

Perth Fish



EXPLORE, IDENTIFY, ENJOY!



Dianne McLean & Michael Taylor





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THE UNIVERSITY OF
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The information in this book is based on the authors' experiences and research, and is intended as an additional resource only. The information contained should not be solely relied upon when making decisions relating to swimming, snorkelling, diving, fishing, etc.

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Purpose

To engage primary and secondary school children in marine science by developing knowledge and promoting an appreciation of fish life off our coast.

OVERVIEW

Whadjuk Noongar Land

Perth sits on Whadjuk Noongar boodja, the land of the Whadjuk Noongar people. The Noongar are the traditional owners of the south-west of Western Australia. For over 45,000 years the Noongar people have inhabited this region and are still one of the largest and proudest indigenous groups in Australia.

The ocean was, and still is, important to the Noongar people, with Wadjemup (Rottnest Island) being of particular importance. Wadjemup was historically an important meeting place and a very spiritual area. Passed down through the oral history of the Noongar over thousands of years, this island is known to the Whadjuk people as the resting place of the spirits, where those that have died go to journey towards the afterlife. When the spirits are ready to leave, they travel west on a whale to Kooranup, the true afterlife, over the horizon where the spirits can rest.

We respectfully acknowledge the Whadjuk people of the Noongar Nation as the traditional custodians of this land that we are lucky enough to enjoy.



Perth's unique marine environment

The sea around Perth is home to an amazing diversity and abundance of marine life. Here, the Indian Ocean possesses a mix of southern cool temperate water and warm tropical water of the Leeuwin current. The Leeuwin Current flows southwards along our coast transporting the eggs, larvae and juveniles of all kinds of ocean life – including fish. Weakest in summer, strongest in autumn and winter, the Leeuwin Current brings many tropical species to our southern waters providing a unique mix of cold and warm water fish species off our coast.



A juvenile bullethead parrotfish (Chlorurus spilurus), this tropical species is sometimes found around the Perth area.



Fish larvae, brought south by the Leeuwin Current



Did you know?

In Australia, there are over 5250 different types (species) of fish and nearly 1300 of these fish species are found nowhere else on Earth.

Fish features

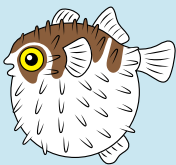
In the ocean off Perth, we have fish of all shapes and sizes. The smallest is probably the twospot eviota (*Eviota bimaculata*), a goby, which reaches a maximum size of 2.5 cm. We also have very large fish, such as great white sharks (*Carcharodon carcharias*), which can reach 6 m in length and tiger sharks (*Galeocerdo cuvier*) which can reach 5.5 m.

Fish are vertebrates, with a backbone, and fall into two main categories:

- (1) Bony fish with skeletons made of bone
- (2) Cartilaginous fish with skeletons made of cartilage



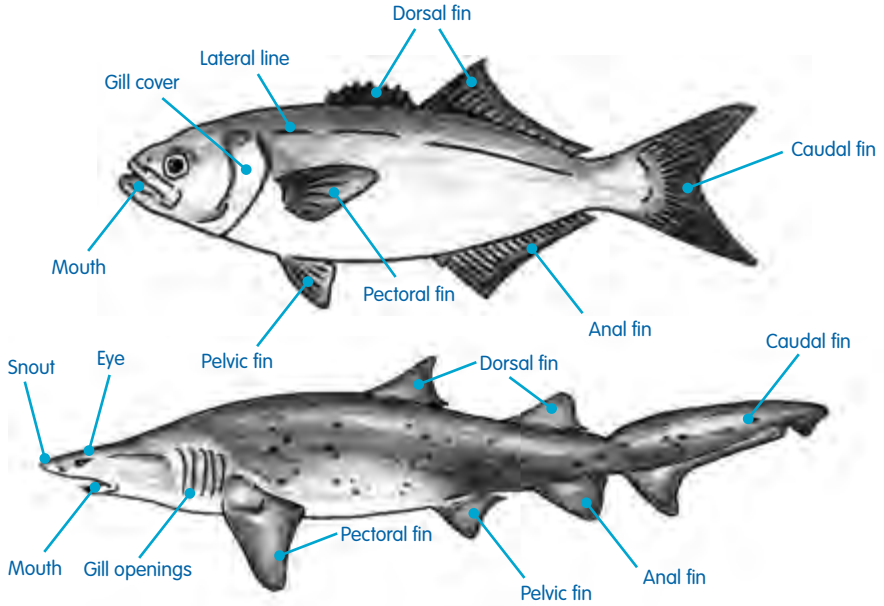
*The great white shark (*Carcharodon carcharias*), one of the largest and most efficient predators in the ocean, can be found off the coast of Perth.*



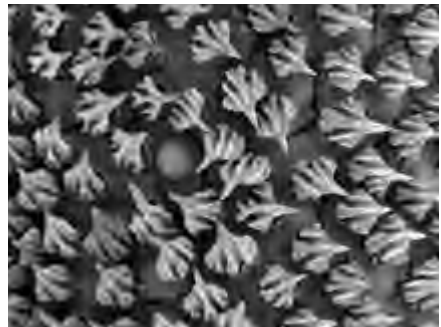
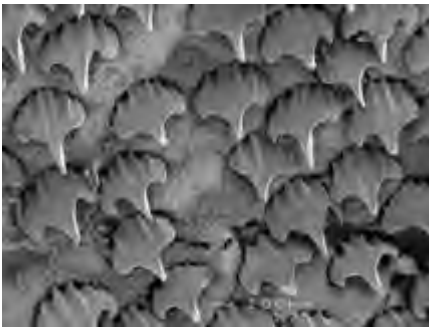
Did you know?

Some fish can breathe and survive out of the water. Rockskippers are types of blennies that can sometimes be found hiding on rocks exposed by the falling tide around Perth and Rottnest Island.

All sharks and rays are in the cartilaginous group; with their lightweight skeletons, and livers full of oil, they can remain buoyant and float in the water. Bony fish cannot rely on oils and lightweight skeletons to keep them afloat and so many have a swim bladder, an air filled balloon inside their body, to stop them sinking.



General anatomy of a bony fish and a cartilaginous shark



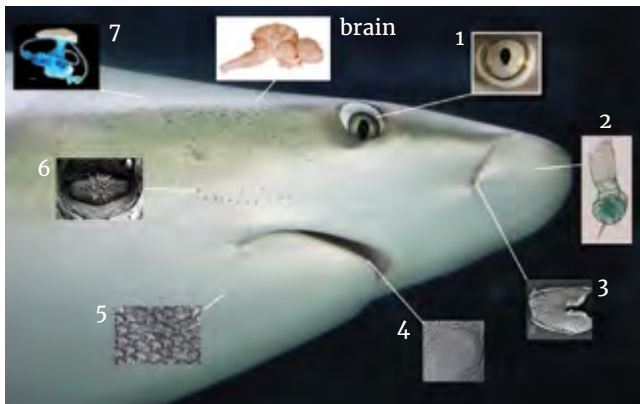
Close up images of denticles. Shark denticles look and feel rough, but cut through the water helping them swim quickly and silently.

Fish skin is protected in a number of different ways. The majority of fishes have scales to act as protection from the environment and predators, while others rely on slimy mucus released by glands across their body. Sharks have denticles covering their skin. These are like small teeth and are very rough to touch. Despite this roughness, the shape of the denticles allow sharks to swim faster and quieter through the water.

While most animals cannot breathe in water, fishes can. Fish take in water and filter it through their gills, where oxygen is extracted and absorbed into their blood stream. Many fish can filter water without moving by pumping water over their gills, others, including the largest sharks, must keep moving to force water over their gills. If these species, known as ram ventilators, were to stop moving they would eventually run out of oxygen.

As well as being able to see and hear, fish also have senses that are alien to us. The lateral line that runs down the side of a fish's body can detect small vibrations in their environment. Fish can also detect changes in pressure and water current. Some species, including sharks, can detect chemicals (or smells), and electric currents created by the movement of other animals in the water.

All these adaptations have led to an amazing amount of diversity in fish and makes the ocean an incredible place to see, study, explore and enjoy.



