

# A fisher's guide: New Zealand's protected fish and reptiles



Department of Conservation  
*Te Papa Atawhai*

Marine life in New Zealand's oceans is incredibly diverse. This guide covers our protected marine fish and reptile species. From sea snakes to sharks, groupers to rays, all of these protected animals have interesting and unique characteristics that make them special. This guide will help you identify New Zealand's protected fish and reptiles, and find out more about their intriguing habits.

This guide describes New Zealand's protected sharks, rays, groupers, turtles, sea snakes and kraits. All these animals occur both inside and outside our waters. Therefore, the guide includes species conservation status assessed both in New Zealand, and globally by the IUCN.

Fishers may encounter these species during their time at sea. Therefore, Ministry for Primary Industries reporting codes are included, for use when incidental captures occur during commercial fishing.

The animals that feature in this guide are legally protected in New Zealand under the Wildlife Act 1953. Some are also protected

outside New Zealand waters. Most are of particular interest to Regional Fisheries Management Organisations and multilateral agreements on conservation or biodiversity.

As a companion to the two seabird guides, this guide continues the "Fisher's guide to" series. Its goal is to help people identify and appreciate some of our lesser known protected marine species. We recognise that fishers are more likely to see these animals than almost all other New Zealanders.

# List of species found in this guide

## Groupers

Giant grouper (Queensland grouper)

*Epinephelus lanceolatus*

Spotted black grouper

*Epinephelus daemeli*

## Sharks

Basking shark

*Cetorhinus maximus*

Oceanic whitetip shark

*Carcharhinus longimanus*

Smalltooth sandtiger shark (deepwater nurse shark)

*Odontaspis ferox*

Whale shark

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## Sea kraits

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*Laticauda colubrina*

Saint Giron's sea krait

*Laticauda saintgironsi*

Blue-lipped sea krait

*Laticauda laticaudata*

Species group:  
Groupers

# Giant grouper

## *Epinephelus lanceolatus*



### Distinguishing characteristics

- Adults are greenish-grey to greyish-brown in colour, and may be faintly mottled
- They have numerous small black spots on their fins.
- May be up to 3 m in size, and weigh 400 kg. Larger and heavier fish have been reported, but are unconfirmed.
- Juveniles have striking black and yellow markings.
- These fish have rounded tails and a large mouth



### Feeding and range

Giant groupers seldom occur in New Zealand waters, preferring warmer regions. In Australia, they occur along both temperate and tropical coasts.

Beyond Australia, they are widely distributed in the Indian and Pacific Oceans.

Their diet includes crabs, lobsters, and fish.

### Interesting facts

All giant groupers are born female. Some then become males if few males are present where they live.

A giant grouper called Bubba at Shedd Aquarium in Chicago was the first fish to have chemotherapy. Bubba survived cancer and was at least 24 years old when he died.



## Breeding and ecology

At around 130 cm in length, juvenile fish mature.

Giant groupers form groups of several females and one male to spawn. Eggs are released over about one week. Spawning behaviour has been studied in captivity, but has not been observed in the wild.

Giant groupers are reef fish that tend to be solitary and live in water depths up to around 100 m. They can occur in shallow inshore waters and estuaries, and tend to move to deeper waters as they age.



## Threats

In some countries, giant grouper are caught by commercial and recreational fisheries. Another threat is capture for the live fish trade. However, hatcheries rearing this species in captivity may reduce pressure from this threat.

In New Zealand, there are two records of giant grouper captures in surface longline and trawl fishing gear. Both are unconfirmed.

Species group:  
Groupers

# Spotted black grouper

## *Epinephelus daemeli*



### Other names

Black cod, black rock-cod, saddletail grouper

### Distinguishing characteristics

- Spotted black grouper vary in colour from dark greyish-black to black and white. Markings are blotchy or in bands with spots.
- This grouper can grow to 2 m in length and 80 kg in weight.
- In New Zealand waters, spotted black groupers are often less than 1 m in length, although larger individuals have been recorded.



### Feeding and range

Spotted black grouper occur off the coasts of Australia and New Zealand.

In New Zealand, these fish tend to occur around the Kermadec and Three Kings Islands, but have been seen off the coast of Westland and in Cook Strait.

This grouper is an opportunistic carnivore. It feeds on fish and crustaceans.

### Interesting facts

Spotted black grouper that occur in New Zealand may have drifted here as larvae, and are thought to be non-breeding.

Spotted black grouper can change colour within a few seconds.



## Breeding and ecology

Spotted black grouper are generally solitary and territorial. Each adult fish tends to have its own cave or hole, which it may share with other reef fish species.

Spotted black grouper occupy estuaries, and shallower coastal waters through to depths of more than 100 m. Juveniles may even be found in rock pools, while larger fish prefer deeper waters.

All spotted black grouper start life as females and change into males at around 30 years of age and 1 m in size.



## Threats

Recreational and commercial fishing are both threats to this species. In particular, it appears vulnerable to spear fishing, as it is a slow-moving and curious species that is readily seen by fishers.

For juvenile spotted black grouper, habitat degradation and loss are threats in coastal and estuarine environments.

Bycatch of spotted black grouper is recorded from New Zealand set net fisheries.

Species group:  
Sharks

# Basking shark

*Cetorhinus maximus*



## Distinguishing characteristics

- These sharks are generally greyish-brown in colour, but can range from black to blue.
- Basking sharks are extremely large, at up to 10 m long. At birth, young sharks (called pups) are 1.5 – 1.8 m in length.
- Basking sharks have very large mouths that are specially adapted for their filter-feeding lifestyle.
- Their tail fin is crescent-shaped.
- The dorsal fins of basking sharks are triangular. However, they are a more rounded triangle shape than for some other shark species (e.g. the white pointer).
- The gill slits are particularly large and wrap almost completely around this shark's head.



