

This picture guide is meant to be used by participating Fish Count groups to hone their fish identification skills prior to their survey, or to help clear up confusion when discussing group findings. It cannot replace a good field book, but it may help you to recognise what these species look like in the water.

If you're not sure about a fish you saw, have a look in this booklet to see if the depth, habitat and description matches up with what you encountered on your snorkel or dive. If a fish only occurs in shallow waters within seagrass beds, you probably didn't see it on a reef at 40 metres down.

As always we encourage you to take as many photos as possible! Photos can be uploaded to the Atlas of Living Australia/Redmap to confirm sightings, especially of unusual species/species outside their known range, and can be used to help identify what your group discovered on the day. Contact fishcount@vnpa.org.au if you'd like to borrow an underwater camera for your event.



Victorian National Parks Association

Our vision is to ensure Victoria is a place with a diverse and healthy natural environment that is protected, respected and enjoyed by all. We work with all levels of government, the scientific community and the general community to achieve long term, best practice environmental outcomes and help shape the agenda for creating and managing national parks, conservation reserves and other important natural areas across land and sea in Victoria.

ReefWatch

ReefWatch is the Victorian National Parks Association's marine citizen science program. It provides projects that engage divers, snorkelers, rock pool ramblers and beach combers to contribute their observations, images and knowledge to expand our understanding of Victoria's unique marine life.

Illustrations by Nicole Mertens © 2019

Symbols used in this guide



Male



Female



Juvenile



Reef associated



Sandy/muddy substrates



Seagrass

Sources and useful resources for fish ID

http://fishesofaustralia.net.au/

https://australianmuseum.net.au/learn/animals/fishes/

https://reeflifesurvey.com/species/search.php

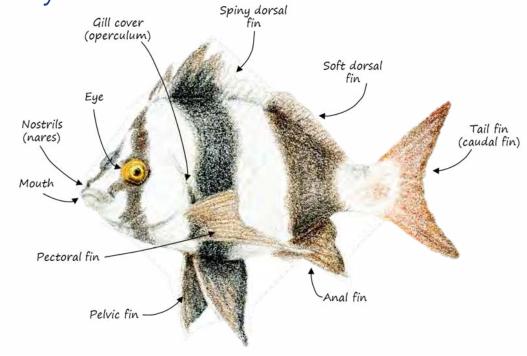
http://portphillipmarinelife.net.au/

https://vnpa.org.au/programs/great-victorian-fish-count/

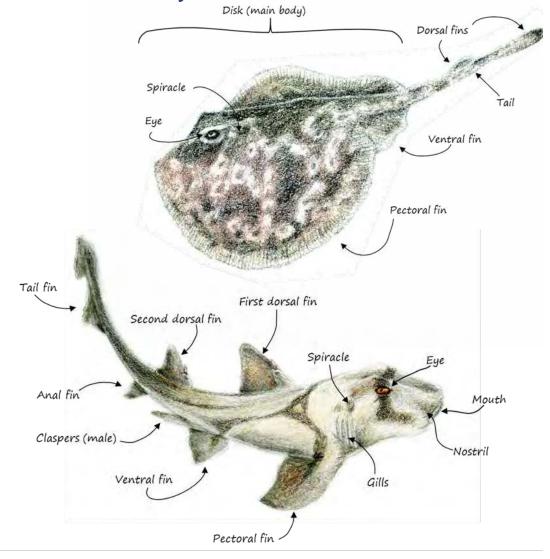
Sharks and Rays of Australia (2nd Edition), Peter Last and John Stevens (2009), CSIRO publishing

Fishes of Australia's Southern Coast, Martin Gomon, Dianne Bray and Rudie Kuiter (2008), New Holland Publishers Australia

Bony fish



Sharks and rays



Dusky Morwong

Dactylophora nigricans

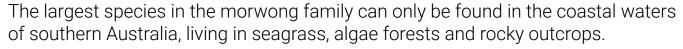
Max length: 120 cm

Habitat: Reefs and seagrass

Depth: 1-30 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates



Young fish are silvery with rows of orange-brown spots along their sides. Adults are grey to brown with a white belly. This species has thick lips, and their pectoral fins have thickened lower rays.



Morwongs

Red Morwong

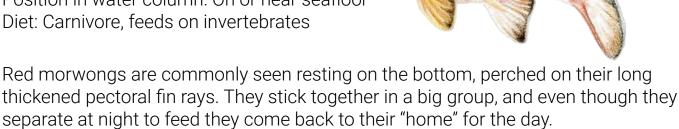
Morwong fuscus

Max length: 65 cm

Habitat: Reef associated

Depth: 1-30 m

Position in water column: On or near seafloor



Adults are pinkish-red on top, silvery-white below, with pale vertical marks at the rear of the body and white stripes on the snout, over their eyes and along their gill covers. Juveniles have prominent silvery-white stripes along their body.