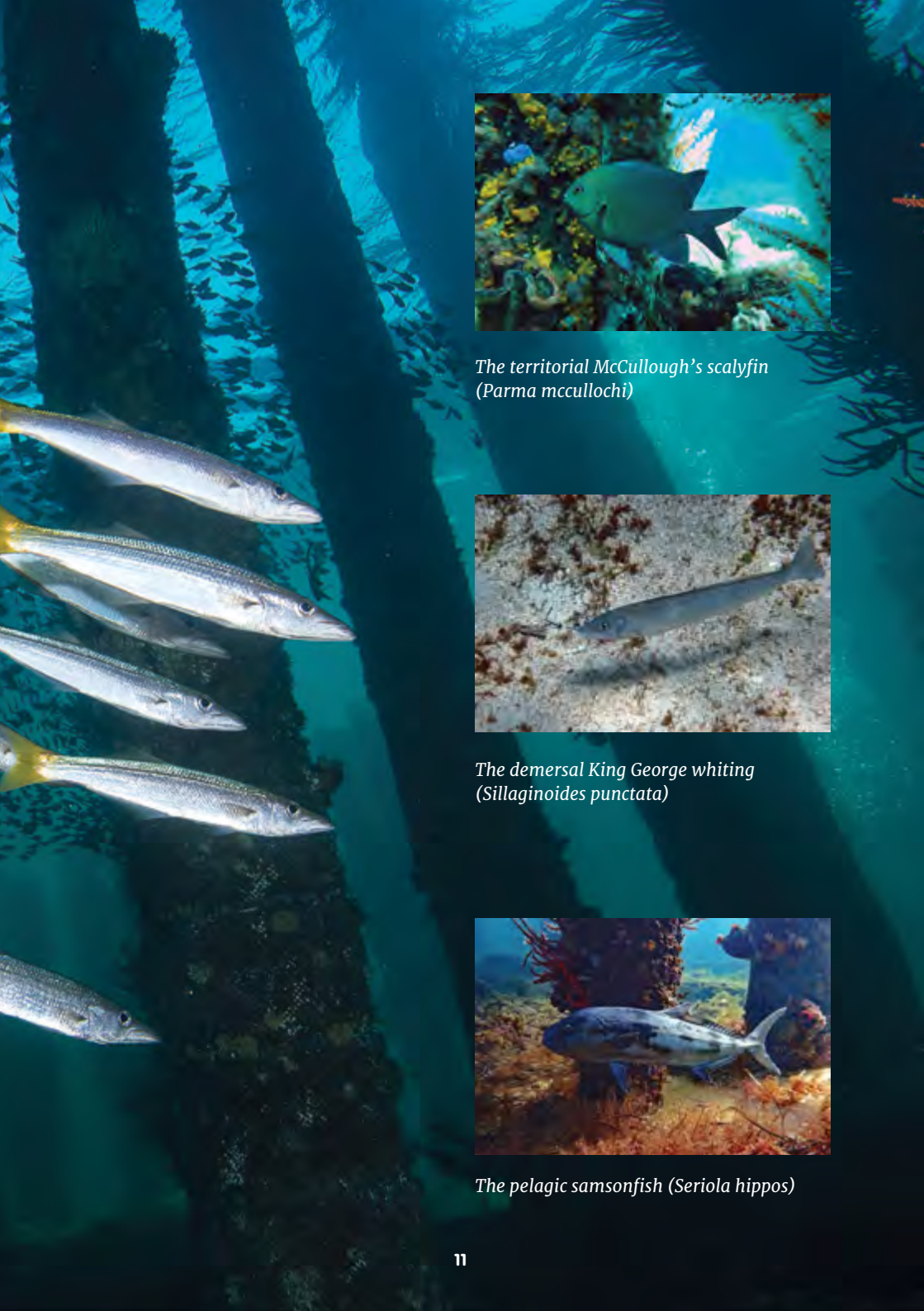
Sharks have a variety of senses to help them find prey. The brain coordinates these senses and its size depends on where the shark lives and how it hunts (great white sharks actually have quite small brains for their size). Here we can see the sensory organs for (1) sight, (2) electrical fields, (3) smell, (4) taste/touch, (5) touch, (6) vibration/water pressure, and (7) hearing/balance. Sharks use all of these senses to understand the ocean around them, and to help them to be such successful predators.

There is no place like home

Fish in the Indian Ocean have all sorts of homes, depending on their particular requirements. Some fish, like the McCulloch's scalyfin (*Parma mccullochi*), are herbivores and territorial. They eat algae and do not stray far from their homes in and around rocky ledges on macroalgae-covered reefs.

King George whiting (*Sillaginoides punctata*) is a demersal (seabed associated) species that undertakes seasonal or annual migrations between places that they feed and places that they go to spawn. Often juvenile King George whiting will be found in shallow seagrass meadows where they can feed and seek shelter. As they get older, they move to deeper areas around rocky reefs. While young King George do not move far on a day-to-day basis, adults can move quite large distances, even up to several hundred kilometres to spawning grounds.

Samsonfish (*Seriola hippos*) are a pelagic, schooling species that occur in coastal and inshore waters. Unlike territorial species with limited home ranges, samsonfish undertake long-distance migrations. Large spawning aggregations form near Rottneest with some individuals travelling >2000 km to get there!



The territorial McCullough's scalyfin (Parma mccullochi)



The demersal King George whiting (Sillaginoides punctata)



The pelagic samsonfish (Seriola hippos)

Human impacts on fish

Unfortunately, nowhere on Earth is free from the influence of humans. We pose the biggest threat to our oceans and fish life through impacts such as rubbish, coastal development, fishing and climate change.

Rubbish

West Australians throw out an average of over 2 kg of rubbish per person every day and over 50% of this rubbish is not recycled. This rubbish has to go somewhere – all too often it can end up in the ocean.



Did you know?

Worldwide an estimated 4.8–12.7 million tonnes of plastic entered the ocean in 2010. Up to 94% of that plastic ends up on the seafloor, with the rest floating in the water or washing up on our beaches.

In Australia, at least 77 marine species have been recorded as being impacted by plastic in the ocean, with the greatest threat being from discarded fishing equipment such as nets and traps. Lost fishing gear can 'ghost fish', tangling marine creatures and causing a slow and painful death. Fish can also ingest (eat) small bits of plastic which can cause them harm. Next time you catch and eat a fish have a look in its stomach for



tiny bits of plastic. But it is not just fish affected by rubbish in the ocean, entanglement and ingestion of plastics has been recorded in 86% of sea turtle species, 44% of seabirds, 43% of mammals and 60% of squid.

Coastal development

Around the world over a billion people live in coastal areas. We love to live near the ocean. However, when people live near the ocean they must clear land and build houses. We dig up, or dredge, the ocean to allow ships to enter and trade. We build sea defences, marinas, and harbours to make sure our ships and shore are safe. Bridges are built to allow people to move safely and quickly around. We even build desalination plants to provide freshwater for us to drink.

Coastal development can remove (dredge) or build over marine habitats and modify local currents and waves. When we build or farm by the ocean, or along rivers that feed into the ocean, we remove vegetation, affect the flow of freshwater into the ocean and change nutrient levels. A build-up of nutrients is called eutrophication. This nutrient build up causes plants and algae to grow dramatically. These plants absorb the oxygen in the water creating a toxic environment where fish cannot breathe. In severe instances, this can lead to mass fish deaths.

Often the structures we build can end up being reefs for marine life. Many jetties are favourite snorkel and dive spots where you can see colourful invertebrates growing on the pillars and a great diversity of fish life.



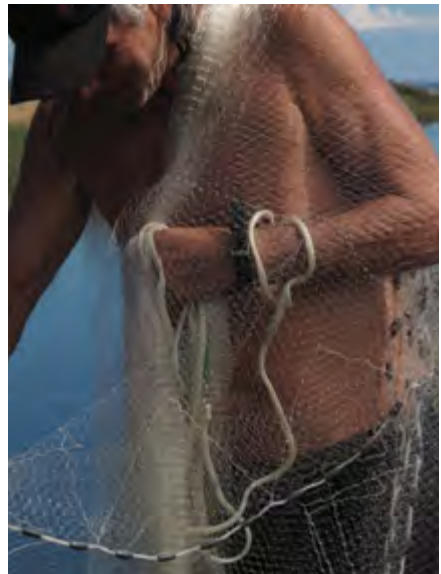
Fishing

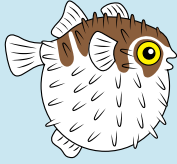
There are two main types of fishing:

- (1) **Commercial fishing** - where people require a special licence to catch fish to sell.
- (2) **Recreational fishing** - where people catch fish for fun or for food but do not sell fish.

Both require different types of licences and are subject to different rules and restrictions (www.fish.wa.gov.au).

Fishing is a fantastically fun activity to do, but don't catch or keep more than you need. The idea that there are plenty of fish in the sea is not always true. Overfishing occurs when fish are removed from the ocean faster than they can reproduce and grow. If this continues over an extended period, fish populations can crash. This is particularly true for species that mature slowly and live a long time, such as the western blue groper (*Achoerodus gouldii*), which can live up to 70 years! We have to carefully monitor and manage how many fish are caught each year to prevent this happening.





Did you know?

*The most valuable commercial fishery in Western Australia is not actually for a fish! The Western rock lobster (*Panulirus cygnus*) fishery is worth up to \$500 million a year.*



Bycatch can also be a problem in fisheries, especially from large boats towing trawl nets. Bycatch refers to a fish or other marine animal that is caught unintentionally. Often these animals are returned to the ocean but their method of capture, or how long they are out of the water, will affect their ability to survive after they are released. In Western Australia, commercial fishers use a range of devices to minimise bycatch. Prawn trawlers use large holding tanks to keep bycatch alive so that it can be safely released.



*A whale shark (*Rhincodon typus*) tangled in a net. This is actually in Indonesia and luckily local research scientists were on hand to release the shark and track it to learn more about the shark's movements.*



Did you know?

Fishing is banned in less than 2% of the world's ocean.

Climate change

One of the greatest problems facing the world is climate change, with temperatures on the land and in the ocean rising. While warmer weather seems like it would be fun, it can have a negative impact on animals, and climate change has resulted in more extreme and unpredictable weather. The warming of the oceans is a major issue for fish, corals, and other ocean life.

Climate change is caused by humans. Loss of forests, pollution from burning fossil fuels, and gas released by farm animals are all major contributors to greenhouse gas emissions. Greenhouse gases, like carbon dioxide and methane act to trap heat within our atmosphere which increases temperatures. As the temperature rises we are likely to experience more rainfall, changeable seasons, reduced sea ice and rising sea levels.

For the oceans, and the fish in them, climate change is a major issue. Most fish have no control of their body temperature and their temperature mirrors that of the surrounding water. Increasing sea temperatures can



The greenhouse gases released by burning fossil fuels are a major contributor to climate change



Sea ice is melting rapidly



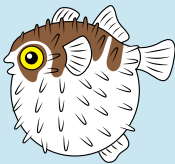
Tropical fish are being seen more often in areas usually home to colder water fish

affect their growth rates, reproduction, swimming and behaviour. As temperatures rise many fish species are slowly moving towards the poles to cooler water. This is called a range shift or range extension. If you spot a tropical fish species in local Perth waters you can log this sighting at 'Redmap' which is a Range Extension Database & Mapping project (www.redmap.org.au).

Climate change also causes changes in ocean chemistry with acidification influencing reproduction and also reducing coral growth. Corals are particularly threatened with large areas bleaching and dying in response to extreme temperatures. Sea level rise brings other issues, with important marine habitats like mangroves, seagrass beds and coral reefs likely to suffer as water levels change.



