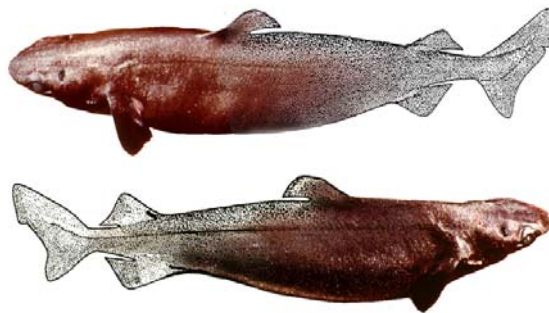


An identification guide for deepwater shark species
















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National Institute of Water and Atmospheric Research

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Introduction

The aim of this guide is to provide clear and concise identification sheets for deepwater shark species for future use by scientific observers and the fishing industry.

This guide is an updated version of the Deepwater Shark Reference Guide sheets already prepared by NIWA.

The shark species are presented alphabetically by common name. Layout for each species is consistent throughout the document and includes the following:

- common name, scientific name, and species code
- colour photograph and line drawing for each species
- information on the depth distribution of the species
- diagnostic features – outlines the key characteristics used to identify the species
- maximum lengths that are attained
- colour photograph and line drawing of the underside of head for some species

These sheets can be substituted for the sheets already included in the revised Observer Manual.

Enclosed is a CD ROM containing the shark guide as an interactive PDF document, an Acrobat Reader installer, and a word document. The guide can be read with Acrobat Reader ver. 3 and up. Any updates to the identification sheets can be made easily at a later date.

Acknowledgments

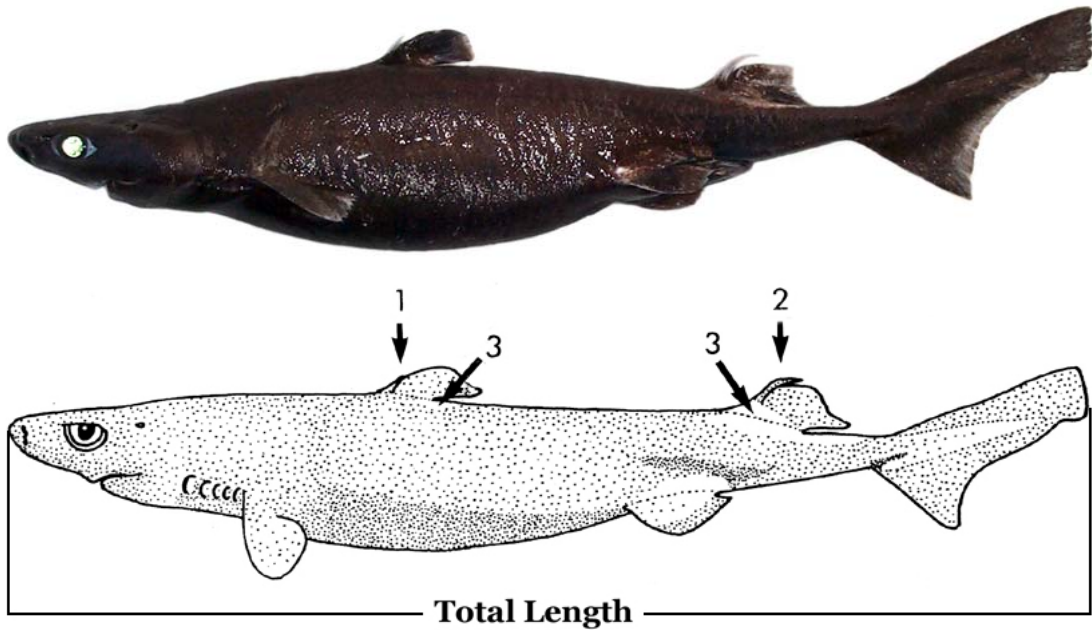
Thanks go to the following National Institute of Water and Atmospheric Research Limited (NIWA) staff for contributing useful comments on earlier versions of this document: Malcolm Clark, Peter McMillan, and Larry Paul. Photographs were provided by Neil Bagley, Malcolm Francis, Peter Marriott, Peter McMillan and Peter Shearer (NIWA). The line diagrams were sourced from the Food and Agriculture Organisation of the United Nations (Compagno 1984).

*Ahako,
he iti pioke,
e tere ana
i te moana
whanui
he au tona*

Even a small shark can make a significant ripple in the vast ocean.

Ngai Takoto pepeha (proverb)

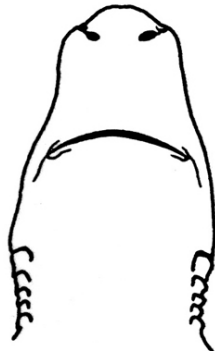
BAXTER'S DOGFISH (ETB)



Baxter's dogfish, *Etmopterus baxteri* (ETB) is the largest of the lantern sharks. Depth range 500 – 1500 m. Found in large numbers over seamount features.

