

Coral life



Maori Wrasse *Cheilinus undulatus*



Kingdom	Animal (Animalia)
Phylum	Chordate (Chordata)
Class	Bony fish (Osteichthyes)

The Maori wrasse is one of the largest reef fish and the largest of the wrasse family. They are voracious predators, eating anything from molluscs to echinoderms and crustaceans, as well as small fish. They are one of the few species to eat the Crown-of-thorns starfish.

Size

They can grow up to 2m in length

Feeding

They feed on molluscs, crustaceans and echinoderms. They have few natural predators.

Habitat

Reefs throughout the Indian and Pacific oceans, from the shallows to a depth of 100m.

Threats

They are vulnerable to overfishing and pollution from e.g. cyanide fishing.

Did you know?

They get their name from the markings on their face which resemble traditional Maori tattoos!



Cleaner wrasse Genus *Labroides*



Kingdom	Animal (Animalia)
Phylum	Chordate (Chordata)
Class	Bony fish (Osteichthyes)

Cleaner wrasses are fish which specialise in cleaning other, larger fish. This symbiotic relationship allows larger fish to stay clean, and provides a food source for the wrasse. The cleaner wrasses congregate in 'cleaning' areas, where bigger fish visit to be groomed by the wrasses, which swim into their mouths and gills to ensure everything is clean.

Size

Most species of cleaner wrasse are small, no bigger than 20cm long

Feeding

They feed off the dead tissue and parasites of fish they clean and have few predators, as larger fish prefer the benefits of cleaning to a quick snack!

Habitat

They live mainly around coral reefs of the Indian and Pacific oceans.

Threats

They face no specific threats except those that threaten the coral reef ecosystem as a whole.

Did you know?

Some wrasses, instead of waiting for customers in the cleaning areas, make 'house visits' for shy fish!



Nudibranch Order *Nudibranchia*

Kingdom	Animal (Animalia)
Phylum	Mollusc (Mollusca)
Class	Gastropod (Gastropoda)

Nudibranchs are a type of mollusc and some of the most colourful animals on the Great Barrier Reef. Often referred to as 'sea slugs', these animals have a variety of different defence mechanisms to avoid being eaten, from storing poisonous cells from anemones they eat, to appearing as bright and colourful as possible to scare of would-be predators.

Size

Nudibranchs range from 2cm to 60cm long.

Feeding

Nudibranchs eat sea anemones and jellyfish. Some species are also cannibalistic. They are eaten by large fish such as wrasse.

Habitat

They live in the warm shallows of coral reefs.

Threats

They can be threatened by eutrophication caused by runoff from coastal areas, as well as fishing techniques such as dredging and bottom trawling.

Did you know?

Nudibranchs are simultaneous hermaphrodites, meaning that they have both male and female sex organs!



Brown algae

Genus *Sargassum*



Kingdom	Protist (Protista)
Phylum	Brown algae (Phaeophyta)
Class	Phaeophyceae

Sargassum includes some of almost 2,000 species of brown algae. It is a type of seaweed which grows thickly, attached to rocks in shallow waters as well as floating with the ocean currents. Its fronds have small globe-shaped compartments filled with gas. This helps it float near the sea's surface to enable photosynthesis. It plays a dual role by helping to form habitats as well as providing a food source.

Size

A few centimetres to up to 12 metres in warmer waters.

Feeding

It absorbs sunlight through photosynthesis and is eaten by smaller, herbivorous fish and sea urchins.

Habitat

Temperate and tropical waters.

Threats

Pollution can affect their ability to build proteins.

Did you know?

It is edible and tastes slightly bitter... but it must be cooked first!



Christmas tree worm

Spirobranchus corniculatus

Kingdom	Animal (Animalia)
Phylum	Annelid (Annelida)
Class	Polychaete (Polychaeta)

Christmas tree worms are a type of worm known as polychaetes. This refers to the little 'chaeta' or feet they have along their sides. The distinctive feature of the Christmas tree worm is the two crowns shaped like Christmas trees. These are used to strain the water for small particles of food, which are then transported in mucus to the mouth at the base of the crown.

Size

Christmas tree worms have a huge range of size from a few millimetres up to 3 metres.

Feeding

Christmas tree worms filter the seawater for plankton. They are eaten by fish.

