

JUNIORRANGERS.COM.AU

JUNIOR RANGERS AT RICKETTS POINT MARINE SANCTUARY



KEEP OUR
PARKS WILD



JUNIOR RANGERS



WELCOME TO RICKETTS POINT MARINE SANCTUARY

If you live in or around Melbourne, chances are Ricketts Point is your closest Marine Sanctuary – an amazing place where you, your family, and your friends, can come any time of the year to experience fascinating and unique underwater wildlife.

A Marine Sanctuary, like the one you stand in today, is a special, protected water environment. It's protected so that all the wonderful fish, crabs, barnacles, snails and algae that call this part of the world home, can have a safe place to grow, live, eat and look after their families – just like us!

Ricketts Point stretches all the way along Beaumaris foreshore from Table Rock to Quiet Corner, with seagrass meadows, rock pools, foreshore and open waters to explore!

In the rock pools – you'll find green, brown and red algae, or seaweed, and lots of different snails, sea stars, crabs, limpets, barnacles, anemones, urchins and more! These animals live in one of the harshest possible environments. In one day they must survive in the heat of direct sun at low tide, and the underwater waves, currents and hungry sea creatures at high tide. As you explore the sanctuary, you will see that all these creatures have special adaptations to this lifestyle, such as the shell of a snail, suction of a limpet and the outer skeleton of a crab.

Beyond the rock pools and under the water lie quiet seagrass meadows. Here, you'll find the baby sea creatures that use the seagrass as a nursery to keep them safe. When they are big enough, they will venture out into the rock pools or open ocean and join the adult fish, rays and sharks!



WHO'S HIDING?

When you're investigating the rock pools, remember to keep all your fingers in sight! Cracks in rocks and dark areas are great areas for creatures that may find your fingers tasty or threatening!

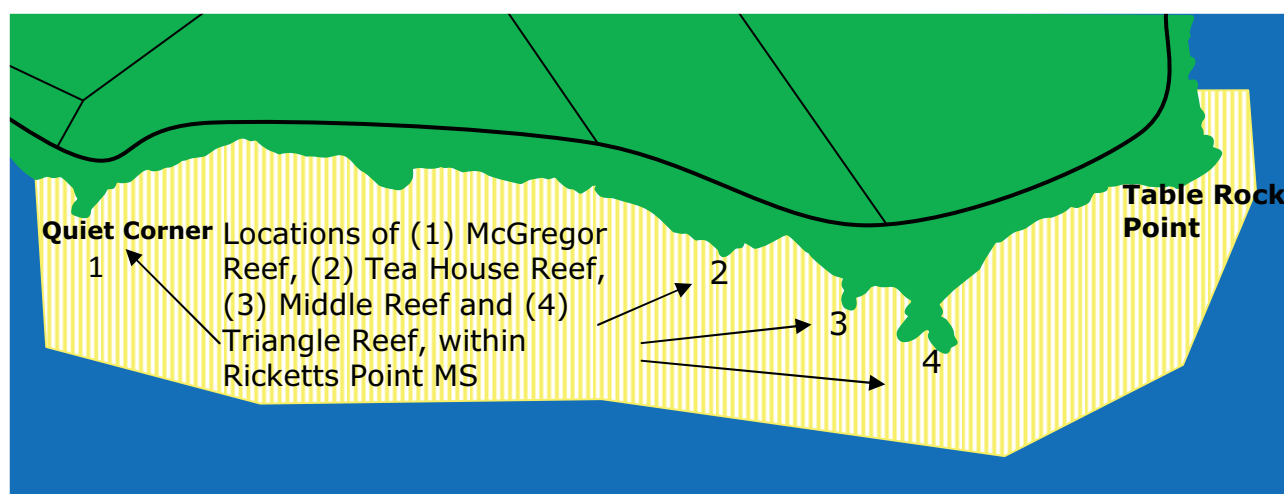
JUNIOR RANGERS



Back onshore, there are even more creatures to be found living along the beach in the wrack that washes up from the ocean waves. In this decaying algae lives countless little insects called amphipods and isopods, as well as sea stars, young snails and worms. Why not get out the magnifying glass to try and find some of the residents of the wrack!