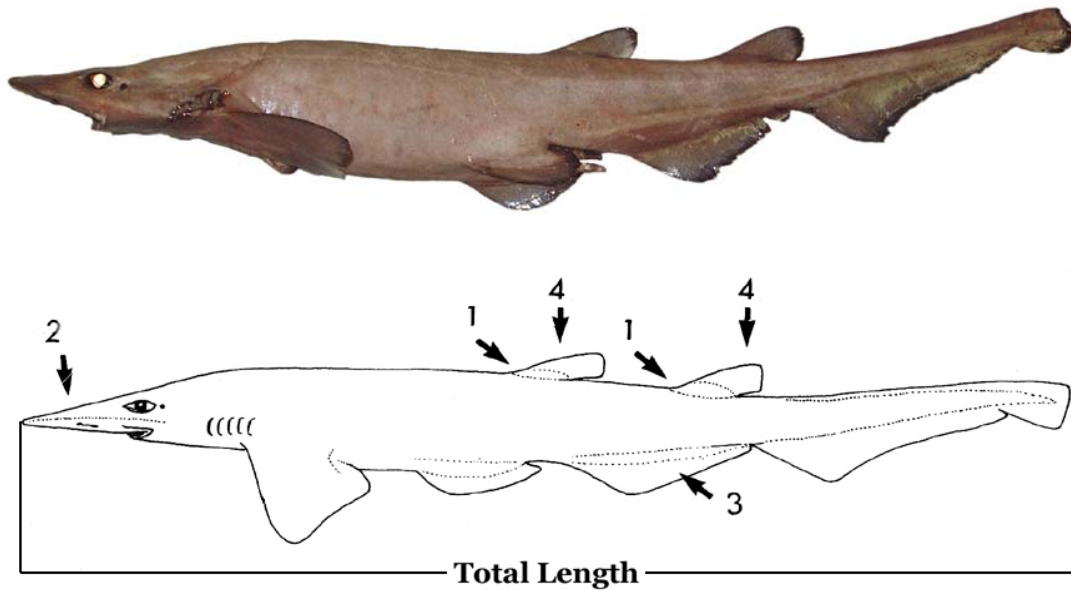
DIAGNOSTIC FEATURES

- First dorsal fin spine is short and strong (1)
- Second dorsal fin spine much larger than first, is long, curved and strong (2)
- Naked skin patches at the base of each dorsal fin (3)
- Uniform brownish black to black; pale where denticles and skin removed
- Attains maximum length of about 85 cm



Underside of head

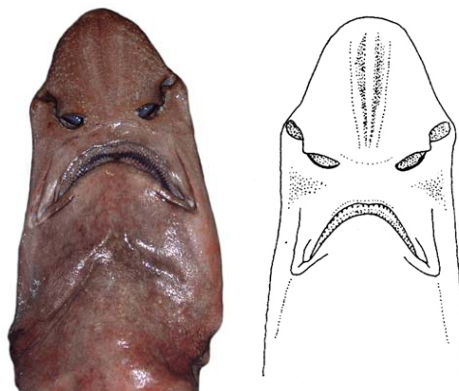
CATSHARKS (APR)



Catsharks, *Aristurus* spp. (APR). This group is widely distributed and comprises several species. Usually occur deeper than 700 m.

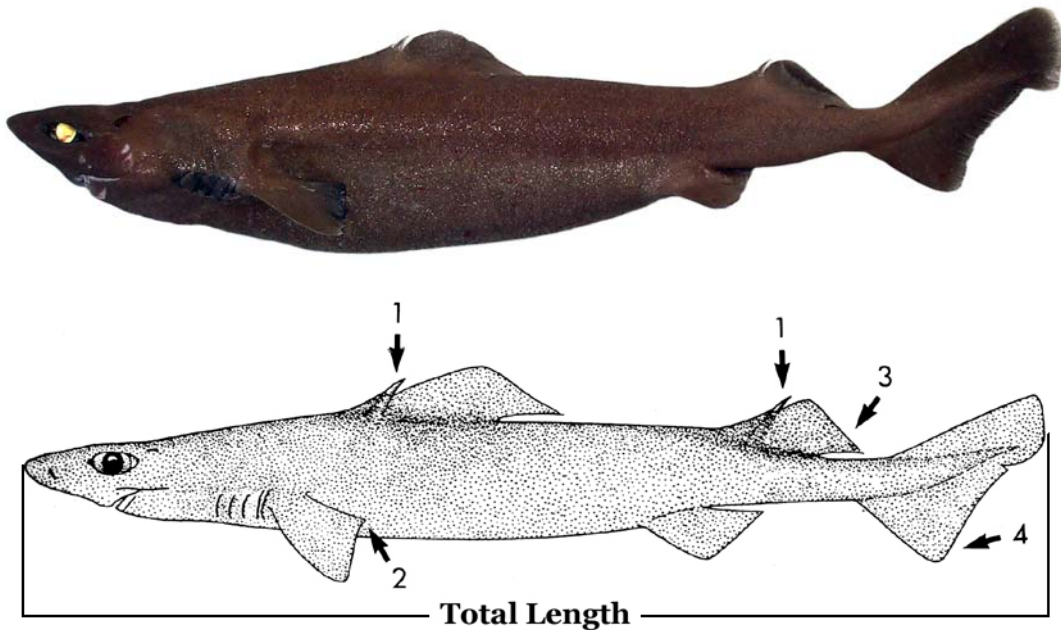
DIAGNOSTIC FEATURES

- No spines in the dorsal fins (1)
- Moderately elongate with a flattened snout (2)
- Teeth very small, bristle-like
- Anal fin very long (3). Dorsal fins are well back on body (4)
- Colour uniform medium greyish to dark brownish, teeth greyish; gill flaps and naked areas on fins black or brown
- Attains maximum length of about 90 cm



