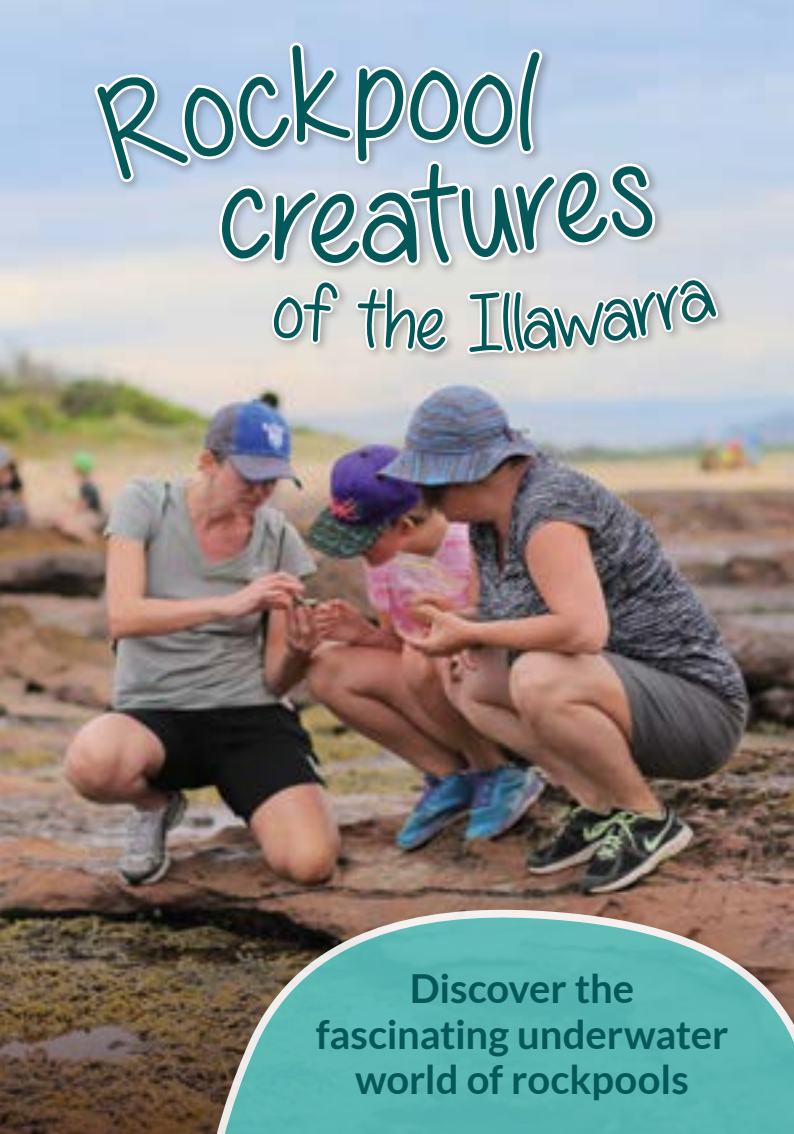
Rockpool creatures of the Illawarra



Discover the fascinating underwater world of rockpools

Rockpool creatures of the Illawarra

Looking into a rockpool is like opening a window into a secret underwater world teeming with life. There are a myriad of strange, alien-like creatures going about their day-to-day business. This brochure will help you to identify plant and animal life common to rockpools in the Illawarra and neighbouring regions and understand why rockpools are so important.

Living on the edge

Rockpools are located in the intertidal zone which lies above water at low tide and below water at high tide. The plants and animals that live here have to deal with challenging living conditions including relentless heat from the sun, crashing waves, inundation with salt water and skilful predators.

White-faced Heron forages for crustaceans in rockpools.

Image: Alison Mellor

Rockpools provide a sanctuary, allowing creatures to hide under loose boulders and in crevices or camouflage themselves against the sandy bottom or plants. Some animals are immobile and have developed unique adaptions to deal with the challenges of daily life.