You can explore all these exciting habitats by patrolling the beaches and combing through the wrack, rambling over the rock pools or even brave the water and go snorkelling!



Look out for these shapes in the rocks. They are burrows created by shrimps over 4 million years ago!

How many can you find?



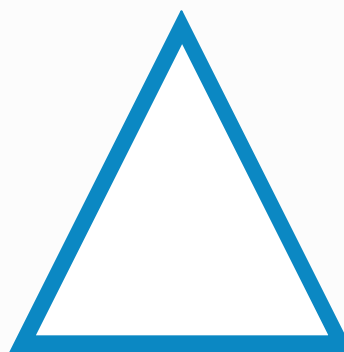
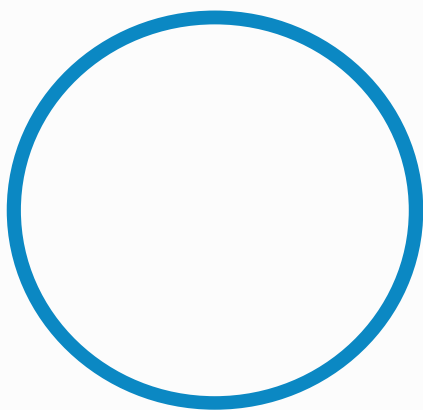
JUNIOR RANGERS

BORN TO EXPLORE



SHAPING UP OUR ROCKPOOLS

Here's a game you can play at Ricketts Point – use your keen eyes to spot as many creatures among the rock pools that match the below shapes – you'll be surprised how many there are!



Hi there! I'm a Bearded Crab – you can see me now, but underwater my disguise helps me travel throughout Ricketts Point almost undetected! *Use the shapes above to draw creatures like me that you find in the water!*

JUNIOR RANGERS



RICKETTS POINT FIND-A-WORD

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

Bearded Crab	Born To Explore	Ecosystem
Junior Rangers	Marine Sanctuary	No Fishing
Protected	Ricketts Point	Rockpools
Weedy Seadragon	Seagrass	Shrimp Burrows
Snorkelling	Rocky Reef	Tides

Fascinating Fact!

In 2002, 13 Marine National Parks and 11 Marine Sanctuaries were created in Victoria to protect over 5% of our coastal waters. This was the first time ever (in the world!) this many marine parks were created at one time!



JUNIOR RANGERS



SEAWEED DISCOVERY



EXPLORE VICTORIA'S BEACHES AND DISCOVER WHY SEAWEED ISN'T JUST A SMELLY WEED.

Seaweed is very important, it provides marine animals with food and shelter and is used by humans for food, medicines and fertilisers.

Seaweed can be found anywhere along Victoria's coast. Fresh seaweed is washed up every day along the daily tide line and along the high tide mark you can find plants and animals that have been there for a bit longer.

Before you start:

For your safety, always visit the beach at low tide and with an adult. Never touch sharp objects. Wear a hat, long-sleeved shirt and sunscreen to avoid sunburn.

Remember to take photos and have fun, take your rubbish home and leave all the creatures, seaweeds and shells where they are.



ANSWER: Air! *The bubbles on seaweed act like lifejackets and hold the seaweed near the water surface so it can catch as many sun rays as possible.

SEAWEED FLOATS

Pop one of the bubbles on seaweed. What is inside?

*See answer bottom left of page.



GO FOR A WALK ALONG THE BEACH AND SEE IF YOU CAN FIND THESE AMAZING SEAWEEDS. TICK OFF WHAT YOU FIND ON THIS SHEET AND COLOUR THE PICTURES.

Bull Kelp

This brown, tough and leathery seaweed can grow up to 80 metres tall. It grows in underwater forests in shallow oceans.