Underside of head

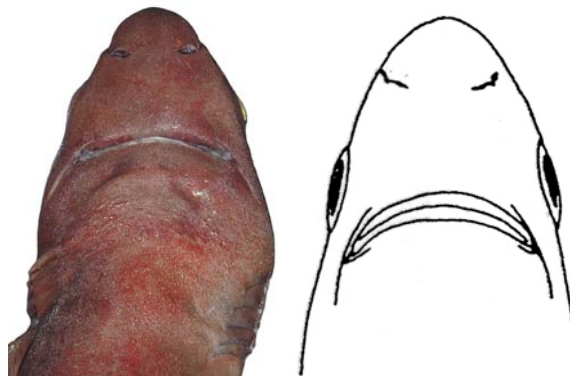
LEAFSCALE GULPER SHARK (CSQ)



Leafscale gulper shark, *Centrophorus squamosus* (CSQ) is a large shark and is most abundant in depths of 600 – 1000 m.

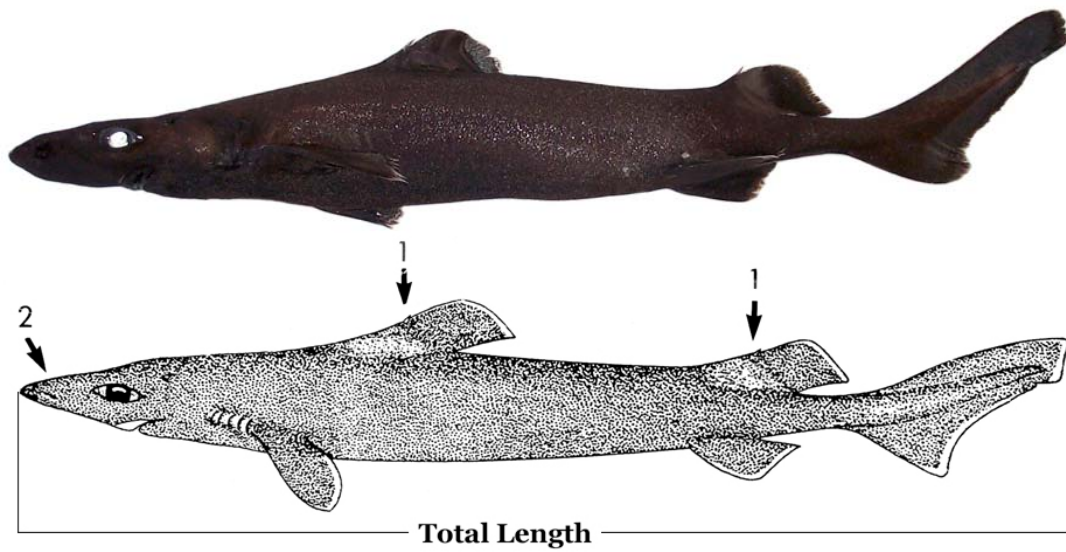
DIAGNOSTIC FEATURES

- Large strong dorsal fin spines (1)
- Inside rear edge of pectoral fin pointed, sometimes slightly elongate (2)
- Second dorsal fin shorter and more triangular than the first dorsal fin (3)
- Caudal fin has a very deep ventral lobe (4)
- Uniformly light greyish brown to dark grey, eyes relatively large
- Attains maximum length of about 140 cm



Underside of head

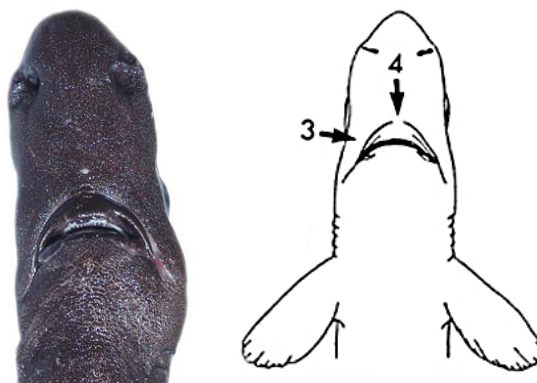
LONGNOSE VELVET DOGFISH (CYP)



Longnose velvet dogfish, *Centroscymnus crepidater* (CYP) is the smallest of the *Centroscymnus* deepwater shark species. It is abundant in New Zealand waters and found most commonly between 600 and 1300 m.

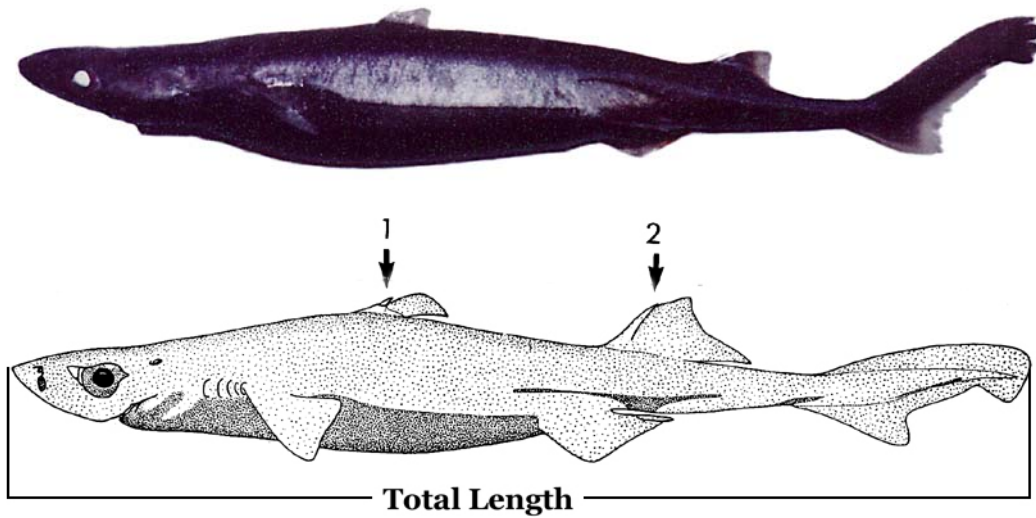
DIAGNOSTIC FEATURES

- Small, partly buried dorsal fin spines (1)
- Snout long, flattened (2). Very long labial furrows in upper jaw (3), separated in front by a narrow band of flesh (4)
- Uniformly dark brown to black
- Attains maximum length of about 110 cm.



