than the eye length.

Biology & ecology: A widespread and deep-living species but surprisingly poorly studied. Probably predatory. Appears to spawn in the winter in New Zealand. Males are smaller than females.

References

Anderson et al. (1998), Cohen et al. (1990), May & Maxwell (1986).

Ahuru

Auchenoceros punctatus

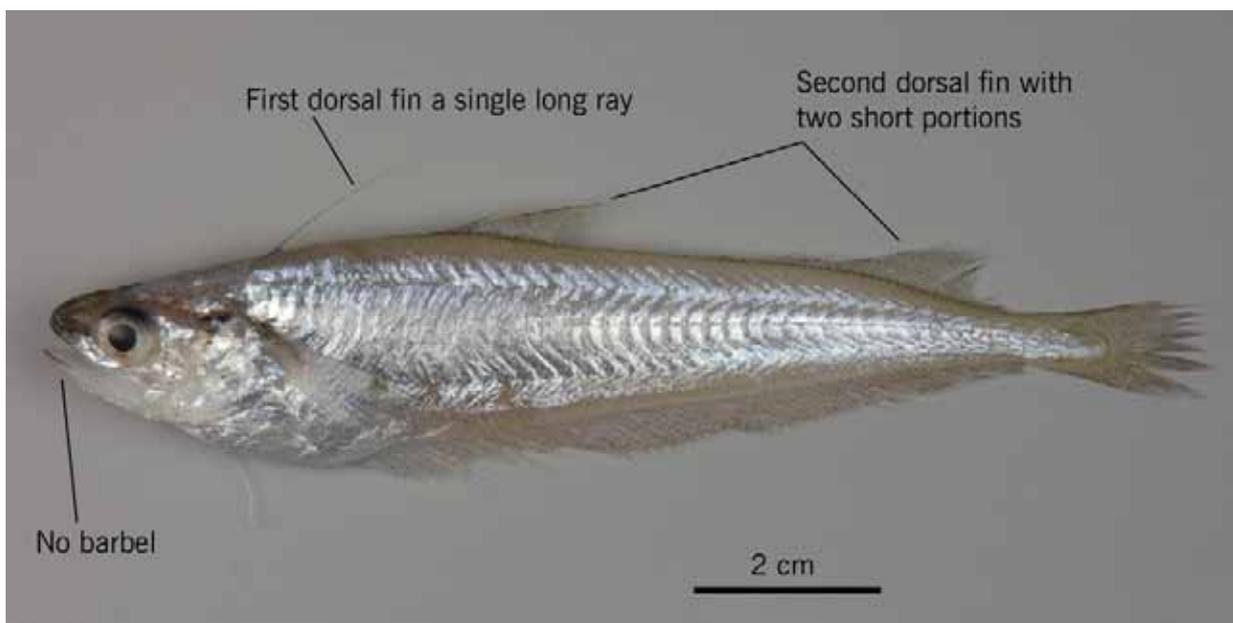
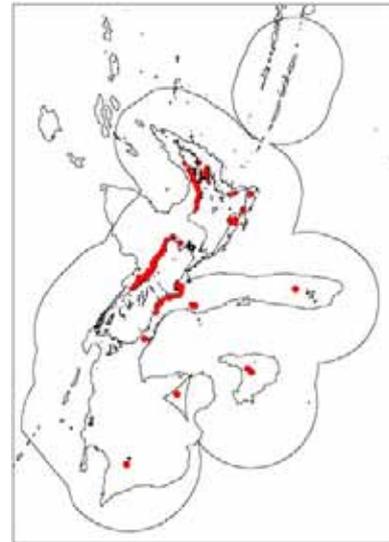
Family: 216. Moridae (deepsea cods)

Maori names: Ahuru

Other names: Pink cod

MFish reporting code: MOD

MFish research 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.

Distribution: East and west coasts of the North and South Islands only at shallow inshore localities. Records from depths greater than about 200 m on the Chatham Rise, and Bounty and Campbell Plateaus are probably erroneous.

Depth: 0 to 200 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.

References

Anderson et al. (1998), Cohen et al. (1990).

Johnson's cod

Halargyreus johnsonii

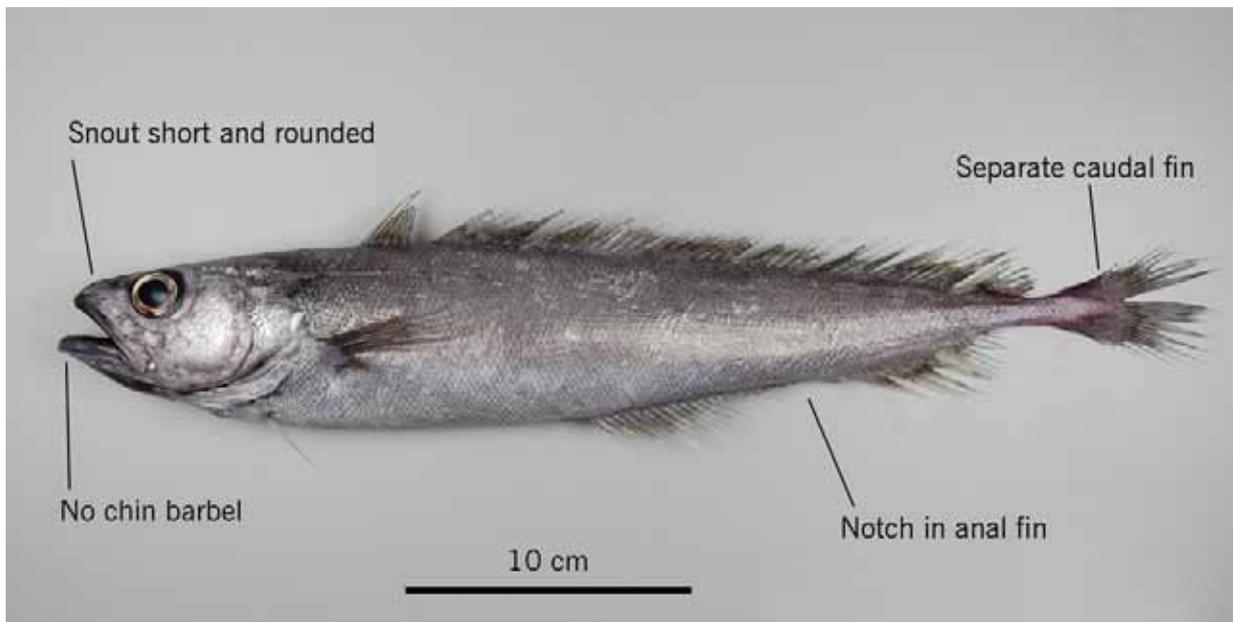
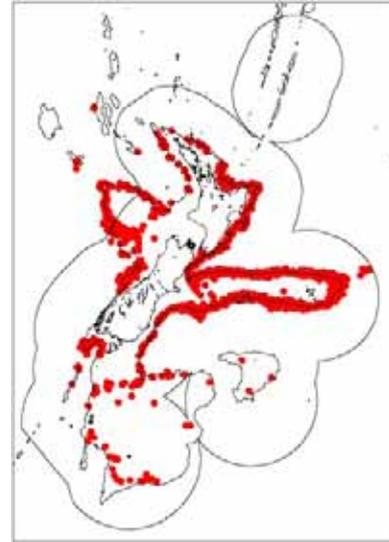
Family: 216. Moridae (deepsea cods)

Maori names: n.a.

Other names: n.a.

MFish reporting code: HJO

MFish research code: HJO



Distinguishing features: 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: Dark greyish above and greyish-silvery below. Black inside mouth. Fins dusky.

Size: To about 70 cm TL.

Distribution: Widespread in New Zealand. Southern Australia (Vic, Tas). Temperate parts of the North and South Atlantic and southern Pacific Oceans.

Depth: 500 to 1400 m.

Similar species: 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. Probably spawns in winter (July-August) and may form aggregations on rises.

References

Anderson et al. (1998), Cohen et al. (1990), Gomon et al. (2008), Paulin et al. (1989).

Small-headed cod

Lepidion microcephalus

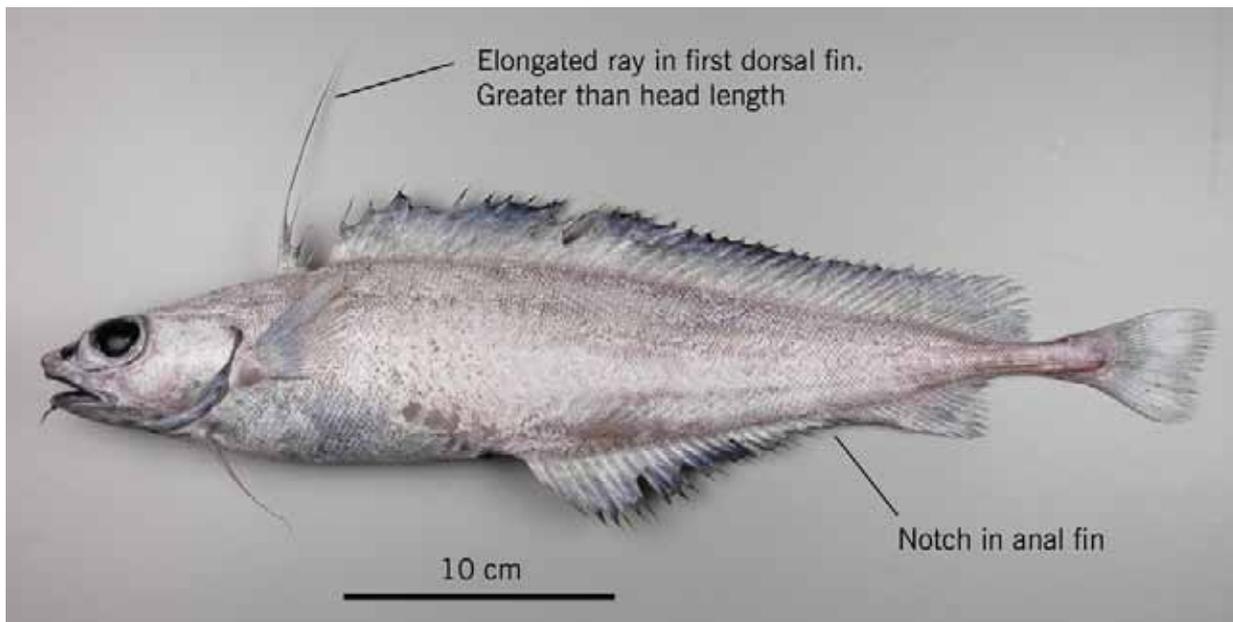
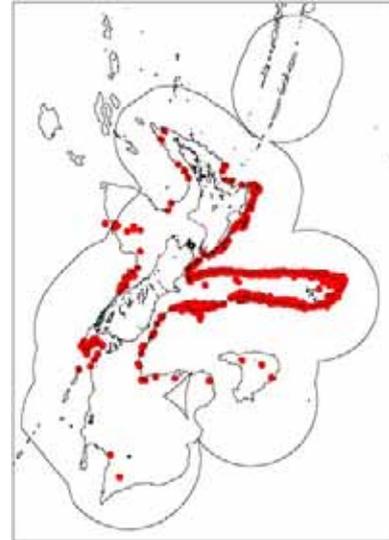
Family: 216. Moridae (deepsea cods)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SMC

MFish research code: SMC



Distinguishing features: Elongated ray in the first dorsal fin much greater than head length. First dorsal fin short based with 5 or more 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.

Distribution: Widespread in New Zealand. 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. Giant lepidion (*Lepidion schmidti*) has a larger head with first dorsal fin about the same as the head length, and only a slight notch in the anal fin.

Biology & ecology: Demersal.

References

Anderson et al. (1998), Cohen et al. (1990), May & Maxwell (1986), Paulin (2003).

Giant lepidion

Lepidion schmidti

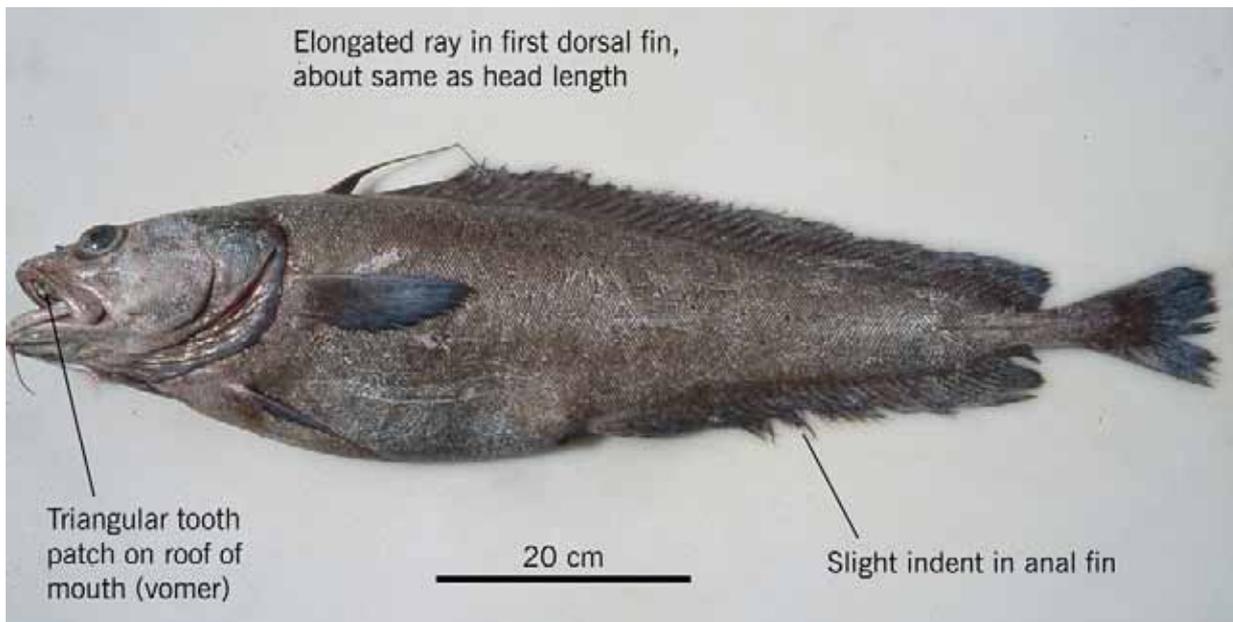
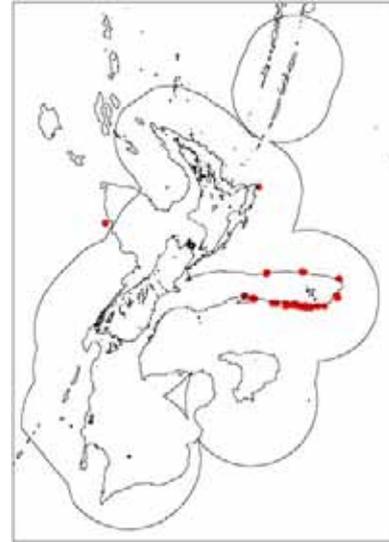
Family: 216. Moridae (deepsea cods)

Maori names: n.a.

Other names: n.a.

MFish reporting code: LEG

MFish research code: LPS



Distinguishing features: Elongated ray in the first dorsal fin usually about the same as head length. Tooth patch on roof of mouth (vomer) triangular or V-shaped. Anal fin with a slight indent near midpoint. First dorsal fin short based with 5 to 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 about 200 cm TL.

Distribution: Both coasts of New Zealand from Cape Reinga to Puysegur Bank and the Chatham Rise. Australia, Japan, Okhotsk Sea, Emperor Seamounts, North Atlantic Ocean.

Depth: 800 to 1500 m.

Similar species: The rarer and possibly more northern *Lepidion inosimae* has a rounded tooth patch on the roof of the mouth (vomer). Small headed cod (*Lepidion microcephalus*) has an elongated ray of the first dorsal fin that is much greater 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.

References

Anderson et al. (1998), Cohen et al. (1990), Paulin (1984, 2003), Paulin et al. (1989).

Ribaldo

Mora moro

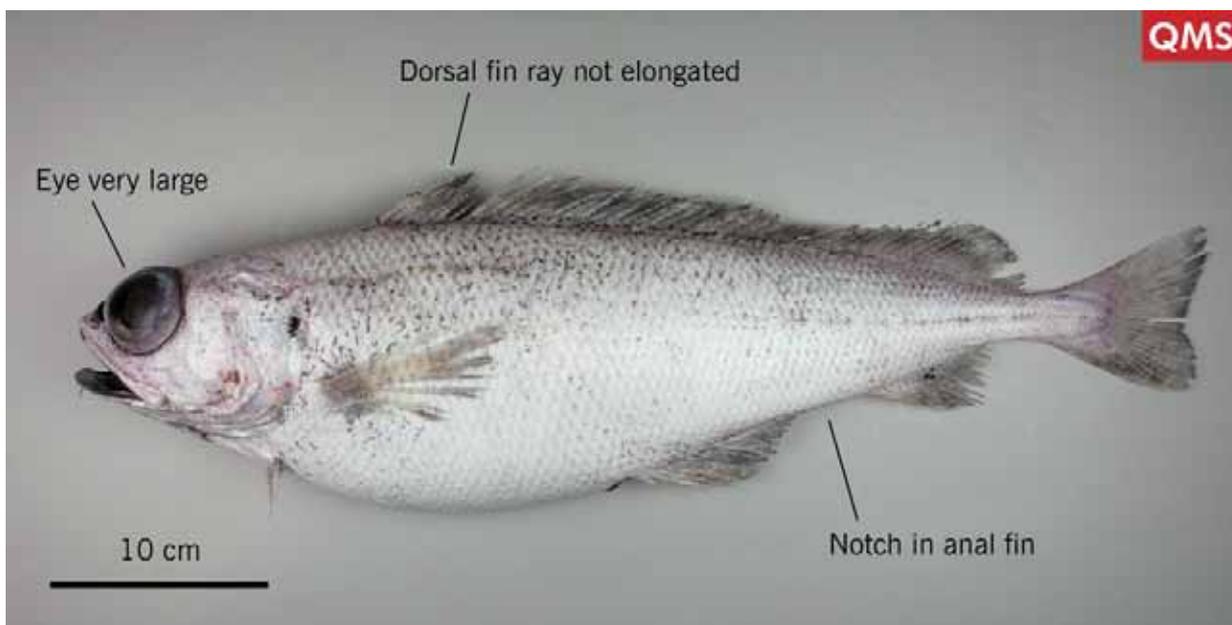
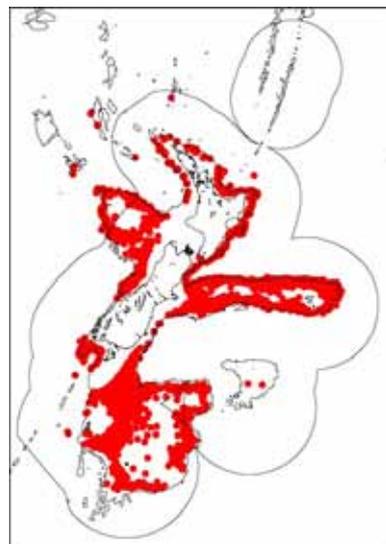
Family: 216. Moridae (deepsea cods)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RIB

MFish research 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. Huge 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.

Distribution: Widespread in New Zealand. Southern Australia (NSW, Vic, Tas, SA, WA), and temperate waters of the northern and southern hemispheres.

Depth: 400 to 1100 m.

Similar species: Other morid cods lack the short ray in the first dorsal fin, huge eye, and pale body and head.

Biology & ecology: Demersal. Carnivore, feeding on fishes, crustaceans, cephalopods, and other invertebrates. Females reach a larger size than males. Probably spawns in winter.

References

Anderson et al. (1998), Cohen et al. (1990), Gomon et al. (2008).

Dwarf cod

Notophycis marginata

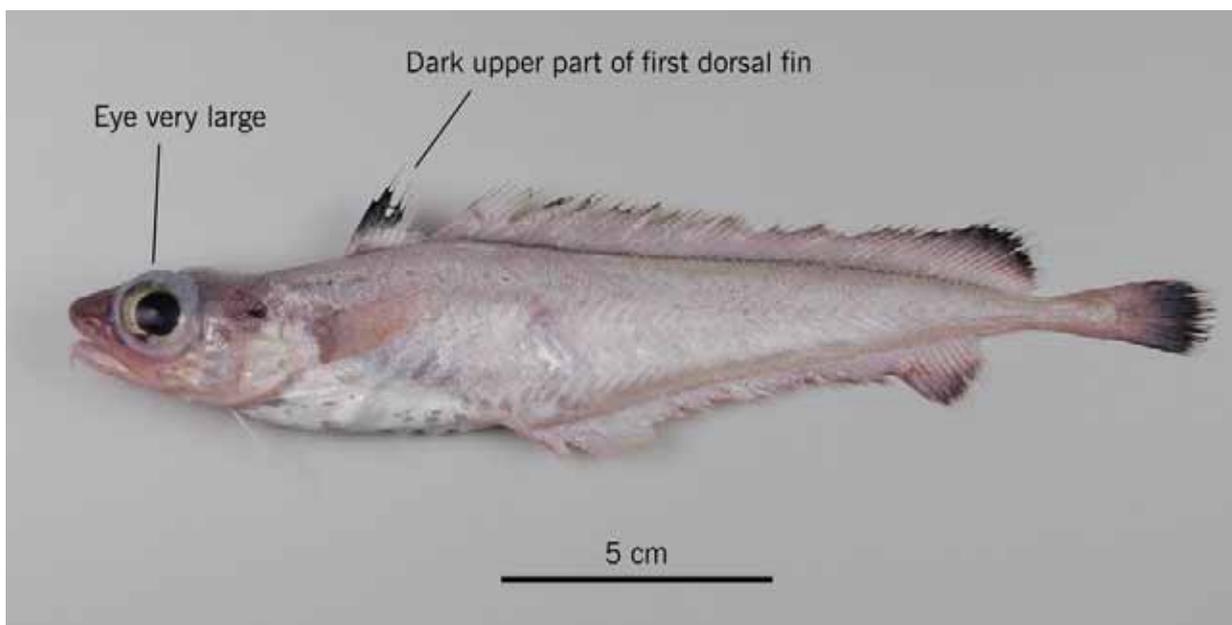
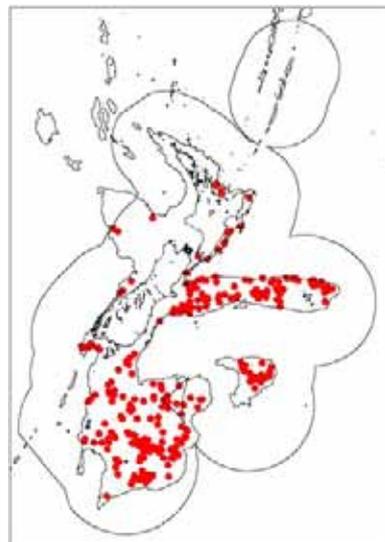
Family: 216. Moridae (deepsea cods)

Maori names: n.a.

Other names: n.a.

MFish reporting code: MOD

MFish research 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.

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.

References

Anderson et al. (1998), Cohen et al. (1990).

Red cod

Pseudophycis bachus

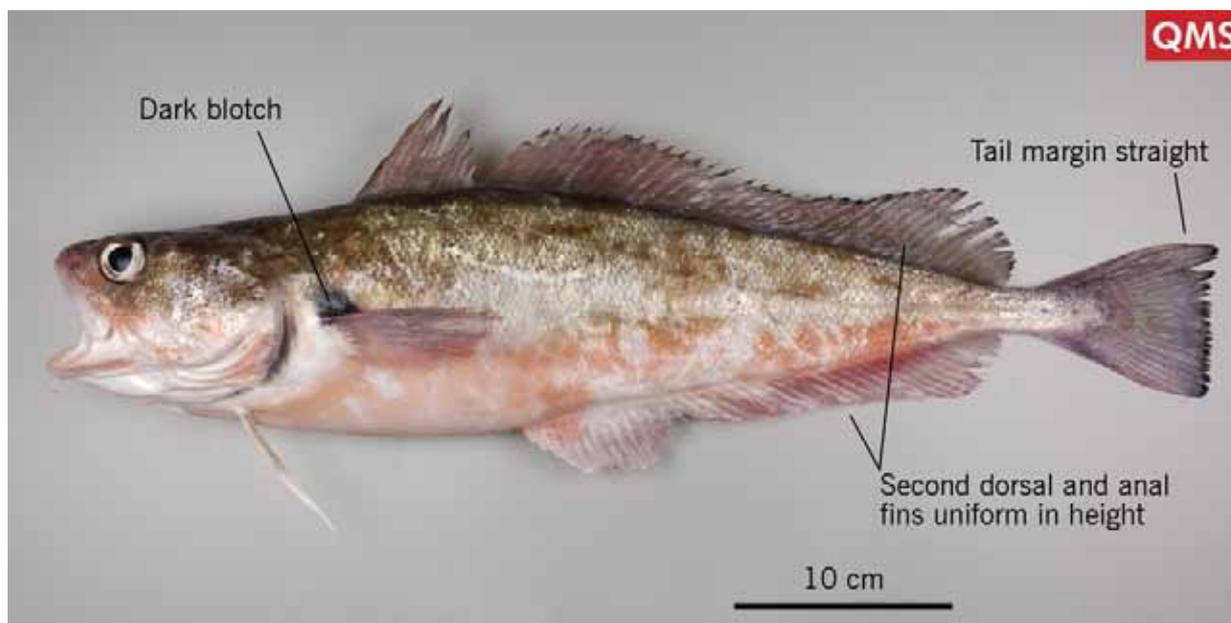
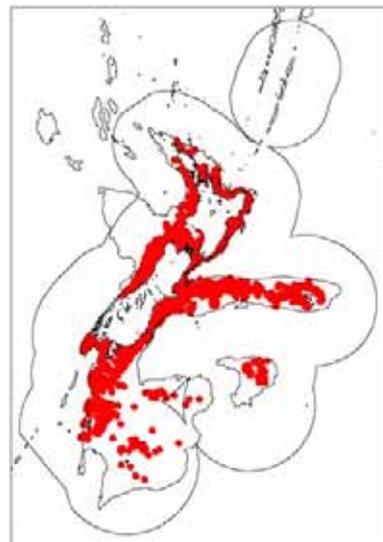
Family: 216. Moridae (deepsea cods)

Maori names: Hoka

Other names: n.a.

MFish reporting code: RCO

MFish research code: RCO



Distinguishing features: Second dorsal and anal fins uniform in height without an obvious notch. Large dark blotch on the upper base of the pectoral fin. Caudal fin margin straight or only slightly rounded. 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.

Distribution: Widespread in New Zealand from Cape Reinga to Campbell Island, including Pukaki Rise, Bounty Plateau, Chatham Rise and Chatham Islands, but possibly absent from the central Challenger Plateau. The same or 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.

References

Anderson et al. (1998), Cohen et al. (1990), Francis (2001), Gomon et al. (2008), Paul (2000), Paulin (1983).

Southern bastard cod

Pseudophycis barbata

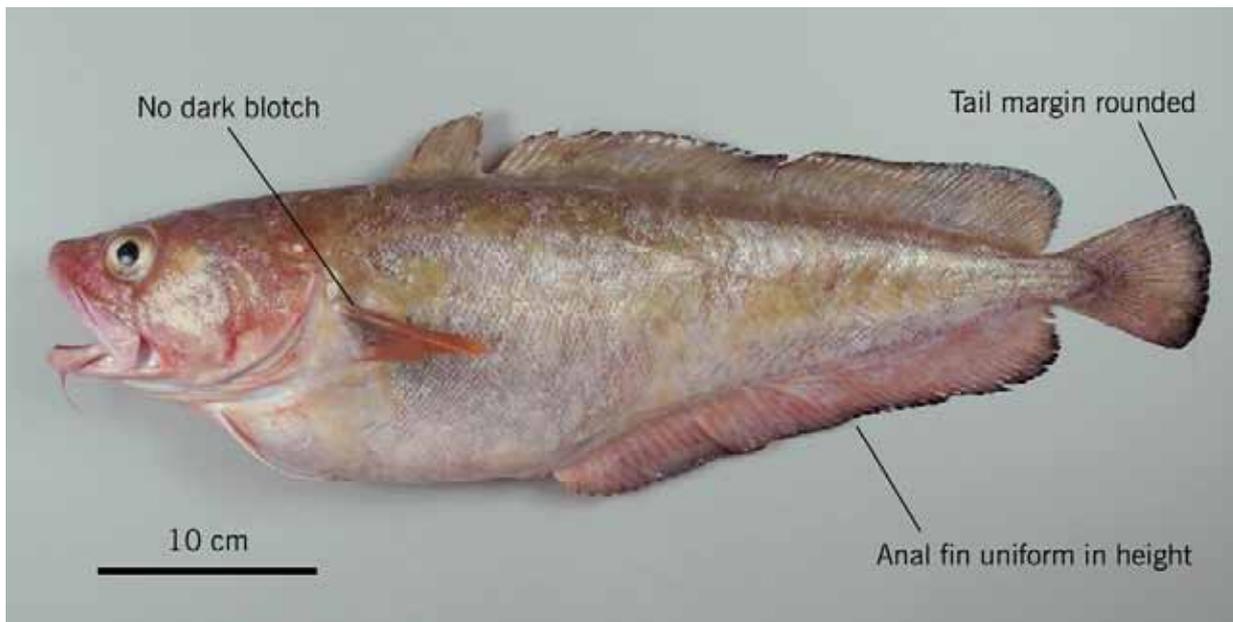
Family: 216. Moridae (deepsea cods)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SBR

MFish research code: SBR



Distinguishing features: No elongated rays in the first dorsal fin. Second dorsal fin and anal fins relatively uniform in height. Caudal fin margin rounded. No dark blotch on the base of the pectoral fin. 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.

Distribution: Central and southern New Zealand. Australia (NSW, Vic, Tas, SA, WA). 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.

References

Anderson et al. (1998), Cohen et al. (1990), Francis (2001), Gomon et al. (2008), Paul (2000), Paulin (1983).

Grenadier cod

Tripterophycis gilchristi

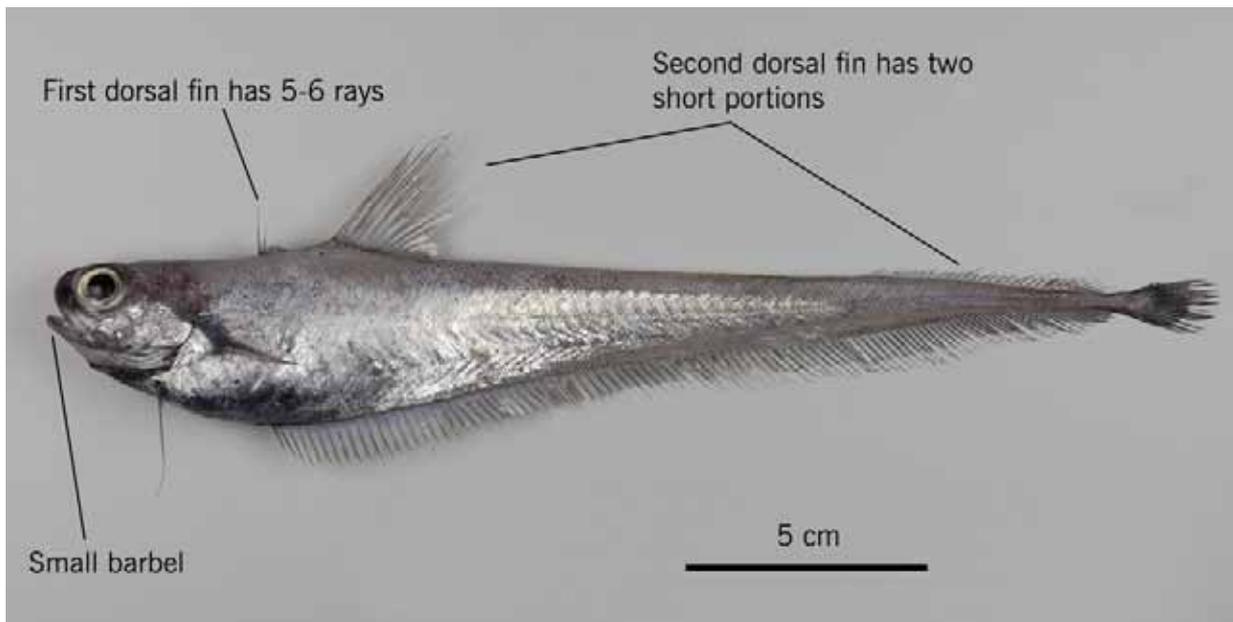
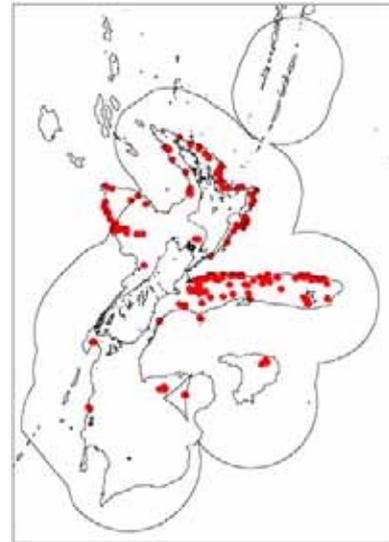
Family: 216. Moridae (deepsea cods)

Maori names: n.a.

Other names: n.a.

MFish reporting code: GRC

MFish research 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.

Size: To about 33 cm TL.

Distribution: Central and northern New Zealand. Records from the Campbell and Bounty Plateaus may be erroneous. Australia (NSW, Vic, Tas, SA), southwest Indian Ocean (South Africa and Madagascar), mid-south Atlantic Ocean.

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.

References

Anderson et al. (1998), Cohen et al. (1990), Gomon et al. (2008).

Lyconus

Lyconus spp.

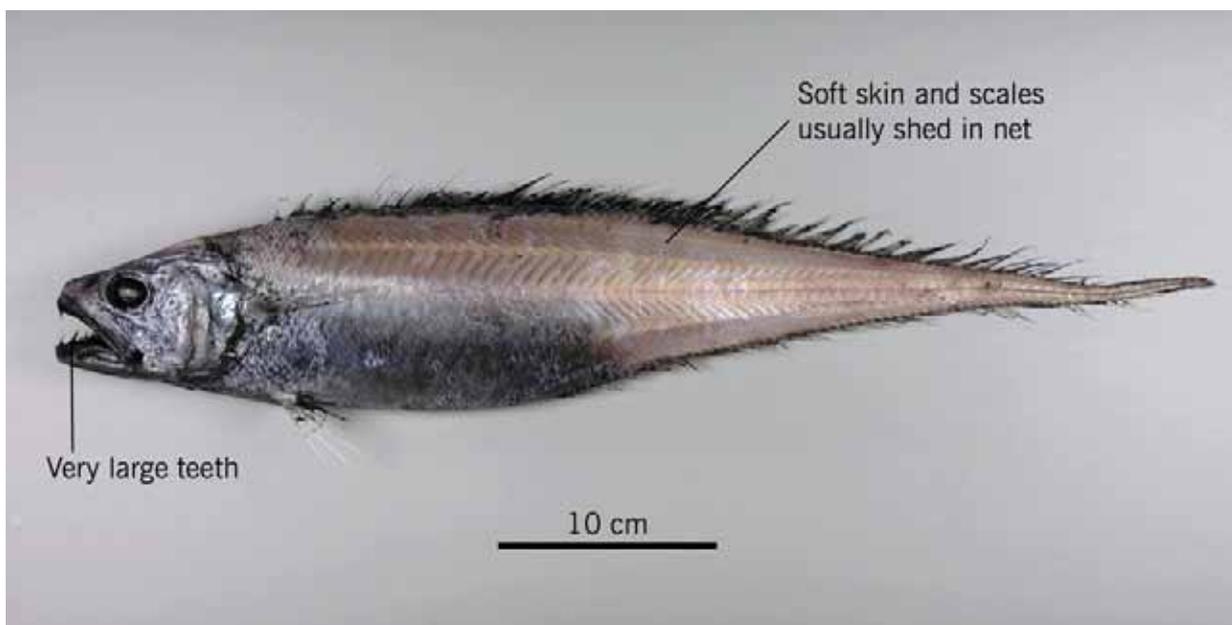
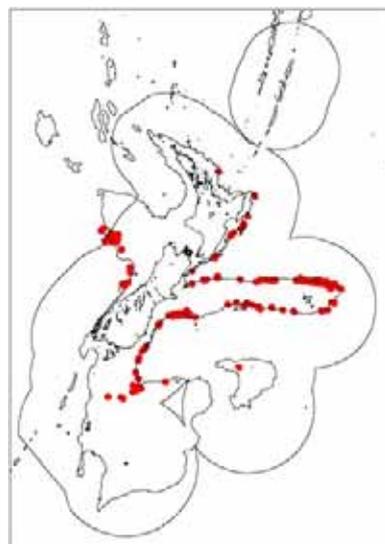
Family: 218. Merlucciidae (merluccid hakes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: LYC

MFish research code: LYC



Distinguishing features: Long body flattened laterally and with a long tapering tail lacking a separate caudal fin. Strong teeth in both jaws with two canine-like teeth on the tip of the upper jaw, longest teeth about half eye diameter. No chin barbel. Dorsal and anal fins long and continuous round the tail, with soft simple rays (no strong spines). Body scales very thin and delicate and scales and skin on tail and most of body usually lost.

Colour: Pale silvery grey body and head. Dark fins and lining of the mouth.

Size: To about 63 cm TL.

Distribution: Widespread in New Zealand. South Atlantic and eastern North Atlantic Oceans.

Depth: 800 to 1300 m.

Similar species: A poorly known group that appears to include two species in New Zealand. Hoki (*Macruronus novaezelandiae*) has two clearly separate dorsal fins, lacks two very large teeth at the tip of the upper jaw, the teeth in the jaws are smaller (less than 25% diameter of the eye), and the silvery body skin is more adherent and not usually lost.

Biology & ecology: Unknown.

References

Anderson et al. (1998), Cohen et al. (1990), Paulin et al. (1989).

Hoki

Macruronus novaezelandiae

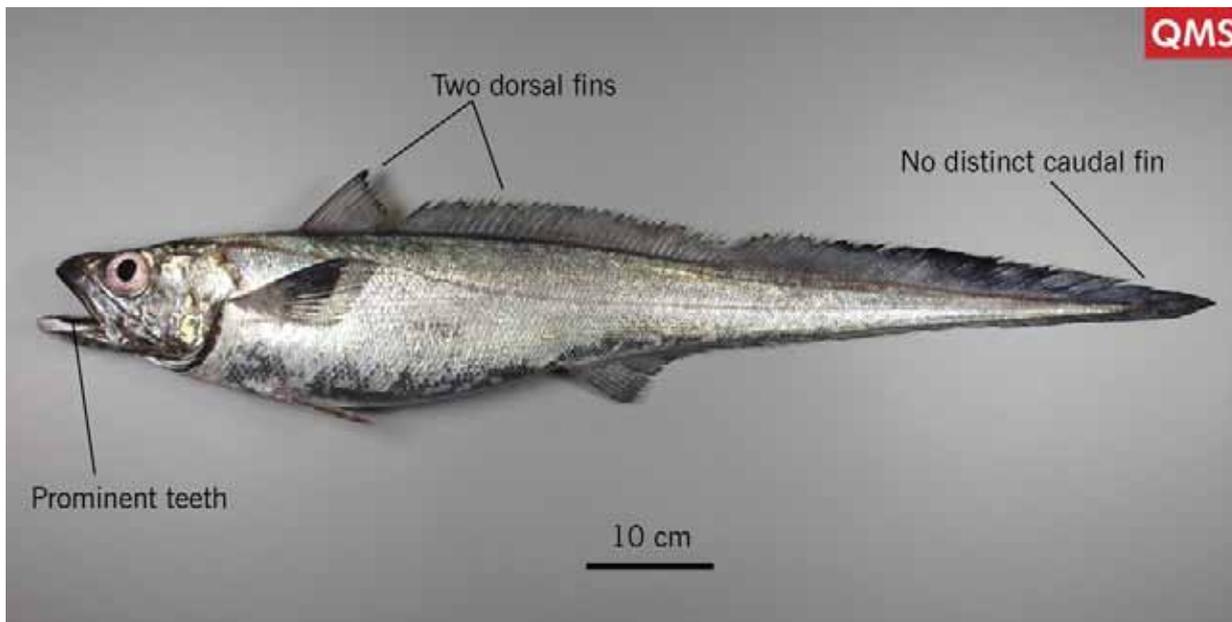
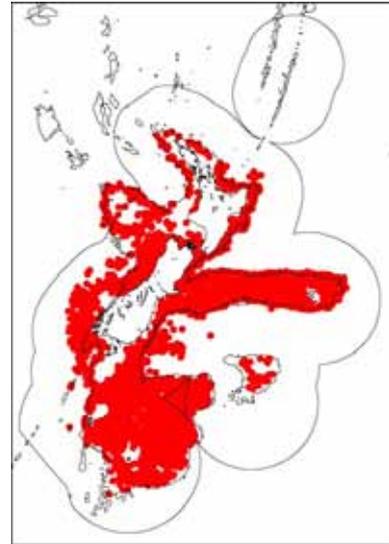
Family: 218. Merlucciidae (merluccid hakes)

Maori names: Hoki

Other names: Blue grenadier (Aus.)

MFish reporting code: HOK

MFish research code: HOK



Distinguishing features: Long tapering body, laterally flattened. First dorsal fin short-based, second dorsal fin long and continuous with the anal fin round the tail. Terminal mouth with slender long teeth. Scales shed very easily.

Colour: Upper head and body silvery with a purple or blue-green tinge, silvery sides and belly. Fins darker.

Size: To at least 142 cm TL.

Distribution: Widespread in New Zealand. Southern Australia from about Sydney to southern Western Australia, including Tasmania.

Depth: 10 to 1200 but usually 200 to 600 m.

Similar species: Javelinfish (*Lepidorhynchus denticulatus*) has a very high first dorsal fin, low second dorsal fin, and dark ventral body surface. *Lyconus* sp. has strong teeth in both jaws with two canine-like teeth on the tip of the upper jaw, longest teeth in the mouth about half eye diameter, no clear separation between the first and second dorsal fins, and very soft skin on the body that is usually lost. Hake (*Merluccius australis*) has a separate tail fin and a deep notch on the anal fin.

Biology & ecology: Wide geographical (34 to 54 S) and depth distributions in New Zealand. Small individuals are known from shallow waters and large fish are generally found deeper than 400 m. Migrate to and spawn from late June to September at known spawning grounds on the west coast South Island, Puysegur, Pegagus Canyon, Conway Trough, and Cook Strait. Feed on midwater fish, squids and crustaceans. Attain a maximum age of about 25 years.

References

Cohen et al. (1990), Gomon et al. (2008), Paulin et al. (1989).

Hake

Merluccius australis

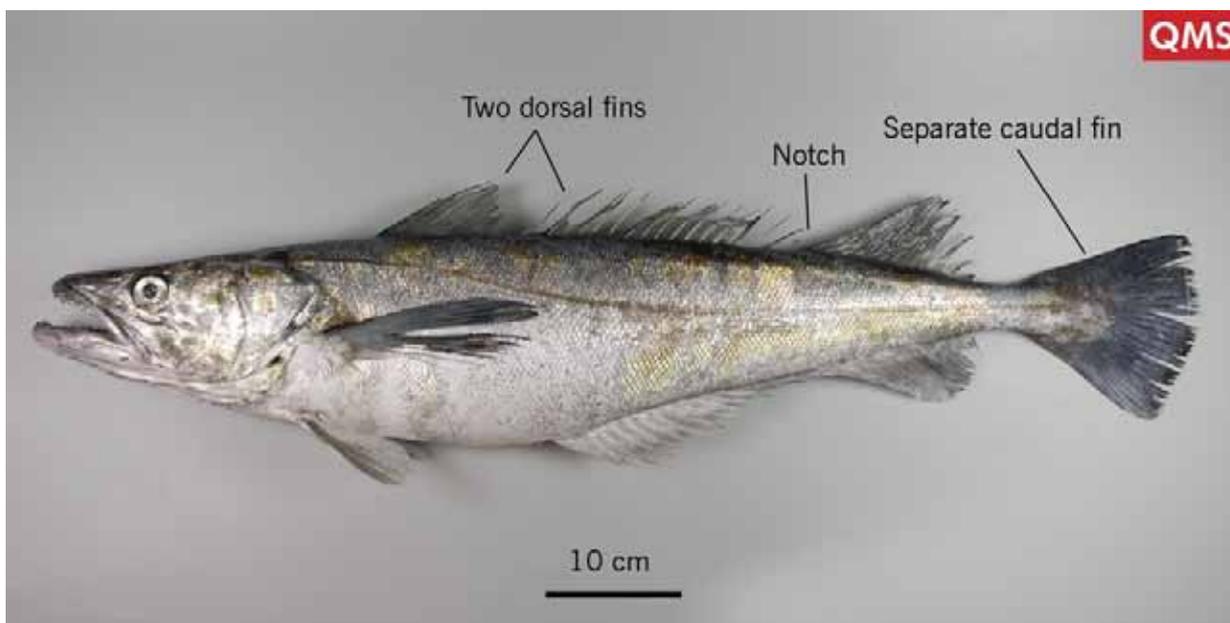
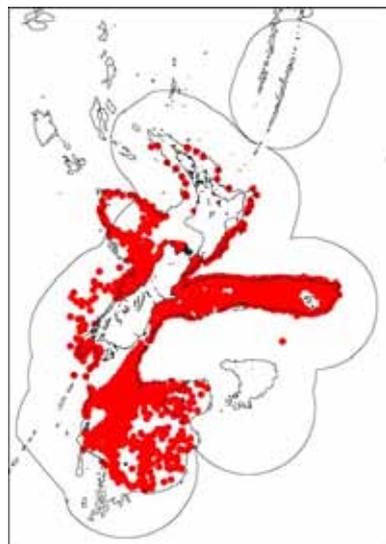
Family: 218. Merlucciidae (merluccid hakes)

Maori names: Kehe

Other names: Southern hake

MFish reporting code: HAK

MFish research code: HAK



Distinguishing features: Two dorsal fins, the first short-based and the second fin long with a notch about midway. Long anal fin with a notch. Separate truncated caudal fin. No chin barbel. Teeth in jaws large, sharp, with outer ones fixed and inner ones depressible inwards.

Colour: Steel-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 at least 140 cm TL.

Distribution: Widespread in New Zealand. Southern tip of South America in the Pacific and Atlantic Oceans.

Depth: 400 to 1100 m.

Similar species: Hoki (*Macruronus novaezelandiae*) lacks a separate caudal fin and lacks a deep notch in the second dorsal and anal fins. Johnson's cod (*Halargyreus johnsonii*) has bands of tiny teeth in the jaws and lacks a notch in the 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 at least 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.

References

Anderson et al. (1998), Cohen et al. (1990), Ministry of Fisheries (2008), Paulin et al. (1989).

Southern blue whiting

Micromesistius australis

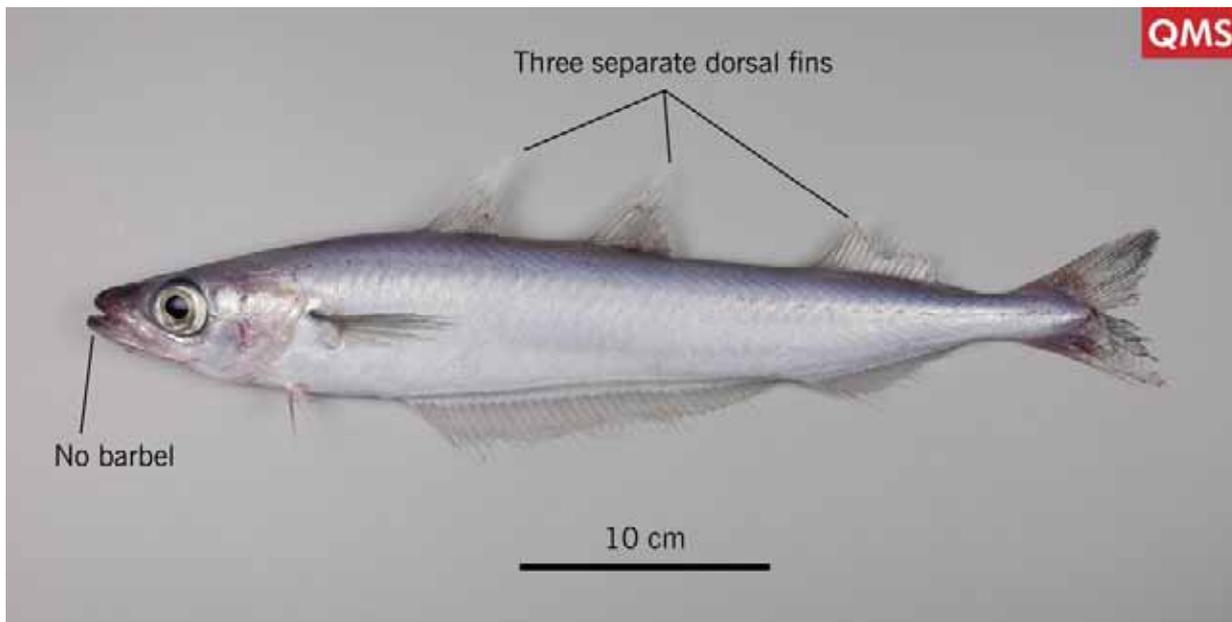
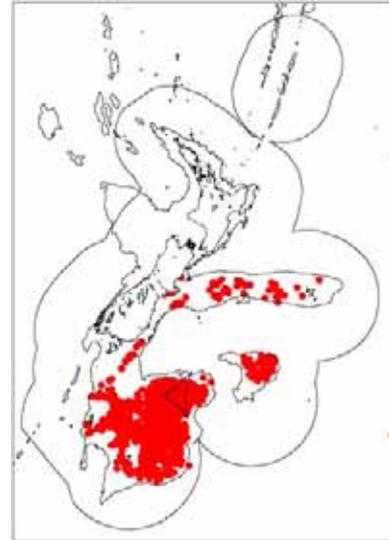
Family: 220. Gadidae (cods)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SBW

MFish research 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 TL.

Distribution: Recorded from the Chatham Rise south on the 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: The three dorsal fins and two anal fins are distinctive and unique features of this species.

Biology & ecology: Found near the bottom but also moves into midwater at times to feed and spawn. Females are larger than males and growth rates are relatively fast with females reaching about 50 cm TL and males about 47 cm TL after 10 years.

References

Anderson et al. (1998), Cohen et al. (1990).

Blue cusk eel

Brotulotaenia crassa

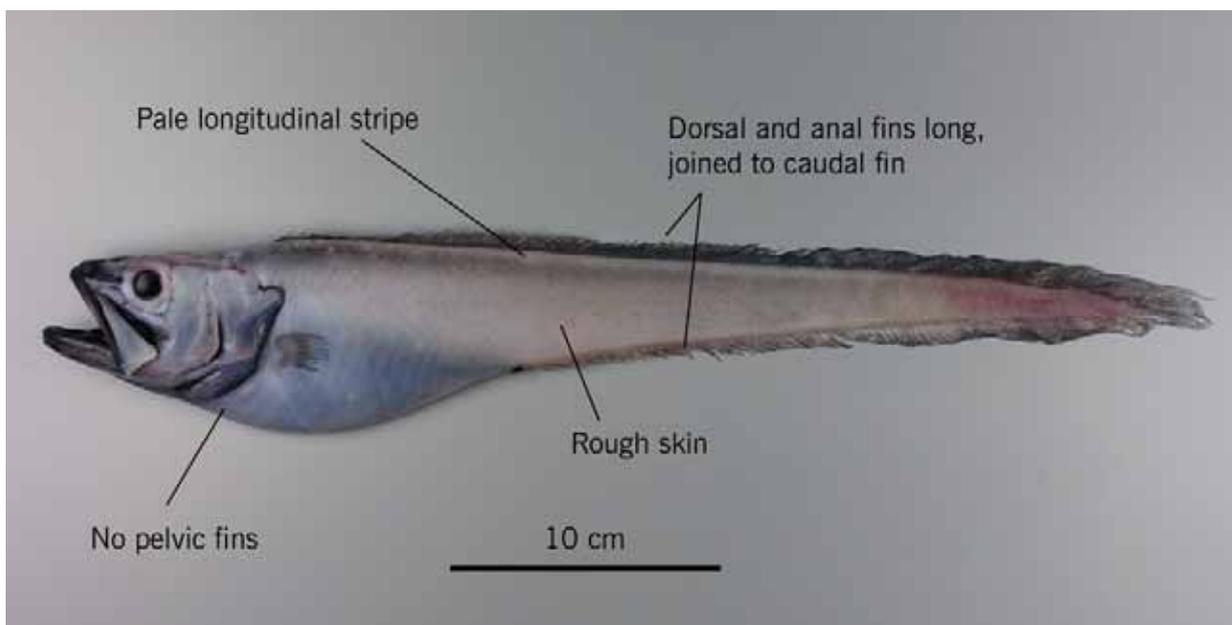
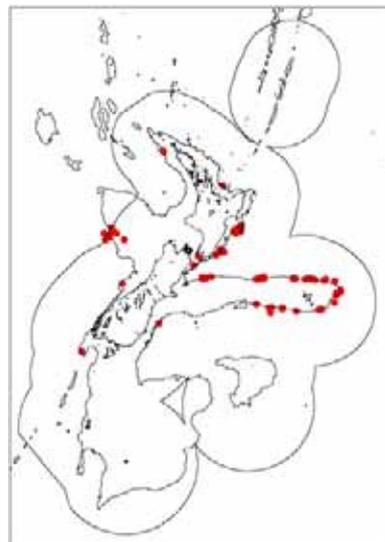
Family: 222. Ophidiidae (cusk-eels)

Maori names: n.a.

Other names: n.a.

MFish reporting code: BCR

MFish research code: BCR



Distinguishing features: Elongate eel-like body with long dorsal and anal fins continuous around the tail. Large head and mouth. No pelvic fins. Body pale blue or grey with longitudinal pale stripes running along the bases of the dorsal and anal fins. Skin with granular texture.

Colour: Body pale blue or grey with longitudinal pale stripes running along the bases of the dorsal and anal fins. Head pale except for black snout, jaws, opercular and branchiostegal membranes. Fins greyish- black.

Size: To about 85 cm TL.

Distribution: Central and northern New Zealand. Australia (NSW, Tas), Atlantic Ocean and off eastern South Africa.

Depth: Not known but captured in bottom trawls at 800 to 1200 m.

Similar species: Ling (*Genypterus blacodes*) has pelvic fins and pink mottled body.

Biology & ecology: Unknown but probably lives in midwater.

References

Anderson et al. (1998), Gomon et al. (2008).

Ling

Genypterus blacodes

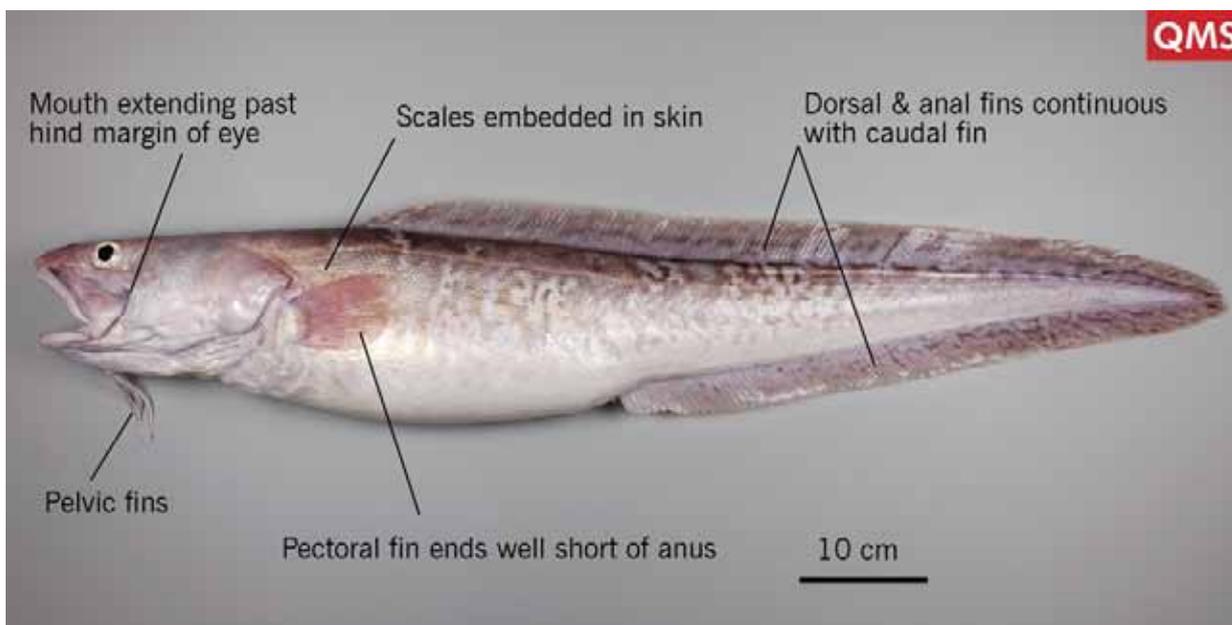
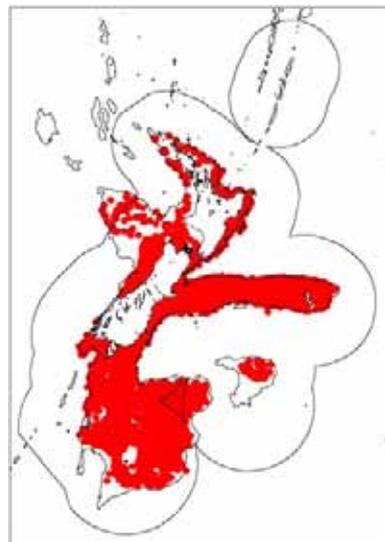
Family: 222. Ophidiidae (cusk-eels)

Maori names: Hoka, hokarari

Other names: n.a.

MFish reporting code: LIN

MFish research code: LIN



Distinguishing features: Pinkish body mottled with brown wavy markings on the side. Dorsal and anal fins continuous with caudal fin. Pelvic fins well forward, origin under the eyes. Mouth extending beyond vertical through hind margin of eye. Scales embedded in the skin. Pectoral fin short, ending well short of anus.

Colour: Pinkish body mottled with brown wavy markings on the side, paler below. Head uniformly brownish above. Mottling extends onto dorsal and anal fins.

Size: To about 200 cm TL.

Distribution: Widespread in New Zealand. Southern Australia from about Newcastle (NSW) around to Bussleton (WA), including Tasmania. South America. A similar species occurs off South Africa.

Depth: 100 to 900 m.

Similar species: The rare brown brotula (*Cataeyx niki*) has a uniform dull brown upper body and sides but 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.

References

Gomon et al. (2008), Paulin et al. (1989).

White brotula

Cataetyx sp.

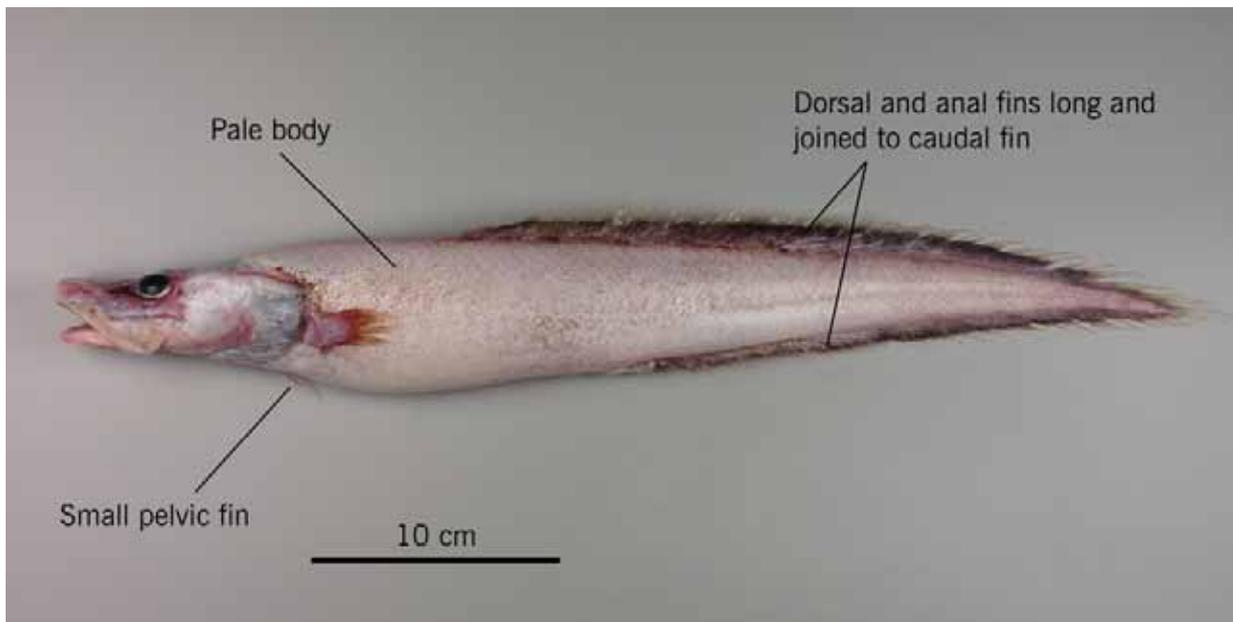
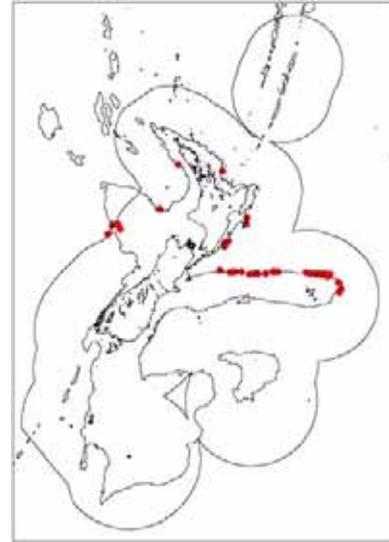
Family: 223. Bythitidae (viviparous brotulas)

Maori names: n.a.

Other names: n.a.

MFish reporting code: CAX

MFish research code: CAX



Distinguishing features: Elongate eel-like body with long dorsal and anal fins continuous around the 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 56 cm TL.

Distribution: Central and northern New Zealand. Australia (Vic, SA).

Depth: 800 to 1300 m.

Similar species: Brown brotula (*Cataetyx niki*) is mid to dark brown, deeper bodied, and reaches a larger size (about 100 cm TL). Blue cusk eel (*Brotulotaenia crassa*) has a pale blue or grey body with longitudinal pale stripes running along the bases of the dorsal and anal fins.

Biology & ecology: Unknown. Probably demersal.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989).

Pink frogmouth

Chaunax sp. C

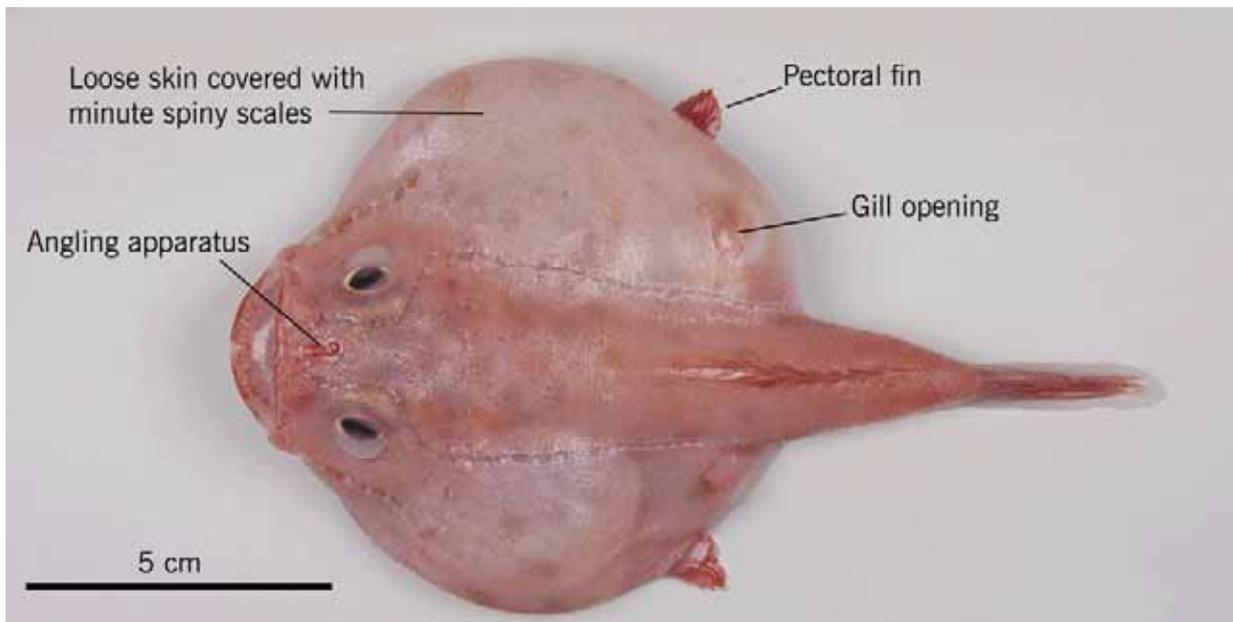
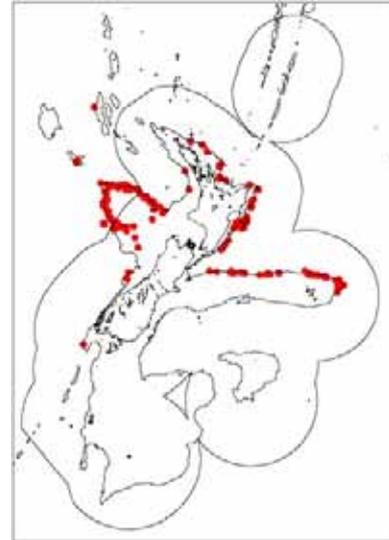
Family: 232. Chaunacidae (coffinfishes, sea toads)

Maori names: n.a.

Other names: Coffinfish

MFish reporting code: CHX

MFish research code: CHX



Distinguishing features: Flaccid body with loose skin covered by minute spiny scales. Short spine armed with a fishing lure on the snout above the upper jaw. Large eyes, conspicuous lateral line system.

Colour: Pinkish body and head, paler underneath. Fins slightly darker pink.

Size: To about 20 cm TL.

Distribution: Central and northern New Zealand.

Depth: 800 to 1100 m.

Similar species: None. There may be other species of *Chaunax* present in northern New Zealand.

Biology & ecology: Unknown. Presumably prey is attracted to the moving lure and then engulfed.

References

Anderson et al. (1998), Gomon et al. (2008), Stewart (1994).

Yellow-eyed mullet

Aldrichetta forsteri

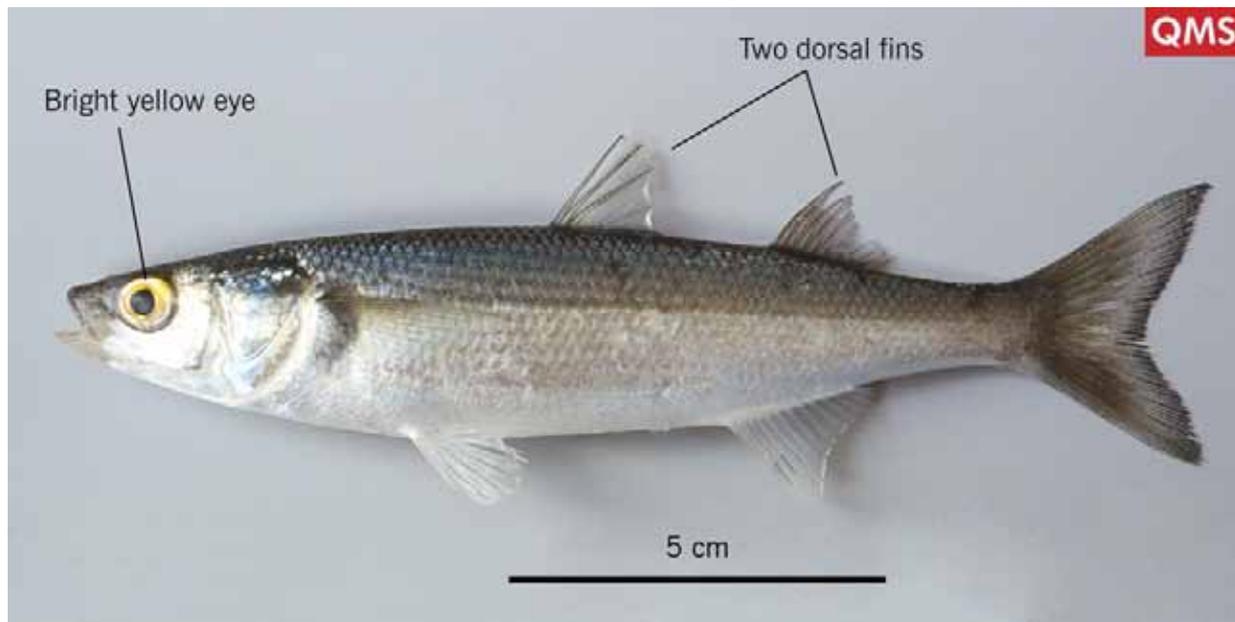
Family: 245. Mugilidae (mulletts)

Maori names: Aua, awa, matakawhiti

Other names: Herring, sprat

MFish reporting code: YEM

MFish research code: YEM



Distinguishing features: Small estuarine and shallow water species with a small head, bright yellow eye, and thin easily dislodged scales. Like other mullets, has two widely separated dorsal fins.

Colour: Body grey-green above, silvery-white below, eye bright yellow.

Size: To about 40 cm FL.

Distribution: Coastal New Zealand except Fiordland. Also southern Australia.

Depth: 0 to 50 m.

Similar species: Grey mullet (*Mugil cephalus*) occurs around northern New Zealand, is dark grey above with a broad head, dull yellow eye, and large firm scales.

Biology & ecology: Common in shallow bays, harbours and estuaries, usually in schools.

References

Francis (2001), Hirt-Chabbert (2006), Last et al. (1983), Paul (2000), Paulin et al. (1989).

Grey mullet

Mugil cephalus

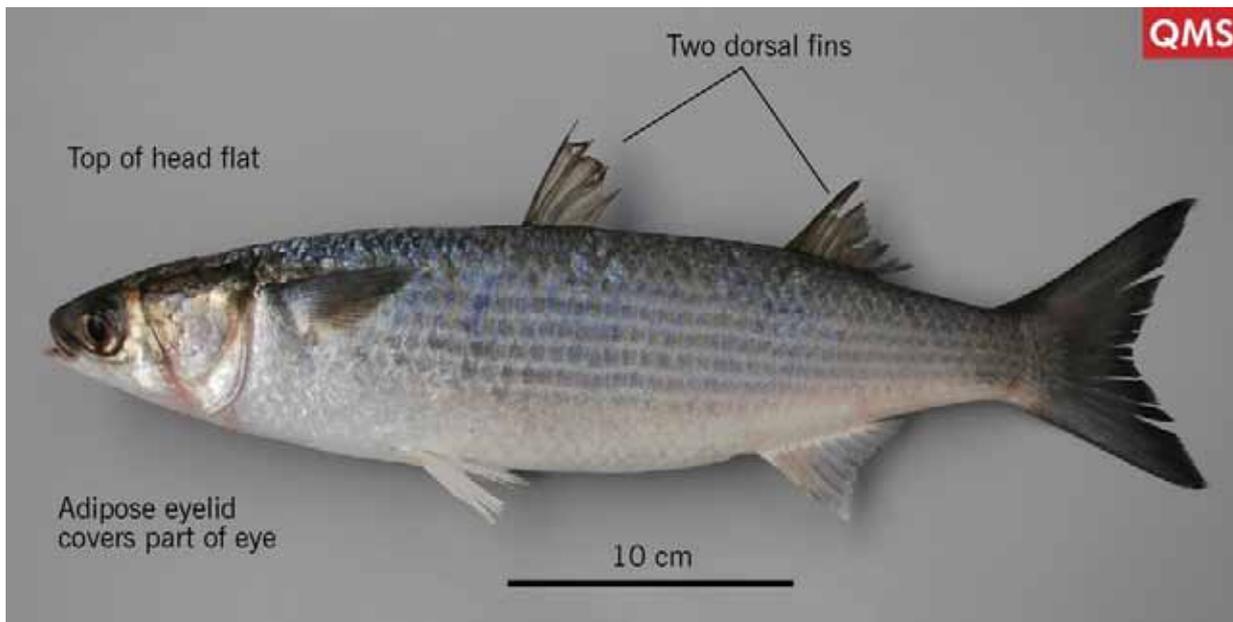
Family: 245. Mugilidae (mulletts)

Maori names: Kanae, hopuhopu

Other names: Sea mullet (Aus.)

MFish reporting code: GMU

MFish research code: GMU



Distinguishing features: Adipose eyelid prominent, covering more than half of the 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.

Distribution: Prefers warmer inshore marine, estuaries, and rivers of northern New Zealand. Offshore records are erroneous. Worldwide in tropical (less abundant), subtropical, and warm temperate waters.

Depth: 0 to 10 m.

Similar species: Yellow-eyed mullet (*Aldrichetta forsteri*) has a bright yellow eye without an obvious adipose eyelid, pointed snout, longer than eye length, and the 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 the sea to spawn from November to February. Feed on algae. Reach ages of at least 15 years in New Zealand.

References

Harrison & Senou (1999), Gomon et al. (20084), Paulin (2005), Paulin et al. (1989).

Garfish

Hyporhamphus ihi

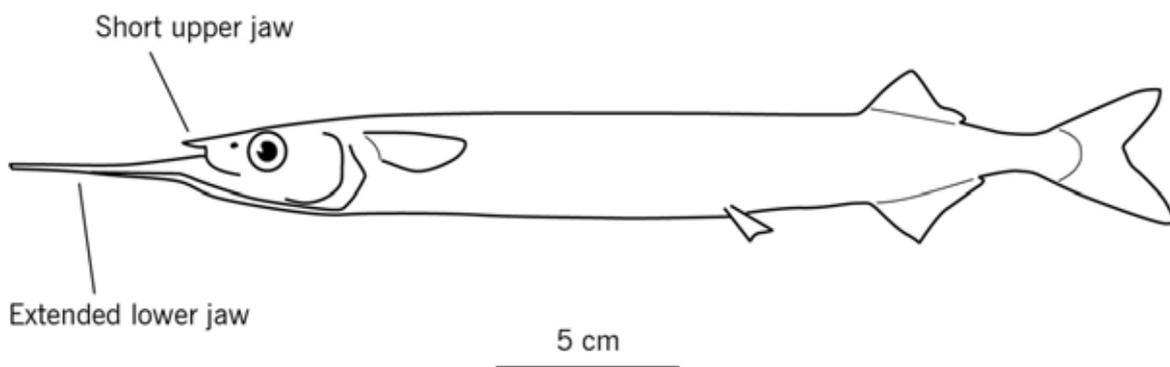
Family: 254. Hemiramphidae (halfbeaks)

Maori names: Ihe, takeke

Other names: n.a.

MFish reporting code: GAR

MFish research code: GAR



Distinguishing features: Elongate beak-like extension of the lower jaw and short triangular upper jaw. Elongate body with short-based dorsal and anal fins at the rear of the body just in front of the caudal fin. Normal sized pectoral and pelvic fins.

Colour: Dark blue-green above with brown flecks, silvery-white sides and belly, with a silver stripe running from behind the top of the pectoral fin base to the tail. Pectoral, dorsal, pelvic and caudal fins dusky, anal fin pale.

Size: To about 40 cm FL.

Distribution: Restricted to New Zealand from Cape Reinga to Foveaux Strait and Chatham Islands, but most common in northern and central inshore areas.

Depth: 0 to a few metres.

Similar species: A second much rarer species of garfish (*Euleptorhamphus viridis*) is recorded from northern New Zealand that has a much longer pectoral fin, longer than the head length (tip of upper jaw to rear edge of operculum).

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.

References

Collette (1999), Francis, (2001), Paul (2000), Paulin et al. (1989).