Banded Morwong

Chirodactylus spectabilis

Max length: 100 cm Habitat: Reef associated

Depth: 1-50 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates



The banded morwong can live for up to 90 years. Their species name, spectabillis, is Latin for 'showy' or 'notable', in reference to their striking colour pattern of 7-8 broad, evenly spaced reddish-brown vertical bands. Their fins have dark, nearly black edges.



Morwongs

Magpie Perch

Pseudogoniistius nigripes

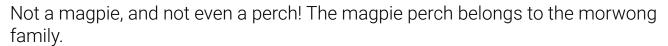
Max length: 41 cm

Habitat: Reef associated

Depth: 1-65 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates



The magpie perch has three dark bands on its body, however it can "turn off" the middle band almost instantly, dramatically changing its appearance. The tail in juveniles is bright reddish-orange, and darkens to brown as the fish matures.



Bastard Trumpeter

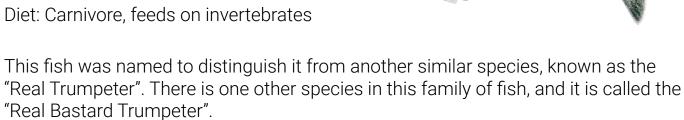
Latridopsis forsteri

Max length: 70 cm

Habitat: Reef associated

Depth: 2-60 m

Position in water column: On or near seafloor



A silvery grey fish with greeny-brown to copper horizontal stripes and markings, and brownish fins with dark edges. The dorsal fin is deeply notched and the tail base is narrow.



Weed whiting

Herring cale

Olisthops cyanomelas

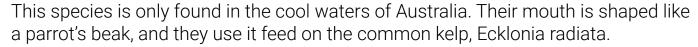
Max length: 51 cm

Habitat: Reef associated

Depth: 1-30 m

Position in water column: On or near seafloor

Diet: Herbivore, feeds on algae



Like most wrasse, the herring cale is able to change sex and colour throughout its life. Juvenile herring cale are greenish-greyish to brown above, yellow below, and are covered in dark blotches, spots and lines, with a broken silvery stripe on the side. Males are pale blue to nearly black with bright blue lines on the edges of the tail fin, pectoral fins and along the snout. Females are yellowish-brown with thin blue wavy lines on the head and fins, and each scale has a bluish-white spot.



Horseshoe Leatherjacket



Meuschenia hippocrepis

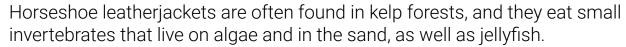
Max length: 60 cm

Habitat: Reef associated

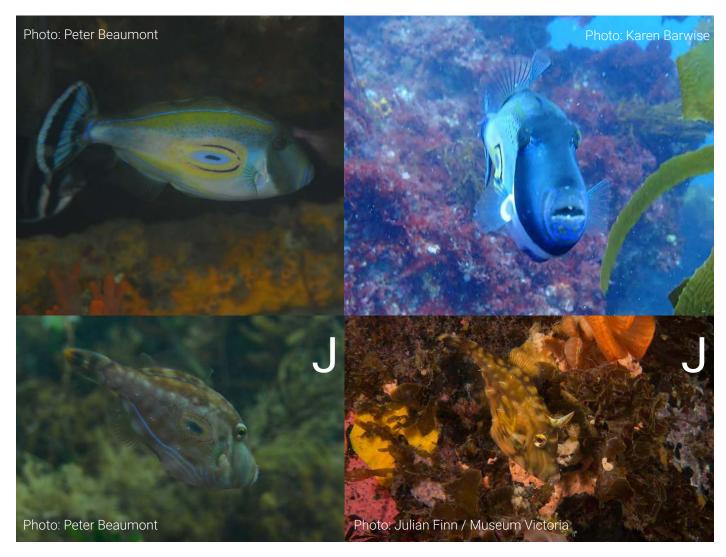
Depth: 1-120 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates



This species gets its name from the horseshoe-shaped marking on the side of its body. Males are more brightly coloured than females. Juveniles have bluish-grey markings surrounded by yellow. This species has 2 pairs of curved spines on each side near the base of the tail fin, and a prominent, serrated spine for the front dorsal fin.



