



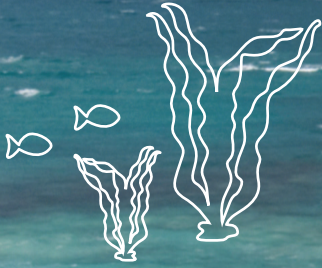
JUNIOR RANGERS



COASTAL AND

MARINE

ACTIVITY



BOOK



Sharing
Nature's
Stories

THE GREAT SOUTHERN REEF



DEFINITION: BIODIVERSITY

BIO means life. DIVERSITY means lots of different types.

Coastlines along Victoria are a mixture of east and west waters.

Victoria's marine and coastal habitats form a part of the Great Southern Reef. This is a patchy rocky reef, rich in biodiversity, that extends all the way from Southern Queensland to Western Australia. Most of the species that live on the Great Southern Reef are found nowhere else in the world.

Habitats, such as rocky reefs support a wide range of animals and plants. In rocky reefs, you can find a range of marine plants, like kelp and seagrass. There are also many colourful endemic animals. This include invertebrate like nudibranchs, or fish like the Blue Devil Fish.

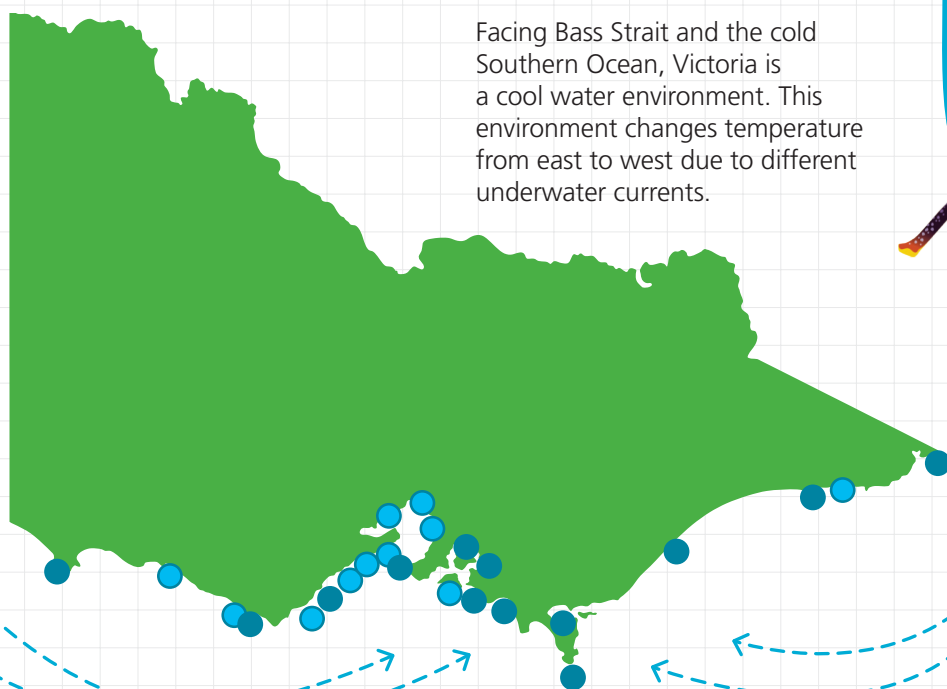
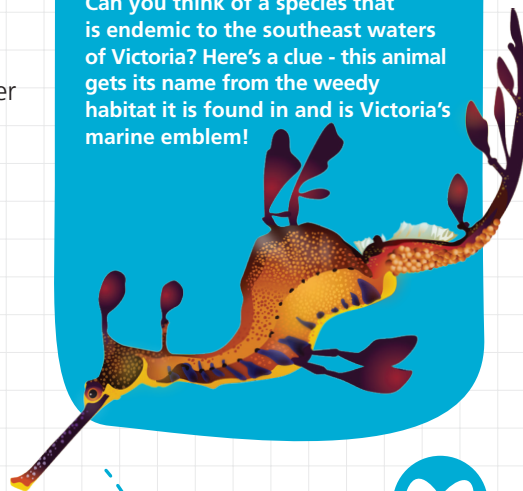
Marine habitats include all underwater areas below the high tide mark and the ocean surface. Coastal habitats include the sandy and rocky areas where the land meets the ocean.