This coral from the Great Barrier Reef has been bleached, losing its colour. If the coral dies it will reduce the amount of shelter and food available to fish



Did you know?

Most fish are cold blooded with their body temperature controlled by the water they swim in. Some sharks have the ability to warm their body to 10-15°C higher than the surrounding water. This allows them to use quick bursts of energy even in cold water.

Protecting our fish



Mary Cove, within the Green Island Sanctuary Zone, Rottneest Island



In Australia, and around the world, we have two main approaches to protecting fish.

- (1) Fishing restrictions limit how, where, and when we fish, as well as the number and size of fish we catch. There are separate restrictions for commercial and recreational fishers.
- (2) Designation of marine parks or protected areas where fishing is not allowed, or is limited. By doing this we can protect fish and the habitat in these areas from fishing.

One of the main restrictions we can place on fishing is limiting how we fish. There are lots of ways to catch a fish, e.g. a fishing rod or dragging large nets behind a boat. Some of the more destructive fishing methods are banned – like fishing with explosives or with poisons, while others (e.g. trawling) are restricted to certain areas and to equipment designed to be less destructive to habitats.

Australia has some of the most well managed fisheries in the world and the majority of commercial operations are sustainable. However, we import much of the fish we eat from other nations around the world, and many of these nations have much worse records in protecting and managing their fish populations. You can help to protect fish stocks by only buying and eating sustainable, locally caught fish.

Around Perth there are a number of protected and managed areas. Among them are Marmion Marine Park, the Port Coogee maritime trail area, the

Swan Estuary Marine Park and at Rottnest there is Kingston Reef, Parker Point, Green Island, West End and Armstrong Marine Sanctuary Zones. Cottesloe reef is within a fish habitat protection zone where you can recreationally fish but no commercial fishing or spearfishing is allowed. More information about these protected areas and the restrictions put in place can be found on the Rottnest Island Authority (<http://ria.wa.gov.au/>) and Department of Biodiversity Conservation and Attractions (<https://www.dbca.wa.gov.au/>) websites.



Some of the beautiful rocky reefs that can be explored in Marmion Marine Park

Artificial reefs for fish

Reefs are some of the most diverse ecosystems in the world. In an attempt to attract fish to areas and increase diversity we can build homes for fish to live in (artificial reefs). Artificial reefs are created out of a range of materials from car tyres, to concrete blocks, and even old ships. Many reefs are built to improve biodiversity and to conserve important fish species, but others are used to improve fishing, encourage surfing, or to attract divers and snorkellers.

Around Perth there are a number of artificial reefs. South Cottesloe has a reef designed to create waves for surfers, large artificial structures designed to attract fish can be found to the south of Rottnest Island and Port Coohee has an artificial reef designed especially for snorkellers and SCUBA divers.



Coogee Maritime Trail

The most accessible artificial reef in Perth is located south of Fremantle in North Coogee. The Coogee Maritime Trail is a dive and snorkel trail that starts at the wreck of the *Omeo*, a steamship which sank in 1905, and includes a purpose built artificial reef. No fishing or boating is allowed in the area making this a sheltered and easily accessible site to snorkel, explore and see many of the fish mentioned in this book.

The *Omeo* wreck sticks up out of the ocean and can be seen from the steps leading to the water. In the 1800s the *Omeo* laid cables on the seabed to allow communication between Australia and Britain, now it is a home for all sorts of fish and invertebrate life. At 20 m long, there are plenty of nooks and crannies for cryptic fish to hide out in, and lots of space for marine invertebrates and algae to grow.



The Coogee Maritime Trail—The wreck of the Omeo is the first thing you see when you enter the water



In 2016, additional artificial structures were installed to create a full dive and snorkel trail that highlights the maritime history of the area and the marine life that can be seen in our local waters.

Starting at the wreck the Coogee Maritime Trail includes 33 structures, designed to attract fish and marine growth, which run parallel to the marina wall from the shallows to a distance of 250 m offshore. A variety of different shaped reef structures were installed by Subcon to create the maritime trail, including “Apollo clusters” which look similar to the front of a NASA rocket, and a large “Reef Pyramid” which marks the end of the trail. Various historical items have been sunk to the seabed and signs with information on the maritime trail, the sea life around it, and the history of the area can be seen underwater.





Amongst the reef, artwork created by local artists can be found including “Stella Maris”, by Melanie Maclou, a large sea star which can be swum through, and a life-size metal sea lion who, depending on the tide, may be sticking his nose out of the water to say hello!

Over 50 species of fish and a range of invertebrates and habitat types have been seen around this sheltered wreck trail. If you are lucky and keep your eyes peeled you may be able to spot rays on the sand and seagrass surrounding the reef as well as schools of trumpeters, colourful dragonets, stripeys, and western talma around the reef structures. Once you have swum out and explored the wreck and reef structures, remember to explore the rocks of the marina wall.



Sculptures, like this sea lion, are an important part of the snorkel trail

The overhangs and marine growth make an excellent sheltered hiding spot for some of the more timid, better camouflaged species that you can see while exploring this site.

Remember to check that the ocean is safe before getting in the water. While this site is sheltered, if the sea is rough it can be dangerous. It is always best to make sure the sea is calm before you explore as you will have a better, safer time in the ocean and you will see a lot more.



Explore and enjoy our ocean

One of the best ways to learn about the ocean and to get to know the fish that live there is to get out there yourself. Grab your snorkel and fins and get out there to see some of the amazing animals that make the ocean their home.

There are plenty of sites to snorkel, and explore, up and down the Perth coastline. We also have Rottnest Island on our doorstep which is a snorkeller's dream. Much of the marine life around Perth can be seen without swimming far from the shore. Finding and identifying fish in the shallows around the coast is really fun, but there are also lots of interesting habitats and invertebrates to discover along the way.



Snorkelling with a 'snorkel buddy'. It is always safer to swim with a friend



Nudibranchs, or sea slugs, are colourful invertebrates that can be seen crawling over reefs around Perth



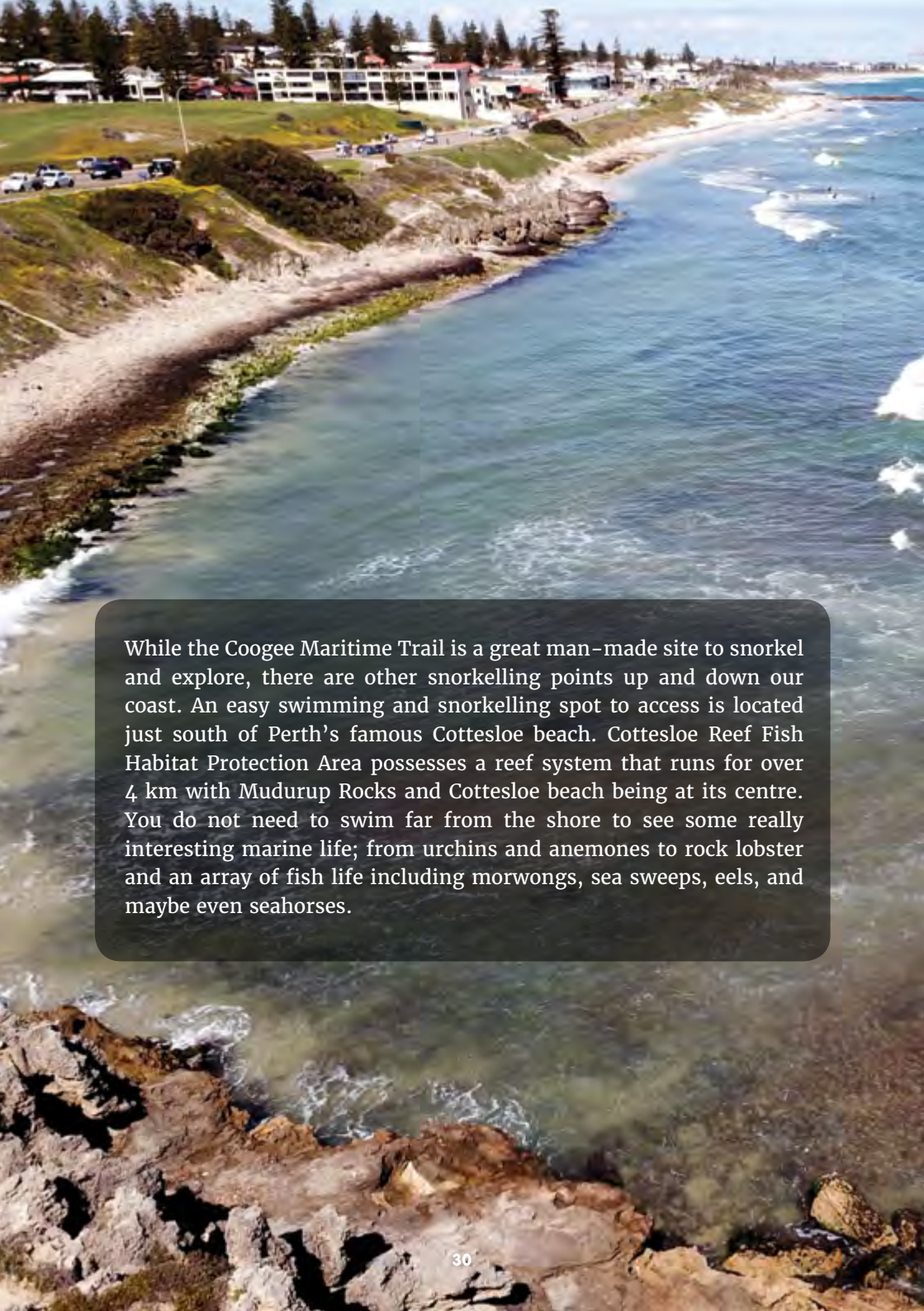
An octopus, one of the smartest creatures in the sea



A jellyfish. Some can sting and the tentacles of some can provide shelter to juvenile fish

Invertebrates can be found in every part of the coast of Perth. Crabs and lobsters tuck themselves away in caves and under ledges. Nudibranchs can be found swimming in the water or crawling over rocks. Urchins feed on the algae growing on rocks while squid and octopus can be found swimming or hiding in a number of different habitats.