Leatherjackets

Six Spined Leatherjacket

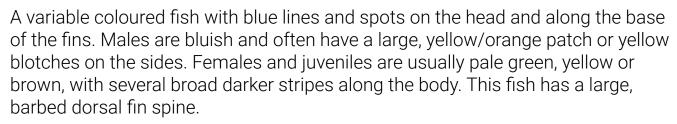
Meuschenia freycineti

Max length: 55 cm

Habitat: Reef associated

Depth: 1-45 m

Position in water column: On or near seafloor Diet: Omnivore, feeds on invertebrates and algae



As its name suggests, this fish usually has 3 pairs of spines near the base of its tail fin (can be anything from 2-4 pairs). Males use these spines to fight for dominance.



Zebra Fish

Girella zebra

Max length: 54 cm

Habitat: Reef associated

Depth: 1-20 m

Position in water column: On or near seafloor

Diet: Herbivore, feeds on algae

Zebra fish are common on rocky reefs, estuaries and bays in shallow waters of southern Australia, and young zebra fish can be found in rock pools. They can be found schooling in small or large groups.

They are white to pale grey with 9-10 dark wedge-shaped bars on their sides. Their fins are yellow. Juveniles are darker with less distinct bars and can be confused with the Luderick, Girella tricuspidata.



Blue devilfishes

Southern Blue Devil

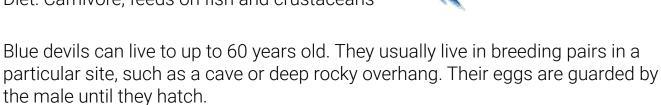
Meuschenia freycineti

Max length: 35 cm

Habitat: Reef associated

Depth: 3-45 m

Position in water column: On or near seafloor Diet: Carnivore, feeds on fish and crustaceans



Dark blue to bluish-grey, covered in iridescent blue spots and fins with light blue edges. Each adult has a unique pattern of blue spots on the lower part of their gills.



Temperate boxfishes

Ornate Cowfish

Aracana ornata

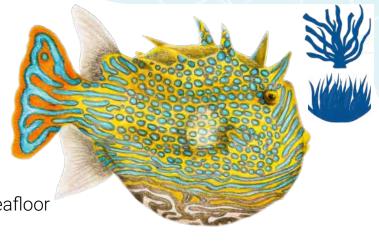
Max length: 15 cm

Habitat: Reefs and seagrass

Depth: 1-30 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates



This cowfish (named after the horns on its head and back) is found in seagrass beds and rocky reefs.

Males and females have different colours- males are mostly yellow with blue stripes and spots, while females and juveniles are brown with a complex pattern of white, wavy stripes and circles. This species can easily be confused with Shaw's cowfish (Aracana aurita), however, the female ornate cowfish has diagonal lines along its snout (compared to nearly horizontal lines in female Shaw's cowfish) and the males have a distinct hump on their snout (lacking in male Shaw's cowfish).



Temperate boxfishes

Shaw's Cowfish

Aracana aurita

Max length: 25 cm

Habitat: Reefs and seagrass

Depth: 10-160 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates



Shaw's cowfish feed by blowing a jet of water at the sandy bottom and eating the small invertebrates and seaweed that are uncovered.

Similar to the ornate cowfish, males are bright blue and yellow while females are mostly brown with yellow-white stripes.



Damselfishes

Victorian Scalyfin

Parma victoriae

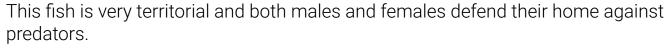
Max length: 25 cm

Habitat: Reef associated

Depth: 1-35 m

Position in water column: On or near seafloor

Diet: Herbivore, feeds on algae



Scalyfins change colour over their lifetime. Young fish are bright orange with neon blue lines and spots and a "false eye" spot to help confuse predators. Large adults are dark greyish to black, or rusty yellow coloured.



Long Snouted Boarfish

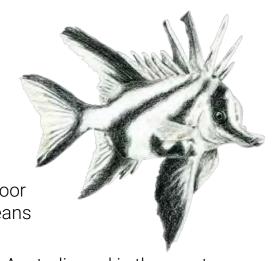
Pentaceropsis recurvirostris

Max length: 50 cm

Habitat: Reef associated

Depth: 3-260 m

Position in water column: On or near seafloor Diet: Carnivore, feeds on fish and crustaceans



The long snouted boarfish is found only in Australia and is the most common boarfish in temperate Australian waters. Very little is known about their life cycle.

This fish has a large head with bony plates and a large, tubular snout. It is white with broad, dark vertically angled bands and large spiny fins. Juveniles have brownish blotches on their dorsal fins, anal fins and bodies.



Old Wives

Old Wife

Parma victoriae

Max length: 30 cm

Habitat: Reefs and seagrass

Depth: 0-85 m

Position in water column: On or near seafloor, midwa

Diet: Carnivore, feeds on invertebrates

The common name 'old wife' comes from the grinding sound that the fish makes with its teeth when stressed, for example, when accidently captured by fishers.