## Feeding and range

Basking sharks are widespread in the Atlantic and Pacific Oceans, north and south of the equator. They may traverse equatorial waters on migration.

These sharks can occur throughout New Zealand waters. Most records are from south of Cook Strait and these sharks are seen infrequently off the North Island.

They feed on plankton and other invertebrates, and small fish.

## Interesting facts

Basking sharks swim at speeds slower than human walking pace and can travel thousands of kilometres. While slow-moving, they can leap entirely clear of the water.



## Breeding and ecology

Basking sharks are filter feeders. They can filter up to 1,800 tons of water per hour, to extract their food.

These sharks occupy a broad depth range, from the sea surface to depths of 1,300 m. They can remain at depths of 600 m or more for months at a time. They generally prefer water temperatures of 8 – 14 °C.

Basking sharks appear to form one global genetic population. They may occur either alone or in small shoals. Males mature at around 5 – 7 m in size and 12 – 16 years old. Females mature later, at 7 – 10 m in length and 16 – 20 years of age.

Pregnancy in basking sharks is thought to last one year or more. Basking shark pups are born live and fully formed.

The lifespan of this shark is unknown, but is estimated at around 50 years.



## Threats

Targeted catch and bycatch are the main threats to this species. Internationally, bycatch is known from setnet and trawl fisheries, and basking sharks have also been reported entangled in pot lines.

In New Zealand, bycatch has been reported from trawl, set net and surface longline fisheries. Captures have occurred in locations around the South Island, out to the Chatham and subantarctic Islands, and off the lower North Island.

Based on an analysis of trawl bycatch events in New Zealand, reducing trawl fishing effort at 200 – 400 m and operating trawl gear at headline heights of 4 m or less may reduce the likelihood of capturing basking sharks.



Species group:  
Sharks

# Oceanic whitetip shark

*Carcharhinus longimanus*



Photo: OldakQuill, CC-BY-SA 3.0



Photo: CVF-ps, CC-BY-SA 3.0

## Other names

Oceanic white-tipped whaler, silvertip shark

## Distinguising characteristics

- The oceanic whitetip shark has a typical shark-like body shape. However, its fins are much more rounded than other similar-looking sharks.
- Its body is darker blueish or bronze grey above, fading to white below. True to the name, adult sharks typically have white tips on their fins (including the tail). Juveniles may have black tips on their fins.
- This shark generally grows up to 3 m in length. Exceptionally large individuals may reach 4 m. The maximum reported weight is 170 kg.



## Feeding and range

Oceanic whitetip sharks are widespread. They occur around the globe generally between latitudes of 30 °N and 35 °S.

In New Zealand, these sharks have been recorded off the North Island and around the Kermadec Islands.

Their diet includes a range of marine life such as fish, squid, rays, sea turtles, seabirds, and crustaceans.

## Interesting facts

While generally slow-moving, these sharks are also capable of swimming with bursts of speed.

Oceanic whitetips follow fish schools and pods of dolphins to scavenge prey. They have also been seen following pilot whales and eating their faeces.



## Breeding and ecology

Oceanic whitetips occur in pelagic waters, at depths up to 152 m and generally in water temperatures of 15 – 28 °C. They prefer water temperatures above 20 °C.

Female oceanic whitetip sharks are slightly larger than males. The sexes mature above around 1.7 m in length, and at 6 – 7 years old in the Pacific. Pregnancy lasts nine months to one year. Pups are about 0.6 m in length when they are born live, in litters of up to 14 individuals. The maximum age for this species in the Pacific is 11 years.

Oceanic whitetips are typically solitary, however they can come together in energetic feeding aggregations when prey are found. They are scavengers that forage opportunistically. Feeding methods include open-mouthed swimming through tuna schools.



## Threats

The global population of this species has been vastly reduced by fishing. It is reported caught both as a target species and as bycatch, in surface longline and gillnet fishing gear.

In New Zealand, the oceanic whitetip has been reported caught in surface longline fisheries off north-eastern North Island and Kermadec Islands. These sharks are also caught occasionally by recreational fishers off Northland.

Use of circle hooks in surface longline fisheries may increase the survival of this shark after release.

NZ Conservation Status: Naturally Uncommon

IUCN Red List: Vulnerable

Species group:  
Sharks

# Smalltooth sandtiger shark

## *Odontaspis ferox*

MPI Species Code: ODO



### Other names

Herbst's nurse shark, deepwater nurse shark, ragged-tooth shark, sand tiger shark

### Distinguishing characteristics

- This shark is greyish-brown above fading to white below. Sometimes there are dark reddish spots scattered over its body. Juveniles may have dark fin tips.
- The first dorsal fin is larger than the second dorsal and anal fins.
- The largest male smalltooth sandtiger shark known was 3.4 m in length. The largest female was 4.5 m. At birth, pups are around 1 m long.



### Feeding and range

This shark is widely distributed across temperate and tropical seas, between 46 °N and around 38 °S including in the Atlantic, Pacific and Indian Oceans.

It occurs in some areas around the North Island and the Kermadec Islands. Further afield, it has been confirmed from the Louisville Seamount Chain and Norfolk Ridge.

It feeds on fish and invertebrates.

### Interesting facts

This shark may look formidable, but aggression towards humans has never been reported.

One smalltooth sandtiger shark pup is born from each of its mother's two uteri. Inside each uterus before birth, pups eat the eggs present.



## Breeding and ecology

The smalltooth sandtiger shark is an active predator. It has no known predators.

It is found at depths from around 10 – 880 m and mainly lives close to the seafloor. Juveniles appear to prefer depths below 200 m.

This shark occurs singly or in small shoals of a few individuals.

Males mature at 2 – 2.5 m in size, and females at 3 –3.5 m. Data on reproduction are limited.



## Threats

The main threat to this species is fishing. While not considered a target species, it has been reported caught in gillnets, on longline hooks, and in trawls.