Underside of head

LUCIFER DOGFISH (ETL)



Lucifer dogfish, *Etmopterus lucifer* (ETL) is a small lantern shark found in moderate numbers in the New Zealand region. This species is most abundant between 400 and 800 m.

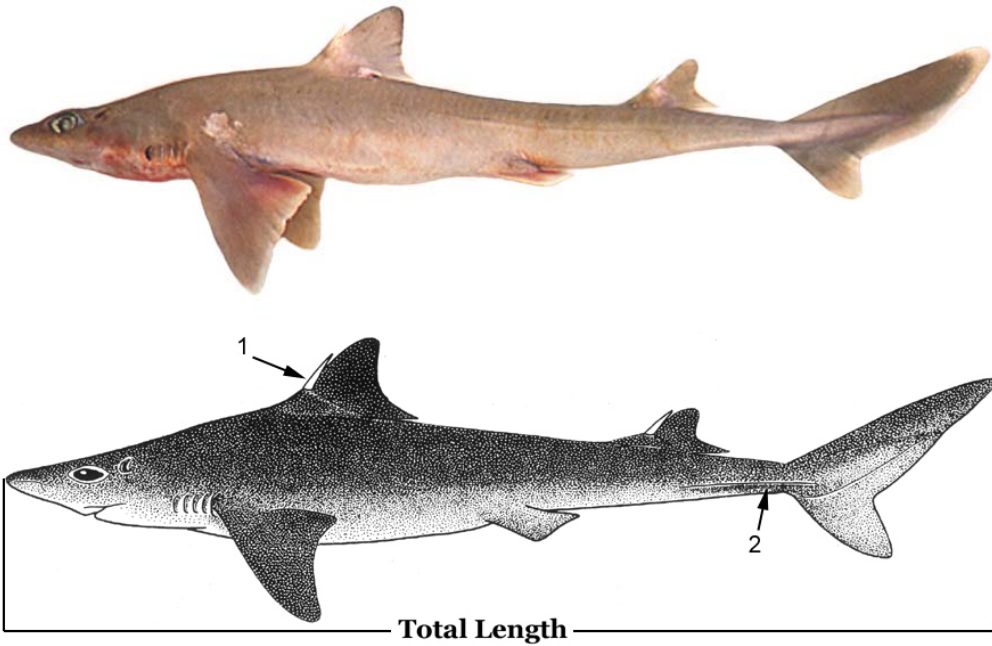
DIAGNOSTIC FEATURES

- Small slender shark
- Small first dorsal spine (1), second dorsal spine longer and slightly curved (2)
- Light brown or grey dorsally, dark brown on the flanks, with a violet sheen, and blackish ventrally
- Denticles arranged in longitudinal rows
- Attains maximum length of about 55 cm



Underside of head

NORTHERN SPINY DOGFISH (NSD)



Northern spiny dogfish, *Squalus mitsukurii* (NSD) is primarily caught around the North Island, in Cook Strait, and around the Chatham Islands ranging from the shallows to 500 m.

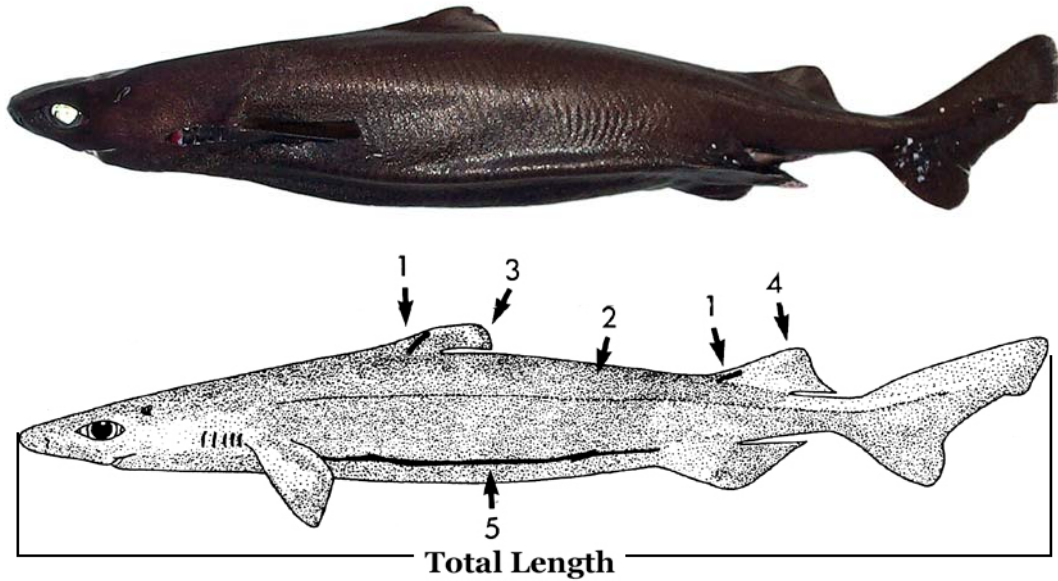
DIAGNOSTIC FEATURES

- Prominent dorsal-fin spines (1), a broadly pointed snout
- Tail base with a prominent lateral keel (2)
- Similar blade-like teeth in both jaws.
- Dorsal surfaces and flanks greyish, paler ventrally. No white spots
- Eye relatively large, green
- Attains maximum length of about 115 cm