Facing Bass Strait and the cold Southern Ocean, Victoria is a cool water environment. This environment changes temperature from east to west due to different underwater currents.

DEFINITION: ENDEMIC

An ENDEMIC species is an animal that is only found in that location.

Can you think of a species that is endemic to the southeast waters of Victoria? Here's a clue - this animal gets its name from the weedy habitat it is found in and is Victoria's marine emblem!



Parks Victoria rangers work hard to protect 13 marine national parks and 11 marine sanctuaries along the coast of Victoria.

- Marine national park
- Marine sanctuary

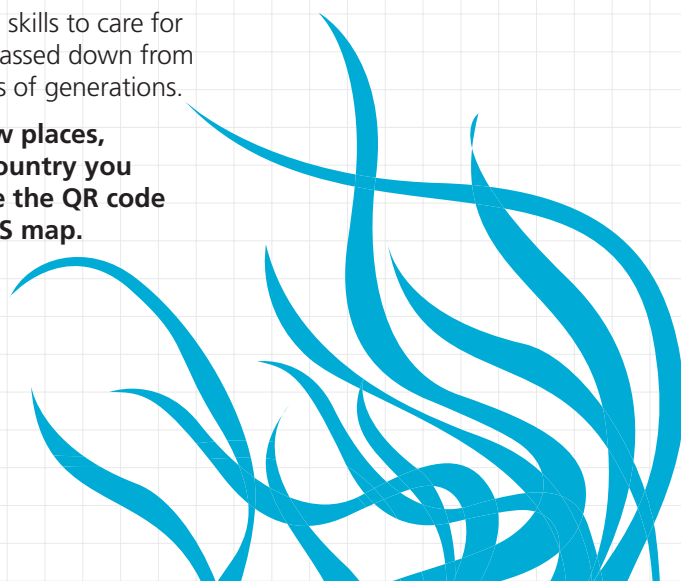
Traditional Owners and Sea Country

Traditional Owners are the first scientists, first storytellers, first farmers and First Peoples of Country. They describe Country as the lands, seas, waterways, plants, and animals that they are connected to.

Coastal and marine environments are just some of the places that Traditional Owners have an ongoing connection with. They are the custodians of Sea, Land and Sky Country.

The knowledge and skills to care for Country has been passed down from Elders for thousands of generations.

When visiting new places, find out whose Country you are exploring. Use the QR code to visit the ACHRIS map.



MIRACULOUS MIGRANTS

ARE YOU A CITIZEN SCIENTIST?

Check out Tangaroa Blue and learn how citizen science actions around the world contribute to clean beaches.



Animals that migrate move from one place to another. These journeys can be close by or very far away.