The Old Wife has venomous spines on its large dorsal fins. It is silvery-white to brownish in colour with prominent dark vertical bands.



Sweeps

Sea Sweep

Scorpis aequipinnis

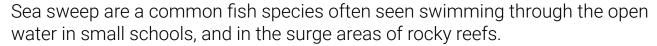
Max length: 48 cm

Habitat: Reef associated

Depth: 1-25 m

Position in water column: On or near seafloor, midwater

Diet: Omnivore, feeds on algae and zooplankton



This fish is silvery-to bluish-grey or greenish-brown, usually with two broad dusky bands ("saddles") on the upper side. These bands are more often seen in juveniles. Adults have a yellow tinge to the lower parts of their head. Their tails are large and

forked, and their dorsal and anal fins have prominent raised lobes



Sweeps

Silver Sweep

Scorpis lineolatus

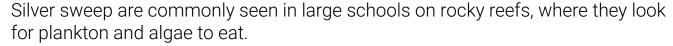
Max length: 30 cm

Habitat: Reef associated

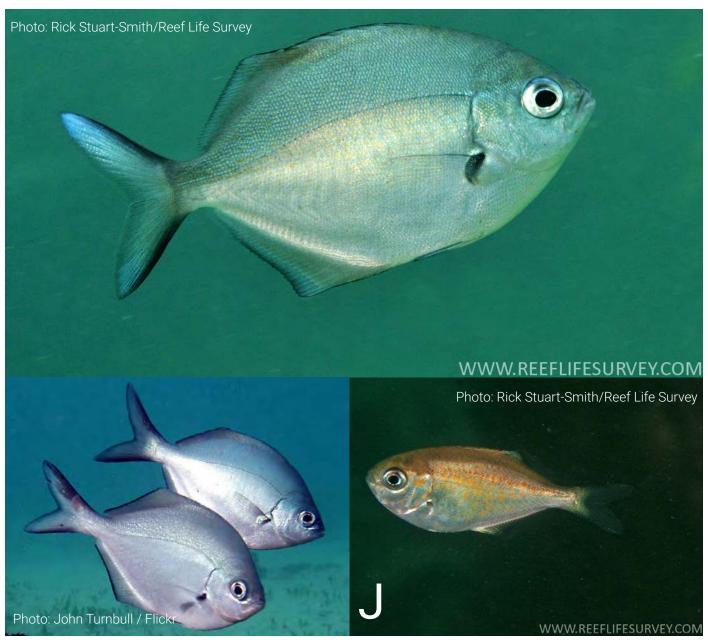
Depth: 1-30 m

Position in water column: On or near seafloor, midwater

Diet: Omnivore, feeds on algae and zooplankton



Compared to sea sweep, silver sweep are mostly light grey and lack the darker bands on the upper sides of its body. They have a blackish area at the base of the pectoral fins and black outer rays on the tail fin.



Western Blue Groper

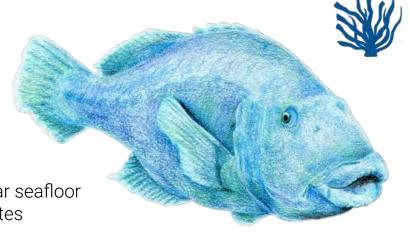
Achoerodus gouldii

Max length: 175 cm Habitat: Reef associated

Depth: 5-100+ m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates



The largest carnivorous bony fish in southern Australia, Western Blue Groper are site-attached, meaning that they tend to remain in their 'home range' for their whole life- up to 70 years. They have been targeted by fishers in the past, causing numbers to decline, but they are now protected in Victoria.

Juvenile fish are greenish, sometimes with yellow-white spots on their backs. Males are grey to blue, and females are greyish-green to red-brown.

Note: the western blue groper is only found west of Wilson's Promontory.



Eastern Blue Groper

Achoerodus viridis

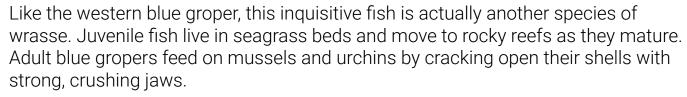
Max length: 120 cm

Habitat: Reefs and seagrass

Depth: 1-60 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates



Male gropers are blue to greenish-blue, while females are usually reddish-brown to brown, often with pale spots and blotches. Juveniles are grey to greyish-brown, also with spots and blotches.

Note: the eastern blue groper is only found east of Wilson's Promontory.