Underside of head

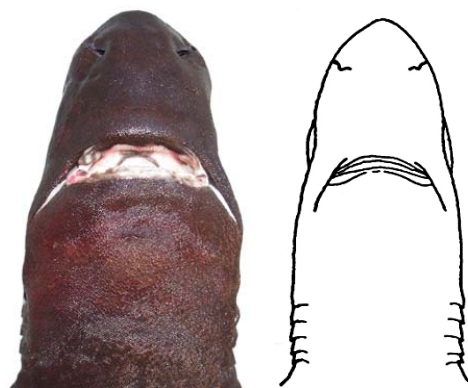
OWSTON'S DOGFISH (CYO)



Owston's dogfish, *Centroscyrnus owstoni* (CYO) is a large deepwater shark fairly commonly found in New Zealand waters with a depth distribution of 600 – 1500 m.

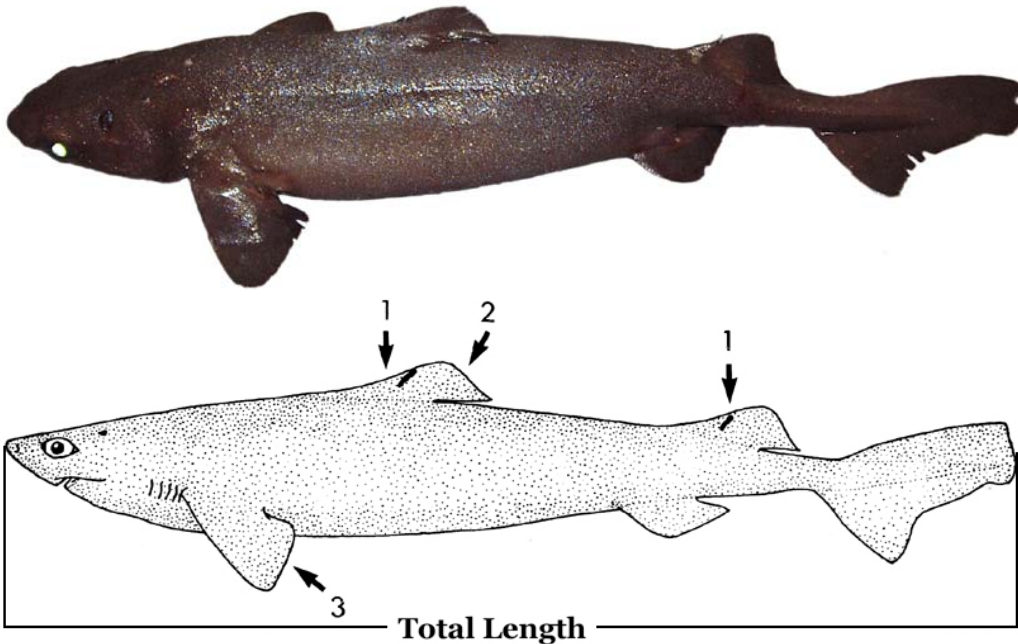
DIAGNOSTIC FEATURES

- Short, partially exposed dorsal spines (1)
- Body with smooth-skinned appearance, caused by small flat denticles (2)
- Low, lobe-like first dorsal fin (3). Second dorsal fin taller and more triangular than first dorsal fin (4)
- Very distinctive belly ridge on each side (5)
- Uniformly dark brown to black (sometimes light greyish brown)
- Attains maximum length of about 115 cm



Underside of head

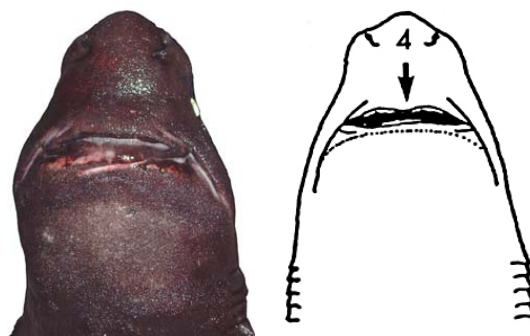
PLUNKET'S SHARK (PLS)



Plunket's shark, *Centroscyrnus plunketi* (PLS) is a large deepwater shark fairly common in New Zealand waters between 500 and 1000 m. This species was once placed in the genus *Scymnodon*.