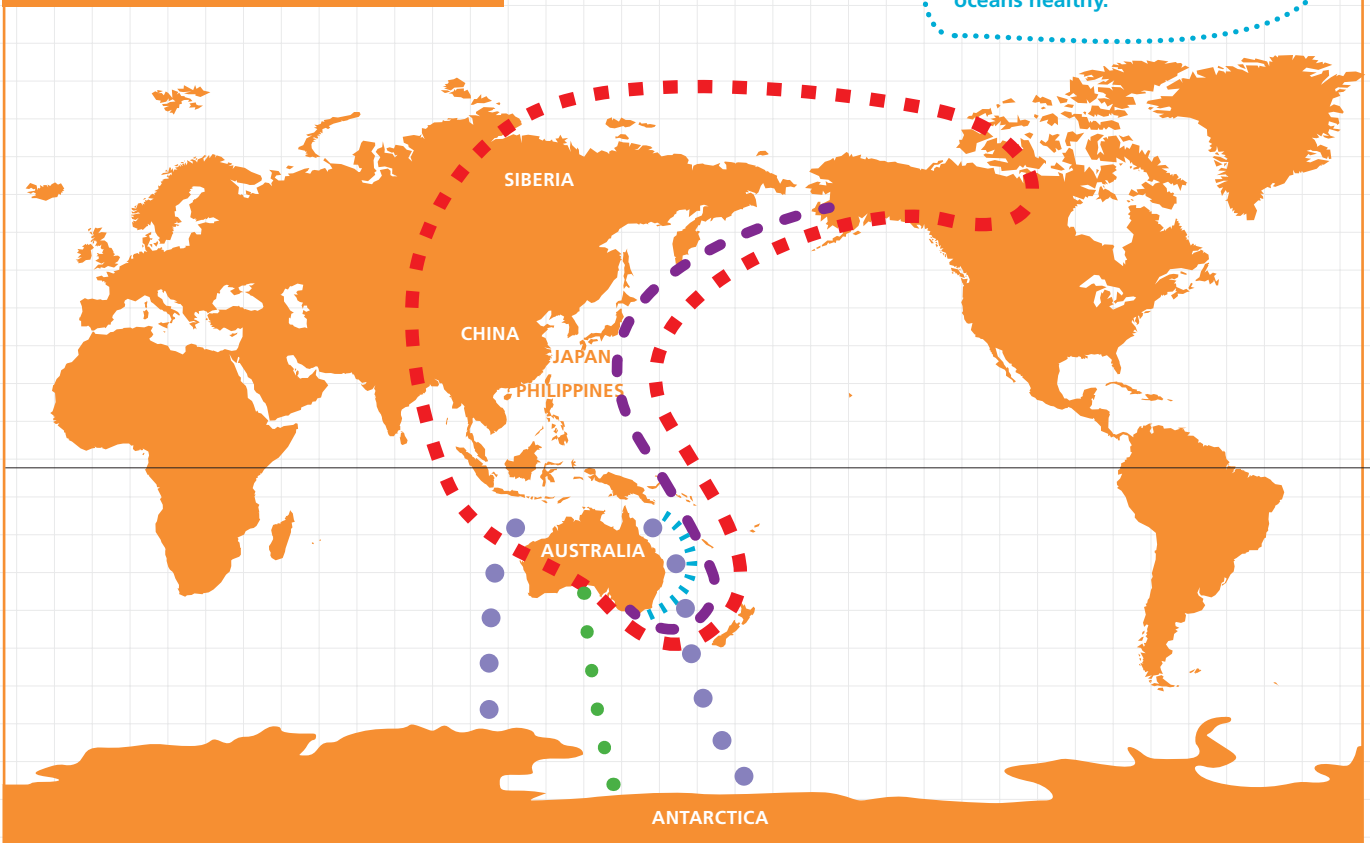
There are many reasons why animals migrate to and from marine and coastal habitats. Can you think of the different ways animals might travel? In the coastal and marine habitats, animals can migrate by flying or by swimming distances.

JUNIOR RANGERS TIP!



Water pollution and plastic is a threat to marine and coastal life. Pollution and plastic can travel long distances on ocean currents, breaking into smaller and smaller pieces. Next time you are at the beach and you notice an object that shouldn't be there, ask an adult to help you pick it up and recycle it. This will help keep the oceans healthy.

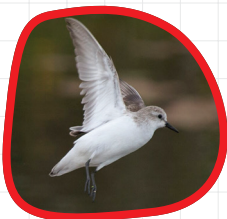
Use the colours and clues to match each animal to its migratory path.



SOUTHERN HEMISPHERE | NORTHERN HEMISPHERE



Short-tailed Shearwaters travel to the Aleutian Islands near Alaska each year. This is a migration path of 15,000kms.



Red Necked Stints travel as far as Siberia to complete their migration.



Humpback Whales travel to Antarctica during the warmer months of the southern hemisphere.



Southern Right Whales complete their migration by exploring the southern waters of Western Australia, South Australia, Victoria and Tasmania.



Short-finned and Long-finned Eels make an interesting journey from freshwater rivers and lakes in Victoria to the salty ocean.

INTERTIDAL ZONE TREASURE HUNT

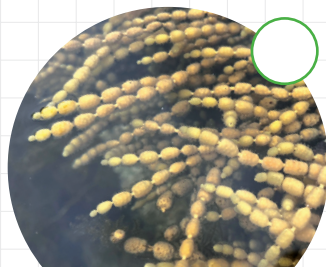


Animals and plants that live in the intertidal zone have very cool adaptations.