Coralline Algae

When Coralline Algae is alive it comes in pinks, purples or reds but when it washes up on the beach, it bleaches white by the sun.



Green Sea Velvet

This seaweed is velvety green and is also known as 'dead man's fingers'.

Sea Apple

A Sea Apple is velvety green and looks like an apple, but isn't edible.



JUNIOR RANGERS



Sea Lettuce

This bright green seaweed can often be seen on the rock platform. Sea Lettuce can be eaten and even added to salads and soups.



Neptune's Necklace

Neptune's Necklace can stay out of the water at low tide because it stores water in its small bead-like blades.



Seagrass

Seagrass is a flowering plant, not seaweed. Small fish and invertebrates hide from predators in seagrass.



SEAWEED HOLDFAST

A seaweed's holdfast is like a suction device which attaches the seaweed to rocks using a powerful 'super glue'. Find seaweed that has been washed up on the beach with a rock attached to it. Try pulling the seaweed from the rock. Did you manage to pull it off?



DID YOU KNOW THAT...

You use Kelp every day? The slimy stuff in Bull Kelp helps bind ice cream, toothpaste and vegemite together!



Small shark species like Port Jackson Sharks lay their eggs in seaweed to protect them from predators?



A Decorator Crabs snips off tiny bits of seaweed and sticks them to its back so that it can camouflage in seaweed?



Phytoplankton are microscopic algae that drift in the ocean and are responsible for most of the world's oxygen?



SEAWEED HUNT

Seaweeds come in three basic colours: brown, green and red. When they have been on the beach for a while they turn black or are bleached white by the sun.

Find five different types of seaweed on the beach. Feel the seaweed and write down what colour it is and describe what it feels like. Words that you can use are: hairy, soft, curved, shiny, spiky, slimy, wet, sharp, prickly, bumpy, hollow, flat, rough, smooth.

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____

JUNIOR RANGERS



FUN PHOTO FACT FILES – *What can you find?*



Did you know that algae or seaweed is always brown, green or red? This is because these different colours grow at different water depths, from green on the surface to red in the deep! *Let's look at some algae found at Ricketts!*

GREEN ALGAE OR CHLOROPHYTA



From Reeves & Buckeridge, 2012

Spiny Caulerpa or Caulerpa brownii (left) is more hairy than its 'forked' relative **Green Sea Velvet or Codium fragile** (right)



From Reeves & Buckeridge, 2012

BROWN ALGAE OR PHAEOPHYTA



From Reeves & Buckeridge, 2012

Sausage Weed or Splachnidium rugosum

Keep an eye out for this slimy seaweed sausage!

JUNIOR RANGERS



FUN PHOTO FACT FILES – *What can you find?*



From Reeves & Buckeridge, 2012

Blue glow weed or Dictyota dichotoma

Look out for this brown algae with a vibrant blue glow!

RED ALGAE OR RHODOPHYTA



From Reeves & Buckeridge, 2012

Tufted Corraline or Corallina officinallus

This feather-like red algae can be found all along the foreshore at Ricketts.

SEAGRASS



From Reeves & Buckeridge, 2012

Seagrass is a member of the Angiosperm group that includes flowering land and water plants. Seagrass protects and shelters brooding young marine life in the ocean. You'll see lots of this **Eel grass or Zostera muelleri** and other species around Ricketts.

JUNIOR RANGERS



LET'S GO BEACHCOMBING!

AMAZING TREASURES SUCH AS MYSTERIOUS SKELETONS, EGG CASES, SEAWEED AND SHELLS WASH UP EVERY DAY ON VICTORIA'S BEACHES. THESE TREASURES GIVE US INTERESTING CLUES ABOUT WHAT LIVES BENEATH THE WAVES.

Searching for these treasures on the beach is called beachcombing and can be done anywhere along Victoria's coast. Fresh seaweed is washed up every day along the daily tide line and along the high tide mark you can find plants and animals that have been there for a bit longer.