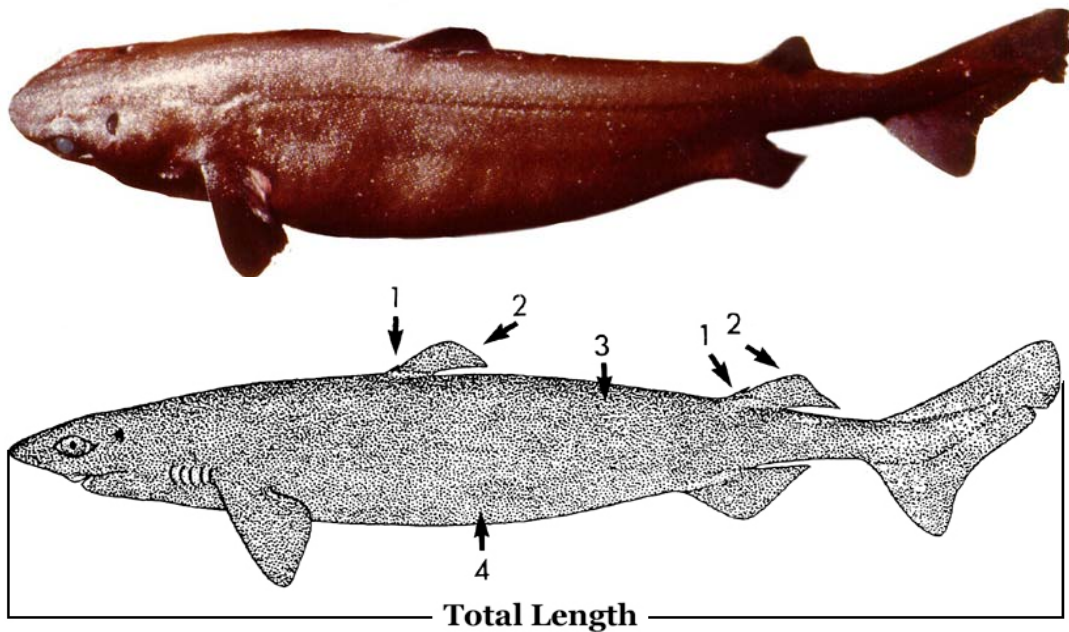
DIAGNOSTIC FEATURES

- Short snout
- Short thick dorsal fin spines (1). First dorsal fin slightly smaller than the second dorsal fin (2). Fin spines small but with tips protruding from fins
- Pectoral fins broad (almost round) (3)
- Teeth in middle of upper jaw much smaller than those on the sides of the upper jaw (4)
- Uniformly grey brown, sometimes dark, juveniles more greyish
- Attains maximum length of about 150 cm



Underside of head

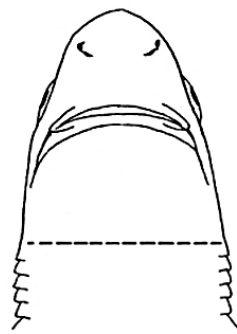
PORTUGUESE DOGFISH (CYL)



Portuguese dogfish, *Centroscymnus coelolepis* (CYL) is the least common of the *Centroscymnus* deepwater shark species and has a depth distribution of 500–1500 m.