The area of the shore between the high and low tide marks is called the **intertidal zone**. Animals and plants that live here must survive both under and out of the water at different times as the tide moves in and out.

JUNIOR RANGERS TIPS!

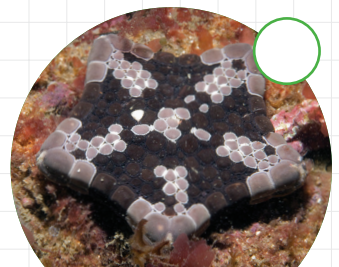
- 1 Rockpools are best explored at low tide.
- 2 Wear sturdy shoes that protect your feet and can get wet.
- 3 Tread carefully, avoiding squashing plants and animals as you explore.
- 4 Remember to only look closely so that you don't disturb the habitat.
- 5 Rockpools are often in protected areas, remember that everything in nature has a place and a purpose – it is best to only take pictures and leave everything you find undisturbed.



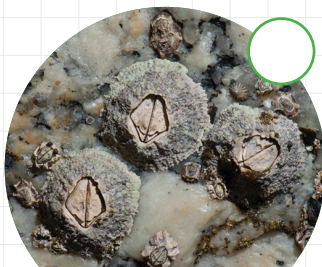
Neptune's Necklace



Limpets



Seastar



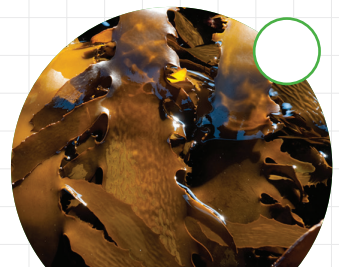
Barnacles



Blue Periwinkles



Anemone



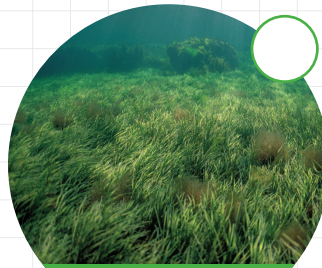
Golden Kelp



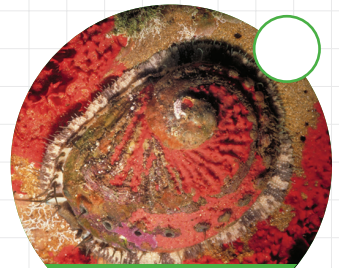
Mussels



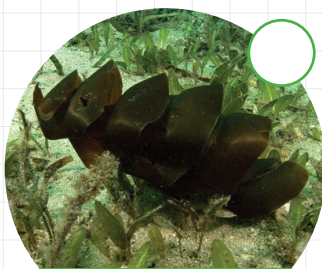
Crab



Seagrass



Abalone



Port Jackson Shark egg case



Sea lettuce



Pacific Gull

When exploring rockpools, ensure you can always see your finger tips! Octopus naturally hide in these habitats and can harm you if they feel threatened by prying fingers.



ABOVE AND BELOW

Animals that live in marine and coastal habitats are connected.

Underneath the water, the marine environment comes alive! It is important to remember that what happens above the water on the coast is connected to life underwater.

The Pied Cormorant is lucky to be able to experience both of these beautiful habitats. Living above water and diving deep to find its favourite food; fish, small crabs and shrimp. The Pied Cormorant is an excellent diver, being able to hold their breath and dive more than ten metres to catch their prey!

FUN FACT!

Pied Cormorant feathers are not waterproof. You might see them drying their wings after diving for a snack.



THE JUNIOR RANGERS WAY!

To explore underwater habitats, you might try snorkelling.

When you are underwater, remember to be careful not to touch anything, including when you are exploring under a pier.

Be careful your fins don't knock any precious habitat.



Can you find some of the animals living within the coastal and marine environments? Species names can go left-to-right, right-to-left and top-to-bottom.