Spinyfin

Diretmichthys parini

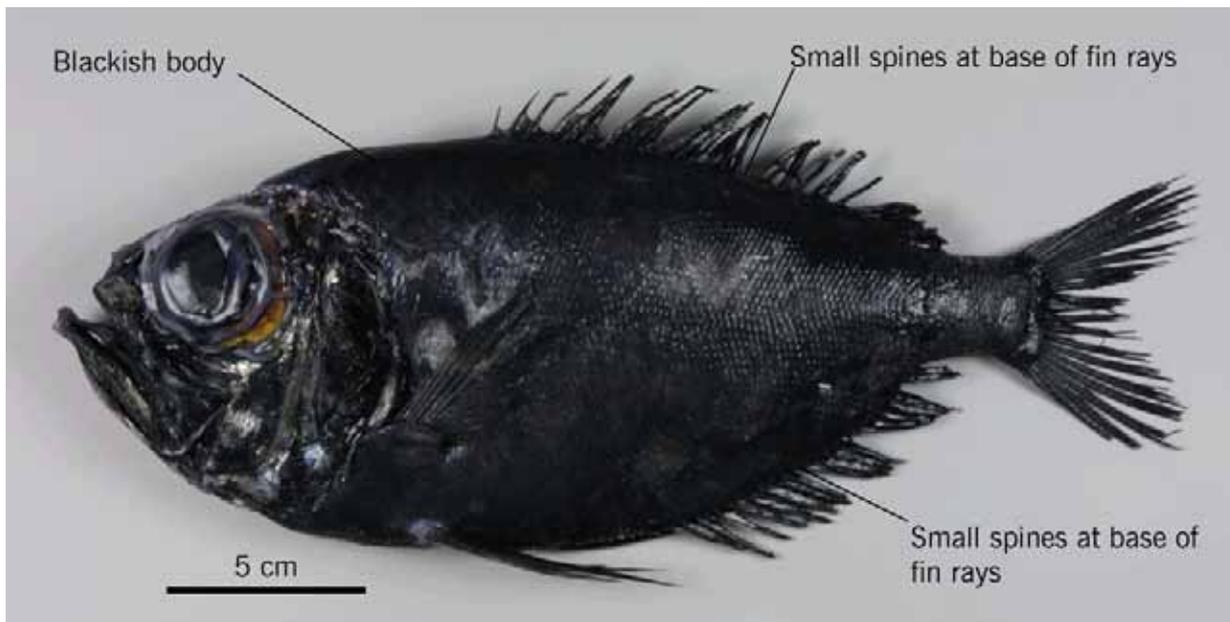
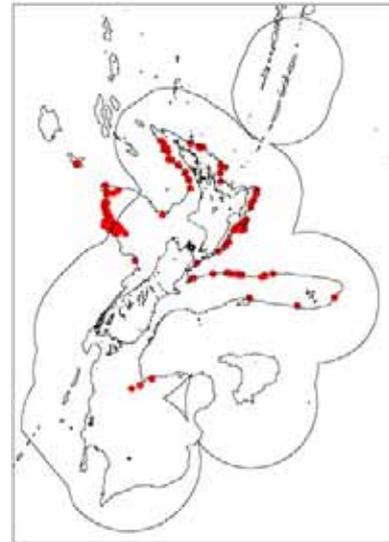
Family: 277. Diretmidae (spinyfins)

Maori names: n.a.

Other names: Black roughy

MFish reporting code: SFN

MFish research code: SFN



Distinguishing features: Blackish-brown head, body, and fins. Small lateral spines on the base of rays of the 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.

Distribution: Central and northern New Zealand. Southern Australia (Qld, Vic, Tas). Widespread in the 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 the 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 the base of the dorsal and anal fin rays.

Biology & ecology: Juveniles are probably in midwater and adults live deeper and closer to the bottom.

References

Anderson et al. (1998), Gomon et al. (2008), Roberts (1999).

Orange roughy

Hoplostethus atlanticus

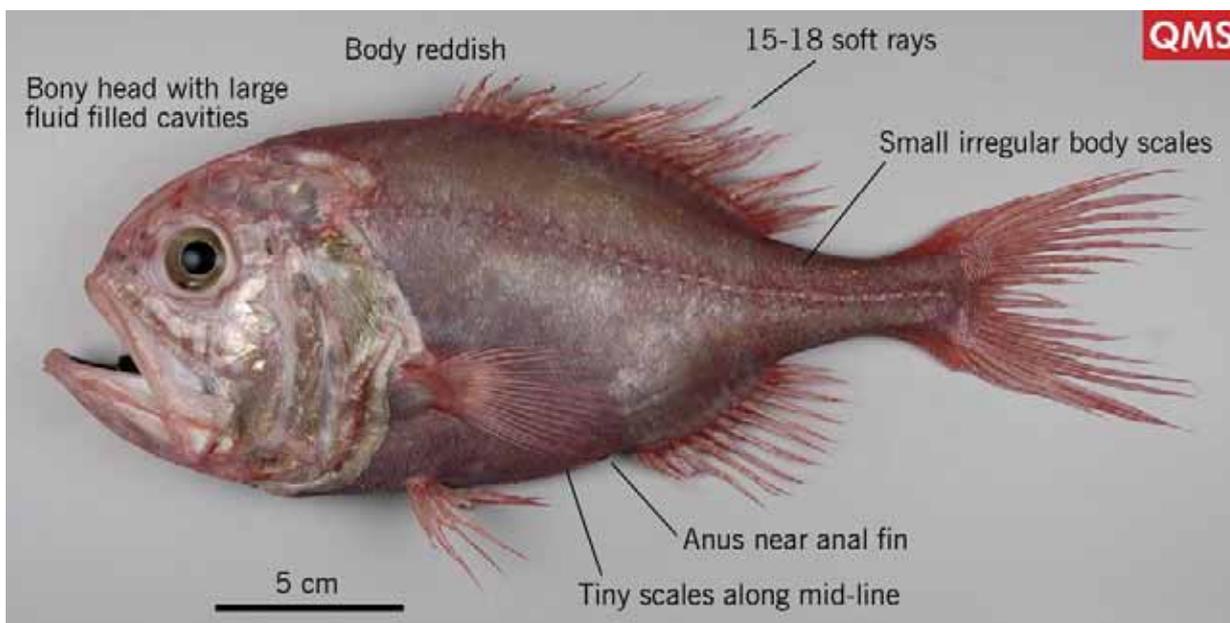
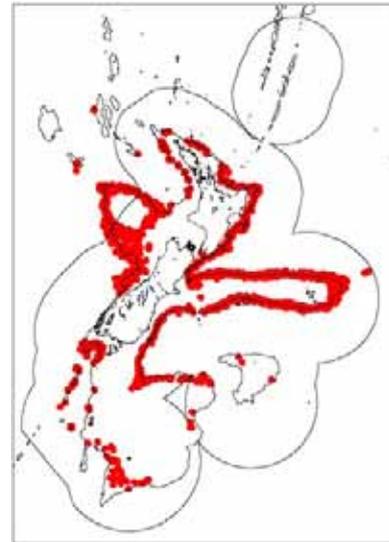
Family: 280. Trachichthyidae (roughies)

Maori names: n.a.

Other names: n.a.

MFish reporting code: ORH

MFish research 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 scute-like scales in a series on the belly from behind the pelvic fin to before the anus. Dorsal fin spines 6 and soft rays 15 to 18.

Colour: Upper body and fins reddish, sides paler reddish-grey, sometimes silvery. Mouth lining black. Iris pale yellow. The body in smaller individuals is paler and very small fish have blackish pectoral and pelvic fins.

Size: To about 48 cm SL.

Distribution: Widespread in New Zealand. Southern Australia. Widespread in temperate waters of the Atlantic, Pacific and Indian Oceans.

Depth: 700 to 1200 m.

Similar species: Silver roughy (*Hoplostethus mediterraneus*) has 12 or 13 dorsal fin soft rays, larger body scales that are usually lost, 9 or 10 ventral scutes, and pinkish pectoral and pelvic fins.

Biology & ecology: Demersal. Probably migrate considerable distances and spawn from June to August at specific sites, including north Chatham Rise, Challenger Plateau, Ritchie Bank, etc. Feed on midwater fishes, cephalopods and crustaceans. Slow growing and long lived, attaining ages of at least 100 years.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin (1979).

Silver roughy

Hoplostethus mediterraneus

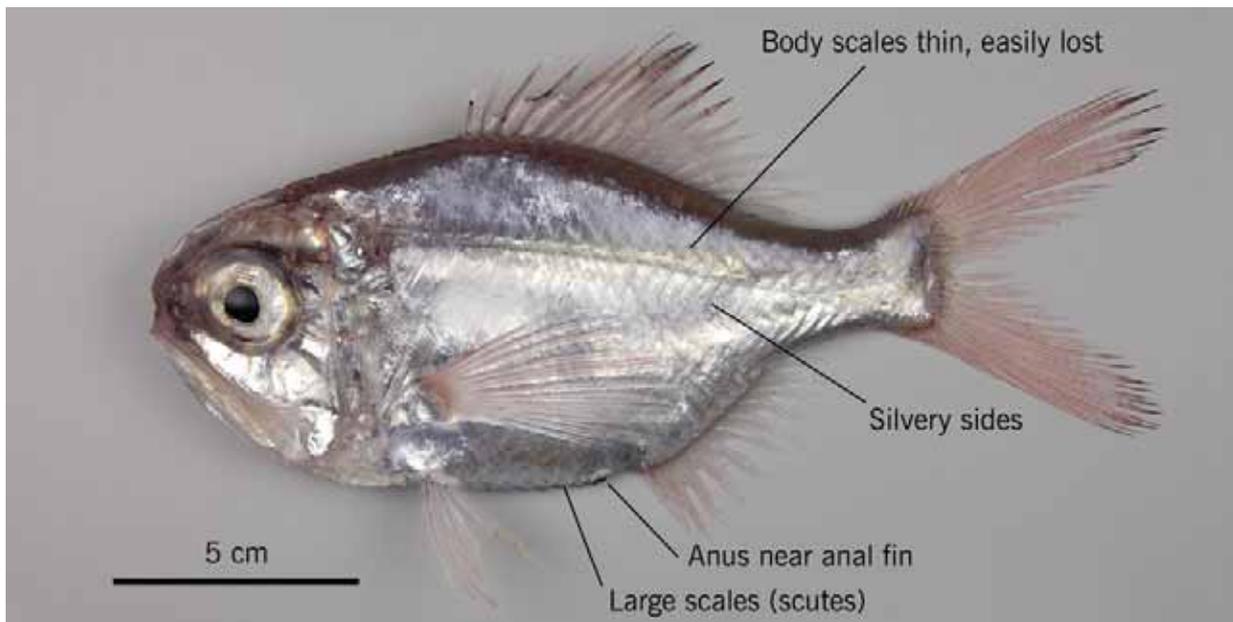
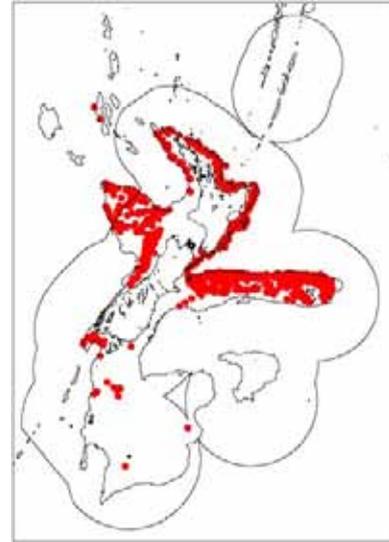
Family: 280. Trachichthyidae (roughies)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SRH

MFish research code: SRH



Distinguishing features: Anus near the origin of the anal fin with no scutes between the anus and anal fin. Row of scute-like scales on belly between pelvic fin and anus. Enlarged scales along the 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 the tips of the dorsal and caudal fins.

Size: To about 21 cm SL.

Distribution: Central and northern New Zealand. Southern Australia (NSW to Great Australian Bight, Tas). 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*) has the anus surrounded by the 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 more dorsal fin rays (15 to 18 v. 12 to 13 in silver roughy), small irregular body scales (larger and usually lost in silver roughy), and small ventral scutes with 19 to 25 on underside in front of anus (9 to 10 in silver roughy).

Biology & ecology: Demersal.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin (1979), Smith & Roberts (2004).

Common roughy

Paratrachichthys trailli

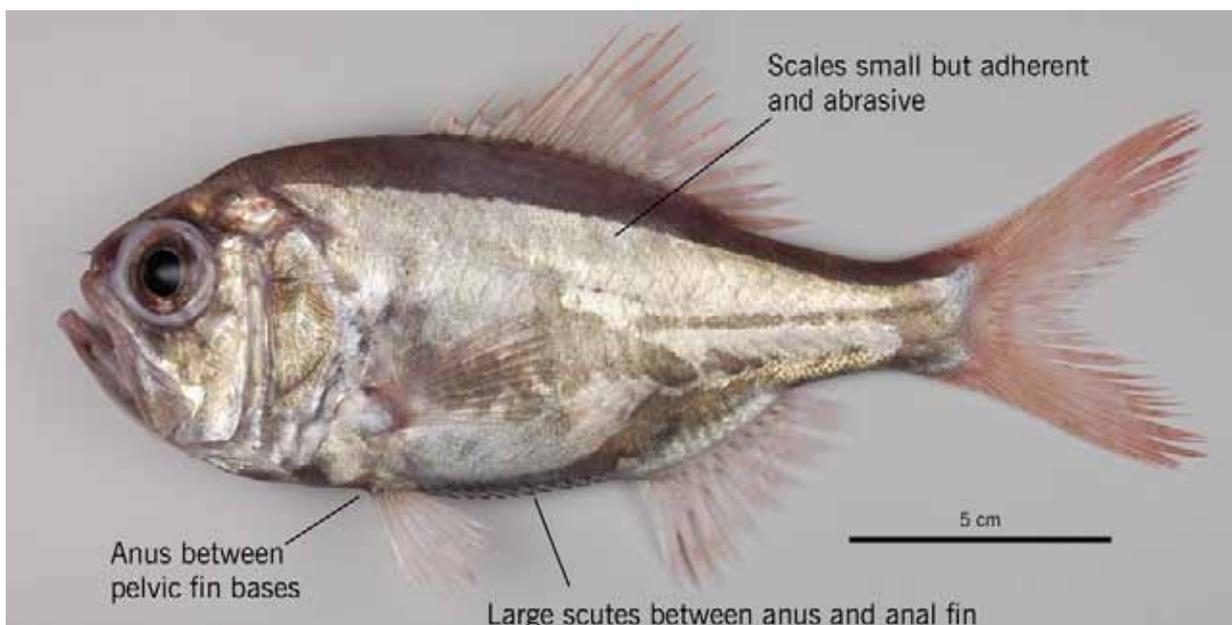
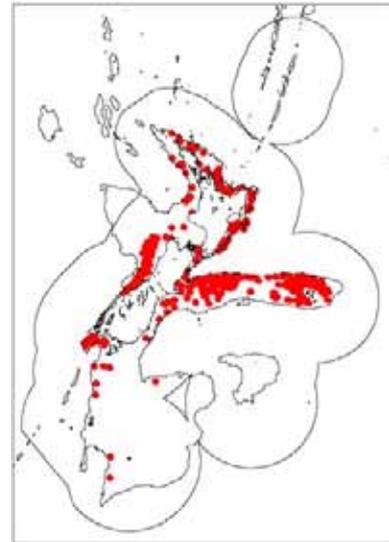
Family: 280. Trachichthyidae (roughies)

Maori names: Patohe

Other names: n.a.

MFish reporting code: RHY

MFish research code: RHY



Distinguishing features: Anus surrounded by an oval of black tissue (light organ) and situated between the pelvic fin bases. A series of large scute-like scales on the belly between the anus and the anal fin. Body covered with small, rough, adherent scales. No enlarged scales in the lateral line.

Colour: Body and head dull pinkish red above, with silvery sides. All fins pinkish. Oval of black tissue (light organ) around the anus.

Size: To about 25 cm FL.

Distribution: Widespread. Known only from New Zealand. A very similar species is reported from southern Australia.

Depth: 0 to 600 m.

Similar species: Silver roughy (*Hoplostethus mediterraneus*) has the anus near the origin of the anal fin, no scutes between the anus and anal fin, has enlarged scales on the lateral line, and has thin body scales that are usually lost during capture. Orange roughy (*H. atlanticus*) has the anus near the origin of the anal fin, no scutes between the anus and anal fin, and has enlarged scales on the lateral line.

Biology & ecology: Small individuals live in shallow coastal waters (5 to 10 m) and have been observed by divers in caves and crevices. Larger individuals are found in deeper waters and occasional catches of many tonnes of apparently spawning individuals have been reported.

References

Anderson et al. (1998), Francis (2001), Paulin (1979).

Longfinned beryx

Beryx decadactylus

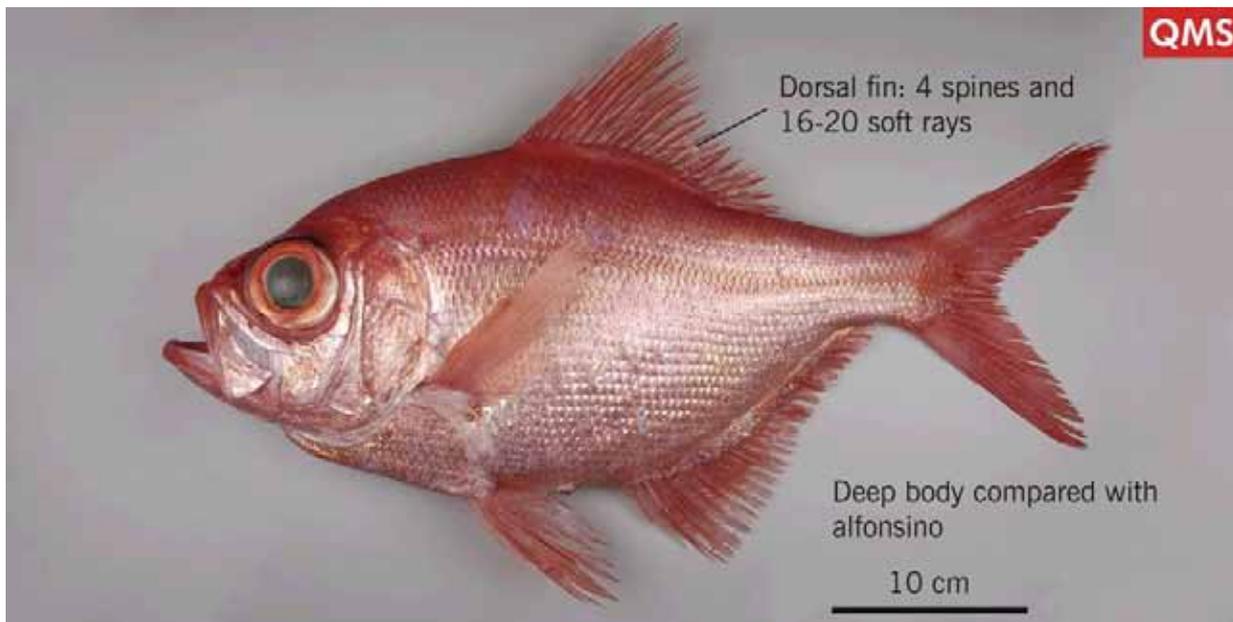
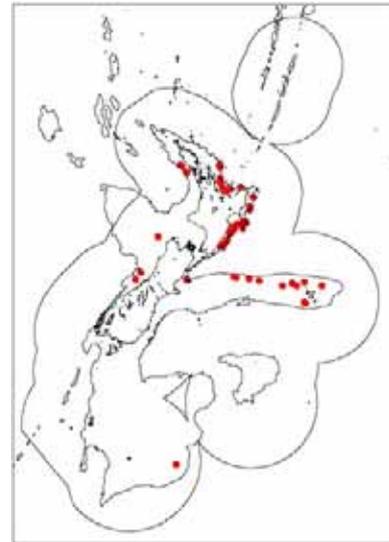
Family: 281. Berycidae (alfonsinos)

Maori names: n.a.

Other names: Imperador (Australia)

MFish reporting code: BYX

MFish research code: BYD



Distinguishing features: Bright red body and fins. Body depth much greater than head length. 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.

Distribution: Mostly around the North Island. Occurring in most temperate and some subtropical oceans.

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.

References

Carpenter & Niem (1999), Hirt-Chabbert (2006), Last et al. (1983), Paul (2000), Paulin et al. (1989).

Alfonsino

Beryx splendens

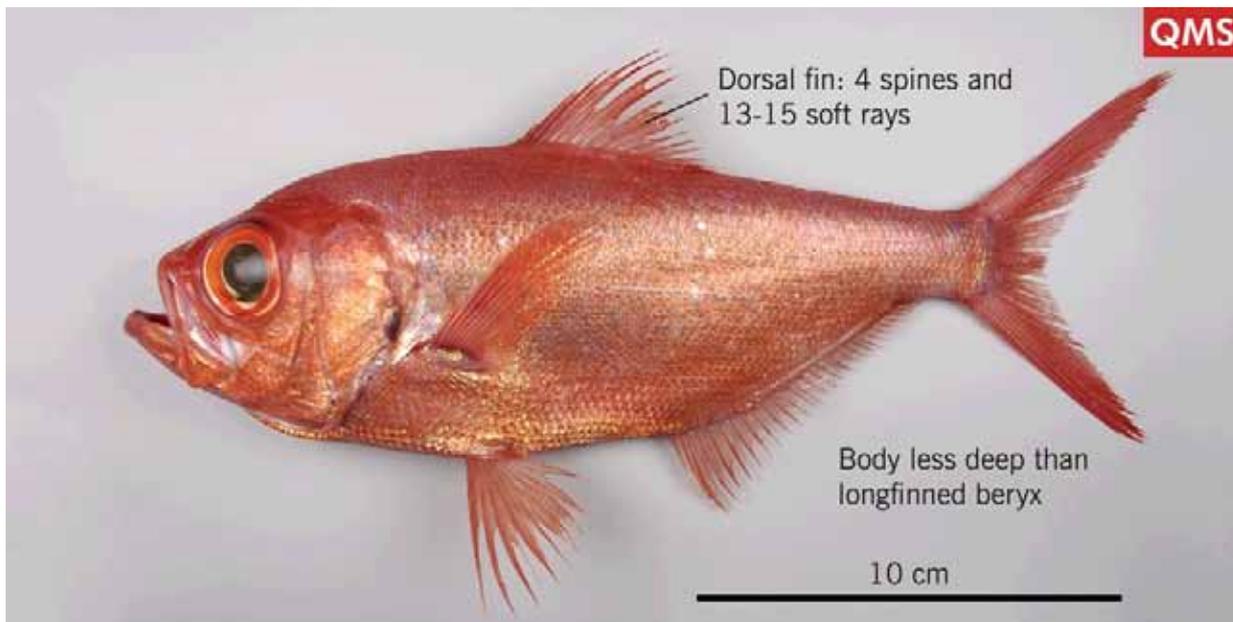
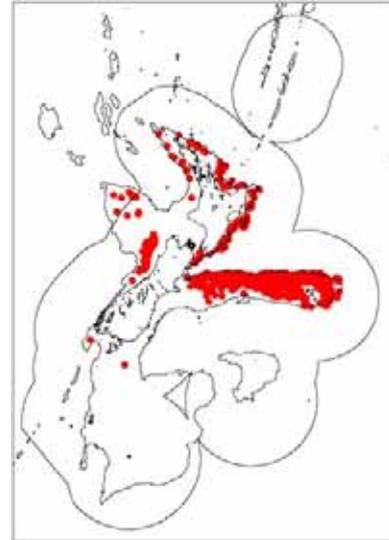
Family: 281. Berycidae (alfonsinos)

Maori names: n.a.

Other names: Splendid alfonsino

MFish reporting code: BYX

MFish research code: BYS



Distinguishing features: Bright red body and fins. Body depth about equal to or slightly more than head length. 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.

Distribution: Central and northern New Zealand. Occurring in most temperate oceans.

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.

References

Hirt-Chabbert (2006), Last et al. (1983), Paul (2000), Paulin et al. (1989).

Red snapper

Centroberyx affinis

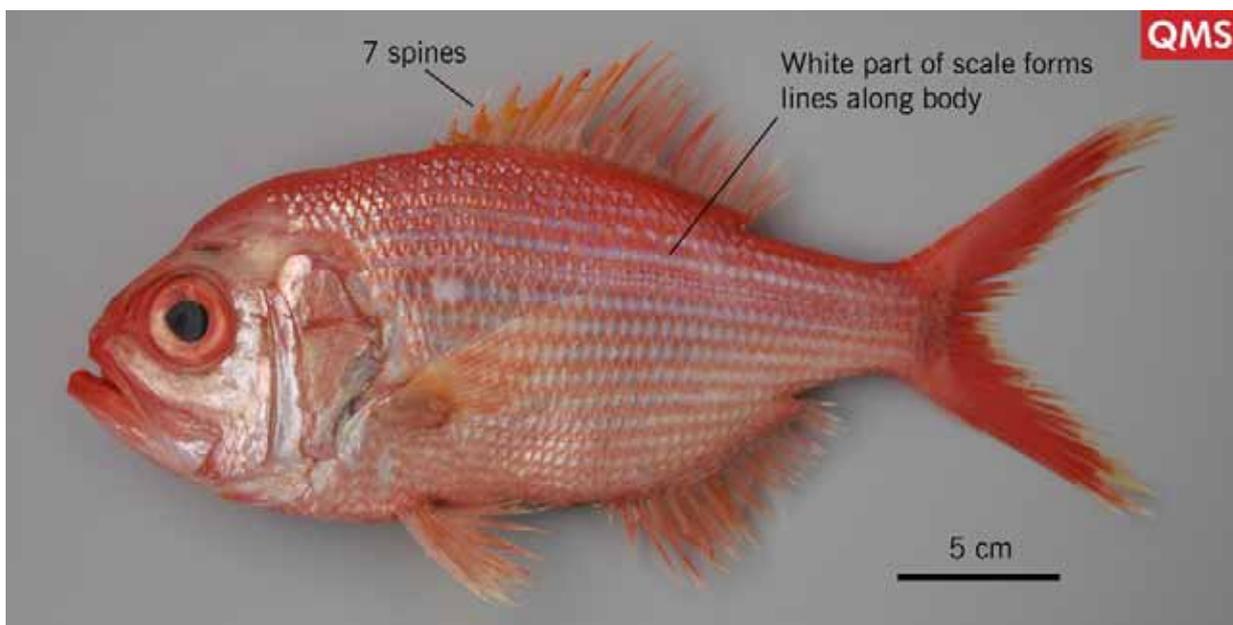
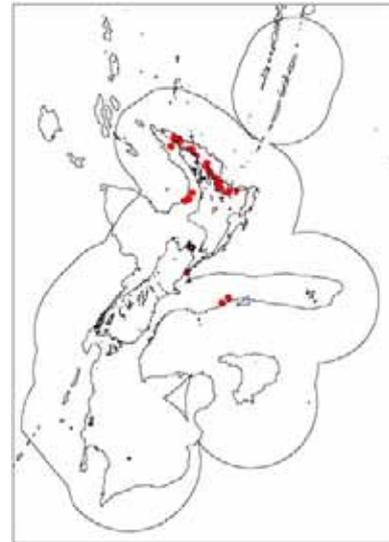
Family: 281. Berycidae (alfonsinos)

Maori names: Koarea

Other names: Redfish (Australia)

MFish reporting code: RSN

MFish research 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.

Distribution: Northern New Zealand. Also eastern Australia, and New Caledonia.

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. Mostly around the North Island, north of about East Cape.

References

Carpenter & Niem (1999), Francis (2001), Hirt-Chabbert (2006), Last et al. (1983), Paul (2000), Paulin et al. (1989).

Silver dory

Cyttus novaezealandiae

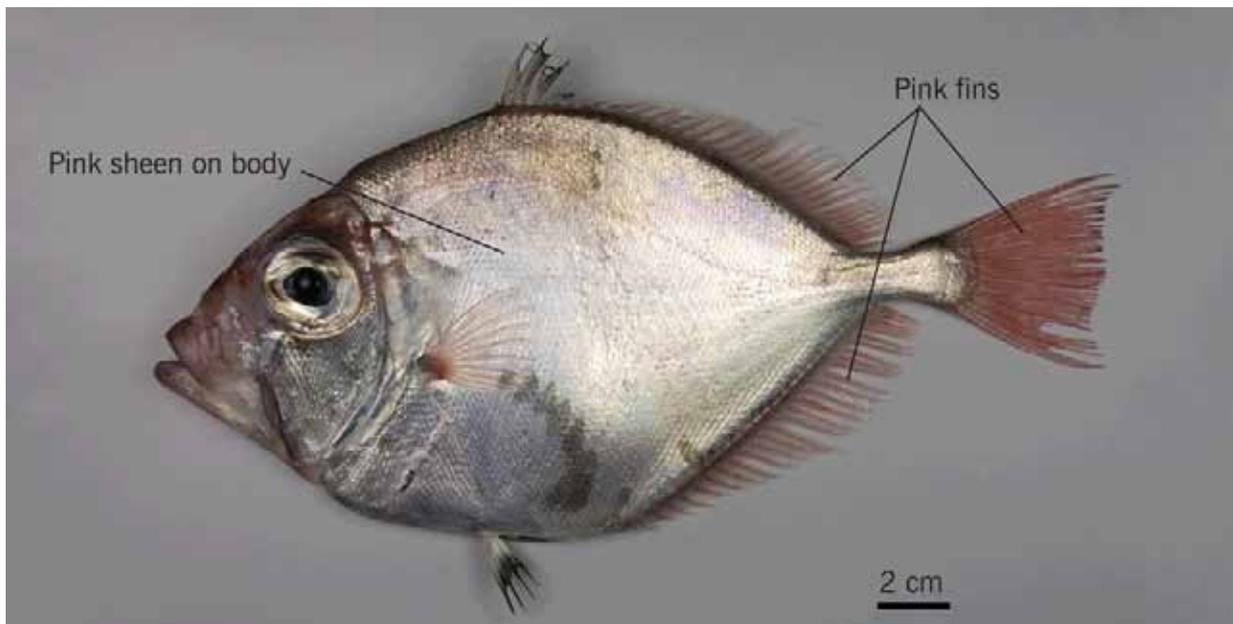
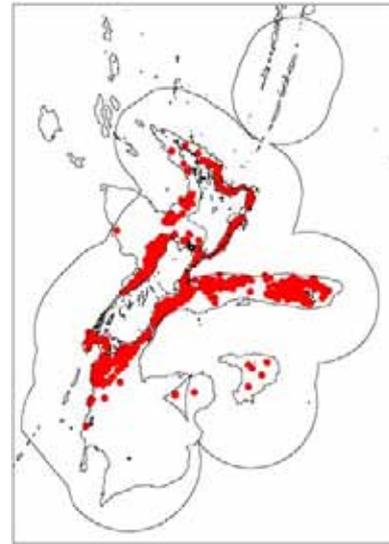
Family: 283. Cyttidae (lookdown dories)

Maori names: n.a.

Other names: Pink dory

MFish reporting code: SDO

MFish research 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.

Distribution: Throughout 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.

References

Hirt-Chabbert (2006), Last et al. (1983), Paul (2000), Paulin et al. (1989).

Lookdown dory

Cyttus traversi

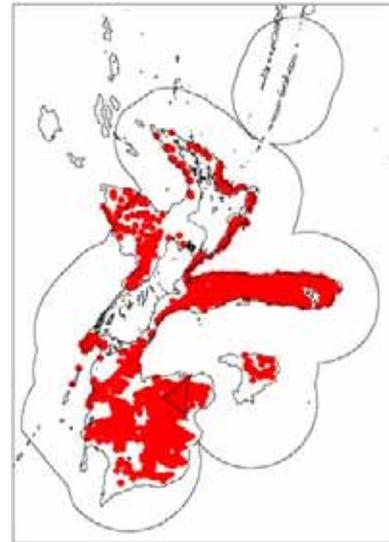
Family: 283. Cyttidae (lookdown dories)

Maori names: n.a.

Other names: King dory (Australia)

MFish reporting code: LDO

MFish research 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.

Distribution: Throughout New Zealand. Southern Australia and South 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.

References

Hirt-Chabbert (2006), James (1976), Last et al. (1983), Paul (2000), Paulin et al. (1989).

Black oreo

Allocyttus niger

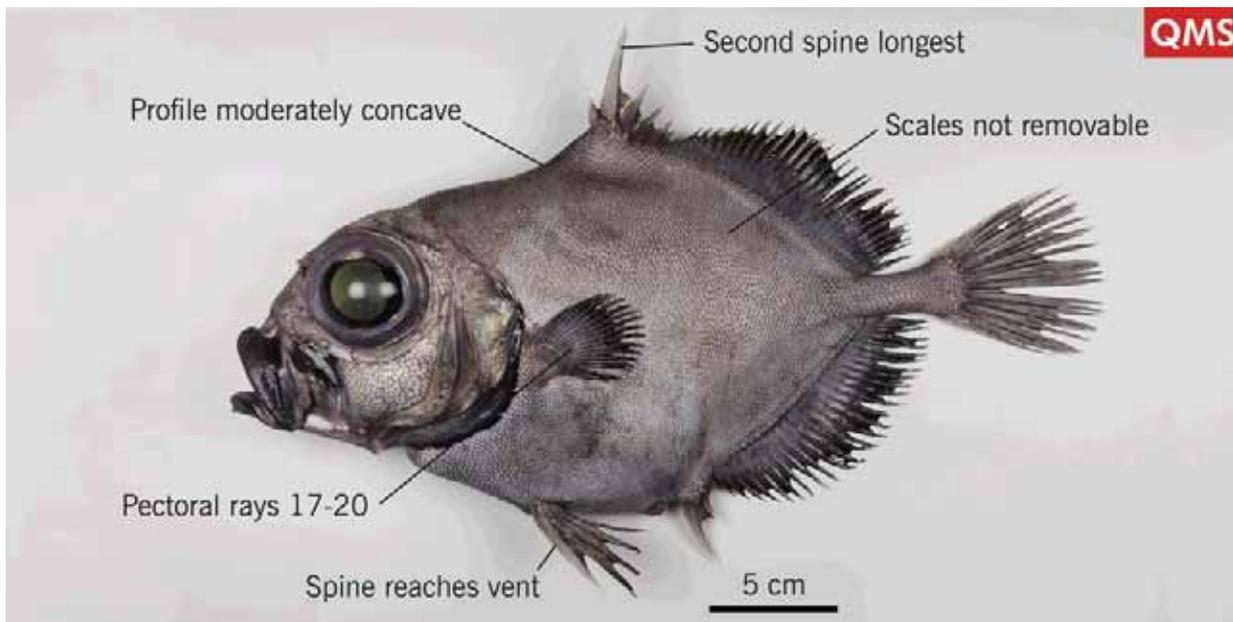
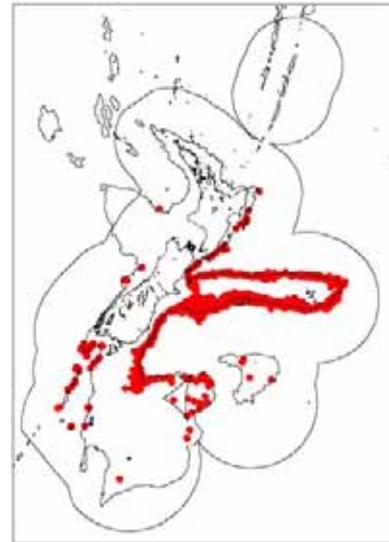
Family: 284. Oreosomatidae (oreos)

Maori names: n.a.

Other names: n.a.

MFish reporting code: BOE

MFish research code: BOE



Distinguishing features: Body scales cannot be dislodged, predorsal profile slightly concave and not rising steeply, pelvic spine extends to vent, small fin spinules, premaxillary bone wide, pectoral rays 17 to 20.

Colour: Body uniform grey-black, fins black.

Size: To about 40 cm TL.

Distribution: Principally southeastern and southern New Zealand. 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.

References

Hirt-Chabbert (2006), James et al. (1988), Paul (2000), Paulin et al. (1989).

Warty oreo

Allocyttus verrucosus

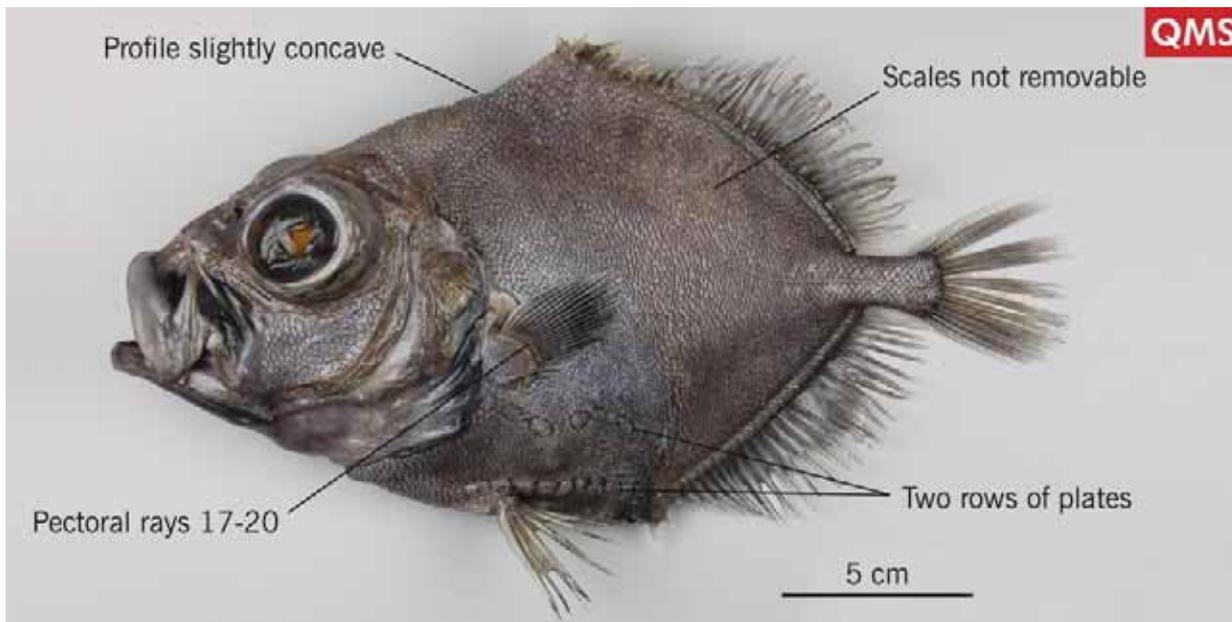
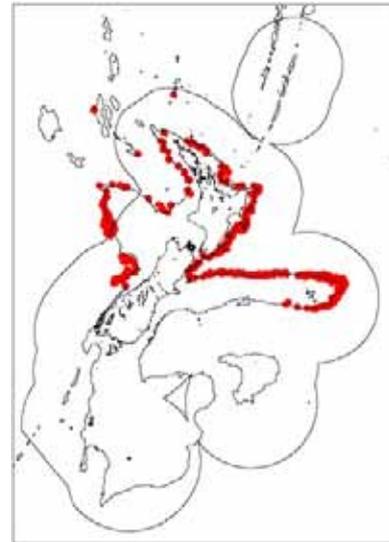
Family: 284. Oreosomatidae (oreos)

Maori names: n.a.

Other names: n.a.

MFish reporting code: WOE

MFish research 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, pelvic spine not reaching vent, no spinules on fins, premaxillary bone moderate width, pectoral rays 17 to 20.

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 35 cm TL.

Distribution: Occurs around central and northern New Zealand. Also off Australia, South Africa and in the western South Atlantic Ocean.

Depth: Deeper than 800 m.

Similar species: Black oreo (*Allocyttus niger*) lacks two rows of flat bony plates on the 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, huge eye, greatly elevated dorsal hump, and a northern distribution. Rough oreo (*Neocyttus psilorhynchus*) is very rare (see spiky oreo).

Biology & ecology: Demersal. The deepest living of the oreos in the New Zealand area and consequently the juveniles are often the only specimens caught, i.e., at the shallow end of the species depth range. Juveniles have dark blotches on the body and the bony plates on the abdomen are relatively large compared to adults.

References

Hirt-Chabbert (2006), James et al. (1988), Paulin et al. (1989).

Spiky oreo

Neocyttus rhomboidalis

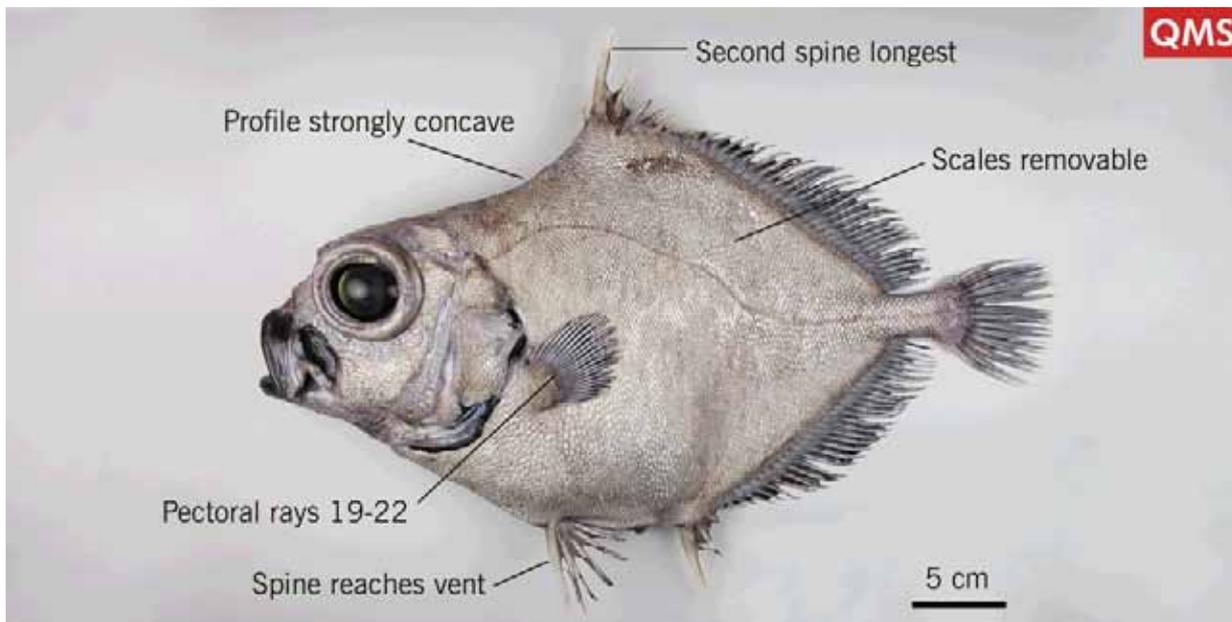
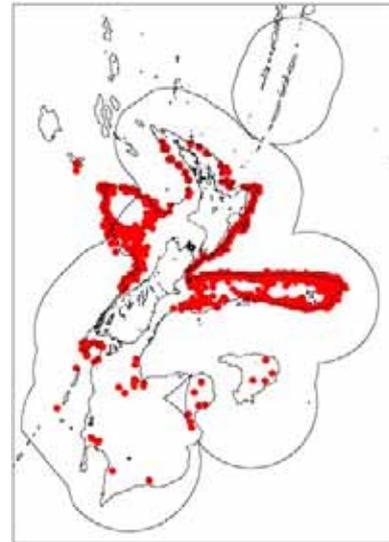
Family: 284. Oreosomatidae (oreos)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SOR

MFish research code: SOR



Distinguishing features: Body scales can be dislodged, predorsal profile strongly concave and rises steeply, pelvic spine extends 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 42 cm TL.

Distribution: Widespread in New Zealand and throughout the Southern Ocean including Australia and South Africa.

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 (*Alloctytus niger*) is grey-black and has scales that cannot be dislodged from the skin. Warty oreo (*Alloctytus 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.

References

Hirt-Chabbert (2006), James et al. (1988), Paul (2000), Paulin et al. (1989).

Smooth oreo

Pseudocyttus maculatus

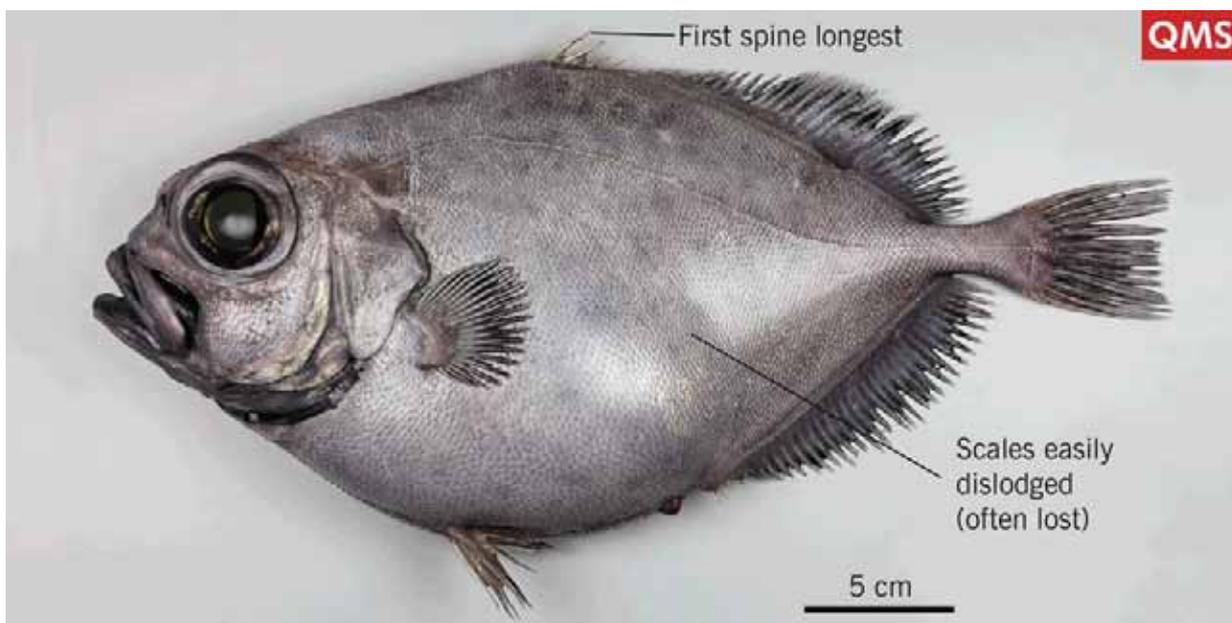
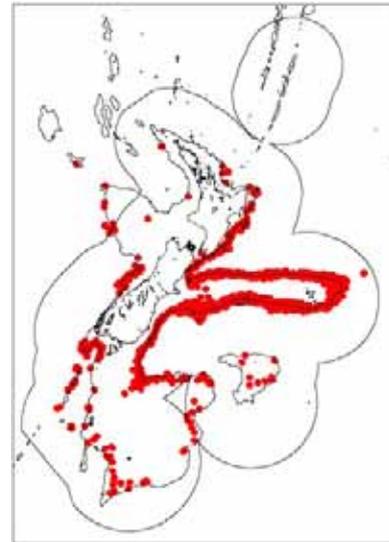
Family: 284. Oreosomatidae (oreos)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SSO

MFish research 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 (< 156 mm) body silvery grey with numerous dark blue blotches.

Size: To about 51 cm TL.

Distribution: Widespread around New Zealand and throughout the Southern Ocean, including Australia, South Africa, and the western South Atlantic.

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.

References

Hirt-Chabbert (2006), James et al. (1988), Paul (2000), Paulin et al. (1989).

Capro dory

Capromimus abbreviatus

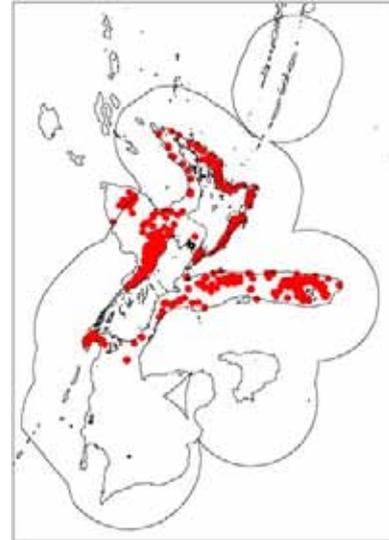
Family: 286. Zeniontidae (armoreye dories)

Maori names: n.a.

Other names: n.a.

MFish reporting code: CDO

MFish research 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.

Distribution: Widely distributed around New Zealand, but excluding the Southern Plateau.

Depth: 200 to 500 m.

Similar species: Other dories lack the dark body markings and are larger.

Biology & ecology: Demersal. More common off east coast of northern and central New Zealand.

References

Froese & Pauly (2007), Paul (2000), Paulin et al. (1989).

Zenion dory

Zenion leptolepis

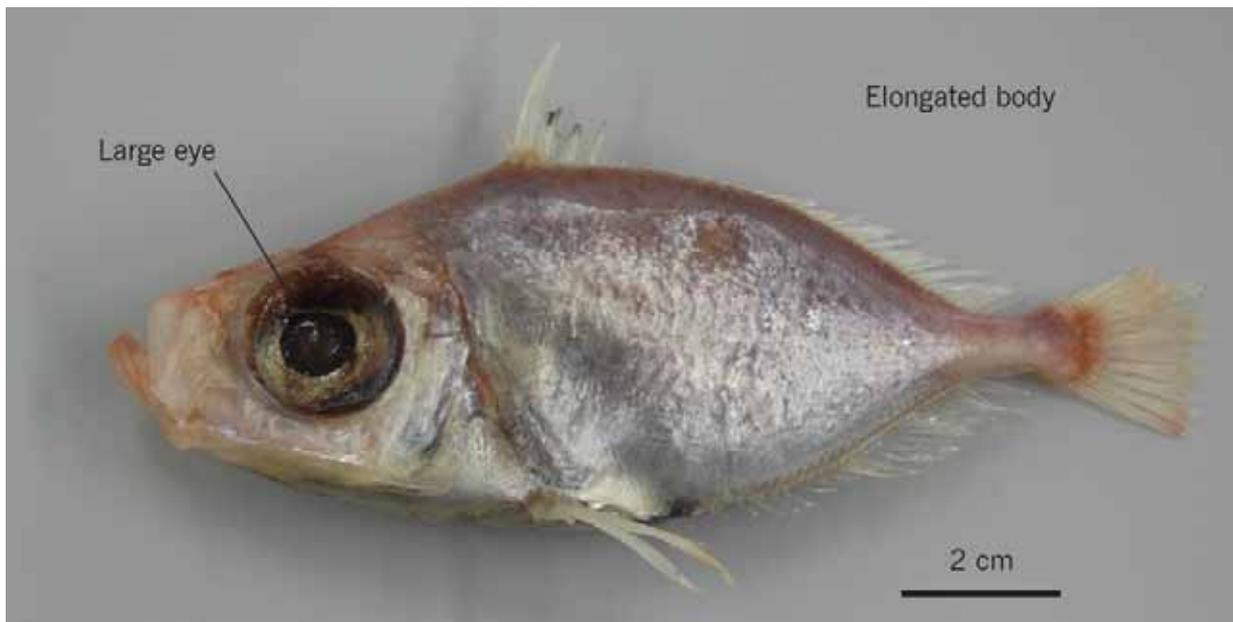
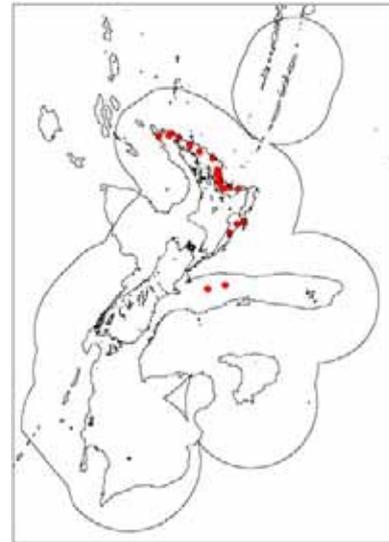
Family: 286. Zeniontidae (armoreye dories)

Maori names: n.a.

Other names: Elongate dory

MFish reporting code: UNI

MFish research code: ZDO



Distinguishing features: Small, to about 16 cm TL, with a relatively elongated body and enormous eyes. One serrated spine in pelvic fin.

Colour: Body silvery with a reddish-brown sheen.

Size: To about 16 cm TL.

Distribution: Central and northern New Zealand. Also western Indian Ocean.

Depth: 330 to 700 m.

Similar species: Other dories lack the very large eye and elongate body.

Biology & ecology: Unknown.

References

Froese & Pauly (2007), Paul (2000), Paulin et al. (1989).

Mirror dory

Zenopsis nebulosa

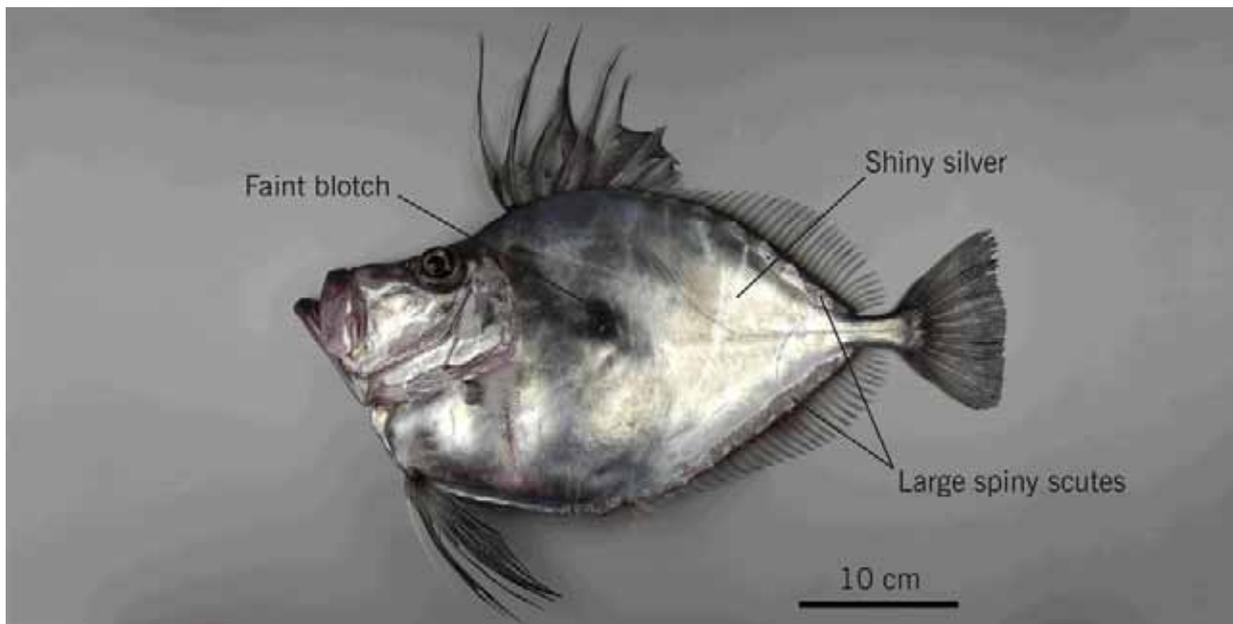
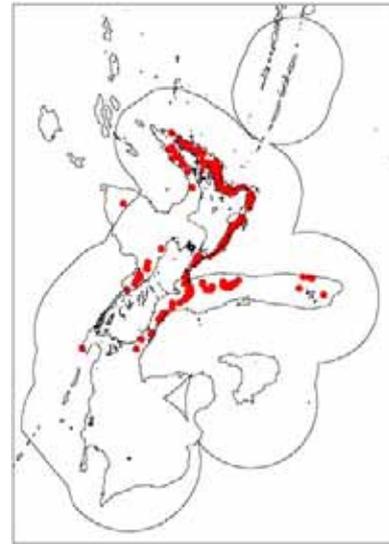
Family: 288. Zeidae (dories)

Maori names: n.a.

Other names: n.a.

MFish reporting code: MDO

MFish research code: MDO



Distinguishing features: Body shiny silver with a faint central blotch on each side, dorsal and particularly pelvic fin rays elongated, 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.

Distribution: Mainly around northern New Zealand. Southern and western Australia, Japan, and eastern Pacific 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.

References

Hirt-Chabbert (2006), Last et al. (1983), Paul (2000), Paulin et al. (1989).

John dory

Zeus faber

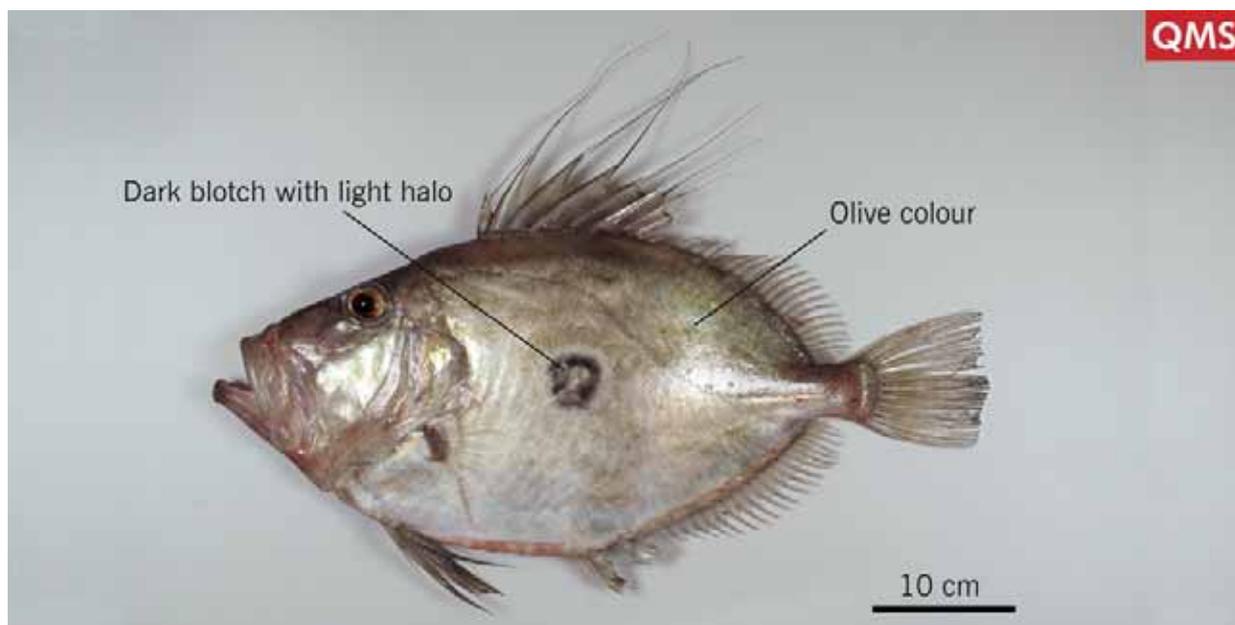
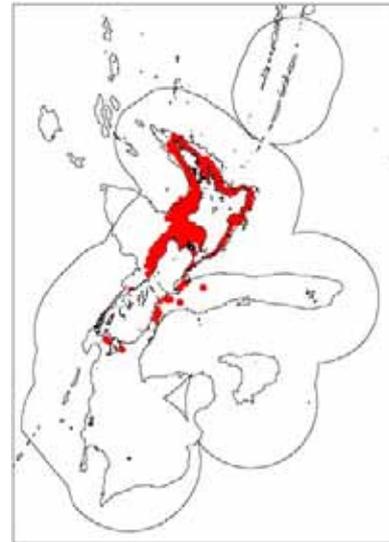
Family: 288. Zeidae (dories)

Maori names: Kuparu

Other names: n.a.

MFish reporting code: JDO

MFish research 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.

Distribution: Throughout New Zealand but uncommon south of Cook Strait. Worldwide species in temperate waters of eastern Atlantic, western Pacific and Indian Oceans.

Depth: 0 to 300 m.

Similar species: Other dories lack the dark body spot and olive body colour.

Biology & ecology: Demersal.

References

Hirt-Chabbert (2006), Last et al. (1983), Paul (2000), Paulin et al. (1989).

Banded bellowsfish

Centriscops humerosus

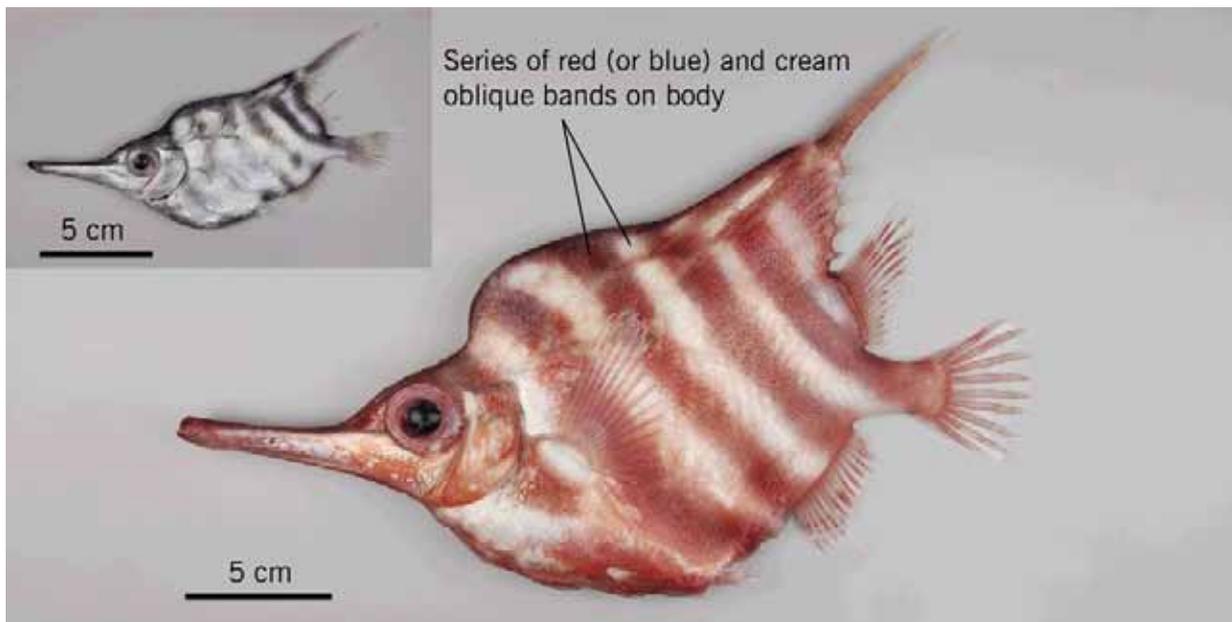
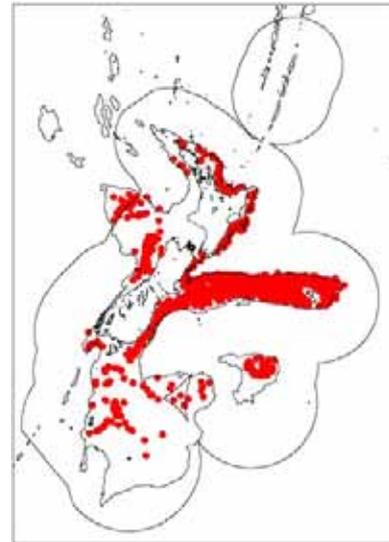
Family: 298. Macroramphosidae (snipefishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: BBE

MFish research code: BBE



Distinguishing features: Snout elongated to form a long tube with a small terminal mouth. Very strong spine (second) in the first dorsal fin. A series of 5 or 6 red (or bluish) and cream diagonal bands on the body.

Colour: A series of five or six red and cream diagonal bands on the body. In individuals less than about 20 cm TL the dark bands are bluish-grey rather than red.

Size: To about 30 cm TL.

Distribution: Widely distributed in New Zealand. Australia (NSW, Vic, Tas, SA, WA), South America, South Africa.

Depth: 200 to 900 m.

Similar species: Crested bellowsfish (*Notopogon lilliei*) lacks the series of 6 diagonal bands on the body.

Biology & ecology: Largely unknown. Probably demersal. The small mouth and long snout are clearly adapted for selecting small food items.

References

Anderson et al. (1998), Gomon et al. (2008).

Snipefish

Macroramphosus scolopax

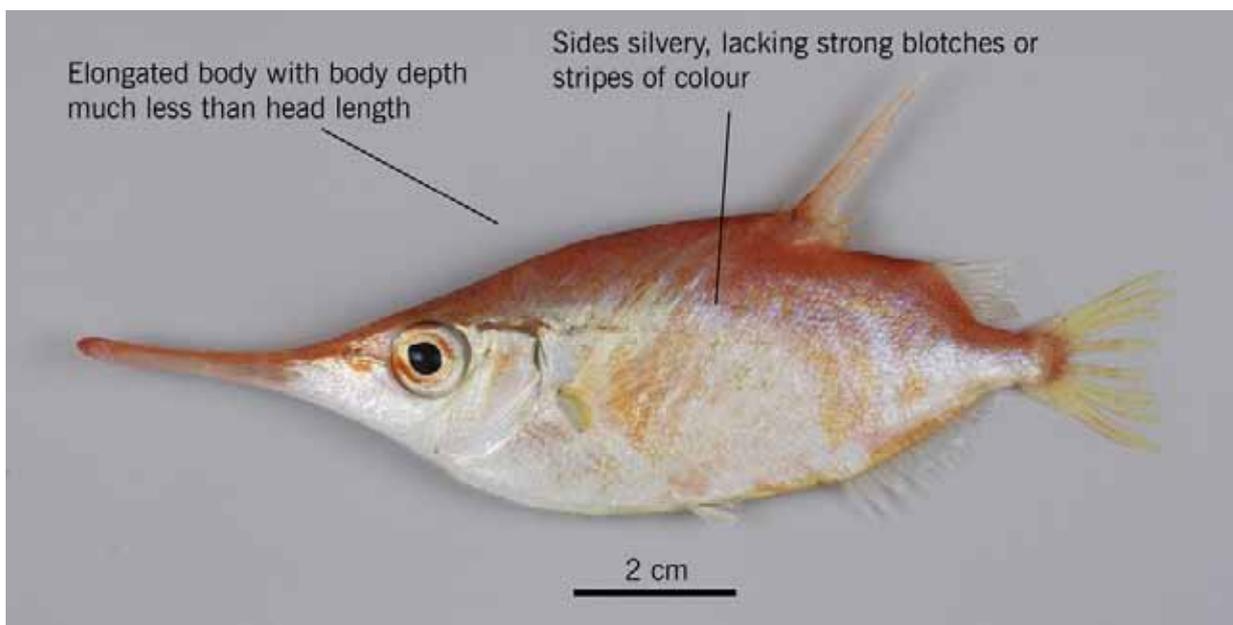
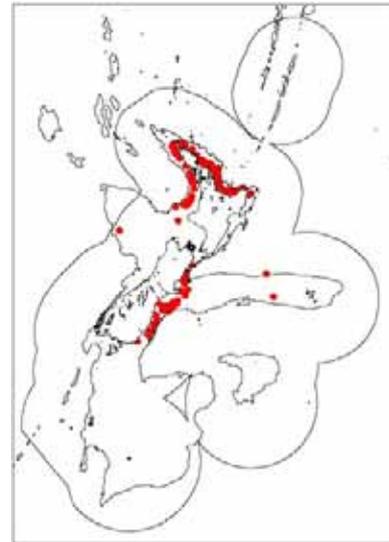
Family: 298. Macroramphosidae (snipefishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SNI

MFish research code: SNI



Distinguishing features: Snout elongated to form a long tube with a small terminal mouth. Very strong spine (second) in the 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.

Distribution: Central and northern New Zealand. Worldwide in temperate latitudes.

Depth: 50 to 350 m.

Similar species: Banded bellowsfish (*Centriscope humerosus*) has diagonal dark bands on the body. Crested bellowsfish (*Notopogon lilliei*) has complex oval shapes and spots on the body. Orange bellowsfish (*Notopogon xenosoma*) has an orange to pink body with white streaks and blotches.

Biology & ecology: Probably demersal but may move into midwater. Thought to feed on zooplankton (copepods and ostracods) and benthic invertebrates.

References

Anderson et al. (1998), Gomon et al. (2008), Smith & Heemstra (1986).

Crested bellowsfish

Notopogon lillie

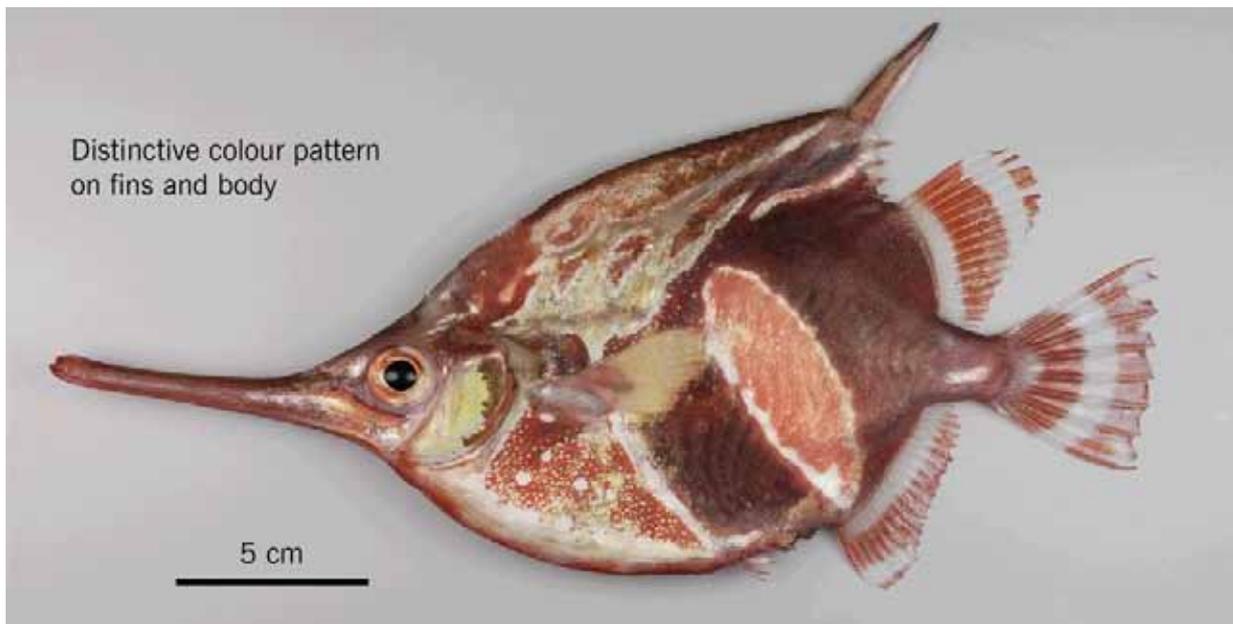
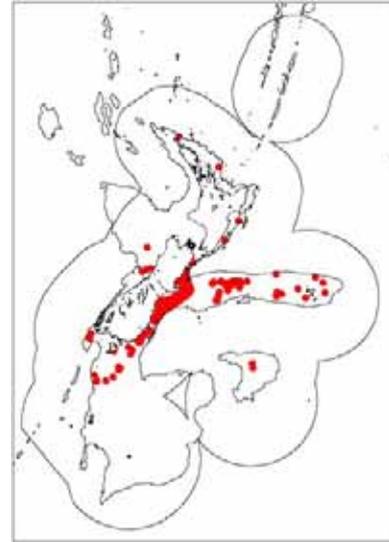
Family: 298. Macroramphosidae (snipefishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: CBE

MFish research code: CBE



Distinguishing features: Snout elongated to form a long tube with a small terminal mouth. Very strong spine (second) in the first dorsal fin. Dorsal profile in front of dorsal fin nearly straight, with very gentle convex curve, bearing a very small low patch of bristles in large individuals. Distinctive and complex colour pattern including a reddish-brown oval rear part of the body with an enclosed smaller pale reddish-pink oval with a 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.

Distribution: Appears to be confined to central and southern New Zealand. Australia (Vic, Tas, SA, WA) and South Africa.

Depth: 50 to 500 m.

Similar species: Banded bellowsfish (*Centriscope humerosus*) has a series of 6 diagonal red or blue-grey bands on the body.

Biology & ecology: Largely unknown. Probably demersal. The small mouth and long snout are clearly adapted for selecting small food items.

References

Anderson et al. (1998), Gomon et al. (2008).

Orange bellowsfish

Notopogon xenosoma

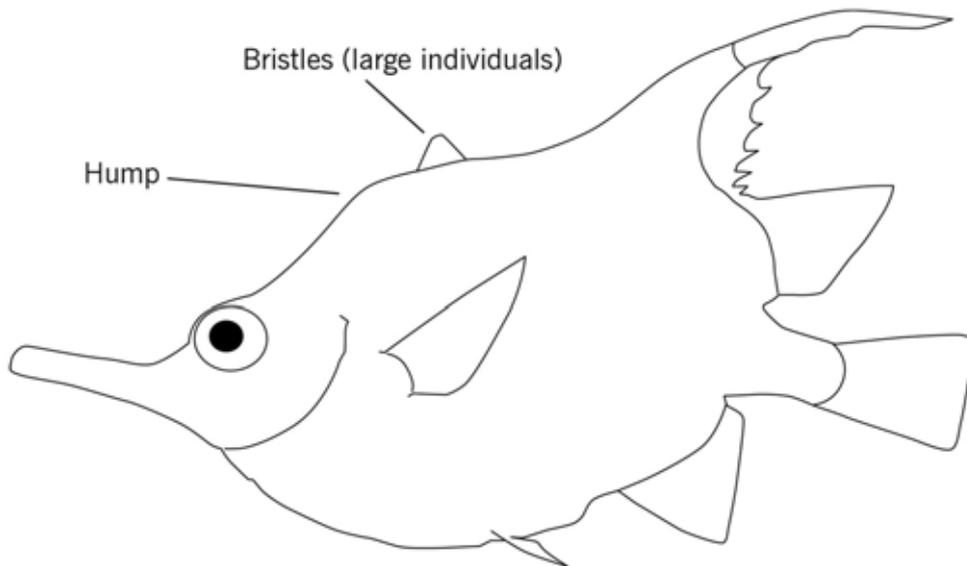
Family: 298. Macroramphosidae (snipefishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: UNI

MFish research code: NOF



Distinguishing features: Snout elongated to form a long tube with a small terminal mouth. Strong spine (second) in the 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 individuals.

Colour: Body orange to pink with white streaks and blotches.

Size: To at least 17 cm TL (15 cm SL).

Distribution: Probably confined to northern New Zealand. Australia from southern Queensland round to central Western Australia. New Caledonia, Madagascar, and South Africa.

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.

References

Gomon et al. (2008), King et al. (2009), Smith & Heemstra (1986).

Sea perch

Helicolenus spp.

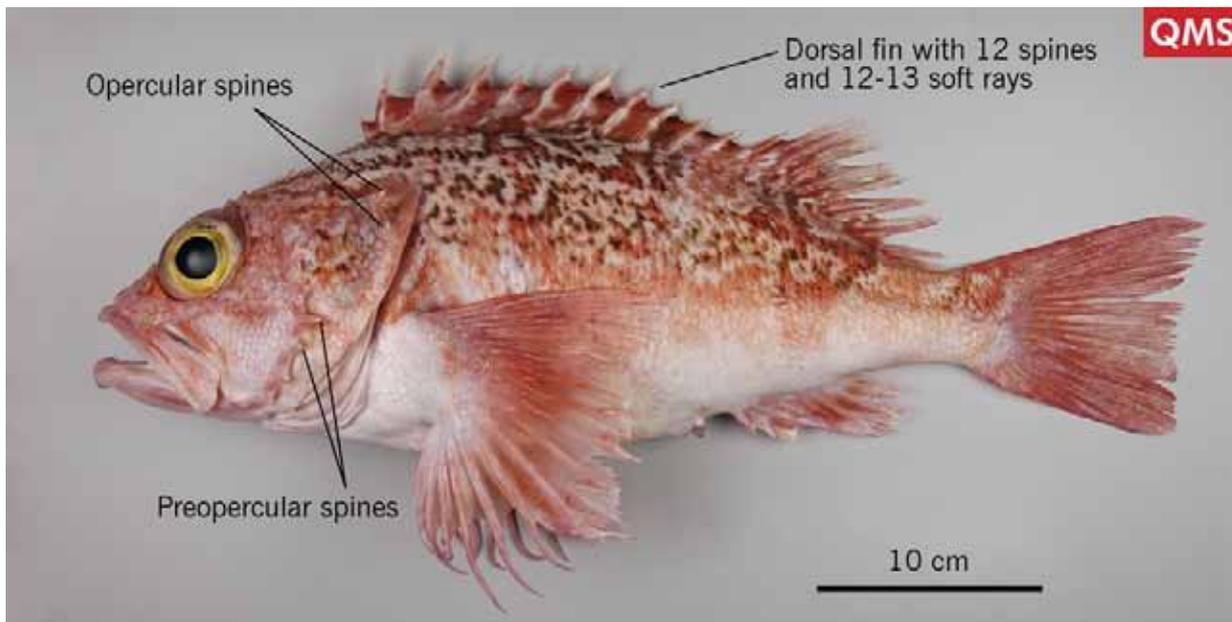
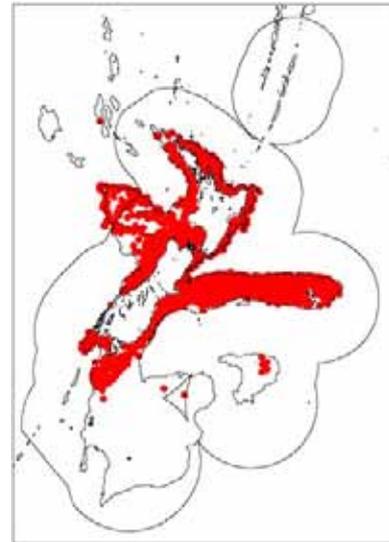
Family: 304. Scorpaenidae (scorpionfishes, rockfishes)

Maori names: Pohuiakaroa

Other names: n.a.

MFish reporting code: SPE

MFish research code: SPE



Distinguishing features: Head large, with spiny ridges and large mouth. Five spines on the rear and lower margin of the preoperculum and two prominent spines near the rear of the operculum. Dorsal fin with 12 strong spines and 12 to 13 soft rays.

Colour: Five vertical dark bands on the body, the fourth Y-shaped. On shallow-water fish the bands are well defined, mid brown, and the body colour reddish orange. On deepwater fish the bands break into lines, bars, and speckles on the dorsal surface, and are pale brown to orange on a pinkish orange body. The dorsal fin continues the body pattern, other fins are pink, red, or orange.

Size: To about 60 cm TL.