An aerial photograph of a coastal town. In the foreground, a large, weathered log lies on a sandy beach. The ocean is a deep blue with white waves breaking. In the background, a town with several buildings, including a large white one, is situated on a grassy hillside. A road with several cars is visible. The sky is clear and blue.

While the Coogee Maritime Trail is a great man-made site to snorkel and explore, there are other snorkelling points up and down our coast. An easy swimming and snorkelling spot to access is located just south of Perth's famous Cottesloe beach. Cottesloe Reef Fish Habitat Protection Area possesses a reef system that runs for over 4 km with Mudurup Rocks and Cottesloe beach being at its centre. You do not need to swim far from the shore to see some really interesting marine life; from urchins and anemones to rock lobster and an array of fish life including morwongs, sea sweeps, eels, and maybe even seahorses.





Mettam's Pool is a beautiful sheltered spot that is perfect for snorkelling in the summer

Another great spot is Mettam's Pool in North Beach. Here the rocky reef protects a sheltered sandy lagoon all within the larger Marmion Marine Park. The result is a shallow protected snorkelling site with lots of nooks and crannies to explore. See if you can spot a red-lip morwong, banded sweep, bullseyes, whiting and schools of tarwhine. If you venture out of the lagoon there is more to see and explore, but it is less protected and more dangerous be sure to go with a buddy and wait for calm conditions. During sunny summer days this a beautiful spot for snorkelling, but in winter things change and the sea becomes rougher. At this time of year snorkelling is not recommended, but grab a surfboard and you may get a wave.

Remember to stay safe in the ocean. It is best to swim with friends and an adult, and make sure someone is keeping an eye on you from the shore and knows where you are going. Look at the water before getting in, watch for rips and stay clear of boats, surfers, fishers and waves near rocks. We usually swim in wetsuits as it keeps us warm, allowing us to stay in the water longer, and protects us if we bump into rocks. Stay hydrated and make sure you are protected from the sun. Above all enjoy yourself and stay safe.

Go fish!



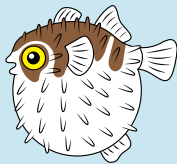
Fishing is a fantastic way to get outside and enjoy our local marine environment. To be a great fisher you need some essentials:

- A rod and reel with fishing line, hook, sinker and swivel
- Bait
- Burley to attract fish
- A bucket and rag
- A knife to scale and clean your fish
- Suncream, hat and water
- A ruler to measure your fish.

Recfishwest have lots of information in their 'kids corner' to help you on your fishing adventure (<https://ilovefishing.com.au/kids-corner/>).

There are lots of places around Perth to fish. Some of the most popular places include jetties (Point Walter, Woodman Point) and breakwaters/groynes (Fremantle, Hillarys). You can also catch fish off many beaches.

Some of the most popular fish to catch around Perth include: herring, skippy, whiting, tarwhine and flathead. See if you can find them in the back of this book!



Did you know?

There are over 33,000 species of fish in the world, and it is likely that up to 10,000 more species exist that have not yet been discovered. In total there are more fish species than there are species of mammals, birds and reptiles combined.

Amazing fish facts

Fish are not only fun to look at, they can do amazing things. If you gave us enough time we could fill one hundred books with fish facts, but here are a few that we think are truly amazing.

Gender bending fish

Many fish can change gender! Fish that can do this are called hermaphroditic species. Sequential hermaphroditism, where an individual starts as one gender and switches to another during its life, is common in fish. Some fish species change from male to female (protandry) and many more change from female to male (protogyny). There are some rare species that can even switch back and forth when they need to (serial bi-directional sex change). Female to male sex change is the most common and can be seen in many species of wrasse and damselfish including some found around Perth like the western king wrasse (*Coris auricularis*).

Male to female sex change is rarer, but is known in clownfish where a large female lives with multiple subordinate males. When this female dies, or is removed, the largest of the males develops into a female and takes over. Remember *Finding Nemo*? Perhaps Marlin should have turned into a girl!



Western king wrasse (Coris auricularis) start out female (shown left) before turning into the larger, dominant, male (right)

Poisonous fish



The poisonous weeping toadfish (Torquigener pleurogramma) is common around Perth



A striped stingray (Trygonoptera ovalis), this species has a venomous spine on its tail to use when they are threatened

Some fish are poisonous to eat. One of the most famous is the pufferfish. In Japan, these are prepared as Fugu and are a delicacy, but if they are prepared wrong, they could kill you.

Ciguatera poisoning, from fish, can also be dangerous to humans. It is caused by toxins produced by tiny microorganisms. The toxins are eaten by small fish feeding on algae on coral reefs which are then eaten by larger fish. If a human eats the flesh of a fish infected with ciguatera poisoning they can get very ill. Most cases have come from large predatory fish caught in the tropics, so it is worth making sure that you are eating local, responsibly caught fish.

Other fish species are venomous, with spines that cause painful stings if they inject venom. Most of these venomous fish, like stingrays, stonefish, cobbler and scorpionfish, will cause a lot of pain. The most effective way to minimise pain is to treat with hot water, but sometimes medical attention is required.

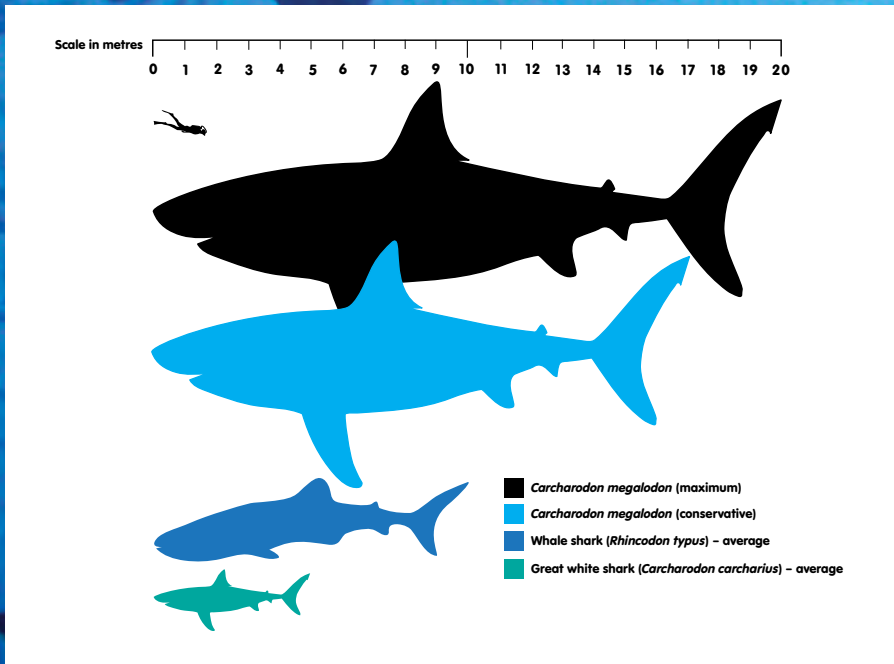


Did you know?

Fish can talk! By grinding their teeth or drumming on their swim bladders, many species of fish can make noises to communicate with fish of the same or sometimes different species.

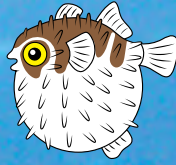
Ancient fish

The biggest predatory shark ever to live is the megalodon, thought to grow to nearly 20 m in length. Each tooth in its jaw could be up to 20 cm long. Feeding on prehistoric whales and turtles, this huge predator would make a great white shark look very small — in fact the pups of this species would have been the size of a great white shark!



Estimated size of a megalodon compared to the whale shark, great white shark and a human

While megalodon is extinct, the coelocanth is considered a “living fossil” because it was only known to scientists from fossils. We thought this fish had gone extinct 66 million years ago until they were rediscovered by a South African scientist in 1938. They are a link to the past and tell us a lot about the evolution of fish.



Did you know?

- The lungfish can live out of the water for several years. By creating a cocoon and burying itself in the earth it can wait for water to come to it. These fish are unique — as well as having gills, they have lungs like we do.
- Flying fish often glide 50 m at a time, but have been seen to glide up to 200 m in one jump.
- The biggest fish in the sea is the whale shark. They can grow up to 17 m, live for 80 years and weigh 34 tonnes. Despite this they eat some of the smallest organisms in the sea, plankton. They are gentle giants and we are lucky enough to have them in Western Australia. Ningaloo Reef in the north-west is the perfect place to go and see these incredible creatures. With climate change, perhaps they will soon visit us in Perth.
- The deepest point in the ocean is Challenger Deep a section of the Mariana Trench in the Pacific Ocean. At 10,994 metres deep you could drop Mount Everest into it and it would not reach the surface. Only three people have ever been to the bottom, less people than have stood on the moon.
- Up to 99% of the ocean floor is unexplored. We know more about the other planets in our solar system than we do about what is at the bottom of the ocean. Beyond 200 m deep we know very little and are finding new things all the time.

Fish Identification

To organise the fish that we see, we use a system to group species that are similar.

We call this **classification**, and when we classify a species, we sort it into different Taxonomic Ranks. Taxonomy mnemonics are a great way to memorize scientific classification. They are made using the letters that correspond to the initials of the primary taxonomic ranks **KPCOFGS**. You can make up your own, or use this one 'Kings Play Chess on Fibreglass Surfboards'.