In New Zealand, incidental captures of this species have occurred in set net and trawl gear.

NZ Conservation Status: Migrant

IUCN Red List: Endangered

MPI Species Code: WSH

Species group:  
Sharks

# Whale shark

## *Rhincodon typus*



### Distinguishing characteristics

- Whale sharks can be extremely large. Animals of 4 – 15 m in length have been seen in New Zealand. The largest reported whale shark was estimated to be 20 m in length and to weigh 34 tonnes.
- Whale sharks are grey above, with pale yellow stripes and spots.
- The grey upper body fades to white below.
- These sharks have distinct ridges along the sides of their bodies.
- Whale sharks have a large mouth at the front of their heads. The mouth can be up to 1.5 m wide.
- The large tail fin may measure up to 3 m, from tip to tip.



### Feeding and range

There are two subpopulations of whale shark globally, which occur in the Atlantic, and Indo-Pacific regions. Most whale sharks are found between 30 °N and 35 °S, in waters warmer than 21°C.

In New Zealand, whale sharks have been reported from 34 – 38 °S. They migrate annually to northeast New Zealand and may range as far south as waters off Fiordland and South Canterbury.

Whale sharks feed on plankton.

### Interesting fact

The whale shark is the largest fish in the world. It is completely harmless to humans.

Whale sharks can be identified individually by their unique patterns of stripes and spots.



## Breeding and ecology

Whale sharks are filter feeders. A juvenile whale shark may eat 21 kg of plankton per day.

At times, they form feeding aggregations at a number of sites throughout their range.

They are found in coastal and offshore waters and are migratory. These sharks can dive to depths of over 1,200 m.

Young are born live and size at birth can vary considerably. Size at maturity is poorly known, but is estimated at around 9 m for both sexes.

The whale shark's large size likely deters predators. However, predation of an 8 m whale shark by orca has been recorded. Depredation of two juveniles has also been observed, by a blue shark and a marlin.



## Threats

Fisheries are the greatest threat to whale sharks. Take in fisheries may be targeted or incidental. Whale shark captures have been reported from harpoon, gillnet, purse seine and trawl fisheries.

In New Zealand, there is one reported incidence of whale shark bycatch, when a 12 m long animal was caught in a trawl net off South Canterbury.

Ship strike is a threat to whale sharks especially where ships occur in the sharks' foraging areas. Propeller injuries indicative of such strikes are well documented from monitoring programmes.

Marine pollution may result in the mortality or displacement of whale sharks.

Tourism based on whale sharks has flourished in recent years. There is potential for negative impacts on whale sharks if they are harassed or overcrowded.

Species group:  
Sharks

# White pointer shark

## *Carcharodon carcharias*



Photo: Hermanus Backpackers, CC-BY-2.0



Photo: sharkdiver68

### Other names

Great white shark

### Distinguishing characteristics

- The white pointer is dark above (usually grey but may be blue, black, or bronze) with a white belly. The colours are clearly delineated and contrast strongly.
- This shark has characteristically large triangular serrated teeth, in both its upper and lower jaw.
- The first dorsal fin is large, and the second is very small by contrast.
- The pectoral fins have black tips on their underside.



### Feeding and range

The white pointer shark is widely distributed occupying tropical, temperate and subantarctic waters. They are uncommon in equatorial areas.

This shark is found throughout New Zealand waters. Most subadult and adult white pointers here also spend part of the year in the southwest Pacific.

The shark's diet is varied, including fish, marine mammals, sea turtles, and seabirds. They are opportunistic foragers.

### Interesting facts

Despite their fierce reputation, white pointers are not well suited to eating humans. This shark's digestive system is not well equipped to deal with the high ratio of bone, to muscle and fat, that characterises human bodies.



## Breeding and ecology

White pointers are migratory but only cross the equator rarely, if at all. Therefore, regionally distinct stocks occur in each hemisphere.

These sharks inhabit water depths of less than 1 m to at least 1,200 m. Juvenile white pointer sharks frequent coastal waters. In New Zealand, white pointers congregate through summer and autumn around fur seal breeding areas.

White pointers mature at 3.6 – 3.8 m and 4.5 – 5.0 m in length, for males and females respectively. Up to 10 pups may be present in a litter.

Longevity is not well known, but is estimated at 30 – 40 years.



## Threats

White pointers are threatened by the reputation they have acquired as being harmful to humans. They are targeted in some areas as trophy fish. It is also likely that they are killed by nets and lines used to exclude sharks from swimming beaches in some locations.

White pointers are caught in commercial fisheries, both incidentally and by more targeted fishing effort. However, populations are insufficient to support sustained targeted fishing activity. They can be caught in longline, gillnet, trawl and trap fisheries.

In New Zealand, bycatch of white pointers is reported throughout the year, from surface and bottom longline, set net and trawl fisheries.

White pointers are also vulnerable to habitat degradation and pollution.



Species group:  
Rays

# Manta ray

## *Manta birostris*



Photo: Jon Hanson, CC-BY-SA 2.0



Photo: Jon Hanson, CC-BY-SA 2.0

### Other names

Giant manta ray, chevron manta ray, oceanic manta ray, Pacific manta ray, pelagic manta ray

### Distinguishing characteristics

- The upper body of this large ray is greyish-blue to greenish-brown. It has shoulder patches that are paler in colour. Its underside is white, sometimes with dark patches behind the gills.
- The head has obvious fleshy extensions. The mouth is at the front end of the head.
- The wingspan is wider than the ray's body (from head to base of tail) is long. The tail is thin. At birth, manta rays have a wingspan of 1.2 – 1.5 m. This grows to at least 7 m and possibly as much as 9.1 m.



### Feeding and range

The manta ray occurs worldwide, in highly fragmented populations.