Blue Throat Wrasse

Notolabrus tetricus

Max length: 50 cm

Habitat: Reefs and seagrass

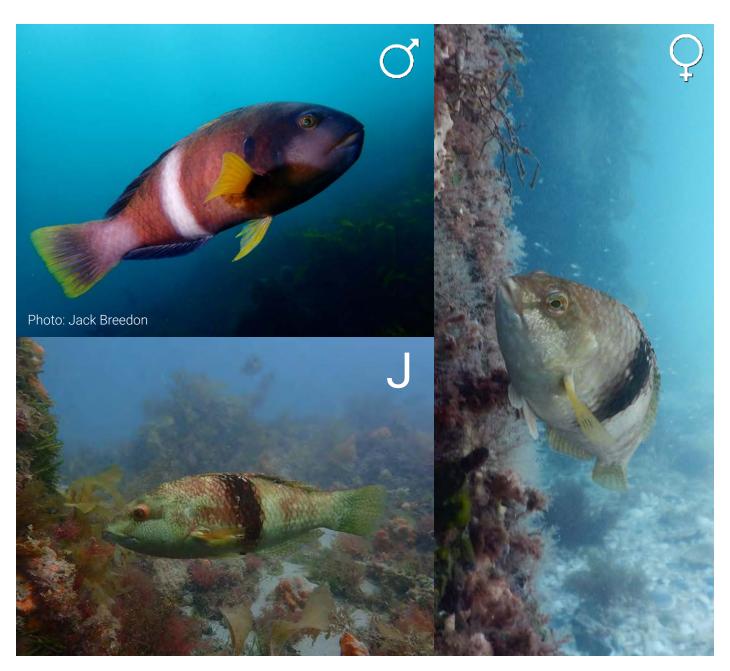
Depth: 1-160 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates



Males are mostly bluish-brown with a white band and blue chin, while females are green to reddish brown with a white and brownish black band.





Saddled Wrasse

Notolabrus fucicola

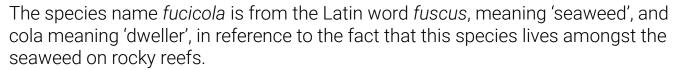
Max length: 45 cm

Habitat: Reef associated

Depth: 1-90 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates



Adults are greenish-blue to brown with a purple tinge, with distinct yellowish bars on their body and fins. Juvenile saddled wrasse are reddish-brown with green and orange mottled patterns.





Wrasses

Senator Wrasse

Pictilabrus laticlavius

Max length: 30 cm

Habitat: Reef associated

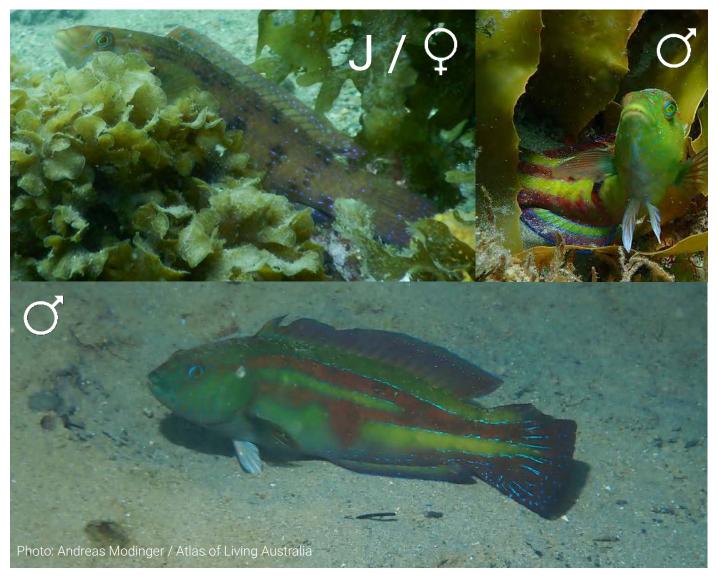
Depth: 3-40 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates



Juveniles and females are reddish brown with a row of black spots along their midline and a black spot on the rear of the dorsal fin. 4-5 dusky bars are present along the lower sides. Young senator wrasse mature into females in their first year, and eventually change sex into brightly coloured males as they get older. Males are green with maroon-purple stripes along their sides.





Southern Maori Wrasse



Ophthalmolepis lineolata

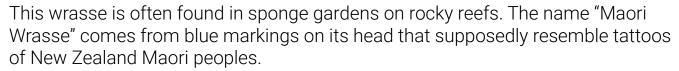
Max length: 47 cm

Habitat: Reef associated

Depth: 1-60 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates



Females and juveniles are reddish-orange above, yellow-brown below and white along the mid sides. Males are brownish-orange above, yellow-brown below, with an irregular black stripe below the white midline and blue spots on the edge of each scale.