Distribution: Widespread around New Zealand. One or more very similar species occur off southern Australia.

Depth: 0 to 900 m.

Similar species: There may be two common species of sea perch in NZ: the brown/orange *H. percoides* in shallow water and the paler, pink/red *H. barathri* in deeper water. No conclusive characters have been found to distinguish them, so the common sea perch is currently considered to be a single variable species, *H. percoides*. *Helicolenus* sp. B from the Kermadec and Louisville Ridges and the east Chatham Rise has olive-green spots and bars on the dorsal surface. Cape scorpionfish (*Trachyscorpia eschmeyeri*) has 13 dorsal fin spines, is uniformly reddish without dark vertical banding, and is deepwater (800+ m).

Biology & ecology: Demersal. Widely distributed from inshore reefs to the mid continental slope. Viviparous (live bearers). Chatham Rise seaperch reach about 43 years.

References

Anderson et al. (1998), Paulin (1989), Paulin et al. (2003).

Cape scorpionfish

Trachyscorpia eschmeyeri

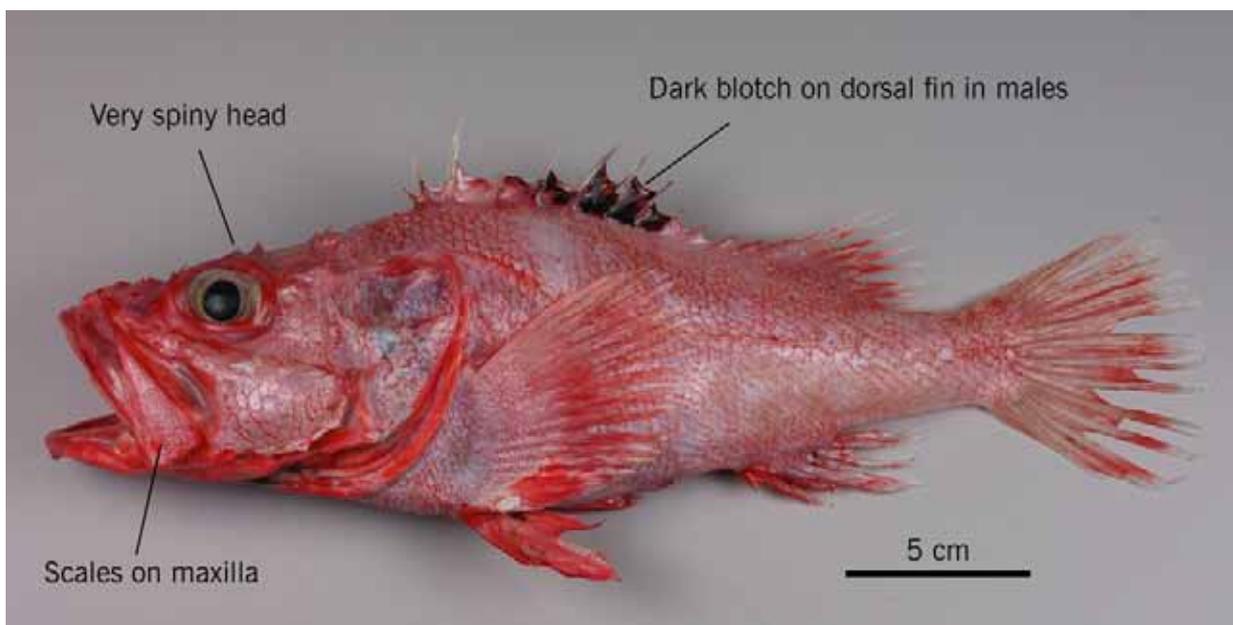
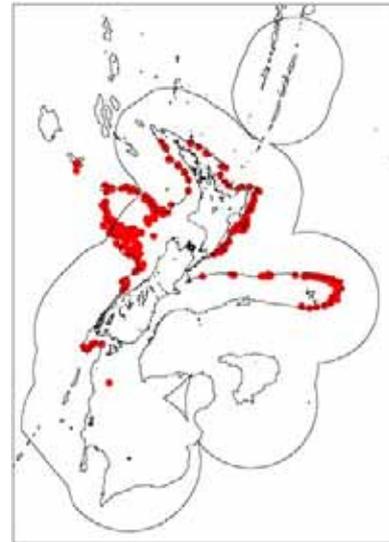
Family: 304. Scorpaenidae (scorpionfishes, rockfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: TRS

MFish research code: TRS



Distinguishing features: Scales on lateral surface of maxilla, head profile concave (adults) or straight (young), no blackish saddles on the body. Dark blotch on dorsal fin of males.

Colour: Body and head pinkish (smaller) or reddish (larger) with darker pigment around lips, eyes, and gill membranes. Fins also pinkish or reddish with lower pectoral, pelvic and front of anal fin darker. Males with a large black blotch on the spinous portion of the dorsal fin.

Size: To about 47 cm TL.

Distribution: Central and northern New Zealand. Widely distributed in the southern hemisphere, from the west Atlantic to the southwest Pacific Ocean through the Indian Ocean, between 30 and 45 S.

Depth: 500 to 1250 m.

Similar species: The rarer *Trachyscorpia carnomagula* lacks scales on the maxilla, has 2 dark bands on the head (originating from the eye), and 4 dark saddles on the body.

Biology & ecology: Demersal.

References

Anderson et al. (1998), Gomon et al. (2008), Motomura et al. (2007).

Alert pigfish

Alertichthys blacki

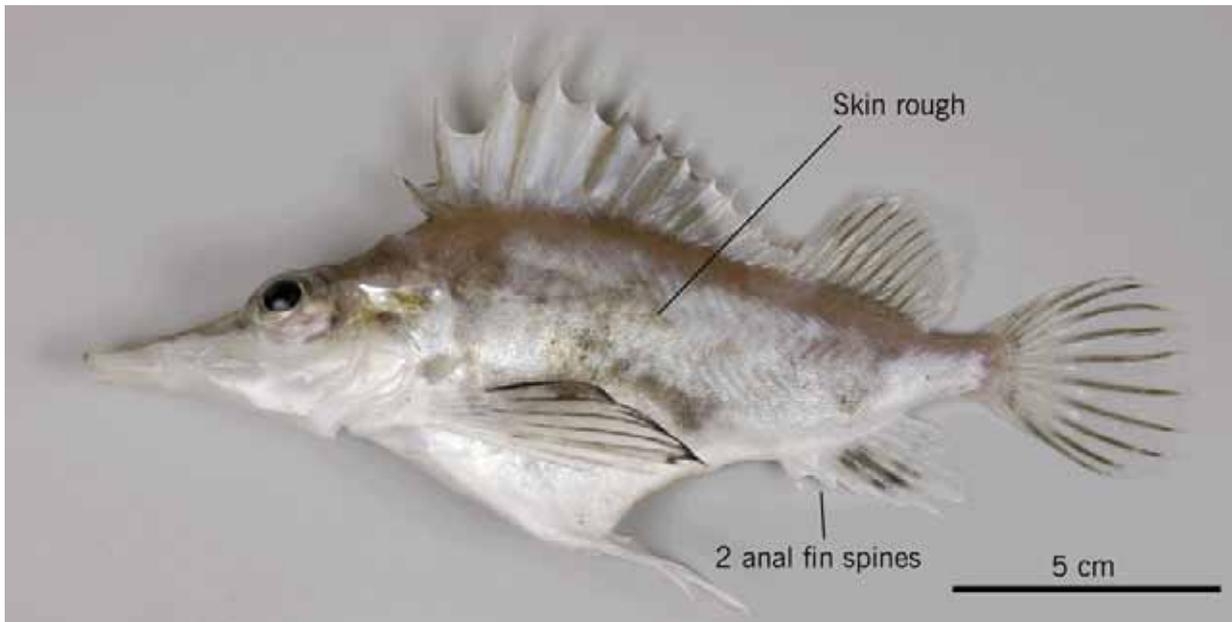
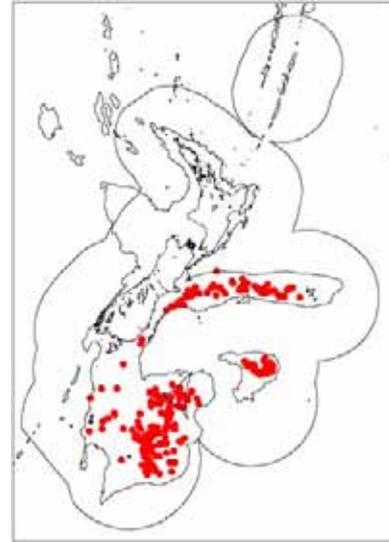
Family: 309. Congiopodidae (racehorses, pigfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: API

MFish research code: API



Distinguishing features: Skin of body rough, 2 anal fin spines, elongated snout. No strong banding on the body.

Colour: Dull silvery-grey body and head, paler ventrally. Pectoral fins with dark anterior margin.

Size: To about 20 cm TL.

Distribution: Central and southern New Zealand from the Chatham Rise south.

Depth: 100 to 600 m.

Similar species: Deepsea pigfish (*Congiopodus coriaceus*) lacks anal fin spines, has smooth body skin, and a pale stripe running along the body. Pigfish (*C. leucopaecilus*) lacks anal fin spines, has smooth body skin, and a series of pale and dark blotches running along the body.

Biology & ecology: Unknown. Demersal on outer shelf and inner slope.

References

Anderson et al. (1998), Paulin et al. (1989).

Deepsea pigfish

Congiopodus coriaceus

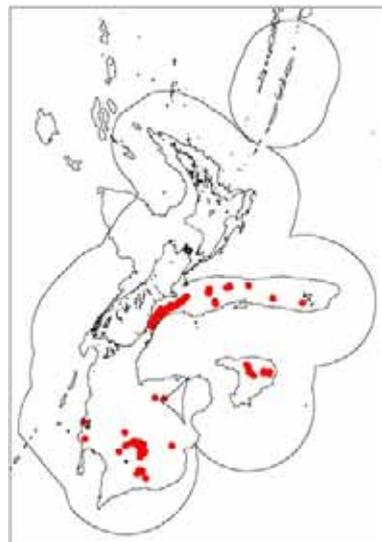
Family: 309. Congiopodidae (racehorses, pigfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: DSP

MFish research code: DSP



Distinguishing features: Skin on the body smooth. Lacks spines in the anal fin. Pale stripe running along the side of the body. Head lateral profile between the eye and the origin of the first dorsal fin at about 45 degrees to the horizontal.

Colour: Pale horizontal stripe on the side of the body from behind the head, fading on caudal peduncle. Rest of body dark brownish fading to cream on the belly.

Size: To at least 32 cm FL.

Distribution: Recorded from about the Chatham Rise south. Known only from New Zealand.

Depth: 140 to 390 m.

Similar species: Pigfish (*Congiopodus leucopaecilus*) has a series of pale (and dark) blotches running along the side of the body and has an almost vertical head profile between the eyes and origin of the first dorsal fin.

Biology & ecology: Demersal.

References

Paulin & Moreland (1979), Paulin et al. (1989).

Pigfish

Congiopodus leucopaecilus

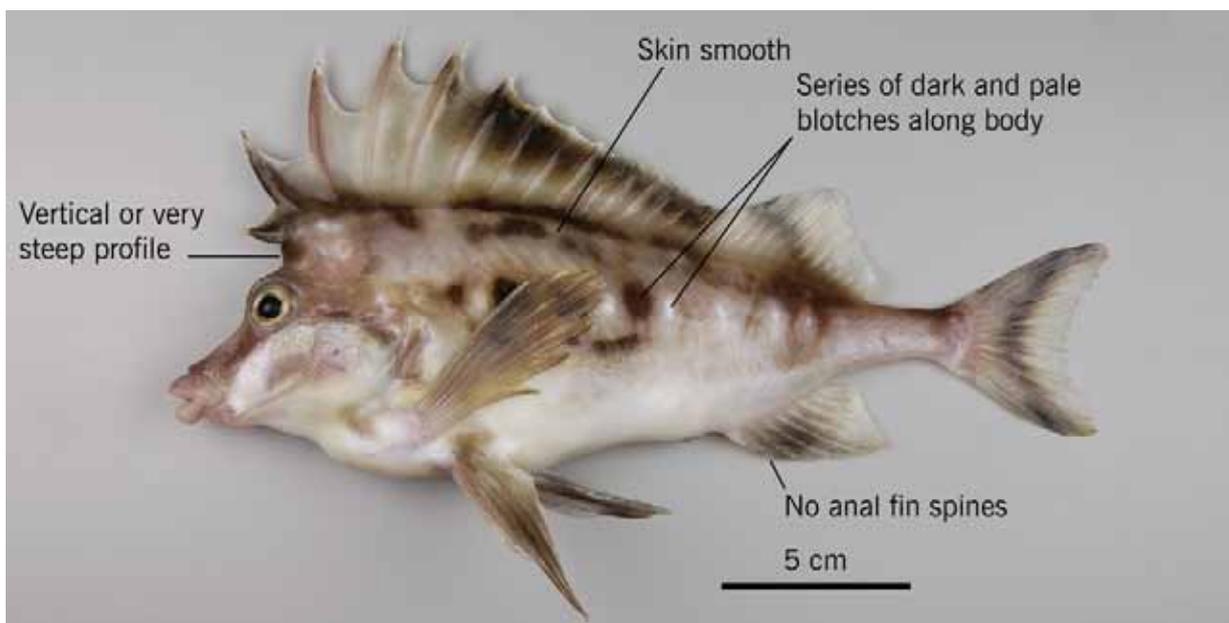
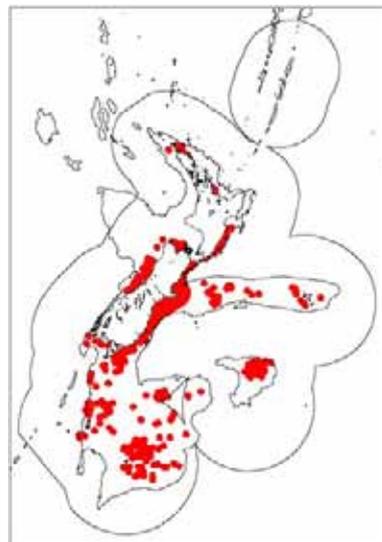
Family: 309. Congiopodidae (racehorses, pigfishes)

Maori names: Purumorua

Other names: n.a.

MFish reporting code: PIG

MFish research code: PIG



Distinguishing features: Skin on the body smooth. Lacks spines in the anal fin. Series of pale and dark blotches running along the side of the body. Head lateral profile between the eye and the origin of the first dorsal fin almost vertical.

Colour: Series of pale and dark blotches running along the side of the body. Rest of body blotchy brownish dorsally, cream ventrally

Size: To at least 28 cm FL.

Distribution: Commonly taken around the 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 an almost continuous pale stripe running along the side of the body and has a head profile between the eyes and origin of the first dorsal fin of about 45 degrees to the horizontal.

Biology & ecology: Demersal.

References

Francis (2001), Paulin & Moreland (1979), Paulin et al. (1989).

Red gurnard

Chelidonichthys kumu

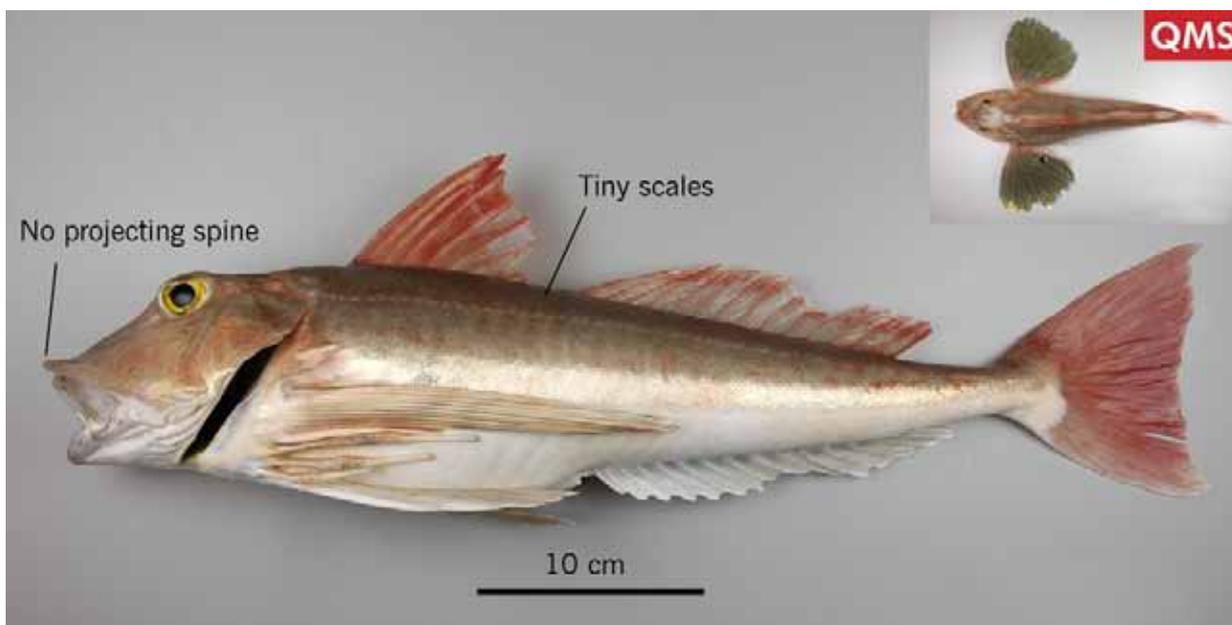
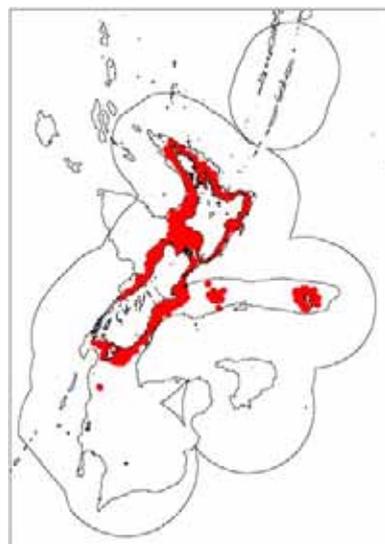
Family: 310. Triglidae (searobins, gurnards)

Maori names: Kumu, kumukumu

Other names: Gurnard

MFish reporting code: GUR

MFish research code: GUR



Distinguishing features: Upper head and body reddish to reddish-brown after death without prominent spots. Body scales tiny, not obvious, firmly attached to the skin and covering all of body except chest and front part of belly. Bony snout blunt, lacking long forward-pointing spines on each side.

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 the sex of the individual.

Size: To about 55 cm FL.

Distribution: Widespread in New Zealand from Cape Reinga to Stewart Island, shallow parts of the Chatham Rise, and Chatham Islands. Southern Australia from southern Queensland to about Shark Bay (WA). South Africa, southern Mozambique. One specimen from Hawaii. Possibly Chile.

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. The rare latchet (*P. polyommata*), from northern New Zealand lacks prominent black spots on body and has two long forward-projecting (rostral) spines on the snout. The scaly gurnard (*Lepidotrigla brachyoptera*) has large firmly attached body scales.

Biology & ecology: Demersal. Reach an age of about 16 years, with females growing faster and larger than males. Spawn in spring and summer.

References

Anderson et al. (1998), Francis, (2001), Gomon et al. (2008), Richards (1999).

Scaly gurnard

Lepidotrigla brachyoptera

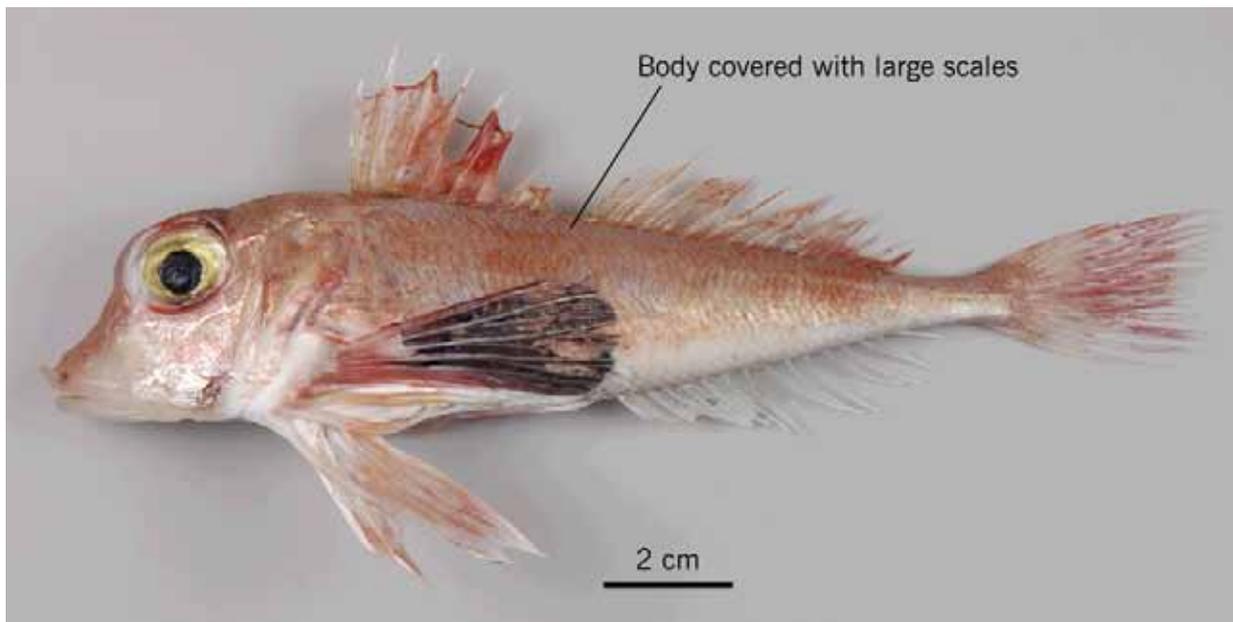
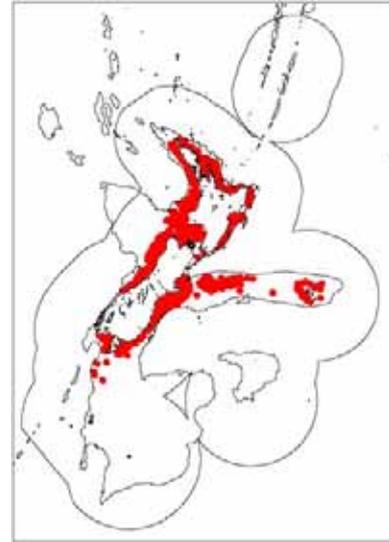
Family: 310. Triglidae (searobins, gurnards)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SCG

MFish research code: SCG



Distinguishing features: Body covered with large scales firmly attached. 10 to 12 scale rows from (but not including) the lateral line to anal fin origin.

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 are probably different for males and females.

Size: To about 20 cm TL.

Distribution: Widespread from Cape Reinga to south of Stewart Island, shallower parts of the Chatham Rise (west) and around Chatham Island. Known only from New Zealand.

Depth: 50 to 400 m.

Similar species: Other New Zealand gurnards lack the large body scales firmly attached to the skin. *Lepidotrigla robinsi*, known only from the Kermadec Islands, has smaller scales with 21 to 26 scale rows from (but not including) the lateral line to anal fin origin.

Biology & ecology: Demersal.

References

Anderson et al. (1998), Gomon et al. (2008), Richards (1992, 1997).

Spotted gurnard

Pterygotrigla andertoni

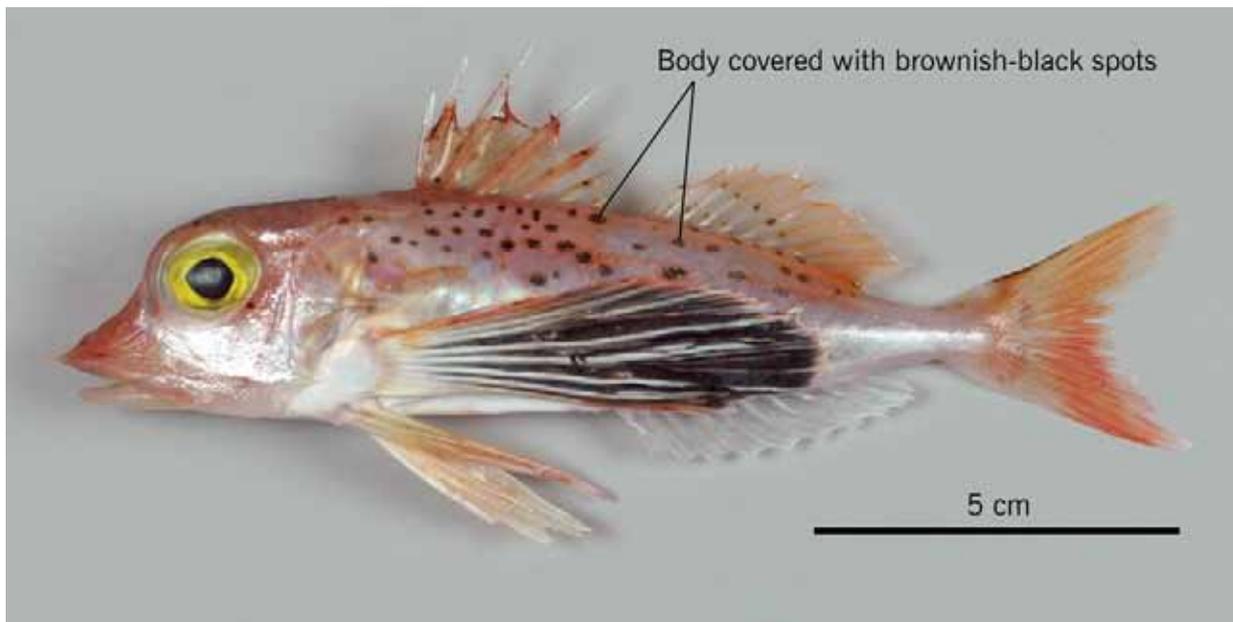
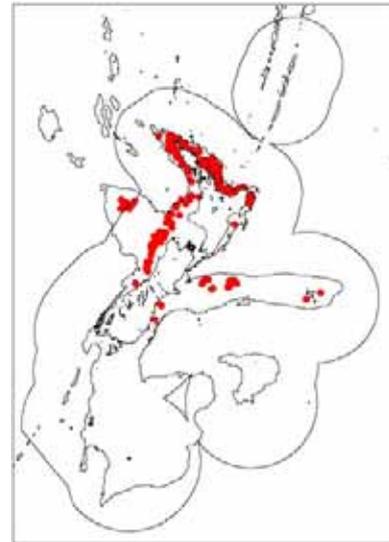
Family: 310. Triglidae (searobins, gurnards)

Maori names: n.a.

Other names: n.a.

MFish reporting code: JGU

MFish research code: JGU



Distinguishing features: Top of head and upper body covered with prominent black spots.

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 a background of semicircular yellowish and bluish lines. Anal fin white, other fins red. Eye yellow.

Size: To at least 40 cm FL.

Distribution: Central and northern New Zealand. Southeastern Australia and north to New Caledonia.

Depth: 100 to 500 m.

Similar species: Formerly confused with the closely similar *Pterygotrigla picta* known from off Chile. Yellow spotted gurnard (*P. pauli*) has prominent yellow spots on the upper body behind the head. The rare latchet (*P. polyommata*), recorded from northern New Zealand lacks prominent black spots on the top of the head and upper body.

Biology & ecology: Demersal.

References

Anderson et al. (1998), Hardy (1982), Richards (1999).

Deepsea flathead

Hoplichthys haswelli

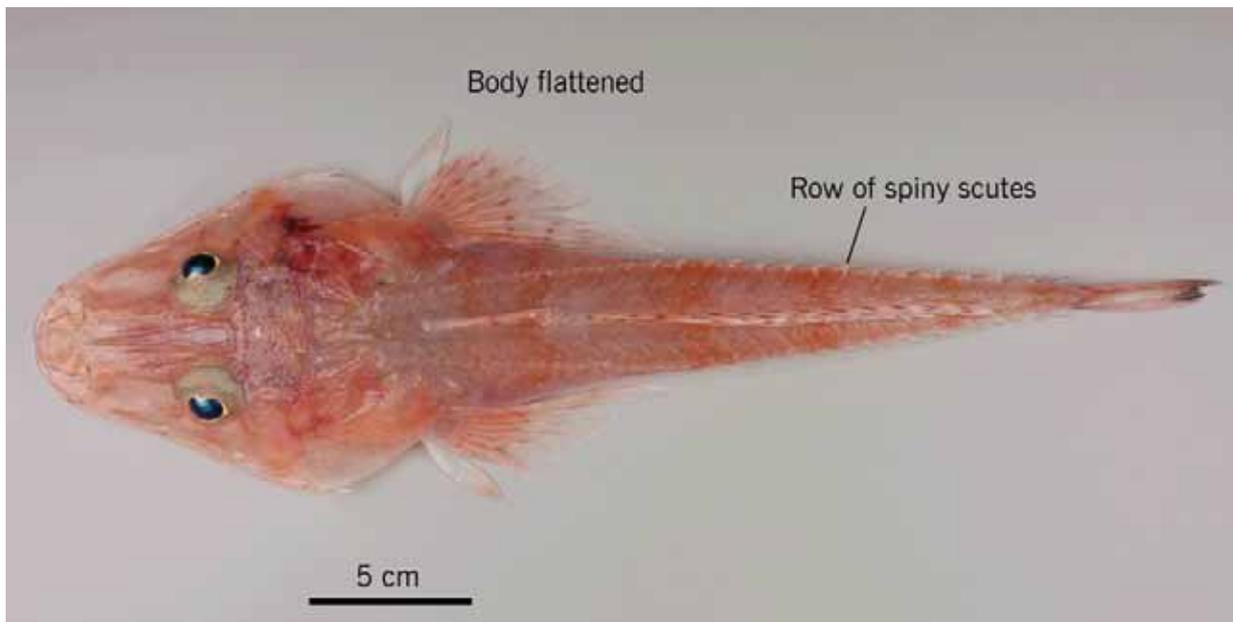
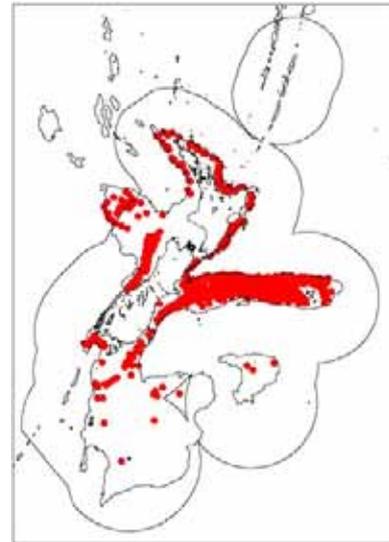
Family: 314. Hoplichthyidae (ghost flatheads)

Maori names: n.a.

Other names: n.a.

MFish reporting code: FHD

MFish research code: FHD



Distinguishing features: Strongly flattened wide head, with elongated flattened body. Spinous first and soft rayed second dorsal fins. A row of spiny scutes running along the side of the body from behind the head to the caudal peduncle.

Colour: Pale reddish-pink upper head and body with whitish underside. Pelvics white, other fins pinkish with dark flecks on pectorals, second dorsal fins. Caudal fin with dark margin.

Size: To about 43 cm TL.

Distribution: Widespread in New Zealand although rarely recorded from the Campbell and Bounty Plateaus. Southern Australia from southern Queensland to the Great Australian Bight.

Depth: 300 to 800 m.

Similar species: A rare species of *Hoplichthys* which has a yellowish-light tan body is reported from 700 m on the Challenger Plateau, and another very slender rare species with much larger eyes is reported from northern New Zealand. Specimens of both should be retained for Te Papa.

Biology & ecology: Demersal. Reported to favour sandy or soft bottom.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989), Stewart & Roberts (2003).

Pale toadfish

Ambophthalmos angustus

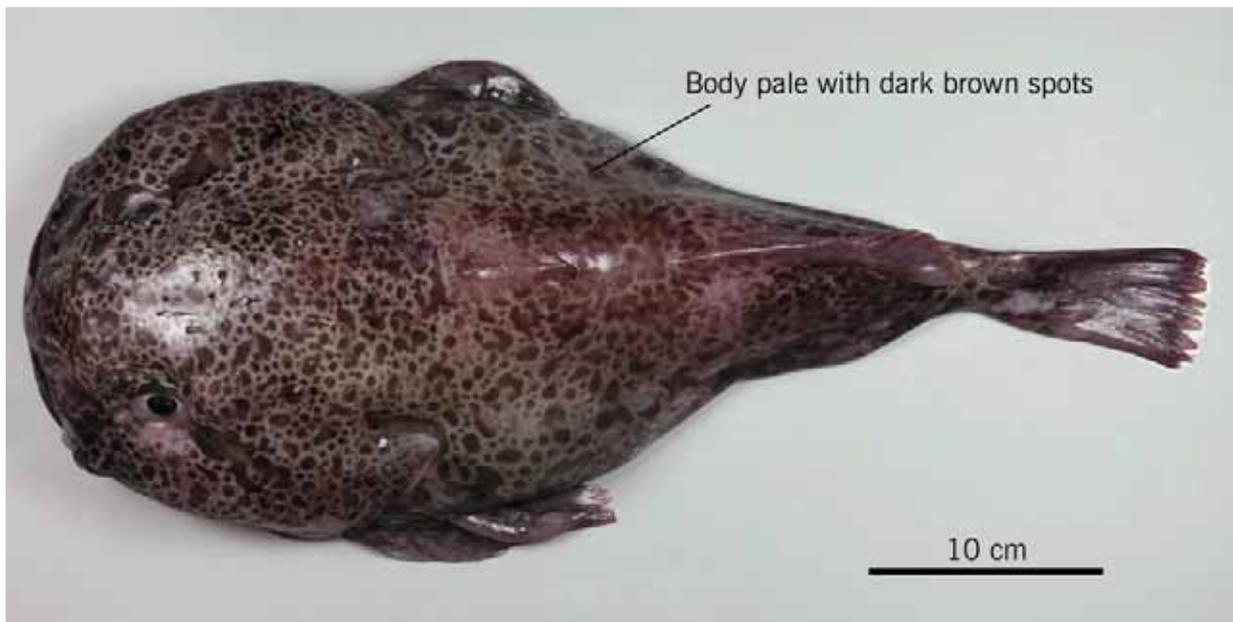
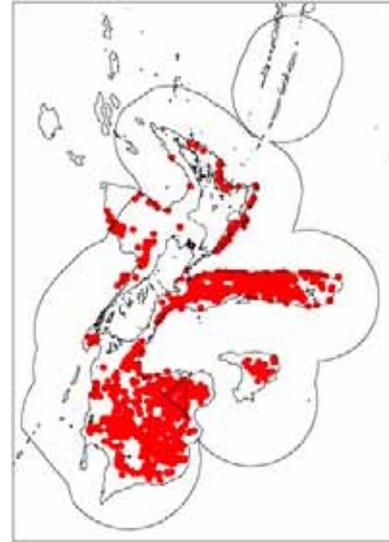
Family: 325. Psychrolutidae (fathead sculpins)

Maori names: n.a.

Other names: n.a.

MFish reporting code: TOP

MFish research 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 the top of the 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.

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 at least 370 m) has dark body with variable pale spots on body and fins. Dark toadfish (*N. latus*) from inshore (0 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 eurystigmatophoros*) from Campbell Plateau (230 to 282 m) has two large grey-brown saddles on a light tan background.

Biology & ecology: Unknown. Probably burrows in mud with the eyes and mouth protruding, waiting for prey.

References

Anderson et al. (1998), Jackson & Nelson (1999, 2000), Nelson (1977).

Bonyskull toadfish

Cottunculus nudus

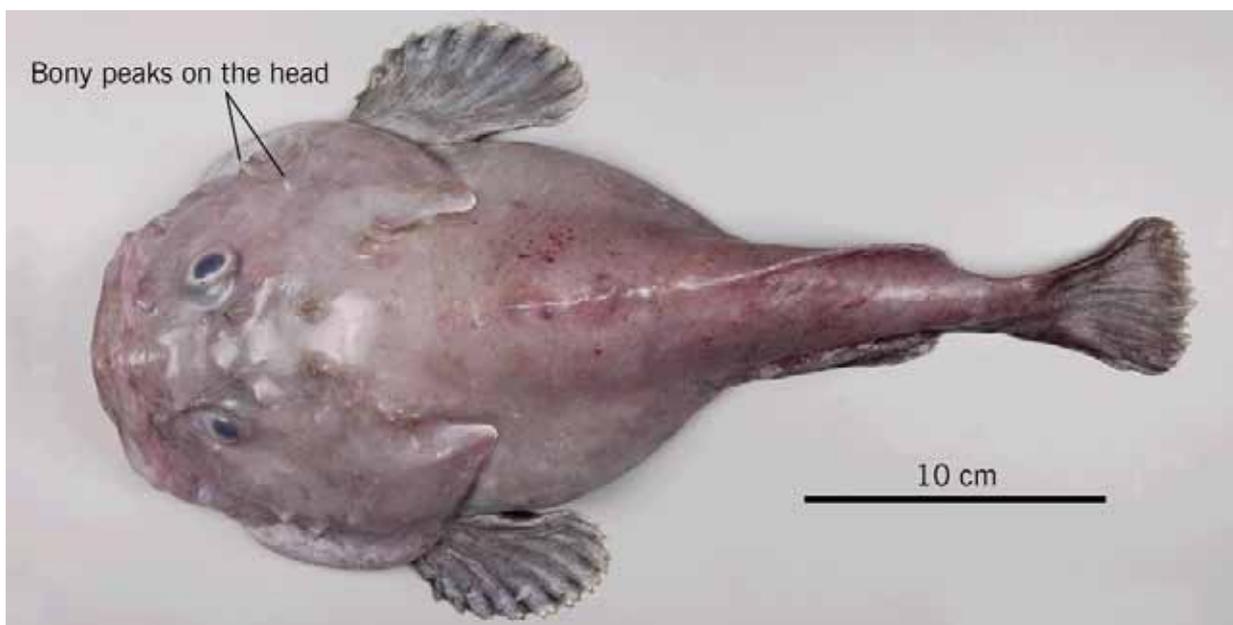
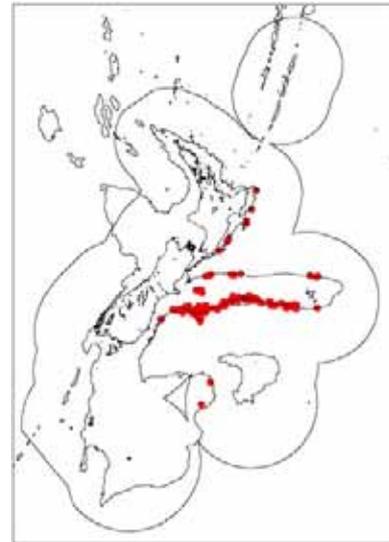
Family: 325. Psychrolutidae (fathead sculpins)

Maori names: n.a.

Other names: n.a.

MFish reporting code: COT

MFish research 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.

Distribution: Recorded only from the east coasts of the North and South Islands, and Chatham Rise.

Depth: 700 to 1200 m.

Similar species: Blobfish (*Psychrolutes microporos*) lacks the bony spines on the head.

Biology & ecology: Unknown. Possibly burrows in mud with the eyes and mouth protruding, drawing in prey by suction.

References

Anderson et al. (1998), Nelson (1989).

Dark toadfish

Neophrynichthys latus

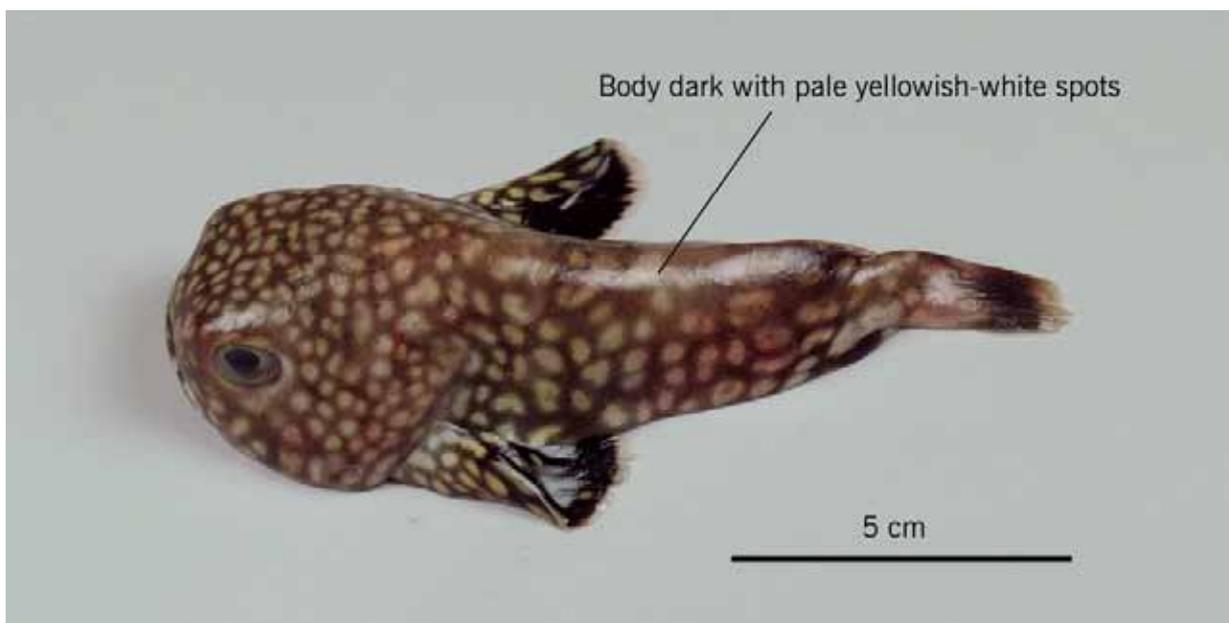
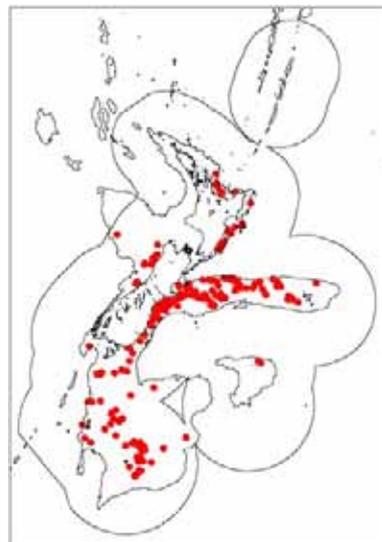
Family: 325. Psychrolutidae (fathead sculpins)

Maori names: n.a.

Other names: n.a.

MFish reporting code: TOD

MFish research 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 the top of the head and nape.

Colour: Body brownish with numerous pale spots. Pectoral and caudal fins dark with encroaching pale spots.

Size: To about 20 cm TL.

Distribution: Validated records suggest it is confined to coastal waters of central and southern New Zealand. Other records (map above) probably include the pale toadfish (*Amblophthalmos angustus*) and the variable spotted toadfish (*Neophrynichthys heterospilos*).

Depth: 0 to 110 m.

Similar species: Variable spotted toadfish (*N. heterospilos*), described from the Campbell Plateau, has fewer larger cirri on top of head and nape, smaller and more variable pale spots on body and fins, and is caught deeper (120 to at least 370 m). Pale toadfish (*Amblophthalmos angustus*) is more widespread in offshore New Zealand, has a pale body with variable sized and shaped dark spots, a few large cirri on top of head, reaches close to 60 cm TL, and is found at depths of 250 to 900 m.

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.

References

Anderson et al. (1998), Jackson & Nelson (2000), Nelson (1977).

Blobfish

Psychrolutes microporos

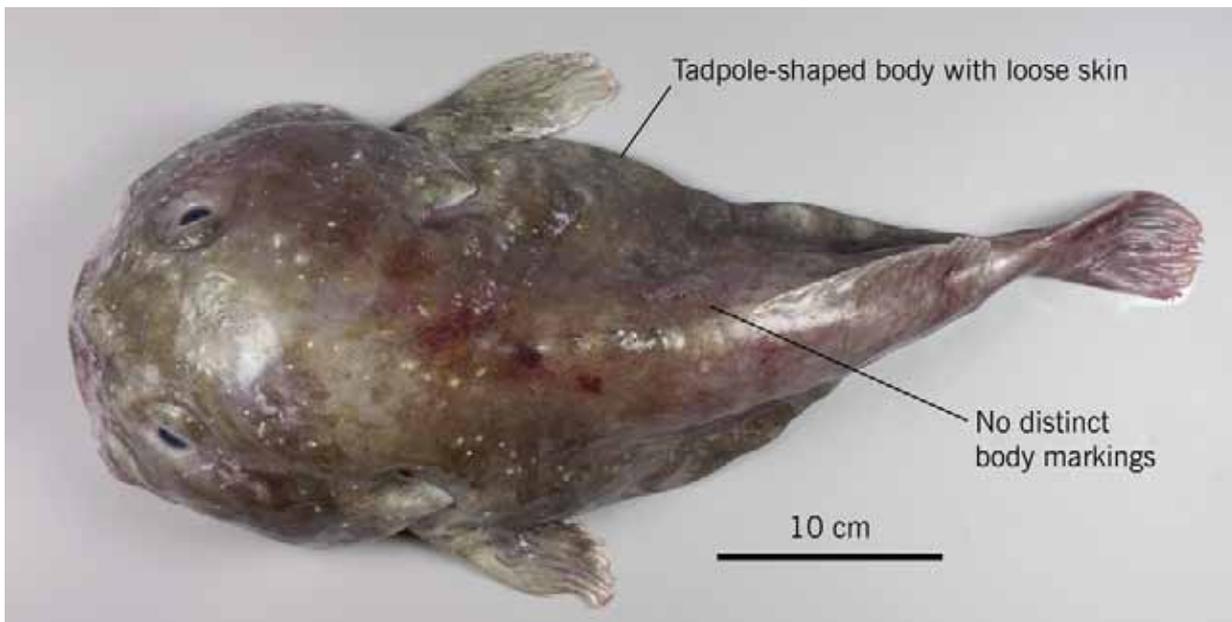
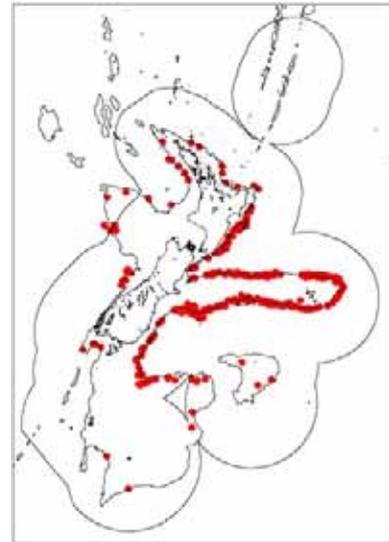
Family: 325. Psychrolutidae (fathead sculpins)

Maori names: n.a.

Other names: n.a.

MFish reporting code: PSY

MFish research 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 at least 50 cm TL.

Colour: Body, head and fins uniform pale pinkish-olive, paler underneath.

Size: To about 63 cm TL.

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. Variable spotted toadfish (*Neophrynichthys heterospilos*) from 120 to 370 m on Campbell Plateau has dark body with pale spots. Dark toadfish (*N. latus*) from 0 to 110 m inshore New Zealand has a dark body with large pale spots, many small cirri on top of head. Marbled toadfish (*Amblophthalmos eurystigmatophoros*) from 230 to 282 m on Campbell Plateau has a pale body with 2 broad dark saddles.

Biology & ecology: Unknown. Probably burrows in mud with the eyes and mouth protruding, waiting for prey.

References

Anderson et al. (1998), Nelson (1995).

Bass groper

Polyprion americanus

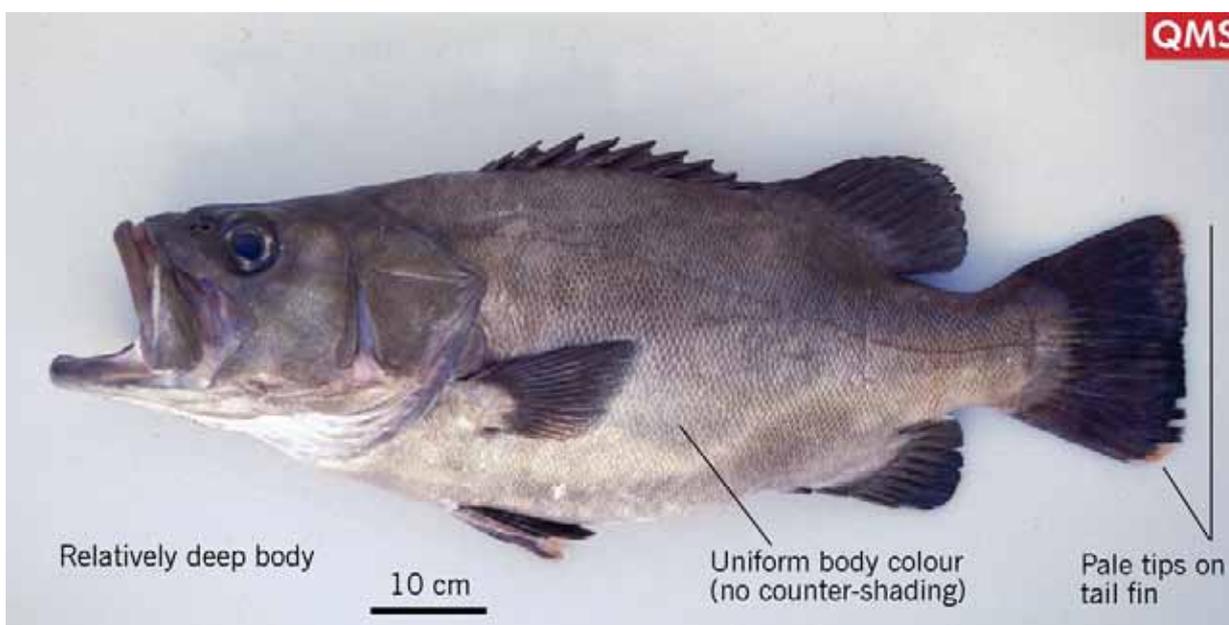
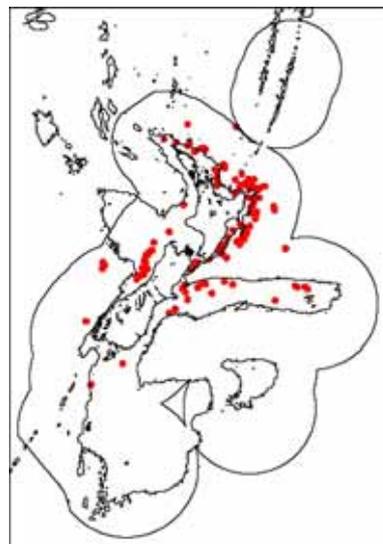
Family: 337. Polyprionidae (wreckfishes)

Maori names: Moeone, toti

Other names: n.a.

MFish reporting code: BAS

MFish research 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, tail margin is straight to slightly rounded, and the lower jaw is only slightly protruding.

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 about 200 cm TL.

Distribution: Widespread in New Zealand from at least the Three Kings Islands to the southern end of the Stewart/Snares shelf/slope, including shallower parts of the Chatham Rise and Chatham Islands. Temperate seas of the southern and northern hemispheres, including southern Australia (NSW, Tas, WA), southern Africa, Tristan da Cunha, Vema Seamount, St. Paul and Amsterdam Islands, North Atlantic and the Mediterranean.

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, the tail margin is straight or slightly forked, and the lower jaw is strongly protruding.

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.

References

Anderson et al. (1998), May & Maxwell (1986), Ministry of Fisheries (2008), Paul (2000), Paulin et al. (1989), Roberts (1996, 2000), Smith & Heemstra (1986).

Hapuku

Polyprion oxygeneios

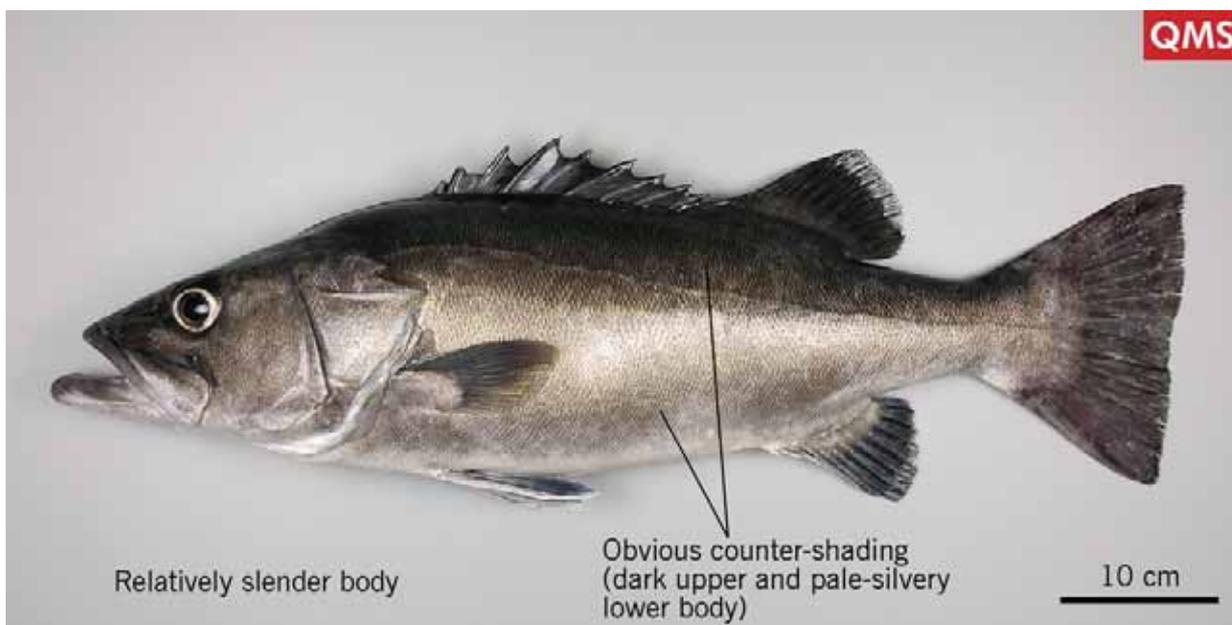
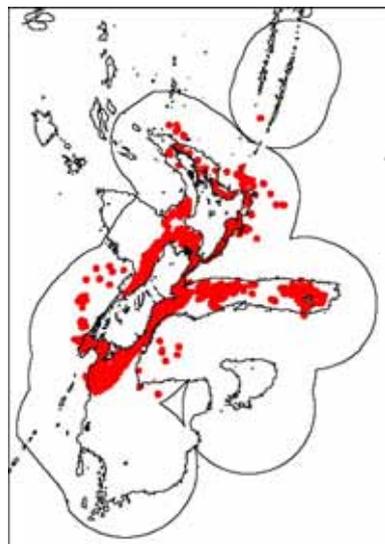
Family: 337. Polyprionidae (wreckfishes)

Maori names: Haapuku, kapua, whapuku

Other names: n.a.

MFish reporting code: HAP

MFish research 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, the tail margin is straight or slightly forked, and the lower jaw is strongly protruding.

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 at least 150 cm TL.

Distribution: Widespread in New Zealand from at least the Three Kings Islands to the southern end of the Stewart/Snares shelf/slope, including shallower parts of the Chatham Rise and Chatham Islands. Southern Australia and Chile.

Depth: 50 to 600 m.

Similar species: Adult bass groper (*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, tail margin is straight to slightly rounded, and the lower jaw is only slightly protruding.

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.

References

Anderson et al. (1998), Gomon et al. (2008), Ministry of Fisheries (2008), Paul (2000), Paulin et al. (1989), Roberts (1996, 2000).

Butterfly perch

Caesioperca lepidoptera

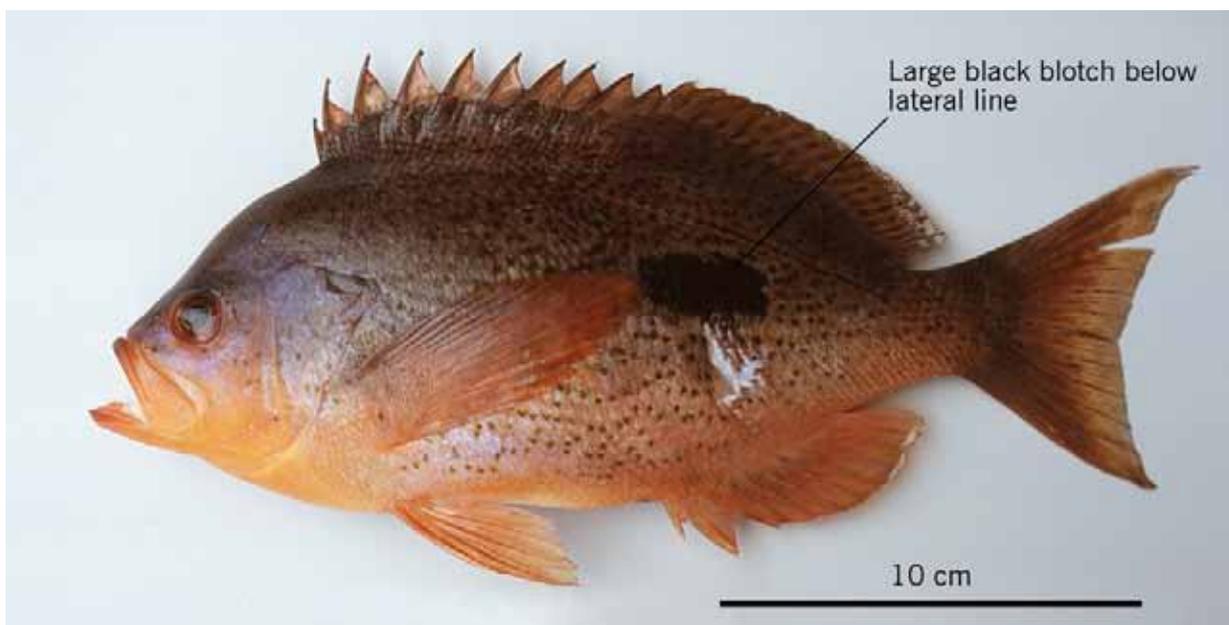
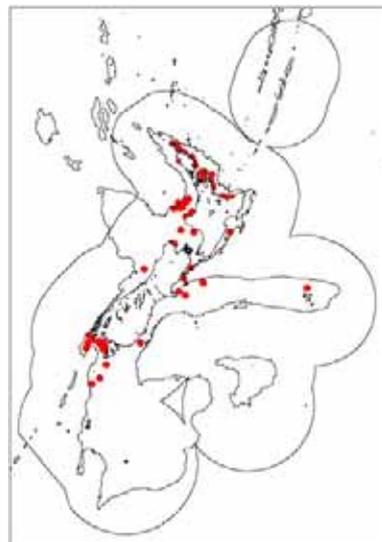
Family: 338. Serranidae (sea basses)

Maori names: Oia

Other names: n.a.

MFish reporting code: BPE

MFish research 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 the body below lateral line and numerous small brownish spots over the body. Head and body reddish-brown above, paler orange below with some iridescent blue markings on the head. Fins reddish-brown, paler below.

Size: To about 40 cm FL.

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 any 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.

References

Anderson et al. (1998), Francis (2001), Gomon et al. (2008).

Spotted black grouper

Epinephelus daemeli

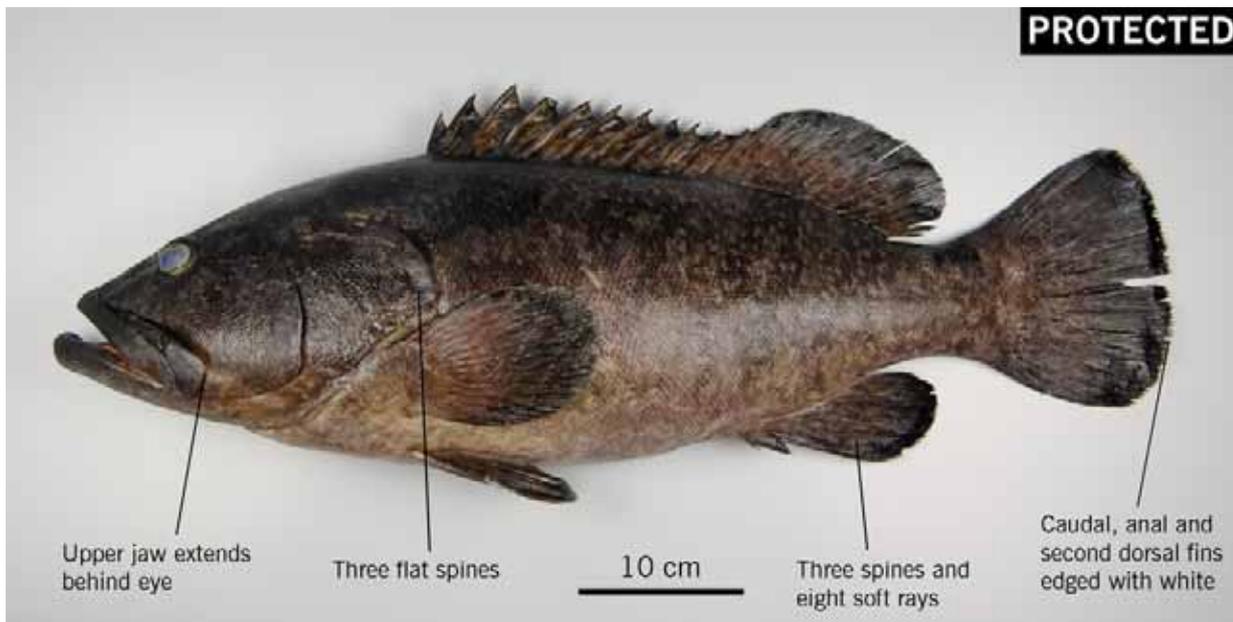
Family: 338. Serranidae (sea basses)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SBG

MFish research 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). Five oblique dark bands (which split ventrally) on body and black saddle on caudal peduncle. Rear fins edged with broad irregular black band and narrow white band.

Size: To about 200 cm TL, but rarely longer than 100 cm around mainland New Zealand.

Distribution: Kermadec Islands to Cook Strait and Westport. Also Norfolk and Lord Howe Islands, and southeast Australia.

Depth: 0 to 50 m, possibly deeper.

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 150 to 300 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.

References

Francis (2001), Heemstra & Randall (1993), Paulin et al. (1989), Randall & Heemstra (1991).

Giant grouper

Epinephelus lanceolatus

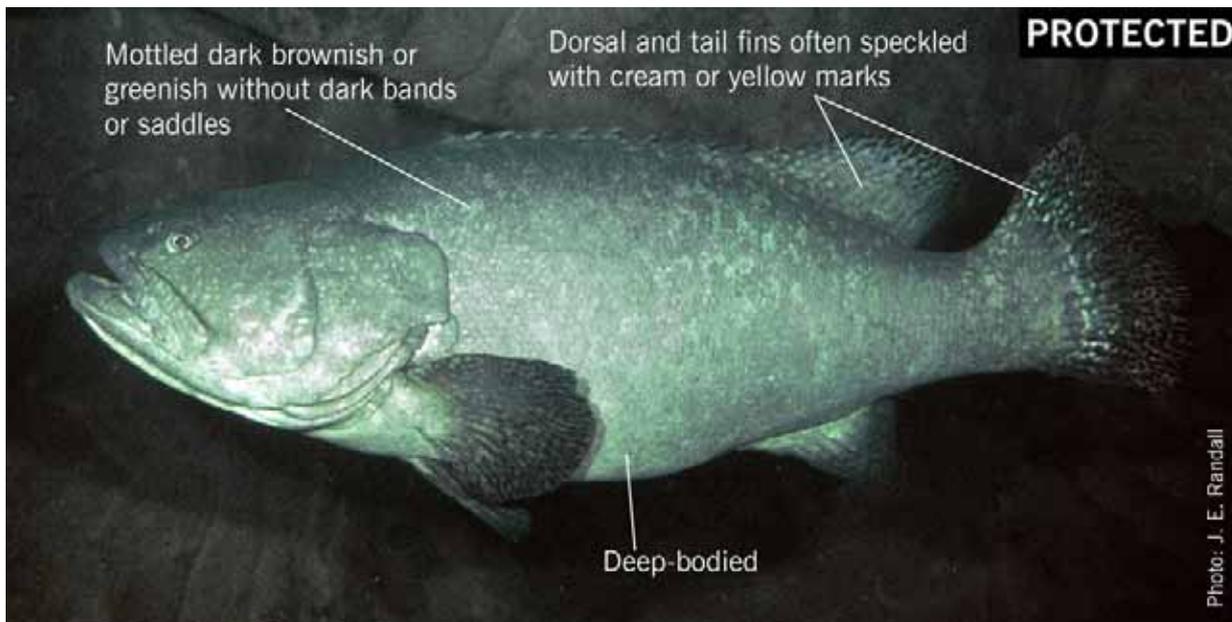
Family: 338. Serranidae (sea basses)

Maori names: (invalid)

Other names: Queensland grouper, giant Queensland grouper

MFish reporting code: GGP

MFish research 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 300 cm SL and 600 kg.

Distribution: Widespread in tropical or sub-tropical seas of the Indian and western Pacific Oceans from southern Africa in the west to Pitcairn Is. in the east.

Depth: 5 to 100 m.

Similar species: Spotted black grouper (*Epinephelus daemeli*) 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.

References

Gomon et al. (2008), Heemstra & Randall (1993).

Orange perch

Lepidoperca aurantia

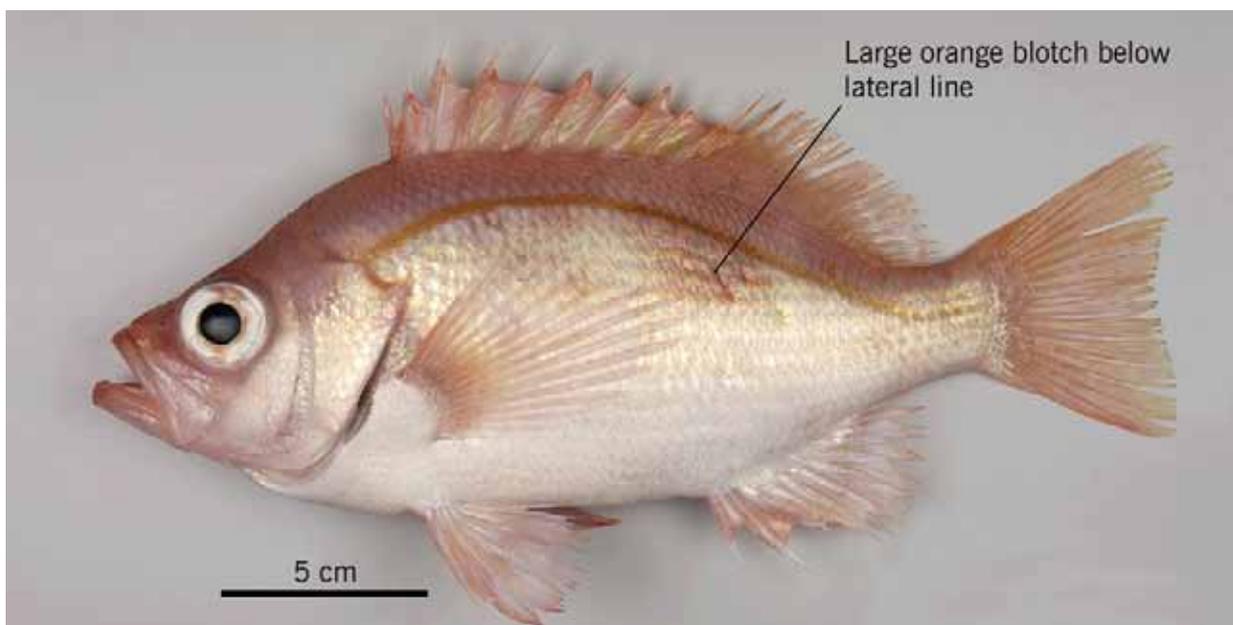
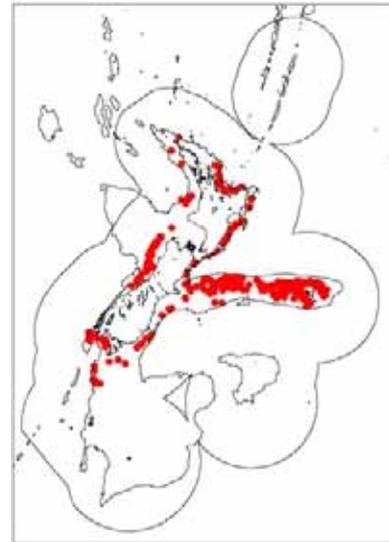
Family: 338. Serranidae (sea basses)

Maori names: n.a.

Other names: n.a.

MFish reporting code: OPE

MFish research 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.

Distribution: Widespread from North Cape to the Stewart/Snares area, 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).

References

Anderson et al. (1998), Roberts (1989).

White cardinalfish

Epigonus denticulatus

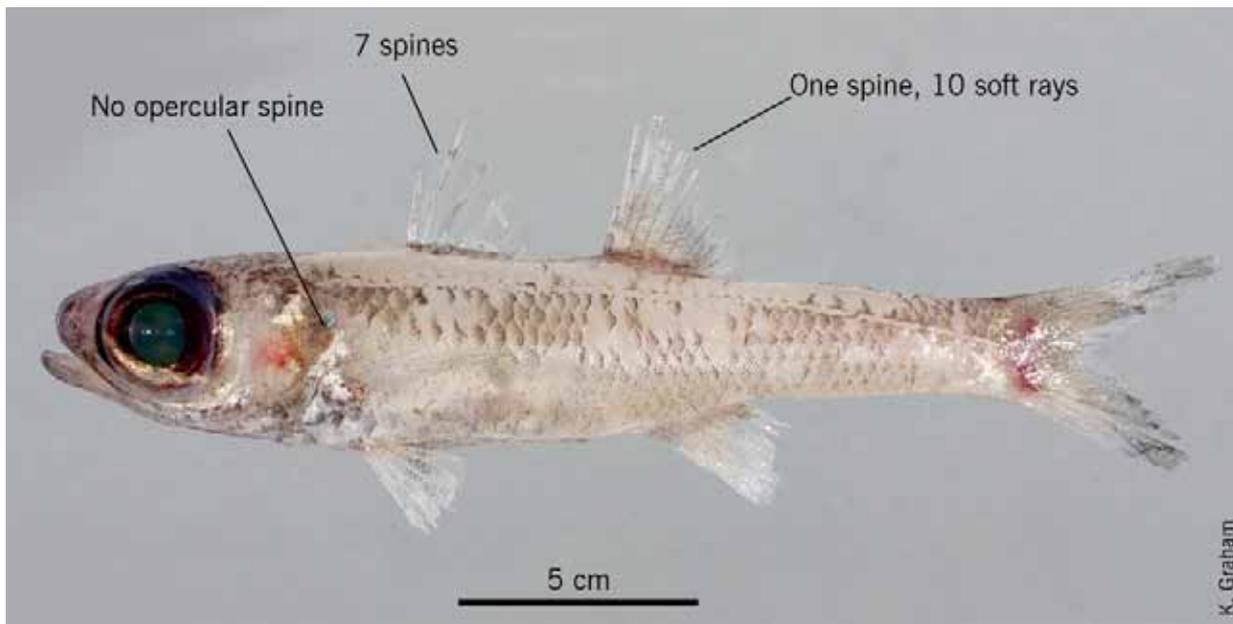
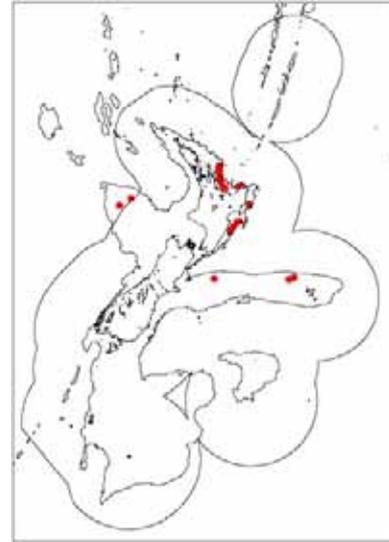
Family: 353. Epigonidae (deepwater cardinalfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: EPD

MFish research code: EPD



Distinguishing features: Second dorsal fin with one spine and 10 soft rays. No stout spine near rear edge of operculum. 7 spines in the first dorsal fin.

Colour: Body greyish-brown, darker above. Chest and belly pearly white. Dorsal and caudal fins dusky, pelvic and anal fins paler.

Size: To about 25 cm FL.

Distribution: Uncertain in New Zealand but probably confined to northern waters. Widespread in the Pacific Ocean including southwest Japan, southern Australia. Caribbean Sea, Gulf of Mexico, and Mediterranean Sea to Africa.

Depth: 130 to 830 m.

Similar species: Robust cardinalfish (*E. robustus*) and bigeye cardinalfish (*E. lenimen*) both have one spine and 9 soft rays in the second dorsal fin, and a small stout spine near the rear edge of the operculum. Deepsea cardinalfish (*E. telescopus*) is much larger but small specimens may be caught with white cardinalfish, but it has 8 spines in the first dorsal fin.

Biology & ecology: Adults probably live near the bottom but juveniles appear to be pelagic.

References

Abramov (1992), Gomon et al. (2008), May & Maxwell (1986), Smith & Heemstra (1986).

Bigeye cardinalfish

Epigonus lenimen

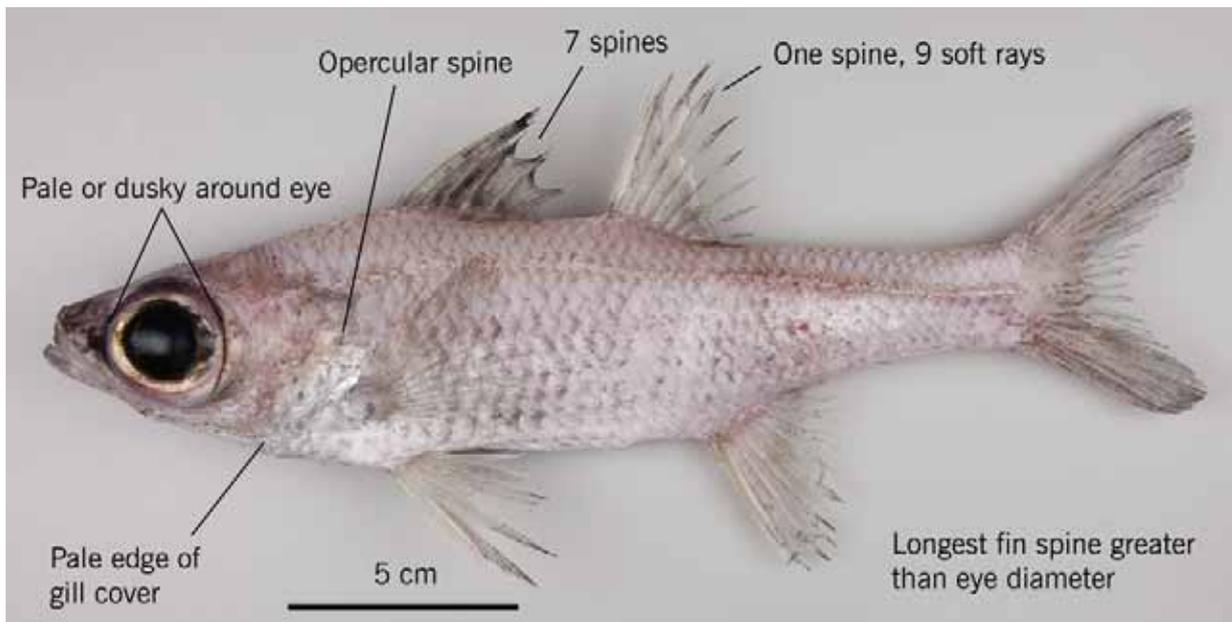
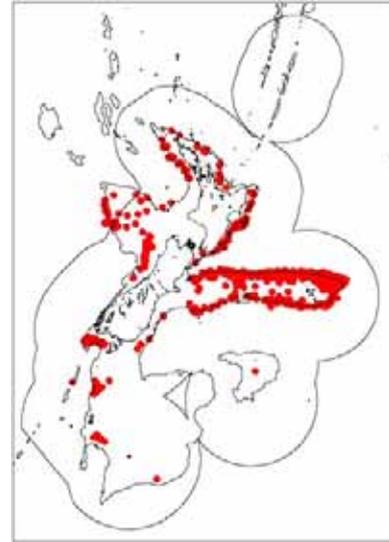
Family: 353. Epigonidae (deepwater cardinalfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: EPL

MFish research code: EPL



Distinguishing features: Second dorsal fin with one spine and 9 soft rays. Small stout spine near rear edge of operculum. Longest fin spine usually longer than eye diameter. No extensive black areas around the eyes or on the rest of the head. Body below the lateral line often whitish.

Colour: Upper body pale brownish but below the lateral line often whitish. Small area of black pigment in front of eye, but no extensive black areas around the eyes or on the rest of the head. Fins pale or dusky with no distinctive markings.

Size: To about 26 cm FL.

Distribution: Widespread in New Zealand. It is likely that fisheries data include misidentification of bigeye cardinalfish and robust cardinalfish (*E. robustus*) and consequently the distribution records for each species are likely to be unreliable. Southern Australia, Tasman Sea and southern Indian and Pacific Oceans.