For example:

Barnacles grip tightly to rocks and can close off the valves at the top of their shells to avoid water loss (and predators' beaks!) when exposed.

Anemones curl up their tentacles to form squishy blobs to avoid water loss at low tide like these Waratah Anemones.

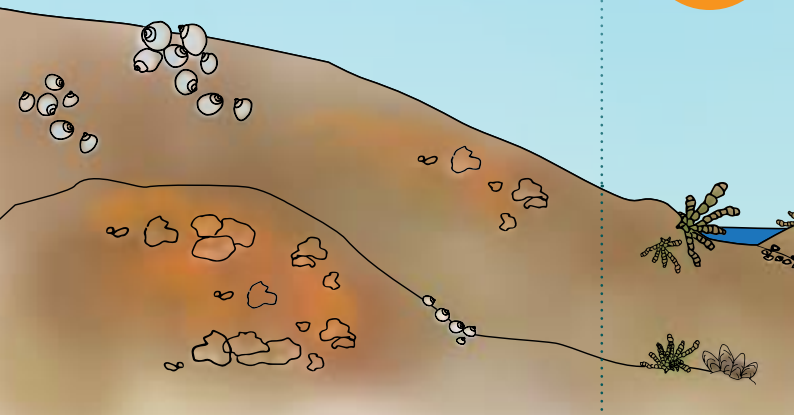
Intertidal zones

There are three zones common to all of the Illawarra's coastal rock platforms. They can be identified by their distance from the water and the types of creatures that live there.

U

Upper Littoral Zone is exposed to the air for long periods at low tide. Common species include lichens and molluscs such as Blue-Grey Periwinkles.

M



Diet

Herbivore
Animals that eat plant material

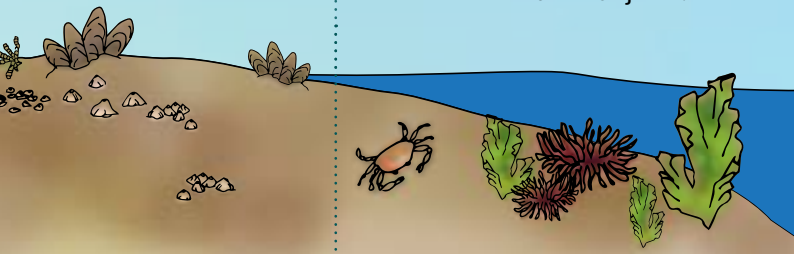
Carnivore
Animals that eat other animals

Omnivore
Animals that feed on both plants and other animals

Mid Littoral Zone is generally the most diverse and home to grazing snails, mussels, barnacles, Neptune's Necklace, tube worms and many other species.

L

Lower Littoral Zone is only exposed for a short period at low tide. Common species include a diversity of seaweeds, some sea snails, crabs and cunjevoi.



Tips for rockpool rambling

Slip Slop Slap Seek and Slide and wear suitable shoes with a decent tread for slippery surfaces.

Keep your hands and feet where you can see them. Some rockpool creatures can cause harm such as sea urchins, crabs, cone shells and the Blue-ringed Octopus. These creatures could be hiding under rocks or seaweed.

Leave only footprints and take a bag to collect rubbish. Fishing line, hooks and plastics end up in the ocean and are a leading cause of death for seabirds, dolphins and turtles.

Leave everything as you found it.
Many rockpool creatures are sensitive to touch or disturbance. If you pick something up or turn over a rock carefully place it back exactly where you found it.

Never turn your back to the ocean.
Be aware of the waves. Check the tides and surf conditions and stay away from the edge of rock platforms.

Take a torch and go for an after dark rockpool ramble.
Many intertidal creatures are nocturnal so they are more active at night. Be sure to check the tide and weather conditions before you set out.

All Illawarra rock platforms have some great rockpools to explore at low tide. Check out the one at the end of your local beach or make a day of it and visit one further afield.