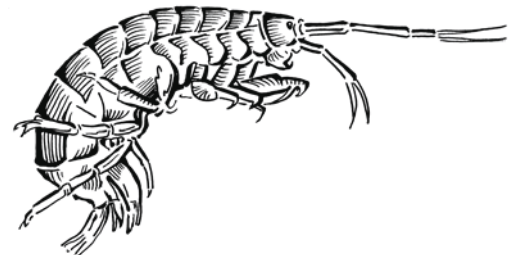
Before you start:

For your safety, always visit the beach at low tide and with an adult. Never touch sharp objects or larger animals like birds, jellyfish and fish. Wear a hat, long-sleeved shirt and sunscreen.

Remember to take photos and have fun, take your rubbish home and leave all the creatures, seaweeds and shells where they are.

HOPPING CRITTERS

Lift up some seaweed on the high tide mark at the top of the beach that has been there for a while. Can you see tiny critters hopping around like fleas? Can you guess what they are and what they are doing?



*See answer below left.

TAKE A WALK ALONG THE HIGH TIDE MARK AND SEE IF YOU CAN FIND SOME OF THESE AMAZING TREASURES. TICK OFF WHAT YOU FIND ON THIS SHEET AND COLOUR THE PICTURES.

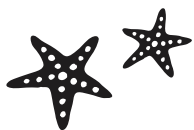
Moon Snail egg mass

Many people get Moon Snail eggs confused with Jellyfish. These jelly like objects are actually Moon Snail egg masses – which are three or four times bigger than themselves. Hold an egg mass to the light. The hundreds of small dots are tiny snail embryos.



Swim bladder

Lots of fish have a swim bladder which they can adjust to help them float. This one belongs to the Globe Fish or puffer fish.



*Answer These animals are called sand hoppers and are feasting on dead seaweed. Sand hoppers are crustaceans; they are the smaller 'cousins' of crabs. They hop by flexing their stomach and spend much of their time buried in the sand to escape the dryness and heat of the day.

LET'S GO BEACHCOMBING!



Feather

Feathers do many jobs for birds. Soft down keeps them warm, wing feathers allow flight and tail feathers are used for steering.



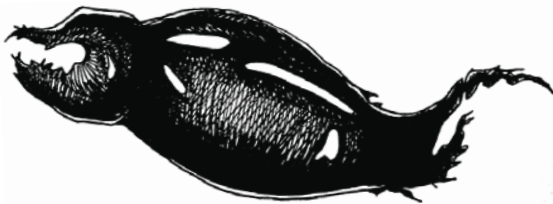
Purple Sea Urchin

Sea Urchins have spines when alive, which help protect them from predators. They have hundreds of tube feet to move around with and a mouth on the underside of their body. Sea Urchins use their five teeth to feed on algae.



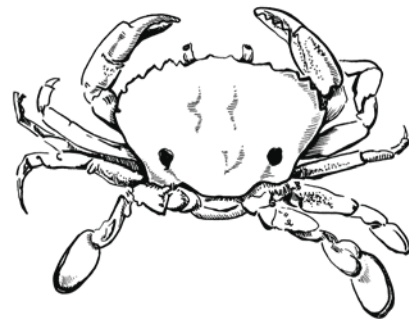
Cat Shark egg

This is one of the coolest things to find on the beach. It looks like seaweed, feels like seaweed, but is in fact a shark egg! Cat Sharks are small sharks that produce egg cases that look like purses. The long, coiled tassels at one end of the egg helps the sharks tangle their eggs into sea weed.



Surf Crab

Surf Crabs have flattened legs that look like paddles. They use these to dig backwards and bury themselves rapidly into the sand when disturbed.



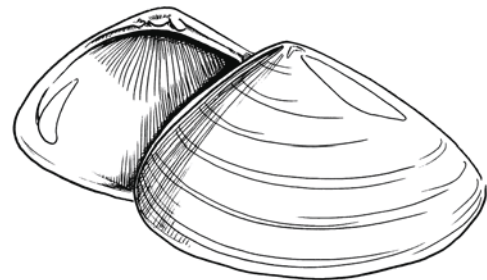
Port Jackson Shark egg

After a female Port Jackson Shark lays her eggs; she uses her mouth to wedge them into a rock crevice. The young sharks hatch after ten to twelve months.