All fish are within the same Kingdom and Phylum as they are all animals (Animalia) and all of them have a backbone (Chordata). It is at the class level that the species included in this book begin to differ. Here they split into Ray-Finned Fishes (Actinopterygii) and Cartilaginous Fishes (Elasmobranchii). From here they are further split at the order and family level. In this book the most common family are the wrasses (Labridae), but in all we have included 106 species from 53 families all of which can be viewed in our local waters.



An example of the classification and taxonomic ranks of the harlequin fish (*Othos dentex*)



We have started the identification guide with cartilaginous fish, these are the sharks and rays and are some of the oldest types of fish in the world. Sharks have been around for nearly 450 million years, while the oldest bony fish fossil is from 420 million years ago.

Fish of the same family appear together, so finding the correct species should not be too hard. If you are struggling, check the index at the back of the book. Scientists most often use the scientific name to refer to species, but we have also included the 'common name'. The scientific name is a combination of the genus and species name, it is written in Latin and italics and is the same no matter where in the world you are.

Some of these species have not been studied well, but many others are well known. If you want to learn more about these fish, and the others you can find here and around Australia, we have provided a list of books and websites at the back of the book where you can find out more.

We hope you enjoy exploring and learning about the ocean as much as we do! See how many fish you can remember and identify when you next go fishing or snorkelling.



SPECIES IDENTIFICATION GUIDE



Key to Species Identification Guide



DIETS

- Algae** Marine organisms that produce energy from sunlight (e.g. seaweed).
- Fishes** The stars of this book. Most fish that are eaten are smaller ray-finned fish.
- Invertebrates** Marine animals without a backbone including crustaceans (e.g. crabs and shrimps), molluscs (e.g. shellfish), corals and cephalopods (e.g. squid)
- Mammals** Marine animals with a backbone and hair (e.g. seals and sea lions)
- Plankton** Drifting organisms that live in the water, usually very small they are carried by the current.

HABITATS

- Rocky Reef** Rocky structures on the seafloor where animals and algae can survive and grow. Often have lots of overhangs and caves.
- Coral Reef** Structures formed by corals, colonies of invertebrate organisms that build rock like homes. Very colourful they create hiding spots for animals and other organism to grow and live in.
- Sandy Bottom** Made up of sand, some fish burrow into it to rest or wait for prey.
- Muddy Bottom** Made up of silty mud, if disturbed it hangs in the water making it hard to see.
- Seagrass** Flowering plants that grow underwater. They form fields (or beds) that grow in shallow sandy bottomed water and are important habitats for many juvenile fish.
- Macroalgae** Seaweeds and other algae that grow on the seafloor and use sunlight to create energy and grow.
- Estuaries** The mouth of a river where it meets the sea. Here fresh and saltwater mix creating unique conditions.
- Coastal** Areas along the coastline, usually fairly shallow comprising a range of habitats.
- Pelagic** The water column, pelagic fish live in the open ocean and travel over a variety of habitats. They can often be found hundreds of kilometres from the coastline.

International Union for Conservation of Nature (IUCN) Rating

The IUCN studies animals and decides if a species is at risk of extinction. If a species has been surveyed, they are given a classification of their risk. In this book we have species from four of the nine levels of classification:

- **Least Concern** These species are at lowest risk of endangerment.
- **Near Threatened** These species are likely to become endangered in the near future.
- **Vulnerable** These species are at high risk of endangerment in the wild.
- **Not Classified** These species are yet to be studied or there is too little information to classify them. Most are not under threat, but some may be very rare.

Temperature regions of Western Australia



Elasmobranchii > Heterodontiformes > Heterodontidae



Port Jackson shark

Heterodontus portusjacksoni



Diet: Invertebrates

Habitat: Rocky Reef; Sandy Bottom

Biology: Venomous spines; Mainly nocturnal

Region: Temperate

Max Length (cm): 165

Elasmobranchii > Orectolobiformes > Orectolobidae



Cobbler wobbegong

Sutorectus tentaculatus



Diet: Invertebrates; Fishes

Habitat: Macroalgae; Rocky Reef

Biology: Exceptional camouflage

Region: Temperate

Max Length (cm): 100

Elasmobranchii > Lamniformes > Odontaspidae



Grey nurse shark

Carcharias taurus



Diet: Invertebrates; Fishes

Habitat: Macroalgae; Rocky Reef

Biology: Potentially dangerous

Region: Subtropical

Max Length (cm): 330

Elasmobranchii > Lamniformes > Lamnidae



Great white shark

Carcharodon carcharias



Diet: Fishes; Mammals

Habitat: Coastal; Pelagic

Biology: "Warm-blooded"; Extremely dangerous

Region: Subtropical and Temperate

Max Length (cm): 540

Elasmobranchii > Rajiformes > Rhinobatidae



Southern fiddler ray

Trygonorrhina dumerilii



Diet: Invertebrates

Habitat: Sandy Bottom; Seagrass

Biology: Mainly nocturnal

Region: Temperate

Max Length (cm): 145

Elasmobranchii > Myliobatiformes > Dasyatidae



Smooth stingray

Bathytoshia brevicaudata



Diet: Invertebrates

Habitat: Muddy Bottom; Rocky Reef; Sandy Bottom

Biology: World's largest stingray; Venomous tail spine

Region: Temperate

Max Length (cm): 430



Elasmobranchii > Myliobatiformes > Urolophidae



Striped stingaree

Trygonoptera ovalis



Diet: Invertebrates

Habitat: Rocky Reef; Seagrass

Biology: Venomous tail spine; Mainly nocturnal

Region: Temperate

Max Length (cm): 61

Elasmobranchii > Myliobatiformes > Urolophidae



Masked stingaree

Trygonoptera personata



Diet: Invertebrates

Habitat: Sandy Bottom; Seagrass

Biology: Venomous tail spine; Mainly nocturnal

Region: Subtropical

Max Length (cm): 47

Elasmobranchii > Myliobatiformes > Myliobatidae



Southern eagle ray

Myliobatis tenuicaudatus



Diet: Invertebrates

Habitat: Rocky Reef; Sandy Bottom; Seagrass

Biology: Venomous tail spine

Region: Temperate

Max Length (cm): 150

Actinopterygii > Clupeiformes > Clupeidae



Blue sprat

Spratelloides robustus



Diet: Plankton

Habitat: Coastal; Estuaries; Pelagic

Biology: Form large schools

Region: Subtropical and Temperate

Max Length (cm): 12

Actinopterygii > Anguilliformes > Muraenidae



Highfin moray

Gymnothorax pseudothyrsoides



Diet: Invertebrates; Fishes

Habitat: Rocky Reef; Coral Reef

Biology: Scavenger; Shelters in holes and crevices

Region: Tropical

Max Length (cm): 80

Actinopterygii > Beloniformes > Hemiramphidae



Southern garfish

Hyporhamphus melanochir



Diet: Plankton

Habitat: Coastal; Seagrass

Biology: Schooling; usually swim just beneath the surface

Region: Temperate

Max Length (cm): 52

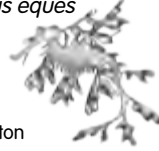


Actinopterygii > Syngnathiformes > Syngnathidae



Leafy seadragon

Phycodurus eques



Diet: Plankton

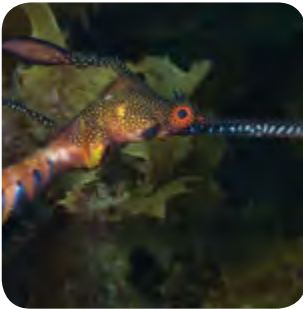
Habitat: Macroalgae; Rocky Reef; Seagrass

Biology: Exceptional camouflage; Males brood eggs in a pouch

Region: Temperate

Max Length (cm): 35

Actinopterygii > Syngnathiformes > Syngnathidae



Common seadragon

Phyllopteryx taeniolatus



Diet: Plankton

Habitat: Macroalgae; Rocky Reef; Seagrass

Biology: Males brood eggs in pouch

Region: Temperate

Max Length (cm): 46

Actinopterygii > Syngnathiformes > Syngnathidae



West Australian seahorse

Hippocampus subelongatus



Diet: Invertebrates

Habitat: Macroalgae; Rocky Reef; Seagrass

Biology: Males brood eggs in pouch

Region: Subtropical

Max Length (cm): 22

Actinopterygii > Scorpaeniformes > Scorpididae



Western red scorpionfish

Scorpaena sumptuosa



Diet: Invertebrates
Habitat: Rocky Reef
Biology: Venomous spines
Region: Subtropical
Max Length (cm): 40

Actinopterygii > Scorpaeniformes > Platycephalidae



Southern bluespotted flathead

Platycephalus speculator



Diet: Invertebrates; Fishes
Habitat: Estuaries; Muddy Bottom; Sandy Bottom; Macroalgae
Biology: Venomous spines; Mainly nocturnal
Region: Temperate
Max Length (cm): 90

Actinopterygii > Perciformes > Epinephelinae



Breaksea cod

Epinephelides armatus



Diet: Invertebrates; Fishes
Habitat: Rocky Reef
Biology: Curious, often approach divers
Region: Temperate
Max Length (cm): 56



Actinopterygii > Perciformes > Epinephelinae



Black-banded seaperch

Hypoplectrodes nigroruber



Diet: Invertebrates; Fishes

Habitat: Macroalgae; Rocky Reef

Region: Temperate

Max Length (cm): 30

Actinopterygii > Perciformes > Epinephelinae



Harlequin fish

Othos dentex



Diet: Fishes

Habitat: Rocky Reef

Biology: Large sharp teeth

Region: Temperate

Max Length (cm): 75

Actinopterygii > Perciformes > Latidae



Black sand bass

Psammoperca datnioides



Diet: Invertebrates; Fishes

Habitat: Macroalgae; Rocky Reef; Coral Reef

Biology: Pronounced lateral line

Region: Tropical

Max Length (cm): 47

Actinopterygii > Perciformes > Plesiopidae



Southern blue devil

Paraplesiops meleagris



Diet: Invertebrates
Habitat: Rocky Reef
Biology: Male guards eggs
Region: Temperate
Max Length (cm): 33