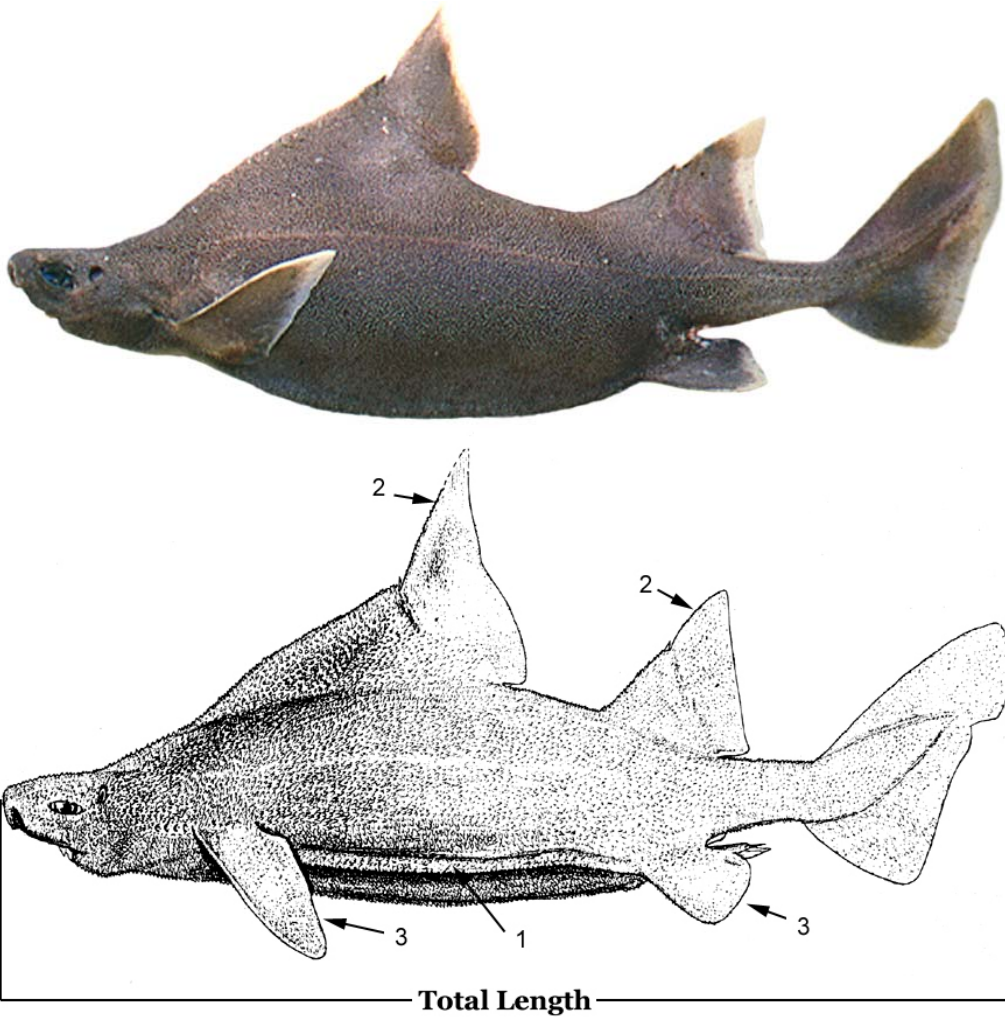
DIAGNOSTIC FEATURES

- Small dorsal fin spines (1)
- Dorsal fins of a similar size and shape (2)
- Body with snake-skin appearance caused by large flat denticles (3)
- No belly ridge (4)
- Uniformly golden brown to dark brown
- Attains maximum length of about 120 cm



Underside of head

PRICKLY DOGFISH (PDG)

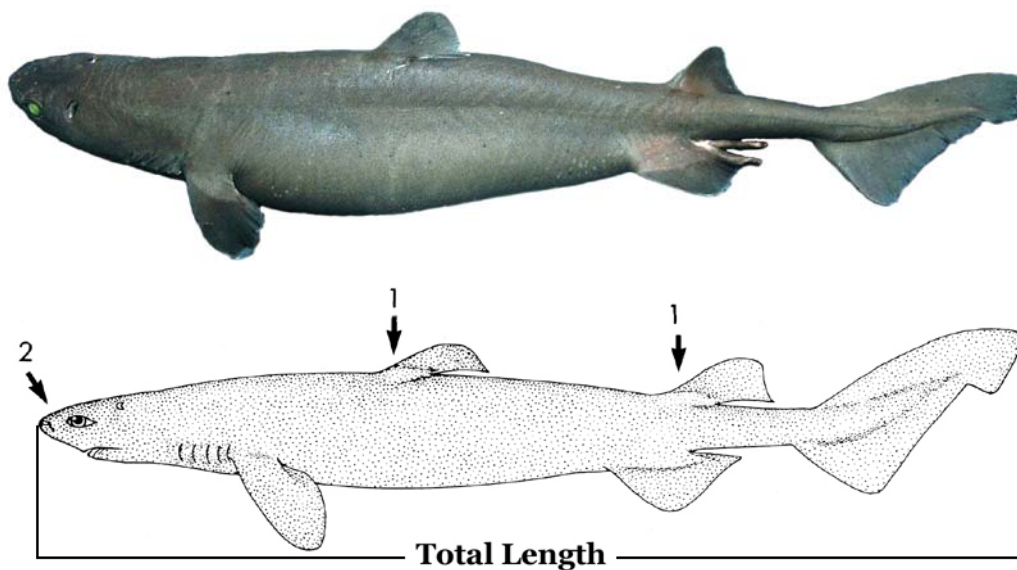


Prickly dogfish, *Oxynotus bruniensis* (PDG) is a fairly rare species. It has a wide depth distribution ranging from around 200 to 1100 m.

DIAGNOSTIC FEATURES

- Distinctive, triangular shaped, hump-backed dogfish with rough skin, prominent belly ridges (1)
- Short blunt snout, and high sail-like dorsal fins with embedded spines (2)
- Uniformly brownish or greyish, tips of dorsal fins and posterior margins of pectoral and pelvic fins (3) white or translucent
- Attains maximum length of about 70 cm

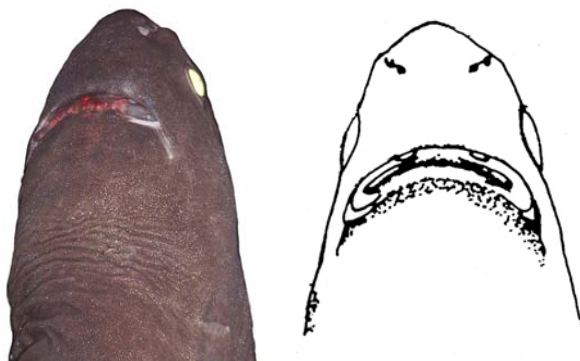
SEAL SHARK (BSH)



Seal shark, *Dalatias licha* (BSH) is a large species also known as black shark and is most commonly found within 300–1000 m.