It is a largely tropical, subtropical and semi-temperate species that is sometimes seen off the northeast coast of North Island. It is likely to migrate between New Zealand waters and tropical seas to the north.

Manta rays eat plankton including shrimp, krill and tiny crabs.

### Interesting facts

The manta ray travels long distances. Tagging studies have documented mantas travelling distances of more than 1,000 km.

Injuries caused by sharks are often observed on manta rays.

Manta markings can be used to recognise individuals.



## Breeding and ecology

Manta rays are filter-feeders. They have been observed herding plankton into a clump before swimming through the centre with open mouths. They sometimes form feeding aggregations when plankton are especially rich.

At maturity, manta wingspans are around 3.7 – 3.8 m and 3.8 – 4.2 m for males and females respectively.

Manta rays give birth to live young. Single pups are most common, though twins can occur. Details are unknown but it is likely that the reproductive cycle is longer than one year.

In New Zealand, mantas have been seen singly or in pairs.



## Threats

Targeted fisheries for manta rays operate in some countries using baited hooks, gillnets and hand-collection methods such as gaffing. Incidental captures also occur, in longline, purse seine, gillnet and trawl fisheries. Entanglements in discarded (ghost) fishing gear are reported.

In New Zealand, manta rays have been reported bycaught in commercial fisheries. However, the captured animals are considered most likely to have been spinetail devil rays. There are no confirmed incidents of mantas being bycaught here.

Non-fishing threats include boat strikes and entanglement in shark nets used at swimming beaches. In some places, tourism has developed based on swimming with mantas. This can have negative impacts on individuals and subpopulations, if not carefully controlled.

Species group:  
Rays

# Spinetail devil ray

## *Mobula japonica*



Photo: © Guy Stevens, Manta Trust



Photo: © Scott Tindale

### Distinguishing characteristics

- This ray is deep blue to purplish black in colour, and iridescent when living. Juveniles have two white crescent-shaped markings on their shoulders.
- It has a wide black band that stretches from eye to eye.
- The underside is white and may have dark patches. The pectoral fin has a white tip.
- Wingtips are pointed. The wingspan is greater than the body length (to the base of the tail). The tail is thin.
- The head has fleshy extensions that are white on the outside.
- This ray's mouth is on the underside of its head.
- In New Zealand waters, this ray's wingspan is about 90 cm at birth and reaches at least 3.1 m.



### Feeding and range

The spinetail devil ray is distributed worldwide, in tropical, subtropical, and warm temperate waters. Its distribution appears to be fragmented.

In New Zealand, devil rays appear to favour an area near the shelf edge off the northeast coast of the North Island. However, they can occur as far south as East Cape and Cape Egmont.

These rays eat plankton.

### Interesting facts

When rays are caught in purse seine gear targeting skipjack, they can be separated from catch using a cargo net over the hopper before the brail is emptied. Catch passes through the net and rays stay behind and can then be released.

These rays travel at speeds of up to 8.3 km/h.



## Breeding and ecology

The spinetail devil ray is a filter feeder.

It appears to spend most of its time at depths of less than 50 m, but can also dive deeply. In New Zealand waters, the deepest known dive is 649 m. This ray follows the vertical movements of its planktonic prey.

Spinetail devil rays give birth in New Zealand waters. They generally produce one pup per litter. It is estimated that they mature at around 5 – 6 years. At maturity, wingspans are around 2 m for males and at least 2.4 m for females. Lifespan is unknown, but is estimated at longer than 14 years.

These rays may occur alone or in groups.



## Threats

Fishing is the main threat to spinetail devil rays. In some areas, targeted fishing occurs using gillnets and harpoons. Bycatch in gillnet and longline fisheries is also reported.

Spinetail devil rays have been reported caught on surface longlines in New Zealand. They may also be caught on trolled lures.

In New Zealand purse seine fisheries, about 8% of sets are reported to catch these rays. Not setting when rays are seen around tuna schools would reduce captures. In areas frequented by rays, setting at depths of less than 200 m should also reduce captures. Rays should be released from nets while still in the water.

NZ Conservation Status: Migrant

IUCN Red List: Vulnerable

Species group:  
Turtles

# Leatherback turtle

*Dermochelys coriacea*

MPI Group Code: TLE  
MPI Species Code: LBT



## Distinguishing characteristics

- The leatherback is a large marine turtle with prominent ridges on its leathery surface. These turtles may grow up to 2 m in length and around 900 kg in weight.
- The leatherback is bluish black to dark brown above.
- It has blotches of white to pale yellow around its throat and flippers, and in some areas of the carapace.
- The belly is pinkish-white.



## Feeding and range

Leatherback turtles occur around the world in tropical and temperate waters. Juveniles prefer warmer waters, above 26 °C.

In New Zealand, leatherbacks are known to occur from the Kermadec Islands to Foveaux Strait and east out to the Chatham Islands.

Leatherbacks feed on soft marine prey such as jellyfish and salps.

## Interesting facts

The leatherback is the only living turtle with leathery skin and no scales or hard shell.

This is the world's largest and most widely distributed marine turtle.

The Pacific Ocean population of leatherback turtles has declined 95% in the last 25 years.



## Breeding and ecology

Leatherback turtles can dive to depths of 1,220 m for up to 85 minutes. Some travel more than 16,000 km/year between their foraging and breeding areas.

Female turtles lay their eggs on sandy beaches. They may nest several times in one season, but only breed every 2 – 3 years.

There is conflicting information on the age at maturity for juvenile leatherbacks; estimates span ages of 15 – 29 years, and carapace sizes above 1.2 m (measured neck to tail over the turtle's curved surface).

In New Zealand, leatherback turtles are most often encountered during summer and autumn, off the North Island.



## Threats

Many threats affect leatherbacks, given the broad range of habitats they occupy and their wide distribution.

The consumption of adults by humans, and eggs by humans and dogs, are threats in some areas.

Coastal development degrades and destroys nesting beaches.