Rockpool creatures

Sponges live in colonies and vary in colour and shape providing camouflage and hiding places for other animals.

Purple Encrusted Sea Sponge
Chalinidae spp.
Sponges filter feed by pumping water in and out of the numerous holes (pores) in their body.

L M

Anemones Closely related to jellyfish and coral, anemones use stinging cells on their tentacles to capture unsuspecting prey such as crustaceans and small fishes.

Waratah Anemone
Actinia tenebrosa
A brilliant red makes this anemone the most conspicuous creature in the rockpool.

Image: Lucy Farrier

L M

Worms play an important role as recyclers in the intertidal food web.

Galeolaria

Galeolaria caespitosa

Galeolaria form large colonies on the rock surface and secrete a hard white tube within which the worm lives.

L M

Fan Worm

A type of Fan Worm.

Fan worms have a spectacular 'feather duster' appearance, their spirally arranged feathery gills aid in feeding and breathing.

Image: Marie-Claire Demers

L M

Barnacles begin their life as a small organism drifting in the ocean before permanently attaching to a hard surface and growing a strong shell. They feed by filtering plankton from the water.

Rosette Barnacle
Tetraclitella purpurascens
Image: Jenny Edwards

L M U

Crabs are crustaceans and have a hard exoskeleton which they need to shed in order to grow. Crabs play an important role in the food chain, cleaning up whatever is left by the retreating tide.

Red Bait Crab
Plagusia chabrus
Image: Lucy Farrier

L M

Chitons

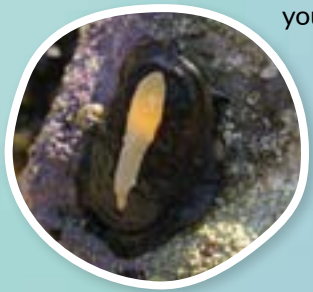
These prehistoric looking creatures may be tricky to spot because they prefer dark places and hide in crevices and under rocks. Australia has over one hundred species of chitons, 90% of which are found only in Australia.

Chiton
A type of Chiton.
Image: Lucy Farrier

L M

Sea Snails

These free moving bottom dwellers with a muscular foot, have a protective shell and a rasp-like band of teeth called the 'radula'. The radula is used by some herbivores such as chitons to scrape micro-algae off the rocks. Carnivores like the Mulberry Whelk use the radula to bore a hole in the shell of prey. You might find Elephant Snails, Mulberry Whelks, Dog Whelks, Black Nerites, Turban Snails or Sea Hares at your local rockpool.



Elephant Snail
Scutus antipodes
This solitary snail emerges from under rocks at night to feed on algae.

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Mulberry Whelk
Morula marginalba
After boring a hole in the shell of it's prey, the whelk then secretes an enzyme to create a 'mollusc milkshake' which is then slurped up!

Image: Lucy Farrier

M

Black Nerite
Nerita melanotragus
These sea snails often form dense clusters. Their thick shell allows them to withstand large waves and attacks by crabs.

M U

Zebra Top Shell
Austrocochlea porcata

M U

Sea Hare
Dolabrifera spp.
The Sea Hare camouflages against the algae it feeds on. If disturbed it squirts a vibrant purple dye.

L M

Spengler's Rock Whelk
Cabestana spengleri
This is one of the most common shells in the lower littoral zone, it feeds mostly on cunjevoi.

L

Variegated limpet
Cellana tramoserica
Limpets range in pattern and size and only feed when covered in water and some return to exactly the same place after grazing.

M U

Blue Periwinkle
Austrolittorina unifasciata

U

Warrener Turban Shell

Turbo undulatus

With a distinctive striped pattern and a turban like shape, these sea snails are often found grazing amongst the Neptune's Necklace. If you pick one up you will find they will retreat inside and close their 'trapdoor' called the operculum.