Depth: 530 to 820 m.

Similar species: Robust cardinalfish (*E. robustus*) has the longest fin spine (all fins) shorter than eye diameter, extensive black pigmented areas around the eyes, and dark pigment inside gill covers and on isthmus. Deepsea cardinalfish (*E. telescopus*) and white cardinalfish (*E. denticulatus*) usually have one spine and 10 soft rays in second dorsal fin, and both lack a stout spine on the rear edge of operculum.

Biology & ecology: Adults probably live near the bottom, but juveniles appear to be pelagic.

References

Abramov (1992), Gomon et al. (2008).

Robust cardinalfish

Epigonus robustus

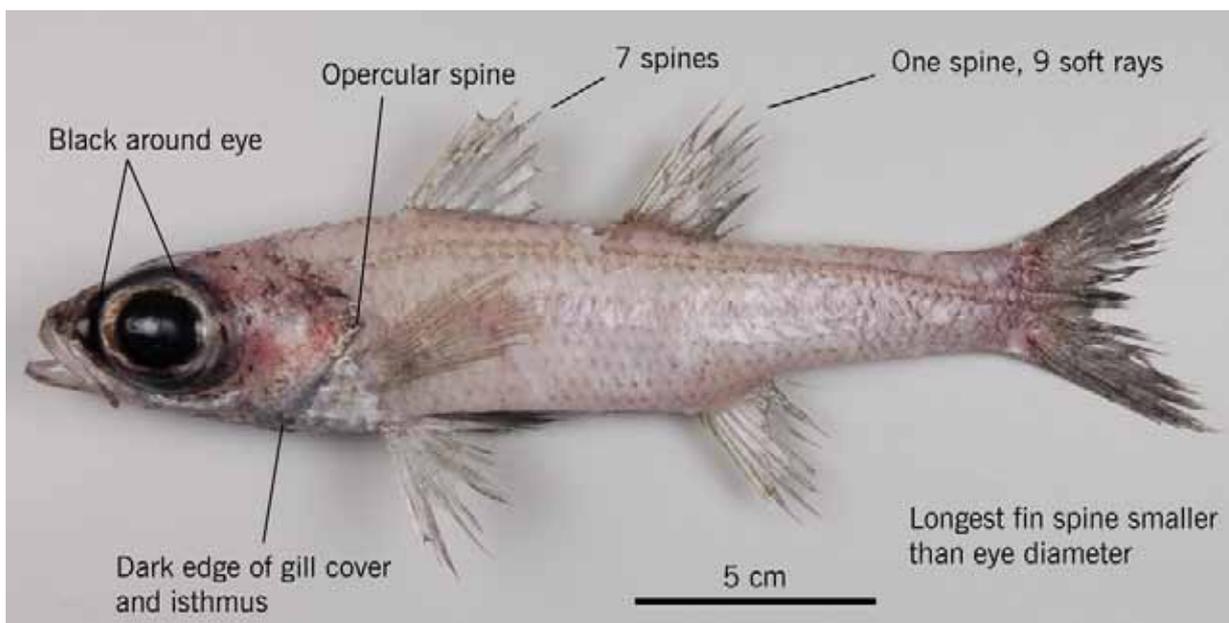
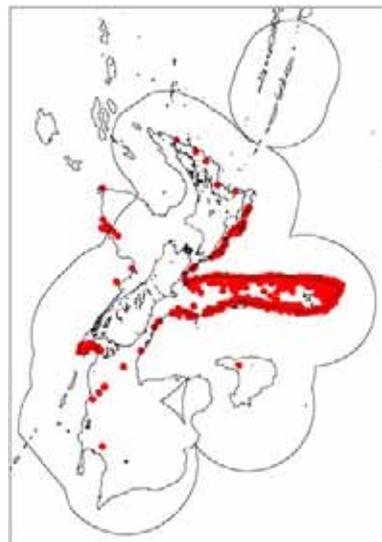
Family: 353. Epigonidae (deepwater cardinalfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: EPR

MFish research code: EPR



Distinguishing features: Second dorsal fin with one spine and 9 soft rays. Small stout spine near rear edge of operculum. Longest fin spine shorter than the eye diameter. Extensive black pigmented areas around the eyes, and dark pigment inside the gill covers and on isthmus.

Colour: Body uniform pale 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.

Distribution: Widespread in New Zealand. It is likely that fisheries data include misidentification of robust cardinalfish and bigeye cardinalfish (*E. lenimen*) and consequently the distribution records for each species are likely to be unreliable. Southern Australia. Widespread in temperate oceans of the southern hemisphere.

Depth: 580 to 1400 m.

Similar species: Bigeye cardinalfish (*E. lenimen*) has the longest fin spine (all fins) longer than eye diameter, and lacks extensive black areas around the eyes or on the rest of the head. Deepsea cardinalfish (*E. telescopus*) and white cardinalfish (*E. denticulatus*) usually have 1 spine and 10 soft rays in the second dorsal fin, and both lack a stout spine on the rear edge of operculum.

Biology & ecology: Adults probably live near the bottom, but juveniles appear to be pelagic.

References

Abramov (1992), Gomon et al. (2008), Smith & Heemstra (1986).

Deepsea cardinalfish

Epigonus telescopus

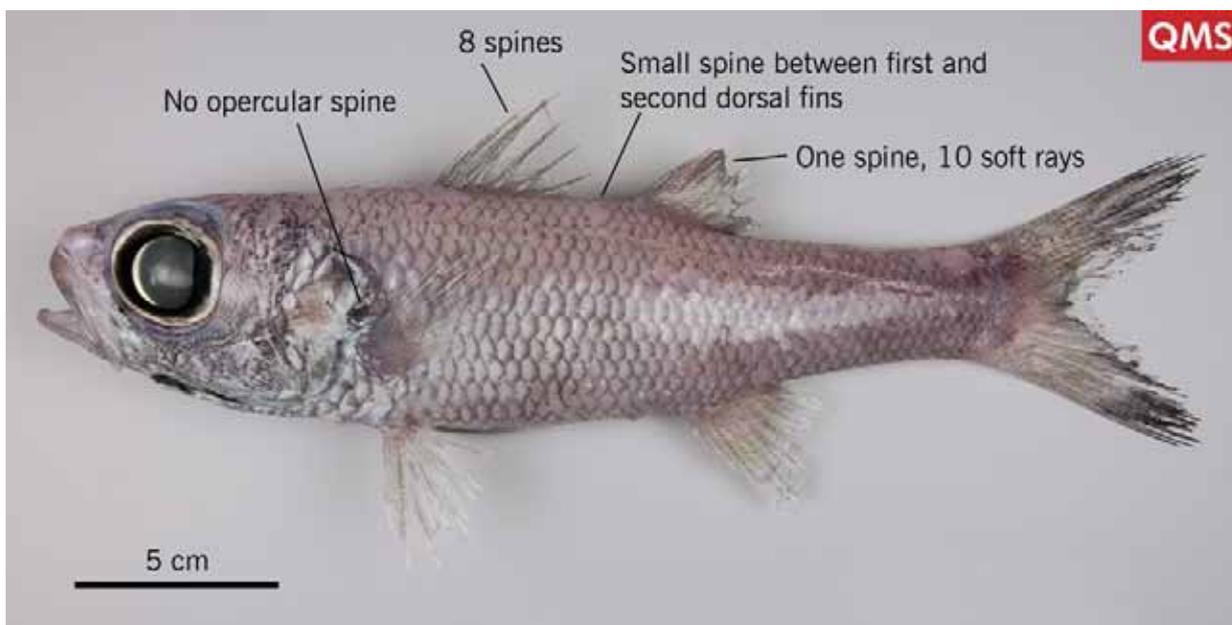
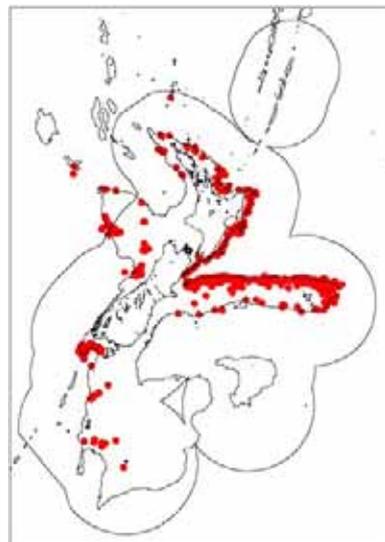
Family: 353. Epigonidae (deepwater cardinalfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: CDL

MFish research code: EPT



Distinguishing features: Second dorsal fin with one spine and 10 soft rays. No stout spine near rear edge of operculum. The eighth spine of the first dorsal fin is small and low and positioned between the first and second dorsal fins.

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.

Distribution: Widespread in New Zealand. Australia (NSW, Vic, Tas). South Atlantic and southern Indian Oceans. Mediterranean Sea, North Atlantic Ocean from Iceland to Canary Islands and USA.

Depth: 300 to 1200 m.

Similar species: Robust (*E. robustus*) and bigeye cardinalfish (*E. lenimen*) have one spine and 9 soft rays in the second dorsal fin and have a small stout spine near the rear edge of the operculum. White cardinalfish (*E. denticulatus*) has 7 spines in the first dorsal fin, compared to 8 in deepsea cardinalfish.

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.

References

Abramov (1992), Gomon et al. (2008), May & Maxwell (1986), Smith & Heemstra (1986).

Trevally

Pseudocaranx georgianus

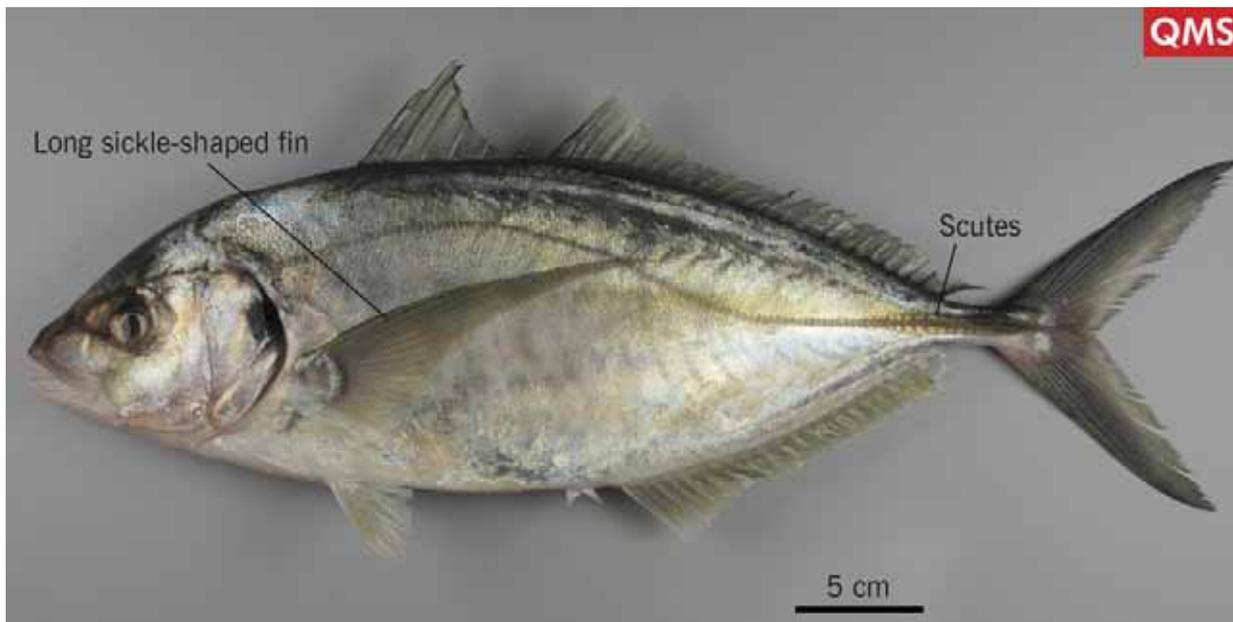
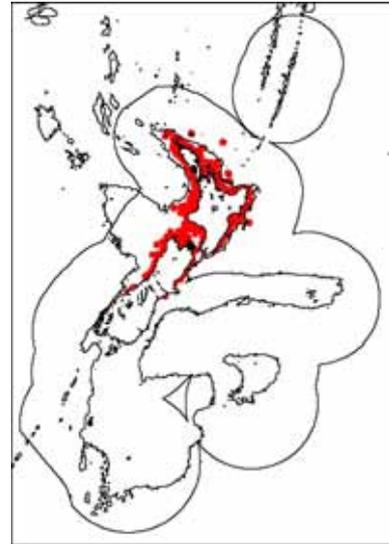
Family: 364. Carangidae (jacks, pompanos)

Maori names: Araara

Other names: n.a.

MFish reporting code: TRE

MFish research code: TRE



Distinguishing features: Moderately deep body with elongated sickle-shaped pectoral fin, small body scales, a row of large lateral line scutes (scales) on tail in front of caudal fin, and 2 short stout spines ahead of the anal fin soft rays.

Colour: Body light blue-green above, silvery white below, and with a yellowish sheen. Fins light yellow-green. A dark blotch on the upper rear edge of the gill cover.

Size: To about 80 cm FL.

Distribution: Common around the North Island, and present around the northern South Island. In southern Australia from New South Wales round to Western Australia.

Depth: 0 to 150 m.

Similar species: Small common warehou (*Seriolella brama*) has a similar body shape and sickle shaped pectoral fin but lacks lateral line scutes at the base of the tail, has a large dark oval blotch on the body behind the head, and lacks the 2 short strong anal fin spines.

Biology & ecology: Occupies a variety of habitats from shallow harbours to pelagic and demersal waters of the continental shelf, often near reefs.

References

Carpenter & Niem (1999), Hirt-Chabbert (2006), James & Stephenson (1974), May & Maxwell (1986), Paul (2000), Paulin et al. (1989), Smith-Vaniz & Jelks (2006).

Kingfish

Seriola lalandi

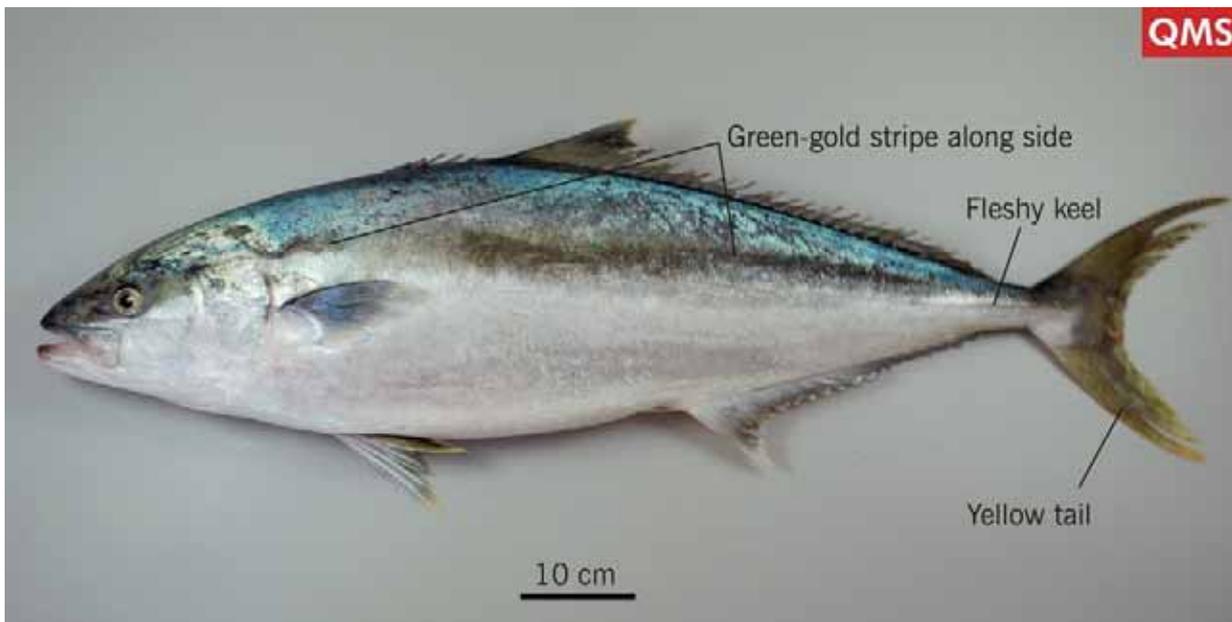
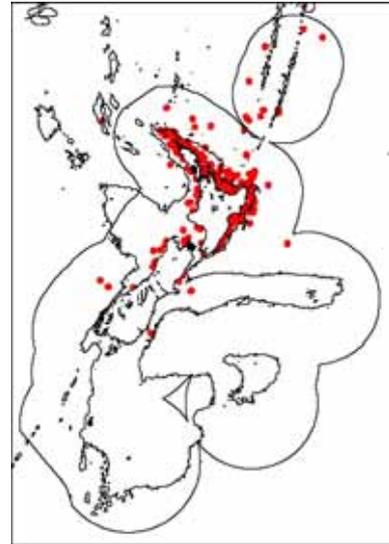
Family: 364. Carangidae (jacks, pompanos)

Maori names: Haku

Other names: Yellowtail kingfish

MFish reporting code: KIN

MFish research code: KIN



Distinguishing features: Large elongate fish with green-gold stripe along the 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 the side from snout to tail. Caudal fin olive-yellow, pectoral and pelvic fins yellowish.

Size: To about 160 cm FL.

Distribution: Common around northern New Zealand, seasonally present around central regions. Populations also around much of the Indo-Pacific in subtropical waters.

Depth: 0 to 200 m.

Similar species: Other large jacks have infrequently been reported from northern New Zealand. These include Samson fish (*Seriola hippos*) which has the tissue surrounding the teeth engorged with blood making the teeth reddish, and almaco jack (*S. rivoliana*) which lacks the small fleshy caudal keel and has a dark or dusky caudal fin.

Biology & ecology: Pelagic on continental shelf, often associated with reefs.

References

Carpenter & Niem (1999), Chapman et al. (2006), Francis (2001), Hirt-Chabbert (2006), Paul (2000), Paulin & Stewart (2001), Paulin et al. (1989).

Greenback jack mackerel

Trachurus declivis

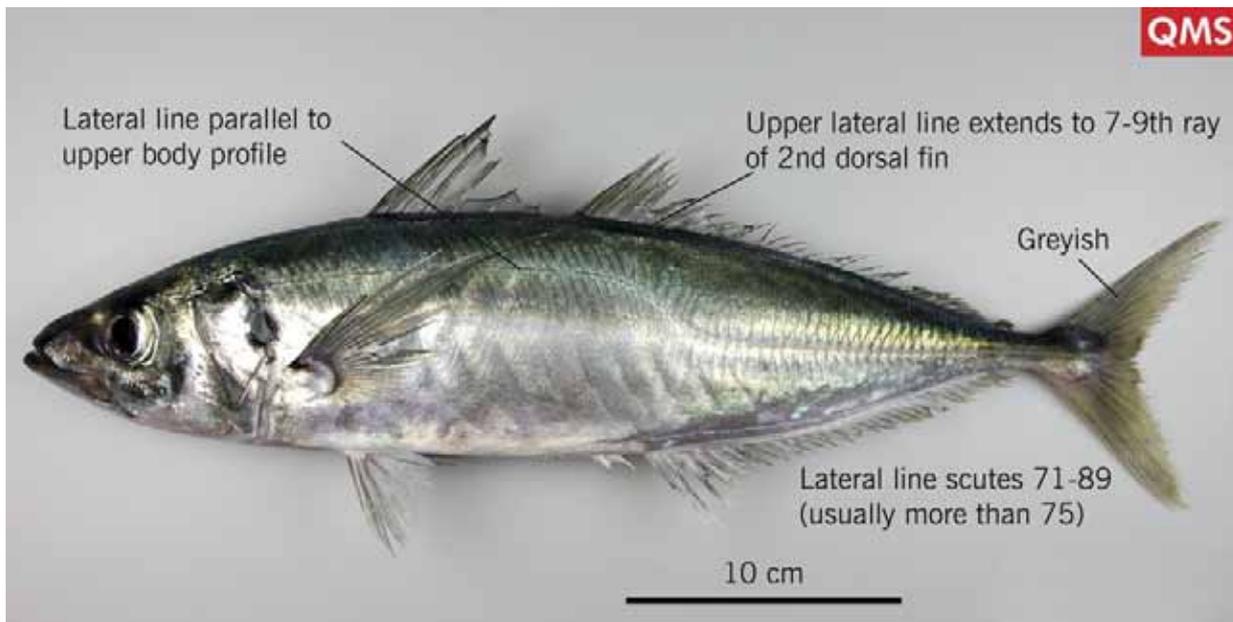
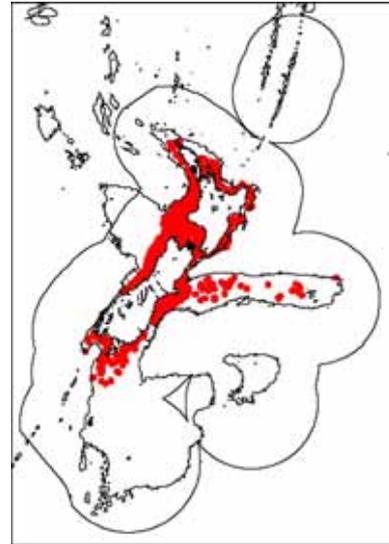
Family: 364. Carangidae (jacks, pompanos)

Maori names: n.a.

Other names: Horse mackerel, scad

MFish reporting code: JMA

MFish research code: JMD



Distinguishing features: Large scute-like scales along the entire length of the lateral line with the front (curved) part of the lateral line parallel with the curve of the 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.

Distribution: Common around New Zealand, including the Chatham Rise, but absent from the Southern Plateau. Southern half of Australia.

Depth: 0 to 300 m.

Similar species: There are three very similar jack mackerel species in New Zealand waters. Yellowtail jack mackerel (*T. novaezealandiae*) and slender jack mackerel (*T. murphyi*) both have a short upper accessory lateral line extending back to the start of the second dorsal fin.

Biology & ecology: Pelagic.

References

Carpenter & Niem (1999), Froese & Pauly (2007), Hirt-Chabbert (2006), May & Maxwell (1986), Paul (2000), Paulin et al. (1989), Stephenson & Robertson (1977).

Slender jack mackerel

Trachurus murphyi

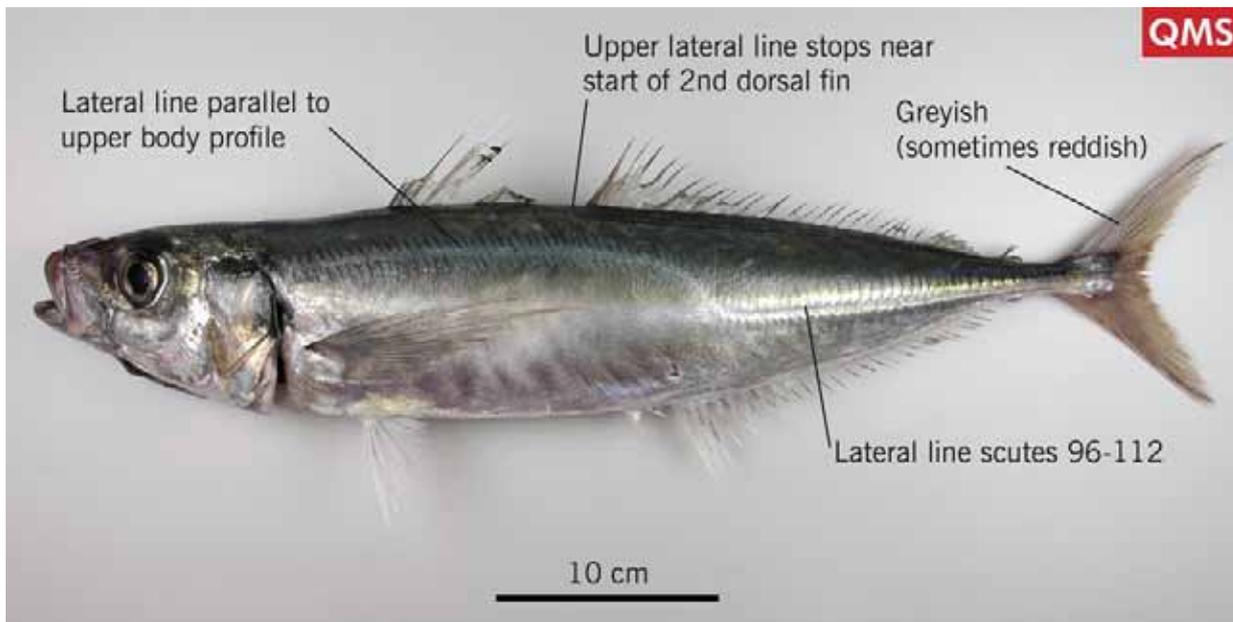
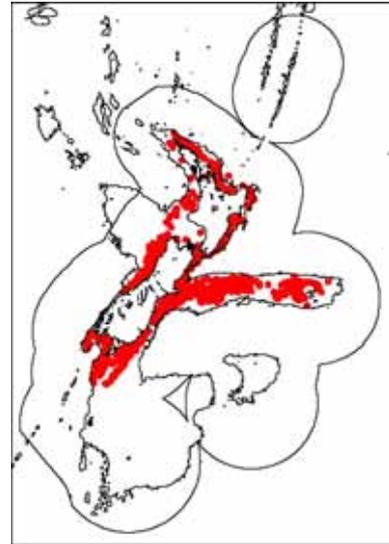
Family: 364. Carangidae (jacks, pompanos)

Maori names: n.a.

Other names: Peruvian jack mackerel, Inca scad

MFish reporting code: JMA

MFish research code: JMM



Distinguishing features: Large scute-like scales along the entire length of the lateral line with the front (curved) part of the lateral line parallel with the curve of the upper body profile. Body bluish-green above with greyish caudal fin. Caudal fin region may be reddish (bloody) because of damage from the meshes of the net.

Colour: Bluish green above, silvery below. Caudal fin greyish but may be reddish (bloody) due to damage from the net.

Size: To about 60 cm FL.

Distribution: Common around New Zealand, especially southern areas including the Chatham Rise but absent from the Southern Plateau. Common off Peru and Chile.

Depth: 0 to 500 m.

Similar species: There are three very similar jack mackerel species in New Zealand waters. Yellowtail jack mackerel (*T. novaezealandiae*) also has a short upper accessory lateral line but it has 67 to 81 lateral line scales (scutes) compared to 96 to 112 in slender jack mackerel. Greenback jack mackerel (*T. declivis*) has a long upper accessory lateral line which extends back to the 5th to 11th, usually 7th to 9th ray of the second dorsal fin.

Biology & ecology: Pelagic.

References

Froese & Pauly (2007), Hirt-Chabbert (2006), Paul (2000), Paulin et al. (1989), Smith-Vaniz (1995).

Yellowtail jack mackerel

Trachurus novaezelandiae

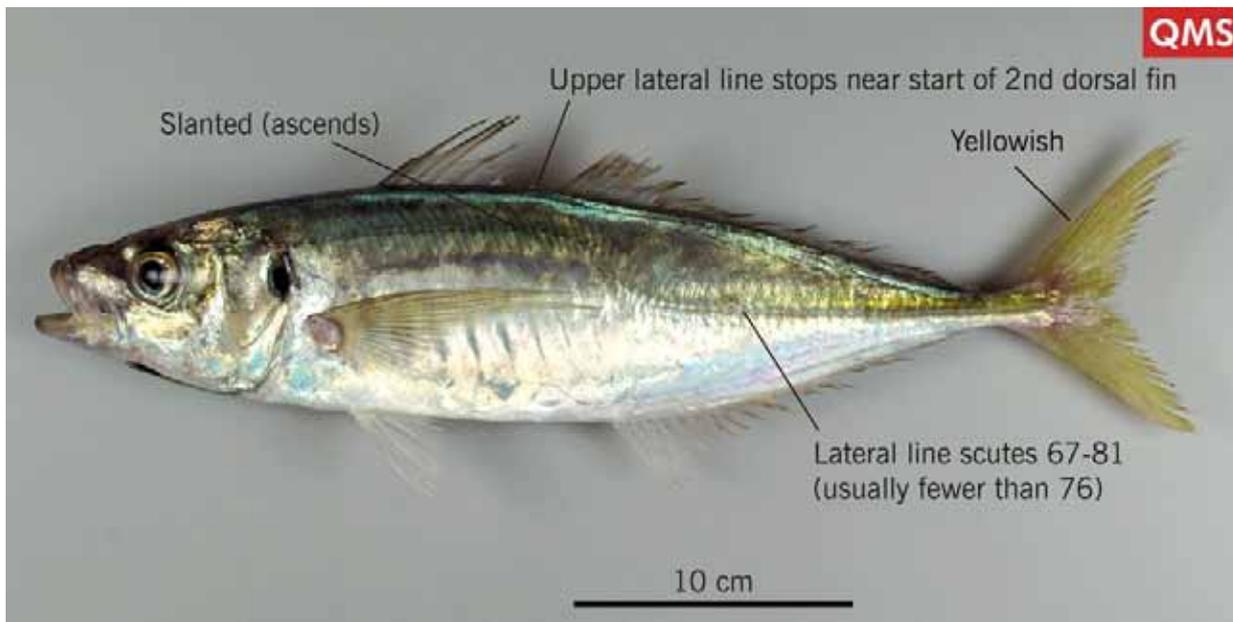
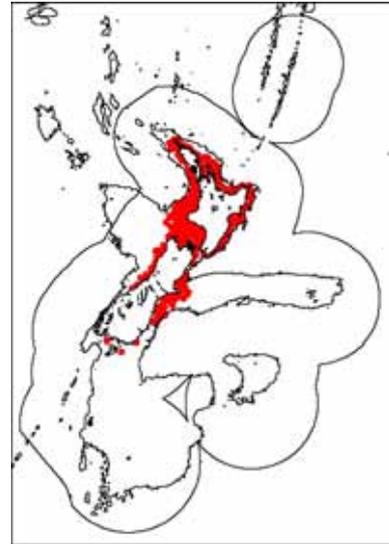
Family: 364. Carangidae (jacks, pompanos)

Maori names: Haature, hauture

Other names: Yellowtail

MFish reporting code: JMA

MFish research code: JMN



Distinguishing features: Large scute-like scales along the entire length of the lateral line with the front (curved) part of the lateral line slanted or ascending slightly front to rear. Upper accessory lateral line (immediately below base of dorsal fin) stops below first to fifth (usually first or second) 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.

Distribution: Common around northern and central coastal New Zealand but absent from Chatham Rise and Southern Plateau. Southern half of Australia.

Depth: 0 to 150 m.

Similar species: There are three very similar jack mackerel species in New Zealand waters. Slender jack mackerel (*T. murphyi*) also has a short upper accessory lateral line but it has 96 to 112 lateral line scales (scutes) compared to 67 to 81 in yellowtail jack mackerel. Greenback jack mackerel (*T. declivis*) has a long upper accessory lateral line which extends back to the 5th to 11th, usually 7th to 9th ray of the second dorsal fin.

Biology & ecology: Pelagic.

References

Carpenter & Niem (1999), Froese & Pauly (2007), Hirt-Chabbert (2006), May & Maxwell (1986), Paul (2000), Paulin et al. (1989), Stephenson & Robertson (1977).

Ray's bream

Brama brama

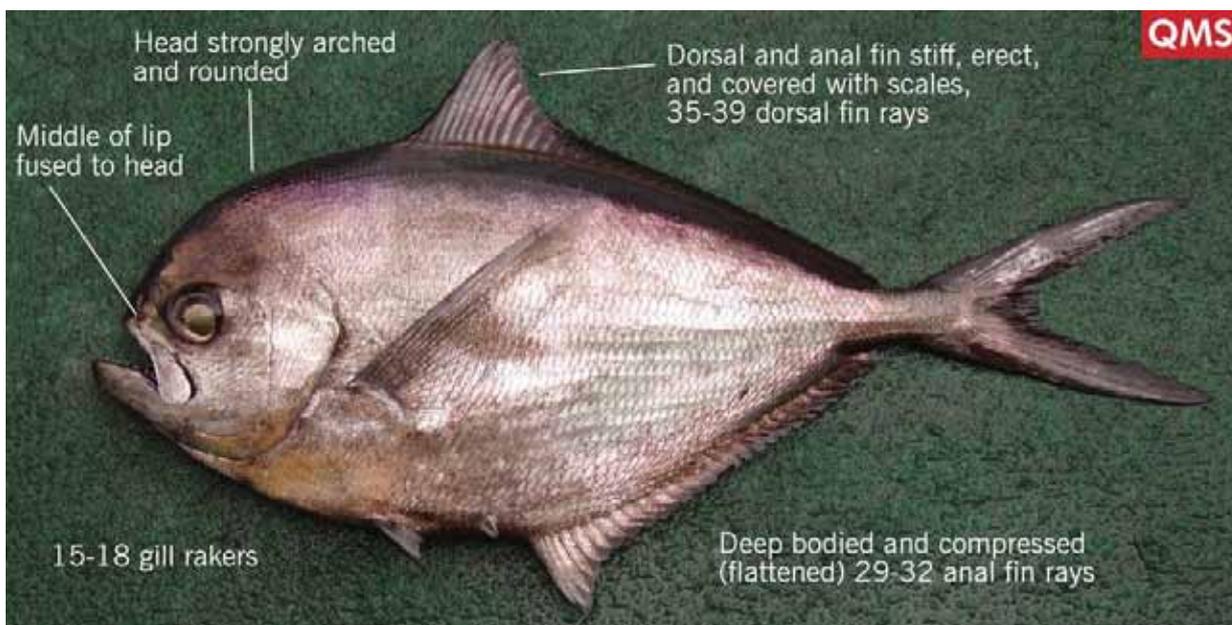
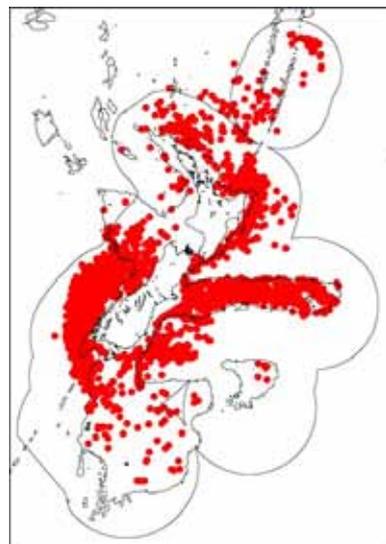
Family: 367. Bramidae (pomfrets)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RBM

MFish research 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.

Distribution: Widely distributed around New Zealand, including the Kermadec region, Chatham Rise and the Subantarctic region, but may be most abundant in the south. Fisheries records 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. Found in the North Atlantic Ocean and throughout the subtropical to subantarctic waters of the southern hemisphere.

Depth: Surface to about 200 m, possibly deeper.

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 29 (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. It is likely that southern bream in particular, but also bronze bream, have been confused with Ray's bream.

Biology & ecology: Pelagic.

References

Bagley et al. (2000), Chapman et al. (2006), Last & Baron (1994), Paulin (1981), Stewart (2001a).

Big-scale pomfret

Taractichthys longipinnis

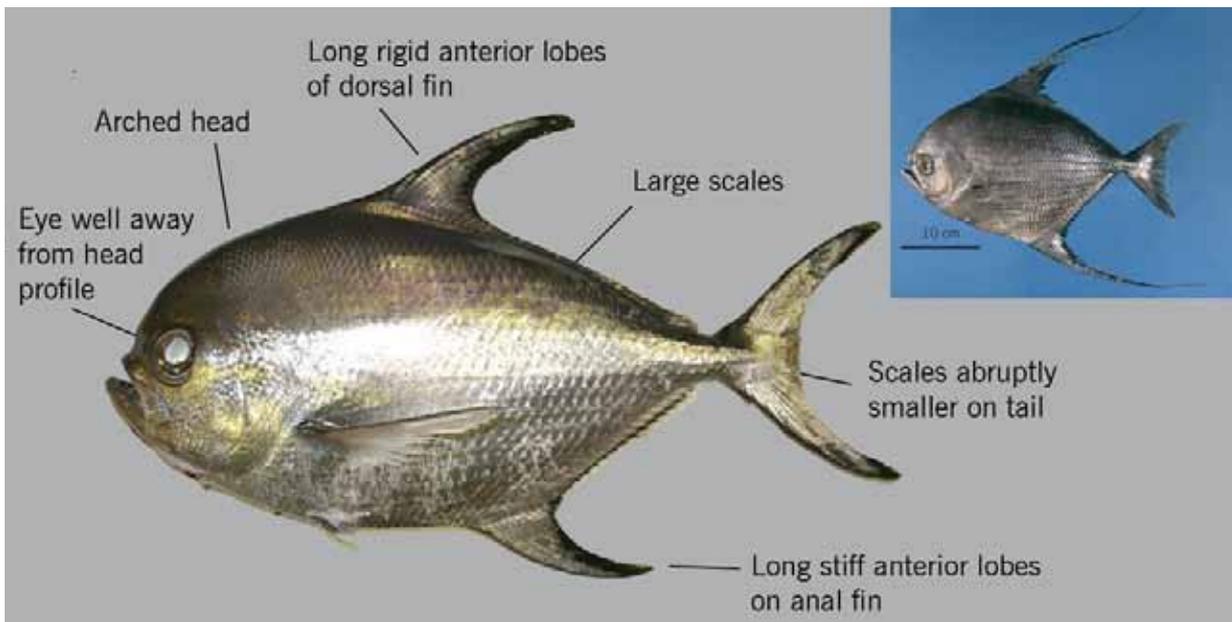
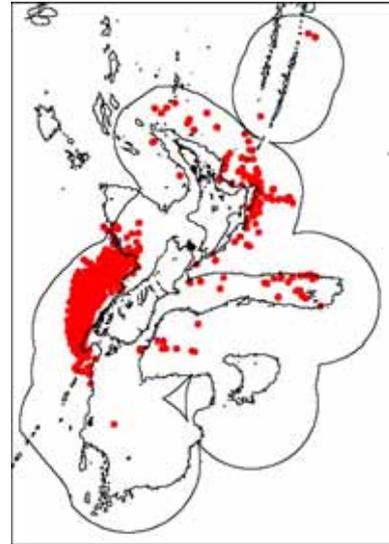
Family: 367. Bramidae (pomfrets)

Maori names: n.a.

Other names: Longfinned bream, longfinned pomfret

MFish reporting code: BSP

MFish research 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. Large body scales, 39 to 46 scales between the hind edge of the operculum and the caudal fin base. Scales on tail fin abruptly smaller than on caudal peduncle. Juveniles have extremely elongated dorsal and anal fin rays which become relatively shorter with age.

Colour: Silver-grey.

Size: To about 100 cm FL in New Zealand.

Distribution: Throughout New Zealand including the Kermadec region, Chatham Rise and the Subantarctic, with greatest abundance around the South Island. Widespread in tropical and temperate oceanic waters of the Atlantic, Indian, and Pacific Oceans.

Depth: To about 500 m.

Similar species: Ray's bream (*Brama brama*) has smaller scales, especially at the base of the tail, and lacks stiff fin spines. Flathead pomfret (*Taractes asper*) has a flatter head profile. Sickie pomfret (*Taractichthys steindachneri*) may also occur in New Zealand waters and has fewer scales (34 to 38) between the hind edge of the operculum and the caudal fin base.

Biology & ecology: Pelagic.

References

Bagley et al. (2000), Paul (2000), Paulin et al. (1989), Stewart (2001b).

Redbait

Emmelichthys nitidus

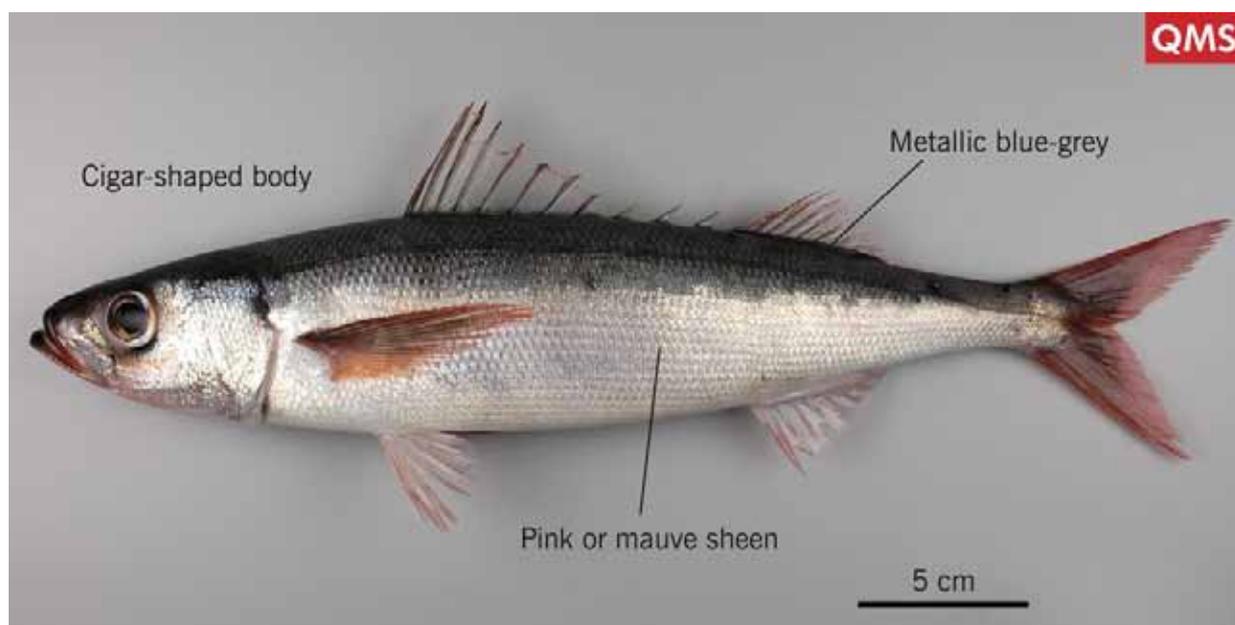
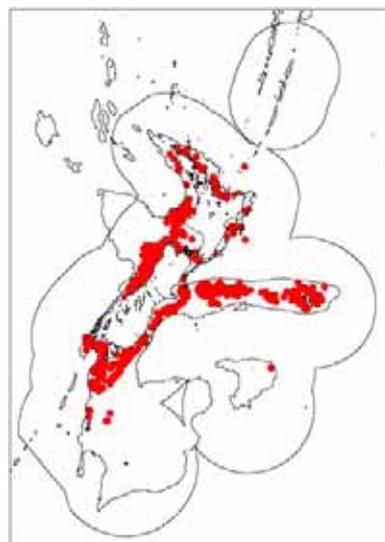
Family: 369. Emmelichthyidae (rovers)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RBT

MFish research code: RBT



Distinguishing features: Body cigar-shaped and metallic blue-grey above, silver on sides and abdomen, but suffused with pink and mauve along the sides. Two dorsal fins have several very short spines between. Scales small and firm.

Colour: Body metallic blue-grey above, silver on sides and abdomen, with pink flush along the sides. Fins pink.

Size: To about 35 cm FL.

Distribution: Widely distributed around New Zealand and the Southern Ocean, including southern Australia, South Africa, Chile.

Depth: 20 to 500 m.

Similar species: Rubyfish (*Plagiogeneion rubiginosum*) has a much deeper body, with body depth greater than head length and the body is more uniformly bright red.

Biology & ecology: Caught near the bottom but in midwater at times.

References

Gomon et al. (2008), Hirt-Chabbert (2006), Last et al. (1983), Paul (2000), Paulin et al. (1989).

Rubyfish

Plagiogeneion rubiginosum

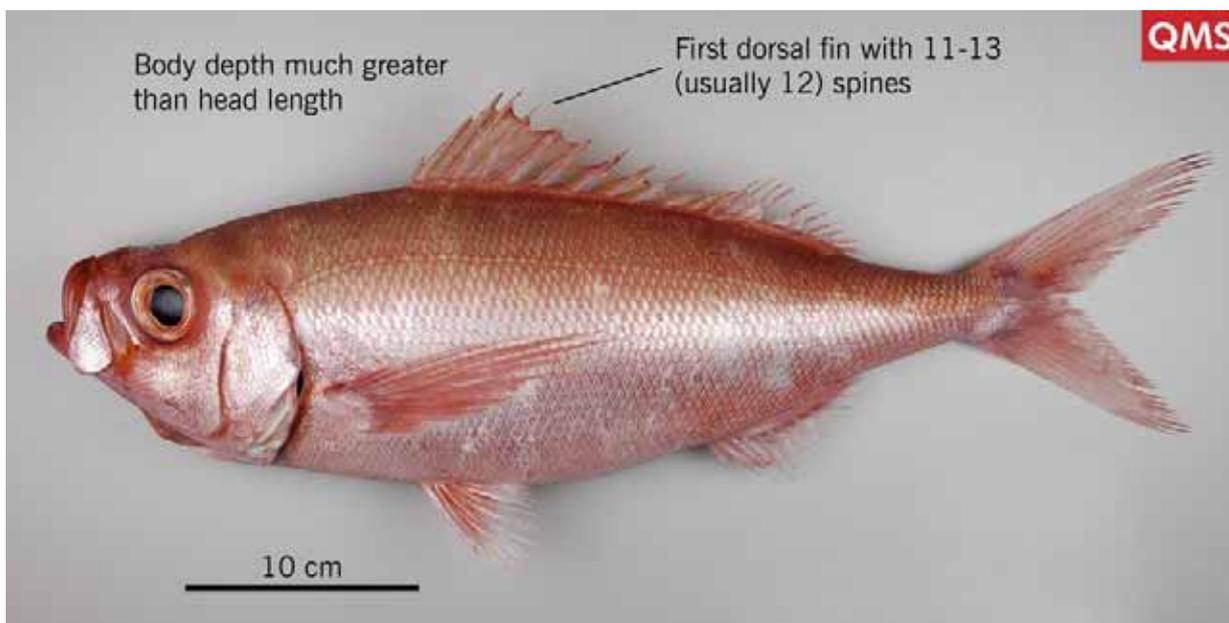
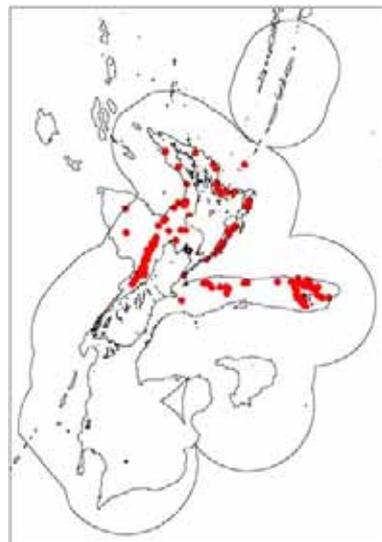
Family: 369. Emmelichthyidae (rovers)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RBY

MFish research code: RBY



Distinguishing features: Reddish or dark pink head, body, and fins. Spinous first dorsal continuous with the 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 the side of the head and body silvery.

Size: To 57 cm FL.

Distribution: Widespread in central and northern New Zealand. Southern Australia (NSW, TAS), Saint Paul and Amsterdam Islands (southern Indian Ocean), southern Africa, seamounts in the South Atlantic Ocean.

Depth: 50 to 500 m.

Similar species: Alfonsino (*Beryx splendens*) has a short dorsal fin, with length of the base much less than depth of the body, compared to rubyfish which has dorsal fin length much greater than body depth. Alfonsino has 4 dorsal fin spines compared to 11 to 13 in rubyfish. Redbait (*Emmelichthys nitidus*) has a gap between the 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.

References

Anderson et al. (1998), Paulin (1999), Paulin et al. (1989).

Snapper

Pagrus auratus

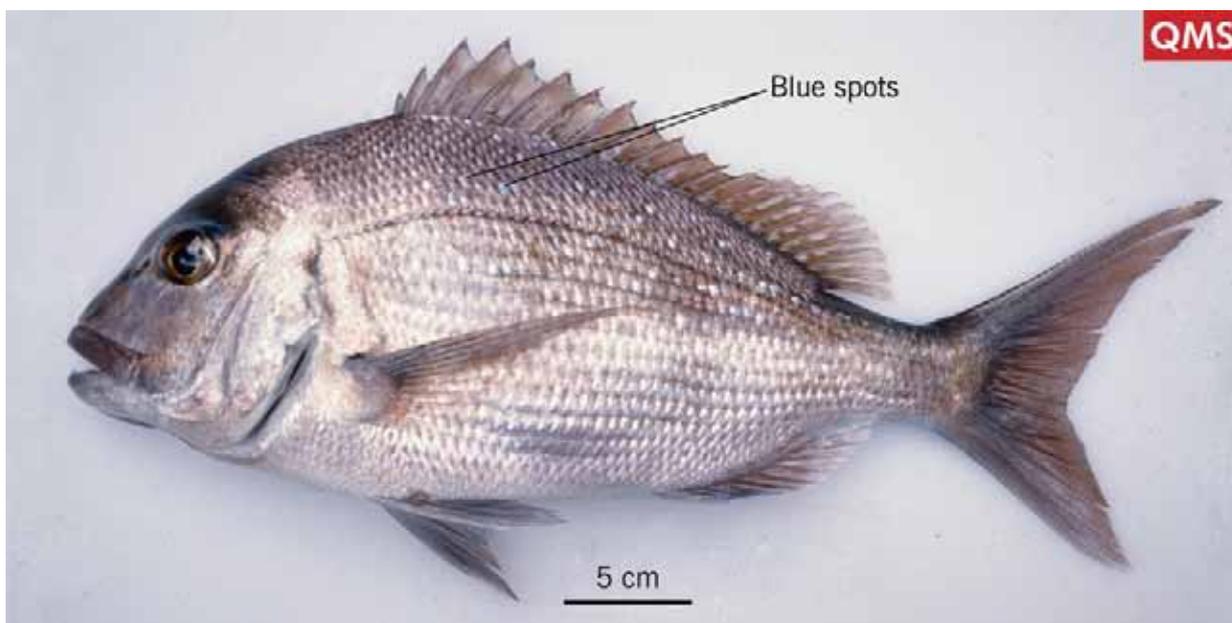
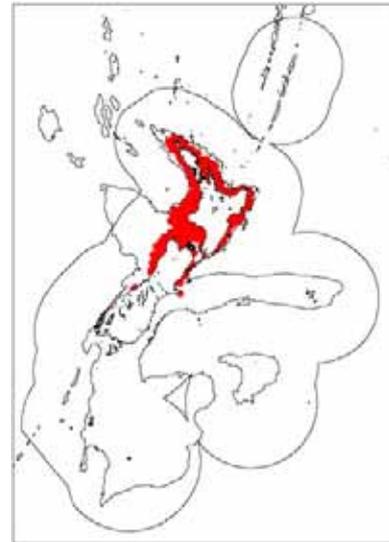
Family: 378. Sparidae (porgies)

Maori names: Karati, taamure

Other names: n.a.

MFish reporting code: SNA

MFish research code: SNA



Distinguishing features: Distinctive colour pattern with many small blue spots on the upper body. Rounded dorsal head profile, except for very large fish which may develop hump on the 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.

Distribution: Central and northern New Zealand; southern Australia. The same or a similar species in northeast part of South China Sea (excluding Philippines) and northward to Japan.

Depth: 0 to 200 m.

Similar species: The only other sparid known from New Zealand is one specimen of yellowfin bream (*Acanthopagrus australis*). This has a silvery bronze body, a dark blotch present at the origin of the lateral line, and the lower fins and ventral part of caudal fin are yellowish. Red snapper (*Centroberyx affinis*) lacks the small blue spots on the body, and has narrow white stripes along the sides.

Biology & ecology: Demersal.

References

Francis (2001), Paul (1986), Paulin (1990), Paulin et al. (1989), Roberts & Stewart (2006).

Goatfish

Upeneichthys lineatus

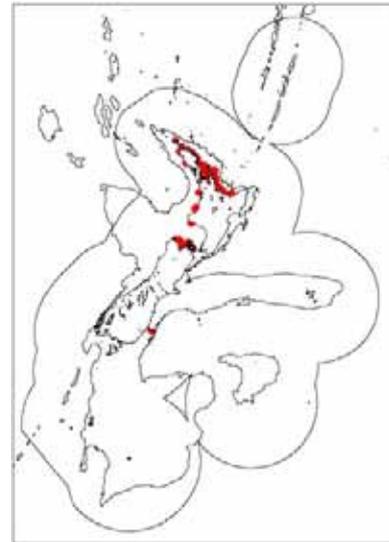
Family: 382. Mullidae (goatfishes)

Maori names: Aahuruhuru

Other names: Red mullet

MFish reporting code: RMU

MFish research 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 an indistinct dark brownish broken band from top of the gill cover to tail base, and yellowish chin barbels.

Size: To about 40 cm FL.

Distribution: Mainly northern and central New Zealand, rare south of Hawke Bay and Farewell Spit. Kermadec Islands.

Depth: 0 to 100 m.

Similar species: The identity of the New Zealand *Upeneichthys* species is uncertain. It may be *Upeneichthys porosus*, described from the Bay of Islands. *Upeneichthys lineatus* is probably an Australian species, first described from Sydney. The rare black-spot goatfish (*Parupeneus spilurus*) has a black spot on the caudal peduncle, and the rare bar-tailed goatfish (*Upeneus francisi*) has 4 pairs of orange and white bars on the upper lobe of the tail.

Biology & ecology: Demersal on sand areas near reefs. Spawn October to January.

References

Anderson et al. (1998), Francis (2001).

Kahawai

Arripis trutta

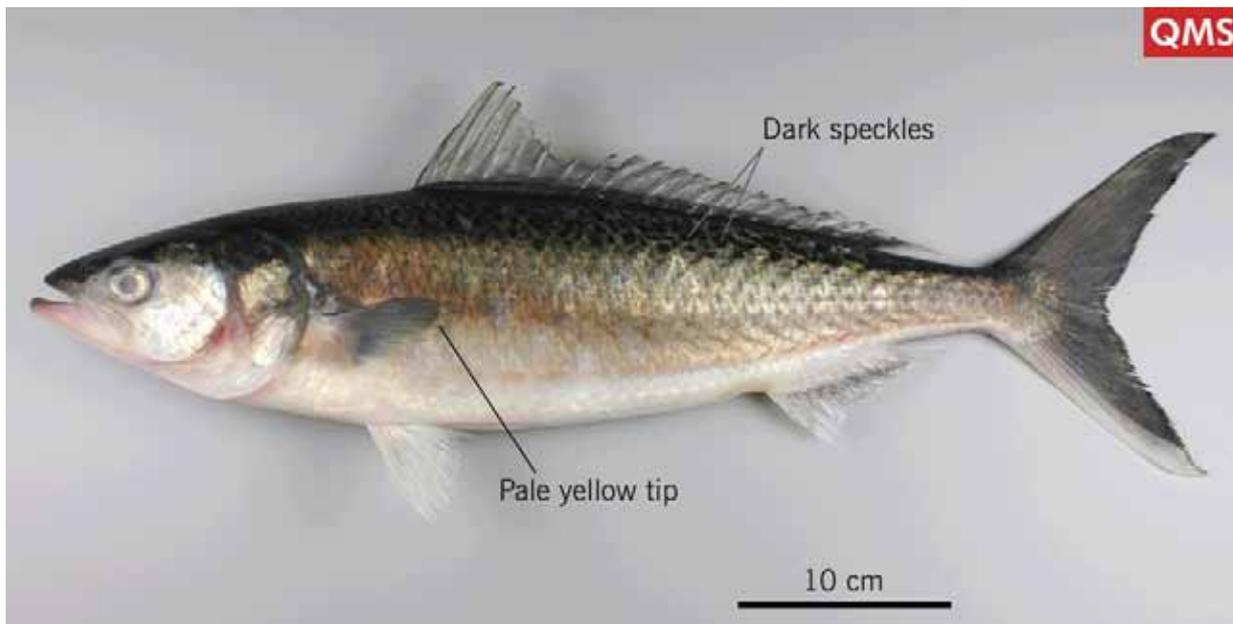
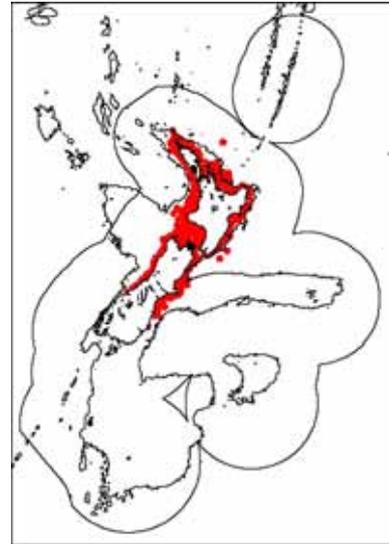
Family: 389. Arripidae (Australasian salmon, kahawai)

Maori names: Kahawai

Other names: Eastern Australian salmon (Australia)

MFish reporting code: KAH

MFish research code: KAH



Distinguishing features: Easily recognised streamlined body with irregular small dark speckles on upper sides, firm large scales.

Colour: Greenish-blue above with irregular small dark speckles, shading to silvery-white below. Outer edge of pectoral fin pale yellow. Tail fin lobe about the same as head length.

Size: To about 70 cm FL.

Distribution: Throughout New Zealand, more abundant about and north of Cook Strait, present in southern areas only in warmer months. Also southeast Australia.

Depth: 0 to 150 m.

Similar species: *Arripis xylabion* occurs in the far north, is rare, and has a grey pectoral fin and tail fin lobe longer than head length.

Biology & ecology: Pelagic on continental shelf, often in schools.

References

Francis (2001), Hirt-Chabbert (2006), May & Maxwell (1986), Paul (2000), Paulin et al. (1989).

Parore

Girella tricuspidata

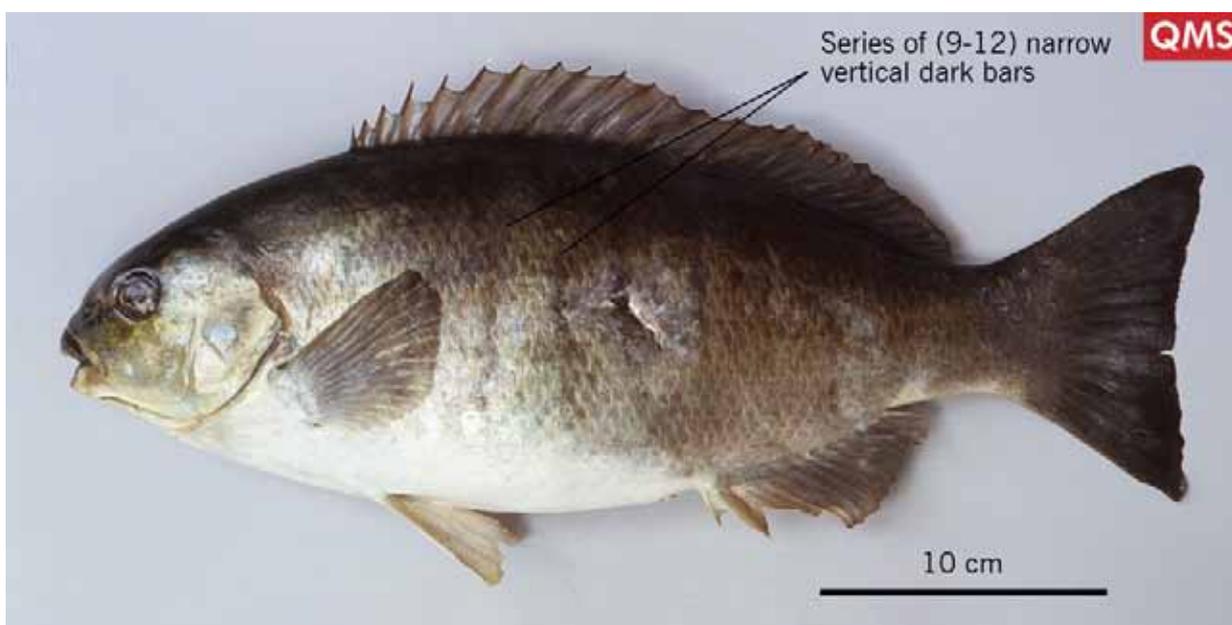
Family: 391. Kyphosidae (sea chubs)

Maori names: Parore

Other names: n.a.

MFish reporting code: PAR

MFish research code: PAR



Distinguishing features: Series of 9 to 12 narrow vertical dark bars on the side of the body. Dorsal fin with 14 to 16 (usually 15) spines.

Colour: Pale olive-yellow to dark greyish-brown with a series of 9 to 12 narrow vertical dark bars on the side of the body. Dorsal, caudal, anal, and pectoral fins pale to brownish. Pelvic fins pale.

Size: To about 62 cm TL.

Distribution: New Zealand from Cook Strait north, more common in the far north. Southern Australia (Qld, NSW, Vic, Tas, SA).

Depth: 0 to 50 m, usually less than 10 m.

Similar species: Other sea chubs or drummers lack the series of narrow vertical dark bars on the side of the body.

Biology & ecology: Found in mangrove swamps, estuaries, harbours, and shallow coastal reefs, often in schools. Adults are largely herbivorous. Spawn in spring-summer.

References

Anderson et al. (1998), Francis, (2001), Gomon et al. (2008).

Sowfish

Paristiopterus labiosus

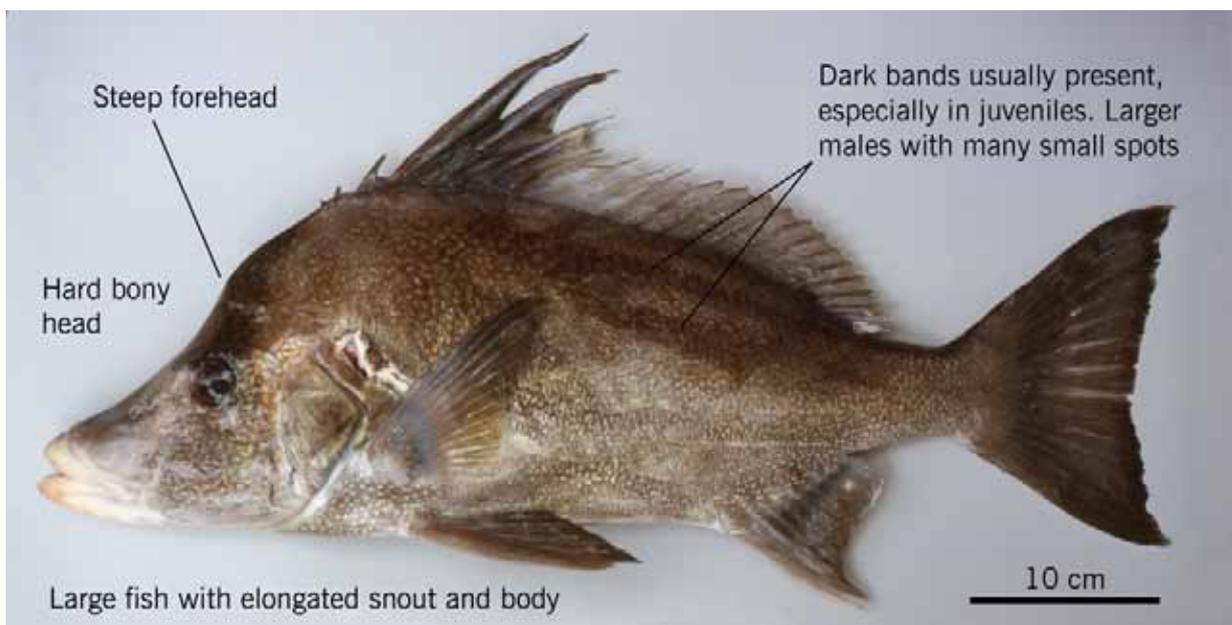
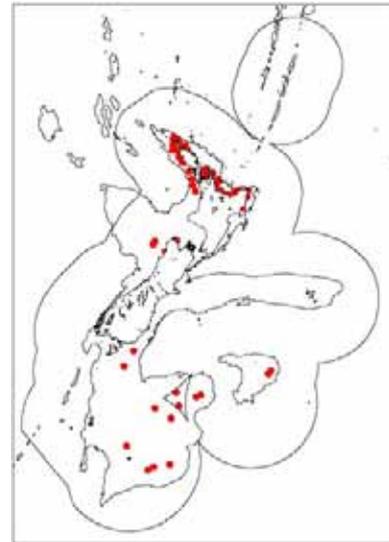
Family: 396. Pentacerotidae (armorheads)

Maori names: n.a.

Other names: Giant boarfish

MFish reporting code: BOA

MFish research code: BOA



Distinguishing features: Large species (to about 85 cm FL) with very hard, finely patterned exposed head bones. Juveniles are deep bodied with a short snout and several dark bands on the body. With increasing size the body and snout elongate, the bands become paler, and in large males the body is covered in small yellow spots. Steep forehead above eyes.

Colour: Juveniles are deeper bodied with several irregularly shaped oblique much darker bands on body; markings fade with increasing size. Adult males covered in many small yellow spots.

Size: To about 85 cm FL.

Distribution: Northern New Zealand, mainly north of East Cape. Records plotted on the map from offshore and southern New Zealand are likely to be misidentified. Also southern Australia.

Depth: 0 to 200 m.

Similar species: Longfinned boarfish (*Zanclistius elevatus*) has a very high dorsal fin with distinctive black blotch near rear margin, and two irregular brown bands on sides of the body. Southern boarfish (*Pseudopentaceros richardsoni*) has iridescent dark blue on upper body, silvery-grey sides and belly. Yellow boarfish (*Pentaceros decacanthus*) is small (to about 25 cm FL) with strong dorsal spines and a yellow body.

Biology & ecology: Demersal and coastal.

References

Anderson et al. (1998), Froese & Pauly (2007), Gomon et al. (2008), Hirt-Chabbert (2006), Paul (2000), Paulin et al. (1989).

Yellow boarfish

Pentaceros decacanthus

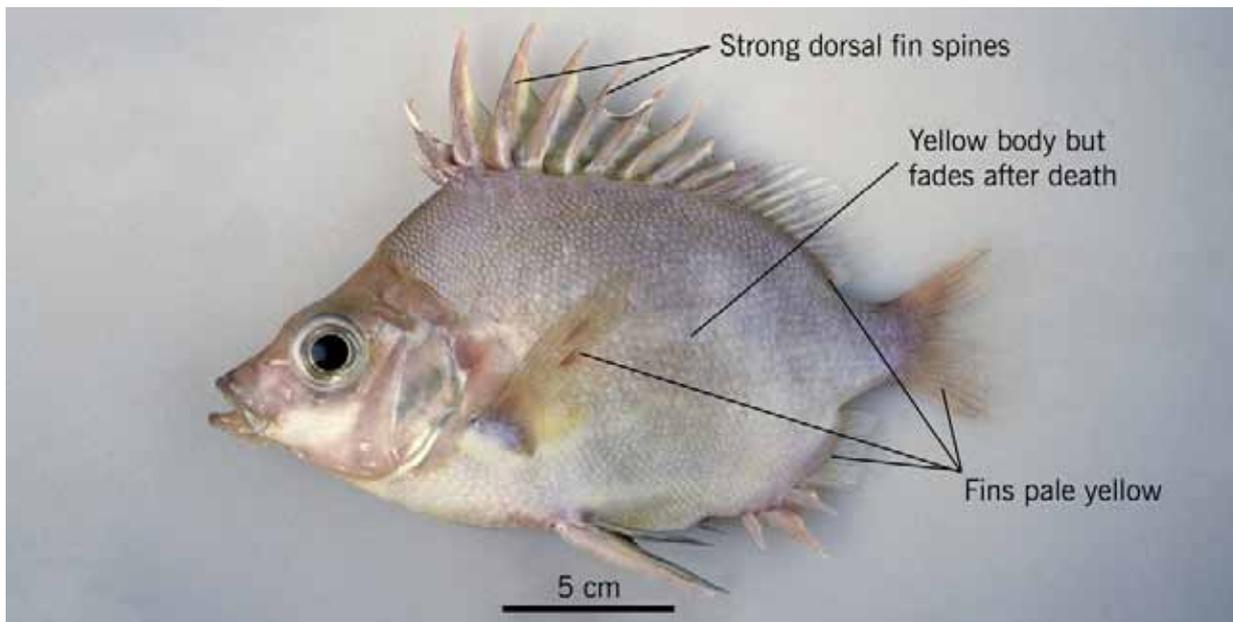
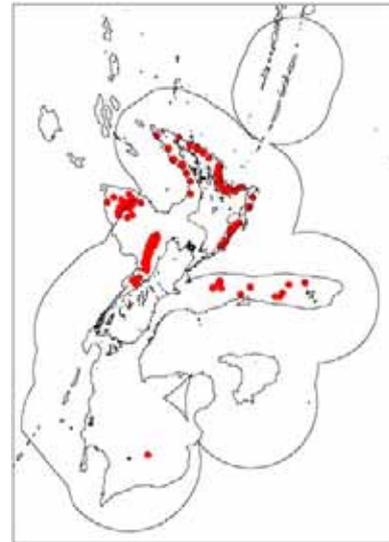
Family: 396. Pentacerotidae (armorheads)

Maori names: n.a.

Other names: Bigspine boarfish

MFish reporting code: YBO

MFish research code: YBO



Distinguishing features: Small (to about 25 cm FL) with strong dorsal 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 25 cm FL.

Distribution: Central and northern New Zealand, also southern Australia.

Depth: 200 to 700 m.

Similar species: Southern boarfish (*Pseudopentaceros richardsoni*) has iridescent dark blue on upper body, silvery-grey sides and belly and is caught offshore. Sowfish (*Paristiopterus labiosus*) is a large inshore species (to about 85 cm FL) with dark blotchy markings or small yellow spots on the body. Longfinned boarfish (*Zanclistius elevatus*) has a very high dorsal fin with distinctive black blotch near rear margin, and two irregular brown bands on sides of the body and is also caught inshore.

Biology & ecology: Demersal.

References

Gomon et al. (2008), May & Maxwell (1986), Paul (2000), Paulin et al. (1989).

Southern boarfish

Pseudopentaceros richardsoni

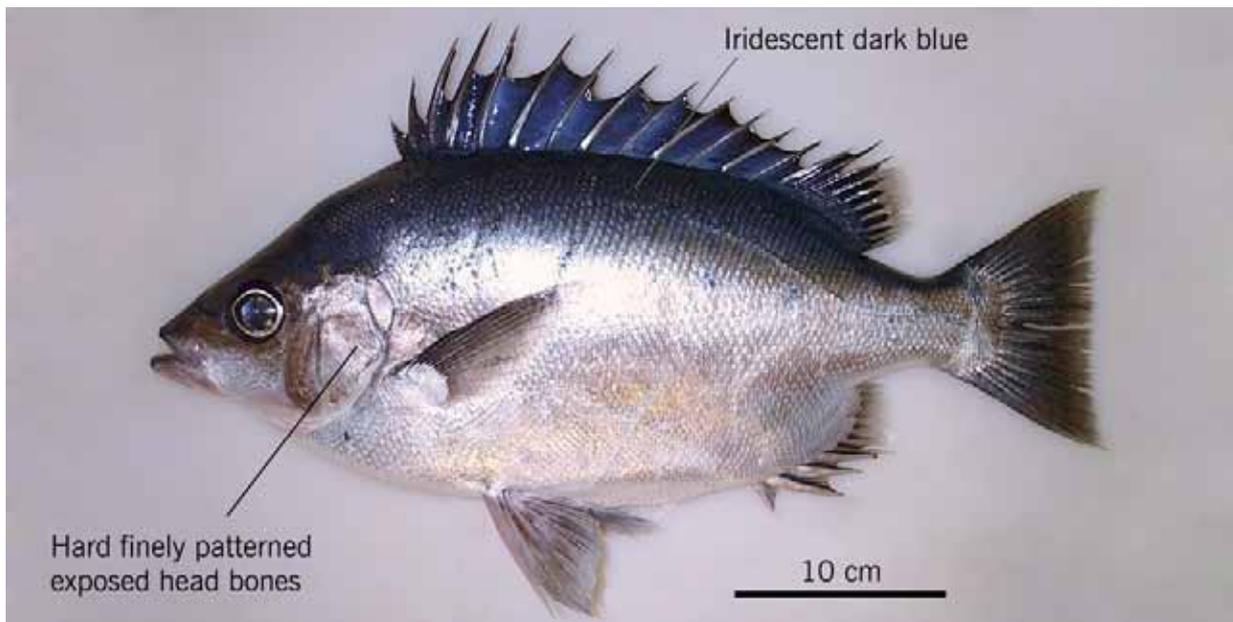
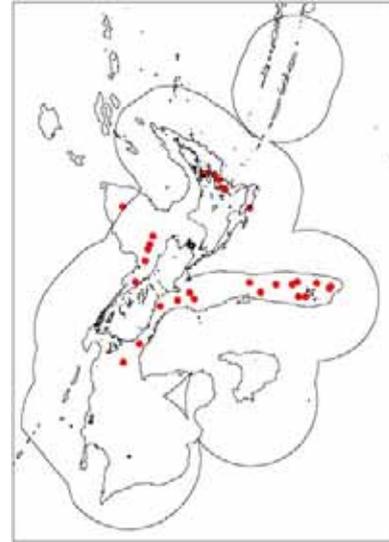
Family: 396. Pentacerotidae (armorheads)

Maori names: n.a.

Other names: Pelagic armourhead

MFish reporting code: SBO

MFish research code: SBO



Distinguishing features: Iridescent dark blue on upper body, silvery-grey sides and belly, and 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.

Distribution: New Zealand. Circumglobal in temperate oceans of the southern hemisphere.

Depth: 50 to 750 m.

Similar species: Yellow boarfish (*Pentaceros decacanthus*) is small (to about 25 cm FL) with strong dorsal spines and a yellow body. Longfinned boarfish (*Zanclistius elevatus*) is an inshore species, has a very high dorsal fin with distinctive black blotch near rear margin, and two irregular brown bands on sides of the body. Sowfish (*Paristiopterus labiosus*) is a large inshore species (to about 85 cm FL) with either dark blotchy markings or small yellowish spots on the body.

Biology & ecology: Demersal. Adults often near rises, juveniles near the surface. Uncommon.

References

Froese & Pauly (2007), Gomon et al. (2008), Hirt-Chabbert (2006), May & Maxwell (1986), Paul (2000), Paulin et al. (1989).

Longfinned boarfish

Zanclistius elevatus

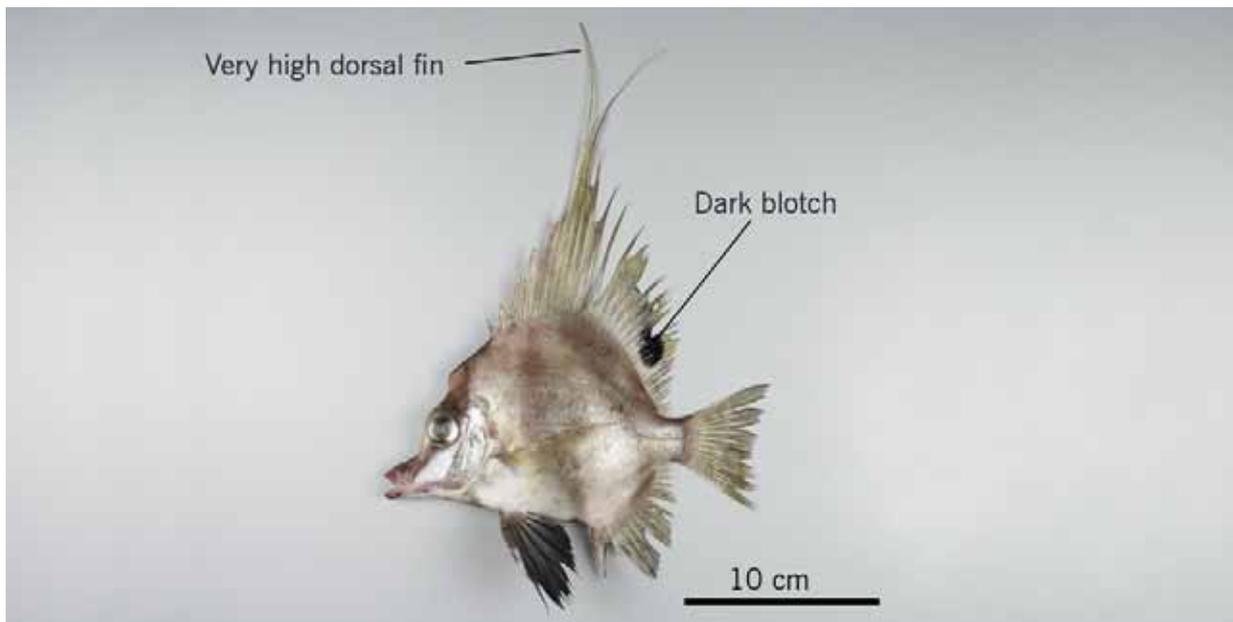
Family: 396. Pentacerotidae (armorheads)

Maori names: n.a.

Other names: n.a.

MFish reporting code: LFB

MFish research code: LFB



Distinguishing features: Very high dorsal fin with distinctive black blotch near rear margin. Two irregular brown bands on body sides.

Colour: Body silvery-grey with two irregular brown bands on sides, another through eye. Dorsal fin has prominent black blotch near rear margin.

Size: To about 35 cm FL.

Distribution: North Island, usually north of East Cape. Also southern Australia.

Depth: 25 to 200 m.

