

BEACHES

NATURE  COAST
Marine Group
EUROBODALLA

SOME COMMON PLANTS AND ANIMALS OF BATEMANS MARINE PARK'S BEACHES



Prepared by Jenny Edwards, with her photos unless otherwise credited

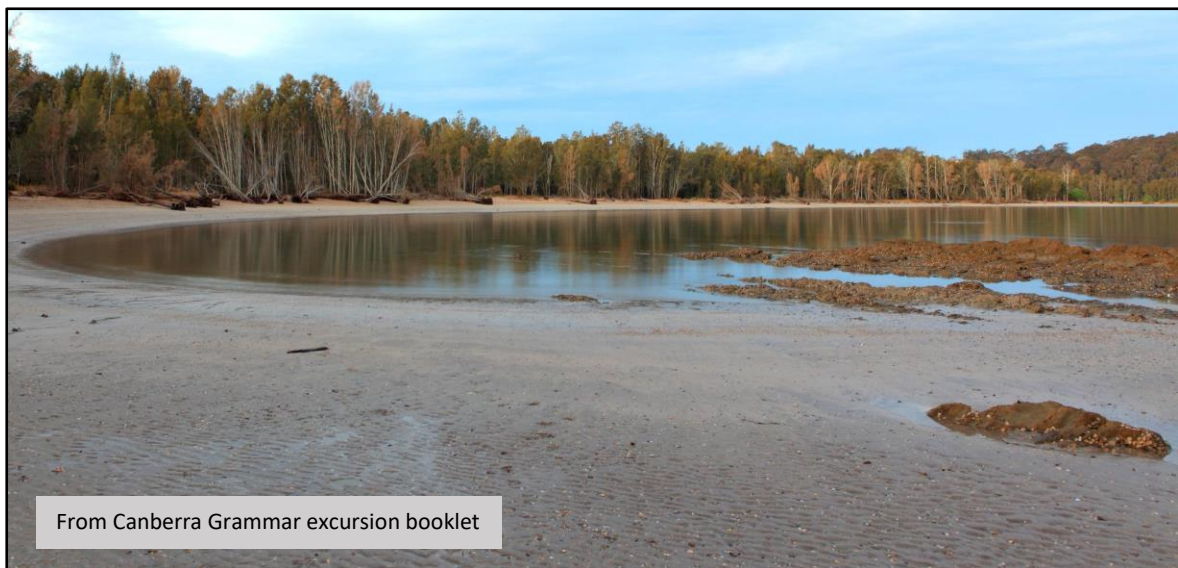
SOME OF THE KIDS' ACTIVITIES ON NCMG'S WEBSITE ARE BASED ON THESE PAGES

The Batemans Marine Park has many beaches. Nearly all of them differ from one another depending on such things as their exposure to ocean waves, the nature of the sand and whether they are near river mouths. These factors have a big influence on the type of plants and animals that live there.

Bengello Beach near Moruya airport (right) is a high energy system. It experiences heavy surf especially during ocean storms and its dunes have regularly been eroded. These have built up again as summer north east winds blow sand up the shore. The beach and the ancient dunes behind it have been extensively studied by Professor Bruce Thom and colleagues researching coastal management and the possible impacts of sea level rise.



Beaches around Batemans Bay are low energy. Waves are usually smaller but sand moves in currents around the Bay, building up on sand banks and some shores while eroding others such as at Cullendulla. (pictured below).



From Canberra Grammar excursion booklet

The sand itself also varies in size of the grains and in their composition. High energy beaches have coarser sand while sand is finer where waves have less energy.

The composition of sands of the beaches from Malua to North Broulee were analysed and found to have high carbonate content from ground up shells. Shelly Beach on Broulee Island is almost pure shell grit. Bengello Beach to the south of Broulee Island is mainly quartz and has very little carbonate. Nearer Moruya River the sand changes again with a higher content of other minerals carried down by the river in rock particles eroded from the catchment.

As beaches differ so do the plants and animals that exist there. While the plants are easily seen most of the marine animals live buried beneath the sand, mostly at or below the low tide mark.