Pollution (including marine debris) kills some turtles and they are vulnerable to vessel strikes.

Climate change is a likely threat over time, as it affects the sex ratio of the hatchling population.

Fisheries bycatch occurs in gillnets, longlines, trawls, traps and pots.

In New Zealand, the leatherback is the turtle species most often reported bycaught in fisheries. It has been reported bycaught during surface longline and inshore trawl fishing.

NZ Conservation Status: Migrant

IUCN Red List: Endangered

Species group:  
Turtles

# Green turtle

*Chelonia mydas*

MPI Group Code: TLE

MPI Species Code: GNT



Photo: L. Bernard



Photo: Peter Keel / Imaginix, CC-BY-SA, 3.0 Unported

## Distinguishing characteristics

- Green turtles are olive green to brown and reddish brown on top.
- They are pale yellow to white underneath sometimes with dark spots. Their shell (carapace) is smooth and domed. They can grow to 1.5 m in length.
- The plates (called scutes) on their shells are non-overlapping. There are five scutes along the midline of their shells, and four scutes down each side.



## Feeding and range

Green turtles occur around the world in tropical and subtropical waters at latitudes of 40 °N to 35 °S.

In New Zealand, green turtles generally occur at latitudes of 34 – 38 °S, off the west and east coasts of the North Island. The most southerly reported green turtle was on the Canterbury coast. They are commonly seen around the Kermadec Islands.

Green turtles have a variable diet that includes marine algae (e.g. seaweeds) and invertebrates.

## Interesting facts

Green turtles got their name from the colour of their insides. Their meat, fat and cartilage are all coloured green. This turtle's diet is thought to be the source of the green colour.



## Breeding and ecology

Green turtles are highly migratory and can travel thousands of kilometres during their lives.

Females lay eggs at nesting beaches, returning to lay at the beach they were born at.

The estimated age at maturity is 26 – 40 years. Life expectancy is poorly known but estimated at 50 years.

Green turtles are present in New Zealand waters year-round.



## Threats

Green turtles are affected by many threats, because of their relatively long lives and diverse life history. Nesting beaches and coastal habitats may be subjected to habitat degradation and human disturbance (including harvesting of eggs and adults). Green turtles are also vulnerable to propeller strikes.

Marine pollution is a threat to turtle survival. Turtles may eat plastic that is in the ocean, such as plastic bags. Eating plastic can kill turtles. Keeping rubbish out of the ocean will help turtles eat right.

Climate change is an emerging threat to turtles, because the sex of turtle hatchlings is determined by temperature during incubation. Increasing temperatures are causing 99% of hatchlings to be female in some areas.

Green turtles are caught in a range of fisheries, including gillnet, purse seine, surface and bottom longline, pot and trawl fisheries.

In New Zealand, green turtles have been reported caught in commercial surface and bottom longline and trawl fisheries. They are also caught in recreational fisheries.



Species group:  
Turtles

# Hawksbill turtle

## *Eretmochelys imbricata*

MPI Group Code: TLE  
MPI Species Code: HBT



### Distinguishing characteristics

- Hawksbill turtles grow to about 1 m in length and weigh 60 – 80 kg.
- As adults, these turtles are marbled brown and creamy yellow above, and yellowish below. Young are brown above and blackish below.
- Hawksbill turtles can be identified by their sharp curving beak and the jagged edges of the back half of their shells.
- They have five plates (scutes) down the midline of their shells and a row of four on each side. Scutes are overlapping, similar to the appearance of roof shingles.



### Feeding and range

The hawksbill turtle occurs around the world in tropical and subtropical areas of the Atlantic, Indian and Pacific Oceans.

In New Zealand, hawksbill turtles are generally seen in waters off the upper North Island. They have also been seen around the Kermadec Islands and have been reported as far south as Cook Strait.

The hawksbill's diet includes algae and soft corals, sponges, jellyfish and other marine invertebrates.

### Interesting facts

Hawksbill turtles may hybridise with loggerhead, green and olive ridley turtles.

The menu for these turtles includes the Portuguese man o' war. While eating this tricky prey, turtles close their eyes to protect them from the man o' war's stinging cells.



## Breeding and ecology

Hawksbills nest on sandy beaches.

They remain at sea throughout their early lives, and mature at 20 – 40 years old.

When mature, they undertake long migratory journeys between their foraging and breeding areas.

Females return to the beach where they hatched to lay their own eggs.



## Threats

Habitat degradation and destruction affects these turtles, for example, through coastal development, loss of marine habitat such as coral reefs, and oil pollution.

Marine debris are another threat, both through entanglement in lost or abandoned (ghost) fishing gear, and ingestion of plastic.

The tortoiseshell trade is declining worldwide but remains a threat in some areas.

Eggs are harvested in some breeding areas, and turtles may be hunted.

Hawksbill turtles are also bycaught in fishing gear.

In New Zealand, hawksbills have been reported caught in surface longline fisheries, around the north and northeast of the North Island.

NZ Conservation Status: Vagrant

IUCN Red List: Vulnerable

Species group:  
Turtles

# Loggerhead turtle

*Caretta caretta*

MPI Group Code: TLE  
MPI Species Code: LHT



## Distinguishing characteristics

- Loggerhead turtles are olive green to reddish brown or greyish above and cream to pale yellow-brown or pinkish below.
- Loggerheads have five plates (scutes) down their midline, and a line of another five scutes on each side.
- They typically grow to around 1.2 m in length and weigh around 180 kg.



## Feeding and range

Loggerhead turtles occur around the world in tropical, subtropical and temperate waters.

In New Zealand, these turtles can occur from the Kermadec Islands, and throughout the length of New Zealand to Stewart Island.

Loggerhead turtles eat a varied diet of marine invertebrates, fish and algae.

## Interesting facts

Adult male loggerhead turtles have longer and thicker tails than females.