Pipi

The Pipi lives a few centimetres beneath the surface and uses its foot to burrow into the sand.



LET'S GO BEACHCOMBING!



CUTTLEFISH BONE

Live Cuttlefish actually look a lot different to what many people think. They are related to and look a lot like squid and octopus. Their bones provide support for their body and help them float. When you find a cuttlebone have a look for marks. Who do you think made these marks?

****See answer below left of page**



****Answer** Dolphins, sharks and seals eat cuttlefish and leave teeth marks behind on the cuttle's bone. If teeth punctures can be seen in regular rows, they have probably been made by dolphins or seals. If the marks are all over it, a bird may have pecked at the cuttlefish after it died.

CARNIVORE OR HERBIVORE?

PICK UP TWO SNAILS ON THE BEACH AND LOOK AT THE OPENING OF THEIR SHELLS. CAN YOU TELL IF THEY EAT MEAT AND ARE CARNIVORES, OR THEY EAT PLANTS AND ARE HERBIVORES?



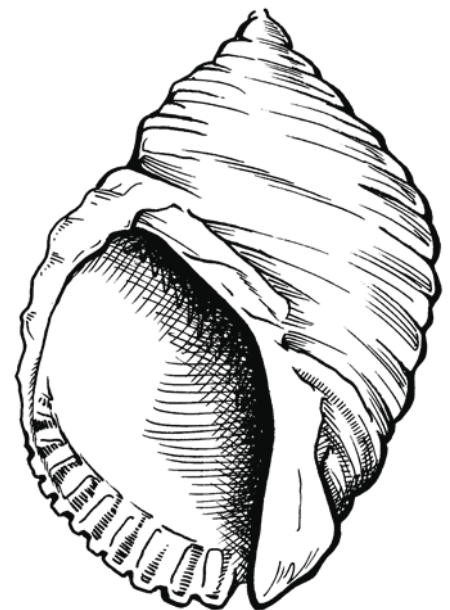
Warrener Snail

If the opening of a shell is round and looks like a salad bowl, more than likely it is a herbivore and eats 'the salad of the sea' (algae).

Dog Winkle

If the opening of a shell has a small groove like a gravy boat, more than likely it is a carnivore and eats other snails. Carnivore snails use a tongue known as their 'radula' to drill a hole into another snail's shell. Once the hole is drilled, they eat the animal inside.

SEE IF YOU CAN FIND A SHELL ON THE BEACH WITH A TINY HOLE DRILLED INTO IT. NOW YOU KNOW IT HAS BEEN EATEN BY A 'KILLER SNAIL'!



JUNIOR RANGERS



FUN PHOTO FACT FILES – *What can you find?*

GASTROPODS



From Reeves & Buckeridge, 2012

**Colourful Limpet or
*Cellana tramoserica***

The gastropod family includes sea snails, limpets and ordinary garden snails. Gastropod means stomach-foot because the body is basically a foot with a stomach on top!

Look closely and you might see a snail scraping up algae with its tooth-covered tongue, or radula. If it is a carnivore, it will use a modified radula, or proboscis, to drill into the shells of other animals and suck them out!



From Reeves & Buckeridge, 2012

**Zebra Top Shell or
*Austrocochlea porcata***

ARTHROPODS



From Reeves & Buckeridge, 2012

**Red-handed Shrimp or
*Palaemon serenus***

**Surf Barnacles or
*Chthamalus antennatus***

Can you find the central plate on barnacles - this is the door that they open to catch food when the tide come in! Inside the shell, a barnacle looks like a tiny crab!

This big group of animals include all animals that have an exoskeleton - a skeleton on the outside! They also have jointed arms and legs and include the crabs, shrimps and barnacles you'll find at Ricketts.