Similar species: Striped boarfish (*Evistias acutirostris*) has a similar body shape but has 5 dark vertical bands on the body and is rare around northern North Island. Sowfish (*Paristiopterus labiosus*) is large (to about 85 cm FL) with either dark blotchy markings or small yellowish spots on the body. Southern boarfish (*Pseudopentaceros richardsoni*) is an offshore species, has iridescent dark blue on upper body, silvery-grey sides and belly. Yellow boarfish (*Pentaceros decacanthus*) is also offshore, is small (to about 25 cm FL) with strong dorsal spines and a yellow body.

Biology & ecology: Demersal, usually near rocky reefs.

References

Francis (2001), Gomon et al. (2008), Last et al. (1983), Paul (2000), Paulin et al. (1989).

Porae

Nemadactylus douglasii

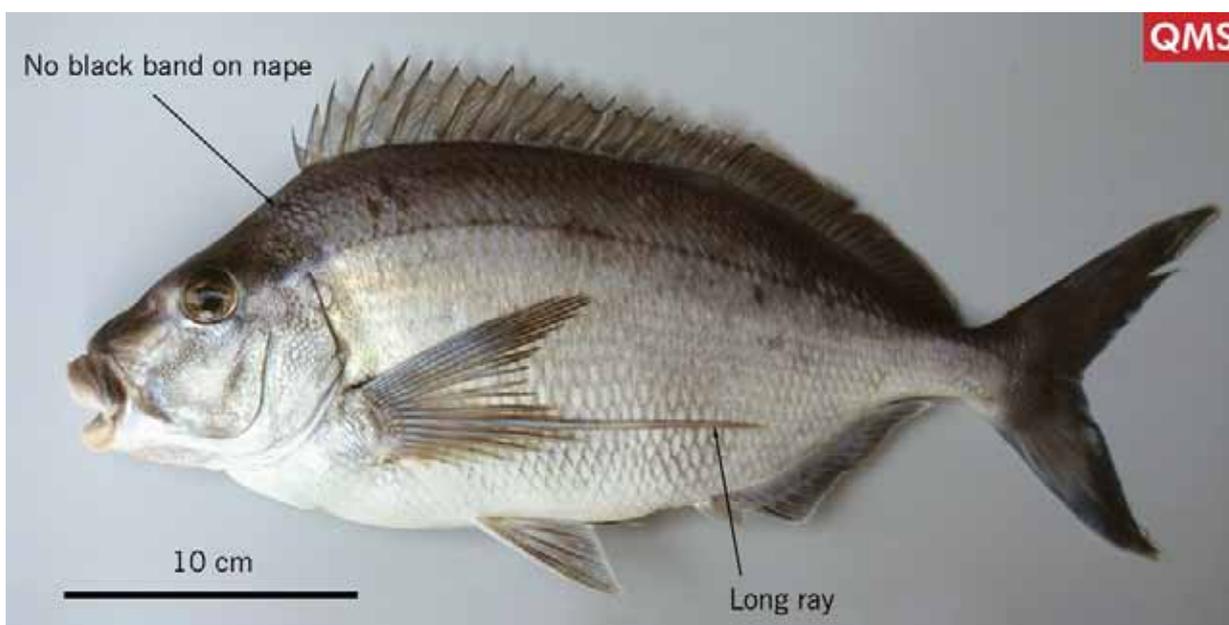
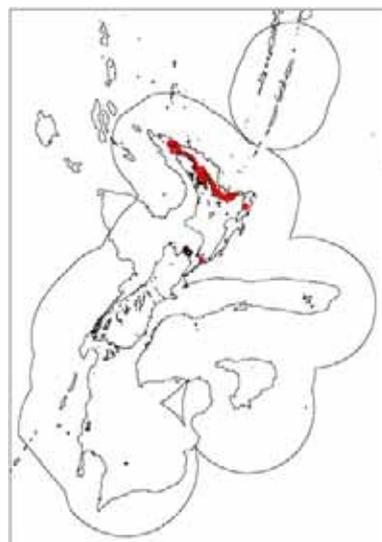
Family: 405. Cheilodactylidae (morwongs)

Maori names: Porae

Other names: n.a.

MFish reporting code: POR

MFish research code: POR



Distinguishing features: Single ray in the lower pectoral fin substantially longer than adjacent rays. No dark saddle mark on the nape of the neck. Small mouth with thick rubbery lips.

Colour: Silvery, with a greenish-blue sometimes yellowish tinge above, pale silvery below the lateral line. Fins may have bluish tinge. Juveniles with a dark blotch just below centre of lateral line, fading with growth.

Size: To about 81 cm FL.

Distribution: Northern New Zealand, reported from Three Kings Islands to Kaikoura, and at the Kermadec Islands. Southern Australia from southern Queensland to eastern Bass Strait.

Depth: 0 to 200 m.

Similar species: Tarakihi (*Nemadactylus macropterus*) has a black saddle on the nape of the neck. King tarakihi (*Nemadactylus* sp.) has a broader black saddle on the nape of the neck and dark upper posterior half of the 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.

References

Anderson et al. (1998), Francis (2001), Gomon et al. (2008), Roberts (1993).

Tarakihi

Nemadactylus macropterus

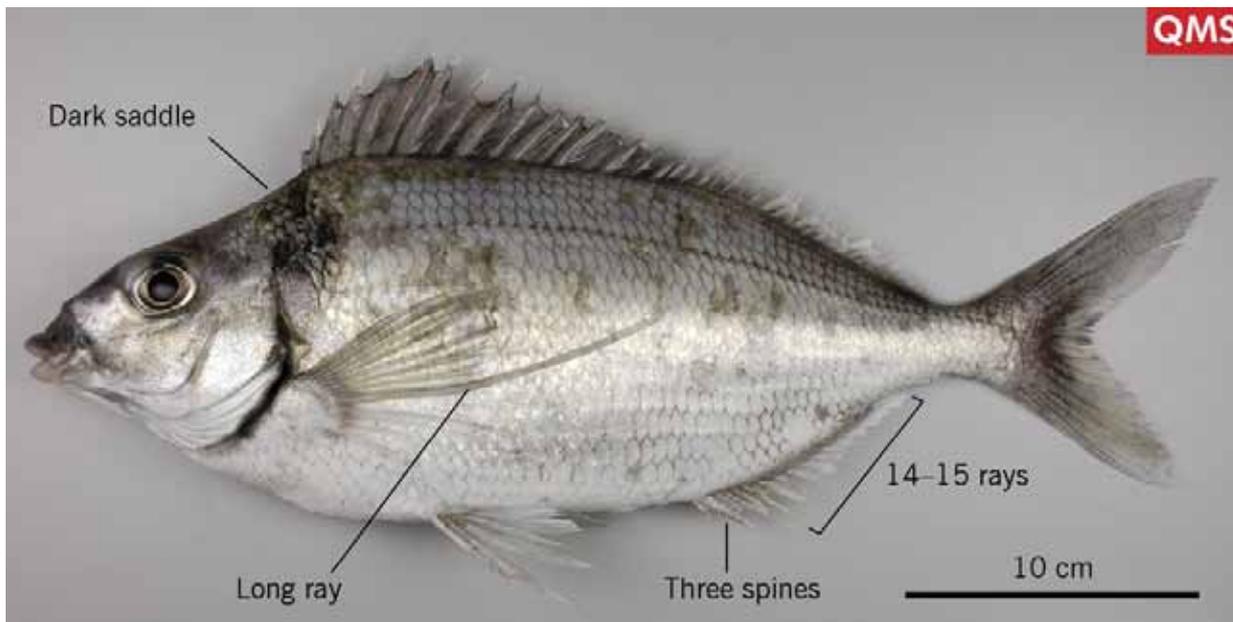
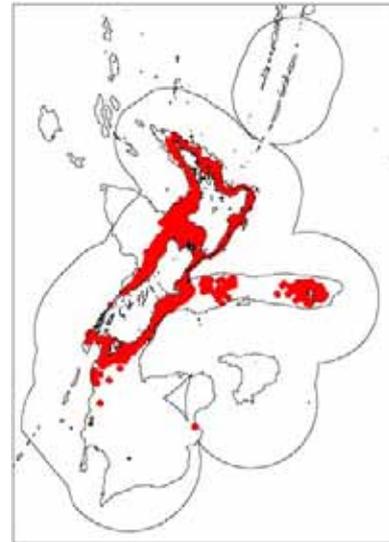
Family: 405. Cheilodactylidae (morwongs)

Maori names: Tarakihi

Other names: n.a.

MFish reporting code: TAR

MFish research code: TAR



Distinguishing features: Single ray in the lower pectoral fin substantially longer than adjacent rays. Dark saddle mark on the nape of the neck. Small mouth with thick rubbery lips. Anal fin with 3 spines and 14 to 15 soft rays.

Colour: Silvery-grey above to silvery-white below. A dark band on the nape of the neck extending down to near the 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.

Distribution: Widespread in New Zealand from Cape Reinga to just south of the Snares Islands, shallow parts of the Chatham Rise, and Chatham Islands. Southern Australia from about Sydney round to Rottnest Island (WA) including Tasmania. The same or a similar species found in South America.

Depth: 5 to 500 m.

Similar species: King tarakihi (*Nemadactylus* sp.) has a broader black saddle on the nape of the neck, dark upper posterior half of the pectoral fin, and 12 soft anal fin rays. Poraie (*Nemadactylus douglasii*) lacks a black saddle on the nape of the neck.

Biology & ecology: Demersal. Small fish tend to be found shallower than larger individuals. Spawn at specific localities, e.g., East Cape, northeast coast of the South Island, and Fiordland, with some measured migration of individuals of about 500 km. Young have a pelagic paper-fish stage with a very thin silvery body. Attain ages of about 45 years.

References

Anderson et al. (1998), Francis, (2001), Gomon et al. (2008), Roberts (1993).

Moki

Latridopsis ciliaris

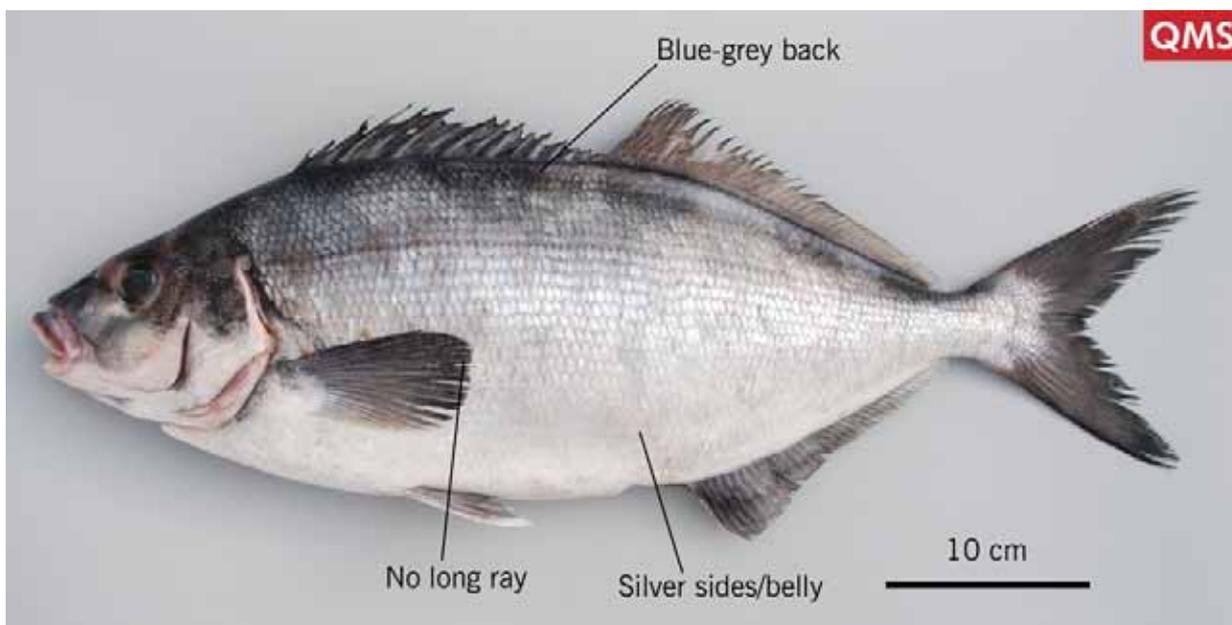
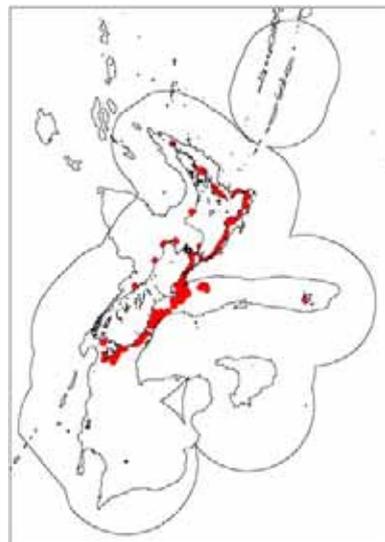
Family: 406. Latridae (trumpeters)

Maori names: Moki

Other names: Blue moki

MFish reporting code: MOK

MFish research code: MOK



Distinguishing features: Deep bodied. Blue-grey above and silver-white below without extended pectoral rays.

Colour: Body blue-grey above often with light and dark vertical banding, silver-white below, fins dark grey.

Size: To about 90 cm FL.

Distribution: Widespread, but more common in central and southern New Zealand. Known only from New Zealand, although it is listed in some Australian publications.

Depth: 0 to 230 m.

Similar species: Copper moki (*Latridopsis forsteri*) has a black margin on the tail fin and several thin pinkish-olive longitudinal lines along the back. Poraie (*Nemadactylus douglasi*) 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.

References

Francis (2001), Paul (2000), Paulin et al. (1989).

Trumpeter

Latris lineata

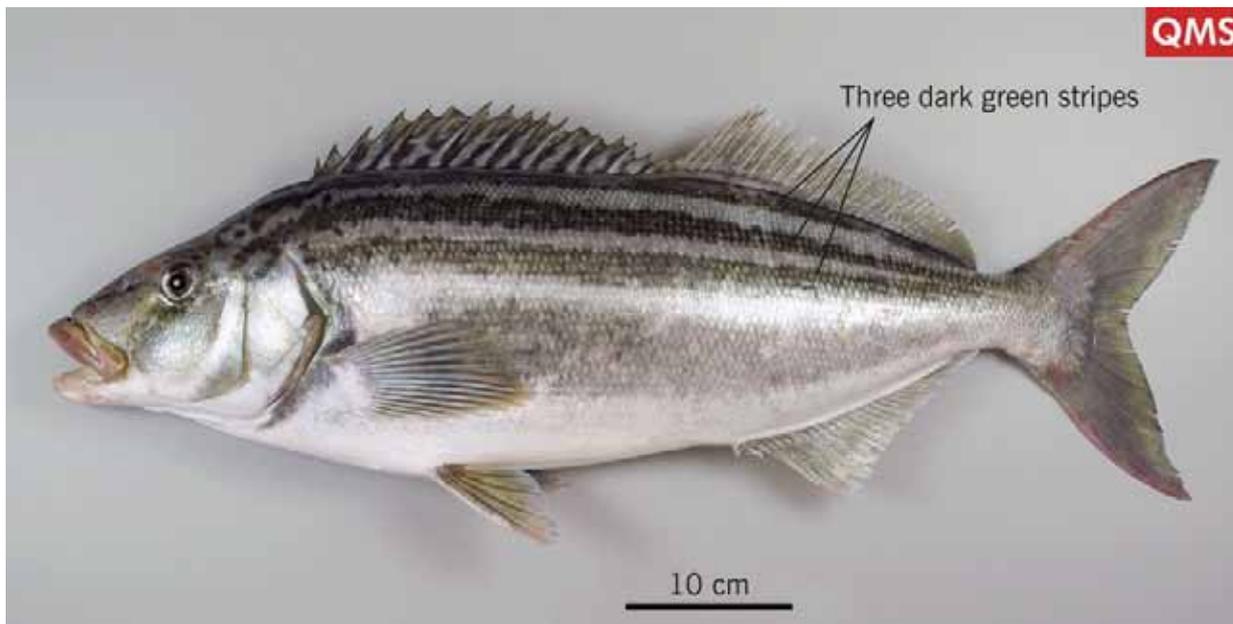
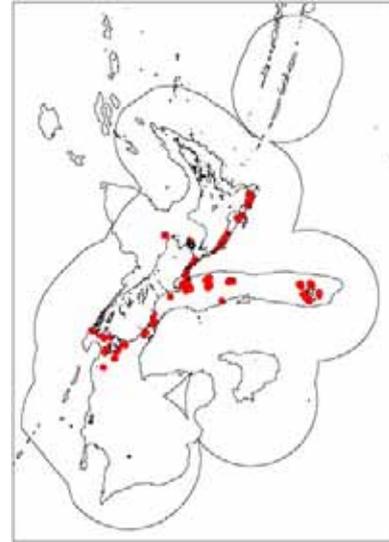
Family: 406. Latridae (trumpeters)

Maori names: Kohikohi

Other names: Striped trumpeter (Australia)

MFish reporting code: TRU

MFish research code: TRU



Distinguishing features: Distinctive colour pattern with three dark green longitudinal stripes along upper body.

Colour: Body light olive above with three dark green longitudinal stripes, and silvery with yellowish sheen below.

Size: To about 110 cm FL.

Distribution: Throughout New Zealand, but rare north of East Cape. Widely distributed in temperate waters of the southern hemisphere including southern Australia and islands in the southern Indian and Atlantic Oceans but absent from coastal waters of South Africa.

Depth: 0 to 300 m.

Similar species: Telescopefish (*Mendosoma lineatum*) is a related, but uncommon, southern species usually occurring near reefs and is blue-green above with many fine brown longitudinal stripes and a protrusible mouth.

Biology & ecology: Demersal, usually over rocky reefs.

References

Francis (2001), Paul (2000), Paulin et al. (1989), Roberts (2003).

Red bandfish

Cepola haastii

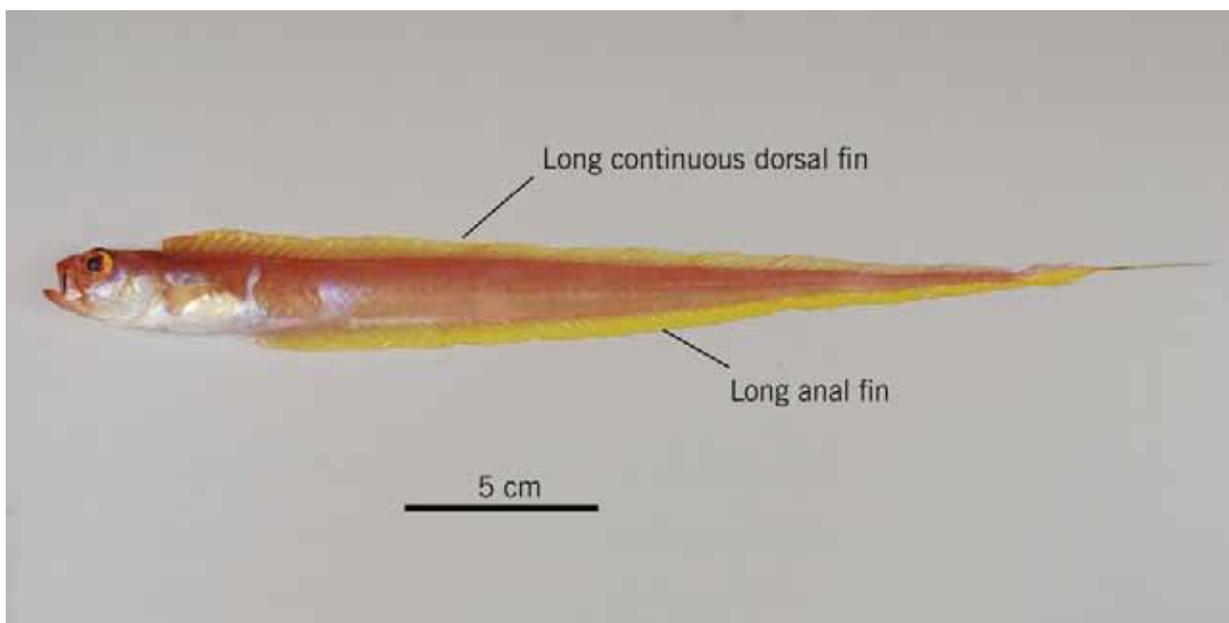
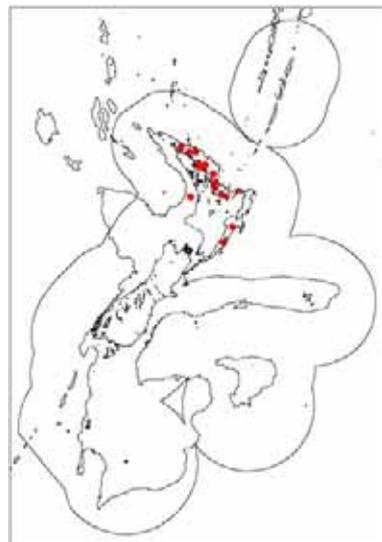
Family: 407. Cepolidae (bandfishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: UNI

MFish research code: CEP



Distinguishing features: Eel-like body with long dorsal and anal fins. Top of head, eye, most of body, and fins reddish-orange.

Colour: Top of head, eye, most of body, and fins reddish-orange with some pale silvery bars and blotches on the body and a pale longitudinal mid lateral streak. Cheek (preoperculum and operculum) and belly silvery.

Size: To about 25 cm TL.

Distribution: Possibly confined to northern New Zealand.

Depth: Not known, probably to less than 200 m.

Similar species: None.

Biology & ecology: Unknown. Possibly lives in burrows in the sediment.

References

Paul (2000), Paulin et al. (1989).

Spotty

Notolabrus celidotus

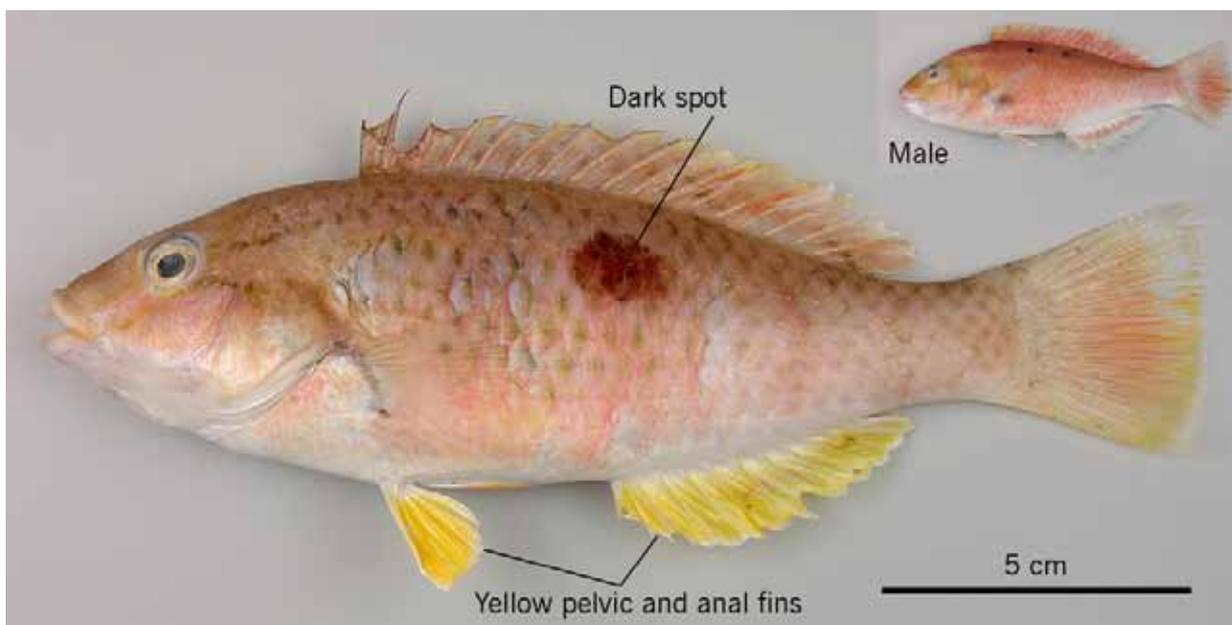
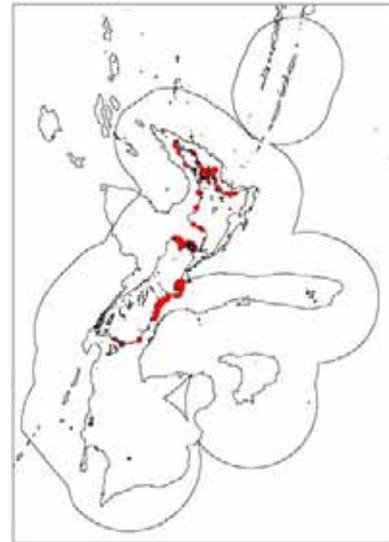
Family: 412. Labridae (wrasses)

Maori names: Paketi, pakirikiri

Other names: n.a.

MFish reporting code: STY

MFish research code: STY



Distinguishing features: Females have a large brown or black spot on the side of the body, and the pelvic and front part of anal fins are yellowish. Males have diffuse small dark spots on the side of the body above the lateral line, and the anal fin has an orange or reddish stripe running along the fin.

Colour: Body colour of juveniles and females yellowish/brown, with a single obvious brown or black spot on the side. Males yellowish/brown with light blue lines on the head and more diffuse brown or black spots high on the sides.

Size: To about 27 cm TL.

Distribution: Confined to New Zealand coastal waters from Cape Reinga to Stewart Island plus the Chatham Islands.

Depth: 0 to 20 m.

Similar species: Other wrasses lack the large dark spot on the side of the body in females, and the diffuse small dark spots on the side of the body above the lateral line in males.

Biology & ecology: Occupy a wide range of habitats from estuaries and intertidal rockpools to the exposed coast. One of the 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.

References

Anderson et al. (1998), Francis (2001), Paulin (1996), Paulin et al. (1989).

Girdled wrasse

Notolabrus cinctus

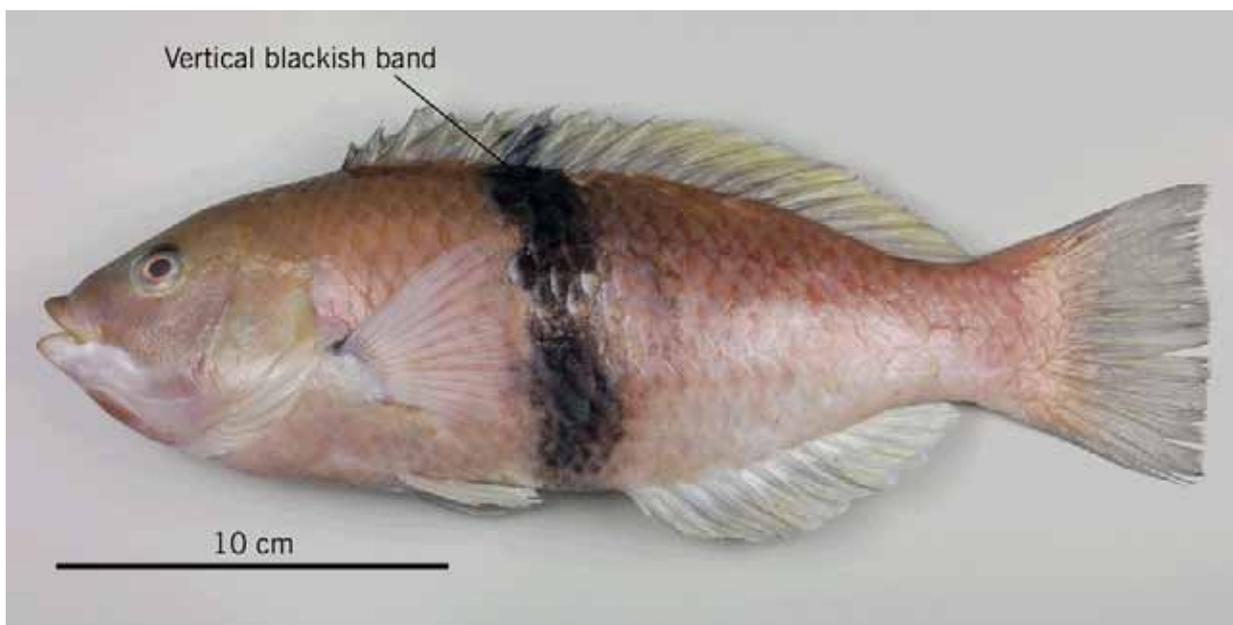
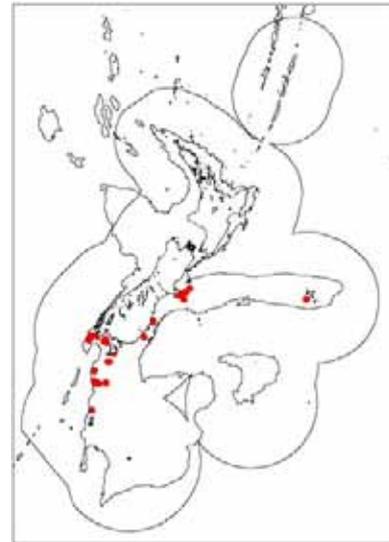
Family: 412. Labridae (wrasse)

Maori names: n.a.

Other names: n.a.

MFish reporting code: GPF

MFish research code: GPF



Distinguishing features: Adults with a narrow vertical blackish band in the middle of the body from the dorsal fin to the belly.

Colour: Adults with a narrow vertical blackish band in the middle of the body from the dorsal fin to the belly. Rest of upper body and head pale brown, paler below. Whitish lower jaw, throat and pectoral fin base. Juveniles with a narrow vertical pale band in the middle of the body.

Size: To about 33 cm TL.

Distribution: Restricted to New Zealand. Mostly central and southern areas including South, Chatham, Auckland, and Campbell Islands, with a few records from further north, e.g., Three Kings Islands.

Depth: 0 to 250 m.

Similar species: Other wrasses lack the narrow dark vertical band in the middle of the 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., the larger individuals are likely to be males. Feed during the day on small invertebrates.

References

Anderson et al. (1998), Francis (2001).

Banded wrasse

Notolabrus fucicola

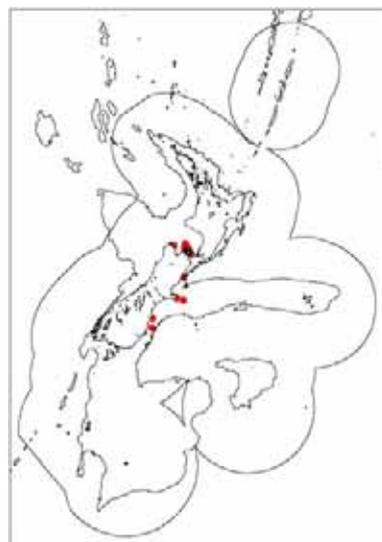
Family: 412. Labridae (wrasse)

Maori names: n.a.

Other names: n.a.

MFish reporting code: BPF

MFish research code: BPF



Distinguishing features: Four yellowish or cream saddles on the back below dorsal fin, with pale bands extending up onto the fin. Fifth yellowish or cream saddle on the back just behind dorsal fin. Anal fin with two yellowish or cream bands. Yellowish or cream blotch on the nape above the top of the operculum.

Colour: Adults greenish or greyish-brown with 4 yellowish or cream saddles on the back extending up onto dorsal fin. A fifth cream saddle just behind dorsal fin. Yellowish or cream blotch on nape above top of operculum. Juveniles yellowish-green or brown with a series of 6 yellowish blotches on the back.

Size: To about 38 cm TL.

Distribution: Widespread in near-shore New Zealand from Three Kings to Snares Islands and Chatham Islands. Southern Australia (NSW, Vic, Tas, SA).

Depth: 0 to 50 m.

Similar species: Other wrasses lack the series of pale bands on the 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. Do not appear to change sex like other wrasses. Feed during the day on small fishes and invertebrates.

References

Anderson et al. (1998), Francis (2001), Gomon et al. (2008).

Scarlet wrasse

Pseudolabrus miles

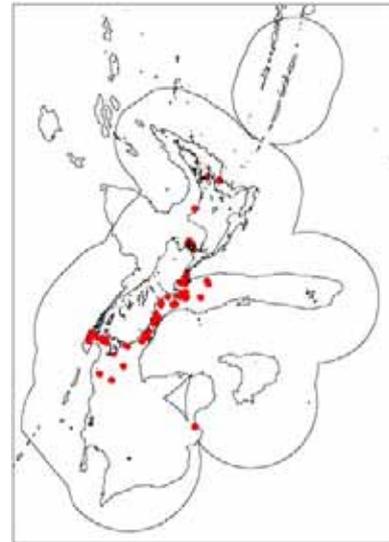
Family: 412. Labridae (wrasses)

Maori names: n.a.

Other names: Red soldierfish

MFish reporting code: SPF

MFish research code: SPF



Distinguishing features: Reddish-brown to black vertical band on the base of the 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 TL.

Distribution: Near-shore from Three Kings to Snares and also Chatham Islands. Known only from New Zealand.

Depth: 0 to 200 m.

Similar species: Other wrasses lack the dark vertical band on the base of the 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., the larger individuals are likely to be males. Feed during the day on small invertebrates.

References

Anderson et al. (1998), Francis (2001).

Butterfish

Odax pullus

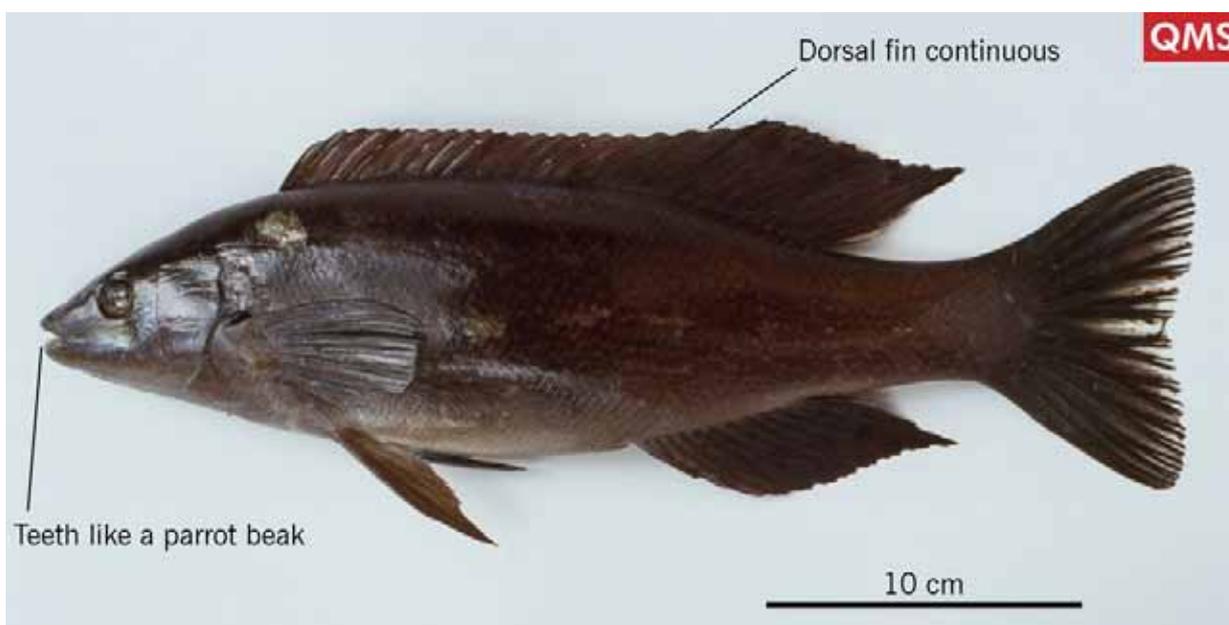
Family: 413. Odacidae (ales)

Maori names: Koaea, marari, tarao

Other names: n.a.

MFish reporting code: BUT

MFish research code: BUT



Distinguishing features: Jaw teeth parrot-like. Dorsal fin continuous. Scales small with 68 to 87 along the lateral line.

Colour: Adult females brown, olive-green or dark green above and paler below with a series of silver blotches running along the body. Adult males are dark olive-green to blue-black above, paler below. Juveniles have golden-yellow body and a series of silver blotches running along the body.

Size: To about 70 cm FL.

Distribution: Widespread from Cape Reinga to Snares Islands, and also Chatham, Antipodes, and Bounty Islands. Known only from New Zealand.

Depth: 0 to 40 m.

Similar species: Adults of the very rare blue-finned butterfish (*Odax cyanoallix*), known only from northeast of the North Island and the Three Kings Islands, have blue head stripes and blue fin margins, about three series of silver blotches running along the body, the upper series on or near the base of the dorsal fins, the middle series from the top rear corner of the gill cover to the caudal peduncle, and the lower series just above mid-body. Scales are smaller with 56 to 60 in the lateral line.

Biology & ecology: Inshore on shallow, rocky, seaweed covered reefs and are a very rare trawl catch. Adults eat brown algae and salps. Spawn July to March and may live to about 15 years.

References

Francis (2001), Paulin et al. (1989).

Patagonian toothfish

Dissostichus eleginoides

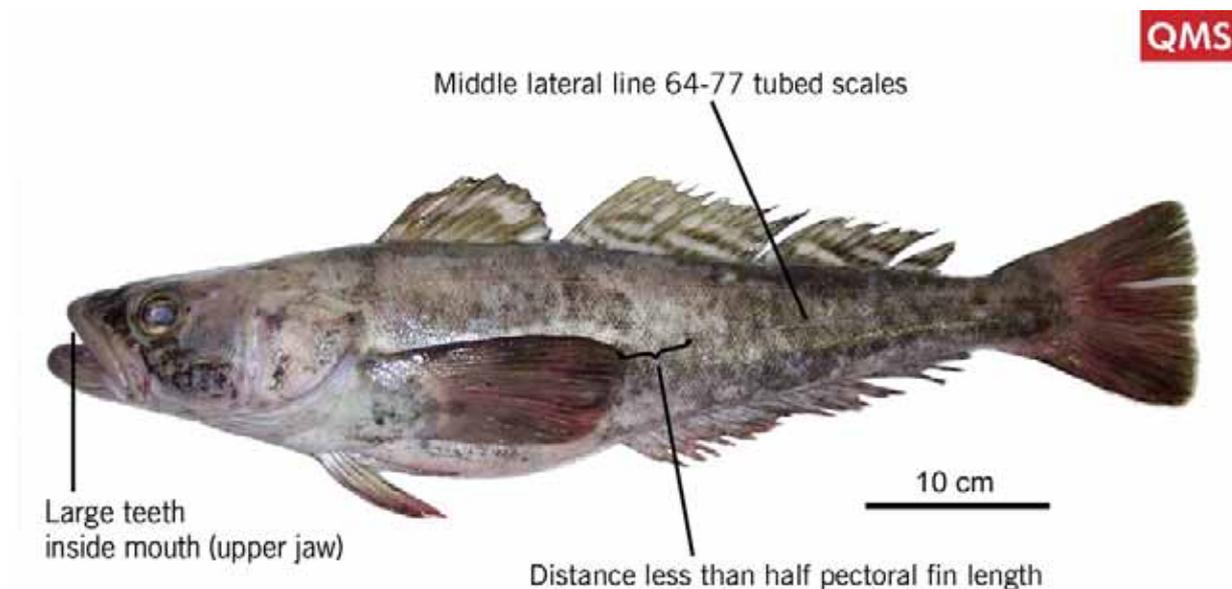
Family: 427. Nototheniidae (cod icefishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: PTO

MFish research code: PTO



Distinguishing features: Middle lateral line with 64 to 77 tubed scales, extending forward to near the rear edge of the pectoral fin and separated from it by less than about half the length of the pectoral fin. A few enlarged canine-like teeth near the middle of the upper jaw.

Colour: Large individuals are brownish-grey on the upper surface of the body with darker blotches, and pale greyish on the lower surface. Fins dark or dusky. Smaller individuals are paler with blotchy dark body marking and diagonal dark stripes on the dorsal fins, but other fins are dusky.

Size: To about 215 cm TL.

Distribution: Widespread between about 40 and 60 S in the Southern Ocean.

Depth: Down to about 2000 m.

Similar species: Antarctic toothfish (*Dissostichus mawsoni*) has a shorter middle lateral line with 35 to 48 tubed scales, teeth near middle of upper jaw not enlarged, and is known only from the 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 the upper jaw.

Biology & ecology: Demersal. Reach age of at least 50 years.

References

Dewitt et al. (1990).

Smallscaled cod

Notothenia microlepidota

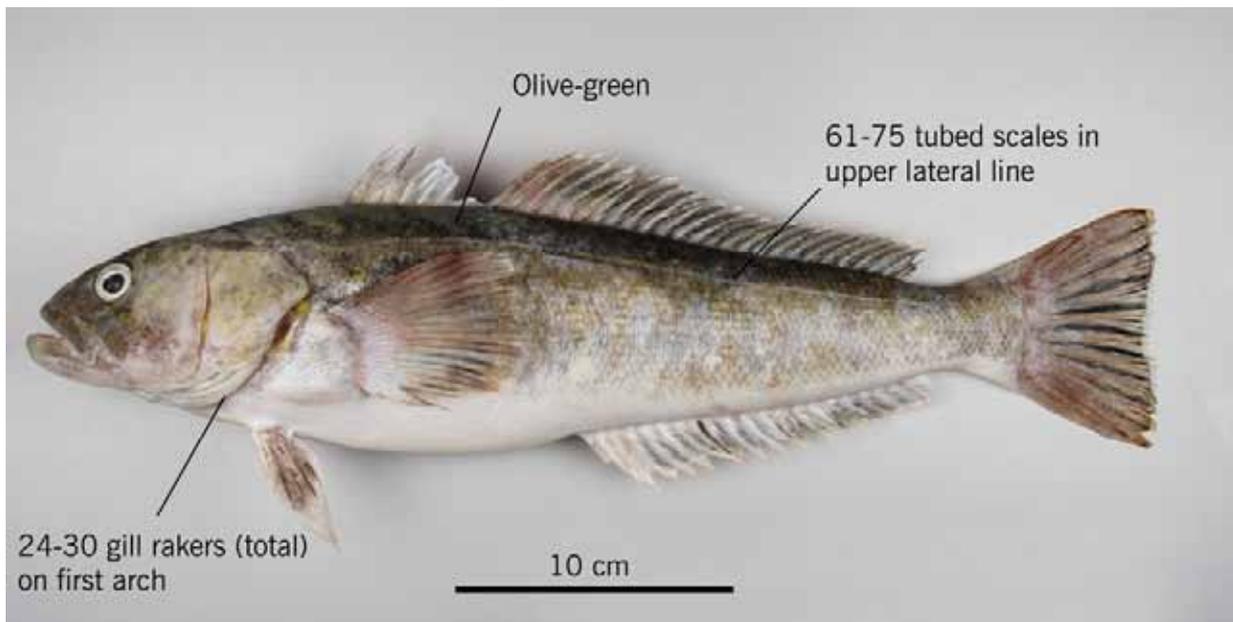
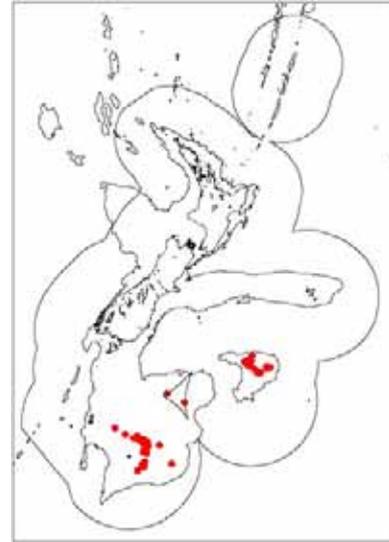
Family: 427. Nototheniidae (cod icefishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SCD

MFish research code: SCD



Distinguishing features: Long upper lateral line with 61 to 75 tubed scales running 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 a longitudinal series from the upper end of gill opening to the 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.

Distribution: Southern New Zealand including Campbell and Bounty Plateaus, and Auckland Islands. Also known from Macquarie Island.

Depth: 0 to 1000 m.

Similar species: Black cod (*Paranotothenia magellanica*) has larger scales, 47 to 64 from the 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 64 to 77 tubed scales in the middle lateral line and prominent canine-like teeth on roof of mouth.

Biology & ecology: Unknown. Has been captured in only a few metres at Campbell Island, and is also caught offshore by trawling to about 1000 m.

References

Anderson et al. (1998), DeWitt (1970), Francis (2001).

Blue cod

Parapercis colias

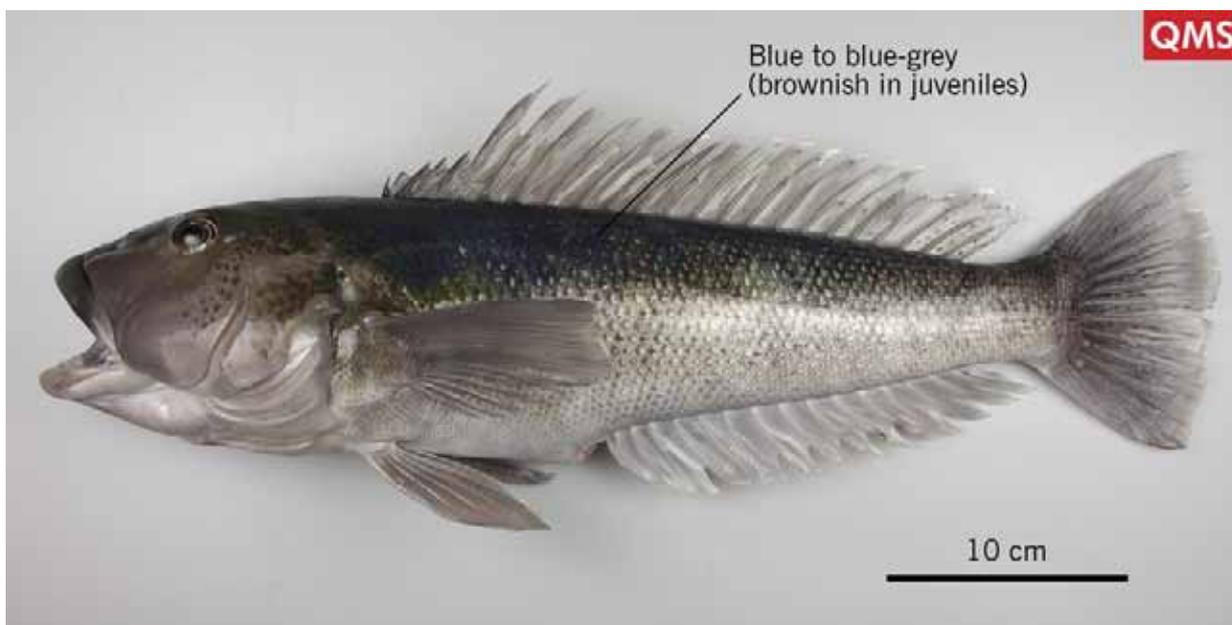
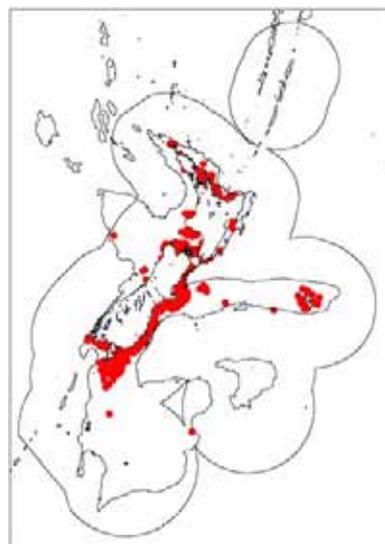
Family: 435. Pinguipedidae (sandperches)

Maori names: Raawaru, pakirikiri, patutuki

Other names: n.a.

MFish reporting code: BCO

MFish research code: BCO



Distinguishing features: Blue-grey above and whitish below in large individuals. Smaller individuals with broken narrow whitish line running along the upper body. 20 dorsal fin soft rays and 17 anal fin soft rays.

Colour: Large adults blue-grey above often with a greenish tinge and whitish below. Smaller fish have a broken narrow whitish line running along the upper body. Very small individuals have two continuous dark brown lines running along the upper body, separated by a narrow cream line.

Size: To at least 60 cm TL.

Distribution: Widespread from Ninety Mile Beach to the southern edge of the Stewart/Snares shelf, including Mernoo Bank and Chatham Islands. Known only from New Zealand.

Depth: 0 to 200 m.

Similar species: Yellow cod (*Parapercis gilliesi*) has a yellowish-tan body with two horizontal rows of dark brown blotches and yellow fins, 21 dorsal fin soft rays, and 18 anal fin soft rays.

Biology & ecology: Demersal and usually found in sandy areas adjacent to reefs. Spawn late winter to early summer. May live to about 20 years.

References

Anderson et al. (1998), Francis (2001), Roberts (1998).

Yellow cod

Parapercis gilliesi

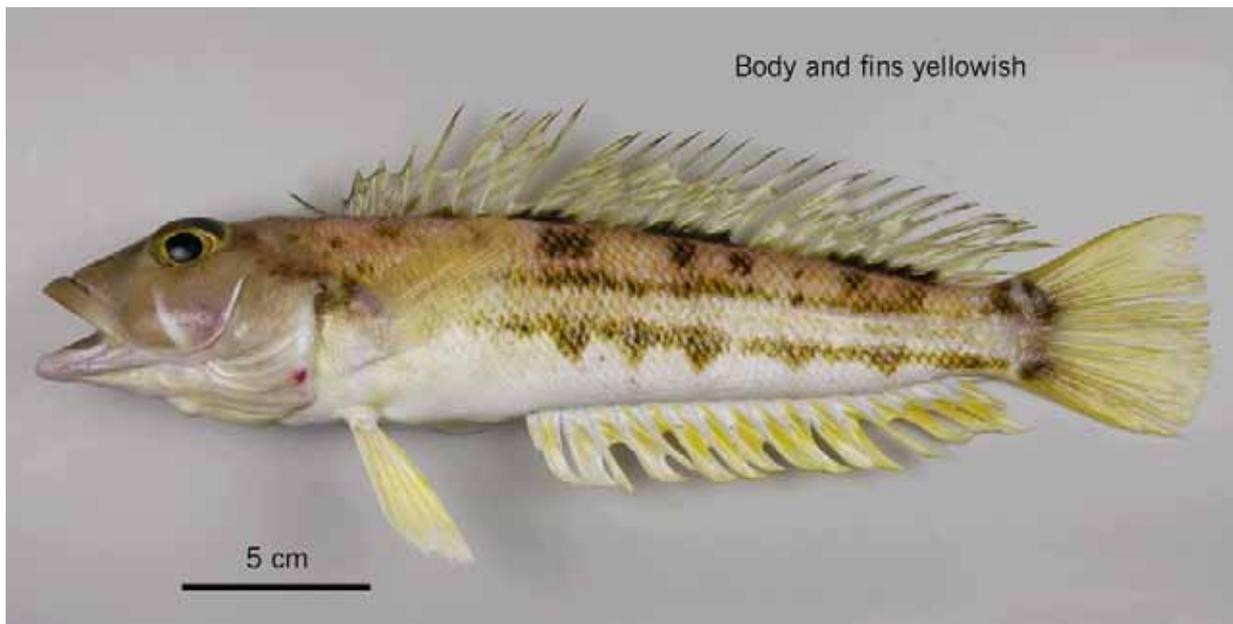
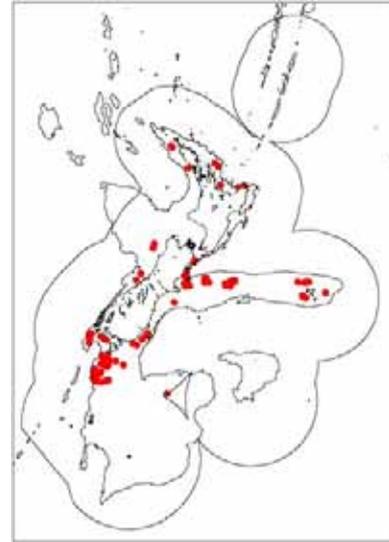
Family: 435. Pinguipedidae (sandperches)

Maori names: n.a.

Other names: Yellow weever

MFish reporting code: YCO

MFish research code: YCO



Distinguishing features: Yellowish-tan body with 2 horizontal rows of dark brown blotches and yellow fins. Usually 5 spines in the dorsal fin followed by 21 soft rays, and 18 anal fin soft rays.

Colour: Yellowish-tan upper body and side with 2 horizontal rows of dark brown blotches, whitish below, and yellow fins.

Size: To about 35 cm TL.

Distribution: Widespread in New Zealand from Ninety Mile Beach to the southern edge of the Stewart/Snares shelf. Known only from New Zealand.

Depth: 50 to 400 m.

Similar species: Blue cod (*Parapercis colias*) has bluish-grey or pale fins (bright yellow pectoral, pelvic, anal, and caudal fins in yellow cod), 20 dorsal fin soft rays and 17 anal fin soft rays. The rare redbanded weever (*Parapercis binivirgata*) from 100 to 300 m in northern New Zealand has a series of 13 to 14 dark red-brown vertical bars arranged in pairs along the body, yellow fins, 22 to 23 dorsal fin soft rays and 20 anal fin soft rays.

Biology & ecology: Demersal. Usually found in sandy areas adjacent to reefs.

References

Anderson et al. (1998), Francis (2001), Roberts (1998).

Opalfishes

Hemerocoetes spp.

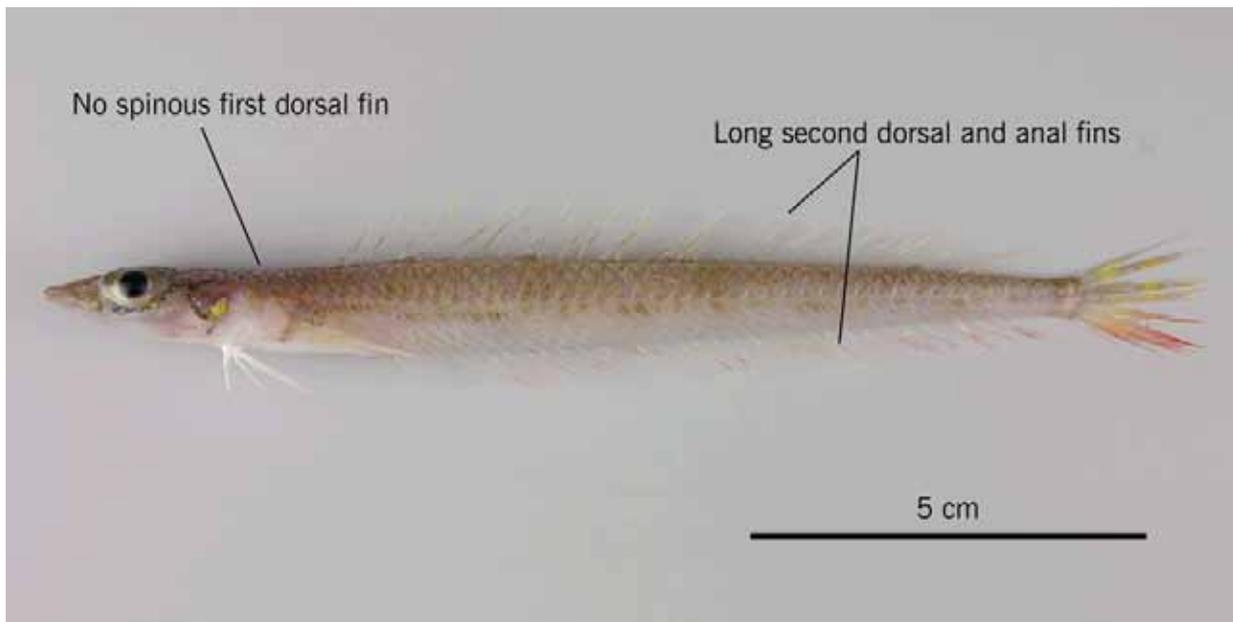
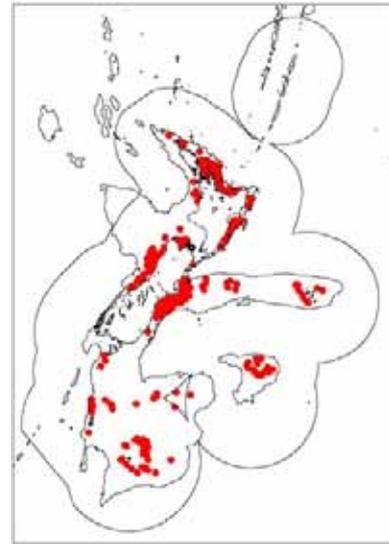
Family: 439. Percophidae (duckbills)

Maori names: n.a.

Other names: n.a.

MFish reporting code: OPA

MFish research 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 the 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 the fins, head, and body, hence the name opalfishes.

Size: To about 23 cm TL depending on the species.

Distribution: The most common species, *H. monopterygius*, is found from North Cape to Stewart Island and Chatham Islands at 4 to 178 m. Four other species (*H. morelandi*, *H. pauciradiatus*, *H. artus*, *H. macrophthalmus*) have discreet geographical and depth distributions around New Zealand. Known only from New Zealand.

Depth: 4 to about 550 m depending on the species.

Similar species: Very small (to about 8 cm TL) and rarely seen sandburrowers (Family Creediidae) have a knob on the inside tip of the lower jaw, small cirri (filaments) on the lower jaw, and a lateral line that descends to near the ventral body.

Biology & ecology: Demersal.

References

Anderson et al. (1998), Nelson (1979), Paulin et al. (1989).

Spotted stargazer

Genyagnus monoptygius

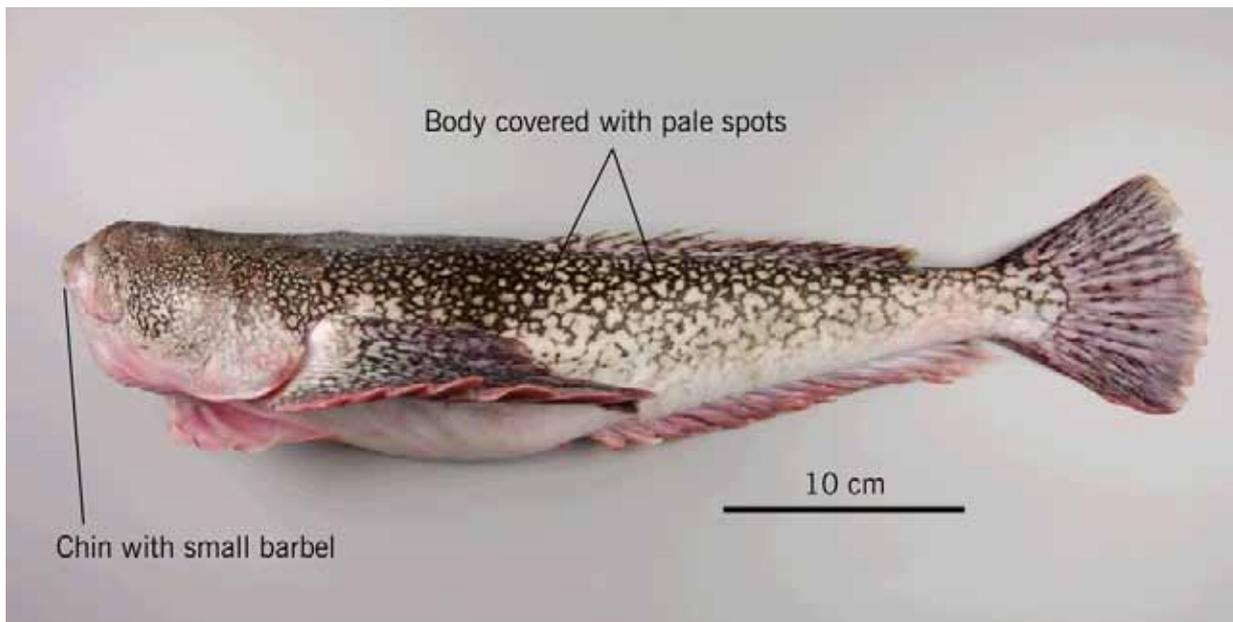
Family: 443. Uranoscopidae (stargazers)

Maori names: Kourepoua

Other names: n.a.

MFish reporting code: SPZ

MFish research code: SPZ



Distinguishing features: Upper head and body with cream spots on a brownish-green background. Small fleshy barbel on chin.

Colour: Upper head and body with cream spots on a brownish-green background. Slightly darker saddle on the 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.

Distribution: Cape Reinga to Foveaux Strait. Known only from New Zealand.

Depth: 0 to 200 m.

Similar species: Other stargazers lack the cream spots on the upper head and body and brownish-green background, and the small fleshy barbel on the chin.

Biology & ecology: Demersal in near-shore waters. Predatory. Spawn in spring or early summer.

References

Anderson et al. (1998), Francis (2001), Paulin et al. (1989).

Banded stargazer

Kathetostoma binigrasella

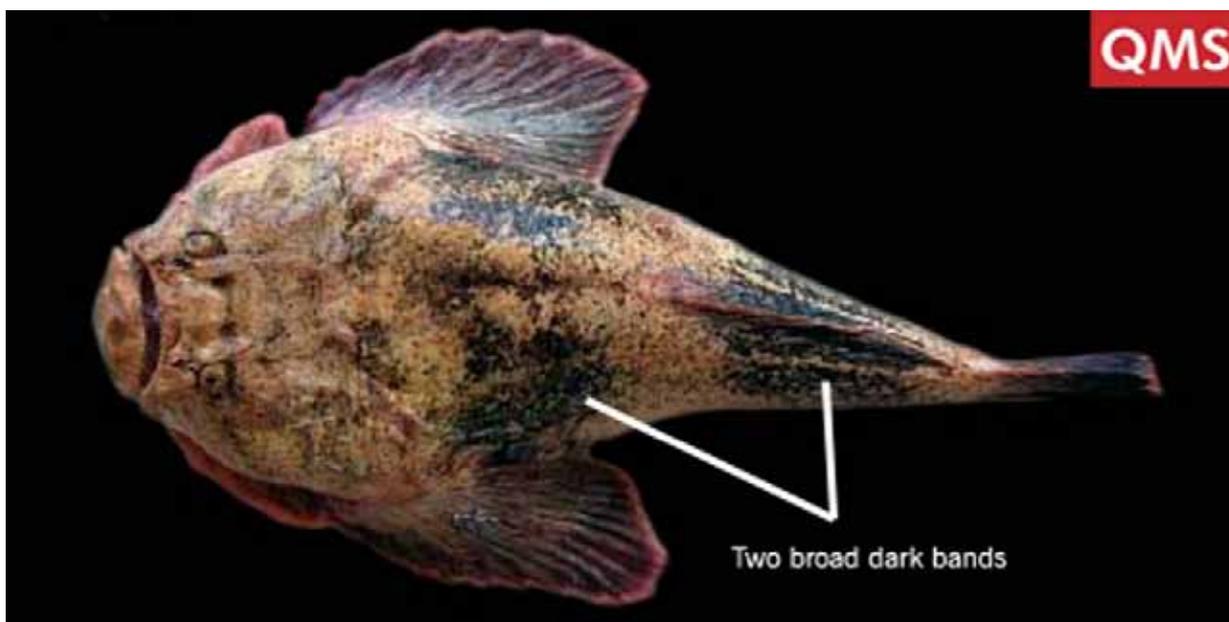
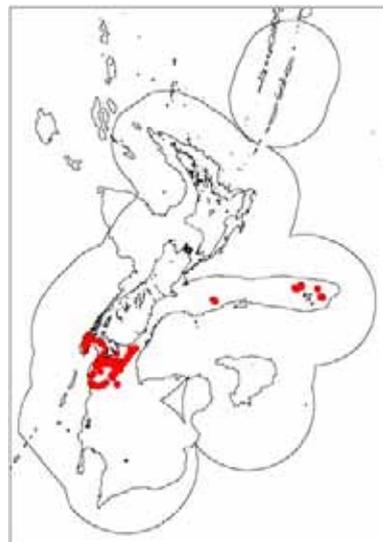
Family: 443. Uranoscopidae (stargazers)

Maori names: n.a.

Other names: n.a.

MFish reporting code: STA

MFish research 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.

Distribution: Widely distributed from the Snares Islands (48 S) in the south to the Norfolk Ridge (about 32 S) in the north. Known only from New Zealand.

Depth: 50 to 350 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: Demersal predator.

References

Anderson et al. (1998), Gomon & Roberts (2011), Paulin et al. (1989), Smith et al. (2006).

Giant stargazer

Kathetostoma giganteum

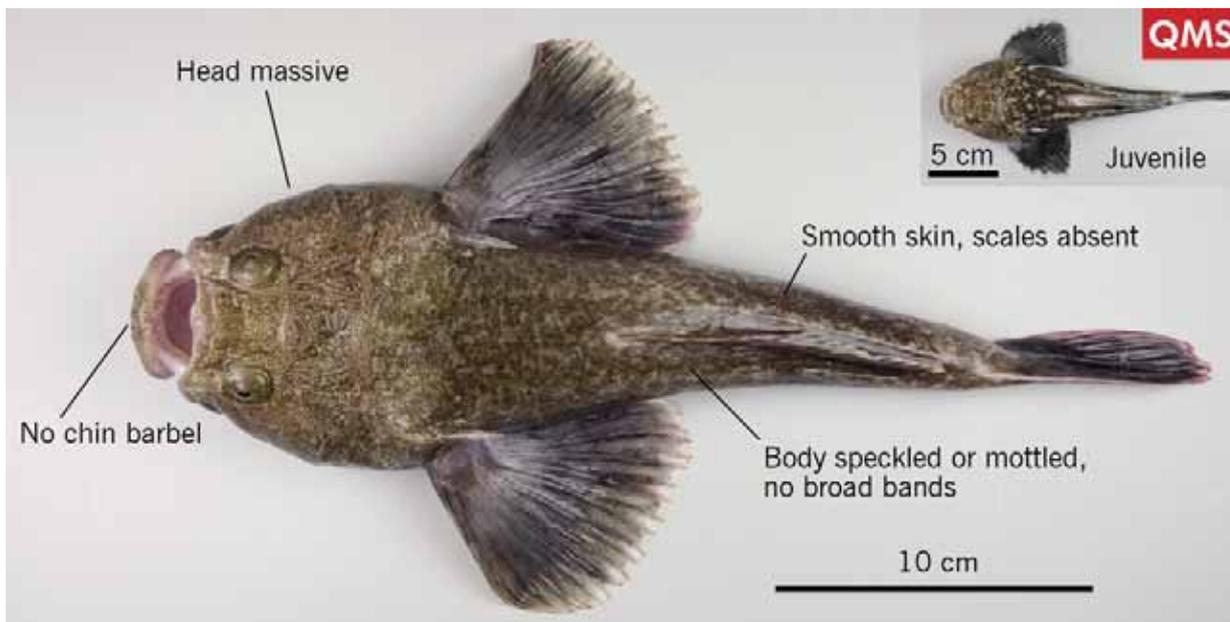
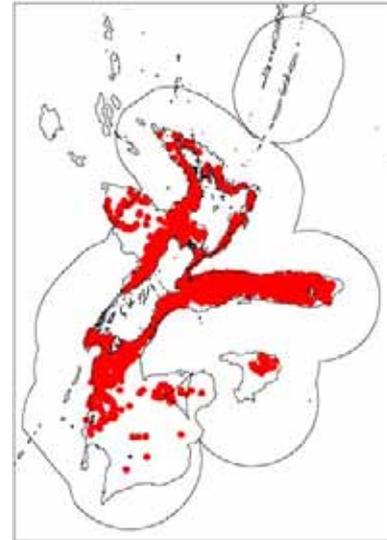
Family: 443. Uranoscopidae (stargazers)

Maori names: n.a.

Other names: Monkfish

MFish reporting code: STA

MFish research code: STA



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.

Distribution: Three Kings Islands to just south of the Auckland Islands. Known only from New Zealand.

Depth: 100 to 900 m.

Similar species: Banded stargazer (*Kathetostoma binigrasella*) has two broad dark saddle-like bands on the upper body and sides (best viewed from above), a stouter body with a wide head, about or less than three times into TL, 15 to 17 dorsal, and 14 to 16 anal fin rays.

Biology & ecology: Demersal predator.

References

Anderson et al. (1998), Gomon & Roberts (2011), Paulin et al. (1989), Smith et al. (2006).

Scaly stargazer

Pleuroscopus pseudodorsalis

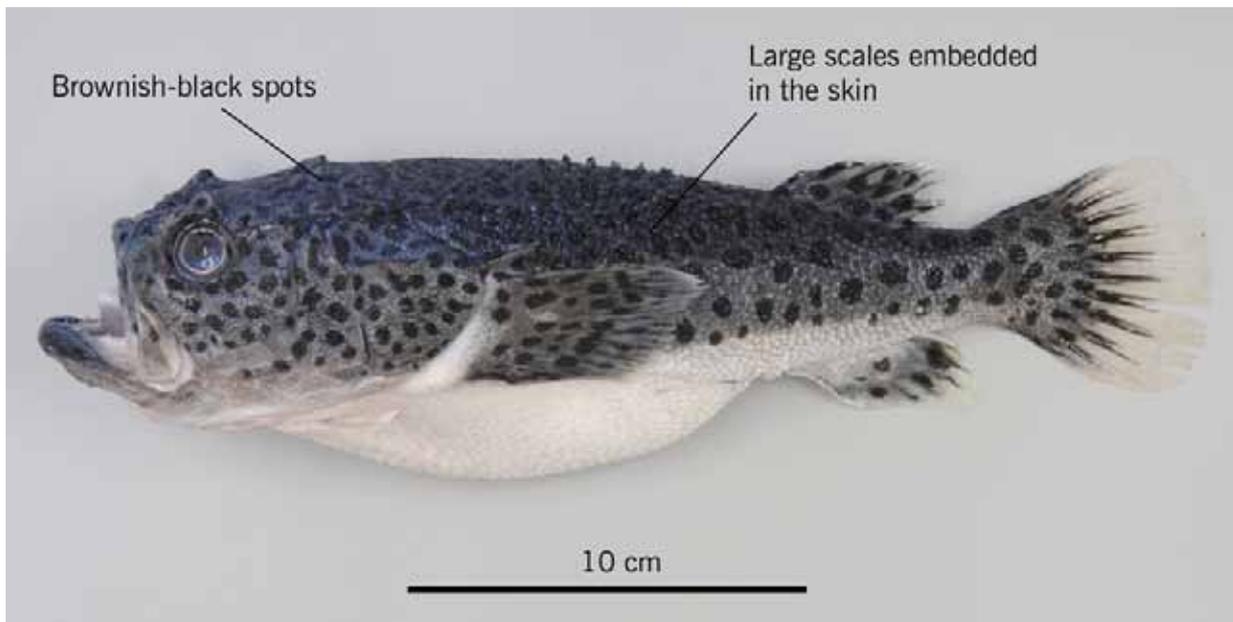
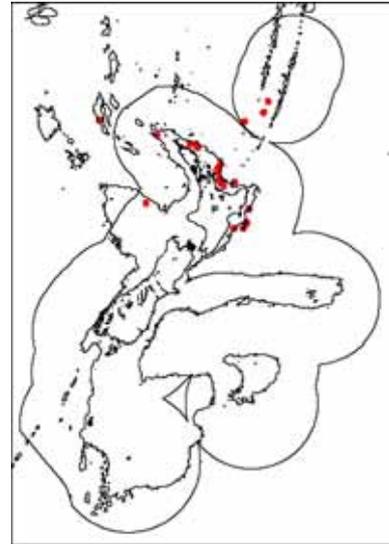
Family: 443. Uranoscopidae (stargazers)

Maori names: n.a.

Other names: n.a.

MFish reporting code: PLZ

MFish research code: PLZ



Distinguishing features: Large body scales embedded in the skin of the 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 the 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 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.

Distribution: Northern New Zealand. Southern Australia and southern Africa.

Depth: 200 to 800 m.

Similar species: Other stargazers lack large body scales embedded in the 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 the soft dorsal fin.

Biology & ecology: Small individuals live in near-surface waters, i.e., are pelagic. Larger individuals are found on the seafloor.

References

Kishimoto et al. (1988), Gomon et al. (2008), Paulin et al. (1989).

Brown stargazer

Xenocephalus armatus

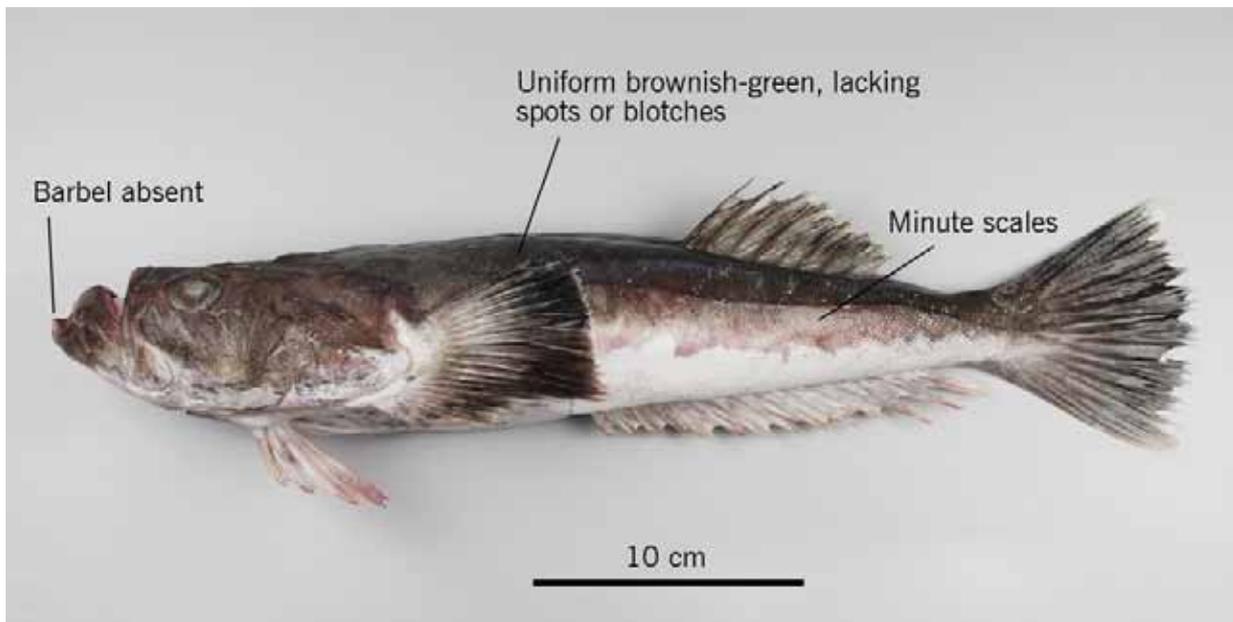
Family: 443. Uranoscopidae (stargazers)

Maori names: n.a.

Other names: n.a.

MFish reporting code: BRZ

MFish research 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. Tiny deeply embedded scales on body. Moderate sized humeral spine above pectoral fin base. Single short based dorsal fin without spines.

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 40 cm TL.

Distribution: Central and northern New Zealand. Australia (NSW, Tas).

Depth: 10 to 300 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: Demersal.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989), Springer & Bauchot (1994).

Gemfish

Rexea solandri

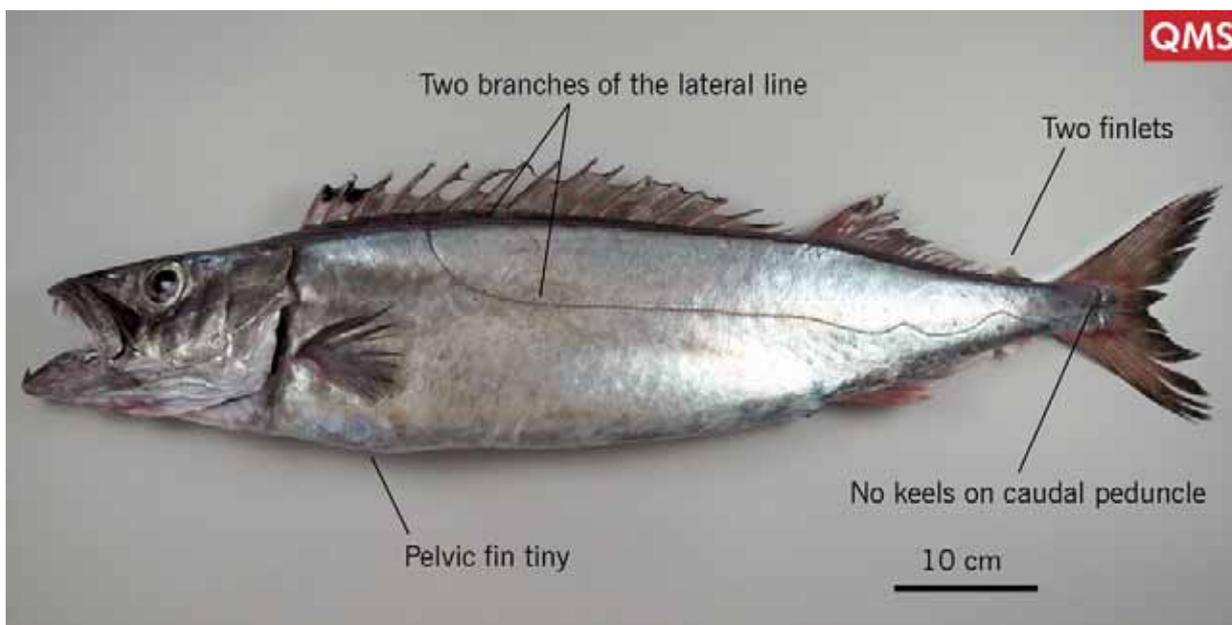
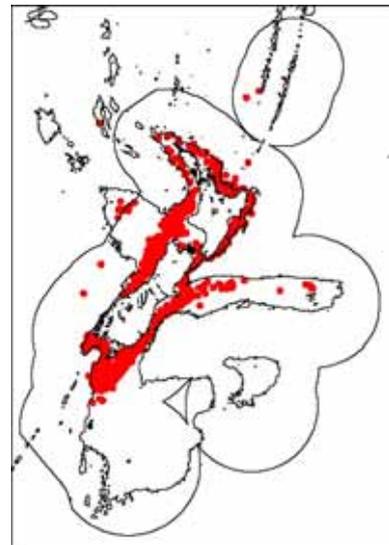
Family: 473. Gempylidae (snake mackerels)

Maori names: Tikati

Other names: n.a.