Habitat

The Christmas tree worm larvae settle on damaged coral polyps and create a burrow. Preference is shown for large coral 'bommies' or mounds.

Threats

Because of their dependence on live coral, anything that threatens the coral, impacts Christmas tree worms.

Did you know?

If a fish bites off the crown, it quickly grows back!



Crown-of-thorns starfish *Acanthaster planci*



Kingdom	Animal (Animalia)
Phylum	Echinoderm (Echinodermata)
Class	Sea star (Asteroidea)

The crown-of-thorns starfish is one of the most studied echinoderms on the Great Barrier Reef, because of the effects that periodic population outbreaks have on coral reefs. It is an unusual species in that it is a specialist corallivore. They have been responsible for 42% of the decline in coral cover on the Great Barrier Reef since 1985.

Size

Adults are usually 20cm to 40cm in diameter.

Feeding

Crown-of-thorns starfish feed on hard corals and occasionally soft corals and anemones. They are eaten by few species, such as the trigger fish and a marine snail, Triton's trumpet.

Habitat

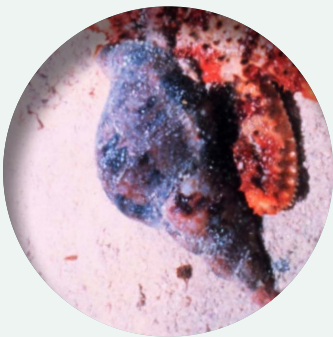
On coral reefs.

Threats

There are no known threats to the crown-of-thorns starfish, but populations die out when they run out of food.

Did you know?

Divers have killed up to 120 crown-of-thorns starfish an hour to control outbreaks!



Triton's trumpet *Charonia tritonis*

Kingdom	Animal (Animalia)
Phylum	Mollusc (Mollusca)
Class	Gastropod (Gastropoda)

Triton's trumpet is a large predatory sea snail. This mollusc is one of the few species that eats the crown-of-thorns starfish, as it has become immune to its toxins. One of the largest sea snails, they also feed on other starfish and sea urchins. They immobilise their prey by injecting them with a paralytic agent in their saliva.

Size

Adults grow to between 10cm and 35cm long.

Feeding

Triton's trumpet feeds on sea urchins and starfish.

Habitat

On coral reefs.

Threats

Like all organisms with a carbonate structure or shell, Triton's trumpet can be affected by ocean acidification. In some areas, the collection of shells for ornaments can be a threat.

Did you know?

The name Triton's trumpet comes from the ancient practice of cutting off the tip of the shell and using it as a trumpet!



Clown Anemonefish *Amphiprion ocellaris*



Kingdom	Animal (Animalia)
Phylum	Chordate (Chordata)
Class	Bony fish (Osteichthyes)

There are 30 different species of anemonefish, so called as they have a symbiotic relationship with anemones. The anemone provides shelter from predators and provides the fish with a food source. The fish eat invertebrates which could otherwise harm the anemone and protect the anemone from other predators.

Size

Typically between 10cm-20cm long.

Feeding

They eat zooplankton such as copepods, and are hunted by larger fish.

Habitat

Shallow reefs and lagoons of the Indian and Pacific oceans, including the Great Barrier Reef and Red Sea.

Threats

Anemonefish are popular aquarium fish. The release of the Disney film 'Finding Nemo' in 2003 saw a sharp increase in demand which saw clown anemonefish populations decline.

Did you know?

Anemonefish (as well as some types of damselfish) are the only fish to be unaffected by the very strong poison of the anemone!



Pearlfish *Carapidae*

Kingdom	Animal (Animalia)
Phylum	Chordate (Chordata)
Class	Bony fish (Osteichthyes)

Pearlfish are tiny fish which live inside invertebrates, including starfish, clams and sea cucumbers. They enter their host's body cavity via their anus and live there, protected from predators and with a ready source of nutrients. Most species of pearlfish live at peace with their host, but others are parasitic.

Size

From a few centimetres long to 20cm.

Feeding

Small invertebrates and crustaceans, or some feed off the organs of their host. They are eaten by larger fish.

Habitat

They live in tropical waters of the Atlantic, Indian and Pacific oceans, to a depth of 2,000m but more usually in shallow waters of less than 30m.