Female-on-female aggression is common among loggerhead turtles at shared feeding sites. This can escalate to physical sparring and chasing.



## Breeding and ecology

Loggerhead turtles can remain submerged for up to four hours, but most dives last 15 – 30 minutes.

Loggerheads mature at 10 – 39 years and they may live up to around 70 years.

These turtles migrate to their breeding areas every few years. Their migrations may traverse thousands of kilometres.

They nest on sandy beaches.



## Threats

Like other turtles, loggerheads are affected by a number of threats. These include marine debris that entangle the turtles and are ingested by them.

Turtles are also prone to vessel strikes.

In some areas, eggs and adult turtles are harvested for human consumption.

Habitat loss and degradation threaten nesting beaches and ocean habitats.

Climate change is an emerging threat to these turtles, who are dependent on incubation temperature to determine the sex of their offspring.

Fisheries bycatch is another threat that loggerhead turtles encounter. They are bycaught in gillnet, longline, trawl, trap, pot and dredge fisheries. In New Zealand, longline and trawl captures have been reported.

NZ Conservation Status: Vagrant

IUCN Red List: Vulnerable

Species group:  
Turtles

# Olive ridley turtle

*Lepidochelys olivacea*

MPI Group Code: TLE  
MPI Species Code: ORT



## Distinguishing characteristics

- Olive ridley turtles are olive to grey above and whitish below. They are much more uniform in colour than other turtles, typically with no distinct markings.
- They have six or more plates (scutes) along each side of the middle row of scutes on their shell.
- They grow to around 0.8 m in length and can weigh 35 – 50 kg.



## Feeding and range

The olive ridley turtle is distributed worldwide, in tropical and subtropical waters.

In New Zealand, olive ridleys have been recorded from Northland through to Stewart Island, and east to the Chatham Islands.

The olive ridley turtle feeds on fish, marine invertebrates and marine algae (seaweeds).

## Interesting facts

The olive ridley turtle got its name from its colour, and being difficult to identify. "Ridley" refers to its identification being a riddle, as 19th century fishermen had trouble distinguishing this turtle from other species.



## Breeding and ecology

Olive ridley turtles can lay eggs in consecutive years and may lay eggs at any time during the year. They nest alone or in aggregations.

Maturity is thought to occur at 10 – 18 years of age.

Adult turtles in the eastern Pacific region are typically pelagic, though these turtles are found in a range of habitats from coastal to oceanic.

Some (but not all) olive ridley turtles are migratory and overall, they are thought to travel shorter distances than other turtle species.



## Threats

Olive ridley turtle eggs may be harvested and eaten on nesting beaches by feral pigs, dogs, dingoes, humans and lizards. Adult turtles may also be harvested in some areas.

In the water, they can become victims of vessel strikes.

Olive ridley turtles are vulnerable to entanglement in marine debris, such as ghost fishing gear. They may also eat plastic.

As well as this marine pollution, they are vulnerable to habitat degradation and loss, e.g. coastal development.

They are caught in trawl, gillnet, purse seine, longline, and hook and line fisheries. They have not been reported bycaught in New Zealand fisheries to date.

Species group:

Sea snakes

# Yellow-bellied sea snake

*Pelamis platurus***Venomous: Avoid handling**

Other names

Pelagic sea snake

Distinguishing characteristics

- Characteristic snake appearance with tail tip flattened to a (vertical) paddle-like form.
- Dark charcoal, brown or black above and bright yellow below, with a strong horizontal delineation along most of the body.
- Tail region has more vertical yellow patterned markings with dark charcoal elsewhere.
- Males are up to around 0.7 m in length, and females grow to around 0.9 m.



## Feeding and range

The yellow-bellied sea snake is widespread in the Pacific and Indian Oceans.

Its core range is tropical waters, but currents sometimes carry it into more temperate areas.

Its distribution tends to be patchy within its range.

This sea snake feeds solely on fish.

## Interesting fact

This snake's foraging strategy is to be a FAD (fish aggregating device, as used in purse seine fisheries). It hangs motionless in the water, and waits for fish to seek shelter underneath it. It then preys on the sheltering fish.

This snake absorbs up to one third of its oxygen from seawater, through its skin.



## Breeding and ecology

The yellow-bellied sea snake swallows its prey whole.

It is generally found in the open ocean, but may occasionally be found in intertidal areas. It typically occurs from the surface to depths of 10 m, foraging in the shallower depths of this range.

Yellow-bellied sea snakes require a minimum temperature of 16 °C to survive long-term.

Male and female yellow-bellied sea snakes mature at 0.5 m and 0.6 m respectively. Females give birth to live young.

Sea snakes must drink fresh water, and source this from rain at the sea surface.



## Threats

There are no known significant threats to this species.

It is reported to occur as bycatch in trawl fisheries outside New Zealand, for example, fisheries targeting prawns and squid.



Species group:

Sea kraits

# Banded sea krait

*Laticauda colubrina*



## Other names

Yellow-lipped sea krait

## Distinguishing characteristics

- True to its name, the banded sea krait has striking black bands along its body
- Between the bands, it is pale bluish-grey above and whitish-yellow below.
- It has a typical snake body shape and its tail is flattened to form a paddle shape.
- Females are larger than males, at around 1.4 m and 0.9 m respectively.

**Venomous: Avoid handling**



## Feeding and range

The banded sea krait occurs in the Pacific Ocean and eastern Indian Ocean.

It is a rare vagrant in Australian and New Zealand waters.

These kraits feed on eels and small fish.

## Interesting facts

Around ten banded sea kraits have been reported in New Zealand, from around the coast of the North Island. They were first recorded here in 1880.



## Breeding and ecology

The banded sea krait occurs in a variety of habitats, including coral reefs and islands, intertidal areas, and in the open ocean.

At sea, it is usually found in waters up to 10 m deep.