Rock Cod

Harlequin Fish

Othos dentex

Max length: 86 cm

Habitat: Reef associated

Depth: 1-30 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates



Very little is known about this long lived species. It will spend its whole life on one patch of reef and is vulnerable to changes in habitat and overfishing. Harlequin fish have not been recorded in Victoria for decades. However, we remain hopeful that this colourful cod will one day return to Victorian waters.

This fish is highly variable in colour, from orange, to pink, red, green or brown. It has large yellow, green or blue spots and dashes along its sides and a large red blotch behind the base of the pectoral fin. Another notable feature is that the large canine teeth at the front of the jaws are visible even when the fish's mouth is closed.



Weedy Seadragon

Phyllopteryx taeniolatus

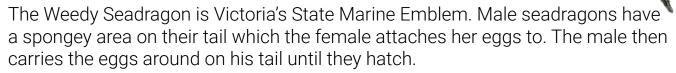
Max length: 45 cm

Habitat: Seagrass/algae beds

Depth: 1-50 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates



This species has a long, tubular snout and leaf-like appendages that resemble algal fronds. Females have deeper bodies than males. Both males and females are reddy-orange to purplish in colour with distinct yellow spots on the head and body. They have bluish bars on the sides of their body and towards the base of tail.



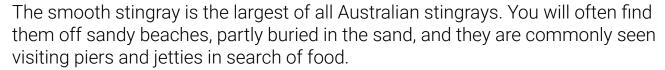
Smooth Stingray

Bathytoshia brevicaudata

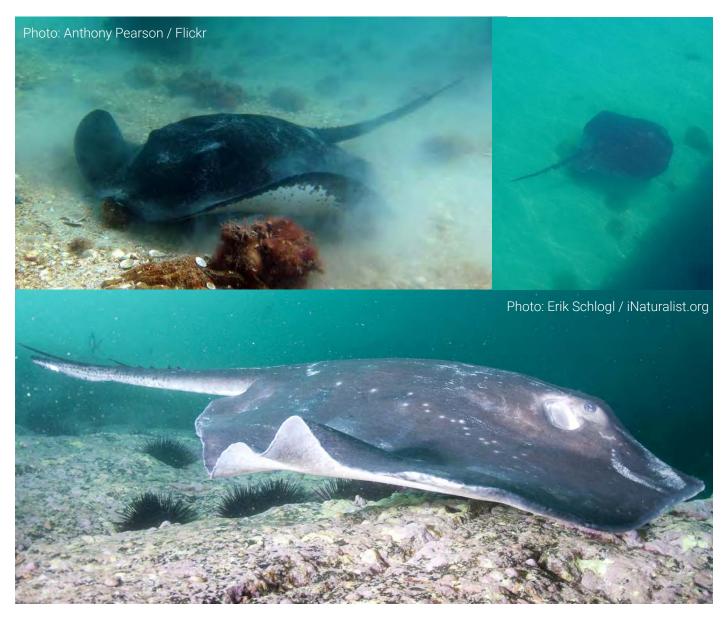
Max length: 430 cm (200 cm width) Habitat: Sandy, muddy substrates

Depth: 1-150 m

Position in water column: On or near seafloor Diet: Carnivore, feeds on invertebrates and fishes



The disc is greyish-brown on top, pale underneath, angular and smooth. The tail is short with large tubercules, thorns and an venomous spine. The area around the eyes is somewhat darker, and there are white spots on the top of the head.



Black Stingray

Bathytoshia lata

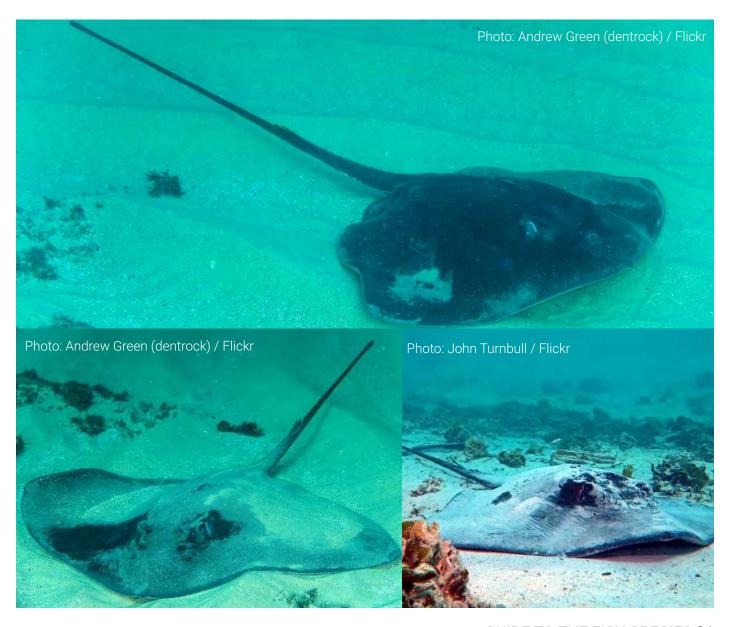
Max length: 400 cm (180 cm width) Habitat: Sandy, muddy substrates