Actinopterygii > Perciformes > Plesiopidae



Bluelined hulafish

Trachinops brauni



Diet: Invertebrates
Habitat: Rocky Reef
Biology: Male guards eggs; Form small aggregations
Region: Temperate
Max Length (cm): 8

Actinopterygii > Perciformes > Plesiopidae



Yellowhead hulafish

Trachinops noarlungae



Diet: Invertebrates
Habitat: Rocky Reef
Biology: Male guards eggs; Form small aggregations
Region: Temperate
Max Length (cm): 15



Actinopterygii > Perciformes > Glaucosomatidae



West Australian dhufish

Glaucosoma hebraicum



Diet: Invertebrates; Fishes

Habitat: Rocky Reef

Biology: Mainly nocturnal

Region: Temperate

Max Length (cm): 122

Actinopterygii > Perciformes > Terapontidae



Western striped grunter

Pelates octolineatus



Diet: Invertebrates

Habitat: Sandy Bottom; Seagrass

Biology: Male guards eggs; Form large schools

Region: Subtropical

Max Length (cm): 28

Actinopterygii > Perciformes > Terapontidae



Sea trumpeter

Pelsartia humeralis



Diet: Invertebrates

Habitat: Sandy Bottom; Seagrass

Biology: Male guards eggs; Form schools

Region: Temperate

Max Length (cm): 38

Actinopterygii > Perciformes > Apogonidae



Western gobbleguts

Ostorhinchus rueppellii



Diet: Invertebrates

Habitat: Macroalgae; Rocky Reef

Biology: Mouthbrood often by males; Form pairs to breed; Mainly nocturnal; form aggregations

Region: Subtropical

Max Length (cm): 12

Actinopterygii > Perciformes > Apogonidae



Western striped cardinalfish

Ostorhinchus victoriae



Diet: Invertebrates

Habitat: Macroalgae; Rocky Reef

Biology: Mouthbrood often by males; Form pairs to breed; Mainly nocturnal; form aggregations

Region: Temperate

Max Length (cm): 8

Actinopterygii > Perciformes > Sillaginidae



King George whiting

Sillaginodes punctatus



Diet: Invertebrates

Habitat: Sandy Bottom; Seagrass

Biology: Juveniles form schools

Region: Temperate

Max Length (cm): 72



Actinopterygii > Perciformes > Sillaginidae



Southern school whiting

Sillago bassensis



Diet: Invertebrates

Habitat: Sandy Bottom

Biology: Form schools

Region: Temperate

Max Length (cm): 33

Actinopterygii > Perciformes > Pomatomidae



Tailor

Pomatomus saltatrix



Diet: Invertebrates; Fishes

Habitat: Coastal; Pelagic

Biology: "Warm-blooded"; Aggressive predator; Forms loose schools

Region: Subtropical

Max Length (cm): 130

Actinopterygii > Perciformes > Echeneidae



Sharksucker

Echeneis naucrates



Diet: Invertebrates; Fishes

Habitat: Coastal; Pelagic

Biology: Attaches to and swims with large marine species

Region: Subtropical

Max Length (cm): 110

Actinopterygii > Perciformes > Carangidae



Silver trevally

Pseudocaranx georgianus



Diet: Invertebrates

Habitat: Coastal; Estuaries; Sandy Bottom; Rocky Reef

Biology: Form large schools

Region: Temperate

Max Length (cm): 70

Actinopterygii > Perciformes > Carangidae



Yellowtail scad

Trachurus novaezelandiae



Diet: Plankton

Habitat: Estuaries; Coastal

Biology: Form large schools

Region: Subtropical

Max Length (cm): 50

Actinopterygii > Perciformes > Carangidae



Samsonfish

Seriola hippos



Diet: Invertebrates; Fishes

Habitat: Coastal; Rocky Reef

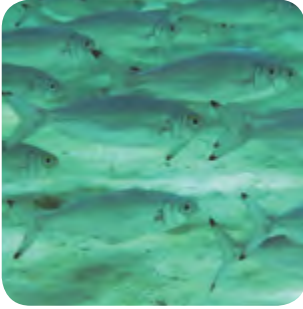
Biology: Fast swimming predator

Region: Temperate

Max Length (cm): 150



Actinopterygii > Perciformes > Arripidae



Australian herring

Arripis georgianus



Diet: Invertebrates; Fishes

Habitat: Coastal; Estuaries; Rocky Reef; Sandy Bottom

Biology: Form large schools

Region: Temperate

Max Length (cm): 41

Actinopterygii > Perciformes > Arripidae



Western Australian salmon

Arripis truttaceus



Diet: Invertebrates; Fishes

Habitat: Coastal; Estuaries; Rocky Reef; Sandy Bottom

Biology: Form large schools

Region: Temperate

Max Length (cm): 100

Actinopterygii > Perciformes > Sparidae



Adult

Tarwhine

Rhabdosargus sarba



Diet: Invertebrates

Habitat: Estuaries; Rocky Reef; Macroalgae

Biology: Form large schools

Region: Subtropical

Max Length (cm): 80



Juvenile

Actinopterygii > Perciformes > Sparidae



Pink snapper

Chrysophrys auratus



Diet: Invertebrates; Fishes

Habitat: Estuaries; Rocky Reef; Seagrass

Biology: Form large schools

Region: Subtropical

Max Length (cm): 130

Actinopterygii > Perciformes > Lethrinidae



Colour change



Colour change

Spangled emperor

Lethrinus nebulosus



Diet: Invertebrates; Fishes

Habitat: Coral Reef; Rocky Reef; Sandy Bottom; Seagrass

Biology: Can change colour; Form small schools

Region: Tropical

Max Length (cm): 87

Actinopterygii > Perciformes > Haemulidae



Goldspotted sweetlips

Plectorhinchus flavomaculatus



Diet: Invertebrates; Fishes

Habitat: Macroalgae; Rocky Reef

Biology: Form pairs to breed; Mainly nocturnal

Region: Tropical

Max Length (cm): 60



Actinopterygii > Perciformes > Nemipteridae



Western butterflyfish

Pentapodus vitta



Diet: Invertebrates

Habitat: Coral Reef; Rocky Reef; Seagrass

Region: Subtropical

Max Length (cm): 26

Actinopterygii > Perciformes > Mullidae



Blacksaddle goatfish

Parupeneus spilurus



Diet: Invertebrates

Habitat: Estuaries; Rocky Reef; Sandy Bottom; Seagrass

Biology: Uses chin barbels (whiskers) to find food

Region: Tropical

Max Length (cm): 50

Actinopterygii > Perciformes > Mullidae



Bluespotted goatfish

Upeneichthys vlamingii



Diet: Invertebrates

Habitat: Sandy Bottom

Biology: Form small schools; Uses chin barbels (whiskers) to find food

Region: Subtropical

Max Length (cm): 35

Actinopterygii > Perciformes > Monodactylidae



Western pomfred

Schuettea woodwardi



Diet: Plankton
Habitat: Rocky Reef
Biology: Form schools
Region: Subtropical
Max Length (cm): 24

Actinopterygii > Perciformes > Pempheridae



Rough bullseye

Pempheris klunzingeri



Diet: Invertebrates
Habitat: Rocky Reef
Biology: Form small schools; Bioluminescent; Mainly nocturnal
Region: Subtropical
Max Length (cm): 18

Actinopterygii > Perciformes > Pempheridae



Bigscale bullseye

Pempheris multiradiata



Diet: Invertebrates
Habitat: Rocky Reef
Biology: Form small aggregations; Bioluminescent; Mainly nocturnal
Region: Temperate
Max Length (cm): 28