B D Y I P V S O U T H E R N R I G H T W H A L E Y
 A H C O M M O N H E R M I T C R A B S L E U R T D
 R K D K A O U S D K H B L U E D E V I L F I S H L
 C R G K V N T G K R A H S N O S K C A J T R O P O
 R E G B A O H N M C A B Q E R T Y U I O P L K J N
 O H W U V N E O S Y T E M N V B C Z A S D F G H G
 T C E R P G R G A D R E D N E C K E D S T I N T S
 A T L R I H N E B J E G Y W R S P O I Y N Q W E P
 R A R U E J D B I K J H O E C D R E S A O R T Y I
 O C U N D L U B S L K L P A O F D F G H G U I O N
 C R C A C L M O C C O W F I S H M L K J A P L K E
 E E E N O U P W U Z X C V B N N L A S D R G H J D
 D T N D R G L D I F G H J K U C V B N M D F D S S
 N S O O M C I E T L Q W R E D J K O P L A X Z A E
 E Y T L O I N T S T Y U I O I S A D G H E C V B A
 D O S P R F G T A F H J K P B T Y E L J S Q M N U
 L D H H A I S O E S P I D E R C R A B K Y W E T R
 O E C I N C Q P S G S A D Z A U I O P Q D U Y R C
 G I A N T A U S T R A L I A N C U T T L E F I S H
 I P E O Q P I W A E T R Y U C I O P K A E L J H I
 N G B D A Y D S R Y M N B V H C Z A S D W D F G N

- | | | | |
|-----------------------------|--------------------|--------------------|-------------------------|
| Weedy Seadragon | Verco's Nudibranch | Pied Oystercatcher | Long Spined Sea Urchin |
| Giant Australian Cuttlefish | Spider Crab | Beach Stone Curlew | Port Jackson Shark |
| Hermit Crab | Blue Devil Fish | Pied Cormorant | Biscuit Seastar |
| Southern Right Whale | Red-necked Stint | Cowfish | Southern Dumpling Squid |
| Burrnunan Dolphin | Pacific Gull | Decorator Crab | Spotted Wobbegong |

EXPLORING UNDERWATER FORESTS

Scientists know that seaweed and seagrass are important for a healthy world. Just like trees, they absorb a lot of carbon – helping to fight a changing climate.



You will find a whole world of plants on the sea floor.

Seaweed and seagrasses grow underwater. These plants provide important shelter for animals to hide, they can be food and they create oxygen for our world to breathe. Have you ever wondered what the difference between seagrass and seaweed is?

Seaweed is algae. Algae is a group of species that use energy from the sun and release oxygen. They are different to plants, as they do not have roots, leaves or flowers.

Seaweeds can often be found floating with the ocean currents. When seaweed first starts to grow, it is held to rocks by a holdfast. A holdfast grips the end of the weed to a rock.

You might have seen the algae Giant Kelp or Bull Kelp washed up on the shore.

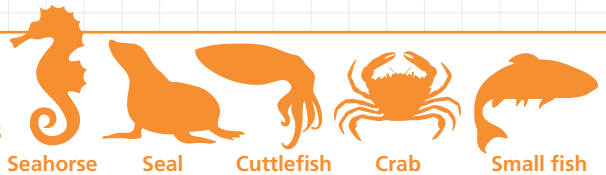


Seagrasses are plants, using energy from sunlight for photosynthesis. Photosynthesis help the plants grow. The process creates oxygen which is released into the water and air. We can breathe easy when plants photosynthesise!

Seagrass grows in the sandy sea floor. Roots on the base of the plant help secure the seagrass in place and to source nutrients from the seabed. Just like plants on land, seagrass have roots, leaves and flowers.



Draw the animals living in or passing through the seagrass and seaweed.



Seahorse

Seal

Cuttlefish

Crab

Small fish

UNEXPECTED UNDERWATER HABITATS



THE JUNIOR RANGERS WAY!