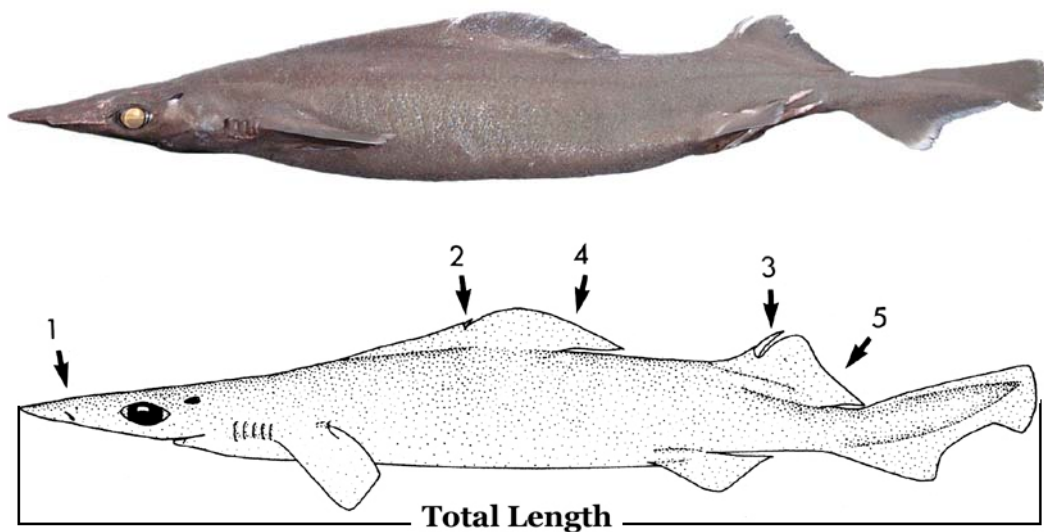
DIAGNOSTIC FEATURES

- No dorsal fin spines (1)
- Snout short, “seal-like” (2), lips thick, fleshy
- Teeth in lower jaw large, triangular and serrated. Teeth in upper jaw smaller, slender and not serrated
- Mostly uniformly black, sometimes light grey or brown; lips pale; rear margins of most fins translucent
- Attains maximum length of about 150 cm



Underside of head

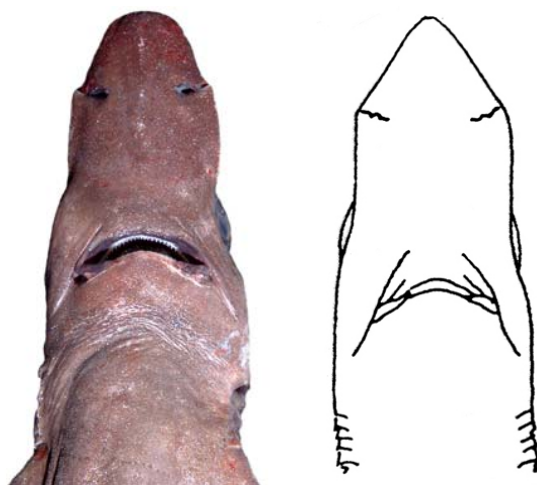
SHOVELNOSE DOGFISH (SND)



Shovelnose dogfish, *Deania calcea* (SND) is a deepwater shark species most abundant in 400 – 1400 m.

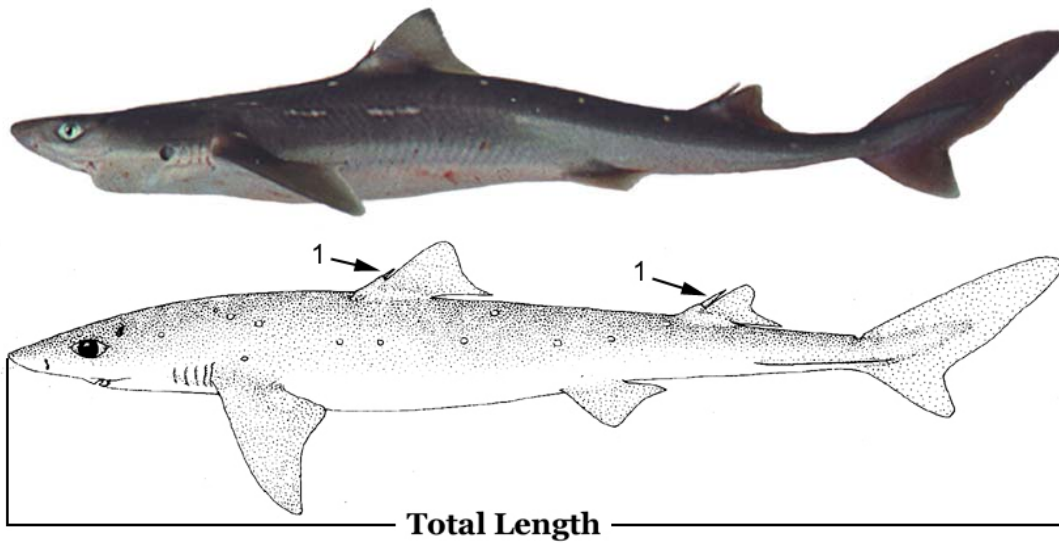
DIAGNOSTIC FEATURES

- Very long flat, shovel-like snout (1)
- First dorsal fin spine strong but short (2), second dorsal spine larger (3)
- Extremely long, low first dorsal fin (4), second dorsal fin shorter and higher (5)
- Adults vary from uniform light to dark grey to dark brown
- Attains maximum length of about 110 cm



Underside of head

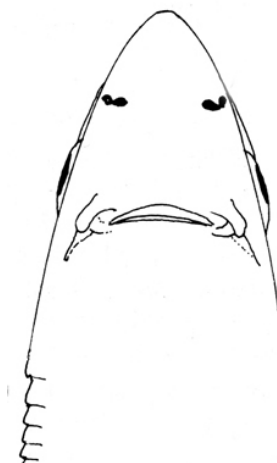
SPINY DOGFISH (SPD)



Spiny dogfish, *Squalus acanthias* (SPD) is commonly caught around the South Island and has a very wide depth distribution, ranging from the shallows to over 800 m.

DIAGNOSTIC FEATURES

- Slender dogfish with prominent dorsal-fin spines (1), first dorsal fin spine much shorter than second spine
- A long and narrow pointed snout
- Dorsal surfaces and flanks grey to brownish-grey, with an irregular array of white spots (sometimes sparse, occasionally absent), paler ventrally
- Attains maximum length of about 110 cm



Underside of head