Image: Jenny Edwards

L M

Sea Urchins and Sea Stars

Although these animals come in a range of unusual shapes and sizes they have one thing in common – radial symmetry. This means that five or more arms radiate out from a central point like spokes on a bicycle wheel. They use their tube-shaped feet to suction onto prey and can regrow lost limbs. At low tide you are likely to spot the Purple Sea Urchin, Green Sea Star, Pin Cushion Sea Star in rockpools, or the spectacular Brittle Sea Star hiding under rocks.

Brittle Star

Ophionereis schayeri

The Brittle Star can grow up to 30cm from arm tip to arm tip. It can regenerate lost arms which it 'drops' as a defence mechanism.

L M

Common Sea Star

Meridiastra calcar

This starfish feeds by pushing its stomach out and secreting enzymes to digest its prey before consuming it.

Image: Lucy Farrier

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Purple Sea Urchin

Heliocidaris erythrogramma

Take care not to step on this sharp spined creature as it can give you a nasty puncture wound. The urchin is not actually poisonous but the spines are rough so a wound gets infected easily.

Image: Jenny Edwards

L M

Fish

A variety of small fish and juveniles of larger fish species such as Sea Mullet, Eastern Rock Black Fish, Luderick and Yellowfin Bream are common visitors to rockpools. Smaller fish include blennies, gobies and Toadfish.

Toadfish

Tetractenos hamiltoni

You may see Toadfish washed up on the beach, their body inflated and covered in poisonous spines. They are not generally eaten by other animals and should not be consumed by humans.

Image: Bill Barker

L M

Horned Blenny

Parablennius intermedius

Blennies are a carnivorous fish and have a sensory tentacle above each eye.

Image: Bill Barker

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Cephalopods

Widely regarded as the most intelligent of all invertebrates (animals without a skeleton), the cephalopods include cuttlefish, squid and octopus. They have a well-developed sense of sight to stalk prey, can squirt a jet of black ink to escape predators and are skilful at camouflage. The bite of a Blue Ringed Octopus can be fatal so always keep your hands where you can see them to avoid a nasty bite!

Blue-ringed Octopus
Hapalochlaena maculosa

Small (up to 8cm) in comparison to other species and generally a mottled brown colour. When disturbed it switches to a colour pattern of pulsating bright blue circles warning you to stay away – these creatures can be deadly!

Image: Marie-Claire Demers

L M

Algae

You will notice a diversity of plant life growing in the cracks and crevices of rockpools. Algae can be red, brown, green or even iridescent and these different colour pigments allow them to absorb sunlight at varying depths within the rockpool.

Algae can form large colonies such as the common Neptune's Necklace which provides important shelter for small animals like molluscs.

Neptune's Necklace
Hormosira banksia
A type of brown alga, the oval shape 'beads' act as a water sack where water is stored to enable it to survive at low-tide.

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Sea Lettuce
Ulva spp.
A type of green alga that is a good source of food for fish.

L

Coralline Algae
Corallina spp.
Coralline Algae has many jointed fronds hardened by calcium that resemble coral.
Image: Matthew Loft

L M

Iridescent Algae
A type of iridescent algae.
Look out for a kaleidoscope of eye-catching colours in the rockpool.
Image: Lucy Farrier

L M

Sea Squirts begin life swimming freely in the ocean. Once they attach themselves to a rock they are stuck there for life! Also known as Tunicates, sea squirts are cylindrical in shape and feed on plankton by pumping water through two openings called siphons.

Cunjevoi
Pyura stolonifera
If you cast your eye over the rock platform at low tide you may just spot a colony of cunjevoi spurting water into the sky!
Image: Jenny Edwards

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Further information

Australian Museum
www.australianmuseum.net.au/intertidal-habitats

Climatewatch
http://www.climatewatch.org.au

Nature Coast Marine Group
www.ncmg.org.au

Thank you to all the people who generously contributed images and feedback for this brochure.

Shellharbour
CITY COUNCIL