MFish reporting code: SKI

MFish research code: SKI



Distinguishing features: Long spinous and shorter soft rayed dorsal fin. Two dorsal and anal finlets behind fins. Upper jaw with 3 to 4 fang-like teeth at front. Lower jaw with 2 prominent teeth at front. Tiny pelvic fin with 1 spine and 2 to 3 soft rays. Protruding lower jaw. No keels on caudal peduncle. One lateral line branching into two at about fifth dorsal spine. Upper branch to near rear of second dorsal fin and lower branch undulates near mid-body towards caudal peduncle. Minute scales on body and rear of head.

Colour: Body iridescent blue above, silvery on side and below. Large black blotch at the front of the first dorsal fin on the upper webbing of the first two or three spines. Other fins pale or dusky.

Size: To about 135 cm FL.

Distribution: Widespread in New Zealand from Cape Reinga to the Stewart/Snares slope including shallower parts of the Chatham Rise, Chatham Islands, and possibly Challenger Plateau. Southern Australia from about Sydney (NSW) to western edge of the Great Australian Bight (WA) including Tasmania.

Depth: 50 to 600 m.

Similar species: Barracouta (*Thyrsites atun*) has a single unbranched lateral line, lacks 2 prominent teeth in the lower jaw, has a larger pelvic fin, 5 to 7 finlets behind the second dorsal fin and 6 to 7 behind the anal fin, and has black webbing between the spines of the first dorsal fin. Other smaller species of *Rexea* may occur in northern New Zealand.

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.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989).

Barracouta

Thyrsites atun

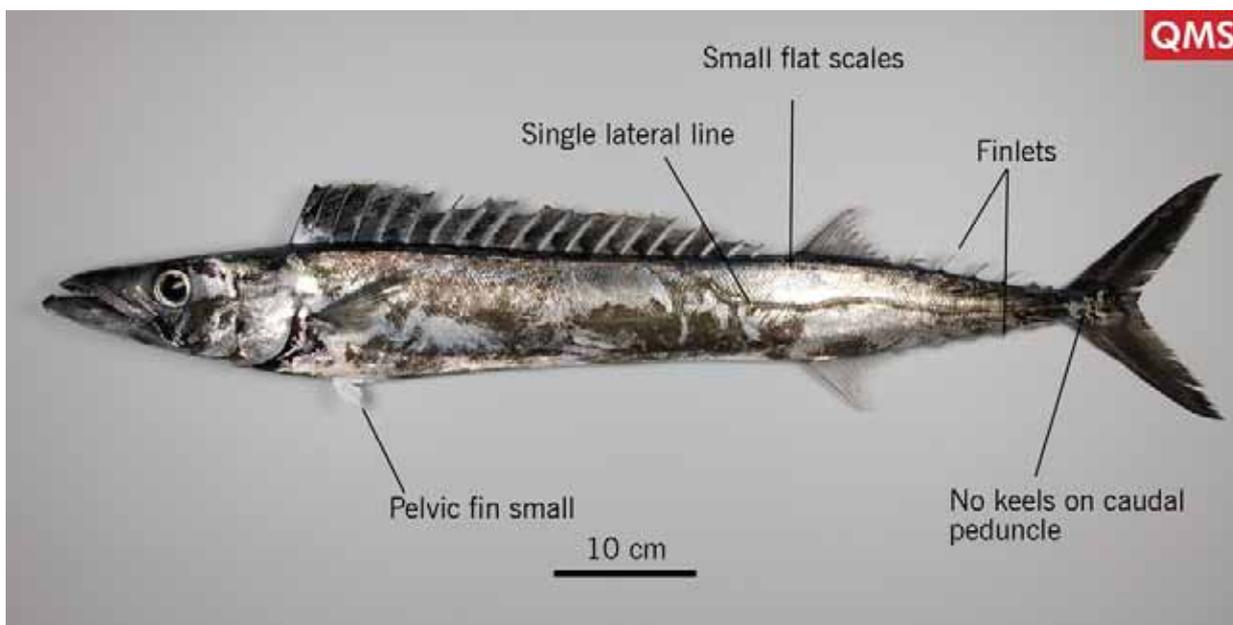
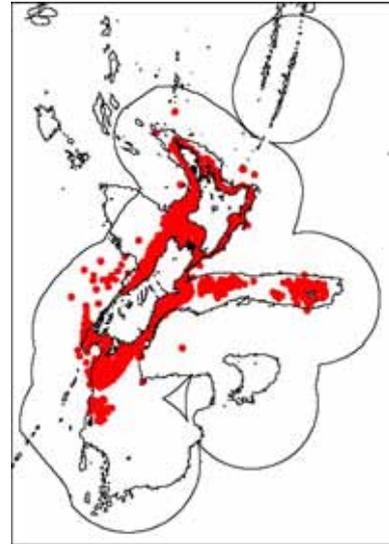
Family: 473. Gempylidae (snake mackerels)

Maori names: Mangaa, makaa

Other names: n.a.

MFish reporting code: BAR

MFish research code: BAR



Distinguishing features: Long spinous dorsal fin followed by shorter soft rayed section with separate finlets (5 to 7) at the rear. Finlets (6 to 7) also behind anal fin. Upper jaw with 3 or 4 fang-like teeth at front. Small pelvic fin with one spine and 5 soft rays. Protruding lower jaw. No fleshy keels on caudal peduncle. Single lateral line running from behind head along upper body, dropping to mid-body near rear of spinous dorsal fin. Small scales on body and most of head but often lost in the net.

Colour: Body dark silvery-blue above, silvery on side and below when fresh but more uniformly silvery after death. Webbing between spines of first dorsal fin blackish. Second dorsal, pectoral, and caudal fins dusky. Pelvic fin whitish.

Size: To about 135 cm FL.

Distribution: Widespread in New Zealand from Cape Reinga to the Auckland Islands Shelf including shallower parts of the Chatham Rise, and Chatham Islands. Widespread in the southern hemisphere including southern Australia from about Moreton Bay (Qld) round to Fremantle (WA) including Tasmania. Also South America, South Africa, and oceanic islands of these latitudes.

Depth: 0 to 400 m.

Similar species: Gemfish (*Rexea solandri*) has a branched (two part) lateral line, 2 prominent teeth in the lower jaw, a tiny pelvic fin, 2 finlets behind the second dorsal and anal fins, and has a black blotch at the front of the first dorsal fin. Black barracouta (*Nesiarchus nasutus*) has a cartilaginous projection on both jaws, lower jaw longer than upper, and a single mostly straight lateral line.

Biology & ecology: Demersal but ranges widely in the water column at times. Predator of crustaceans and small schooling fishes. Attains at least 10 years of age. Spawns late winter to summer and may migrate considerable distances to spawning grounds.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989), Stewart (1999a).

Frostfish

Lepidopus caudatus

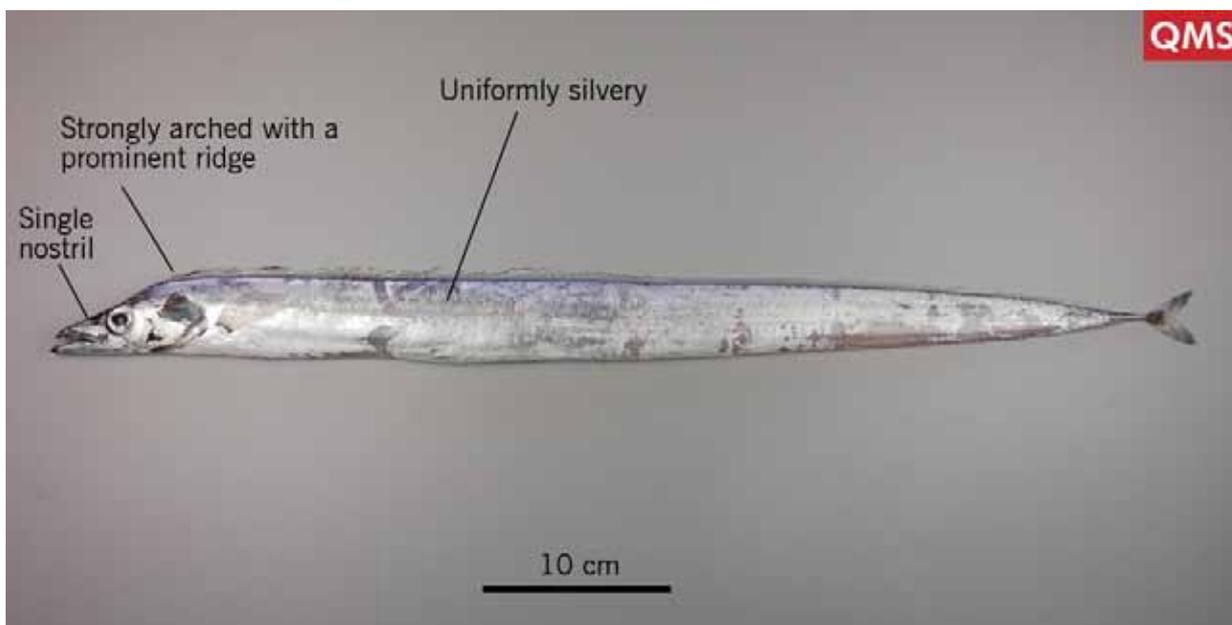
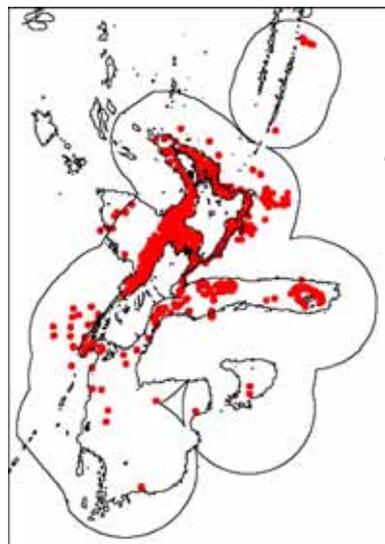
Family: 474. Trichiuridae (cutlassfishes)

Maori names: Hikau, paara, taharangi

Other names: n.a.

MFish reporting code: FRO

MFish research code: FRO



Distinguishing features: Body uniformly silvery. Very long body with small forked tail fin. Single nostril on each side of snout. Profile of head strongly arched with a prominent ridge near origin of the dorsal fin. Strong teeth in jaws, fang-like at front of upper jaw. Pelvic fin tiny. Single lateral line slightly closer to lower side near rear of body. Second (first spine tiny) anal fin spine plate-like, about half the length of the pupil. 98 to 110 dorsal fin elements (spines plus soft rays) and 59 to 66 anal fin soft rays.

Colour: Body uniformly silvery. May be black upper margin of membrane near front of first dorsal fin. Lobes of caudal fin dusky.

Size: To about 200 cm FL.

Distribution: Widespread in central and northern NZ. The few records from southern and northern NZ are uncertain and may include other species of snake mackerels (gempylids) and cutlassfishes (trichiurids). Widespread in the southern hemisphere including Australia (NSW to southern WA including Tas), South Africa including Walvis Ridge, and seamounts in the southern Indian Ocean from about 30 to 35 S. Northern hemisphere from France to Senegal in the North Atlantic Ocean and western Mediterranean.

Depth: 50 to 600 m.

Similar species: Species of *Benthodesmus* are also silvery and have a single nostril on each side of snout but head profile rises gently from tip of snout to origin of dorsal fin, i.e., not strongly arched and lacking a prominent ridge. *Benthodesmus elongatus* has 143 to 152 and *B. tenuis* 118 to 128 dorsal fin elements (spines plus soft rays) and both species are more slender and smaller (less than 100 cm FL) than frostfish. Snake mackerels (gempylids) have a 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.

References

Gomon et al. (2008), Nakamura & Parin (1993), Stewart (1996).

Slender tuna

Allothunnus fallai

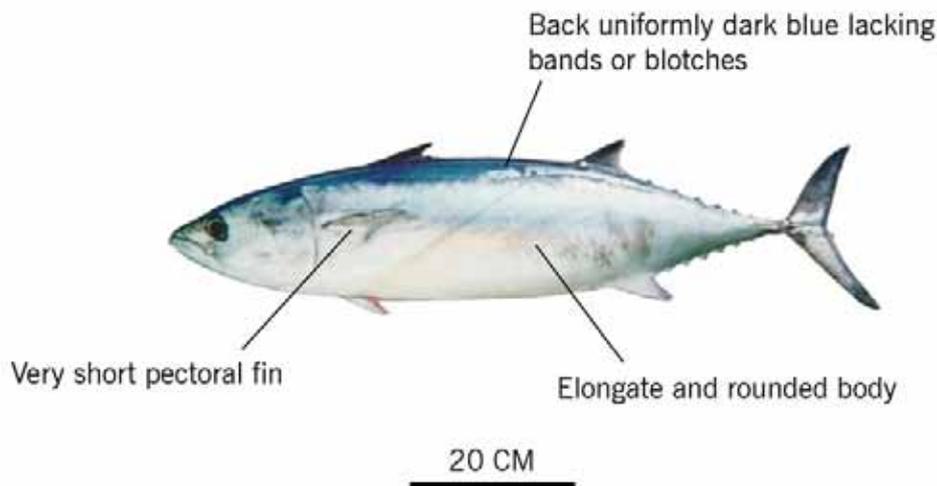
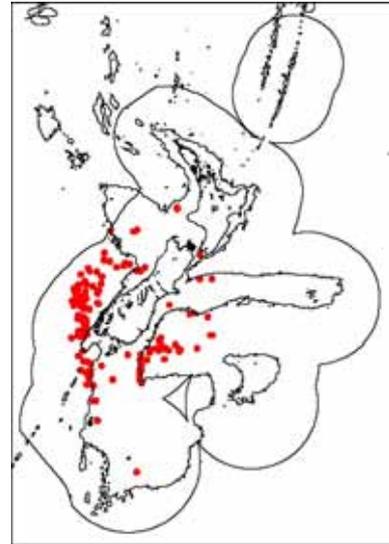
Family: 475. Scombridae (mackerels, tunas)

Maori names: n.a.

Other names: n.a.

MFish reporting code: STU

MFish research 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. Back uniformly dark blue, lacking dark bands or blotches.

Colour: Back uniformly dark blue, lacking dark bands or blotches, lower sides and belly silvery white.

Size: To 94 cm FL in New Zealand, maximum recorded 96 cm FL.

Distribution: Around the South Island and the subantarctic. Circumglobal in the Southern Ocean between 20 and 50 S.

Depth: To about 200 m.

Similar species: No other tuna has the combination of slender elongated body, dark blue upper surface, very short pectoral fin, and high number of gill rakers.

Biology & ecology: Pelagic, usually in the open ocean.

References

Bagley et al. (2000), Chapman et al. (2006), Collette & Nauen (1983), Paul (2000), Yatsu (1995a, 1995b).

Blue mackerel

Scomber australasicus

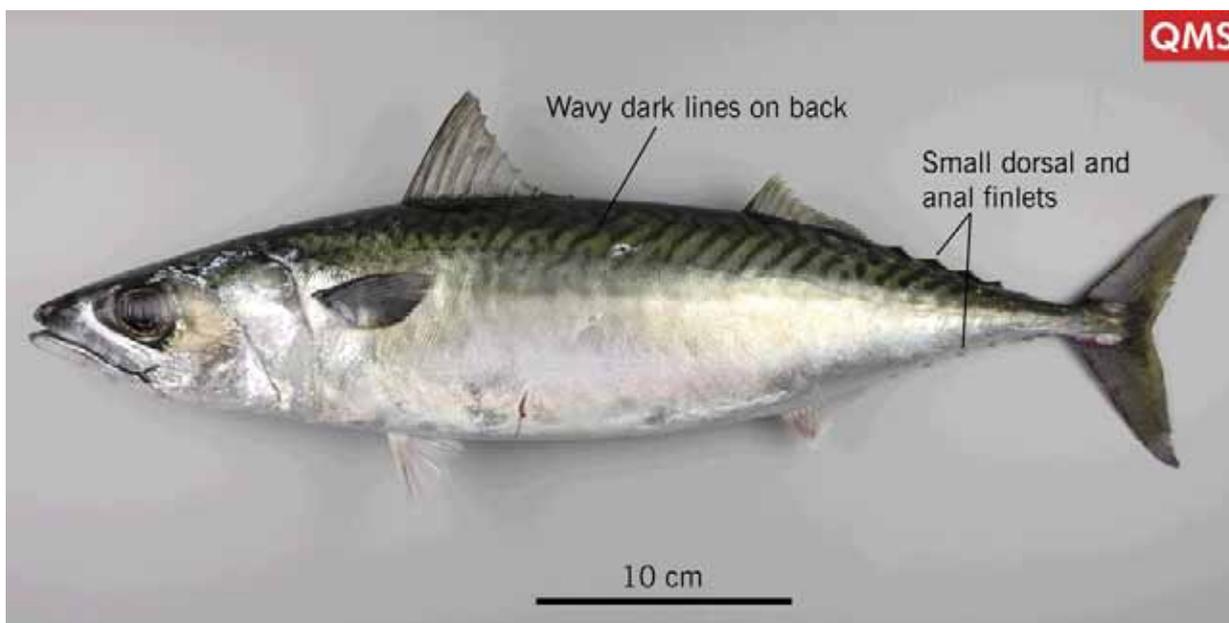
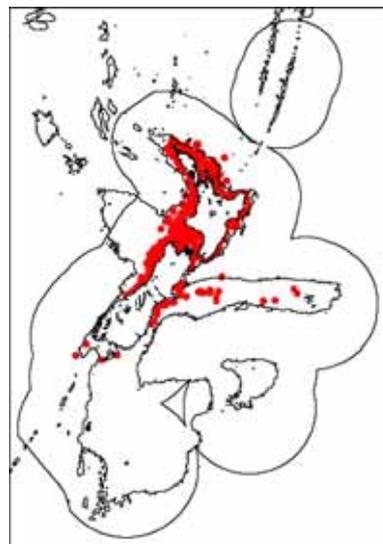
Family: 475. Scombridae (mackerels, tunas)

Maori names: Tawatawa

Other names: English mackerel, Pacific mackerel

MFish reporting code: EMA

MFish research code: EMA



Distinguishing features: Small tuna-like species, with distinctive pattern of wavy dark lines across the back, and lighter coloured markings along the sides and belly. Five small dorsal and anal finlets in front of tail fin.

Colour: Body mid to dark blue-green above with many dark wavy lines, sides and belly silvery-white with lighter dots and bars.

Size: To about 55 cm FL.

Distribution: Present around New Zealand but uncommon in southern areas. Also Australia, Japan, China, Hawaii, Mexico, India, Red Sea.

Depth: 0 to 150 m.

Similar species: Jack mackerel species (*Trachurus* spp.) have enlarged scales (scutes) along the lateral line, no wavy dark bars on the upper body, and 2 stout anal fin spines. Frigate tuna (*Auxis thazard*) have 15 or more narrow, oblique to nearly horizontal, dark wavy lines in the scaleless area above the lateral line, 8 finlets behind the second dorsal fin, and 7 finlets behind the anal fin.

Biology & ecology: Pelagic over the continental shelf.

References

Carpenter & Niem (1999), Hirt-Chabbert (2006), May & Maxwell (1986), Paul (2000), Paulin et al. (1989).

Southern bluefin tuna

Thunnus maccoyii

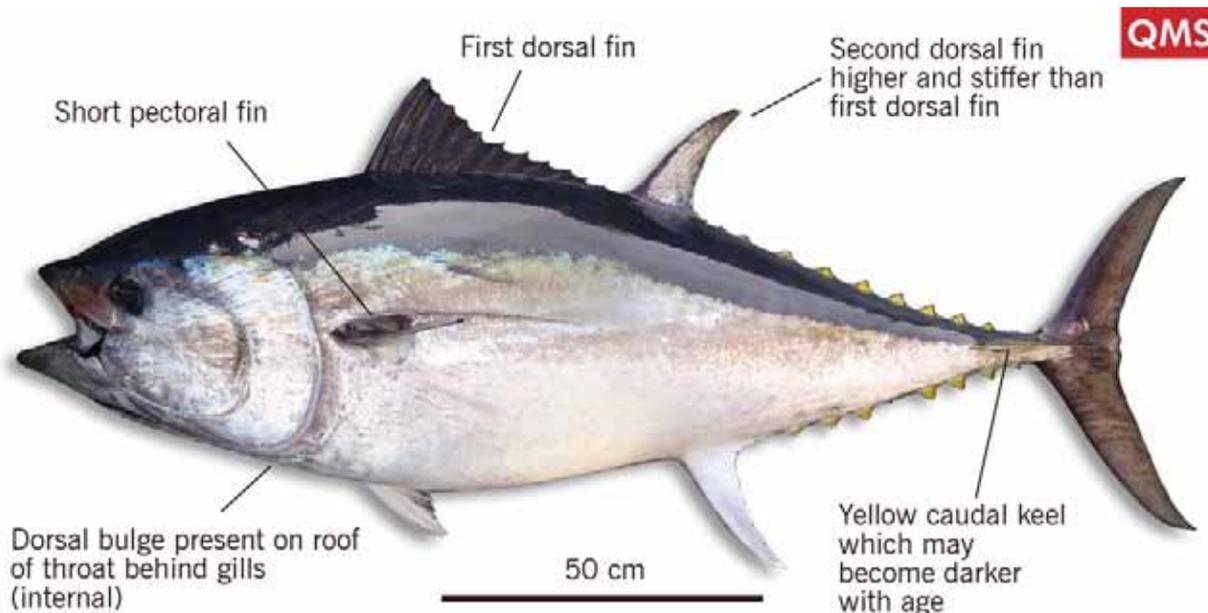
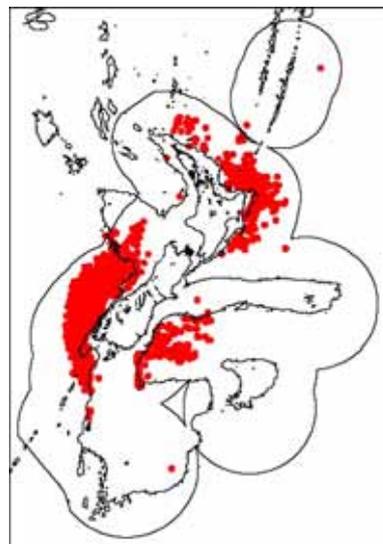
Family: 475. Scombridae (mackerels, tunas)

Maori names: n.a.

Other names: Bluefin, southern bluefin

MFish reporting code: STN

MFish research code: STN



Distinguishing features: Large species. 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 the roof of the throat (dorsal bulge) behind the gills which may only be obvious when the gills are removed.

Colour: Bluish-black above and silvery-white below, yellow finlets, caudal keel usually yellow but can become dark with age.

Size: To 215 cm FL in New Zealand, maximum recorded 225 cm FL.

Distribution: Around the South Island and east coast of the North Island, with few fish north of 34 S. Elsewhere found in the Southern Ocean usually south of 30 S.

Depth: Mostly 0 to 40 m with dawn and dusk dives and occasional deep dives to 800 m (or more).

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 the continental shelf in New Zealand. Young fish are caught over the continental shelf in Australia.

References

Bagley et al. (2000), Chapman et al. (2006), Collette & Nauen (1983), Davis & Stanley (2002), Evans & Patterson (2007), Griggs (2000), Gunn et al. (2006), Murray et al. (1999), Smith & Griggs (2000), Smith et al. (2001), Willis & Hobday (2007).

Swordfish

Xiphias gladius

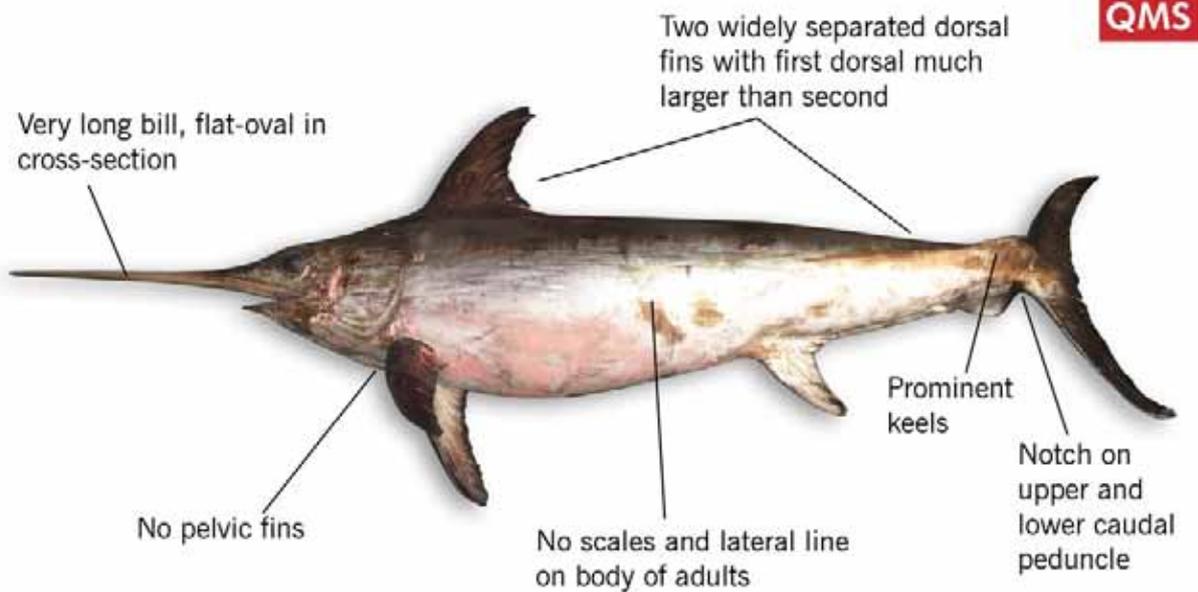
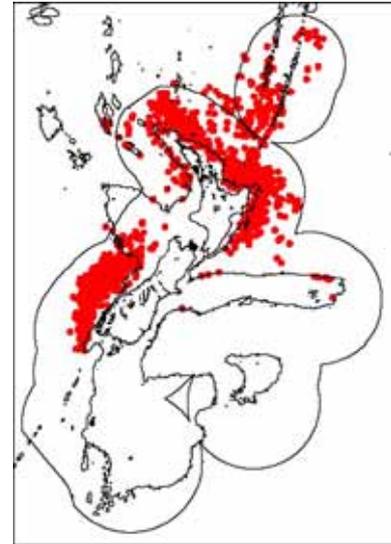
Family: 476. Xiphiidae (swordfishes)

Maori names: Paea

Other names: Broadbill swordfish, broadbill

MFish reporting code: SWO

MFish research code: SWO



Distinguishing features: Upper jaw prolonged into a long bill, flat-oval in cross section. Two widely separated dorsal fins with the first much larger than the second in adults. No pelvic fins. Prominent caudal keel. Notch on upper and lower caudal peduncle. Juveniles less than about 130 cm FL have scales, teeth, a lateral line, and a continuous dorsal fin. Teeth and lateral line disappear with growth.

Colour: Blackish-brown above, paler brown-white below, with blackish-brown fins.

Size: To 330 cm FL in New Zealand, maximum at least 500 cm.

Distribution: Widespread in New Zealand but probably more abundant north of about 43° S. Worldwide in tropical, temperate and sometimes cold waters of all oceans.

Depth: 0 to 900 m. Near the surface during the night and deeper during the day, with occasional deep dives possibly to 1000 m.

Similar species: Marlins have shorter bills that are round in cross section, and have pelvic fins.

Biology & ecology: Pelagic, usually found in surface waters warmer than 13°C, but tolerate 5 to 27°C. Highly migratory species, able to undergo long distance migrations. Usually caught beyond the continental shelf.

References

Bagley et al. (2000), Chapman et al. (2006), Murray et al. (1999), Nakamura (1985), Paul (2000), Takahashi et al. (2003).

Rudderfish

Centrolophus niger

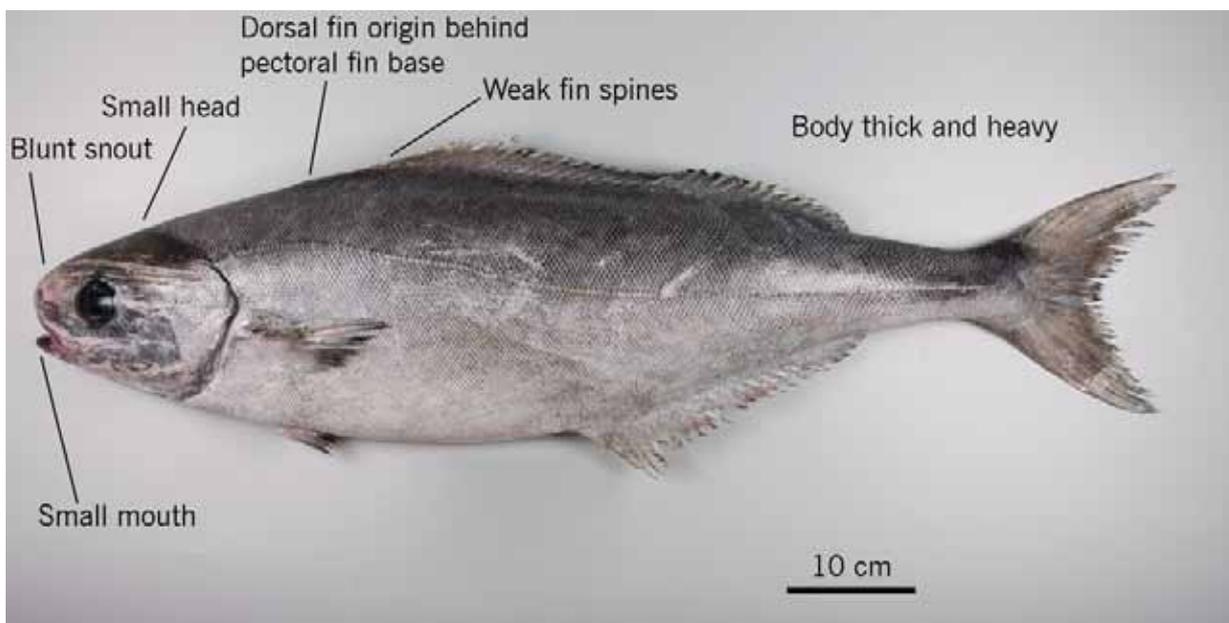
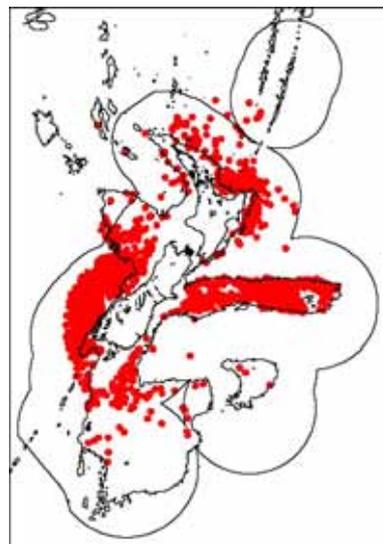
Family: 479. Centrolophidae (medusafishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: RUD

MFish research 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 the pectoral fin bases, and very small pelvic fins. Scales absent on the upper head from the tip of the snout to about the rear edge of the eyes and from the pre-operculum.

Colour: Adults mid to dark brown, paler below. Juveniles have two broad dark vertical bands on the body.

Size: To about 130 cm FL.

Distribution: Throughout New Zealand including the Kermadec region, Chatham Rise and the Subantarctic. Found in the Southern Ocean from South Africa to South America, and in the Mediterranean and northern Atlantic Ocean.

Depth: To about 900 m.

Similar species: Tasmanian ruffe (*Tubbia tasmanica*), has the dorsal origin over the pectoral fin base and has numerous oblique rows of pores below the dorsal fin and above the anal fin. Ragfish (*Pseudoicichthys australis*) has a less stout body and a short snout. Gempylids have enlarged fangs in the jaws, strong fin spines, and larger pelvic fins.

Biology & ecology: Pelagic, in temperate waters.

References

Bagley et al. (2000), Francis et al. (1999), Paul (2000), Paulin et al. (1989), Stewart (1999c).

Bluenose

Hyperoglyphe antarctica

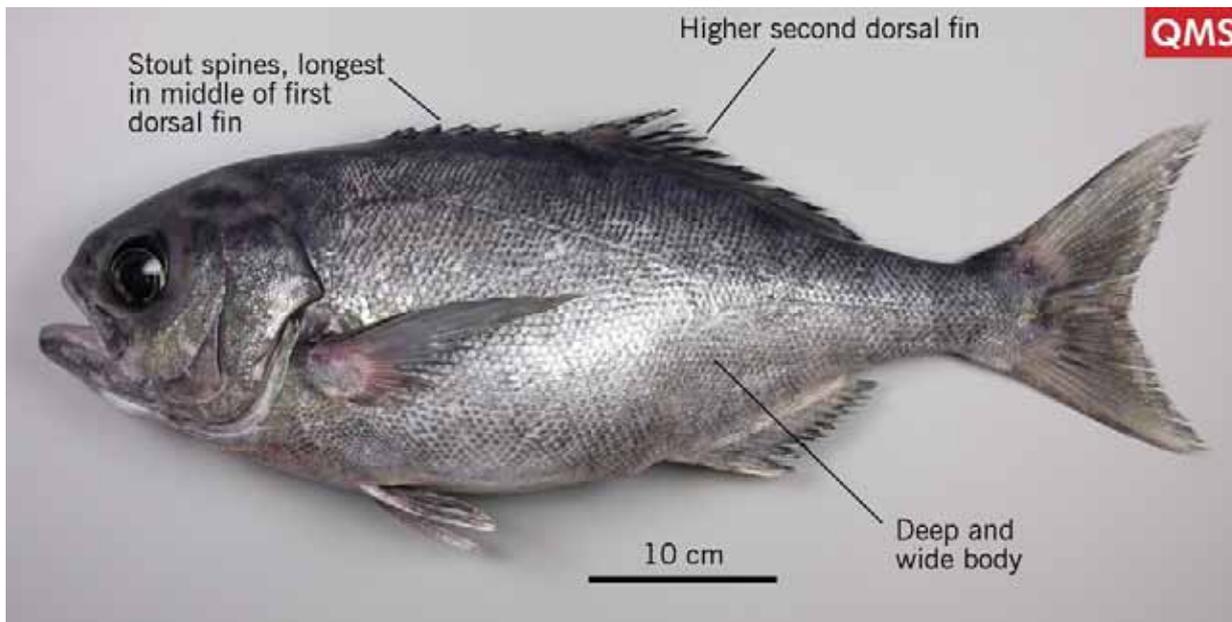
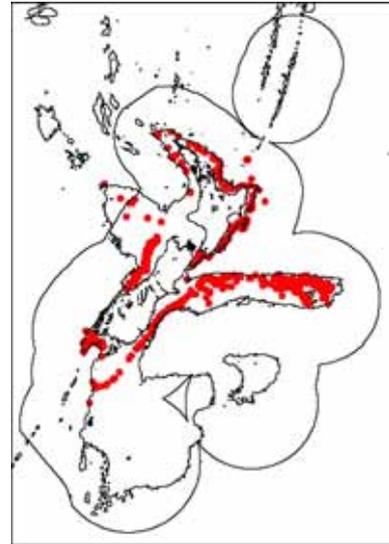
Family: 479. Centrolophidae (medusafishes)

Maori names: Matiri

Other names: n.a.

MFish reporting code: BNS

MFish research code: BNS



Distinguishing features: Two dorsal fins, the first low with 8 to 9 stout spines, scarcely separated from the second soft dorsal which is much higher and has 18 to 21 rays. The middle spines in the first dorsal fin are longer than the others. Nape scaleless except for a small ovate patch of scales on each side above and behind the eye. Anal fin with 13 to 16 soft rays. Deep and wide body. Lateral line arched just behind the head then curves down to reach the midline of the body at about the middle of the anal fin.

Colour: Dark greyish-blue above and more greyish-silvery on the sides and belly. Fins all greyish, paler below.

Size: To at least 137 cm FL.

Distribution: Widespread in New Zealand from north of Cape Reinga to the southern edge of the Stewart/Snares Shelf, and Chatham Rise. Widespread in the southern hemisphere including southern Australia (NSW, Tas), South Africa, Tristan de Cunha.

Depth: 200 to 800 m.

Similar species: Species of *Seriolella* have at least 25 second dorsal fin soft rays and 19 anal fin soft rays. Silver warehou (*S. punctata*) and common warehou (*S. brama*) have dark blotches above pectoral fin base. White warehou (*S. caerulea*) is paler than bluenose, with an undulating lateral line. Ocean blue-eye (*Schedophilus labyrinthicus*) is rarer and 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 probably live at near-surface depths for about two years (to about 47 cm FL) then recruit to near the seafloor. Attain ages of at least 60 years. No distinct spawning grounds known. Probably spawn mid-late summer.

References

Anderson et al. (1998), Gomon et al. (2008), McDowall (1982), Stewart & Roberts (2004).

Ragfish

Pseudoicichthys australis

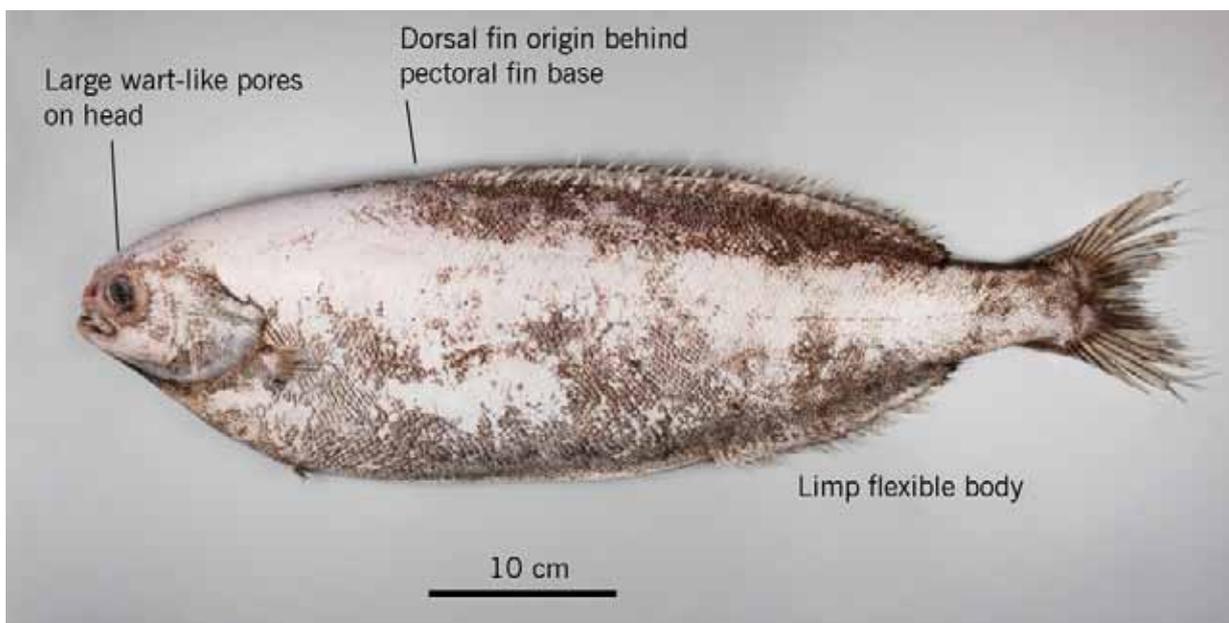
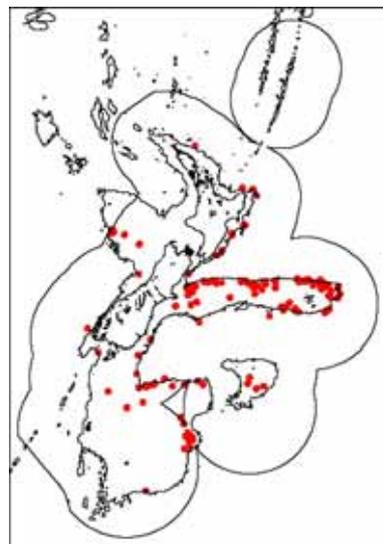
Family: 479. Centrolophidae (medusafishes)

Maori names: n.a.

Other names: Southern drifffish

MFish reporting code: RAG

MFish research code: RAG



Distinguishing features: Limp bodied fish with small head, blunt snout with wart-like pores, and small mouth. Head including snout, operculum and cheeks scaled. Single long-based dorsal fin with soft rays. 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 TL.

Distribution: Recorded from around the South Island of New Zealand. Validity of some records from fisheries surveys is uncertain. Also recorded from Tasmania, Chile, Argentina, the Falkland Islands, South Georgia, South Orkney Islands, and the Kerguelen Islands.

Depth: Uncertain. Adults possibly 500 to 1200 m. Juveniles near the surface to about 300 m.

Similar species: Slender ragfish (*Schedophilus huttoni*) is thinner bodied, more elongate, dorsal fin origin is above pectoral fin base, single large pore at the base of each dorsal fin ray. Tasmanian ruffe (*Tubbia tasmanica*) has dorsal fin origin above pectoral fin base and an oblique row of small pores at the base of each dorsal fin ray. Rudderfish (*Centrolophus niger*) has a more robust body, lacks scales on the snout and pre-operculum (cheek), snout length is longer than eye diameter. Pelagic butterfish (*Schedophilus maculatus*) has robust body but has a series of single pores at base of each dorsal fin ray running along the body.

Biology & ecology: Rare in New Zealand. Probably a deep, cool water species.

References

Anderson et al. (1989), McDowall (1982), Parin & Piotrovsky (2004), Stewart (1999c).

Common warehou

Seriolella brama

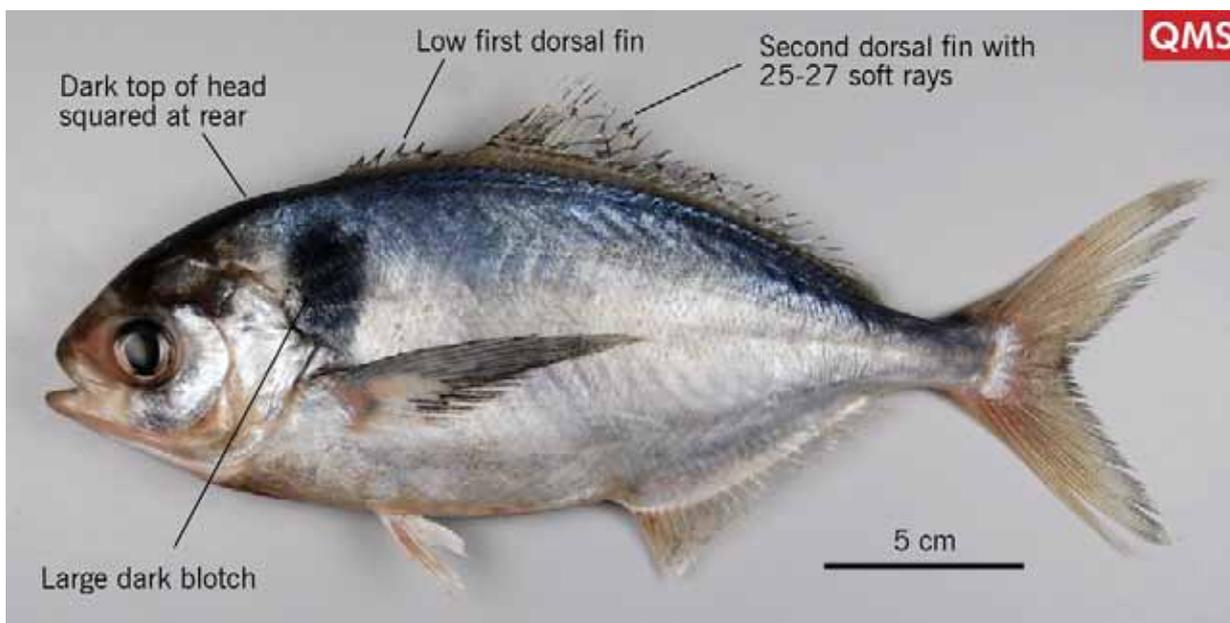
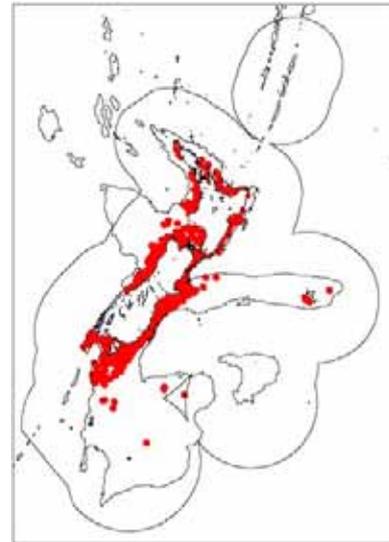
Family: 479. Centrolophidae (medusafishes)

Maori names: Warehou

Other names: Warehou, blue warehou

MFish reporting code: WAR

MFish research code: WAR



Distinguishing features: Dark coloration on the top of the head does not form a point at the rear of the head. Large dark blotch on the side of the body behind the head. Distinct low first dorsal fin with 7 to 9 (usually 8) spines followed by a short second dorsal fin with 25 to 27 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 the side of the body behind the head extending from the pectoral fin base towards the top of the body.

Size: To about 90 cm FL.

Distribution: Widespread in central and southern New Zealand coastal waters, with patchy distribution on the west coast North Island, uncommon or rare on the northeast coast North Island. Offshore NZ records are uncertain or erroneous. Southern Australia (Vic, Tas, SA).

Depth: 5 to 250 m.

Similar species: Silver warehou (*S. punctata*) has dark coloration on the top of the head extending back to form a point at the rear of the head, and more second dorsal fin rays (35 to 39). White warehou (*S. caerulea*) differs by lacking a dark blotch on the side of the body behind the head.

Biology & ecology: Demersal. Feeds on plankton organisms, mainly salps. Reaches at least 22 years of age

References

Anderson et al. (1998), Gomon et al. (2008), McDowall (1982).

White warehou

Seriolella caerulea

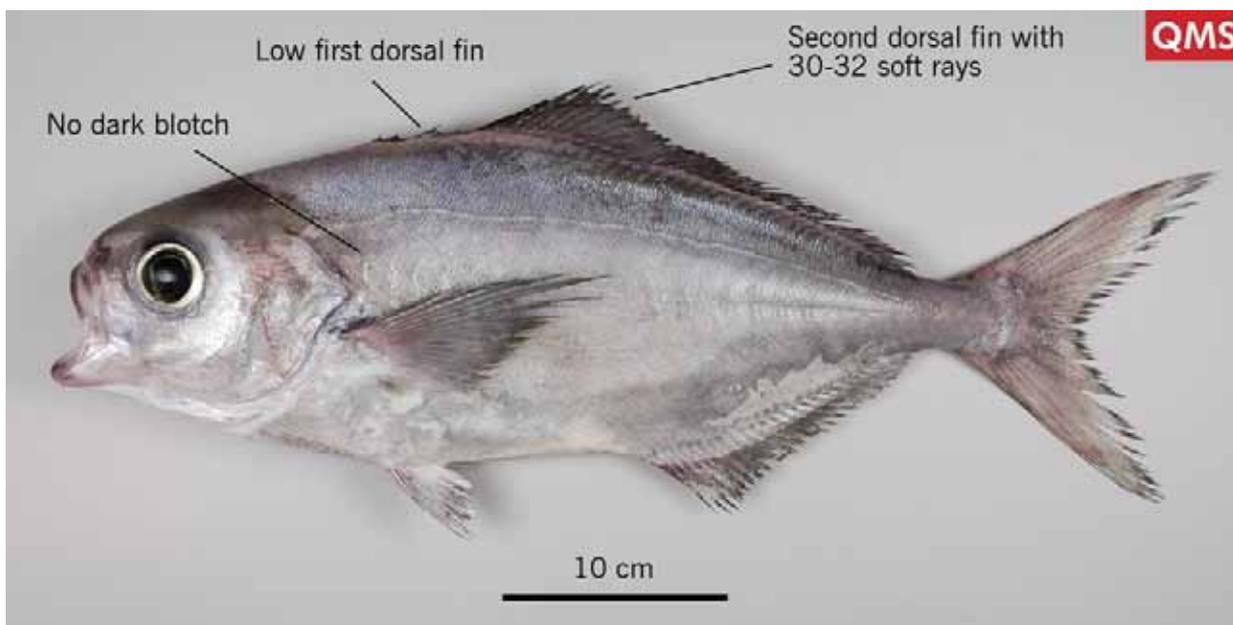
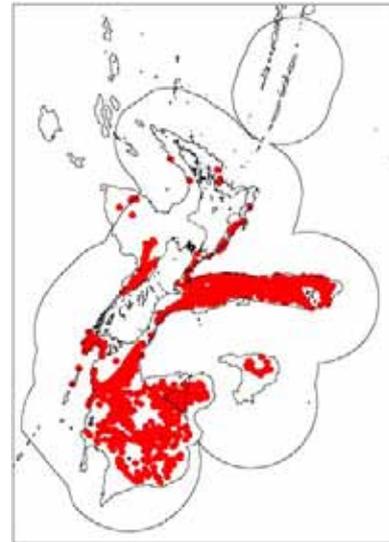
Family: 479. Centrolophidae (medusafishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: WWA

MFish research code: WWA



Distinguishing features: Dark coloration on the top of the head does not form a point at the rear of the head. No dark blotch on the side of the body behind the head. Distinct low first dorsal fin with 6 to 8 spines followed by a second dorsal fin with 30 to 32 soft rays. Lateral line tends to undulate.

Colour: In adults the body is silvery-grey to creamy-white. No distinctive markings on head or body. Juveniles may have distinctive wavy pale and dark grey stripes running along the body which disappear with growth.

Size: To about 69 cm FL.

Distribution: Central and southern New Zealand, including the east and west coasts of the South Island, Campbell and Bounty Plateau, and Chatham Rise. Widespread in the southern temperate Pacific including southern Australia (Tas), Juan Fernandez, Patagonian Chile and Argentina.

Depth: 200 to 700 m.

Similar species: Silver warehou (*S. punctata*) has dark colouration 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 (35 to 39). Common warehou (*S. brama*) has a large dark blotch on side of body behind head, fewer soft rays in second dorsal fin (25 to 27), and a long sickle-shaped pectoral fin.

Biology & ecology: Demersal. Feeds on plankton organisms, mainly salps. Maximum age is uncertain.

References

Anderson et al. (1998), McDowall (1982).

Silver warehou

Seriola punctata

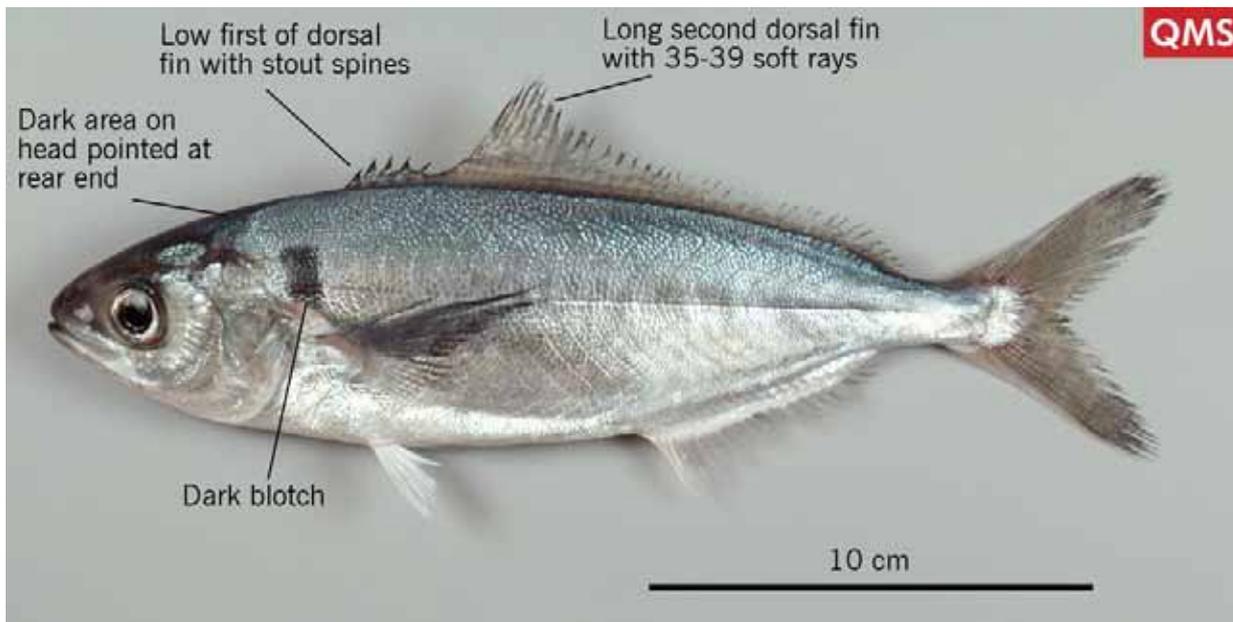
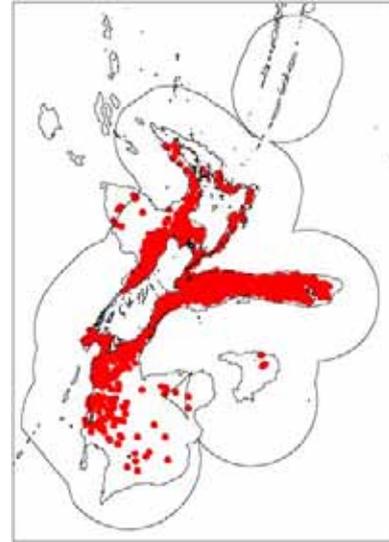
Family: 479. Centrolophidae (medusafishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SWA

MFish research code: SWA



Distinguishing features: Slender body and pointed snout. Dark coloration on the top of the head extends back to form a point at the rear of the head. Small dark blotch on the side of the body behind the head. Distinct low first dorsal fin with 7 to 9 stout spines followed by a long second dorsal fin with 35 to 39 soft rays. Total number of elements (spines plus soft rays) in the dorsal fin 42 or more.

Colour: Body silvery-blue to grey above, paler sides, and silvery-white below. Small dark blotch on the side of the body behind the head. Head dark grey-brown above extending back to form a point at the rear of the head.

Size: To about 66 cm FL.

Distribution: Widespread in New Zealand from off Ninety Mile Beach (juveniles) to south of Campbell Island, but most common in central and southern New Zealand including the Chatham Rise, and the west and east coasts of the South Island down to Auckland Island. Southern Australia (southern NSW, SA, Tas), Patagonian Chile and Argentina.

Depth: Juveniles 50 to 150 m. Adults 200 to 800 m.

Similar species: Common warehou (*S. brama*) has dark coloration on top of head that does not form a point at rear of head, fewer soft rays in second dorsal fin (25 to 27), much longer pectoral fin, and larger dark blotch on side of body behind head. White warehou (*S. caerulea*) has dark colouration on top of head that does not form a point at rear of head, and lacks a dark blotch on the side of the body behind head.

Biology & ecology: Demersal. Forms feeding and spawning aggregations. Feeds mainly on salps. Reaches at least 23 years of age.

References

Anderson et al. (1998), Gomon et al. (2008), McDowall (1982).

Tasmanian ruffe

Tubbia tasmanica

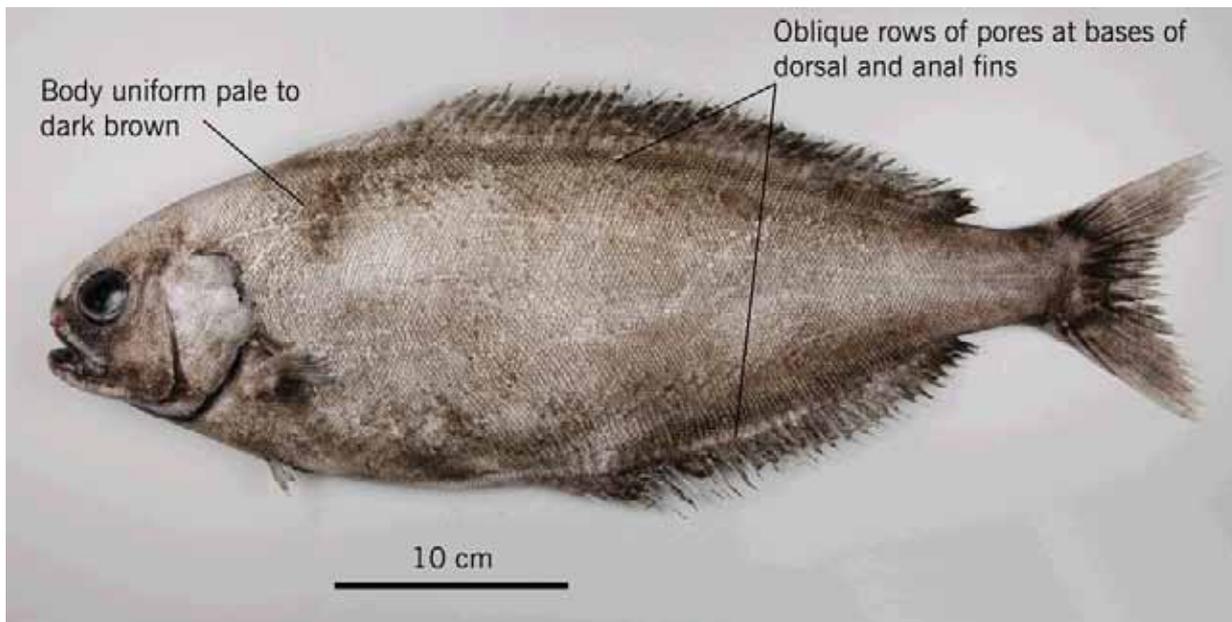
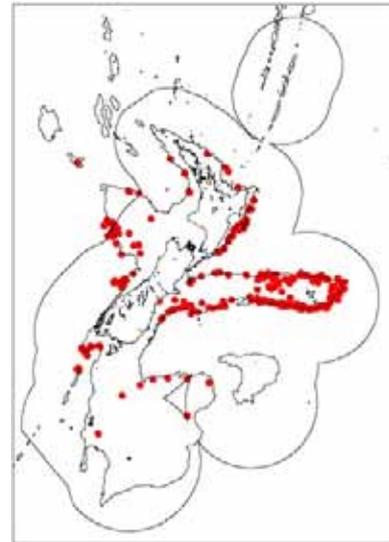
Family: 479. Centrolophidae (medusafishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: TUB

MFish research code: TUB



Distinguishing features: Numerous oblique rows of pores below the dorsal fin and above the 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.

Distribution: Widespread in New Zealand. Southern Australia, Indian Ocean off South Africa, but possibly more widespread in cool temperate southern hemisphere.

Depth: 400 to 1200 m.

Similar species: *Tubbia* sp. (Stewart 1999) has much larger eye, is darker, higher dorsal and anal fins. Rudderfish (*Centrolophus niger*) lacks rows of pores at bases of dorsal and anal fins, lacks scales on snout and cheek, to over 100 cm FL. Ragfish (*Pseudoicichthys australis*) has very small mouth and snout, and small eye. Slender ragfish (*Schedophilus huttoni*) is very limp-bodied, more elongated, paler. Pelagic butterfish (*S. maculatus*) has a single pore at base of each dorsal fin ray.

Biology & ecology: Young are probably pelagic, but adults appear to be living near the seafloor.

References

Anderson et al. (1998), Gomon et al. (2008), McDowall (1982), Parin & Piotrovsky (2004), Stewart (1999c).

Squairetail

Tetragonurus cuvieri

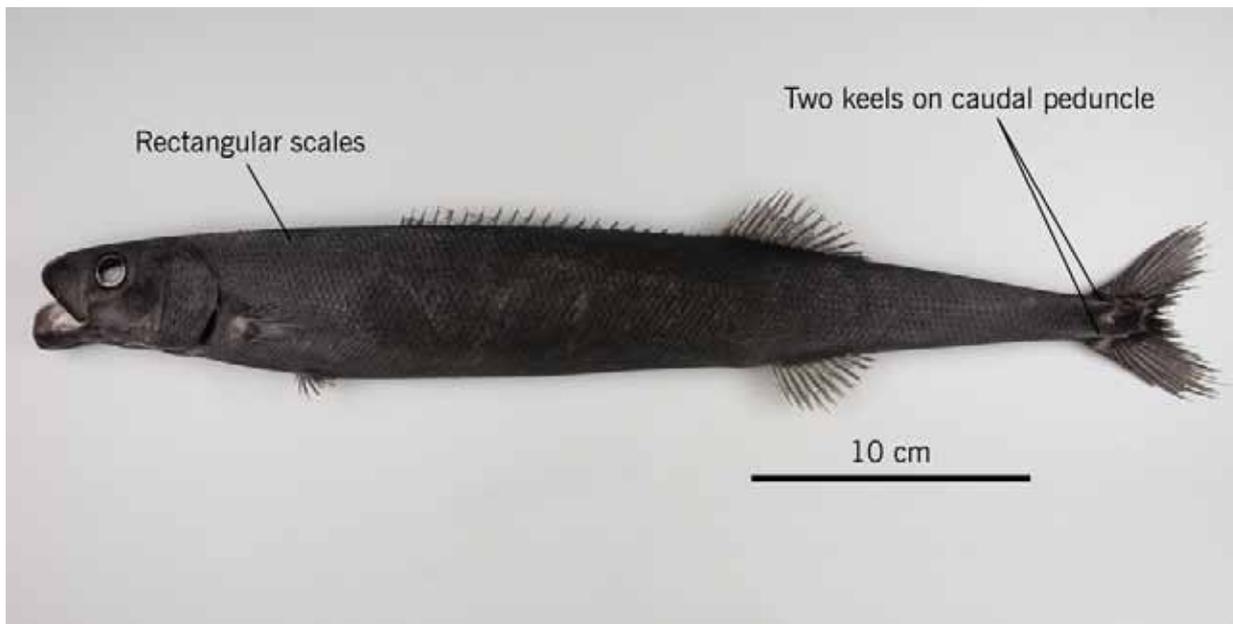
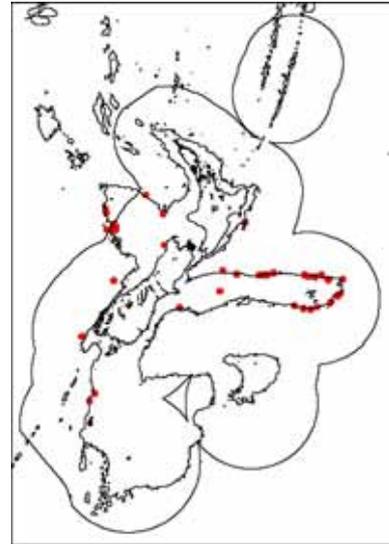
Family: 482. Tetragonuridae (squairetails)

Maori names: n.a.

Other names: n.a.

MFish reporting code: TET

MFish research 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 at least 70 cm FL.

Distribution: Widespread in New Zealand. Southern Australia (NSW, Vic, Tas) and widely distributed in subtropical and temperate waters of the Atlantic, Mediterranean, Pacific, and Indian Oceans.

Depth: 400 to 1300 m.

Similar species: Other fishes lack the combination of body shape, body scale pattern, lower jaw teeth, and keels on the caudal peduncle.

Biology & ecology: Oceanic fishes and probably capable of fast swimming. Presumably the adults live in midwater. The distinctive jaws and teeth are possibly adapted for feeding on soft bodied invertebrates such as ctenophores and jellyfishes.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989).

Witch

Arnoglossus scapha

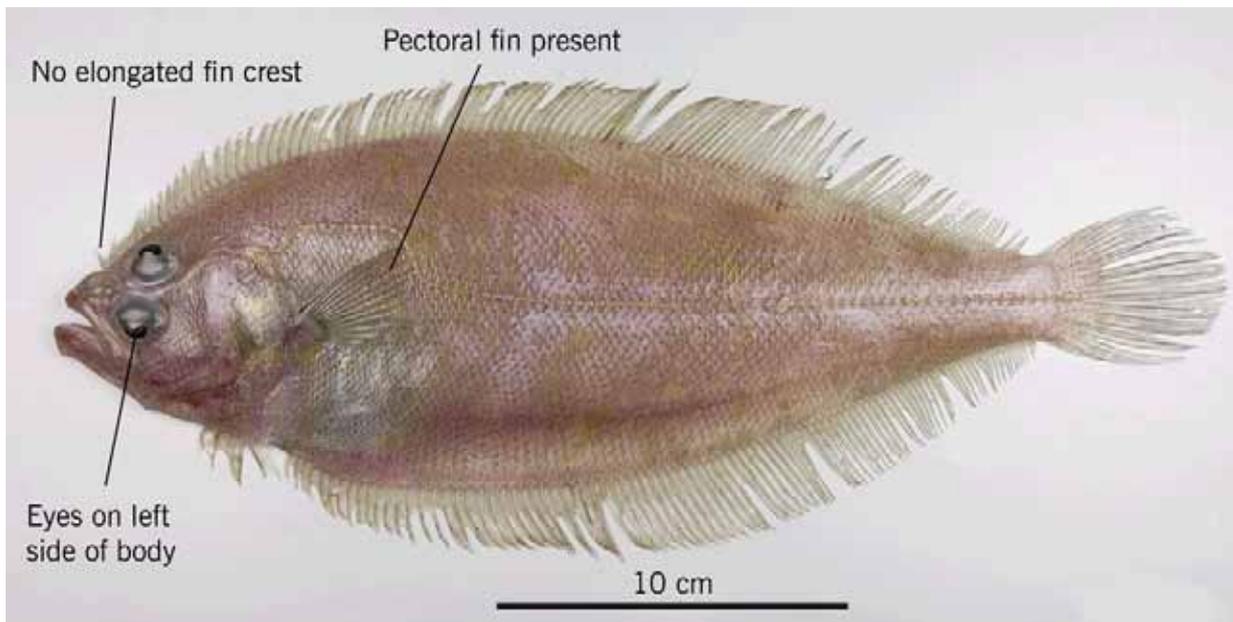
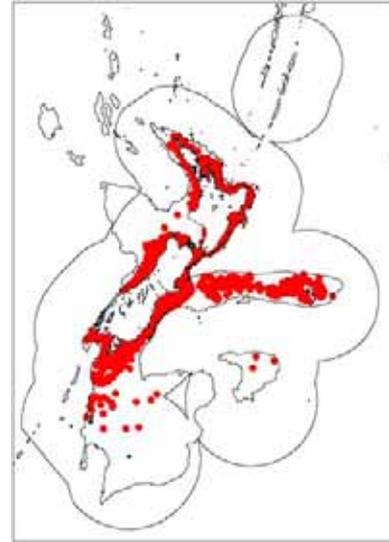
Family: 494. Bothidae (lefteye flounders)

Maori names: Mehue

Other names: n.a.

MFish reporting code: WIT

MFish research code: WIT



Distinguishing features: Eyes on left side of the 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.

Distribution: New Zealand only, but widely distributed.

Depth: 20 to 500 m.

Similar species: Crested flounder (*Lophonectes gallus*) has the anterior rays of the dorsal fin elongated into a crest.

Biology & ecology: Found around most of New Zealand but more common around the South Island.

References

Manikiam (1969), Paul (2000), Paulin et al. (1989).

Crested flounder

Lophonectes gallus

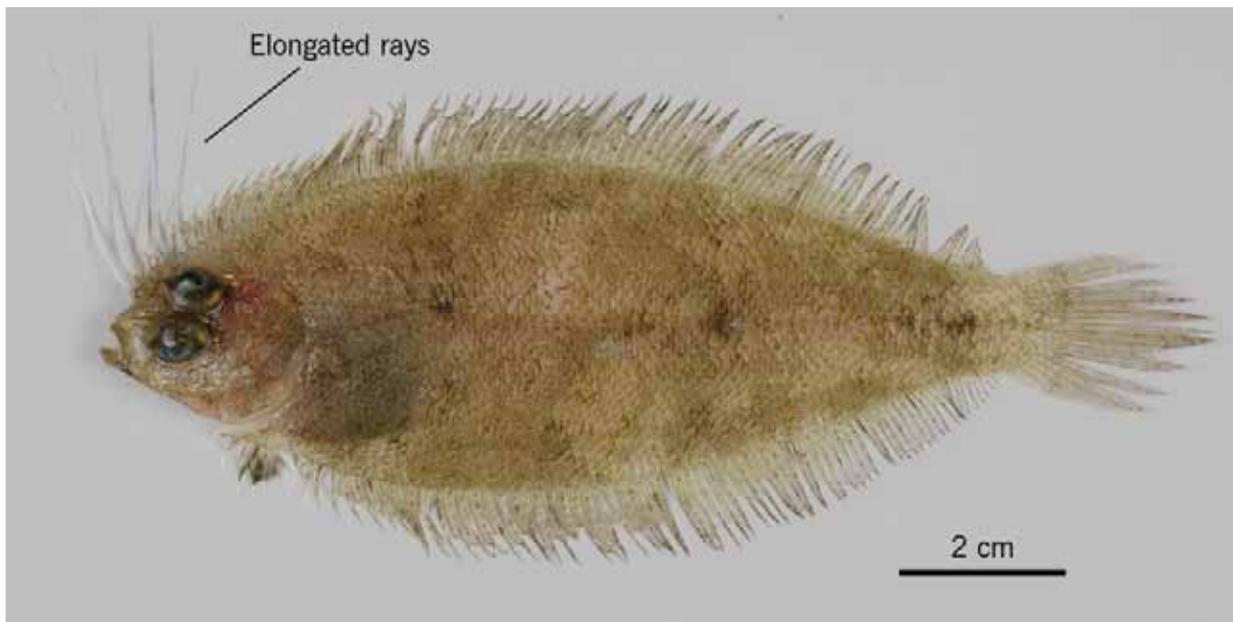
Family: 494. Bothidae (lefteye flounders)

Maori names: n.a.

Other names: n.a.

MFish reporting code: BOT

MFish research 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.

Distribution: Coastal waters north of about East Cape. Also southern and eastern Australia.

Depth: 10 to 100 m.

Similar species: Witch (*Arnoglossus scapha*) is usually larger and has no dorsal fin crest.

Biology & ecology: Demersal.

References

Manikiam (1969), May & Maxwell (1986), Paul (2000), Paulin et al. (1989).

Spotted flounder

Azygopus pinnifasciatus

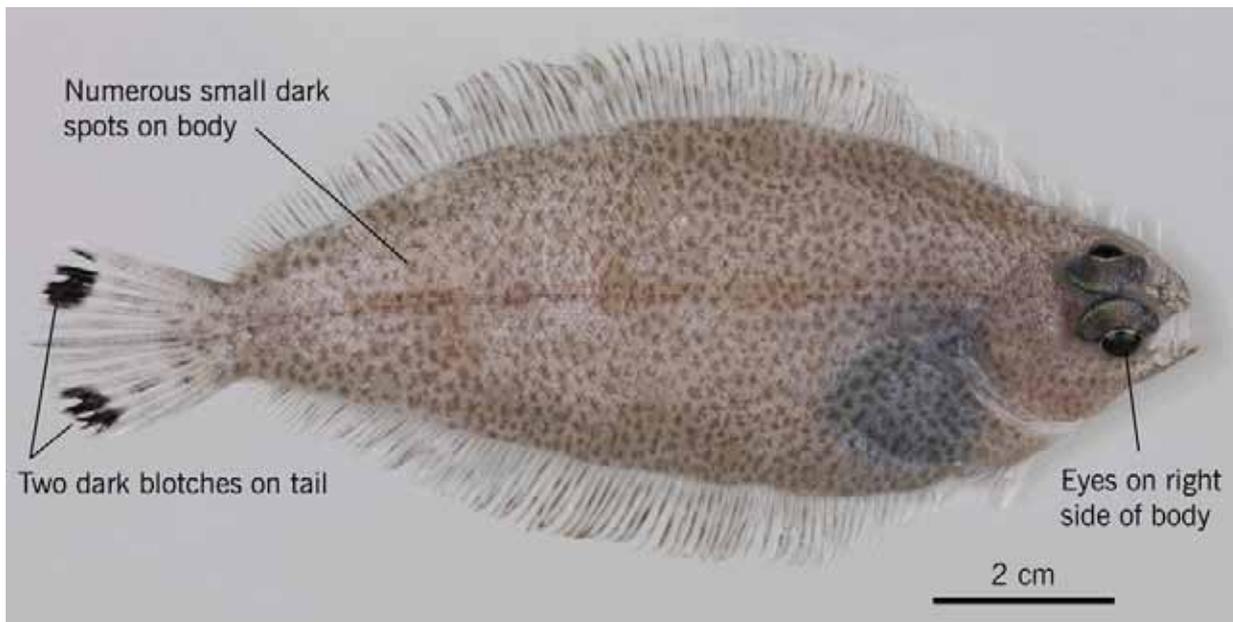
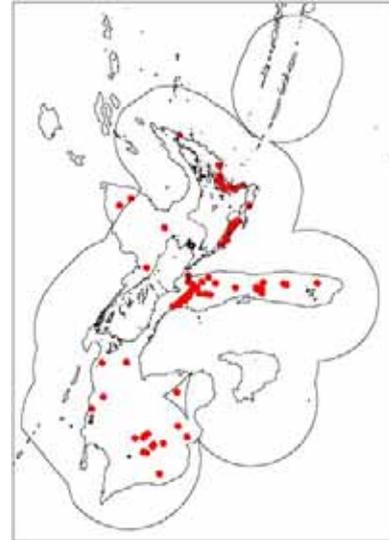
Family: 497. Rhombosoleidae (rhombosoleid flounders)

Maori names: n.a.

Other names: n.a.

MFish reporting code: SDF

MFish research code: SDF



Distinguishing features: Small (to about 20 cm TL) with eyes on the right side of the 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.

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.

Distribution: Widespread around New Zealand. Also southern Australia.

Depth: 200 to 800 m.

Similar species: Other flatfishes lack the 2 large dark blotches on the tail fin.

Biology & ecology: Demersal.

References

Gomon et al. (2008), Manikiam (1969), May & Maxwell (1986), Paul (2000), Paulin et al. (1989).

Brill

Colistium guntheri

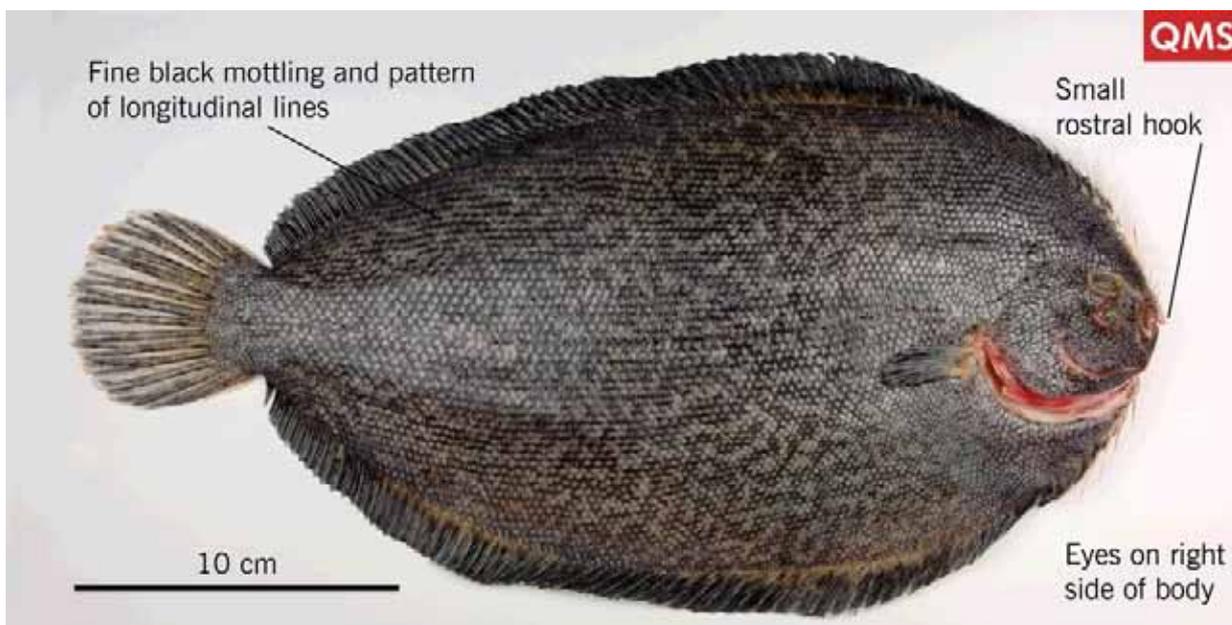
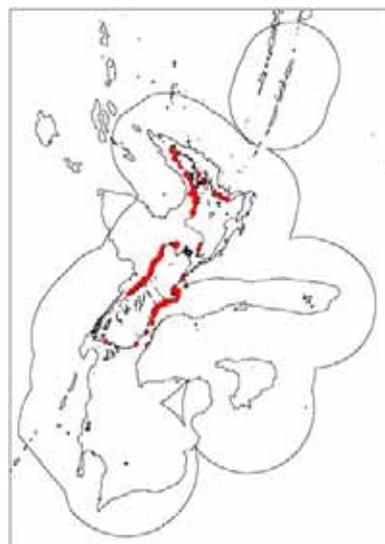
Family: 497. Rhombosoleidae (rhombosoleid flounders)

Maori names: Paatiki-nui

Other names: n.a.