PLANTS NEAREST THE BEACH

Dune plants trap wind-blown sand and speed up the rebuilding of the foredune after erosion. There is a zonation of plants from the foredune to the more sheltered back dunes.

Three plants that are likely to be growing nearest the high tide mark on high energy beaches are:

Spinifex - *Spinifex sericeus* – (right)

A perennial native grass with runners and silver-green strap like leaves. Flowers appear in late spring. Seeds form in a spiky ball that detaches and rolls along the beach.



European Sea Rocket - *Cakile maritima* – (left)

A spreading succulent thought to have arrived in ship's ballast in the early 1900s. It is now common on Eurobodalla's beaches near the high tide line but is not a problem.

Sea spurge – *Euphorbia paralias* – (right)

This cane toad of the dunes with noxious milky sap was introduced about 60 years ago and spreads rapidly. The sap can irritate the skin and damage the eyes. Please notify Council if you see any so it can be controlled.



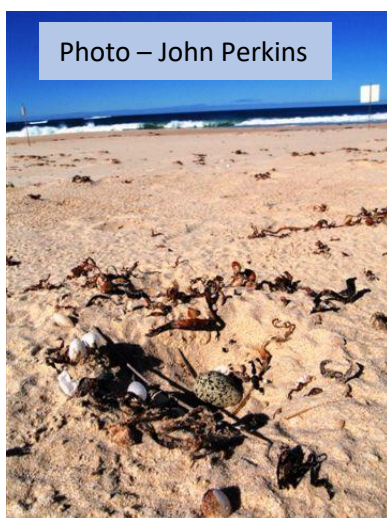
From the Internet

Some information about plants near low energy beaches can be found in article on estuaries.

BIRDS

Migratory Shore Birds

In summer several species of threatened migratory shore birds nest high on the beach. Their nests are very vulnerable and volunteers try to help by erecting signage or temporary fences. You can help by staying well away and keeping your dog on a leash on beaches with the nesting sites.



The nest at Durras (left) was that of a Hooded Plover.

Two threatened shore birds that are permanent residents are the black and white Pied Oystercatcher (right) - which nests near the high tide mark- and the Sooty Oystercatcher – more often seen on rocky shores.



CRABS AND OTHER CRUSTACEANS

Smooth-handed Ghost Crab *Ocypode cordimana*
Grow to 35 mm across the back



Jennifer Wilcox

These small fast moving sand coloured crabs live in deep holes in the dunes far above high tide. They come out at night to scavenge on the beach near the water.



Sand Hoppers or Beach Fleas Grammarid amphipods
These tiny crustaceans bury in the sand near the strand line and feed on rotting seaweed and the decaying remains of fish and birds.



The grid squares (left) are 5 X 5mm.

Some of the amphipod holes are visible in the sand (right).



From the Internet

Surf Crab *Ovalipes australiensis*
Grow to 10 cm across the back

It is a swimming crab with flattened "paddles" on its hind legs. It moves easily in the water and can quickly dig in backwards to bury itself in the sand. The two spots on its back make it easy to identify.

This crab is expert at stealing the bait of beach fishers.

Hermit crabs

There are several species in the Batemans Marine Park. All rely on marine snail shells to protect their fleshy abdomens. *Diogenes custos* (right) with its large left claw is common on sandy ocean beaches and is particularly fond of the smooth shells of the sand snail.



Soldier crabs *Mictyris spp.*

At least two species of soldier crabs are found on sheltered beaches in our area. They bubble sand through their mouthparts to extract edible material leaving distinctive heaps of tiny sand balls. Unlike other crabs, they can walk forwards. They are also able to quickly bury themselves in a spiral motion when threatened.

BIVALVE MOLLUSCS (those with two shells)

Where the sand is covered by the sea for most or all of the time bivalve molluscs filter food particles and plankton from the water. They bury under the sand with a muscular “foot” and have two siphons which reach the surface of the sand. One siphon draws in a current of water bringing food and oxygen to the animal, while the other expels waste and carbon dioxide.