From Reeves & Buckeridge, 2012

**Decorator Crab or
*Naxia aurita***

Like our friend the Bearded Crab, the Decorator Crab covers himself to hide, but instead of hair – he grows all kinds of algae on his back!



From Reeves & Buckeridge, 2012

JUNIOR RANGERS



FUN PHOTO FACT FILES – *What can you find?*



From Reeves & Buckeridge, 2012

**Eleven-armed Seastar or
*Coscinasterias muricata***
have 7 to 14 arms. *How many
can you count?*

ECHINODERMS

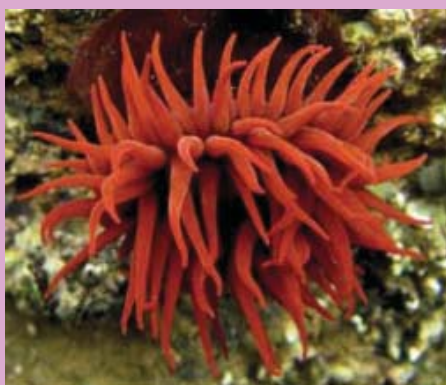
A family of marine animals with 'spiky skin'! Echino = spiky and derm = skin

They are perfectly symmetrical around a central point like these sea stars and urchins



From Reeves & Buckeridge, 2012

**Purple Sea Urchin or
*Heliocidaris erythrogramma***



From Reeves & Buckeridge, 2012

Waratah Anemone or *Actinia tenebrosa*

At low tide, this red anemone withdraws its tentacles the heat. As high tide rushes in, it stretches out its tentacles to catch passing food, using tiny stinging cells called nematocysts that stun and cling to prey.

Gently touch the tentacles to feel these sticky stinging cells trying to catch you!



From Reeves & Buckeridge, 2012

Short-tailed Sea Slug or *Ceratosoma brevicaudatum*

This rippled pink, white and red sea slug is abundant at Ricketts Point.

Can you spot him?

JUNIOR RANGERS



FUN PHOTO FACT FILES – *What can you find?*

FISH



Photographer: David Reinhard

Zebrafish or Danio rerio

Beyond the rockpools, you'll see schools of these striped fish zooming over the rocks and stopped every so often to nibble on some algae, insects or plankton.

Port Jackson Shark or Heterodontus portusjacksoni

After spotting their egg casings on the beach, look out for these speckled sharks in the deeper water!



Photographer: David Reinhard



Photographer: David Reinhard

Snapper or Pagrus auratus

Toadfish or Batrachoididae
Look out for these blue eyes!



Photographer: David Reinhard

Flathead or Platycephalidae

Flathead are well camouflaged with their speckled scales. You'll find them hiding in ambush in the sand, mud or under rock edges!



Photographer: David Reinhard

EXPLORE VICTORIA'S ROCKY SHORES



THE PLANTS AND ANIMALS OF THE ROCKY SHORES CAN BE FOUND IN DIFFERENT ZONES ON THE ROCK PLATFORM DEPENDING ON HOW LONG THEY CAN SURVIVE OUT OF THE WATER.

Take a walk along these different zones and find amazing creatures hiding in rockpools, sheltering under rocks or in rock crevices and fixed to boulders. Colour in the pictures of all the creatures you can find using the colours you saw.

HIGH TIDE LINE

Blue grey **periwinkles** can survive out of the water for a long time because of their tight fitting trap door which holds the moisture within their shell.

LOW TIDE LINE

Abalone feed on algae mainly at night and hold on tightly to rocks during the day.

Chequerboard snails are scavengers and use their 'siphon' or nose to find dead animals to feed on.

Red waratah anemones look like red blobs at low tide but when the tide comes in, they unfold their red tentacles to sting prey.

Common sea stars come in blues, greys, greens, oranges, purples and reds and have tiny little tube feet to move around with.

Chitons protect their backs with 8 overlapping plates and can roll up in a ball to protect themselves from predators.