MFish reporting code: BRI (effort), FLA (landing)

MFish research 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 70 cm TL.

Distribution: Widespread patchy distribution. Known only from New Zealand.

Depth: 0 to 100 m.

Similar species: Turbot (*Colistium nudipinnis*) has larger dark blotches on the eyed side, a longer rostral hook reaching beyond the posterior end of the maxillary on the eyed side, and a deeper and thicker body.

Biology & ecology: Demersal.

References

Hirt-Chabbert (2006), Manikiam (1969), Paul (2000), Paulin et al. (1989).

Turbot

Colistium nudipinnis

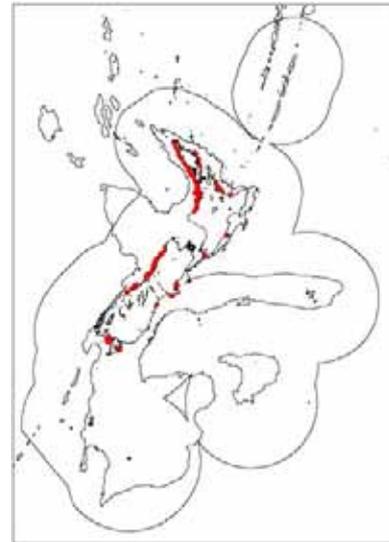
Family: 497. Rhombosoleidae (rhombosoleid flounders)

Maori names: Paatiki

Other names: n.a.

MFish reporting code: TUR (effort), FLA (landing)

MFish research 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 80 cm TL.

Distribution: Most common on the west coast of the South Island. Known only from New Zealand.

Depth: 0 to 100 m.

Similar species: Brill (*Colistium guntheri*) has fine black mottling in longitudinal lines on the eyed side, a shorter rostral hook not reaching the posterior end of the maxillary on the eyed side, and the body is more slender and thinner.

Biology & ecology: Demersal.

References

Hirt-Chabbert (2006), Manikiam (1969), Paul (2000), Paulin et al. (1989).

Lemon sole

Pelotretis flavilatus

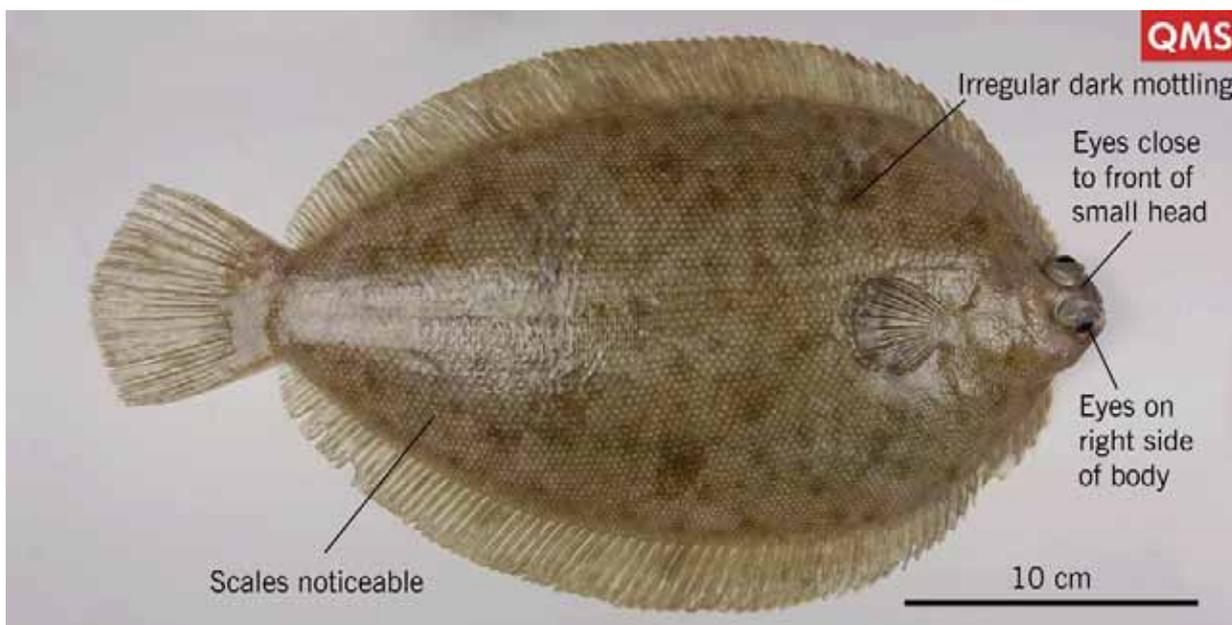
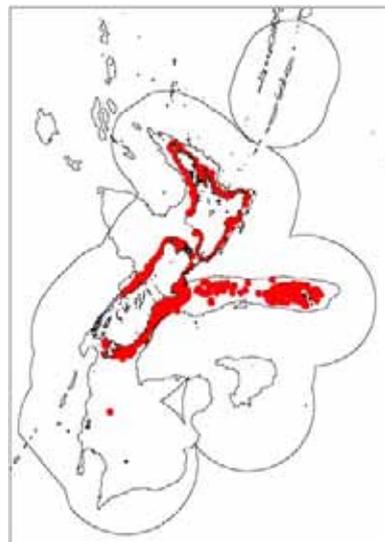
Family: 497. Rhombosoleidae (rhombosoleid flounders)

Maori names: n.a.

Other names: n.a.

MFish reporting code: LSO (effort), FLA (landing)

MFish research 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.

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.

References

Hirt-Chabbert (2006), Manikiam (1969), Paul (2000), Paulin et al. (1989).

New Zealand sole

Peltorhamphus novaezeelandiae

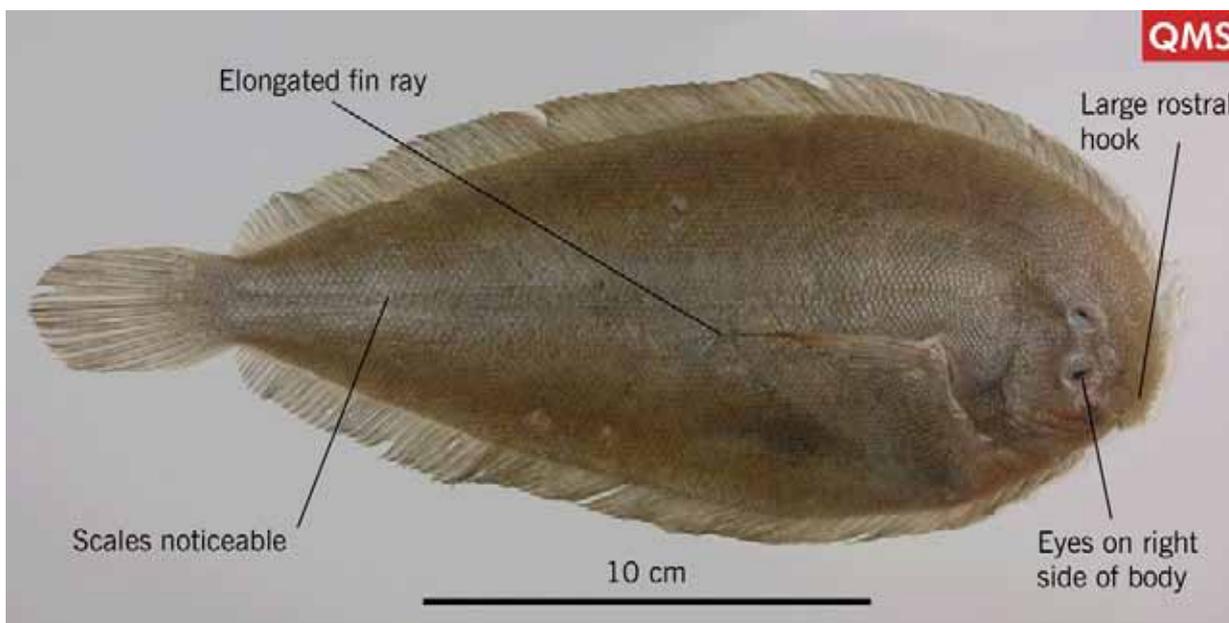
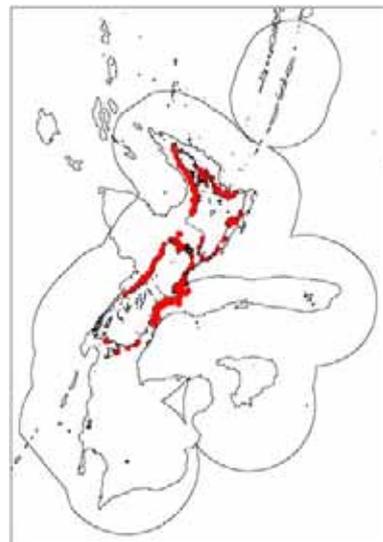
Family: 497. Rhombosoleidae (rhombosoleid flounders)

Maori names: Paatiki-rore

Other names: Common sole, English sole

MFish reporting code: ESO (effort), FLA (landing)

MFish research 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.

Distribution: Widespread but more common around the South Island. Known only from New Zealand

Depth: 0 to 100 m.

Similar species: Two dwarf species of *Peltorhamphus* grow no larger than about 20 cm total length. Speckled sole (*P. latus*) is broader than the New Zealand sole and has speckles on the upper body. Slender sole (*P. tenuis*) is narrower with faint longitudinal markings on the upper body.

Biology & ecology: Demersal, including shallow bays and estuaries.

References

Hirt-Chabbert (2006), James (1972), Manikiam (1969), Paul (2000), Paulin et al. (1989).

Yellowbelly flounder

Rhombosolea leporina

Family: 497. Rhombosoleidae (rhombosoleid flounders)

Maori names: Paatiki-totara

Other names: n.a.

MFish reporting code: YBF (effort), FLA (landing)

MFish research 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.

Distribution: Known only from New Zealand.

Depth: 0 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, whereas sand flounder (*R. plebeia*) is more diamond-shaped and has relatively larger eyes and more dorsal fin rays.

Biology & ecology: Demersal, especially in sheltered bays, harbours, and estuaries.

References

Hirt-Chabbert (2006), Manikiam (1969), Paul (2000), Paulin et al. (1989).

Sand flounder

Rhombosolea plebeia

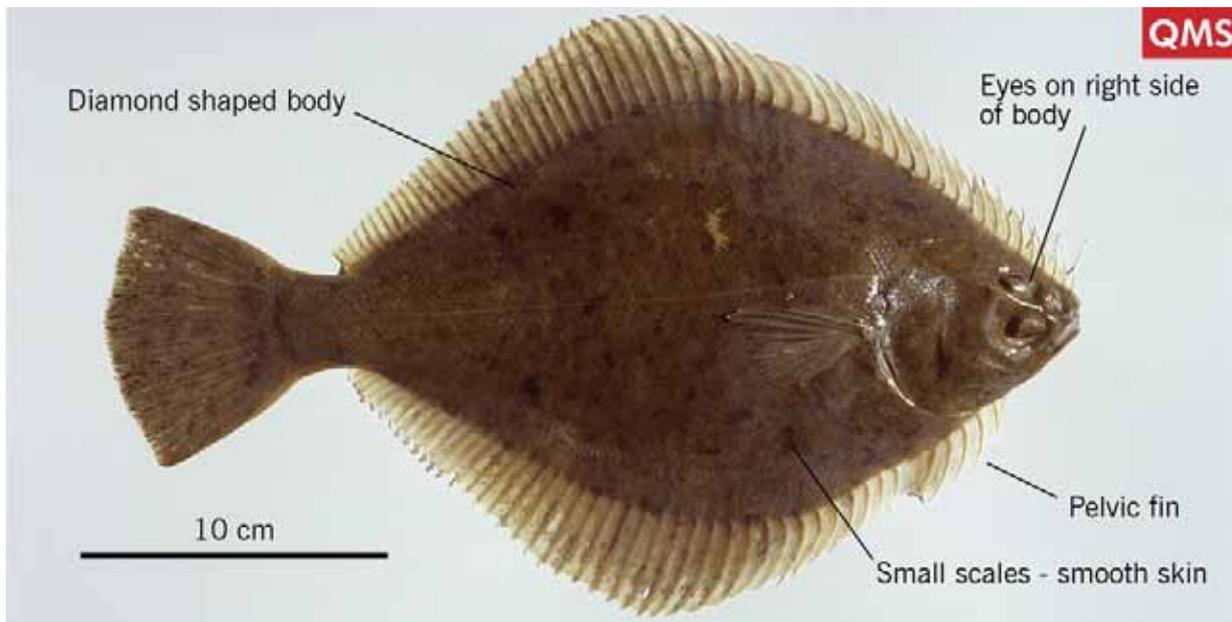
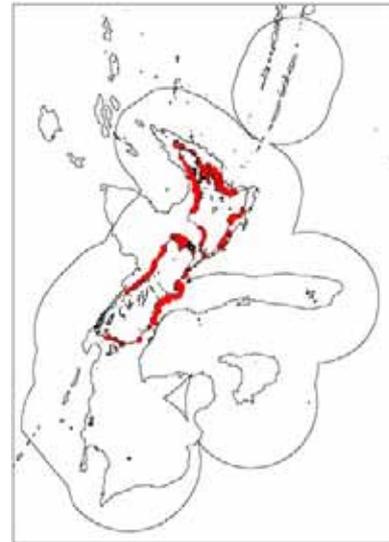
Family: 497. Rhombosoleidae (rhombosoleid flounders)

Maori names: Paatiki

Other names: Dab, diamond, square

MFish reporting code: SFL (effort), FLA (landing)

MFish research 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.

Distribution: Widespread. Known only from New Zealand.

Depth: 0 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.

References

Hirt-Chabbert (2006), Manikiam (1969), Paul (2000), Paulin et al. (1989).

Black flounder

Rhombosolea retiaria

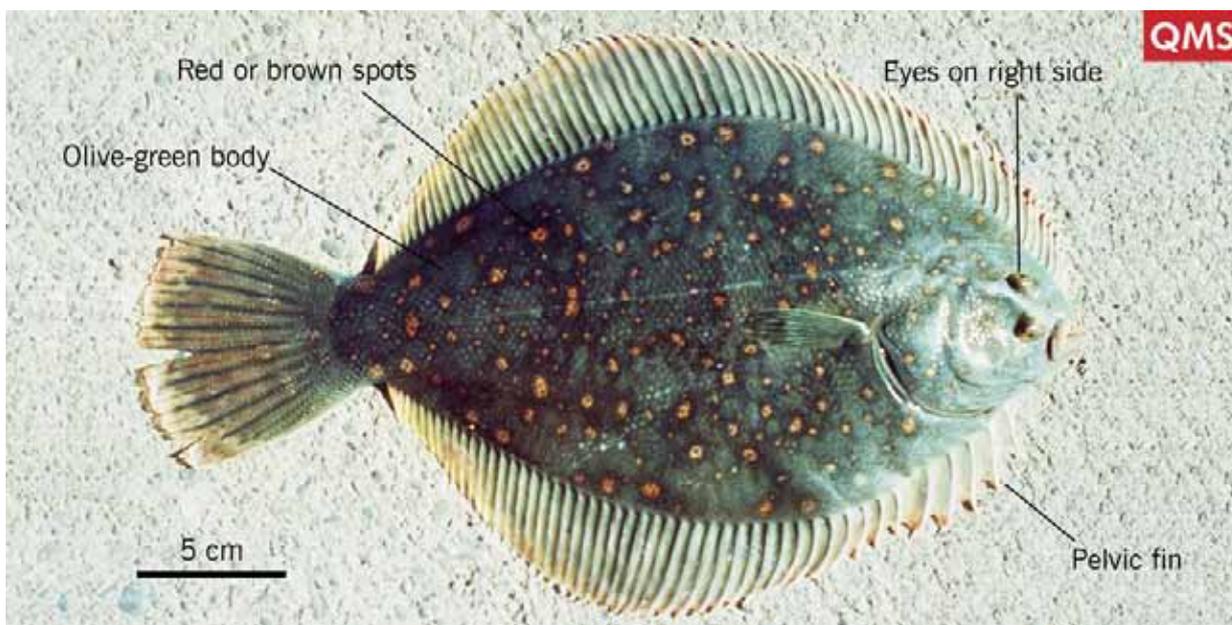
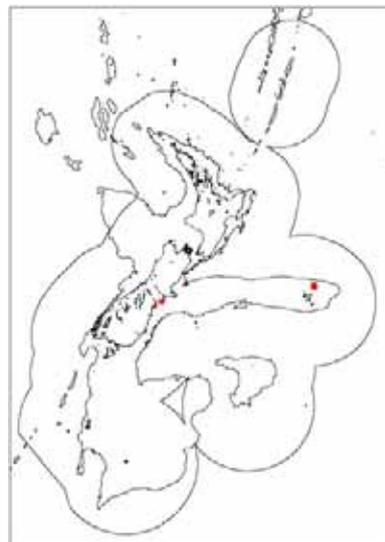
Family: 497. Rhombosoleidae (righteye flounders)

Maori names: Patiki-mohoao

Other names: n.a.

MFish reporting code: BFL (effort), FLA (landing)

MFish research 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.

Distribution: Known only from New Zealand.

Depth: 0 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.

References

Manikiam (1969), Paul (2000), Paulin et al. (1989).

Greenback flounder

Rhombosolea tapirina

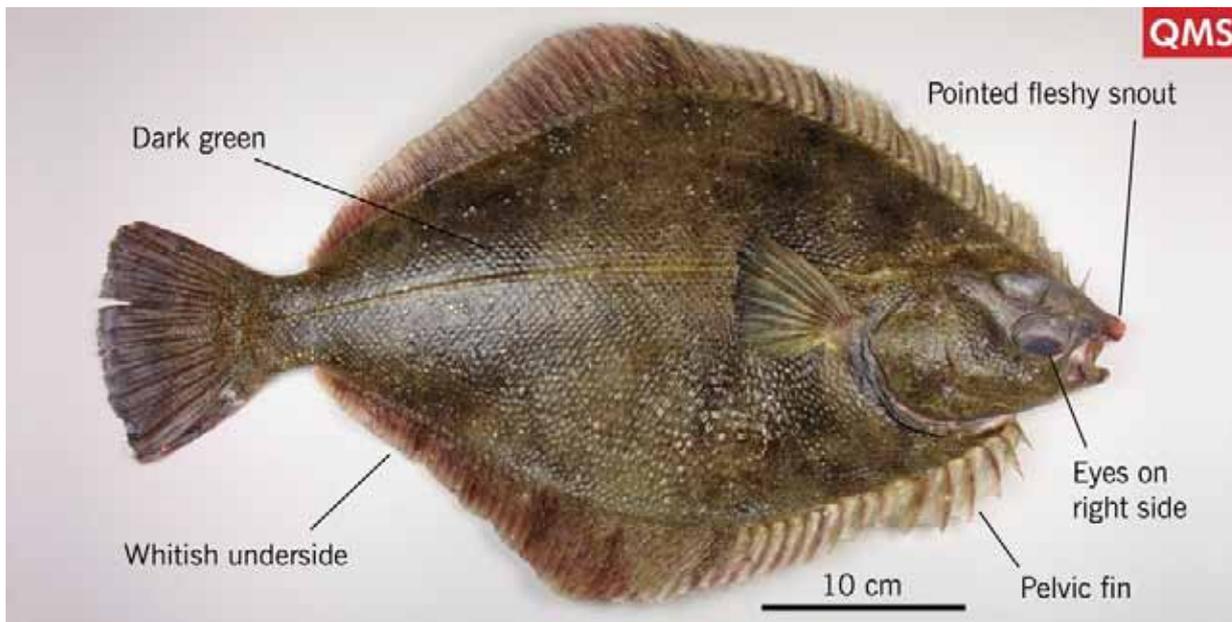
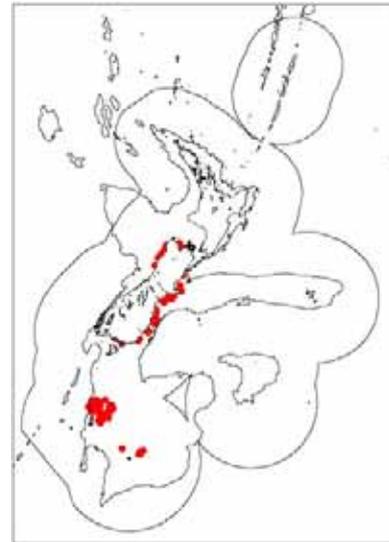
Family: 497. Rhombosoleidae (rhombosoleid flounders)

Maori names: n.a.

Other names: n.a.

MFish reporting code: GFL (effort), FLA (landing)

MFish research 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.

Distribution: Southern New Zealand, including around Auckland and Campbell Islands. Also southern Australia.

Depth: 0 to 300 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.

References

Gomon et al. (2008), Hirt-Chabbert (2006), Manikiam (1969), Paul (2000), Paulin et al. (1989).

Finless flounder

Mancopsetta milfordi

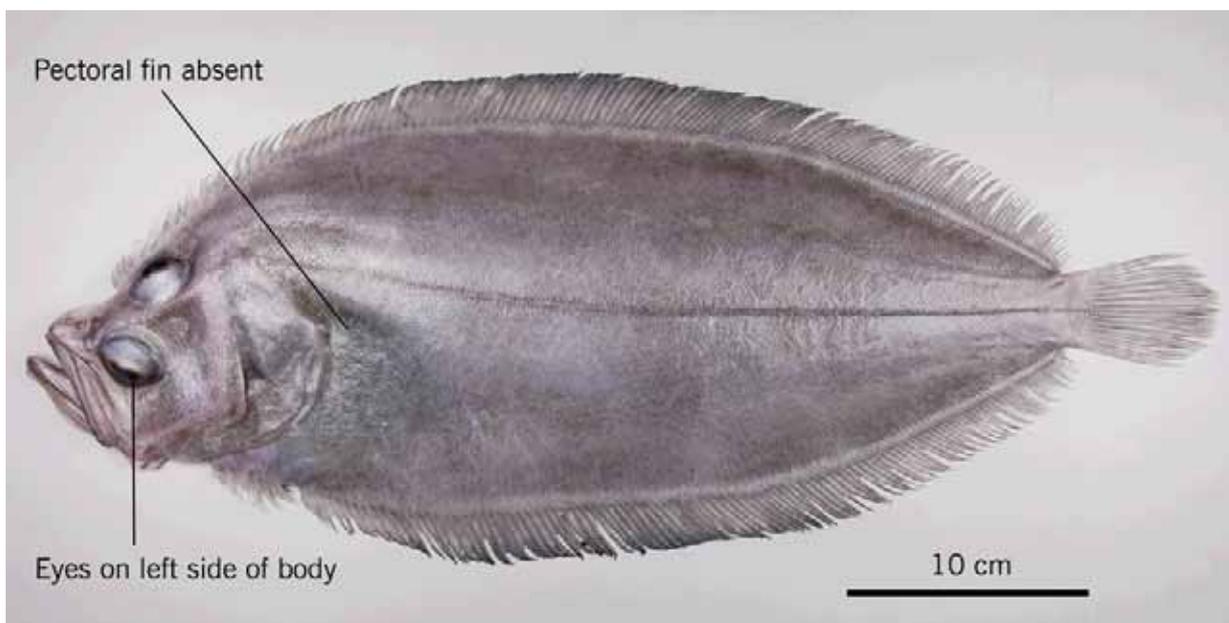
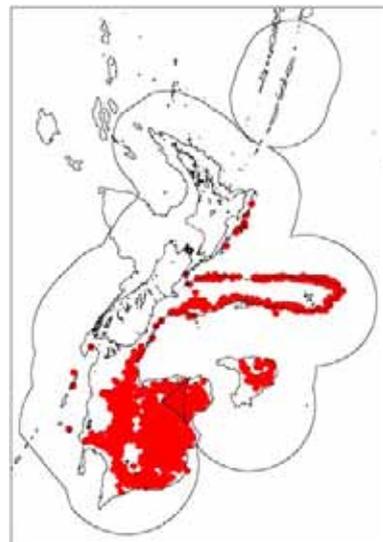
Family: 498. Achiropsettidae (southern flounders)

Maori names: n.a.

Other names: Armless flounder

MFish reporting code: MAN

MFish research code: MAN



Distinguishing features: Body scales lack erect spines giving skin a smooth texture (moving from head to tail). No pectoral fins and eyes on the left side of the body (with head facing away from viewer).

Colour: Body brownish-grey, median fins darker.

Size: To about 60 cm TL.

Distribution: Mainly on the Southern Plateau and Chatham Rise. Widespread in the Southern Ocean.

Depth: 400 to 1500 m.

Similar species: Prickly flounder (*Achiropsetta tricholepis*) has erect spines on body scales giving skin a sandpaper-like texture. Some specimens of *Mancopsetta* have numerous small dark spots on the eyed side. Further study is required to ascertain whether this is a different species.

Biology & ecology: Demersal.

References

Heemstra (1990), Hoese & Bray (2006), Paulin et al. (1989).

Leatherjacket

Meuschenia scaber

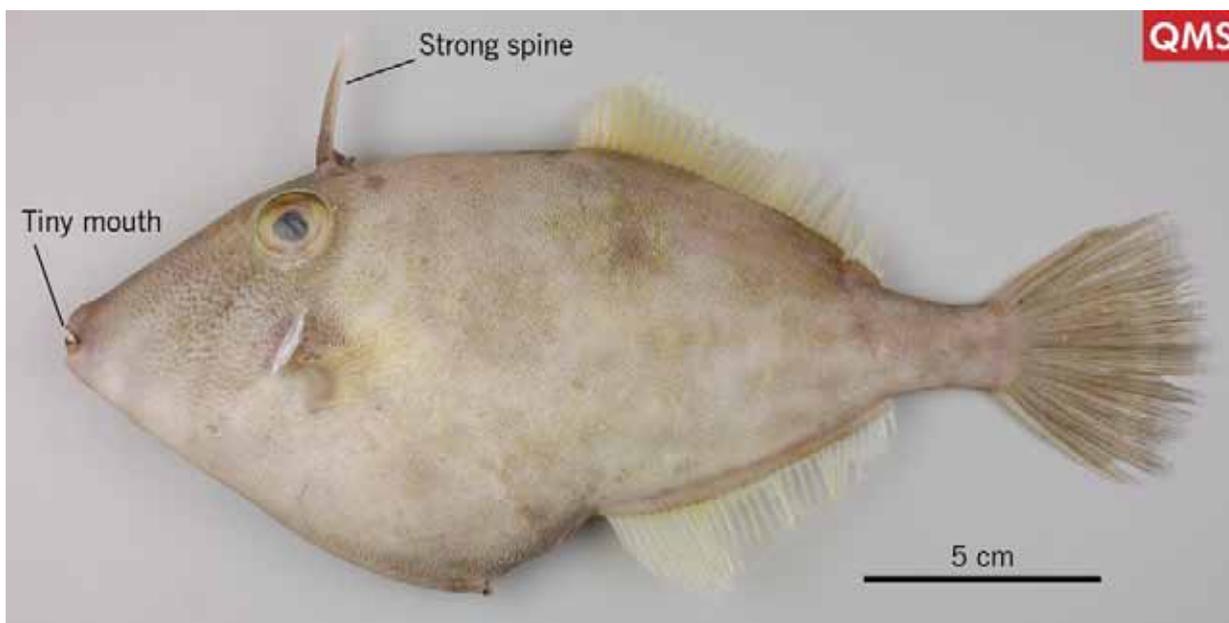
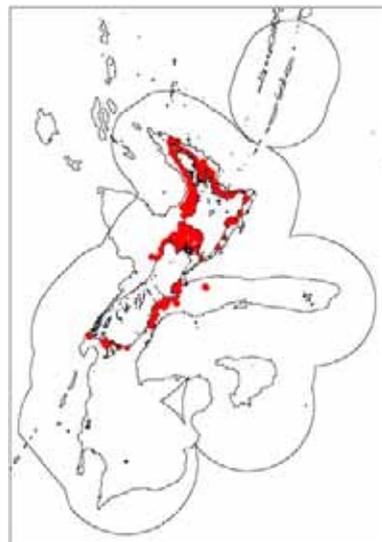
Family: 506. Monacanthidae (filefishes)

Maori names: Hiriri, kookiri

Other names: n.a.

MFish reporting code: LEA

MFish research code: LEA



Distinguishing features: Distinctive elongated body shape with a small mouth containing a set of powerful nipping jaws and a strong dorsal spine (first dorsal fin). Fin rays near the front of the second dorsal and the anal fins longer (higher) than rays at the rear of the fin, especially for males. Fresh colour pale brown, greyish or whitish, usually with numerous dark blotches and two or three dark bars from eye to underside of head.

Colour: Fresh body colour in males pale brown, greyish or whitish, often with dark blotches on sides and 2 or 3 dark bars from eye to underside of head, all fins yellowish, tail with a black crescent shaped vertical line near rear border. Females similar but lack black line on tail.

Size: To about 31 cm TL.

Distribution: Coastal New Zealand from Three Kings Islands to Stewart Island, but more abundant in central and northern areas. Southern Australia (NSW, Vic, Tas, SA, WA).

Depth: 0 to 200 m.

Similar species: Other species in this family from New Zealand are very rare and are mostly tropical or subtropical species that are caught infrequently in northern New Zealand. An example is the unicorn leatherjacket (*Aluterus monoceros*) which has been caught by trawlers in northern New Zealand and is a larger species reaching 76 cm TL with a slender body and a very small dorsal spine, which may have indistinct small dark spots and blotches on the 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 the 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.

References

Anderson et al. (1998), Francis, (2001), Gomon et al. (2008), Hutchins (2001), Paulin et al. (1989), Stewart (1998).

Globefish

Contusus richiei

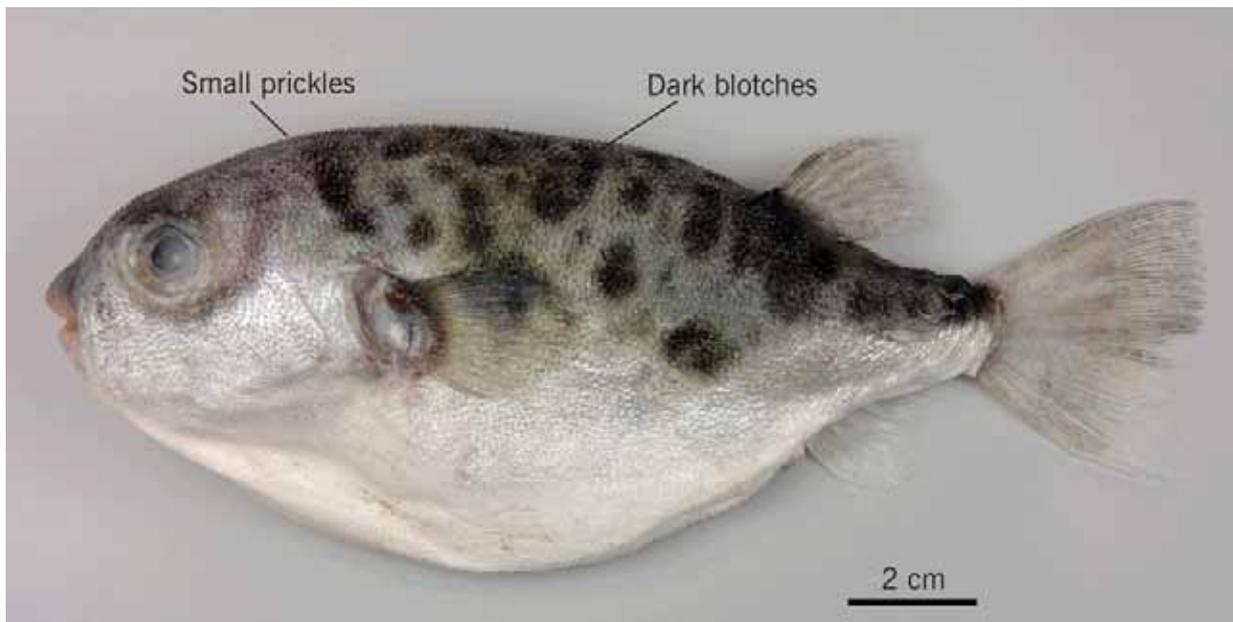
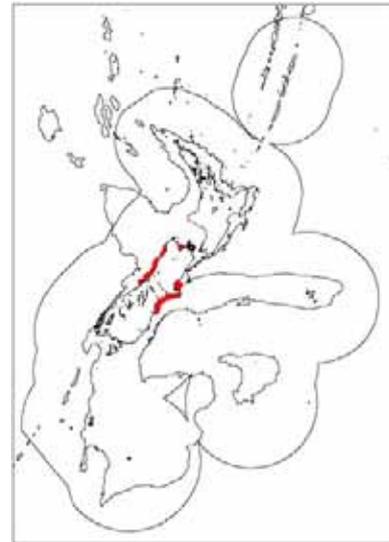
Family: 509. Tetraodontidae (puffers)

Maori names: n.a.

Other names: n.a.

MFish reporting code: UNI

MFish research code: GLB



Distinguishing features: Small pufferfish which can inflate body when disturbed. 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.

Distribution: Patchy distribution in New Zealand but most common along the Canterbury and Westland coasts. Also southern Australia.

Depth: 0 to 50 m.

Similar species: Other pufferfishes occur occasionally around northern New Zealand, but have different colour patterns.

Biology & ecology: Sporadically present in sheltered sandy bays and harbours. Puffers are known to have deadly toxins in certain body tissues.

References

Gomon et al. (2008), May & Maxwell (1986), Paul (2000), Paulin et al. (1989).

Porcupine fish

Allomycterus pilatus

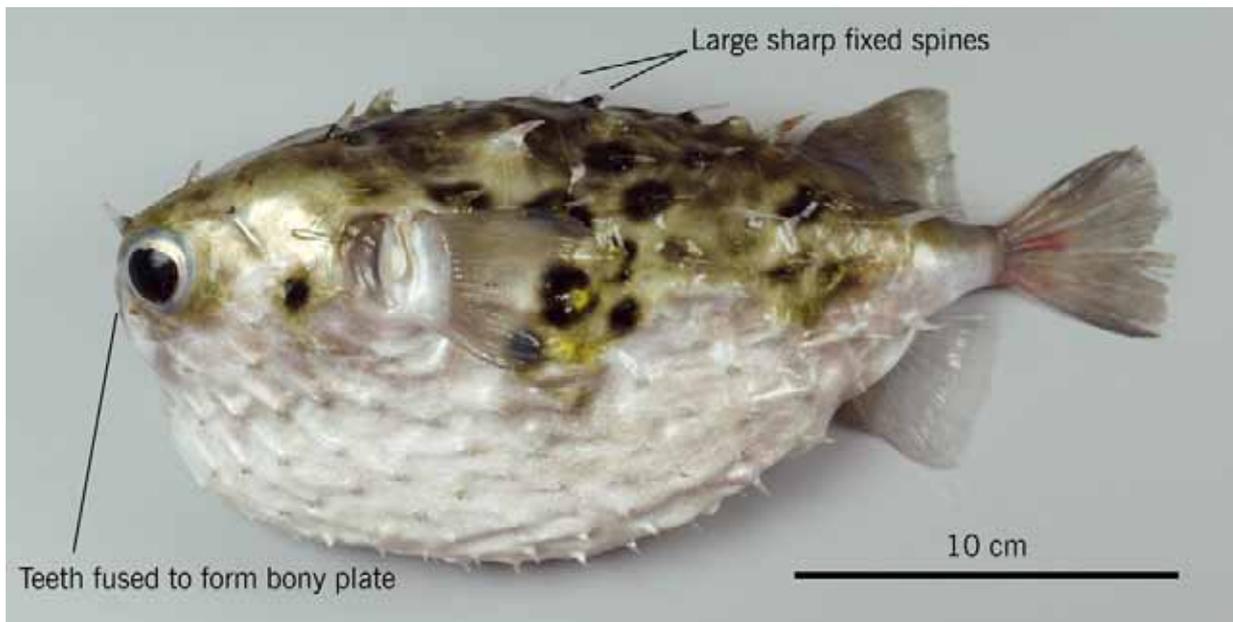
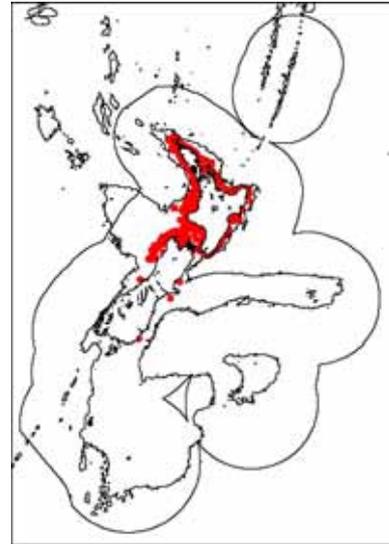
Family: 510. Diodontidae (porcupinefishes)

Maori names: n.a.

Other names: n.a.

MFish reporting code: POP

MFish research code: POP



Distinguishing features: Inflatable globular body covered with prominent spines. Teeth fused into beak-like jaws. Interorbital region (between the eyes) mostly lacks spines but the spines present are short and erect (fixed).

Colour: Olive brown above, white below. Blackish blotches about the size of the eyes or smaller on the upper surface and sides. Yellowish blotches on sides in front of pectoral fin base, behind pectoral fin, and below the dorsal fin.

Size: To about 50 cm TL.

Distribution: Central and northern New Zealand. Southern Australia.

Depth: 5 to 320 m.

Similar species: The only other porcupinefish (*Diodon hystrix*) recorded from New Zealand is rare, probably occurs only in the far north, and has very long, sharp, erectile spines between the eyes.

Biology & ecology: Unknown. Presumed to live near the seafloor but has been observed in schools near the surface, e.g., in Wellington Harbour.

References

Anderson et al. (1998), Gomon et al. (2008), Paulin et al. (1989).

SECTION 4. REFERENCES

Abramov, A.A. (1992). Species composition and distribution of *Epigonus* (Epigonidae) in the world ocean. *Journal of Ichthyology* 32(5): 94–108.

Amaoka, K.; Matsura, K.; Inada, T.; Takeda, M.; Hatanaka, H.; Okada, K. (eds) (1990). Fishes collected by the r/v *Shinkai Maru* around New Zealand. JAMARC, Tokyo. 410 p.

Anderson O.F.; Bagley, N.W.; Hurst, R.J.; Francis, M.P.; Clark, M.R.; McMillan, P.J. (1998). Atlas of New Zealand fish and squid distributions from research bottom trawls. *NIWA Technical Report 42*. 303 p.

Anon (1995). New Zealand Fishing Industry Agreed Implementation Standards Issue 1: May 1995. IAIS 004.2: Authorised Fish Names Circular 1995. (http://www.nzfsa.govt.nz/animalproducts/seafood/iais/4/004_2.pdf.)

Arai, T.; Iwamoto, T. (1979). A new species of macrourid fish genus *Coelorinchus* from off Tasmania, New Zealand, and the Falkland Islands. *Japanese Journal of Ichthyology* 26(3): 238–246.

Arai, T.; McMillan, P.J. (1982). A new macrourid fish, *Coelorinchus biclinozonalis* from New Zealand, and redescription of *C. australis* from Australia. *Japanese Journal of Ichthyology* 29(2): 115–125.

Bagley, N.W.; Anderson, O.F.; Hurst, R.J.; Francis, M.P.; Taylor, P.R.; Clark, M.R.; Paul, L.J. (2000). Atlas of New Zealand fish and squid distributions from midwater trawls, tuna longline sets, and aerial sightings. *NIWA Technical Report 72*. 171 p.

Banks, D.; Crysell, S.; Garty, J.; Paris, S.; Shelton, P. (eds.). (2007). The guide book to New Zealand commercial fish species. 2007 revised edition. The New Zealand Seafood Industry Council Ltd, Wellington. 276 p.

Blackwell, R.G.; Stevenson, M.L. (2003). Review of the distribution and abundance of deepwater sharks in New Zealand waters. *New Zealand Fisheries Assessment Report 2003/40*. 48 p.

Burrige, C.P.; Smolenski, A.J. (2004). Molecular phylogeny of the Cheilodactylidae and Latridae (Perciformes: Cirrhitidae) with notes on taxonomy and biogeography. *Molecular Phylogenetics and Evolution* 30(1): 118–127.

Carpenter, K.E.; Niem, V.H. (eds) (1998). FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific. Volume 2. FAO, Rome.

Carpenter, K.E.; Niem, V.H. (eds) (1999). FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific. Volumes 3–4. FAO, Rome.

Carpenter, K.E.; Niem, V.H. (eds) (2001). FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific. Volumes 5–6. FAO, Rome.

- Clark, M.R.; King, K.J. (1989). Deepwater fish resources off the North Island, New Zealand: results of a trawl survey, May 1985 to June 1986. *New Zealand Fisheries Technical Report 11*. 56 p.
- Clarke, M.W.; Connolly, P.L.; Bracken, J.J. (2002). Age estimation of the exploited deepwater shark *Centrophorus squamosus* from the continental slopes of the Rockall Trough and Porcupine Bank. *Journal of Fish Biology* 60: 501–514.
- Clarke, M.W.; Connolly, P.L.; Bracken, J.J. (2002). Catch, discarding, age estimation, growth and maturity of the squalid shark *Deania calceus* west and north of Ireland. *Fisheries Research* 56(2): 139–153.
- Cohen, D.M.; Inada, T.; Iwamoto, T.; Scialabba, N. (1990). FAO species catalogue. Vol. 10. Gadiform fishes of the world (Order Gadiformes). *FAO Fisheries Synopsis 125(10)*. FAO, Rome. 442 p.
- Collette, B.B. (1999). Hemiramphidae. Halfbeaks. Pp. 2180–2196. *In* Carpenter, K.E.; Niem, V.H. (eds). FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific. Volumes 2–6. FAO, Rome.
- Collette, B.B.; Nauen, C.E. (1983). FAO species catalogue. Volume 2 Scombrids of the world: An annotated and illustrated catalogue of tunas, mackerels, bonitos and related species known to date. *FAO Fisheries Synopsis 125(2)*. 137 p.
- Compagno, L.J.V. (1984). FAO species catalogue. Vol. 4. Sharks of the world. An annotated and illustrated catalogue of shark species known to date. Part 1 – Hexanchiformes to Lamniformes. *FAO Fisheries Synopsis 125(4/1)*. 249 p.
- Compagno, L.J.V. (2001). Sharks of the world. An annotated and illustrated catalogue of shark species known to date. *FAO Species Catalogue for Fishery Purposes 1, vol. 2*. 269 p.
- Compagno, L.J.V.; Dando, M.; Fowler, S. (2005). *Sharks of the World*. Princeton Field Guides, Princeton University Press. 480 p.
- Cox, G.; Francis, M. (1997). *Sharks and rays of New Zealand*. Canterbury University Press, Christchurch. 68 p.
- Daley, R.; Stevens, J.; Graham, K. (2002). Catch analysis and productivity of the deepwater dogfish resource in southern Australia. Report by CSIRO Marine Research and NSW Fisheries to the Fisheries Research and Development Corporation. FRDC Project 1998/108.
- Davis, T.L.O.; Stanley, C.A. (2002): Vertical and horizontal movements of southern bluefin tuna (*Thunnus maccoyii*) in the Great Australian Bight observed with ultrasonic telemetry. *Fishery Bulletin* 100(3): 448–465.
- DeWitt, H.H. (1970). A revision of the fishes of the genus *Notothenia* from the New Zealand region, including Macquarie Island. *Proceedings of the California Academy of Sciences* 38(16): 299–340.

Dewitt, H.H.; Heemstra P.C.; Gon, O. (1990). Nototheniidae, p. 279–331. *In*: Gon, O.; Heemstra, P.C. (eds). Fishes of the Southern Ocean. J.L.B. Smith Institute of Ichthyology, Grahamstown.

Didier, D.A. (2002). Two new species of chimaeroid fishes from the southwestern Pacific Ocean (Holocephali, Chimaeridae). *Ichthyological Research* 49: 299–306.

Didier, D.A. (2008). Two new species of the genus *Hydrolagus* Gill (Holocephali: Chimaeridae) from Australia. Pp. 349–356. *In* Last, P.R.; White, W.T.; Pogonoski, J.J. (eds). Descriptions of new Australian Chondrichthyans. *CSIRO Marine and Atmospheric Research Paper 022*.

Didier, D.A.; Nakaya, K. (1999). Redescription of *Rhinochimaera pacifica* (Mitsukuri) and first record of *R. africana* Compagno, Stehmann & Ebert from Japan (Chimaeriformes: Rhinochimaeridae). *Ichthyological Research* 46: 139–152.

Didier, D.A.; Seret, B. (2002). Chimaeroid fishes of New Caledonia with description of a new species of *Hydrolagus* (Chondrichthyes, Holocephali). *Cybium* 26: 225–233.

Duffy, C.A.J. (2007). First record of *Centrophorus harrissoni* from New Zealand, with observations on squamation in Centrophoridae (Squaliformes). *New Zealand Journal of Marine and Freshwater Research* 41: 163–173.

Duffy, C.A.J.; Last, P.R. (2007). Redescription of the northern spiny dogfish *Squalus griffini* Phillipps, 1931 from New Zealand. *In*: Last, P.R.; White, W.T.; Pogonoski, J.J. (eds). Descriptions of new dogfishes of the genus *Squalus* (Squaloidea: Squalidae). *CSIRO Marine and Atmospheric Research Paper 14*, pp. 91–100, *CSIRO Marine and Atmospheric Research*, Hobart.

Evans, K.; Patterson T. (2007). Movements and behaviour of large southern bluefin tuna in the Tasman Sea and Indian Ocean regions determined using pop-up satellite archival tags: a summary of results for 2006–07. Working paper CCSBT-ESC/0709/Info 01 presented to the 8th Meeting of the Stock Assessment Group and the 12th Meeting of the Scientific Committee (incorporating the Extended Scientific Committee) of the CCSBT, 4–8 September, and 10–14 September 2007, Hobart, Australia.

Eschmeyer, W.N. (ed.) (2008). *Catalog of Fishes* electronic version (updated 29 August 2008).

<http://www.calacademy.org/research/ichthyology/catalog/fishcatsearch.html>

Francis, M.P. (2001). *Coastal fishes of New Zealand. An identification guide*. Third edition. Reed Books, Auckland. 103 p.

Francis, M.P.; Griggs, L.H.; Baird, S.J.; Murray, T.E.; Dean, H.A. (1999). Fish bycatch in New Zealand tuna longline fisheries. *NIWA Technical Report 55*. 70 p.

Francis, M.; McMillan, P.; Lasenby, R.; Didier, D. (1998). How to tell dark and pale ghost sharks apart. *Seafood New Zealand* 6(11): 29–30.

Froese, R.; Pauly, D. (eds). (2007). FishBase. World Wide Web electronic publication. www.fishbase.org, version (08/2007).

Garrick, J.A.F. (1951). The blind electric rays of the genus *Typhlonarke* (Torpedinidae). *Zoology publications from Victoria University College* 15. 6 p.

Garrick, J.A.F. (1954a). Studies on New Zealand Elasmobranchii. Part III. A new species of *Triakis* (Selachii) from New Zealand. *Transactions of the Royal Society of New Zealand* 82: 695–702.

Garrick, J.A.F. (1954b). Studies on New Zealand Elasmobranchii. Part I. Two further specimens of *Arhynchobatis asperrimus* Waite (Batoidei) with an account of the skeleton and a discussion on the systematic position of the species. *Transactions of the Royal Society of New Zealand* 82: 119–132.

Garrick, J.A.F. (1957a). Studies on New Zealand Elasmobranchii. Part VI. Two new species of *Etmopterus* from New Zealand. *Bulletin of the Museum of Comparative Zoology, Harvard* 116: 171–190.

Garrick, J.A.F. (1957b). Further notes on the affinities of *Arhynchobatis asperrimus* Waite (Batoidei) with other rajoids, and data on a fourth specimen. *Transactions of the Royal Society of New Zealand* 85: 201–203.

Garrick, J.A.F. (1959a). Studies on New Zealand Elasmobranchii. Part VII. – The identity of specimens of *Centrophorus* from New Zealand. *Transactions of the Royal Society of New Zealand* 86: 127–141.

Garrick, J.A.F. (1959b). Studies on New Zealand Elasmobranchii. Part IX. – *Scymnodon plunketi* (Waite, 1910), an abundant deep water shark of New Zealand waters. *Transactions of the Royal Society of New Zealand* 87: 271–282.

Garrick, J.A.F. (1960). Studies on New Zealand Elasmobranchii. Part XI – Squaloids of the genera *Deania*, *Etmopterus*, *Oxynotus* and *Dalatias* in New Zealand waters. *Transactions of the Royal Society of New Zealand* 88: 489–517.

Garrick, J.A.F. (1971). *Harriotta raleighana*, a long-nosed chimaera (Family Rhinochimaeridae), in New Zealand waters. *Journal of the Royal Society of New Zealand* 1: 203–213.

Garrick, J.A.F.; Paul, L.J. (1971). *Heptranchias dakini* Whitely, 1931, a synonym of *H. perlo* (Bonaterre, 1788), the sharpsnouted sevengill or perlon shark, with notes on sexual dimorphism in this species. *Zoology Publications from Victoria University of Wellington* 54. 12 p.

Garrick, J.A.F.; Paul, L.J. (1974). The taxonomy of New Zealand skates (Suborder Rajoidea), with descriptions of three new species. *Journal of the Royal Society of New Zealand* 4: 345–377.

Gomon, M.; Bray, D.; Kuitert, R. (eds) (2008). Fishes of Australia's southern coast. Reed New Holland, Sydney. 928 p.

- Gomon, M.F.; Roberts, C.D. (2011). A second New Zealand species of the stargazer genus *Kathetostoma* (Trachinoidei: Uranoscopidae). *Zootaxa* 2776: 1–12.
- Grande, T. (1999). Revision of the genus *Gonorynchus* Scopoli, 1777 (Teleostei: Ostariophysi). *Copeia* 1999(2): 453–469.
- Griggs, L. (2000). Bluefin tuna identification guide (prepared October 2000, as part of MFish Project MOF2000/02B). (Unpublished report held by MFish, Wellington.)
- Gunn, J.; Evans, K.; Patterson, T.; Carter, T. (2006). Examining the movement and residency of adult SBT in the Tasman Sea and on their spawning grounds south of Indonesia using pop-up archival tags. Working paper CCSBT-ESC/0609/Info presented to the 7th meeting of the Stock Assessment Group and the 11th meeting of the Extended Scientific Committee of the CCSBT, 4–11 September and 12–15 September 2006, Tokyo, Japan.
- Hardy, G.S. (1982). A new species of *Pterygotrigla* (Pisces: Triglidae) from New Zealand. *New Zealand Journal of Zoology* 9: 207–210.
- Harrison, I.J.; Senou, H. (1999). Mugilidae. Mulletts. Pp. 2069–2112. In Carpenter, K.E.; Niem, V.H. (eds). FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific. Volumes 2–6. FAO, Rome.
- Heemstra, P.C. (1990). Achiropsettidae. p 408–413. In: Gon, O.; Heemstra, P.C. (eds). *Fishes of the Southern Ocean*. J.L.B. Smith Institute of Ichthyology, Grahamstown.
- Heemstra, P.C.; Randall, J.E. (1993). Groupers of the World (Family Serranidae, Subfamily Epinephelinae). An annotated and illustrated catalogue of the grouper, rockcod, hind, coral grouper and lyretail species known to date. *FAO Fisheries Synopsis* 125(16). 382 p.
- Hirt-Chabbert, J. (2006). Fish species of New Zealand. A photographic guide. Reed Books, Auckland.
- Hoese, D. F.; Bray, D. J. (2006). Achiropsettidae. pp. 1824–1825. In: Hoese, D.F.; Bray, D.J.; Paxton, J.R.; Allen, G.R. Fishes. In: Beesley, P.L.; Wells, A. (eds) *Zoological Catalogue of Australia*. Volume 35. ABRS & CSIRO Publishing: Australia Part 1, pp. xxiv 1–670; Part 2, pp. xxi 671–1472; Part 3, pp. xxi 1473–2178.
- Hutchins, J.B. Monacanthidae Filefishes (leatherjackets). (2001). Pp. 3929–3947. In Carpenter, K.E.; Niem, V.H. (eds). FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific. Volumes 2–6. FAO, Rome.
- Irvine, S.B.; Stevens, J.D.; Laurenson, L.J.B. (2006a). Surface bands on deepwater squalid dorsal-fin spines: an alternative method for ageing *Centroselachus crepidater*. *Canadian Journal of Fisheries and Aquatic Sciences* 63: 617–627.
- Irvine, S.B.; Stevens, J.D.; Laurenson, L.J.B. (2006b). Comparing external and internal dorsal-spine bands to interpret the age and growth of the giant lantern shark, *Etmopterus baxteri* (Squaliformes: Etmopteridae). *Environmental Biology of Fishes* 77: 253–264.

- Iwamoto, T. (1990). Macrouridae. Pp. 90–317. In Cohen, D.M.; Inada, T.; Iwamoto, T.; Scialabba, N. FAO species catalogue. Vol. 10. Gadiform fishes of the world (Order Gadiformes). *FAO Fisheries Synopsis 125(10)*. FAO, Rome. 442 p.
- Iwamoto, T.; Anderson, M.E.; (1994). Review of the grenadiers (Teleostei: Gadiformes) of southern Africa, with descriptions of four new species. *Ichthyological Bulletin of the J.L.B. Smith Institute of Ichthyology 61*: 1–28.
- Iwamoto, T.; Graham, K.J. (2001). Grenadiers (Families Bathygadidae and Macrouridae, Gadiformes, Pisces) of New South Wales, Australia. *Proceedings of the California Academy of Sciences 52(21)*: 407–509.
- Iwamoto, T.; McMillan, P. (1997). A new grenadier, genus *Trachonurus*, from New Zealand and Australia (Pisces: Gadiformes: Macrouridae). *Memoirs of the Museum of Victoria 56(1)*: 255–259.
- Iwamoto, T.; McMillan, P.J.; Shcherbachev, Y.N. (1999). A new grenadier, genus *Caelorinchus*, from Australia and New Zealand (Pisces, Gadiformes, Macrouridae). *New Zealand Journal of Marine and Freshwater Research 33*: 49–54.
- Iwamoto, T.; Shcherbachev, Y.N. (1991). Macrourid fishes of the subgenus *Chalinura*, genus *Coryphaenoides*, from the Indian Ocean. *Proceedings of the California Academy of Sciences 47(7)*: 207–233.
- Iwamoto, T.; Williams, A. (1999). Grenadiers from the continental slope of Western and Northwestern Australia. *Proceedings of the California Academy of Sciences 51(3)*: 105–243.
- Jackson, K.L.; Nelson, J.S. (1999). *Ambopthalmos eurystigmatophoros*: A new species of flathead sculpin (Scorpaeniformes: Psychrolutidae) from New Zealand. *Copeia 1999(2)*: 428–433.
- Jackson, K.L.; Nelson, J.S. (2000). *Neophrynichthys heterospilos*, a new species of flathead sculpin (Scorpaeniformes: Psychrolutidae) from New Zealand. *New Zealand Journal of Marine and Freshwater Research 34*: 719–726.
- James, G.D. (1972). Revision of the New Zealand flatfish genus *Peltorhamphus* with descriptions of two new species. *Copeia 2*: 345–55.
- James G.D.; Stephenson, A.B. (1974). *Caranx georgianus* Cuvier, 1833 (Pisces: Carangidae) in temperate Australasian waters. *Journal of the Royal Society of New Zealand 4*: 401–10.
- James, G.D. (1976). *Cyttus traversi* Hutton: juvenile form of *C. ventralis* Barnard and Davies (Pisces : Zeidae). *Journal of the Royal Society of New Zealand 6*: 493–498.
- James, G.D.; Inada, T.; Nakamura, I. (1988). Revision of the oreosomatid fishes (Family Oreosomatidae) from the southern oceans with description of a new species. *New Zealand Journal of Zoology 15*:291–326.

Karmovskaya, E.S.; Paxton J.R. (2000). Revision of the Australian congrid eels of the genus *Gnathophis* (family Congridae), with descriptions of six new species. *Journal of Ichthyology* 40 (Suppl. 1): s1–s14.

King, C.M.; Roberts, C.D.; Bell, B.D.; Fordyce, R.E., Nicoll, R.S.; Worthy, T.H.; Paulin, C.D.; Hitchmough, R.A.; Keyes, I.W., Baker, A.N.; Stewart, A.L.; Hiller, N. McDowall, R.N.; Holdaway, R.N.; McPhee, R.P.; Schwarzshans, W.W.; Tennyson, A.J.D.; Rust, S.; Macadie, I. (2009). Phylum Chordata lancelets, fishes, amphibians, reptiles, birds, mammals. Pp 431–554. In Gordon, D.P. (ed.). New Zealand inventory of biodiversity. Volume one. Kingdom Animalia. Radiata, Lophotrocozoa, Deuterostomia. Canterbury University Press, Christchurch.

Kishimoto, H.; Last, P.R.; Fujii, E.; Gomon, M.F. (1988). Revision of a deep-sea stargazer genus *Pleuroscopus*. *Japanese Journal of Ichthyology* 35(2): 150–158.

Kubota, T.; Shiobara, Y.; T. Kubodera, T. (1991) Food habits of the frilled shark *Chlamydoselachus anguineus* collected from Suruga Bay, Central Japan. *Nippon Suisan Gakkaishi* 57: 15–20.

Kyne, P.M.; Simpfendorfer, C.A. (2007). A collation and summarization of available data on deepwater chondrichthyans: biodiversity, life history and fisheries. A report prepared by the IUCN SSC Shark Specialist Group for the Marine Conservation Biology Institute. 137 p. (<http://www.flmnh.ufl.edu/fish/organizations/ssg/deepchondreport.pdf>)

Last, P.R.; Gledhill, D.C. (2007). The Maugean skate, *Zearaja maugeana* sp. nov. (Rajiformes: Rajidae) - a micro-endemic, Gondwanan relict from Tasmanian estuaries. *Zootaxa* 1494: 45–65.

Last, P.R.; McEachran, J.D. (2006). New softnose skate genus *Brochiraja* from New Zealand (Rajidae: Arhynchobatinae) with description of four new species. *New Zealand Journal of Marine and Freshwater Research* 40: 65–90.

Last, P.R.; Scott, E.O.G.; Talbot, F.H. (1983). Fishes of Tasmania. Tasmanian Fisheries Development Authority, Hobart.

Last, P.R.; Stevens, J.D. (2009). Sharks and rays of Australia. Second edition. CSIRO Publishing, Collingwood. 644 p.

Manikiam, J.S. (1969). A guide to the flatfishes (Order Heterosomata) of New Zealand. *Tuatara* 17: 118–130.

May, J.L.; Maxwell, J.G.H. (1986). Field guide to trawl fish from temperate waters of Australia. CSIRO, Melbourne. 492 p.

McDowall, R.M. (1982). The centrolophid fishes of New Zealand (Pisces: Stromateoidei). *Journal of the Royal Society of New Zealand* 12(2): 103–142.

McDowall, R.M.; Stewart, A.L. (1999). Further specimens of *Agrostichthys parkeri* (Teleostei: Regalecidae), with natural history notes. Pp. 165–174. In. Séret, B.; Sire, J.-Y.

- (eds). Proceedings of the 5th Indo-Pacific fish conference (Nouméa, 3–8 November 1997.) Paris: Société Française d'Ichtyologie & Institute de Recherche pour le Développement, 888 p.
- McMillan, C.B.; Wisner, R.L. (1984). Three new species of seven-gilled hagfishes (Myxinidae, *Eptatretus*) from the Pacific Ocean. *Proceedings of the California Academy of Sciences* 43(16): 249–267.
- McMillan, P.J. (1995). Review of trachyrincine grenadier fishes (Pisces: Macrouridae) from New Zealand, with a description of a new species of *Trachyrincus*. *New Zealand Journal of Marine and Freshwater Research* 29: 83–91.
- McMillan, P.J. (1999). New grenadier fishes of the genus *Coryphaenoides* (Pisces: Macrouridae); one from off New Zealand and one widespread in the southern Indo-West Pacific and Atlantic Oceans. *New Zealand Journal of Marine and Freshwater Research* 33: 481–489.
- McMillan, P.J.; Paulin, C.D. (1993). Descriptions of nine new species of rattails of the genus *Caelorinchus* (Pisces, Macrouridae) from New Zealand. *Copeia* 1993(3): 819–840.
- Mincarone, M.M.; Stewart, A.L. (2006). A new species of giant seven-gilled hagfish (Myxinidae: *Eptatretus*) from New Zealand. *Copeia* 2006(2): 225–229.
- Ministry of Fisheries, Science Group (comps.) (2006). Report from the Fishery Assessment Plenary, May 2006: stock assessments and yield estimates. 875 p. (Unpublished report held by MFish, Wellington.)
- Ministry of Fisheries (2008). Report from the Fisheries Assessment Plenary, May 2008: stock assessments and yield estimates. 990 p. (Unpublished report held by MFish, Wellington.)
- Motomura, H.; Last, P.R.; Yearsley, G.K. (2007). Two new species of the scorpionfish genus *Trachyscorpia* (Sebastidae: Sebastolobinae) from the southern Indo-West Pacific, with comments on the distribution of *T. eschmeyeri*. *Zootaxa* 1466: 19–34.
- Murray, T.; Richardson, K.; Dean, H.; Griggs, L. (1999): New Zealand tuna fisheries with reference to stock status and swordfish bycatch. Final Research Report to Ministry of Fisheries for project TUN9701. 126 p. (Unpublished report held by MFish, Wellington.)
- Nakamura, I. (1985): FAO Species Catalogue Vol. 5. Billfishes of the World. An annotated and illustrated catalogue of marlins, sailfishes, spearfishes and swordfishes known to date. *FAO Fisheries Synopsis* 125(5). 65 p.
- Nakamura, I.; Parin N.V. (1993). FAO species catalogue. Snake mackerels and cutlassfishes of the world (families Gempylidae and Trichiuridae). *FAO Fisheries Synopsis* 125(15): i–vii + 1–136.
- Nakaya, K. (1991). A review of the long-snouted species of *Apristurus* (Chondrichthyes, Scliorhinidae). *Copeia* 1991: 992–1002.
- Nakaya, K.; Bass, A.J. (1978). The frill shark *Chlamydoselachus anguineus* in New Zealand seas. *New Zealand Journal of Marine and Freshwater Research* 12: 397–398.

- Nelson, J.S. (1977). Fishes of the southern hemisphere genus *Neophrynichthys* (Scorpaeniformes: Cottoidei), with descriptions of two new species from New Zealand and Macquarie Island. *Journal of the Royal Society of New Zealand* 7(4): 485–511.
- Nelson, J.S. (1979). Revision of the fishes of the New Zealand genus *Hemerocoetes* (Perciformes: Percophididae), with descriptions of two new species. *New Zealand Journal of Zoology* 6: 587–599.
- Nelson, J.S. (1989). *Cotunculus nudus*, a new psychrolutid fish from New Zealand (Scorpaeniformes: Cottoidei). *Copeia* 1989(2): 401–408.
- Nelson, J.S. (1995). *Psychrolutes microporos*, a new species of cottoid (Teleostei: Scorpaeniformes) from New Zealand and Japan with biogeographical comments. *Proceedings of the Zoological Society of Calcutta* 48: 67–76.
- Nelson J.S. (2006). *Fishes of the World*. Fourth edition. John Wiley & Sons, Hoboken. 601 p.
- Parin, N.V.; Piotrovsky, A.S. (2004) Stromateoid fishes (suborder Stromateoidei) of the Indian Ocean (species composition, distribution, biology, and fisheries). *Journal of Ichthyology* 44 (suppl. 1): s33–s62.
- Paul, L.J. (1986). *New Zealand fishes. An identification guide*. Reed Methuen, Auckland. 184 p.
- Paul, L.J. (2000). *New Zealand fishes. Identification, natural history & fisheries*. Revised edition. Reed, Auckland. 253 p.
- Paulin, C.D. (1979). New Zealand roughies (Pisces: Berycomorphii: Trachichthyidae). *New Zealand Journal of Zoology* 6: 69–76.
- Paulin, C.D. (1983). A revision of the family Moridae (Pisces Anacanthini) within the New Zealand region. *National Museum of New Zealand Records* 2(9): 81–126.
- Paulin, C.D. (1984). First record of *Lepidion inosimae* (Günther) and *L. schmidti* Svetovidov (Pisces: Moridae) from New Zealand. *New Zealand Journal of Zoology* 11: 59–62.
- Paulin, C.D. (1989). Redescription of *Helicolenus percoides* (Richardson) and *H. barathri* from New Zealand (Pisces, Scorpaenidae). *New Zealand Journal of Zoology* 19: 319–325.
- Paulin, C. (1996). The spotty: a queer reef streaker. *Seafood New Zealand* 4(5): 90–91.
- Paulin, C. (1999). Bonnetmouths: Rubyfish and redbait. *Seafood New Zealand* 7(8): 74–76.
- Paulin, C. (2003). Charismatic megafauna. *Seafood New Zealand* 11(5): 61–63.
- Paulin, C. (2005). A rich mixing of mullet. *Seafood New Zealand* 13(11): 61–63.

- Paulin, C.D.; Moreland, J.M. (1979). *Congiopodus coriaceus*, a new species of pigfish, and a redescription of *C. leucopaecilus* (Richardson), from New Zealand (Pisces: Congiopodidae). *New Zealand Journal of Zoology* 6: 601–608.
- Paulin, C.; Smith, P.J.; McVeagh, M. (2003). Seaperch how many species? *Seafood New Zealand* 11(7): 61–63.
- Paulin, C.; Stewart, A. (2001). Kingfish. *Seafood New Zealand* 9(1): 70–72.
- Paulin, C.; Stewart, A.; Roberts, C.; McMillan, P. (1989). New Zealand fish. A complete guide. *National Museum of New Zealand Miscellaneous Series No. 19*. 279 p.
- Randall, J.E.; Heemstra, P.C. (1991). Revision of Indo-Pacific groupers (Perciformes: Serranidae: Epinephelinae), with descriptions of five new species. *Indo-Pacific Fishes* 20. 332 p.
- Richards, W.J. (1992). Comments on the genus *Lepidotrigla* (Pisces, Triglidae) with descriptions of two new species from the Indian and Pacific Oceans. *Bulletin of Marine Science* 51(1): 45–65.
- Richards, W.J. (1997). A new species of *Lepidotrigla* (Pisces, Triglidae) from the Kermadec Islands of the South Pacific. *Bulletin of Marine Science* 60(3): 1050–1059.
- Richards, W.J. (1999). Triglidae. Gurnards, sea robins (also, armoured gurnards, armoured sea robins). Pp 2359–2382. In Carpenter, K.E.; Niem, V.H. (eds). *FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific. Volumes 2–6*. FAO, Rome.
- Roberts, C.D. (1989). A revision of New Zealand and Australian orange perches (Teleostei; Serranidae) previously referred to *Lepidoperca pulchella* (Waite) with description of a new species of *Lepidoperca* from New Zealand. *Journal of Natural History* 23: 557–589.
- Roberts, C.D. (1993). New fishes from the Kermadec Ridge. *Seafood New Zealand* 1(4): 102–103.
- Roberts, C.D. (1996). Hapuku and bass: the mystery of the missing juveniles. *Seafood New Zealand* 4(1): 17–21.
- Roberts, C. (1998). Two odd cod. (Weever need for rare sandperch). *Seafood New Zealand* 6(1): 95–96.
- Roberts, C. (1998). Secretive sandfishes sought. *Seafood New Zealand* 6(3): 83–84.
- Roberts, C. (1999). Black roughy. *Seafood New Zealand* 7(6): 74–76.
- Roberts, C. (2000). Juvenile bass discovered out west. *Seafood New Zealand* 8(10): 82–84.
- Roberts, C.D. (2003). A new species of trumpeter (Teleostei; Percomorpha; Latridae) from the central South Pacific Ocean, with a taxonomic review of the striped trumpeter *Latris lineata*. *Journal of the Royal Society of New Zealand* 33 (4): 731–754.

- Roberts, C.D.; Grande, T.C. (1999). The sandfish, *Gonorynchus forsteri* (Gonorynchidae), from bathyal depths off New Caledonia, with notes on New Zealand specimens. Pp. 195–205. In Séret, B. & J.-Y. Sire (eds.). *Proceedings of the 5th Indo-Pacific Fish Conference (Nouméa, 3–8 November 1997)*. Paris: Société Française d'Ichtyologie & Institut de Recherche pour le Développement, 888 p.
- Roberts, C.; Stewart, A. (1998): Magnificent moonfishes. *Seafood New Zealand* 6(6): 91–92.
- Sato, K.; Nakaya, K.; Stewart, A.L. (1999). A new species of the deep-water catshark genus *Apristurus* from New Zealand waters (Chondrichthyes: Scyliorhinidae). *Journal of the Royal Society of New Zealand* 29: 325–335.
- Sato, T.; Nakabo, T. (2002). Two new species of *Paraulopus* (Osteichthyes: Aulopiformes) from New Zealand and eastern Australia, and comparisons with *P. nigripinnis*. *Species Diversity No. 7*: 393–404.
- Sazonov, Y.I.; Iwamoto, T. (1992). Grenadiers (Pisces, Gadiformes) of the Nazca and Sala y Gomez ridges, south-eastern Pacific. *Proceedings of the California Academy of Sciences* 48(2): 27–95.
- Sazonov, Y.I.; Williams, A. (2001). A review of the alepocephalid fishes (Argentiniformes, Alepocephalidae) from the continental slope of Australia. *Journal of Ichthyology* 41(1): s1–s36.
- Shcherbachev, Y. N.; Sazonov, Y. I.; Iwamoto, T. (1992). Synopsis of the grenadier genus *Kuronezumia* (Pisces: Gadiformes: Macrouridae), with description of a new species. *Proceedings of the California Academy of Sciences* 48(3): 97–108.
- Shirai, S; Tachikawa, H. 1993. Taxonomic resolution of the *Etmopterus pusillus* species group (Elasmobranchii, Etmopteridae), with description of *E. bigelowi*, n. sp. *Copeia* 1993: 483–495.
- Smith, M.M.; Heemstra P.C. (1986). *Smith's Sea Fishes*. Macmillan, Johannesburg. 1047 p.
- Smith, P.; Griggs, L. (2000). Identification of northern bluefin tuna in the New Zealand EEZ. Final Research Report for Ministry of Fisheries Research Project MOF2000/02B. October 2000. 12 p. (Unpublished report held by MFish, Wellington.)
- Smith, P.; Griggs, L.; Chow, C. (2001). DNA identification of Pacific bluefin tuna (*Thunnus orientalis*) in the New Zealand fishery. *New Zealand Journal of Marine and Freshwater Research* 35(4): 843–850.
- Smith, P.J.; McPhee, R.P.; Roberts, C.D. (2006). DNA and meristic evidence for two species of giant stargazer (Teleostei: Uranoscopidae: *Kathetostoma*) in New Zealand waters. *New Zealand Journal of Marine and Freshwater Research* 40(3): 379–387.
- Smith, P.J.; Roberts, C.D. (2004). Silver roughy. How many species? *Seafood New Zealand* 12(6): 62–63.

Smith-Vaniz, W.F. (1995). Carangidae. Jureles, pámpanos, cojinúas, zapateros, cocineros, casabes, macarelas, chicharos, jorobados, medregales, pez pilota. p. 940–986. In: Fischer, W.; Krupp, F.; Schneider, W.; Sommer, C.; Carpenter, K.E.; Niem, V. (eds.) Guía FAO para Identificación de Especies para lo Fines de la Pesca. Pacífico Centro-Oriental. 3 Vols. FAO, Rome.

Smith-Vaniz, W.F.; Jelks, H.L. (2006). Australian trevallies of the genus *Pseudocaranx* (Teleostei: Carangidae), with description of a new species from Western Australia. *Memoirs of Museum Victoria* 63(1): 97–106.

Springer, V.G.; Bauchot, M.-L. (1994). Identification of the taxa *Xenocephalidae*, *Xenocephalus*, and *X. armatus* (Osteichthyes: Uranoscopidae). *Proceedings of the Biological Society of Washington* 107(1): 79–89.

Stephenson, A.B.; Robertson, D.A. (1977). The New Zealand species of *Trachurus* (Pisces: Carangidae). *Journal of the Royal Society of New Zealand* 7: 243–253.

Stewart, A. (1994). Anglerfishes – a story of parasitic sex and meals by trickery. *Seafood New Zealand* 2(7): 102–105.

Stewart, A. (1995). New Zealand sea serpents: oarfishes and their relatives. *Seafood New Zealand* 3(2): 101–104.

Stewart, A. (1996): Frostfish - in from the cold. *Seafood New Zealand* 4(10): 98–100.

Stewart, A. (1998). Summer visitors. *Seafood New Zealand* 6(5): 77–79.

Stewart, A. (1999): Three “barra” boys: „cudá, „cudina and „cúta. *Seafood New Zealand* 7(2): 78–80.

Stewart, A. (1999). Rudderfish – neither escolar nor oilfish. *Seafood New Zealand* 7(10): 82–84.

Stewart, A. (2000). The frill shark. *Seafood New Zealand*: 74–76.

Stewart, A. (2001). Pomfrets in New Zealand waters. *Seafood New Zealand* 9(9): 77–80.

Stewart, A. (2003). Deep-sea lizardfishes. *Seafood New Zealand* 11(6): 62–63.

Stewart, A.; Roberts, C.D. (2003). Ghost flatheads. *Seafood New Zealand* 11(2). 61–63.

Stewart, A.; Roberts, C.D. (2004). Ocean blue-eye: another bluenose? *Seafood New Zealand* 12(7): 61–63.

Strickland, R.R. (1990). Nga tini a Tangaroa: a Maori-English, English-Maori dictionary of fish names. *New Zealand Fisheries Occasional Publication No. 5*. 64 p.

Takahashi, M.; Okamura, H.; Yokawa, K.; Okasaki, M. (2003). Swimming behaviour and migration of a swordfish recorded by an archival tag. *Marine and Freshwater Research* 54(4): 527–534.

- Tanaka, S.; Shiobara, Y.; Hioki, S.; Abe, H.; Nishi, G.; Yano, K.; Suzuki, K. (1990). The reproductive biology of the frilled shark, *Chlamydoselachus anguineus* from Suruga Bay, Japan. *Japanese Journal of Ichthyology* 37: 273–291.
- Taniuchi, T., Garrick, J.A.F. (1986). A new species of *Scymnodalatias* from the southern oceans, and comments on other squaliform sharks. *Japanese Journal of Ichthyology* 33: 119–134.
- Wetherbee, B.M. (1996). Distribution and reproduction of the southern lantern shark from New Zealand. *Journal of Fish Biology* 49: 1186–1196.
- Wetherbee, B.M. (2000). Assemblage of deep-sea sharks on Chatham Rise, New Zealand. *Fishery Bulletin* 98: 189–198.
- Whitehead, P.J.P.; Smith P.J.; Robertson, D.A. (1985). The two species of sprat in New Zealand waters (*Sprattus antipodum* and *S. muelleri*). *New Zealand Journal of Marine and Freshwater Research* 19: 261–271.
- Willis, J.; Hobday, A.J. (2007): Influence of upwelling on movement of southern bluefin tuna (*Thunnus maccoyii*) in the Great Australian Bight. *Marine and Freshwater Research* 58(8): 699–708.
- Yamakawa, T; Taniuchi, T; Nose, Y. (1986). Review of the *Etmopterus lucifer* group (Squalidae) in Japan. In Uyeno, T.; Arai, R.; Taniuchi, T.; Matsuura, K. (eds.), Proceedings of the Second International Conference on Indo-Pacific Fishes. Ichthyological Society of Japan, Tokyo, pp. 197–207.
- Yatsu, Y. (1995): Zoogeography of the epipelagic fishes in the South Pacific Ocean and the Pacific sector of the Subantarctic, with special reference to the ecological role of slender tuna, *Allothunnus fallai*. *Bulletin of the National Research Institute of Far Seas Fisheries* 32: 1–145.
- Yatsu, A. (1995). The role of slender tuna, *Allothunnus fallai*, in the pelagic ecosystems of the south Pacific Ocean. *Japanese Journal of Ichthyology* 41(4):367–377.