Depth: 1-360 m

Position in water column: On or near seafloor Diet: Carnivore, feeds on invertebrates and fishes



Uniformly greenish brown to black on top and pale underneath, the black stingray is similar in size and look to the smooth stingray. However, the black stingray has a tail much longer than its body (compared to the smooth stingray's tail, which is shorter than its body) and no white spots on the disc near the head.



Spotted Stingaree

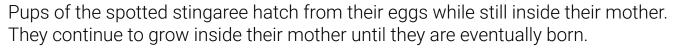
Urolophus gigas

Max length: 70 cm

Habitat: Sandy, muddy substrates and seagrass

Depth: 1-50 m

Position in water column: On or near seafloor Diet: Carnivore, feeds on invertebrates and fishes



The spotted stingaree is dark brown to black on top with many indistinct pale rings and spots and the margins of the disc and tail are grey or black. The disc itself is circular to oval in shape. The underside of the disc is white or cream. It possess a venomous spine on the tail behind the dorsal fin.



Southern Eagle Ray

Myliobatis tenuicaudatus

Max length: 240 cm (120 cm width)

Habitat: Sandy, muddy substrates and seagrass

Depth: 1-130 m

Position in water column: On or near seafloor Diet: Carnivore, feeds on invertebrates and fishes



Southern eagle rays are very fast swimmers, and can jump high out of the water. They can blow a jet of water out of their gill slits to expose molluscs and other invertebrates hiding in the sand, which they feed on.

The disc is wider than it is long, with angular tips. The snout is blunt, with conspicuous spiracles near the eyes. The dorsal fin is small, but the tail fin is long and whip like with a poisonous spine. The upperside is brown, grey, olive or yellowish with a variable pattern of blue-grey spots and bars, while the underside is pale grey.



Guitarfish

Southern Fiddler Ray

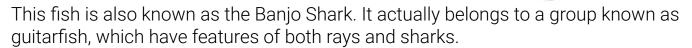
Trygonorrhina dumerilii

Max length: 150 cm

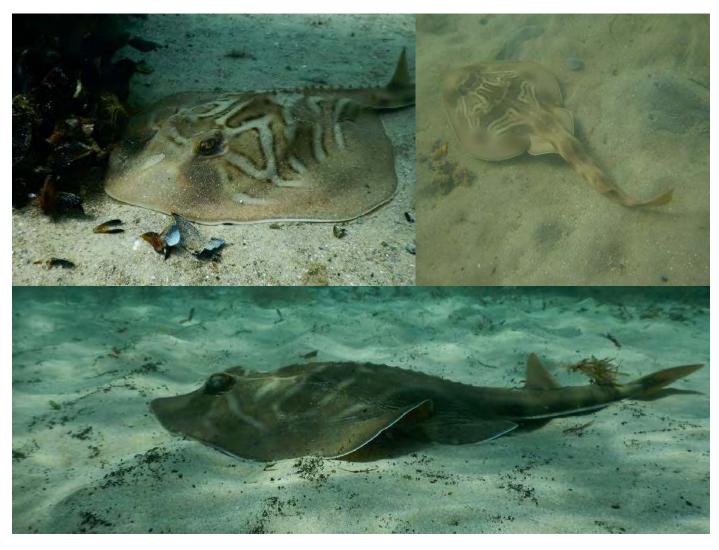
Habitat: Sandy, muddy substrates and seagrass

Depth: 1-205 m

Position in water column: On or near seafloor Diet: Carnivore, feeds on invertebrates and fishes



The southern fiddler ray has a flattened body with a diamond shaped disc, a row of thorn-like denticles along the middle of its back to the first dorsal fin, and a long broad tail with two similarly sized dorsal fins. The upper tail lobe is well developed but the lower lobe is short. The upper side of the body is yellowish brown with darkedged pale bands radiating from the eyes and on other sides of the middle of the disc. The underside is pale.



Port Jackson Shark

Heterodontus portusjacksoni

Max length: 170 cm. Typically 95 cm (females)

or 75 cm (males)

Habitat: Reefs, sandy substrates and seagrass

Depth: 1-275 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates and fishes



Port Jackson sharks are one of the few species of shark that does not need to swim to breathe. It can pump water over its gills, allowing it to sit still under rocky ledges and wait for food. They lay spiral shaped eggs which the mother shark will place between cracks in rocky reefs for protection.