This species also spends time on land, for example, to shed its skin, digest prey, and lay eggs.

As well as the difference in body size, females may weigh up to three times a male's weight.



## Threats

Coastal development is likely to have negative impacts on this species, given its need to spend time on land and its use of intertidal habitats.

Where coral reefs are damaged or die, this species may be negatively affected.

Despite being venomous, the banded sea krait is harvested in a limited area of the Philippines.

Species group:  
Sea kraits

# Saint Giron's sea krait

*Laticauda saintgironsi*



Photo: moi mème , <https://commonc.wikipedia.org>



Photo: <http://anaigetguillamelavieausoleil.over-blog.com>

## Other names

New Caledonian sea krait

## Distinguishing characteristics

- This krait has a typical snake body shape.
- It has dark grey to black bands, that may not meet underneath the body or may have a pale blotch in them.
- The dark bands alternate with brown bands, that can range from light brown to dark chestnut.

**Venomous: Avoid handling**



## Feeding and range

This krait occurs around New Caledonia (including its offshore islands). One has been reported from New Zealand.

They feed on eels.

## Interesting facts

The taxonomic classification of this species has been of keen interest to scientists. One of its diagnostic features is a yellow or creamy upper lip (easier checked on a dead specimen!)

On land, this krait can be found living in abandoned wedge-tailed shearwater burrows.



## Breeding and ecology

Like all kraits, Saint Giron's sea krait spends time both in water and on land.

They can travel hundreds of metres inland, and sometimes aggregate in lagoons or terrestrial refuges.

Females lay their eggs on land, every two years on average. Typically, three eggs are laid. Laying can occur in communal nurseries, which females may travel more than 50 km (including through water) to visit.



## Threats

Coastal development has negative impacts on this krait, given its need to spend time on land and its extensive use of intertidal habitats.

Species group:  
Sea kraits

# Blue-lipped sea krait

*Laticauda laticaudata*



## Other names

Brown-lipped sea krait, blackbanded sea krait

## Distinguishing characteristics

- This krait has a typical snake body shape.
- It has black bands encircling its body, that alternate with blue above and cream or white below.
- Males reach 0.9 m and females grow to just over 1 m in length.

**Venomous: Avoid handling**



## Feeding and range

This krait occurs in the Indian and Pacific Oceans.

Its distribution is patchy within its range.

It is a vagrant in Australia and New Zealand.

This krait feeds on eels.

## Interesting fact

This species can dive to depths of more than 80 m.



## Breeding and ecology

This krait is usually found from surface depths to 15 m.

Like other kraits, the blue-lipped sea krait occurs on land and at sea.

It occurs around coral islands and reefs, mangroves and the open ocean.

It does not travel far inland, instead staying within a few metres of the shore.

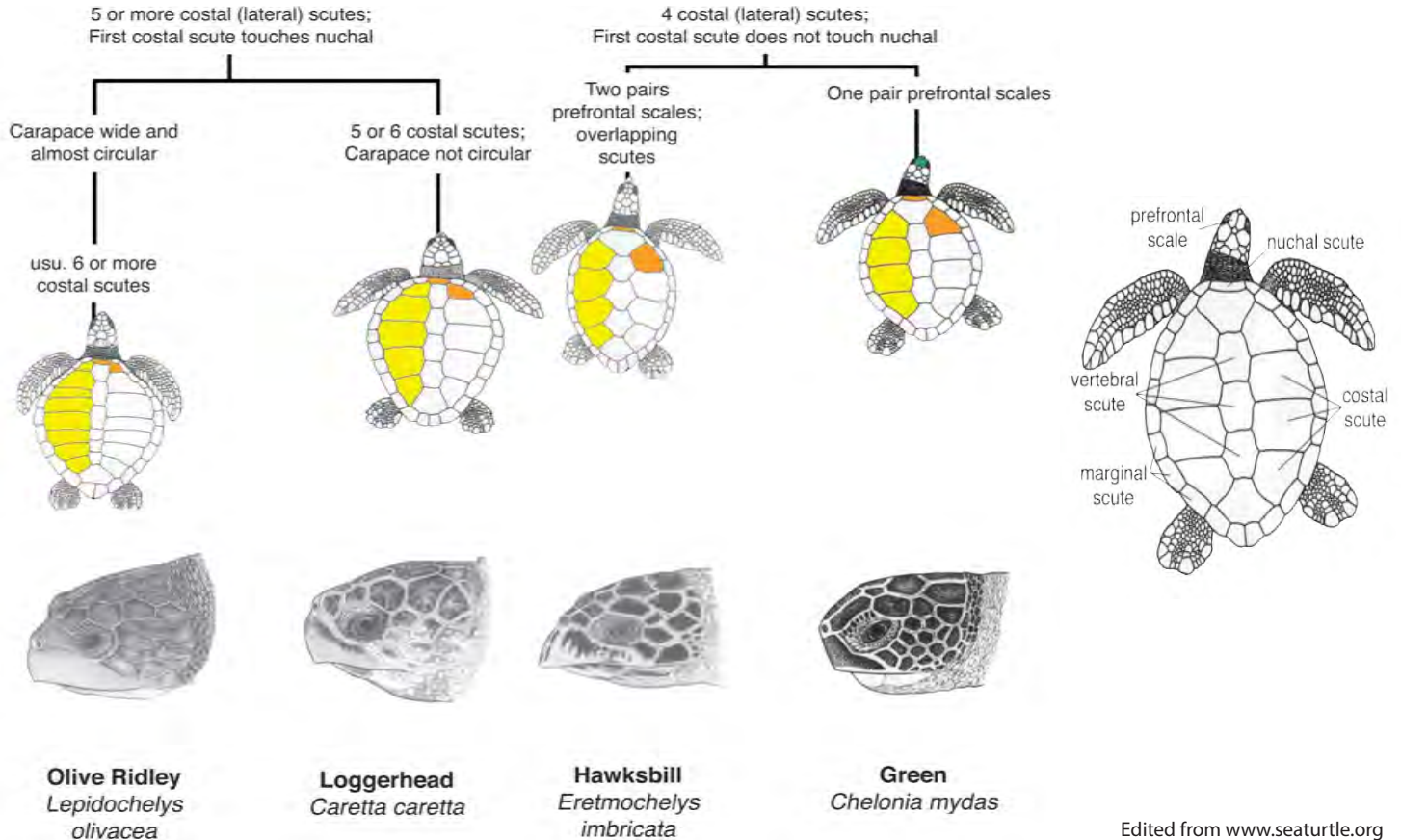
Females lay their eggs on land.