Threats

They face no specific threats other than those that face the coral reef ecosystem in general.

Did you know?

Their anus is close to their head, enabling quick and easy defecation by popping their heads out of their host's bottom!



Bumphead parrotfish *Bombometopon muricatum*



Kingdom	Animal (Animalia)
Phylum	Chordata (Chordata)
Class	Bony fish (Osteichthyes)

This distinctive fish has a vertical forehead and huge teeth for ramming into and then eating corals. They grow slowly and can live for up to 40 years. They are found in groups, and sleep as groups too, often in the shelter of caves or shipwrecks.

Size

They grow to over 1m in length.

Feeding

They live off algae and live corals, eating over 5 tonnes a year, and are primarily hunted by sharks, as well as humans.

Habitat

Bumphead parrotfish live around reefs and lagoons of the Indian and Pacific oceans, to a depth of around 30m.

Threats

They face no specific threats other than those that face the coral reef ecosystem in general, but can suffer from overfishing.

Did you know?

They are hermaphrodites – they begin life as females and turn into males as they mature!



Staghorn coral *Acropora cervicornis*

Kingdom	Animal (Animalia)
Phylum	Cnidaria
Class	Anthozoa

Staghorn coral is a branching stony coral. Such hard corals are actually colonies of tiny polyps, a small animal much like the sea anemone. The polyps form a carbonate shelter and as the polyps reproduce, these carbonate structures grow as long branches. Hard corals are essential in creating the 3D reef habitat that supports so many different species.

Size

Branches range from a few centimetres to over 2m.

Feeding

Hard corals receive energy from their symbiotic relationship with zooxanthellae. The polyps also catch plankton such as copepods.

Habitat

Back and fore reef habitats at a depth of 0-30m.

Threats

Damage from changes in salinity, pH level and especially from increases in sea temperature which can cause bleaching. Locally, threats include storm damage and being eaten by the crown-of-thorns starfish.

Did you know?

Polyps reproduce both sexually and asexually and the polyps are both individual animals and linked within a colony!



Sea anemone Order Actiniaria

Kingdom	Animal (Animalia)
Phylum	Cnidaria
Class	Anthozoa



Anemones are a type of polyp, the same animal that forms corals. They are usually found as single polyps, but can also form colonies. They have tentacles formed around an oval body which have stinging capsules at their ends, to immobilise their prey. They have a symbiotic relationship with some species of fish, which use the anemones as a refuge and are not stung. In return, these fish protect the anemone from predators.

Size

Anemones range from 1cm across to over 1m in diameter.

Feeding

Sea anemones eat small fish and shrimp. They are eaten by nudibranchs, some sea stars and fish.

Habitat

They usually live on the hard bottom of the sea and are found in most tropical and temperate coastal areas.

Threats

There are no known threats to sea anemones other than the general threats to the coral ecosystem. It can be affected by outbreaks of the crown-of-thorns starfish.

Did you know?

Some species of sea anemone can live for over 50 years!



Blue green algae Phylum Cyanobacteria

Kingdom	Bacteria (Monera)
Phylum	Cyanobacteria
Class	-

Cyanobacteria are microorganisms, bacteria which fix nitrogen and carbon. They also produce oxygen through photosynthesis, enabling other species to live in the surrounding environment. Some live within protists (e.g. algae) or sponges, providing energy to the host, or form part of lichens in the splash zone of rocky shore environments.

Size

Microscopic, although in aquatic environments occasionally create 'blooms' which can be seen from space!

Feeding

They obtain energy from the sun through photosynthesis. They supply nutrients to other forms of algae and form an important part of the marine food web.

Habitat

All land and aquatic environments across the entire planet.

Threats

Pollution can affect their ability to build proteins.

Did you know?

The oldest known fossils are made from cyanobacteria and are 3.5 billion years old!



Tiger shark *Galeocerdo cuvier*



Kingdom	Animal (Animalia)
Phylum	Chordate (chordata)
Class	Sharks & rays (Chondrichthyes)

One of the largest sharks in the world, the tiger shark is one of the apex predators on the Great Barrier Reef. It gets its name from the dark vertical stripes along its sides that resemble a tiger's stripes. It is a solitary creature, mainly hunting at night.