While shells of hundreds of different species can be found on Eurobodalla’s beaches, most are washed in from rocky areas or from deeper water. The most common species that live in the beach are:

Pipi – *Latona / Donax deltoides* – (right) - length to 60 mm

Pipis are the most common bivalve found low in the intertidal zone on exposed sandy ocean beaches. They were so over-harvested that a bag limit of 50 was imposed. They can only be used for bait and must not be removed from the beach or eaten.



Pink Tellen – *Tellina albinella* – (left)

- length to 60 mm

This thin glossy shell can vary from white to bands of pink and orange. It is often found at Corrigans Beach as it seems to prefer sandy beaches near river mouths.

Photo – Wayne King



Trough Shells – *Austromactra* spp.

– length 40-60 mm

Trough Shells are rounded triangular shells often with distinct concentric ridges near their outer edges. Contrary Trough Shells (*Mactra contraria*) (left) are common at Broulee but two other species are likely to be found at Corrigans Beach.

Photos – Wayne King



Mactra exima (above).

Wedge Shell – *Paphies angusta / elongata*– (right) - length to 25 mm

These are common on surf beaches from mid to low tide areas. They can sometimes be seen on the surface where they use the waves to carry them up or down the sand.

Photo – Wayne King



Razor or Fingernail shell - *Solen vaginoides* –

(left) - length to 95 mm

Razor shells, named after the old-fashioned cut-throat razors because of their shape, prefer more sheltered beaches such as Corrigans Beach in Batemans Bay. The animal remains buried vertically with only the tips of its siphons at the surface.

Prickly Pen shell – *Pinna muricata* – (right) – length to 30 cm.

These are sometimes found on sheltered beaches like those around Batemans Bay. The animal lives buried in silty sand, usually among seagrasses.

Their shell is very sharp so beware of stepping on one!

Photo – Wayne King





Doughboy Scallop – *Mimachlamys asperrima* –(left)

- length to 110 mm

The shell is orange to pink or purple with up to 26 ridges radiating from the hinge to the edge. The animal has numerous blue eyes in a line around the edge of the opening. They live on the surface of the sand in shallow water. Common at Shelly Beach and Corrigan's Beach.

There is a bag limit of 50 total for any collection of one or more species of scallops.

Photo – Wayne King



Angel's Wing- *Barnea / Pholas australasiae* – (right) - length to 70 mm

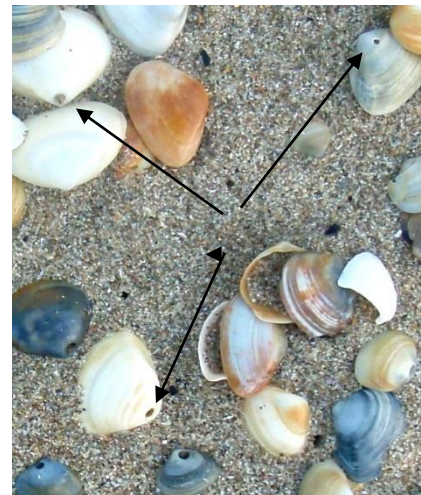
This delicate shell bores into hard mud or soft rock where it remains with only its siphons connected to the water. Sometimes found on Corrigan's Beach and North Broulee beach near Broulee Island.



Wedding Cake Clam - *Bassina disjecta* – (left) – length 60mm

This spectacular shell lives in sandy bays. A similar species with longer points on its edges but fewer raised ridges is *Bassina jacksoni*.

Photo – Wayne King



GASTROPODS (sea snails)

Not many species of sea snails are common in the intertidal zones of Eurobodalla's beaches. The moon or sand snails are predators that plough their way just below the surface seeking their bivalve prey. They drill a neat hole usually near the hinge of their victim using acidic saliva and a rasping toothed radula (tongue). Some shells in this photo taken at Corrigan's Beach show the typical hole drilled by moon snails.



Conical Moon Snail – *Conuber conicum /*

Polinices conicus

– length to 42 mm

These elongated moon snails have a brown to orange band around the top of each whorl and prefer sheltered beaches. They lay their eggs in kidney-shaped jellies.

Shell photo – Wayne King



Bladder Moon Snail - *Neverita didyma*

– size to 65 mm

Largest of Eurobodalla's moon snails, this rounded species lays its eggs in sand collars. It has a distinctive groove near its opening and is more common on exposed beaches.