## Threats

Coastal development has negative impacts on this krait, given its need to spend time on land and its extensive use of intertidal habitats.

# Guide to identifying hard-shelled sea turtles

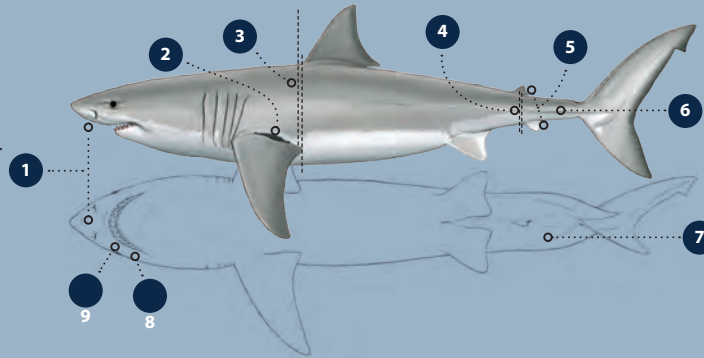


# Guide to identifying White pointer vs Porbeagle

## Great white / White pointer

*Carcharodon carcharias*

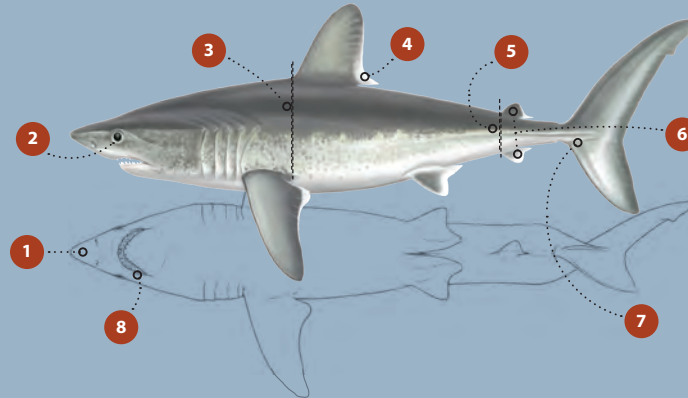
1. Snout bluntly conical, relatively short.
2. Black axillary spot often present.
3. First dorsal fin origin usually over pectoral inner margins.
4. Second dorsal fin insertion over or slightly anterior to anal fin origin.
5. Second dorsal fin and anal fin minute.
6. Low keels on caudal peduncle.
7. Low keels on caudal peduncle, secondary caudal keels absent.
8. Large triangular, serrated, teeth.
9. Mouth broadly rounded.



## Porbeagle

*Lamna nasus*

1. Snout relatively long and acutely conical.
2. Eyes very large, diameter about one-third snout length.
3. First dorsal fin originates over or slightly posterior to pectoral fins insertions.
4. Free rear tip prominently white.
5. Second dorsal fin origin about over or slightly anterior to anal fin origin.
6. Second dorsal fin and anal fin small.
7. Secondary caudal keels present and strong.
8. Teeth large, smooth edged, with small lateral cusplets on each side.



The main distinguishing characters of the porbeagle are:

- the white spot on the free-rear tip of the first dorsal fin
- the small secondary keel on the base of the lower lobe of the tail
- the shape of the teeth – slender main cusp with a small lateral cusp each side of the base

Other differences are:

- a larger eye
- more pointed snout
- the absence of a sharp line demarcating the colour of the upper body from the underside
- the large diffuse dark blotch on the underside of the pectoral fin (cf. sharply defined black spot on the underside of the tip of the pectoral fin).



# Resources

Duffy, C., Francis, M., Dunn, M., Finucci, B., Ford, R., Hitchmough, R. and Rolfe, J. 2016. Conservation status of New Zealand chondrichthyans (chimaeras, sharks and rays), 2016. New Zealand Threat Classification Series 23. Department of Conservation. Wellington.

Francis, M.P. and Lyon, W.S. 2012. Review of commercial fishery interactions and population information for eight New Zealand protected fish species. Final Report Prepared for Department of Conservation. Wellington.

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Godoy, D.A. 2016. The ecology and conservation of green turtles (*Chelonia mydas*) in New Zealand. Ph.D. Thesis. Massey University, Albany.

Hitchmough, R., Barr, B., Lettink, M., Monks, J., Reardon, J., Tocher, M., van Winkel, D. and Rolfe, J. 2015. Conservation status of New Zealand reptiles, 2015. New Zealand Threat Classification Series 17. Department of Conservation, Wellington.

IUCN 2017. The IUCN Red List of Threatened Species. Version 2017-3. Available at: <http://www.iucnredlist.org>. Accessed 3 June 2018.

You can report sightings of marine turtles and sea snakes at:

<https://www.doc.govt.nz/our-work/reptiles-and-frogs-distribution/atlas/species-sightings-and-data-management/report-a-sighting/>

If you find sick, injured or dead animals that are shown in this guide, call the DOC hotline:

0800 DOC HOT or 0800 362 468

This and other identification guides published by DOC can be found at:

<https://www.doc.govt.nz/our-work/conservation-services-programme/csp-identification-guides/>

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