Size

Adult tiger sharks commonly grow to between 3m and 4.2m long, and can grow over 5m in length.

Feeding

They are voracious predators and not very picky, eating anything from fish to turtles, squid, marine mammals, human rubbish and car number plates.

Habitat

Mainly throughout tropical and subtropical waters worldwide, and are often found close to the coast.

Threats

They are vulnerable to fishing due to their slow growth and long lifespan.

Did you know?

About 10 people a year die from shark attacks, but humans kill 100 million sharks every year!



Manta ray *Manta alfredi*

Kingdom	Animal (Animalia)
Phylum	Chordate (Chordata)
Class	Sharks & rays (Chondrichthyes)

Mantas are large graceful fish, that often look like they are flying through the water with their large pectoral fins. They are filter feeders, using lobes either side of their mouth to funnel plankton towards them. Mantas are often found visiting cleaning stations, where fish such as the cleaner wrasse nibble parasites and their dead skin.

Size

Reef mantas reach 5.5 metres wide.

Feeding

Mantas are filter feeders, eating plankton and fish larvae. The mantas main predators are large sharks and orcas (killer whales).

Habitat

Typically found throughout tropical and subtropical waters.

Threats

They are slow swimmers near the surface and often become entangled in fishing gear.

Did you know?

They have the largest brain of all fish and we still have much to learn about their social behaviour!



Green turtle

Chelonia mydas



Kingdom	Animal (Animalia)
Phylum	Chordate (chordata)
Class	Reptile (Reptilia)

Green turtles are one of the six species of sea turtle that are found on the Great Barrier Reef. In the non-breeding season, turtles from the Great Barrier Reef travel as far as Fiji and Indonesia. Green turtles lay their eggs in pits they dig on beaches on islands and bays.

Size

Green turtles usually have a carapace (shell) between 80cm and 120cm long.

Feeding

Green turtles feed mainly on algae and seagrass. They are eaten by humans and larger sharks.

Habitat

Green turtles are found throughout tropical and subtropical oceans, returning to beaches to nest and they feed on coral reefs and seagrass meadows.

Threats

Destruction of seagrass meadows is the main threat. They also risk being caught in fishing nets and having their nesting sites destroyed by coastal developments.

Did you know?

Green turtles are reptiles and cold-blooded and they have been known to sunbathe to warm themselves up!



Copepod

Subclass *Copepoda*

Kingdom	Animal (Animalia)
Phylum	Arthropod (arthropoda)
Class	Crustacean (Crustacea)

A copepod is a small marine animal. It is a crustacean, and is related to lobsters, shrimps and crabs. Copepods are zooplankton, small animals that are carried by ocean currents rather than making their own way in the world. The word copepod comes from two Greek words *kope-oar* and *pod-foot*. They are the most abundant animal on this planet.

Size

Copepods are typically 1mm to 2mm long.

Feeding

Copepods are secondary producers, eating algae and turning this into the more complex building blocks needed for larger marine life, such as filter feeders.

Habitat

Throughout the oceans from pole to pole.

Threats

Copepods are susceptible to a decrease in the pH of the ocean from the process of ocean acidification.

Did you know?

There are an estimated 1,347,000,000,000,000,000,000 copepods in the world's oceans!



Boulder coral Family *Portitidae*



Kingdom	Animal (Animalia)
Phylum	Cnidaria
Class	Anthozoa

Portitidae is a family of hard corals that can form large coral mounds, known as 'bommies'. Such hard corals are actually colonies of tiny polyps, a small animal much like the sea anemone. Hard corals are essential in creating the 3D reef habitat that supports so many different species. They grow very slowly at a rate of 1-2cm a year.

Size

These mounds can range up to 8m high and 5m across.

Feeding

Hard corals receive energy from their symbiotic relationship with zooxanthellae. The polyps also catch plankton such as copepods with their stinging tentacles.

Habitat

The 'bommies' favour lagoons and proximity to the reef slope.