Actinopterygii > Perciformes > Kyphosidae



Zebrafish

Girella zebra



Diet: Algae

Habitat: Estuaries; Macroalgae; Rocky Reef; Sandy Bottom

Biology: Form schools

Region: Subtropical

Max Length (cm): 34

Actinopterygii > Perciformes > Kyphosidae



Western buffalo bream

Kyphosus cornelii



Diet: Invertebrates

Habitat: Rocky Reef

Biology: Form small schools; Mainly nocturnal

Region: Subtropical

Max Length (cm): 18

Actinopterygii > Perciformes > Kyphosidae



Silver drummer

Kyphosus sydneyanus



Diet: Algae

Habitat: Macroalgae; Rocky Reef

Biology: Form large Schools

Region: Temperate

Max Length (cm): 80

Actinopterygii > Perciformes > Scorpididae



Stripey

Microcanthus strigatus



Diet: Algae; Invertebrates

Habitat: Rocky Reef

Biology: Form large aggregations

Region: Tropical

Max Length (cm): 16

Actinopterygii > Perciformes > Scorpididae



Footballer sweep

Neotypus obliquus



Diet: Algae

Habitat: Macroalgae; Rocky Reef

Biology: Form large aggregations

Region: Subtropical

Max Length (cm): 22

Actinopterygii > Perciformes > Scorpididae



Sea sweep

Scorpis aequipinnis



Diet: Plankton

Habitat: Rocky Reef

Biology: Form schools

Region: Temperate

Max Length (cm): 40



Actinopterygii > Perciformes > Scorpididae



Banded sea sweep

Scorpaenopsis georgiana



Diet: Plankton

Habitat: Rocky Reef

Biology: Form schools

Region: Temperate

Max Length (cm): 33

Actinopterygii > Perciformes > Scorpididae



Moonlighter

Tilodon sexfasciatus



Diet: Invertebrates

Habitat: Estuaries; Rocky Reef

Region: Subtropical

Max Length (cm): 40

Actinopterygii > Perciformes > Chaetodontidae



Western butterflyfish

Chaetodon assarius



Diet: Algae; Invertebrates

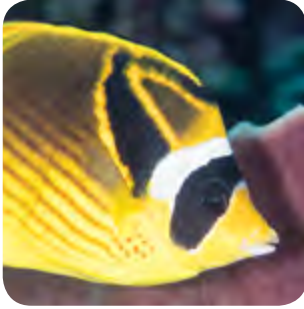
Habitat: Macroalgae; Rocky Reef

Biology: Form small aggregations; Form pairs to breed

Region: Tropical

Max Length (cm): 16

Actinopterygii > Perciformes > Chaetodontidae



Racoon butterflyfish

Chaetodon lunula



Diet: Invertebrates

Habitat: Coral Reef; Rocky Reef

Biology: Form pairs to breed; Mainly Nocturnal

Region: Tropical

Max Length (cm): 20

Actinopterygii > Perciformes > Chaetodontidae



Adult



Juvenile

Western talma

Chelmonops curiosus



Diet: Invertebrates

Habitat: Rocky Reef

Biology: Form pairs to breed

Region: Subtropical

Max Length (cm): 26

Actinopterygii > Perciformes > Enoplosidae



Old wife

Enoplosus armatus



Diet: Invertebrates

Habitat: Estuaries; Macroalgae; Rocky Reef; Seagrass

Biology: Venomous spines. Often form large aggregations

Region: Temperate

Max Length (cm): 50



Actinopterygii > Perciformes > Pomacentridae



Indo-Pacific sergeant

Abudefduf vaigiensis



Diet: Algae; Invertebrates

Habitat: Coral Reef; Rocky Reef

Biology: Form pairs to breed; Male guards eggs

Region: Tropical

Max Length (cm): 20

Actinopterygii > Perciformes > Pomacentridae



Adult



Juvenile

McCulloch's scalyfin

Parma mccullochi



Diet: Algae

Habitat: Rocky Reef

Biology: Territorial; Form pairs to breed; Male guards eggs

Region: Subtropical

Max Length (cm): 54

Actinopterygii > Perciformes > Pomacentridae



Blackhead puller

Chromis klunzingeri



Diet: Plankton

Habitat: Coral Reef

Biology: Form pairs to breed; Male guards eggs

Region: Subtropical

Max Length (cm): 6.5

Actinopterygii > Perciformes > Pomacentridae



West Australian puller

Chromis westaustralis



Diet: Plankton

Habitat: Coral Reef; Rocky Reef

Biology: Form pairs to breed; Male guards eggs

Region: Tropical

Max Length (cm): 8.5

Actinopterygii > Perciformes > Cheilodactylidae



Crested morwong

Cheilodactylus gibbosus



Diet: Algae; Invertebrates

Habitat: Rocky Reef; Sandy Bottom

Region: Temperate

Max Length (cm): 60

Actinopterygii > Perciformes > Cheilodactylidae



Redlip morwong

Cheilodactylus rubrolabiatus



Diet: Invertebrates

Habitat: Macroalgae; Rocky Reef

Region: Tropical

Max Length (cm): 40



Actinopterygii > Perciformes > Cheilodactylidae



Dusky morwong

Dactylophora nigricans



Diet: Invertebrates

Habitat: Rocky Reef; Seagrass

Region: Temperate

Max Length (cm): 120

Actinopterygii > Perciformes > Cheilodactylidae



Blue morwong

Nemadactylus valenciennesi



Diet: Invertebrates

Habitat: Macroalgae; Rocky Reef

Region: Temperate

Max Length (cm): 90

Actinopterygii > Mugiliformes > Mugilidae



Sea mullet

Mugil cephalus



Diet: Algae; Invertebrates

Habitat: Estuaries; Sandy Bottom

Biology: Form schools

Region: Subtropical

Max Length (cm): 100

Actinopterygii > Perciformes > Sphyraenidae



Longfin pike

Dinolestes lewini



Diet: Fishes

Habitat: Macroalgae; Rocky Reef; Seagrass

Biology: Form schools

Region: Subtropical

Max Length (cm): 100

Actinopterygii > Perciformes > Labridae



Western blue groper

Achoerodus gouldii



Diet: Invertebrates

Habitat: Rocky Reef

Biology: Hermaphrodite (female→male); Form pairs to breed

Region: Temperate

Max Length (cm): 175

Actinopterygii > Perciformes > Labridae



Scribbled wrasse

Anampses geographicus



Diet: Invertebrates

Habitat: Coral Reef; Macroalgae; Rocky Reef

Biology: Hermaphrodite (female→male); Form pairs to breed

Region: Tropical

Max Length (cm): 31



Actinopterygii > Perciformes > Labridae



Foxfish

Bodianus frenchii



Diet: Invertebrates

Habitat: Rocky Reef

Biology: Hermaphrodite (female→male); Form pairs to breed

Region: Subtropical

Max Length (cm): 45

Actinopterygii > Perciformes > Labridae



Male



Female

Western king wrasse

Coris auricularis



Diet: Invertebrates

Habitat: Coral Reef; Rocky Reef

Biology: Hermaphrodite (female→male); Form pairs to breed; Live in groups with dominant male

Region: Subtropical

Max Length (cm): 40

Actinopterygii > Perciformes > Labridae



Adult



Juvenile

Brownfield's wrasse

Halichoeres brownfieldi



Diet: Invertebrates

Habitat: Rocky Reef; Seagrass

Biology: Hermaphrodite (female→male)

Region: Subtropical

Max Length (cm): 15

Actinopterygii > Perciformes > Labridae



Blackspotted wrasse

Austrolabrus maculatus



Diet: Invertebrates

Habitat: Rocky Reef

Biology: Hermaphrodite (female→male); Form pairs to breed

Region: Temperate

Max Length (cm): 13

Actinopterygii > Perciformes > Labridae



Common cleanerfish

Labroides dimidiatus



Diet: Invertebrates; Plankton

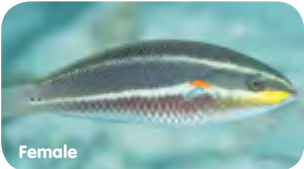
Habitat: Coral Reef; Rocky Reef

Biology: Hermaphrodite (female→male); Form cleaning stations where they live and clean other fish of invertebrate parasites

Region: Tropical

Max Length (cm): 14

Actinopterygii > Perciformes > Labridae



Redspot wrasse

Stethojulis bandanensis



Diet: Invertebrates

Habitat: Rocky Reef; Sandy Bottom

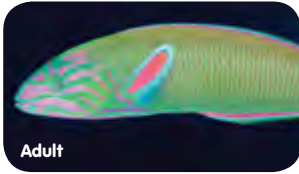
Biology: Hermaphrodite (female→male)

Region: Tropical

Max Length (cm): 15



Actinopterygii > Perciformes > Labridae



Moon wrasse

Thalassoma lunare



Diet: Invertebrates

Habitat: Rocky Reef; Sandy Bottom

Biology: Hermaphrodite (female→male)

Region: Subtropical

Max Length (cm): 45

Actinopterygii > Perciformes > Labridae



Green moon wrasse

Thalassoma lutescens



Diet: Invertebrates

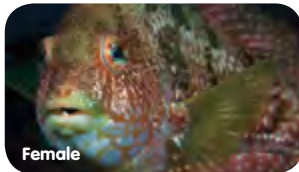
Habitat: Rocky Reef; Sandy Bottom

Biology: Hermaphrodite (female→male); Form pairs to breed

Region: Subtropical

Max Length (cm): 30

Actinopterygii > Perciformes > Labridae



Brownspeckled wrasse

Notolabrus parilus



Diet: Invertebrates

Habitat: Rocky Reef

Biology: Hermaphrodite (female→male); Form pairs to breed

Region: Temperate

Max Length (cm): 45



Actinopterygii > Perciformes > Labridae



Redband wrasse

Pseudolabrus biserialis



Diet: Invertebrates

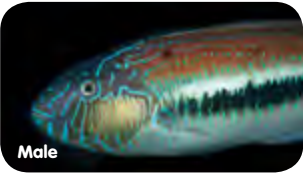
Habitat: Macroalgae; Rocky Reef

Biology: Hermaphrodite (female→male); Form pairs to breed

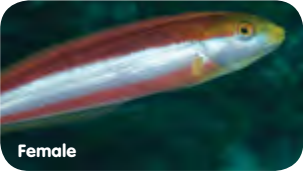
Region: Temperate

Max Length (cm): 18

Actinopterygii > Perciformes > Labridae



Male



Female

Southern Maori wrasse

Ophthalmolepis lineolatus



Diet: Invertebrates

Habitat: Sandy Bottom

Biology: Hermaphrodite (female→male); Form pairs to breed

Region: Temperate

Max Length (cm): 40

Actinopterygii > Perciformes > Labridae



Baldchin groper

Choerodon rubescens



Diet: Invertebrates

Habitat: Coral Reef; Macroalgae; Rocky Reef

Biology: Hermaphrodite (female→male); Form pairs to breed

Region: Subtropical

Max Length (cm): 90



Actinopterygii > Perciformes > Odacidae



Rainbow cale

Heteroscarus acroptilus



Diet: Algae

Habitat: Macroalgae; Rocky Reef

Biology: Hermaphrodite (female→male)

Region: Temperate

Max Length (cm): 24

Actinopterygii > Perciformes > Odacidae



Pencil weed whiting

Siphonognathus beddomei



Diet: Algae

Habitat: Macroalgae; Rocky Reef

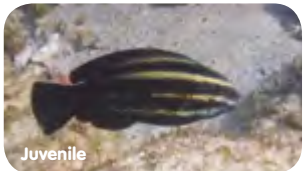
Region: Temperate

Max Length (cm): 12

Actinopterygii > Perciformes > Scaridae



Adult



Juvenile

Steephead parrotfish

Chlorurus microrhinos



Diet: Algae

Habitat: Coral Reef; Macroalgae; Rocky Reef

Biology: Forms Schools; Hermaphrodite (female→male)