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Alopiidae	Thresher sharks	20	16, 45
Argentinidae	Argentines, herring smelts	166	21, 103
Arhynchobatidae	Softnose skates	48b	19, 82
Arripidae	Australasian salmon, kahawai	389	27, 230
Bathygadidae	Grenadiers, bathygadids, rattails	215	22, 115
Bathysauridae	Deepsea lizardfishes	197	21, 109
Berycidae	Alfonsinos	281	24, 179
Bothidae	Lefteye flounders	494	30, 271
Bramidae	Pomfrets	367	26, 224
Bythitidae	Viviparous brotulas	223	23, 170
Callorhynchidae	Ploughnose chimaeras	5	16, 35
Carangidae	Jacks, pompanos	364	26, 219
Carcharhinidae	Requiem sharks	29	17, 56
Centrolophidae	Medusafishes	479	29, 263
Centrophoridae	Gulper sharks	35	18, 65
Cepolidae	Bandfishes	407	28, 240
Cetorhinidae	Basking sharks	21	17, 46
Chaunacidae	Coffinfishes, sea toads	232	23, 171
Cheilodactylidae	Morwongs	405	27, 236
Chimaeridae	Shortnose chimaeras, ratfishes	7	16, 38
Chlamydoselachidae	Frill sharks	31	18, 59
Clupeidae	Herrings	97	21, 99
Congiopodidae	Racehorses, pigfishes, horsefishes	309	25, 198
Congridae	Conger eels	86	20, 94
Cyttidae	Lookdown dories	283	24, 182
Dalatiidae	Kitefin sharks	39	19, 76
Dasyatidae	Whiptail stingrays	55	20, 86
Diodontidae	Porcupinefishes	510	31, 285
Diretmidae	Spinyfins	277	23, 175
Emmelichthyidae	Rovers	369	26, 226
Engraulidae	Anchovies	95	21, 98
Epigonidae	Deepwater cardinalfishes	353	26, 215
Etmopteridae	Lantern sharks	36	18, 67
Euclichthyidae	Eucla cod	214	22, 114
Gadidae	Cods	220	23, 167
Gempylidae	Snake mackerels	473	29, 256
Gonorynchidae	Beaked sandfishes	99	21, 102
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Hemiramphidae	Halfbeaks	254	23, 174
Hexanchidae	Cow sharks	32	18, 60
Hoplichthyidae	Ghost flatheads	314	25, 204
Kyphosidae	Sea chubs	391	27, 231
Labridae	Wrasses	412	28, 241
Lamnidae	Mackerel sharks	22	17, 47
Lampridae	Opahs	202	22, 110
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Macrouridae	Grenadiers, rattails	215	22, 115

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Mugilidae	Mulletts	245	23, 172
Mullidae	Goatfishes	382	27, 229
Myliobatidae	Eagle rays	58a	20, 88
Myxinidae	Hagfishes	1	16, 34
Narkidae	Sleeper rays	43b	19, 78
Notacanthidae	Spiny eels	73	20, 91
Nototheniidae	Cod icefishes	427	28, 246
Odacidae	Cales	413	28, 245
Odontaspidae	Sand tiger sharks	16	16, 44
Ophidiidae	Cusk-eels	222	23, 168
Oreosomatidae	Oreos	284	24, 184
Oxynotidae	Rough sharks	38	19, 75
Paraulopidae	Cucumber fishes	184	21, 108
Pentacerotidae	Armorheads	396	27, 232
Percophidae	Duckbills	439	28, 250
Pinguipedidae	Sandperches	435	28, 248
Polyprionidae	Wreckfishes	337	26, 209
Pseudotriakidae	False cat sharks	25	17, 53
Psychrolutidae	Fathead sculpins	325	25, 205
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Serranidae	Sea basses	338	26, 211
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Sparidae	Porgies	378	27, 228
Sphyrnidae	Hammerhead sharks	30	18, 58
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Tetraonuridae	Squaretails	482	30, 270
Tetraodontidae	Puffers	509	31, 284
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Trachichthyidae	Roughies	280	24, 176
Trachipteridae	Ribbonfishes	206	22, 111
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Trichiuridae	Cutlassfishes	474	29, 258
Triglidae	Searobins, gurnards	310	25, 201
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Zeidae	Dories	288	24, 190
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Armorye dories	Zeniontidae	286	24, 188
Armorheads	Pentacerotidae	396	27, 232
Australasian salmon, kahawai	Arripidae	389	27, 230
Bandfishes	Cepolidae	407	28, 240
Basking sharks	Cetorhinidae	21	17, 46
Beaked sandfishes	Gonorynchidae	99	21, 102
Cales	Odacidae	413	28, 245
Cat sharks	Scyliorhinidae	23	17, 50
Cod icefishes	Nototheniidae	427	28, 246
Cods	Gadidae	220	23, 167
Coffinfishes, sea toads	Chaunacidae	232	23, 171
Conger eels	Congridae	86	20, 94
Cow sharks	Hexanchidae	32	18, 60
Cucumber fishes	Paraulopidae	184	21, 108
Cusk-eels	Ophidiidae	222	23, 168
Cutlassfishes	Trichiuridae	474	29, 258
Cutthroat eels	Synaphobranchidae	80	20, 92
Deepsea cods	Moridae	216	22, 154
Deepsea lizardfishes	Bathysauridae	197	21, 109
Deepwater cardinalfishes	Epigonidae	353	26, 215
Dogfish sharks	Squalidae	34	18, 63
Dories	Zeidae	288	24, 190
Duckbills	Percophidae	439	28, 250
Eagle rays	Myliobatidae	58a	20, 88
Eucla cod	Euclichthyidae	214	22, 114
False cat sharks	Pseudotriakidae	25	17, 53
Fathead sculpins	Psychrolutidae	325	25, 205
Filefishes	Monacanthidae	506	30, 283
Frill sharks	Chlamydoselachidae	31	18, 59
Ghost flatheads	Hoplichthyidae	314	25, 204
Goatfishes	Mullidae	382	27, 229
Grenadiers, bathygadids, rattails	Bathygadidae	215	22, 115
Grenadiers, rattails	Macrouridae	215	22, 115
Gulper sharks	Centrophoridae	35	18, 65
Hagfishes	Myxiniidae	1	16, 34
Halfbeaks	Hemiramphidae	254	23, 174
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Hammerhead sharks	Sphyrnidae	30	18, 58
Herrings	Clupeidae	97	21, 99
Hound sharks	Triakidae	27	17, 54
Jacks, pompanos	Carangidae	364	26, 219
Kitefin sharks	Dalatiidae	39	19, 76
Lantern sharks	Etmopteridae	36	18, 67
Lefteye flounders	Bothidae	494	30, 271
Longnose chimaeras	Rhinochimaeridae	6	16, 36
Lookdown dories	Cyttidae	283	24, 182

Common name	Scientific name	Number	Page
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Mackerels, tunas	Scombridae	475	29, 259
Medusafishes	Centrolophidae	479	29, 263
Merluccid hakes	Merlucciidae	218	22, 164
Morwongs	Cheilodactylidae	405	27, 236
Mulletts	Mugilidae	245	23, 172
Oarfishes	Regalacidae	207	22, 112
Opahs	Lampridae	202	22, 110
Oreos	Oreosomatidae	284	24, 184
Ploughnose chimaeras	Callorhynchidae	5	16, 35
Pomfrets	Bramidae	367	26, 224
Porcupinefishes	Diodontidae	510	31, 285
Porgies	Sparidae	378	27, 228
Puffers	Tetraodontidae	509	31, 284
Racehorses, pigfishes, horsefishes	Congiopodidae	309	25, 198
Requiem sharks	Carcharhinidae	29	17, 56
Rhombosoleid flounders	Rhombosoleidae	497	30, 273
Ribbonfishes	Trachipteridae	206	22, 111
Rough sharks	Oxynotidae	38	19, 75
Roughies	Trachichthyidae	280	24, 176
Rovers	Emmelichthyidae	369	26, 226
Sand tiger sharks	Odontaspidae	16	16, 44
Sandperches	Pinguipedidae	435	28, 248
Scorpionfishes, rockfishes	Scorpaenidae	304	25, 196
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Sea chubs	Kyphosidae	391	27, 231
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<i>Alepocephalus antipodanus</i>	Smallscaled brown slickhead	SSM	SSM	104
<i>Alepocephalus australis</i>	Bigscaled brown slickhead	SBI	SBI	105
<i>Alertichthys blacki</i>	Alert pigfish	API	API	198
<i>Alloctytus niger</i>	Black oreo	BOE	BOE	184
<i>Alloctytus verrucosus</i>	Warty oreo	WOE	WOE	185
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<i>Ambopthalmos angustus</i>	Pale toadfish	TOP	TOP	205
<i>Antimora rostrata</i>	Violet cod	VCO	VCO	154
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<i>Coelorinchus cookianus</i>	Cook's rattail	RAT	CCO	122
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<i>Genyagnus monopterygius</i>	Spotted stargazer	SPZ	SPZ	251
<i>Genypterus blacodes</i>	Ling	LIN	LIN	169
<i>Girella tricuspidata</i>	Parore	PAR	PAR	231
<i>Gnathophis habenatus</i>	Silver conger	SEE	SEE	97
<i>Gollum attenuatus</i>	Slender smooth-hound	SSH	SSH	53
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<i>Macruronus novaezealandiae</i>	Hoki	HOK	HOK	165
<i>Malacocephalus laevis</i>	Smooth headed rattail	RAT	MLA	147
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<i>Merluccius australis</i>	Hake	HAK	HAK	166
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<i>Meuschenia scaber</i>	Leatherjacket	LEA	LEA	283
<i>Micromesistius australis</i>	Southern blue whiting	SBW	SBW	167
<i>Mora moro</i>	Ribaldo	RIB	RIB	159
<i>Mugil cephalus</i>	Grey mullet	GMU	GMU	173
<i>Mustelus lenticulatus</i>	Rig	SPO	SPO	55
<i>Myliobatis tenuicaudatus</i>	Eagle ray	EGR	EGR	88
<i>Nemadactylus douglasii</i>	Porae	POR	POR	236
<i>Nemadactylus macropterus</i>	Tarakihi	TAR	TAR	237
<i>Neocyttus rhomboidalis</i>	Spiky oreo	SOR	SOR	186
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<i>Pleuroscopus pseudodorsalis</i>	Scaly stargazer	PLZ	PLZ	254
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<i>Seriolella punctata</i>	Silver warehou	SWA	SWA	268
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<i>Sprattus muelleri</i>	Stout sprat	SPR	SPM	101
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Basking shark	<i>Cetorhinus maximus</i>	BSK	BSK	46
Bass groper	<i>Polyprion americanus</i>	BAS	BAS	209
Baxter's lantern dogfish	<i>Etmopterus baxteri</i>	ETB	ETB	67
Bigeye cardinalfish	<i>Epigonus lenimen</i>	EPL	EPL	216
Big-scale pomfret	<i>Taractichthys longipinnis</i>	BSP	BSP	225
Bigscaled brown slickhead	<i>Alepocephalus australis</i>	SBI	SBI	105
Black flounder	<i>Rhombosolea retiaria</i>	BFL (effort), FLA (landing)	BFL	280
Black ghost shark	<i>Hydrolagus homonycteris</i>	HYD	HYB	41
Black javelinfish	<i>Mesobius antipodum</i>	RAT	BJA	148
Black lip rattail	<i>Coelorinchus celaenostomus</i>	RAT	CEX	121
Black oreo	<i>Allocyttus niger</i>	BOE	BOE	184
Black slickhead	<i>Xenodermichthys copei</i>	BSL	BSL	107
Blackspot rattail	<i>Lucigadus nigromaculatus</i>	RAT	VNI	145
Blobfish	<i>Psychrolutes microporos</i>	PSY	PSY	208
Blue cod	<i>Paraperca colias</i>	BCO	BCO	248
Blue cusk eel	<i>Brotulotaenia crassa</i>	BCR	BCR	168
Blue mackerel	<i>Scomber australasicus</i>	EMA	EMA	260
Blue shark	<i>Prionace glauca</i>	BWS	BWS	57
Bluenose	<i>Hyperoglyphe antarctica</i>	BNS	BNS	264
Bollons rattail	<i>Coelorinchus bollonsi</i>	CBO	CBO	120
Bonyskull toadfish	<i>Cottunculus nudus</i>	COT	COT	206
Brill	<i>Colistium guntheri</i>	BRI (effort), FLA (landing)	BRI	274
Broadnose sevengill shark	<i>Notorynchus cepedianus</i>	SEV	SEV	62
Bronze whaler shark	<i>Carcharhinus brachyurus</i>	BWH	BWH	56
Brown chimaera	<i>Chimaera</i> sp. C	CHP	CHP	39
Brown stargazer	<i>Xenocephalus armatus</i>	BRZ	BRZ	255
Bulbous rattail	<i>Kuronezumia bubonis</i>	RAT	NBU	142
Butterfish	<i>Odax pullus</i>	BUT	BUT	245
Butterfly perch	<i>Caesioperca lepidoptera</i>	BPE	BPE	211
Cape scorpionfish	<i>Trachyscorpia eschmeyeri</i>	TRS	TRS	197
Capro dory	<i>Capromimus abbreviatus</i>	CDO	CDO	188
Carpet shark	<i>Cephaloscyllium isabellum</i>	CAR	CAR	52
Catshark	<i>Apristurus</i> spp.	APR	APR	50
Codheaded rattail	<i>Bathygadus cottoides</i>	BAC	BAC	115
Common halosaur	<i>Halosaurus pectoralis</i>	UNI	HPE	90
Common roughy	<i>Paratrachichthys trailli</i>	RHY	RHY	178
Common warehou	<i>Serirolella brama</i>	WAR	WAR	266

Common name	Scientific name	MFish reporting code	MFish research code	Page
Conger eel	<i>Conger verreauxi</i>	CON	CVR	96
Cook's rattail	<i>Coelorinchus cookianus</i>	RAT	CCO	122
Crested bellowsfish	<i>Notopogon lilliei</i>	CBE	CBE	194
Crested flounder	<i>Lophonectes gallus</i>	BOT	CFL	272
Cucumber fish	<i>Paraulopus nigripinnis</i>	CUC	CUC	108
Dark banded rattail	<i>Coelorinchus maurofasciatus</i>	RAT	CDX	128
Dark toadfish	<i>Neophrynichthys latus</i>	TOD	TOD	207
Dawson's catshark	<i>Bythaelurus dawsoni</i>	DCS	DCS	51
Dealfish	<i>Trachipterus trachypterus</i>	DEA	DEA	111
Deepsea cardinalfish	<i>Epigonus telescopus</i>	CDL	EPT	218
Deepsea flathead	<i>Hoplichthys haswelli</i>	FHD	FHD	204
Deepsea lizardfish	<i>Bathysaurus ferox</i>	BEF	BEF	109
Deepsea pigfish	<i>Congiopodus coriaceus</i>	DSP	DSP	199
Deepwater spiny skate	<i>Amblyraja cf. hyperborea</i>	DSK	DSK	79
Dwarf cod	<i>Notophycis marginata</i>	MOD	DCO	160
Eagle ray	<i>Myliobatis tenuicaudatus</i>	EGR	EGR	88
Electric ray	<i>Torpedo fairchildi</i>	ERA	ERA	77
Elephant fish	<i>Callorhinchus milii</i>	ELE	ELE	35
Eucla cod	<i>Euclichthys polynemus</i>	EUC	EUC	114
Filamentous rattail	<i>Gadomus aoteanus</i>	RAT	GAO	140
Finless flounder	<i>Mancopsetta milfordi</i>	MAN	MAN	282
Four-rayed rattail	<i>Coryphaenoides subserrulatus</i>	RAT	CSU	139
Frill shark	<i>Chlamydoselachus anguineus</i>	FRS	FRS	59
Frostfish	<i>Lepidopus caudatus</i>	FRO	FRO	258
Garfish	<i>Hyporhamphus ihi</i>	GAR	GAR	174
Gemfish	<i>Rexea solandri</i>	SKI	SKI	256
Ghost shark (dark ghost shark)	<i>Hydrolagus novaezealandiae</i>	GSH	GSH	42
Giant chimaera	<i>Chimaera lignaria</i>	CHG	CHG	38
Giant grouper	<i>Epinephelus lanceolatus</i>	GGP	GGP	213
Giant lepidion	<i>Lepidion schmidti</i>	LEG	LPS	158
Giant stargazer	<i>Kathetostoma giganteum</i>	STA	STA	253
Girdled wrasse	<i>Notolabrus cinctus</i>	GPF	GPF	242
Globefish	<i>Contusus richei</i>	UNI	GLB	284
Globosehead rattail	<i>Cetonurus crassiceps</i>	RAT	CCR	116
Goatfish	<i>Upeneichthys lineatus</i>	RMU	RMU	229
Greenback flounder	<i>Rhombosolea tapirina</i>	GFL (effort), FLA (landing)	GFL	281
Greenback jack mackerel	<i>Trachurus declivis</i>	JMA	JMD	221
Grenadier cod	<i>Tripterygius gilchristi</i>	GRC	GRC	163
Grey mullet	<i>Mugil cephalus</i>	GMU	GMU	173
Hagfish	<i>Eptatretus cirrhatous</i>	HAG	HAG	34
Hairy conger	<i>Bassanago hirsutus</i>	HCO	HCO	95
Hake	<i>Merluccius australis</i>	HAK	HAK	166
Hammerhead shark	<i>Sphyrna zygaena</i>	HHS	HHS	58
Hapuku	<i>Polyprion oxygeneios</i>	HAP	HAP	210
Hoki	<i>Macruronus novaezealandiae</i>	HOK	HOK	165
Horrible rattail	<i>Coelorinchus horribilis</i>	RAT	CXH	124
Humpback rattail	<i>Coryphaenoides dossenus</i>	RAT	CBA	134
Javelin fish	<i>Lepidorhynchus denticulatus</i>	JAV	JAV	144
John dory	<i>Zeus faber</i>	JDO	JDO	191
Johnson's cod	<i>Halargyreus johnsonii</i>	HJO	HJO	156
Kahawai	<i>Arripis trutta</i>	KAH	KAH	230

Common name	Scientific name	MFish reporting code	MFish research code	Page
Kaiyomaru rattail	<i>Coelorinchus kaiyomaru</i>	RAT	CKA	126
Kingfish	<i>Seriola lalandi</i>	KIN	KIN	220
<i>Kuronezumia leonis</i>	<i>Kuronezumia leonis</i>	RAT	NPU	143
Leafscale gulper shark	<i>Centrophorus squamosus</i>	CSQ	CSQ	65
Leatherjacket	<i>Meuschenia scaber</i>	LEA	LEA	283
Lemon sole	<i>Pelotretis flavilatus</i>	LSO (effort), FLA (landing)	LSO	276
Ling	<i>Genypterus blacodes</i>	LIN	LIN	169
Longfinned beryx	<i>Beryx decadactylus</i>	BYX	BYD	179
Longfinned boarfish	<i>Zanclistius elevatus</i>	LFB	LFB	235
Longnose deepsea skate	<i>Bathyraja shuntovi</i>	PSK	PSK	83
Longnose spookfish	<i>Harriotta raleighana</i>	LCH	LCH	36
Longnose velvet dogfish	<i>Centroscymnus crepidater</i>	CYP	CYP	71
Long-tailed stingray	<i>Dasyatis thetidis</i>	WRA	WRA	87
Lookdown dory	<i>Cyttus traversi</i>	LDO	LDO	183
Lucifer dogfish	<i>Etmopterus lucifer</i>	ETL	ETL	68
<i>Lyconus</i> sp.	<i>Lyconus</i> sp.	LYC	LYC	164
Mahia rattail	<i>Coelorinchus matamua</i>	CMA	CMA	127
Mako shark	<i>Isurus oxyrinchus</i>	MAK	MAK	48
McMillan's rattail	<i>Coryphaenoides mcmillani</i>	RAT	CMX	135
Mirror dory	<i>Zenopsis nebulosa</i>	MDO	MDO	190
Moki	<i>Latridopsis ciliaris</i>	MOK	MOK	238
Moonfish	<i>Lampris guttatus</i>	MOO	MOO	110
Murray's rattail	<i>Coryphaenoides murrayi</i>	RAT	CMU	136
New Zealand sole	<i>Peltorhamphus novaezeelandiae</i>	ESO (effort), FLA (landing)	ESO	277
<i>Nezumia namatahi</i>	<i>Nezumia namatahi</i>	RAT	NNA	149
Northern spiny dogfish	<i>Squalus griffini</i>	NSD	NSD	64
Notable rattail	<i>Coelorinchus innotabilis</i>	RAT	CIN	125
Numbfish	<i>Typhlonarke</i> spp.	BER	BER	78
Oarfish	<i>Regalecus glesne</i>	OAR	OAR	113
Oblique banded rattail	<i>Coelorinchus aspercephalus</i>	RAT	CAS	118
<i>Odontomacurus murrayi</i>	<i>Odontomacurus murrayi</i>	RAT	OMU	150
Oliver's rattail	<i>Coelorinchus oliverianus</i>	COL	COL	130
Opalfishes	<i>Hemerocoetes</i> spp.	OPA	OPA	250
Orange bellowsfish	<i>Notopogon xenosoma</i>	UNI	NOF	195
Orange perch	<i>Lepidoperca aurantia</i>	OPE	OPE	214
Orange roughy	<i>Hoplostethus atlanticus</i>	ORH	ORH	176
Owston's dogfish	<i>Centroscymnus owstoni</i>	CYO	CYO	72
Pacific spookfish	<i>Rhinochimaera pacifica</i>	RCH	RCH	37
Pale ghost shark	<i>Hydrolagus bemisi</i>	GSP	GSP	40
Pale toadfish	<i>Amblophthalmos angustus</i>	TOP	TOP	205
Parore	<i>Girella tricuspidata</i>	PAR	PAR	231
Patagonian toothfish	<i>Dissostichus eleginoides</i>	PTO	PTO	246
Pigfish	<i>Congiopodus leucopaecilus</i>	PIG	PIG	200
Pilchard	<i>Sardinops sagax</i>	PIL	PIL	99
Pineapple rattail	<i>Idiophorhynchus andriashevi</i>	RAT	PIN	141
Pink frogmouth	<i>Chaunax</i> sp. C	CHX	CHX	171
Plunket's shark	<i>Proscymnodon plunketi</i>	PLS	PLS	73
Pointynose blue ghost shark	<i>Hydrolagus trolli</i>	HYP	HYP	43
Porae	<i>Nemadactylus douglasii</i>	POR	POR	236
Porbeagle shark	<i>Lamna nasus</i>	POS	POS	49

Common name	Scientific name	MFish reporting code	MFish research code	Page
Porcupine fish	<i>Allomycterus pilatus</i>	POP	POP	285
Portuguese dogfish	<i>Centroscymnus coelolepis</i>	CYL	CYL	70
Prickly deepsea skate	<i>Brochiraja spinifera</i>	OSK	BTS	85
Prickly dogfish	<i>Oxynotus bruniensis</i>	PDG	PDG	75
Ragfish	<i>Pseudoicichthys australis</i>	RAG	RAG	265
Ray's bream	<i>Brama brama</i>	RBM	RBM	224
Red bandfish	<i>Cepola haastii</i>	UNI	CEP	240
Red cod	<i>Pseudophycis bachus</i>	RCO	RCO	161
Red gurnard	<i>Chelidonichthys kumu</i>	GUR	GUR	201
Red snapper	<i>Centroberyx affinis</i>	RSN	RSN	181
Redbait	<i>Emmelichthys nitidus</i>	RBT	RBT	226
Ribaldo	<i>Mora moro</i>	RIB	RIB	159
Ribbonfish	<i>Agrostichthys parkeri</i>	AGR	AGR	112
Ridge scaled rattail	<i>Macrourus carinatus</i>	MCA	MCA	146
Rig	<i>Mustelus lenticulatus</i>	SPO	SPO	55
Robust cardinalfish	<i>Epigonus robustus</i>	EPR	EPR	217
Rough skate	<i>Zearaja nasuta</i>	RSK	RSK	81
Roughhead rattail	<i>Coelorinchus trachycarus</i>	RAT	CHY	133
Rubyfish	<i>Plagiogeneion rubiginosum</i>	RBV	RBV	227
Rudderfish	<i>Centrolophus niger</i>	RUD	RUD	263
Sand flounder	<i>Rhombosolea plebeia</i> <i>Gonorynchus forsteri</i> & <i>G. greyi</i>	SFL (effort), FLA (landing)	SFL	279
Sandfish	<i>Gonorynchus forsteri</i>	GON	GON	102
Scaly gurnard	<i>Lepidotrigla brachyoptera</i>	SCG	SCG	202
Scaly stargazer	<i>Pleuroscopus pseudodorsalis</i>	PLZ	PLZ	254
Scarlet wrasse	<i>Pseudolabrus miles</i>	SPF	SPF	244
School shark	<i>Galeorhinus galeus</i>	SCH	SCH	54
Sea perch	<i>Helicolenus</i> spp.	SPE	SPE	196
Seal shark	<i>Dalatias licha</i>	BSH	BSH	76
Serrulate rattail	<i>Coryphaenoides serrulatus</i>	RAT	CSE	137
Sharpnose sevengill shark	<i>Heptranchias perlo</i>	HEP	HEP	60
Short-tailed black ray	<i>Dasyatis brevicaudata</i>	BRA	BRA	86
Shovelnose dogfish	<i>Deania calcea</i>	SND	SND	66
Silver conger	<i>Gnathophis habenatus</i>	SEE	SEE	97
Silver dory	<i>Cyttus novaezealandiae</i>	SDO	SDO	182
Silver roughy	<i>Hoplostethus mediterraneus</i>	SRH	SRH	177
Silver warehou	<i>Seriolella punctata</i>	SWA	SWA	268
Silverside	<i>Argentina elongata</i>	SSI	SSI	103
Sixgill shark	<i>Hexanchus griseus</i>	HEX	HEX	61
Slender jack mackerel	<i>Trachurus murphyi</i>	JMA	JMM	222
Slender smooth-hound	<i>Gollum attenuatus</i>	SSH	SSH	53
Slender sprat	<i>Sprattus antipodum</i>	SPR	SPA	100
Slender tuna	<i>Allothunnus fallai</i>	STU	STU	259
Small banded rattail	<i>Coelorinchus parvifasciatus</i>	RAT	CCX	131
Small-headed cod	<i>Lepidion microcephalus</i>	SMC	SMC	157
Smallscaled brown slickhead	<i>Alepocephalus antipodanus</i>	SSM	SSM	104
Smallscaled cod	<i>Notothenia microlepidota</i>	SCD	SCD	247
Smalltooth sand tiger shark	<i>Odontaspis ferox</i>	ODO	ODO	44
Smooth deepsea skate	<i>Brochiraja asperula</i>	OSK	BTA	84
Smooth headed rattail	<i>Malacocephalus laevis</i>	RAT	MLA	147
Smooth lanternshark	<i>Etmopterus pusillus</i>	ETP	ETP	69
Smooth oreo	<i>Pseudocyttus maculatus</i>	SSO	SSO	187

Common name	Scientific name	MFish reporting code	MFish research code	Page
Smooth skate	<i>Dipturus innominatus</i>	SSK	SSK	80
Snapper	<i>Pagrus auratus</i>	SNA	SNA	228
Snipefish	<i>Macroramphosus scolopax</i>	SNI	SNI	193
Snubnosed eel	<i>Simenchelys parasitica</i>	SNE	SNE	93
Softnose skate (longtail skate)	<i>Arhynchobatis asperrimus</i>	LSK	LSK	82
Southern bastard cod	<i>Pseudophycis barbata</i>	SBR	SBR	162
Southern blue whiting	<i>Micromesistius australis</i>	SBW	SBW	167
Southern bluefin tuna	<i>Thunnus maccoyii</i>	STN	STN	261
Southern boarfish	<i>Pseudopentaceros richardsoni</i>	SBO	SBO	234
Sowfish	<i>Paristiopterus labiosus</i>	BOA	BOA	232
Spiky oreo	<i>Neocyttus rhomboidalis</i>	SOR	SOR	186
Spineback	<i>Notacanthus sexspinis</i>	SBK	SBK	91
Spiny dogfish	<i>Squalus acanthias</i>	SPD	SPD	63
Spinyfin	<i>Diretmichthys parini</i>	SFN	SFN	175
Spotted black grouper	<i>Epinephelus daemeli</i>	SBG	SBG	212
Spotted flounder	<i>Azygopus pinnifasciatus</i>	SDF	SDF	273
Spotted gurnard	<i>Pterygotrigla andertoni</i>	JGU	JGU	203
Spotted stargazer	<i>Genyagnus monopterygius</i>	SPZ	SPZ	251
Spotty	<i>Notolabrus celidotus</i>	STY	STY	241
Spotty faced rattail	<i>Coelorinchus acanthiger</i>	RAT	CTH	117
Squaretail	<i>Tetragonurus cuvieri</i>	TET	TET	270
Stout sprat	<i>Sprattus muelleri</i>	SPR	SPM	101
Striate rattail	<i>Coryphaenoides striaturus</i>	RAT	CTR	138
Supanose rattail	<i>Coelorinchus supernasutus</i>	RAT	CFX	132
Swollenhead conger	<i>Bassanago bulbiceps</i>	SCO	SCO	94
Swordfish	<i>Xiphias gladius</i>	SWO	SWO	262
<i>Talismania longifilis</i>	<i>Talismania longifilis</i>	SLK	TAL	106
Tarakihi	<i>Nemadactylus macropterus</i>	TAR	TAR	237
Tasmanian ruffe	<i>Tubbia tasmanica</i>	TUB	TUB	269
Thresher shark	<i>Alopias vulpinus</i>	THR	THR	45
Trevally	<i>Pseudocaranx georgianus</i>	TRE	TRE	219
Trumpeter	<i>Latris lineata</i>	TRU	TRU	239
Turbot	<i>Colistium nudipinnis</i>	TUR (effort), FLA (landing)	TUR	275
Two saddle rattail	<i>Coelorinchus biclinozonalis</i>	RAT	CBI	119
Unicorn rattail	<i>Trachyrincus longirostris</i>	WHR	WHR	153
Upturned snout rattail	<i>Coelorinchus mycterismus</i>	RAT	CJX	129
Velvet dogfish	<i>Zameus squamulosus</i>	OSD	ZAS	74
Velvet rattail	<i>Trachonurus gagates</i>	RAT	TRX	151
Violet cod	<i>Antimora rostrata</i>	VCO	VCO	154
Warty oreo	<i>Alloctytus verrucosus</i>	WOE	WOE	185
White brotula	<i>Cataetyx</i> sp.	CAX	CAX	170
White cardinalfish	<i>Epigonus denticulatus</i>	EPD	EPD	215
White pointer shark	<i>Carcharodon carcharias</i>	WPS	WPS	47
White rattail	<i>Trachyrincus aphyodes</i>	WHX	WHX	152
White warehou	<i>Seriolella caerulea</i>	WWA	WWA	267
Witch	<i>Arnoglossus scapha</i>	WIT	WIT	271
Yellow boarfish	<i>Pentaceros decacanthus</i>	YBO	YBO	233
Yellow cod	<i>Parapercis gilliesi</i>	YCO	YCO	249
Yellow-belly flounder	<i>Rhombosolea leporina</i>	YBF (effort), FLA (landing)	YBF	278
Yellow-eyed mullet	<i>Aldrichetta forsteri</i>	YEM	YEM	172

Common name	Scientific name	MFish reporting code	MFish research code	Page
Yellowtail jack mackerel	<i>Trachurus novaezelandiae</i>	JMA	JMN	223
Zenion dory	<i>Zenion leptolepis</i>	UNI	ZDO	189

Index 5 – Alphabetical list of species MFish research codes

MFish research code	MFish reporting code	Scientific name	Common name	Page
AGR	AGR	<i>Agrostichthys parkeri</i>	Ribbonfish	112
ANC	ANC	<i>Engraulis australis</i>	Anchovy	98
API	API	<i>Alertichthys blacki</i>	Alert pigfish	198
APR	APR	<i>Apristurus</i> spp.	Catshark	50
BAC	BAC	<i>Bathygadus cottoides</i>	Codheaded rattail	115
BAR	BAR	<i>Thyrsites atun</i>	Barracouta	257
BAS	BAS	<i>Polyprion americanus</i>	Bass groper	209
BBE	BBE	<i>Centriscops humerosus</i>	Banded bellowsfish	192
BCO	BCO	<i>Parapercis colias</i>	Blue cod	248
BCR	BCR	<i>Brotulotaenia crassa</i>	Blue cusk eel	168
BEE	BEE	<i>Diastobranchus capensis</i>	Basketwork eel	92
BER	BER	<i>Typhlonarke</i> spp.	Numbfish	78
BFE	BFE	<i>Bathysaurus ferox</i>	Deepsea lizardfish	109
BFL	BFL (effort), FLA (landing)	<i>Rhombosolea retiaria</i>	Black flounder	280
BGZ	STA	<i>Kathetostoma binigrasella</i>	Banded stargazer	252
BJA	RAT	<i>Mesobius antipodum</i>	Black javelinfish	148
BNS	BNS	<i>Hyperoglyphe antarctica</i>	Bluenose	264
BOA	BOA	<i>Paristiopterus labiosus</i>	Sowfish	232
BOE	BOE	<i>Allocyttus niger</i>	Black oreo	184
BPE	BPE	<i>Caesioperca lepidoptera</i>	Butterfly perch	211
BPF	BPF	<i>Notolabrus fucicola</i>	Banded wrasse	243
BRA	BRA	<i>Dasyatis brevicaudata</i>	Short-tailed black ray	86
BRI	BRI (effort), FLA (landing)	<i>Colistium guntheri</i>	Brill	274
BRZ	BRZ	<i>Xenocephalus armatus</i>	Brown stargazer	255
BSH	BSH	<i>Dalatias licha</i>	Seal shark	76
BSK	BSK	<i>Cetorhinus maximus</i>	Basking shark	46
BSL	BSL	<i>Xenodermichthys copei</i>	Black slickhead	107
BSP	BSP	<i>Taractichthys longipinnis</i>	Big-scale pomfret	225
BTA	OSK	<i>Brochiraja asperula</i>	Smooth deepsea skate	84
BTS	OSK	<i>Brochiraja spinifera</i>	Prickly deepsea skate	85
BUT	BUT	<i>Odax pullus</i>	Butterfish	245
BWH	BWH	<i>Carcharhinus brachyurus</i>	Bronze whaler shark	56
BWS	BWS	<i>Prionace glauca</i>	Blue shark	57
BYD	BYX	<i>Beryx decadactylus</i>	Longfinned beryx	179
BYS	BYX	<i>Beryx splendens</i>	Alfonsino	180
CAR	CAR	<i>Cephaloscyllium isabellum</i>	Carpet shark	52
CAS	RAT	<i>Coelorinchus aspercephalus</i>	Oblique banded rattail	118
CAX	CAX	<i>Cataetyx</i> sp.	White brotula	170
CBA	RAT	<i>Coryphaenoides dossenus</i>	Humpback rattail	134
CBE	CBE	<i>Notopogon lilliei</i>	Crested bellowsfish	194
CBI	RAT	<i>Coelorinchus biclinozonalis</i>	Two saddle rattail	119
CBO	CBO	<i>Coelorinchus bollonsi</i>	Bollons rattail	120
CCO	RAT	<i>Coelorinchus cookianus</i>	Cook's rattail	122
CCR	RAT	<i>Cetonurus crassiceps</i>	Globosehead rattail	116
CCX	RAT	<i>Coelorinchus parvifasciatus</i>	Small banded rattail	131
CDO	CDO	<i>Capromimus abbreviatus</i>	Capro dory	188
CDX	RAT	<i>Coelorinchus maurofasciatus</i>	Dark banded rattail	128
CEP	UNI	<i>Cepola haastii</i>	Red bandfish	240
CEX	RAT	<i>Coelorinchus celaeostomus</i>	Black lip rattail	121

MFish research code	MFish reporting code	Scientific name	Common name	Page
CFA	CFA	<i>Coelorinchus fasciatus</i>	Banded rattail	123
CFL	BOT	<i>Lophonectes gallus</i>	Crested flounder	272
CFX	RAT	<i>Coelorinchus supernasutus</i>	Supanose rattail	132
CHG	CHG	<i>Chimaera lignaria</i>	Giant chimaera	38
CHP	CHP	<i>Chimaera</i> sp. C	Brown chimaera	39
CHX	CHX	<i>Chaunax</i> sp. C	Pink frogmouth	171
CHY	RAT	<i>Coelorinchus trachycarus</i>	Roughhead rattail	133
CIN	RAT	<i>Coelorinchus innotabilis</i>	Notable rattail	125
CJX	RAT	<i>Coelorinchus mycterismus</i>	Upturned snout rattail	129
CKA	RAT	<i>Coelorinchus kaiyomaru</i>	Kaiyomaru rattail	126
CMA	CMA	<i>Coelorinchus matamua</i>	Mahia rattail	127
CMU	RAT	<i>Coryphaenoides murrayi</i>	Murray's rattail	136
CMX	RAT	<i>Coryphaenoides mcmillani</i>	McMillan's rattail	135
COL	COL	<i>Coelorinchus oliverianus</i>	Oliver's rattail	130
COT	COT	<i>Cottunculus nudus</i>	Bonyskull toadfish	206
CSE	RAT	<i>Coryphaenoides serrulatus</i>	Serrulate rattail	137
CSQ	CSQ	<i>Centrophorus squamosus</i>	Leafscale gulper shark	65
		<i>Coryphaenoides</i>		
CSU	RAT	<i>subserrulatus</i>	Four-rayed rattail	139
CTH	RAT	<i>Coelorinchus acanthiger</i>	Spotty faced rattail	117
CTR	RAT	<i>Coryphaenoides striaturus</i>	Striate rattail	138
CUC	CUC	<i>Paraulopus nigripinnis</i>	Cucumber fish	108
CVR	CON	<i>Conger verreauxi</i>	Conger eel	96
CXH	RAT	<i>Coelorinchus horribilis</i>	Horrible rattail	124
CYL	CYL	<i>Centroscymnus coelolepis</i>	Portuguese dogfish	70
CYO	CYO	<i>Centroscymnus owstoni</i>	Owston's dogfish	72
CYP	CYP	<i>Centroscymnus crepidater</i>	Longnose velvet dogfish	71
DCO	MOD	<i>Notophycis marginata</i>	Dwarf cod	160
DCS	DCS	<i>Bythaelurus dawsoni</i>	Dawson's catshark	51
DEA	DEA	<i>Trachipterus trachipterus</i>	Dealfish	111
DSK	DSK	<i>Amblyraja</i> cf. <i>hyperborea</i>	Deepwater spiny skate	79
DSP	DSP	<i>Congiopodus coriaceus</i>	Deepsea pigfish	199
EGR	EGR	<i>Myliobatis tenuicaudatus</i>	Eagle ray	88
ELE	ELE	<i>Callorhynchus milii</i>	Elephant fish	35
EMA	EMA	<i>Scomber australasicus</i>	Blue mackerel	260
EPD	EPD	<i>Epigonus denticulatus</i>	White cardinalfish	215
EPL	EPL	<i>Epigonus lenimen</i>	Bigeye cardinalfish	216
EPR	EPR	<i>Epigonus robustus</i>	Robust cardinalfish	217
EPT	CDL	<i>Epigonus telescopus</i>	Deepsea cardinalfish	218
ERA	ERA	<i>Torpedo fairchildi</i>	Electric ray	77
		<i>Peltorhamphus</i>		
ESO	ESO (effort), FLA (landing)	<i>novaezeelandiae</i>	New Zealand sole	277
ETB	ETB	<i>Etmopterus baxteri</i>	Baxter's lantern dogfish	67
ETL	ETL	<i>Etmopterus lucifer</i>	Lucifer dogfish	68
ETP	ETP	<i>Etmopterus pusillus</i>	Smooth lanternshark	69
EUC	EUC	<i>Euclichthys polynemus</i>	Eucla cod	114
FHD	FHD	<i>Hoplichthys haswelli</i>	Deepsea flathead	204
FRO	FRO	<i>Lepidopus caudatus</i>	Frostfish	258
		<i>Chlamydoselachus</i>		
FRS	FRS	<i>anguineus</i>	Frill shark	59
GAO	RAT	<i>Gadomus aoteanus</i>	Filamentous rattail	140
GAR	GAR	<i>Hyporhamphus ihi</i>	Garfish	174
GFL	GFL (effort), FLA (landing)	<i>Rhombosolea tapirina</i>	Greenback flounder	281

MFish research code	MFish reporting code	Scientific name	Common name	Page
GGP	GGP	<i>Epinephelus lanceolatus</i>	Giant grouper	213
GLB	UNI	<i>Contusus richiei</i>	Globefish	284
GMU	GMU	<i>Mugil cephalus</i>	Grey mullet	173
GON	GON	<i>Gonorynchus forsteri</i> & <i>G. greyi</i>	Sandfish	102
GPF	GPF	<i>Notolabrus cinctus</i>	Girdled wrasse	242
GRC	GRC	<i>Tripterophycis gilchristi</i>	Grenadier cod	163
GSH	GSH	<i>Hydrolagus novaezealandiae</i>	Ghost shark (dark ghost shark)	42
GSP	GSP	<i>Hydrolagus bemisi</i>	Pale ghost shark	40
GUR	GUR	<i>Chelidonichthys kumu</i>	Red gurnard	201
HAG	HAG	<i>Eptatretus cirrhatus</i>	Hagfish	34
HAK	HAK	<i>Merluccius australis</i>	Hake	166
HAL	UNI	<i>Halosaurus macrochir</i>	Abyssal halosaur	89
HAP	HAP	<i>Polyprion oxygeneios</i>	Hapuku	210
HCO	HCO	<i>Bassanago hirsutus</i>	Hairy conger	95
HEP	HEP	<i>Heptranchias perlo</i>	Sharpnose sevensgill shark	60
HEX	HEX	<i>Hexanchus griseus</i>	Sixgill shark	61
HHS	HHS	<i>Sphyrna zygaena</i>	Hammerhead shark	58
HJO	HJO	<i>Halargyreus johnsonii</i>	Johnson's cod	156
HOK	HOK	<i>Macruronus novaezealandiae</i>	Hoki	165
HPE	UNI	<i>Halosaurus pectoralis</i>	Common halosaur	90
HYB	HYD	<i>Hydrolagus homonycteris</i>	Black ghost shark	41
HYP	HYP	<i>Hydrolagus trolli</i>	Pointynose blue ghost shark	43
JAV	JAV	<i>Lepidorhynchus denticulatus</i>	Javelin fish	144
JDO	JDO	<i>Zeus faber</i>	John dory	191
JGU	JGU	<i>Pterygotrigla andertoni</i>	Spotted gurnard	203
JMD	JMA	<i>Trachurus declivis</i>	Greenback jack mackerel	221
JMM	JMA	<i>Trachurus murphyi</i>	Slender jack mackerel	222
JMN	JMA	<i>Trachurus novaezealandiae</i>	Yellowtail jack mackerel	223
KAH	KAH	<i>Arripis trutta</i>	Kahawai	230
KIN	KIN	<i>Seriola lalandi</i>	Kingfish	220
LCH	LCH	<i>Harriotta raleighana</i>	Longnose spookfish	36
LDO	LDO	<i>Cyttus traversi</i>	Lookdown dory	183
LEA	LEA	<i>Meuschenia scaber</i>	Leatherjacket	283
LFB	LFB	<i>Zanclistius elevatus</i>	Longfinned boarfish	235
LIN	LIN	<i>Genypterus blacodes</i>	Ling	169
LPS	LEG	<i>Lepidion schmidti</i>	Giant lepidion	158
LSK	LSK	<i>Arhynchobatis asperrimus</i>	Softnose skate (longtail skate)	82
LSO	LSO (effort), FLA (landing)	<i>Pelotretis flavilatus</i>	Lemon sole	276
LYC	LYC	<i>Lyconus</i> sp.	<i>Lyconus</i> sp.	164
MAK	MAK	<i>Isurus oxyrinchus</i>	Mako shark	48
MAN	MAN	<i>Mancopsetta milfordi</i>	Finless flounder	282
MCA	MCA	<i>Macrourus carinatus</i>	Ridge scaled rattail	146
MDO	MDO	<i>Zenopsis nebulosa</i>	Mirror dory	190
MLA	RAT	<i>Malacocephalus laevis</i>	Smooth headed rattail	147
MOK	MOK	<i>Latridopsis ciliaris</i>	Moki	238
MOO	MOO	<i>Lampris guttatus</i>	Moonfish	110
NBU	RAT	<i>Kuronezumia bubonis</i>	Bulbous rattail	142
NNA	RAT	<i>Nezumia namatahi</i>	<i>Nezumia namatahi</i>	149

MFish research code	MFish reporting code	Scientific name	Common name	Page
NOF	UNI	<i>Notopogon xenosoma</i>	Orange bellowsfish	195
NPU	RAT	<i>Kuronezumia leonis</i>	<i>Kuronezumia leonis</i>	143
NSD	NSD	<i>Squalus griffini</i>	Northern spiny dogfish	64
OAR	OAR	<i>Regalecus glesne</i>	Oarfish	113
ODO	ODO	<i>Odontaspis ferox</i>	Smalltooth sand tiger shark	44
OMU	RAT	<i>Odontomacrurus murrayi</i>	<i>Odontomacrurus murrayi</i>	150
OPA	OPA	<i>Hemerocoetes</i> spp.	Opalfishes	250
OPE	OPE	<i>Lepidoperca aurantia</i>	Orange perch	214
ORH	ORH	<i>Hoplostethus atlanticus</i>	Orange roughy	176
PAR	PAR	<i>Girella tricuspidata</i>	Parore	231
PCO	MOD	<i>Auchenoceros punctatus</i>	Ahuru	155
PDG	PDG	<i>Oxynotus bruniensis</i>	Prickly dogfish	75
PIG	PIG	<i>Congiopodus leucopaecilus</i>	Pigfish	200
PIL	PIL	<i>Sardinops sagax</i>	Pilchard	99
PIN	RAT	<i>Idioloophorhynchus andriashevi</i>	Pineapple rattail	141
PLS	PLS	<i>Proscymnodon plunketi</i>	Plunket's shark	73
PLZ	PLZ	<i>Pleuroscopus pseudodorsalis</i>	Scaly stargazer	254
POP	POP	<i>Allomycterus pilatus</i>	Porcupine fish	285
POR	POR	<i>Nemadactylus douglasii</i>	Porae	236
POS	POS	<i>Lamna nasus</i>	Porbeagle shark	49
PSK	PSK	<i>Bathyraja shuntovi</i>	Longnose deepsea skate	83
PSY	PSY	<i>Psychrolutes microporos</i>	Blobfish	208
PTO	PTO	<i>Dissostichus eleginoides</i>	Patagonian toothfish	246
RAG	RAG	<i>Pseudoicichthys australis</i>	Ragfish	265
RBM	RBM	<i>Brama brama</i>	Ray's bream	224
RBT	RBT	<i>Emmelichthys nitidus</i>	Redbait	226
RBV	RBV	<i>Plagiogeneion rubiginosum</i>	Rubyfish	227
RCH	RCH	<i>Rhinochimaera pacifica</i>	Pacific spookfish	37
RCO	RCO	<i>Pseudophycis bachus</i>	Red cod	161
RHY	RHY	<i>Paratrachichthys trailli</i>	Common roughy	178
RIB	RIB	<i>Mora moro</i>	Ribaldo	159
RMU	RMU	<i>Upeneichthys lineatus</i>	Goatfish	229
RSK	RSK	<i>Zearaja nasuta</i>	Rough skate	81
RSN	RSN	<i>Centroberyx affinis</i>	Red snapper	181
RUD	RUD	<i>Centrolophus niger</i>	Rudderfish	263
SBG	SBG	<i>Epinephelus daemeli</i>	Spotted black grouper	212
SBI	SBI	<i>Alepocephalus australis</i>	Bigscaled brown slickhead	105
SBK	SBK	<i>Notacanthus sexspinis</i>	Spineback	91
SBO	SBO	<i>Pseudopentaceros richardsoni</i>	Southern boarfish	234
SBR	SBR	<i>Pseudophycis barbata</i>	Southern bastard cod	162
SBW	SBW	<i>Micromesistius australis</i>	Southern blue whiting	167
SCD	SCD	<i>Notothenia microlepidota</i>	Smallscaled cod	247
SCG	SCG	<i>Lepidotrigla brachyoptera</i>	Scaly gurnard	202
SCH	SCH	<i>Galeorhinus galeus</i>	School shark	54
SCO	SCO	<i>Bassanago bulbiceps</i>	Swollenhead conger	94
SDF	SDF	<i>Azygopus pinnifasciatus</i>	Spotted flounder	273
SDO	SDO	<i>Cyttus novaezealandiae</i>	Silver dory	182
SEE	SEE	<i>Gnathophis habenatus</i>	Silver conger	97

MFish research code	MFish reporting code	Scientific name	Common name	Page
SEV	SEV	<i>Notorynchus cepedianus</i>	Broadnose sevengill shark	62
SFL	SFL (effort), FLA (landing)	<i>Rhombosolea plebeia</i>	Sand flounder	279
SFN	SFN	<i>Diretmichthys parini</i>	Spinyfin	175
SKI	SKI	<i>Rexea solandri</i>	Gemfish	256
SMC	SMC	<i>Lepidion microcephalus</i>	Small-headed cod	157
SNA	SNA	<i>Pagrus auratus</i>	Snapper	228
SND	SND	<i>Deania calcea</i>	Shovelnose dogfish	66
SNE	SNE	<i>Simenchelys parasitica</i>	Snubnosed eel	93
SNI	SNI	<i>Macroramphosus scolopax</i>	Snipefish	193
SOR	SOR	<i>Neocyttus rhomboidalis</i>	Spiky oreo	186
SPA	SPR	<i>Sprattus antipodum</i>	Slender sprat	100
SPD	SPD	<i>Squalus acanthias</i>	Spiny dogfish	63
SPE	SPE	<i>Helicolenus</i> spp.	Sea perch	196
SPF	SPF	<i>Pseudolabrus miles</i>	Scarlet wrasse	244
SPM	SPR	<i>Sprattus muelleri</i>	Stout sprat	101
SPO	SPO	<i>Mustelus lenticulatus</i>	Rig	55
SPZ	SPZ	<i>Genyagnus monopterygius</i>	Spotted stargazer	251
SRH	SRH	<i>Hoplostethus mediterraneus</i>	Silver roughy	177
SSH	SSH	<i>Gollum attenuatus</i>	Slender smooth-hound	53
SSI	SSI	<i>Argentina elongata</i>	Silverside	103
SSK	SSK	<i>Dipturus innominatus</i>	Smooth skate	80
SSM	SSM	<i>Alepocephalus antipodanus</i>	Smallscaled brown slickhead	104
SSO	SSO	<i>Pseudocyttus maculatus</i>	Smooth oreo	187
STA	STA	<i>Kathetostoma giganteum</i>	Giant stargazer	253
STN	STN	<i>Thunnus maccoyii</i>	Southern bluefin tuna	261
STU	STU	<i>Allothunnus fallai</i>	Slender tuna	259
STY	STY	<i>Notolabrus celidotus</i>	Spotty	241
SWA	SWA	<i>Serirolella punctata</i>	Silver warehou	268
SWO	SWO	<i>Xiphias gladius</i>	Swordfish	262
TAL	SLK	<i>Talismania longifilis</i>	<i>Talismania longifilis</i>	106
TAR	TAR	<i>Nemadactylus macropterus</i>	Tarakahi	237
TET	TET	<i>Tetragonurus cuvieri</i>	Squaretail	270
THR	THR	<i>Alopias vulpinus</i>	Thresher shark	45
TOD	TOD	<i>Neophrynichthys latus</i>	Dark toadfish	207
TOP	TOP	<i>Amblophthalmos angustus</i>	Pale toadfish	205
TRE	TRE	<i>Pseudocaranx georgianus</i>	Trevally	219
TRS	TRS	<i>Trachyscorpia eschmeyeri</i>	Cape scorpionfish	197
TRU	TRU	<i>Latris lineata</i>	Trumpeter	239
TRX	RAT	<i>Trachonurus gagates</i>	Velvet rattail	151
TUB	TUB	<i>Tubbia tasmanica</i>	Tasmanian ruffe	269
TUR	TUR (effort), FLA (landing)	<i>Colistium nudipinnis</i>	Turbot	275
VCO	VCO	<i>Antimora rostrata</i>	Violet cod	154
VNI	RAT	<i>Lucigadus nigromaculatus</i>	Blackspot rattail	145
WAR	WAR	<i>Serirolella brama</i>	Common warehou	266
WHR	WHR	<i>Trachyrincus longirostris</i>	Unicorn rattail	153
WHX	WHX	<i>Trachyrincus aphyodes</i>	White rattail	152
WIT	WIT	<i>Arnoglossus scapha</i>	Witch	271
WOE	WOE	<i>Alloctytus verrucosus</i>	Warty oreo	185
WPS	WPS	<i>Carcharodon carcharias</i>	White pointer shark	47
WRA	WRA	<i>Dasyatis thetidis</i>	Long-tailed stingray	87

MFish research code	MFish reporting code	Scientific name	Common name	Page
WWA	WWA	<i>Seriolella caerulea</i>	White warehou	267
YBF	YBF (effort), FLA (landing)	<i>Rhombosolea leporina</i>	Yellow-belly flounder	278
YBO	YBO	<i>Pentaceros decacanthus</i>	Yellow boarfish	233
YCO	YCO	<i>Parapercis gilliesi</i>	Yellow cod	249
YEM	YEM	<i>Aldrichetta forsteri</i>	Yellow-eyed mullet	172
ZAS	OSD	<i>Zameus squamulosus</i>	Velvet dogfish	74
ZDO	UNI	<i>Zenion leptolepis</i>	Zenion dory	189

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MFish reporting code	MFish research code	Scientific name	Common name	Page
AGR	AGR	<i>Agrostichthys parkeri</i>	Ribbonfish	112
ANC	ANC	<i>Engraulis australis</i>	Anchovy	98
API	API	<i>Alertichthys blacki</i>	Alert pigfish	198
APR	APR	<i>Apristurus</i> spp.	Catshark	50
BAC	BAC	<i>Bathygadus cottoides</i>	Codheaded rattail	115
BAR	BAR	<i>Thyrsites atun</i>	Barracouta	257
BAS	BAS	<i>Polyprion americanus</i>	Bass groper	209
BBE	BBE	<i>Centriscops humerosus</i>	Banded bellowsfish	192
BCO	BCO	<i>Parapercis colias</i>	Blue cod	248
BCR	BCR	<i>Brotulotaenia crassa</i>	Blue cusk eel	168
BEE	BEE	<i>Diastobranchus capensis</i>	Basketwork eel	92
BER	BER	<i>Typhlonarke</i> spp.	Numbfish	78
BFE	BFE	<i>Bathysaurus ferox</i>	Deepsea lizardfish	109
BFL (effort), FLA (landing)	BFL	<i>Rhombosolea retiaria</i>	Black flounder	280
BNS	BNS	<i>Hyperoglyphe antarctica</i>	Bluenose	264
BOA	BOA	<i>Paristiopterus labiosus</i>	Sowfish	232
BOE	BOE	<i>Alloctytus niger</i>	Black oreo	184
BOT	CFL	<i>Lophonectes gallus</i>	Crested flounder	272
BPE	BPE	<i>Caesioperca lepidoptera</i>	Butterfly perch	211
BPF	BPF	<i>Notolabrus fucicola</i>	Banded wrasse	243
BRA	BRA	<i>Dasyatis brevicaudata</i>	Short-tailed black ray	86
BRI (effort), FLA (landing)	BRI	<i>Colistium guntheri</i>	Brill	274
BRZ	BRZ	<i>Xenocephalus armatus</i>	Brown stargazer	255
BSH	BSH	<i>Dalatias licha</i>	Seal shark	76
BSK	BSK	<i>Cetorhinus maximus</i>	Basking shark	46
BSL	BSL	<i>Xenodermichthys copei</i>	Black slickhead	107
BSP	BSP	<i>Taractichthys longipinnis</i>	Big-scale pomfret	225
BUT	BUT	<i>Odax pullus</i>	Butterfish	245
BWH	BWH	<i>Carcharhinus brachyurus</i>	Bronze whaler shark	56
BWS	BWS	<i>Prionace glauca</i>	Blue shark	57
BYX	BYD	<i>Beryx decadactylus</i>	Longfinned beryx	179
BYX	BYS	<i>Beryx splendens</i>	Alfonsino	180
CAR	CAR	<i>Cephaloscyllium isabellum</i>	Carpet shark	52
CAX	CAX	<i>Cataetyx</i> sp.	White brotula	170
CBE	CBE	<i>Notopogon lilliei</i>	Crested bellowsfish	194
CBO	CBO	<i>Coelorinchus bollonsi</i>	Bollons rattail	120
CDL	EPT	<i>Epigonus telescopus</i>	Deepsea cardinalfish	218
CDO	CDO	<i>Capromimus abbreviatus</i>	Capro dory	188
CFA	CFA	<i>Coelorinchus fasciatus</i>	Banded rattail	123
CHG	CHG	<i>Chimaera lignaria</i>	Giant chimaera	38
CHP	CHP	<i>Chimaera</i> sp. C	Brown chimaera	39
CHX	CHX	<i>Chaunax</i> sp. C	Pink frogmouth	171
CMA	CMA	<i>Coelorinchus matamua</i>	Mahia rattail	127
COL	COL	<i>Coelorinchus oliverianus</i>	Oliver's rattail	130
CON	CVR	<i>Conger verreauxi</i>	Conger eel	96
COT	COT	<i>Cottunculus nudus</i>	Bonyskull toadfish	206
CSQ	CSQ	<i>Centrophorus squamosus</i>	Leafscale gulper shark	65

MFish reporting code	MFish research code	Scientific name	Common name	Page
CUC	CUC	<i>Paraulopus nigripinnis</i>	Cucumber fish	108
CYL	CYL	<i>Centroscymnus coelolepis</i>	Portuguese dogfish	70
CYO	CYO	<i>Centroscymnus owstoni</i>	Owston's dogfish	72
CYP	CYP	<i>Centroscymnus crepidater</i>	Longnose velvet dogfish	71
DCS	DCS	<i>Bythaelurus dawsoni</i>	Dawson's catshark	51
DEA	DEA	<i>Trachipterus trachipterus</i>	Dealfish	111
DSK	DSK	<i>Amblyraja cf. hyperborea</i>	Deepwater spiny skate	79
DSP	DSP	<i>Congiopodus coriaceus</i>	Deepsea pigfish	199
EGR	EGR	<i>Myliobatis tenuicaudatus</i>	Eagle ray	88
ELE	ELE	<i>Callorhinchus milii</i>	Elephant fish	35
EMA	EMA	<i>Scomber australasicus</i>	Blue mackerel	260
EPD	EPD	<i>Epigonus denticulatus</i>	White cardinalfish	215
EPL	EPL	<i>Epigonus lenimen</i>	Bigeye cardinalfish	216
EPR	EPR	<i>Epigonus robustus</i>	Robust cardinalfish	217
ERA	ERA	<i>Torpedo fairchildi</i>	Electric ray	77
ESO (effort), FLA (landing)	ESO	<i>Peltorhamphus novaezealandiae</i>	New Zealand sole	277
ETB	ETB	<i>Etmopterus baxteri</i>	Baxter's lantern dogfish	67
ETL	ETL	<i>Etmopterus lucifer</i>	Lucifer dogfish	68
ETP	ETP	<i>Etmopterus pusillus</i>	Smooth lanternshark	69
EUC	EUC	<i>Euclichthys polynemus</i>	Eucla cod	114
FHD	FHD	<i>Hoplichthys haswelli</i>	Deepsea flathead	204
FRO	FRO	<i>Lepidopus caudatus</i>	Frostfish	258
FRS	FRS	<i>Chlamydoselachus anguineus</i>	Frill shark	59
GAR	GAR	<i>Hyporhamphus ihi</i>	Garfish	174
GFL (effort), FLA (landing)	GFL	<i>Rhombosolea tapirina</i>	Greenback flounder	281
GGP	GGP	<i>Epinephelus lanceolatus</i>	Giant grouper	213
GMU	GMU	<i>Mugil cephalus</i> <i>Gonorynchus forsteri</i> & <i>G. greyi</i>	Grey mullet	173
GON	GON	<i>Notolabrus cinctus</i>	Sandfish	102
GPF	GPF	<i>Tripterygius gilchristi</i>	Girdled wrasse	242
GRC	GRC	<i>Hydrolagus novaezealandiae</i>	Grenadier cod	163
GSH	GSH	<i>Hydrolagus bemisi</i>	Ghost shark (dark ghost shark)	42
GSP	GSP	<i>Chelidonichthys kumu</i>	Pale ghost shark	40
GUR	GUR	<i>Eptatretus cirrhatus</i>	Red gurnard	201
HAG	HAG	<i>Merluccius australis</i>	Hagfish	34
HAK	HAK	<i>Polyprion oxygeneios</i>	Hake	166
HAP	HAP	<i>Bassanago hirsutus</i>	Hapuku	210
HCO	HCO	<i>Heptranchias perlo</i>	Hairy conger	95
HEP	HEP	<i>Hexanchus griseus</i>	Sharpnose sevengill shark	60
HEX	HEX	<i>Sphyrna zygaena</i>	Sixgill shark	61
HHS	HHS	<i>Halargyreus johnsonii</i>	Hammerhead shark	58
HJO	HJO	<i>Macruronus novaezealandiae</i>	Johnson's cod	156
HOK	HOK	<i>Hydrolagus homonycteris</i>	Hoki	165
HYD	HYB	<i>Hydrolagus trolli</i>	Black ghost shark	41
HYP	HYP	<i>Lepidorhynchus denticulatus</i>	Pointynose blue ghost shark	43
JAV	JAV	<i>Zeus faber</i>	Javelin fish	144
JDO	JDO		John dory	191

MFish reporting code	MFish research code	Scientific name	Common name	Page
JGU	JGU	<i>Pterygotrigla andertoni</i>	Spotted gurnard Greenback jack	203
JMA	JMD	<i>Trachurus declivis</i>	mackerel	221
JMA	JMM	<i>Trachurus murphyi</i>	Slender jack mackerel Yellowtail jack	222
JMA	JMN	<i>Trachurus novaezelandiae</i>	mackerel	223
KAH	KAH	<i>Arripis trutta</i>	Kahawai	230
KIN	KIN	<i>Seriola lalandi</i>	Kingfish	220
LCH	LCH	<i>Harriotta raleighana</i>	Longnose spookfish	36
LDO	LDO	<i>Cyttus traversi</i>	Lookdown dory	183
LEA	LEA	<i>Meuschenia scaber</i>	Leatherjacket	283
LEG	LPS	<i>Lepidion schmidti</i>	Giant lepidion	158
LFB	LFB	<i>Zanclistius elevatus</i>	Longfinned boarfish	235
LIN	LIN	<i>Genypterus blacodes</i>	Ling Softnose skate (longtail skate)	169 82
LSK	LSK	<i>Arhynchobatis asperrimus</i>		
LSO (effort), FLA (landing)	LSO	<i>Pelotretis flavilatus</i>	Lemon sole	276
LYC	LYC	<i>Lyconus</i> sp.	<i>Lyconus</i> sp.	164
MAK	MAK	<i>Isurus oxyrinchus</i>	Mako shark	48
MAN	MAN	<i>Mancopsetta milfordi</i>	Finless flounder	282
MCA	MCA	<i>Macrourus carinatus</i>	Ridge scaled rattail	146
MDO	MDO	<i>Zenopsis nebulosa</i>	Mirror dory	190
MOD	PCO	<i>Auchenoceros punctatus</i>	Ahuru	155
MOD	DCO	<i>Notophycis marginata</i>	Dwarf cod	160
MOK	MOK	<i>Latridopsis ciliaris</i>	Moki	238
MOO	MOO	<i>Lampris guttatus</i>	Moonfish	110
NSD	NSD	<i>Squalus griffini</i>	Northern spiny dogfish	64
OAR	OAR	<i>Regalecus glesne</i>	Oarfish Smalltooth sand tiger shark	113 44
ODO	ODO	<i>Odontaspis ferox</i>		
OPA	OPA	<i>Hemerocoetes</i> spp.	Opalfishes	250
OPE	OPE	<i>Lepidoperca aurantia</i>	Orange perch	214
ORH	ORH	<i>Hoplostethus atlanticus</i>	Orange roughy	176
OSD	ZAS	<i>Zameus squamulosus</i>	Velvet dogfish	74
OSK	BTA	<i>Brochiraja asperula</i>	Smooth deepsea skate	84
OSK	BTS	<i>Brochiraja spinifera</i>	Prickly deepsea skate	85
PAR	PAR	<i>Girella tricuspidata</i>	Parore	231
PDG	PDG	<i>Oxynotus bruniensis</i>	Prickly dogfish	75
PIG	PIG	<i>Congiopodus leucopaecilus</i>	Pigfish	200
PIL	PIL	<i>Sardinops sagax</i>	Pilchard	99
PLS	PLS	<i>Proscymnodon plunketi</i>	Plunket's shark	73
PLZ	PLZ	<i>Pleuroscopus pseudodorsalis</i>	Scaly stargazer	254
POP	POP	<i>Allomycterus pilatus</i>	Porcupine fish	285
POR	POR	<i>Nemadactylus douglasii</i>	Porae	236
POS	POS	<i>Lamna nasus</i>	Porbeagle shark	49
PSK	PSK	<i>Bathyraja shuntovi</i>	Longnose deepsea skate	83
PSY	PSY	<i>Psychrolutes microporos</i>	Blobfish	208
PTO	PTO	<i>Dissostichus eleginoides</i>	Patagonian toothfish	246
RAG	RAG	<i>Pseudoicichthys australis</i>	Ragfish	265
RAT	CCR	<i>Cetonurus crassiceps</i>	Globosehead rattail	116
RAT	CTH	<i>Coelorinchus acanthiger</i>	Spotty faced rattail	117
RAT	CAS	<i>Coelorinchus aspercephalus</i>	Oblique banded rattail	118

MFish reporting code	MFish research code	Scientific name	Common name	Page
RAT	CBI	<i>Coelorinchus biclinozonalis</i>	Two saddle rattail	119
RAT	CEX	<i>Coelorinchus celaenostomus</i>	Black lip rattail	121
RAT	CCO	<i>Coelorinchus cookianus</i>	Cook's rattail	122
RAT	CXH	<i>Coelorinchus horribilis</i>	Horrible rattail	124
RAT	CIN	<i>Coelorinchus innotabilis</i>	Notable rattail	125
RAT	CKA	<i>Coelorinchus kaiyomaru</i>	Kaiyomaru rattail	126
RAT	CDX	<i>Coelorinchus maurofasciatus</i>	Dark banded rattail	128
RAT	CJX	<i>Coelorinchus mycterismus</i>	Upturned snout rattail	129
RAT	CCX	<i>Coelorinchus parvifasciatus</i>	Small banded rattail	131
RAT	CFX	<i>Coelorinchus supernasutus</i>	Supanose rattail	132
RAT	CHY	<i>Coelorinchus trachycarus</i>	Roughhead rattail	133
RAT	CBA	<i>Coryphaenoides dossenus</i>	Humpback rattail	134
RAT	CMX	<i>Coryphaenoides mcmillani</i>	McMillan's rattail	135
RAT	CMU	<i>Coryphaenoides murrayi</i>	Murray's rattail	136
RAT	CSE	<i>Coryphaenoides serrulatus</i>	Serrulate rattail	137
RAT	CTR	<i>Coryphaenoides striaturus</i>	Striate rattail	138
RAT	CSU	<i>Coryphaenoides subserrulatus</i>	Four-rayed rattail	139
RAT	GAO	<i>Gadomus aoteanus</i>	Filamentous rattail	140
		<i>Idioloophorhynchus</i>		
RAT	PIN	<i>andriashevi</i>	Pineapple rattail	141
RAT	NBU	<i>Kuronezumia bubonis</i>	Bulbous rattail	142
RAT	NPU	<i>Kuronezumia leonis</i>	<i>Kuronezumia leonis</i>	143
RAT	VNI	<i>Lucigadus nigromaculatus</i>	Blackspot rattail	145
RAT	MLA	<i>Malacocephalus laevis</i>	Smooth headed rattail	147
RAT	BJA	<i>Mesobius antipodum</i>	Black javelinfish	148
RAT	NNA	<i>Nezumia namatahi</i>	<i>Nezumia namatahi</i>	149
			<i>Odontomacrus</i>	
RAT	OMU	<i>Odontomacrus murrayi</i>	<i>murrayi</i>	150
RAT	TRX	<i>Trachonurus gagates</i>	Velvet rattail	151
RBM	RBM	<i>Brama brama</i>	Ray's bream	224
RBT	RBT	<i>Emmelichthys nitidus</i>	Redbait	226
RBY	RBY	<i>Plagiogeneion rubiginosum</i>	Rubyfish	227
RCH	RCH	<i>Rhinochimaera pacifica</i>	Pacific spookfish	37
RCO	RCO	<i>Pseudophycis bachus</i>	Red cod	161
RHY	RHY	<i>Paratrachichthys trailli</i>	Common roughy	178
RIB	RIB	<i>Mora moro</i>	Ribaldo	159
RMU	RMU	<i>Upeneichthys lineatus</i>	Goatfish	229
RSK	RSK	<i>Zearaja nasuta</i>	Rough skate	81
RSN	RSN	<i>Centroberyx affinis</i>	Red snapper	181
RUD	RUD	<i>Centrolophus niger</i>	Rudderfish	263
SBG	SBG	<i>Epinephelus daemeli</i>	Spotted black grouper	212
			Bigscaled brown	
SBI	SBI	<i>Alepocephalus australis</i>	slickhead	105
SBK	SBK	<i>Notacanthus sexspinis</i>	Spineback	91
SBO	SBO	<i>Pseudopentaceros richardsoni</i>	Southern boarfish	234
SBR	SBR	<i>Pseudophycis barbata</i>	Southern bastard cod	162
SBW	SBW	<i>Micromesistius australis</i>	Southern blue whiting	167
SCD	SCD	<i>Notothenia microlepidota</i>	Smallscaled cod	247
SCG	SCG	<i>Lepidotrigla brachyoptera</i>	Scaly gurnard	202
SCH	SCH	<i>Galeorhinus galeus</i>	School shark	54
SCO	SCO	<i>Bassanago bulbiceps</i>	Swollenhead conger	94
SDF	SDF	<i>Azygopus pinnifasciatus</i>	Spotted flounder	273

MFish reporting code	MFish research code	Scientific name	Common name	Page
SDO	SDO	<i>Cyttus novaezealandiae</i>	Silver dory	182
SEE	SEE	<i>Gnathophis habenatus</i>	Silver conger	97
SEV	SEV	<i>Notorynchus cepedianus</i>	Broadnose sevengill shark	62
SFL (effort), FLA (landing)	SFL	<i>Rhombosolea plebeia</i>	Sand flounder	279
SFN	SFN	<i>Dirtemichthys parini</i>	Spinyfin	175
SKI	SKI	<i>Rexea solandri</i>	Gemfish	256
SLK	TAL	<i>Talismania longifilis</i>	<i>Talismania longifilis</i>	106
SMC	SMC	<i>Lepidion microcephalus</i>	Small-headed cod	157
SNA	SNA	<i>Pagrus auratus</i>	Snapper	228
SND	SND	<i>Deania calcea</i>	Shovelnose dogfish	66
SNE	SNE	<i>Simenchelys parasitica</i>	Snubnosed eel	93
SNI	SNI	<i>Macroramphosus scolopax</i>	Snipefish	193
SOR	SOR	<i>Neocyttus rhomboidalis</i>	Spiky oreo	186
SPD	SPD	<i>Squalus acanthias</i>	Spiny dogfish	63
SPE	SPE	<i>Helicolenus</i> spp.	Sea perch	196
SPF	SPF	<i>Pseudolabrus miles</i>	Scarlet wrasse	244
SPO	SPO	<i>Mustelus lenticulatus</i>	Rig	55
SPR	SPA	<i>Sprattus antipodum</i>	Slender sprat	100
SPR	SPM	<i>Sprattus muelleri</i>	Stout sprat	101
SPZ	SPZ	<i>Genyagnus monopterygius</i>	Spotted stargazer	251
SRH	SRH	<i>Hoplostethus mediterraneus</i>	Silver roughy	177
SSH	SSH	<i>Gollum attenuatus</i>	Slender smooth-hound	53
SSI	SSI	<i>Argentina elongata</i>	Silverside	103
SSK	SSK	<i>Dipturus innominatus</i>	Smooth skate	80
SSM	SSM	<i>Alepocephalus antipodanus</i>	Smallscaled brown slickhead	104
SSO	SSO	<i>Pseudocyttus maculatus</i>	Smooth oreo	187
STA	BGZ	<i>Kathetostoma binigrasella</i>	Banded stargazer	252
STA	STA	<i>Kathetostoma giganteum</i>	Giant stargazer	253
STN	STN	<i>Thunnus maccoyii</i>	Southern bluefin tuna	261
STU	STU	<i>Allothunnus fallai</i>	Slender tuna	259
STY	STY	<i>Notolabrus celidotus</i>	Spotty	241
SWA	SWA	<i>Seriolella punctata</i>	Silver warehou	268
SWO	SWO	<i>Xiphias gladius</i>	Swordfish	262
TAR	TAR	<i>Nemadactylus macropterus</i>	Tarakihi	237
TET	TET	<i>Tetragonurus cuvieri</i>	Squaretail	270
THR	THR	<i>Alopias vulpinus</i>	Thresher shark	45
TOD	TOD	<i>Neophrynichthys latus</i>	Dark toadfish	207
TOP	TOP	<i>Amblophthalmos angustus</i>	Pale toadfish	205
TRE	TRE	<i>Pseudocaranx georgianus</i>	Trevally	219
TRS	TRS	<i>Trachyscorpia eschmeyerii</i>	Cape scorpionfish	197
TRU	TRU	<i>Latris lineata</i>	Trumpeter	239
TUB	TUB	<i>Tubbia tasmanica</i>	Tasmanian ruffe	269
TUR (effort), FLA (landing)	TUR	<i>Colistium nudipinnis</i>	Turbot	275
UNI	HAL	<i>Halosauropsis macrochir</i>	Abyssal halosaur	89
UNI	HPE	<i>Halosaurus pectoralis</i>	Common halosaur	90
UNI	ZDO	<i>Zenion leptolepis</i>	Zenion dory	189
UNI	NOF	<i>Notopogon xenosoma</i>	Orange bellowsfish	195
UNI	CEP	<i>Cepola haastii</i>	Red bandfish	240

MFish reporting code	MFish research code	Scientific name	Common name	Page
UNI	GLB	<i>Contusus richiei</i>	Globefish	284
VCO	VCO	<i>Antimora rostrata</i>	Violet cod	154
WAR	WAR	<i>Seriolella brama</i>	Common warehou	266
WHR	WHR	<i>Trachyrincus longirostris</i>	Unicorn rattail	153
WHX	WHX	<i>Trachyrincus aphyodes</i>	White rattail	152
WIT	WIT	<i>Arnoglossus scapha</i>	Witch	271
WOE	WOE	<i>Allocyttus verrucosus</i>	Warty oreo	185
WPS	WPS	<i>Carcharodon carcharias</i>	White pointer shark	47
WRA	WRA	<i>Dasyatis thetidis</i>	Long-tailed stingray	87
WWA	WWA	<i>Seriolella caerulea</i>	White warehou	267
YBF (effort), FLA (landing)	YBF	<i>Rhombosolea leporina</i>	Yellow-belly flounder	278
YBO	YBO	<i>Pentaceros decacanthus</i>	Yellow boarfish	233
YCO	YCO	<i>Parapercis gilliesi</i>	Yellow cod	249
YEM	YEM	<i>Aldrichetta forsteri</i>	Yellow-eyed mullet	172

APPENDIX 1

Instructions for photography and collecting specimens at sea: observers, researchers

Background

NIWA has been photographing fishes for identification guides using a standard procedure (see procedure below), but we are missing or have only poor quality images of many species, particularly some of the bigger fishes (sharks, tunas), and less common species. This is a request for either images or specimens. Obviously it is impractical to return bigger, (e.g., sharks) or economically valuable fishes (e.g., tunas, billfishes), but images would be appreciated. Contact Peter McMillan or Peter Marriott, NIWA, Private Bag 14901 Wellington 6241, email p.mcmillan@niwa.co.nz or p.marriott@niwa.co.nz for a list of the species required.

Method

Either

1. Collect one good specimen of the fish species caught if this is practical, i.e., a small specimen, and freeze it in a plastic bag filled with some water to reduce damage during transport. Please include a capture location data label. Please freight to: Peter McMillan or Peter Marriott, NIWA, 295-301 Evans Bay Parade, Wellington.

Or:

2. Prepare and photograph the fish in a standard way (if possible/practical).

Procedure for fish photography

1. Select the best specimen from the catch. Wash off mud, blood, etc. An undamaged left hand side is preferred as the specimen is always oriented **head to the left for fish photography and illustration**. But we can flip the image later so this is not critical.
2. Take photos on a flat, even background. Ideally grey or a pale uniform colour is best but not critical. Please remove lines, hoses, etc from the fish and from the background of the image. Include a label listing capture location, photographer, identification (if known). Many fish lie at an angle, because of an enlarged belly; put a support under the dorsal margin if necessary to ensure a directly side-on view. Blot off water on fish and on the background. Please ensure that all parts of the fish, i.e., tip of snout to end of tail are in the frame. Sometimes it takes a bit of trial and error with exposures and focus to get a good quality image.
3. Retain the specimen if it is small and rare, with the location label. Freeze in seawater if possible/practical to prevent damage to fin rays once frozen. Please freight to: Peter McMillan or Peter Marriott, NIWA, 295-301 Evans Bay Parade, Wellington.