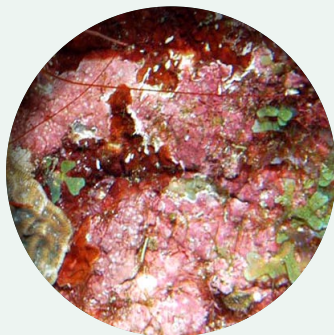
Threats

Hard corals are susceptible to damage from changes in pH level and especially from increases in sea temperature which can cause bleaching. Locally threats include pollution from runoff and being eaten by the crown-of-thorns starfish.

Did you know?

Some of these coral colonies are over 700 year olds and they can be dated by counting their annual growth bands!

Red coralline algae Genus *Porolithon*



Kingdom	Protist (Protista)
Phylum	Red algae (Rhodophyta)
Class	Rhodophyceae

Porolithon are pinkish algae which build and strengthen coral reefs. They live on rock, binding materials together and forming a calcified layer beneath them to protect the reef crest from the impact of waves and storms, and are known as 'reef cement.' They also convert nutrients into food for other species and generate oxygen.

Size

From microscopic up to 25cm.

Feeding

They absorb sunlight through photosynthesis and provide a food source for smaller, herbivorous fish.

Habitat

Primarily reef crests, as well as the inner and outer reef, in warm and tropical waters.

Threats

They are under threat from ocean acidification which makes it harder for the formation of their carbonate structures. Pollution and higher water temperatures also have an impact.

Did you know?

Although they appear red or pink in colour they also contain green chlorophyll!



Mantis shrimp Order *Stomatopoda*



Kingdom	Animal (Animalia)
Phylum	Arthropod (Arthropoda)
Class	Crustacean (Crustacea)

Mantis shrimps are aggressive and typically solitary creatures. They kill their prey in two different ways, by spearing or smashing with their large front claws. Some species are 'speakers' impaling their prey and other are 'smashers', striking their victims and stunning or killing them.

Size

Mantis shrimps grow to between 1cm and 40cm long.

Feeding

'Speakers' prefer animals without a hard shell such as small fish. 'Smashers' prey on crabs, snails and other molluscs. They are preyed upon by larger fish.

Habitat

Mantis shrimps live in crevices in the coral or rock in lagoons and also burrow in the sand.

Threats

They face no known threats, except those that threaten the coral reef ecosystem as a whole.

Did you know?

Their smash is so powerful and fast it can create a sonic boom and there are reports of mantis shrimps kept in aquaria breaking the glass.



Sea cucumber Class *Holotheuroidea*

Kingdom	Animal (Animalia)
Phylum	Echinoderm (Echinodermata)
Class	Sea cucumber (Holotheuroidea)

Sea cucumbers are a diverse and common type of echinoderm, found all along the Great Barrier Reef. Within sea cucumbers, a number of species have some quite surprising habits. Some sea cucumbers reproduce asexually, splitting in half to form two complete individuals. A favourite defence mechanism to avoid being eaten by fish, is to shoot their guts and internal organs out of their anus.

Size

Adults typically range from 10cm to 30cm in length.

Feeding

Most sea cucumbers sift through the sediment for plankton and decaying organic matter. They are eaten by a range of fish.

Habitat

Found on coral reefs, the intertidal zone and in deep water.

Threats

Edible species of sea cucumber (yes - they are widely considered delicious!), known as bêche-de-mer are under threat from overfishing.

Did you know?

Some species have also developed a symbiotic relationship with species such as the pearl fish, which shelters in the sea cucumber's anus to avoid predation!



Sea Urchin
Class *Echinoidea*



Kingdom	Animal (Animalia)
Phylum	Echinoderm (Echinodermata)
Class	Sea Urchin (Echinoidea)

Sea urchins are related to starfish and sea cucumbers. Most sea urchins hide during the day to avoid predators. They also have poisonous spines to protect them. Sea urchins are mainly herbivorous eating the algae that grows on the coral reef. They play an important role in making sure that the coral reef is not overrun by seaweed.

Size

Adults typically range from 6cm to 12cm in diameter, not including the spines.

Feeding

Most sea urchins eat algae. They are preyed upon by snails such as Triton's trumpet and also by some crabs, rays and sharks.

Habitat

Found on coral reefs, sand flats and seagrass beds.

Threats

Sea urchin larvae are extremely sensitive to ocean acidification as well as threats to the coral ecosystem.

Did you know?

Most sea urchins only have mild venom, and although not fatal to humans, can be very painful if stepped on!