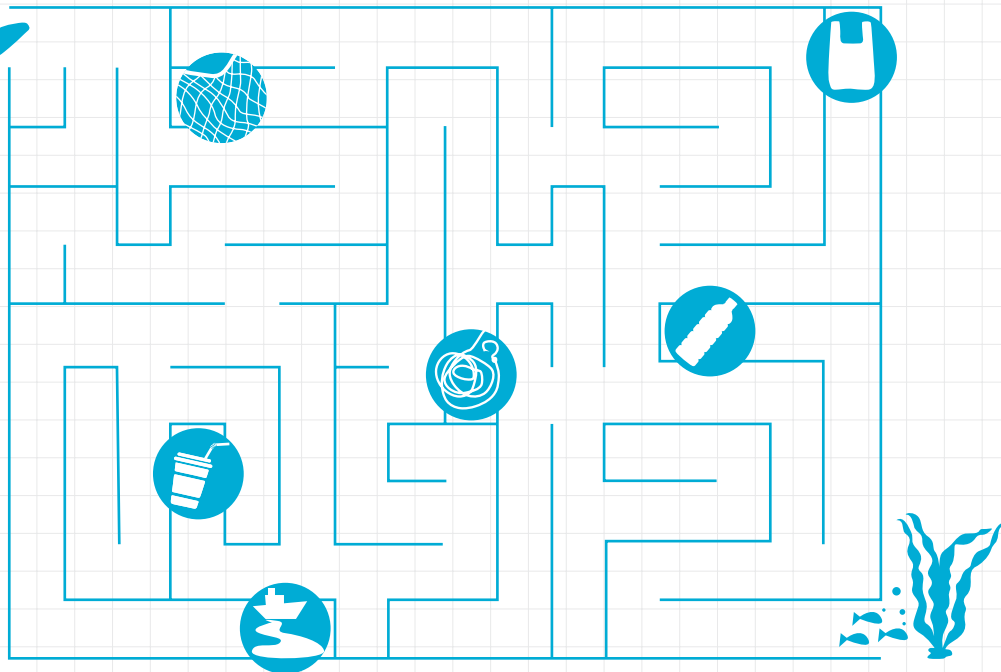
All waterways lead to the ocean. Help keep rivers, creeks, streams and the ocean healthy by protecting storm drains from litter.

Healthy rivers, creeks and streams are important in keeping our oceans healthy too.

It is important for rivers, creeks and streams to be healthy, free from plastic and pollution, for wildlife and plants to live there. Rivers, creeks and streams have a long journey across the land before the freshwater arrives at the coastal and marine habitat.

Eels are one of a few animals that have evolved to travel between fresh and salty water.

Help the Short-finned Eel find its way from the freshwater streams to the sea. Watch out for pollution along the way!