A small shark with a stocky head and body, a small mouth with unusual, curled appendages, a prominent bony ridge above each eye and a stout spine at the front of both dorsal fins. They are pale grey to brown with a "harness" of broad, dark, irregular lines on both sides of the body and a thick dark band running vertically across the head in line with the eyes.



Carpetsharks

Spotted Wobbegong

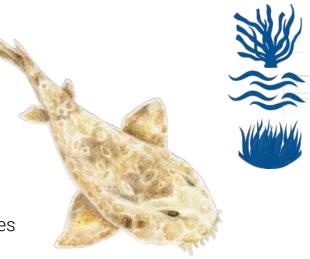
Orectolobus maculatus

Max length: 170 cm

Habitat: Reefs, sandy substrates and seagrass

Depth: 1-218 m

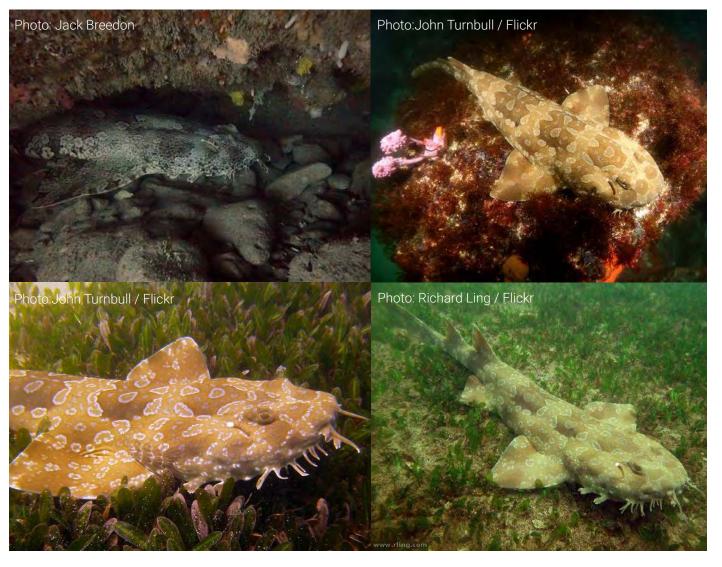
Position in water column: On or near seafloor Diet: Carnivore, feeds on invertebrates and fishes



Spotted wobbegongs often lie on sand or rocky reef bottoms waiting for prey, which they lure in close with the shaggy barbels in front of their mouths- small fish and invertebrates can mistake these for food.

This shark is yellow to greenish-brown with large dark saddles along the back and whitish rings along the entire body. There is a distinctive brown triangle between the eyes. 6-10 fleshy lobes are present along each side of the head.

It can be confused with the banded wobbegong, Orectolobus halei, but that shark has less obvious markings in its saddle and fewer fleshy lobes (4-6 total).



Carpetsharks

Varied Carpetshark

Parascyllium variolatum

Max length: 92 cm

Habitat: Reef associated

Depth: 1-200 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates and fishes



A small, nocturnal species, it shelters in caves, crevices, under ledges and in kelp and seagrass beds during the day.

This eel-like shark is also known as the Necklace Carpetshark due to the dark, white-speckled band around its neck behind the head. Small white spots and darker saddles span the length of the grey-brown body, and large, with dark blotches on the edges of the fins.



Catsharks

Draughtboard Shark

Cephaloscyllium laticeps

Max length: 100 cm

Habitat: Reefs and sandy substrates

Depth: 2-60 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on fishes, squid and crustaceans

When the draughtboard shark is disturbed or scared it increases its body size by inflating its stomach with water in the same way that pufferfish do. This makes it hard for predators to take a bite, and is why this fish is also known as a swell shark.

Brownish to grey in colour with a broad dark saddle behind the eyes, and many irregular dark spots, blotches and saddles on the body. Occasionally paler flecks are present.





Elephantfish

Callorhinchus milii

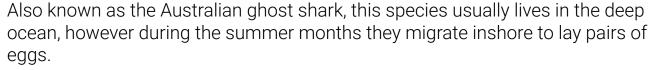
Max length: 92 cm

Habitat: Reef associated

Depth: 1-200 m

Position in water column: On or near seafloor

Diet: Carnivore, feeds on invertebrates and fishes



This unusual looking species has a strange, hoe-shaped snout which it uses to search the sandy seafloor for food. It has two dorsal fins, with a long venomous spine in front of the first one, large pectoral fins, and a long tail. The colour is silvery white, often with darker brownish-grey blotches along the body and fins.