Barnacles are stuck to rocks with their heads. When the tide comes in, they open their armour-like doors and stick their legs out to capture food.

When the tide comes in, **limpets** move away from their home base scraping algae off rocks before returning to their base at low tide.

Mussels clump together to protect themselves from predators.

LOW ZONE

MID ZONE

HIGH ZONE

EXPLORE VICTORIA'S ROCKY SHORES

LIFE IN A ROCKPOOL

Rockpools are found near the low tide mark and come in all shapes and sizes.

It's a tough life for creatures in small rockpools. They're easily accessed by predators, water warms up and turns salty on hot days and flushes out when it rains.

Stand on the edge of a rockpool, be very still and catch a glimpse of what lives in the water.

DID YOU KNOW?

Rocky shores look different every time you visit them. Waves shape our shores by eroding rocky platforms and creating rockpools. Rocks, sand and sea life are carried away with the receding tide and also left behind after high tide.



Neptune's Neck is brown seaweed that looks like a string of pearls.

The **Elephant Snail** looks like it has grown too big for its shell. Its tiny white shell is often completely covered by a black mantle.

Bright red **Biscuit Sea Stars** push their stomach outside their body to eat. Once the food is digested, they pull back their stomach into their body.

Seagrasses are plants that live underwater. They provide a habitat for tiny marine animals like prawns and fish.

The spotty **Smooth Toadfish** is seen as a nuisance by fishermen because they gobble up bait, but they keep our coastal waters clean by feeding on almost anything they can scavenge.

Purple Sea Urchins are covered in spines which help the urchins to move around and protect it from predators.

Female **shore crabs** have an O like tail flap to carry their eggs, while males have a V like tail flap.

This beautiful patterned **Pheasant Snail** shell comes in reds, pinks and browns and is sometimes called 'painted lady'.

Tasmanian Blennies will dart out from their holes in rocky reefs to snap up tiny shrimps and crabs.

JUNIOR RANGERS



JUNIOR RANGER FACT FILES

Marine plants and animals in Australia's southern oceans and bays are found nowhere else, with around 90% of the plants and animals found only in these areas!

Due to shellfish harvesting over recent decades, Ricketts Point has come under threat because all the bigger animals that eat the shellfish had nothing to eat!

Marine parks are important places for people to learn. They're used by students on excursions and fieldtrips and by scientists who carry out regular monitoring and research!

Remember – no fishing, spear fishing, littering or collecting shells in Marine National Parks or Sanctuaries

When in marine parks, you can go surfing, swimming, snorkelling, diving or boating!

Victoria's Marine National Parks and sanctuaries include habitats such as kelp forests, rocky reefs, mangroves, salt marsh and seagrass meadows.

Marine National Parks and Sanctuaries protect marine habitats and species, significant natural features, seascapes and cultural and aesthetic value as well as an amazing variety of fish, sponges and other animals, from tiny organisms to large sea mammals!

JUNIOR RANGERS



ONE LAST THING...

Now that you've learnt heaps about Ricketts Point and all about the Marine National Parks and Sanctuaries, and how they help the environment, you're right on track to becoming a first class Junior Ranger!

And remember...

LEAVE NO TRACE ALONG YOUR WAY.
TAKE GOOD MEMORIES OF YOUR DAY.
THAT'S THE JUNIOR RANGER WAY!

For more cool activities, games, fact sheets and other fun stuff, jump online and head to www.juniorrangers.com.au.

Acknowledgements

Parks Victoria would like to thank the members of Marine Care Ricketts Point (www.marinecare.org.au) for the use of their photographs, as well as John Buckeridge and Jessica Reeves for the use of their field guide, the Urban Sanctuary, as a reference for this booklet.

References and further reading

Reeves, J. and J. S. Buckeridge, 2012. *The Urban Sanctuary. Algae and Marine Invertebrates of Ricketts Point Marine Sanctuary*. Greypath Publications, Melbourne. 140 pp. ISBN 978-0-9804483-5-1.