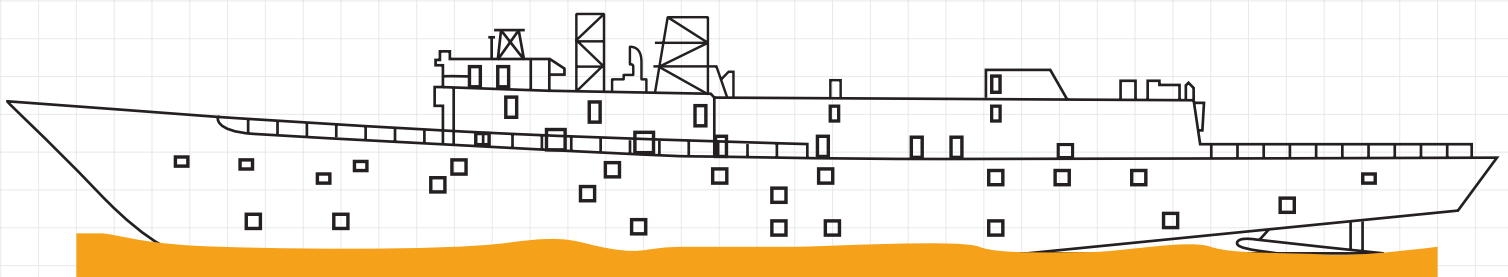
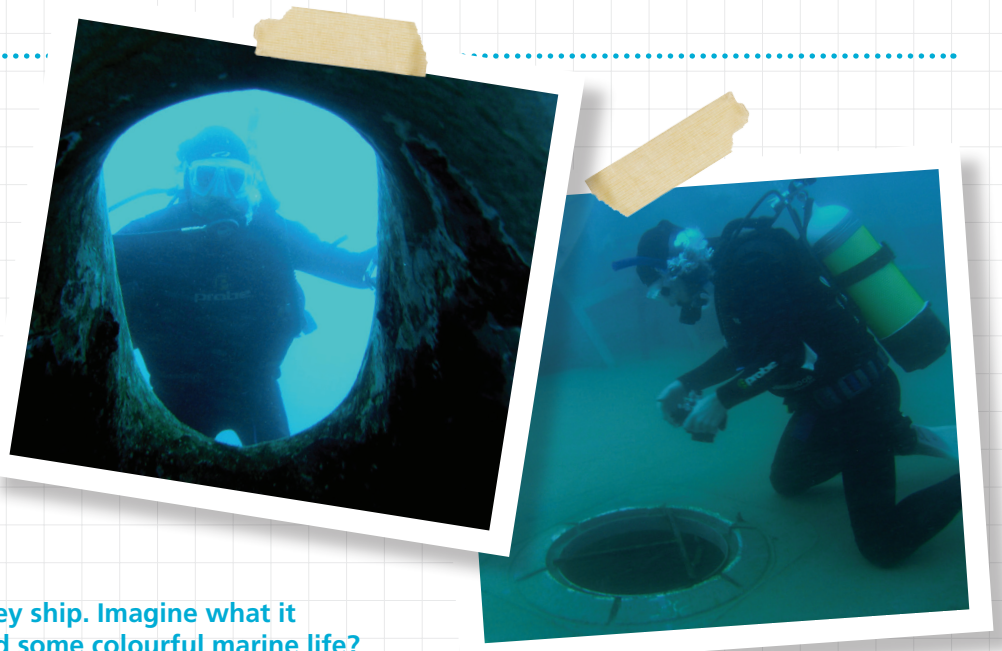
Shipwreck

Ex-HMAS Canberra, Bass Strait


Another sort of underwater habitat can be found sitting on the ocean floor. Shipwrecks around the world provide structure for marine life to grow on. This creates habitat for animals to live and explore.

The Ex-HMAS Canberra sits 28 metres below the sea surface on a sandy floor. Parks Victoria rangers venture below the surface to ensure this protected habitat is safe for other divers to explore.

The Ex-HMAS Canberra was a grey ship. Imagine what it might look like now. Can you add some colourful marine life?



TWITCHER ON THE SAND

 Victoria's networks of parks and reserves form the core of Aboriginal cultural landscapes. Parks Victoria acknowledges the continuing connection that Traditional Owners have to these landscapes and recognises their ongoing role in caring for Country on which we learn, play and live.

Did you know that someone who loves to go bird watching is called a 'twitcher'?

Above the high tide line and within the sand dunes are very important coastal habitats for beach nesting birds. Sand provides a soft space to lay eggs with some **camouflage** from predators.

Coastal birds must be very careful not to let their eggs or young become too cold or hot. They keep the temperature consistent by sitting on the nest.

It is important that nesting birds are not disturbed so that their young can survive the harsh winds, hot sun and chilly temperatures of coastal habitats.

Become a Twitcher! If you notice a bird you haven't seen before, check out 'Birds in Backyards' to see if you can identify it.



JUNIOR RANGERS TIP: WATCH FROM AFAR!

To ensure that you don't upset chicks and their parent birds, watch the shorebirds from the seawaters edge.



Dogs can often scare birds away from their precious nests or chicks. Keeping your dog on a leash and playing down at the waters edge, ensures the coastal birds can protect their eggs and chicks.

Match the shorebird to the perfect nest area. Use the clues to help you work out which nest belongs to which coastal bird.



Sooty Oystercatcher's sometimes build their nests in rockpool areas.



© Mitch Burrows



Hooded Plover's build their nest close by to sticks or dried kelp.



Little Penguin's sometimes need help building their nests when erosion or housing development interrupt their habitat.



DEFINITION: CAMOUFLAGE

To blend in or be disguised in their surroundings. Can you see why some birds lay their eggs near the dried seaweed? It helps them to be camouflaged!