Region: Tropical

Max Length (cm): 70

Actinopterygii > Perciformes > Scaridae



Bullethead parrotfish

Chlorurus spilurus



Diet: Algae

Habitat: Coral Reef; Macroalgae; Rocky Reef

Biology: Hermaphrodite (female -> male); Form pairs to breed

Region: Tropical

Max Length (cm): 40

Actinopterygii > Perciformes > Scaridae



Bluebarred parrotfish

Scarus ghobban



Diet: Algae

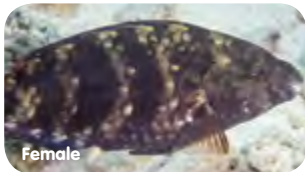
Habitat: Rocky Reef; Coral Reef; Sandy Bottom

Biology: Hermaphrodite (female -> male); Form pairs to breed

Region: Tropical

Max Length (cm): 90

Actinopterygii > Perciformes > Scaridae



Schlegel's parrotfish

Scarus schlegeli



Diet: Algae

Habitat: Rocky Reef; Coral Reef; Sandy Bottom

Biology: Hermaphrodite (female -> male); Form pairs to breed; Territorial

Region: Tropical

Max Length (cm): 40



Actinopterygii > Perciformes > Pinguipedidae



Wavy grubfish

Parapercis haackei



Diet: Algae

Habitat: Macroalgae; Rocky Reef

Biology: Hermaphrodite (female→male)

Region: Subtropical

Max Length (cm): 24

Actinopterygii > Perciformes > Blenniidae



Filamentous blenny

Cirripectes filamentosus



Diet: Algae

Habitat: Coral Reef; Rocky Reef

Biology: Can tolerate a wide range of environmental conditions

Region: Tropical

Max Length (cm): 7.5

Actinopterygii > Perciformes > Callionymidae



Finger dragonet

Dactylopus dactylopus



Diet: Invertebrates

Habitat: Macroalgae; Sandy Bottom

Biology: Uses spines to 'walk' over bottom

Region: Tropical

Max Length (cm): 30

Actinopterygii > Perciformes > Callionymidae



Longspine dragonet

Pseudocalliurichthys goodladi



Diet: Invertebrates
Habitat: Sandy Bottom
Biology: Well camouflaged
Region: Tropical
Max Length (cm): 22

Actinopterygii > Perciformes > Gobiidae



Whitebarred goby

Amblygobius phalaena



Diet: Algae; Invertebrates
Habitat: Macroalage; Rocky Reef; Seagrass
Biology: Form pairs to breed; Males brood eggs
Region: Tropical
Max Length (cm): 15

Actinopterygii > Perciformes > Siganidae



Black rabbitfish

Siganus fuscescens



Diet: Algae
Habitat: Macroalgae; Rocky Reef; Seagrass
Biology: Venomous spines; Form schools
Region: Tropical
Max Length (cm): 40



Actinopterygii > Perciformes > Scombridae



Spanish mackerel

Scomberomorus commerson



Diet: Fishes

Habitat: Coastal; Pelagic

Biology: Form small schools

Region: Tropical

Max Length (cm): 240

Actinopterygii > Pleuronectiformes > Paralichthyidae



Smalltooth flounder

Pseudorhombus jenynsii



Diet: Invertebrates

Habitat: Estuaries; Muddy Bottom; Sandy Bottom

Biology: Both eyes on same side of body as adults; Mainly nocturnal

Region: Subtropical

Max Length (cm): 34

Actinopterygii > Tetraodontiformes > Monacanthidae



Yellowstriped leatherjacket

Meuschenia flavolineata



Diet: Algae; Invertebrates

Habitat: Rocky Reef

Region: Temperate

Max Length (cm): 30

Actinopterygii > Tetraodontiformes > Monacanthidae



Bluelined leatherjacket

Meuschenia galii



Diet: Algae; Invertebrates

Habitat: Rocky Reef

Region: Temperate

Max Length (cm): 34

Actinopterygii > Tetraodontiformes > Monacanthidae



Horseshoe leatherjacket

Meuschenia hippocrepis



Diet: Algae; Invertebrates

Habitat: Macroalgae; Rocky Reef

Region: Temperate

Max Length (cm): 51

Actinopterygii > Tetraodontiformes > Monacanthidae



Fanbelly leatherjacket

Monacanthus chinensis



Diet: Algae; Invertebrates

Habitat: Estuaries; Macroalgae; Rocky Reef; Sandy Bottom

Region: Tropical

Max Length (cm): 38



Actinopterygii > Tetraodontiformes > Aracanaidae



Western smooth boxfish

Anoplocapros amygdaloides



Diet: Invertebrates

Habitat: Macroalgae; Rocky Reef; Sandy Bottom

Region: Subtropical

Max Length (cm): 30

Actinopterygii > Tetraodontiformes > Aracanaidae



Male



Female

Whitebarred boxfish

Anoplocapros lenticularis



Diet: Invertebrates

Habitat: Macroalgae; Rocky Reef; Sandy Bottom

Region: Temperate

Max Length (cm): 33

Actinopterygii > Tetraodontiformes > Tetraodontidae



Weeping toadfish

Torquigener pleurogramma



Diet: Invertebrates

Habitat: Estuaries; Coastal; Sandy Bottom

Biology: Poisonous

Region: Subtropical

Max Length (cm): 21



Actinopterygii > Tetraodontiformes > Tetraodontidae

North-west blowfish

Lagocephalus sceleratus



Diet: Invertebrates; Fishes

Habitat: Rocky Reef; Sandy Bottom

Biology: Poisonous

Region: Tropical

Max Length (cm): 110



Did you know?

Some species, like this western striped cardinalfish, care for their offspring by holding them in their mouth. The eggs are kept in the mouth of one of the parent's and held there until after they hatch. They are released once the juveniles can swim. While the larvae are in the parent's mouth it is difficult for the parent to feed.



Image credits

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Location on page: T – top, M – middle, B – bottom, L – left, R – right

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Samantha Andrzejczek Pg: 17, 19

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Illustrations

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City of Cockburn Pg: 25

Shaun P. Collin Pg: 9

Juliet Corley Pg: 49M, 49B, 52T, 52M, 52B, 55T, 57T, 57M, 58T, 59M, 59B, 61M, 62B, 65T, 66M, 68T, 68M, 69T, 70T, 70M, 70B, 71T, 71M, 71B, 73M, 73B, 75B, 77T, 77M, 77B

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Glossary

Abundance - The number of individuals of a species or group of species

Aggregation - A grouping of fish in a location

Bioluminescent - A species that produces or emits light

Breed - To mate and produce offspring (babies)

Brood - When a parent cares for juveniles after they have hatched

Camouflage - The ability to hide presence by blending into the surroundings

Diversity - The number of different species

Ecosystem - A community of organisms and their environment

Endemic - a species only found in a restricted area

Habitat - The natural environment in which a species lives

Microorganism - an organism that cannot be seen by the human eye (often bacteria, viruses, or fungi)

Nocturnal - A species that is active at night

Predator - An animal that hunts or preys upon other animals

Prey - An animal that is hunted and killed by another for food

Scavenger - A species that feeds of dead animals

School - A group of fish that swim together as a group in a coordinated way

Spawning - The release of eggs

Species - A group of organisms that can mate with one another to produce fertile offspring

Subtropical - Region outside the tropics, often have hot summers and cool winters

Sustainable - Able to be maintained without causing further damage

Temperate - Between the subtropics and polar regions, cool temperatures sometimes getting below freezing

Territorial - Taking possession and protecting a home range from individuals of the same or different species

Toxic - Poisonous substances or conditions

Tropical - Region of the Earth surrounding the equator, home to warm water species

Further reading

If you enjoy knowing what you see when you go underwater then we would recommend taking a look at the following resources:

Books

- *Sea Fishes of Southern Australia*, Barry Hutchins and Roger Swainston
- *Sharks and Rays of Australia*, Peter Last and John Stevens
- *Field Guide to Marine Fishes of Tropical Australia and South-East Asia*, Gerald R Allen

Websites

- **Fishes of Australia**

www.fishesofaustralia.net.au

An online resource for information on the diversity and biology of Australia's marine and freshwater fishes.

- **FishBase**

www.fishbase.org

A global database of fish species with great information on just about any species you can think of.

- **DPIRD: Fisheries Division**

www.fish.wa.gov.au

Responsible for managing fisheries in Western Australia. Information and guides on recreational fish size and bag limits can be found here as well as information on protected fish and commercial fisheries.

- **Dept of Biodiversity Conservation and Attractions**

www.dbca.wa.gov.au

Responsible for the protection and management of the marine and terrestrial environment in WA. The Rottneest Island Authority and the Parks and Wildlife Service can be accessed here providing information on the marine environment, protected areas, and key species.

- **Reef Life Survey**

<https://reeflifesurvey.com/>

A citizen science program in where divers undertake surveys of reef biodiversity on rocky and coral reefs around the world. This is a great resource to assist and improve upon fish identification.

- **Redmap**

www.redmap.org.au

The Range Extension Database and Mapping project is where you can share sightings of species that are uncommon in your area.

- **RecFishWest Kids Corner**

www.ilovefishing.com.au/kids-corner

A great resource for young fishers to learn more about how, where and what to catch.

- **iNaturalist**

www.inaturalist.org/projects/australasian-fishes

Here pictures can be submitted to be identified by experts for use in research.

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AUSTRALIA**

Oceans Institute



western australian
marine science institution

This book is offered free of charge to schools around Perth.

With 179 colour images, 112 illustrations, and a description of 106 fish species, *Perth Fish* provides an introduction to unique marine life found off our coast.

The Indian Ocean is our backyard playground with many wonders that lie just beneath the surface. With an introduction into the diversity of life found in the ocean, the threats that face it, and some of the efforts that are made to protect our marine life; this book aims to inspire future generations to explore, identify and enjoy the world's oceans.