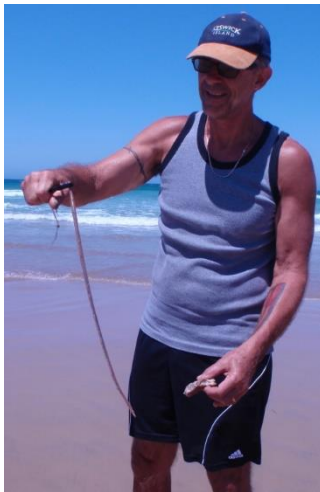
Reticulate Dog Whelk – *Nassarius particeps* – length to 25 mm
This whelk is an important scavenger on sheltered beaches. The brown-lined shell is distinctive as is its black-spotted yellow foot. Often found at Corrigans Beach.



Photo – Wayne King

MANY SHELLS FOUND ON MORE SHELTERED BEACHES CAN BE SEEN IN “ESTUARIES” ON THIS WEBSITE.

WORMS



Giant Beach Worms – *Australonuphis* sp. – length to 300cm

Long thin worms with hundreds of segments, these animals live hidden from view at the low water mark in temporary tubes of sand grains glued together with mucus. They scavenge seaweed and dead animal matter that washes around at the edge of the water. Fish and birds prey on them and skillful fishers catch them for bait.



Head end of a Giant Beach Worm

Lug or Rag Worm – Family Arenicolidae

Lug worms are also segmented polychaete worms with bristles on each segment but are much shorter than the Giant Beach Worms. They live permanently head end down in a J shaped mucus-lined burrow. The worm swallows the sand near its head, digests any organic matter and deposits its waste at the surface.



FISH

Not many fish are commonly seen close to shore in the wash zone, the lower intertidal zone covered by water at high tide. Species like whiting and bream visit as the tide rises when they search for prey.

Toadfish are more obvious and stingarees make their presence felt.



Smooth Toadfish - *Tetractenos glaber* – length to 160mm

These are one of the most abundant fish near mouths of estuaries. Their flesh and organs contain a powerful neurotoxin which protects them from predators while they hunt for small shellfish, worms, and any crabs or other crustaceans they can find. A similar species with a stripe along its side and marks like tear stains below its eye is the Weeping Toadfish (*Torquigener pleurogramma*).

Photo- Robyn Miller

Common Stingaree – *Trygonoptera testacea*

– length to 760cm

Stingarees have a rounded fin at the end of their tail and one or two venomous spines on their tail.

Common Stingarees are often sand coloured and lie half buried in the surf zone so it is best to shuffle in when entering the water. First aid for stings is hot fresh water (about 45°), carefully remove the barb then get medical treatment.

Photo – Andrew Green



Sea Snakes are not common but are dangerous. They occasionally come ashore on beaches when still alive and can move quickly.

Photo by Marg Hamon

A FEW OF THE FLOTSAM

You will find the remains of many plants and animals along the strand line, especially after heavy seas. Cuttlefish “bones” are common in winter and the bodies of Shearwaters which did not survive their arduous north-south journey are often found in summer.



Skeleton of a **Weedy Seadragon**
Phyllopteryx taeniolatus

Photo – Jane Elek



Blue Bottles – *Physalia* sp, –a hydrozoan colony.



In summer there is usually a blue invasion of animals that drift with the currents. Those pictured above are small and harmless.

Left to right they are:

Sea Lizard – *Glaucilla marginata* – a nudibranch mollusc

By the wind sailor – *Velella velella* – a hydrozoan

Blue Button – *Porpita porpita* –a hydrozoan colony

Their long tentacles cause painful stings. To treat a sting: rinse with sea water and remove the tentacles. Immerse the stung area in hot water (to 45°) or a hot shower. If no hot water use an icepack or cold running water to relieve the pain.

TIP have a bottle of water on the sand to get hot.



Cuttlefish (*Sepia spp.*) are cephalopod molluscs related to squid and octopuses but have a buoyant internal shell. Several species of cuttlefish are common in the Batemans Marine Park. As most die after spawning their shells are often washed ashore relatively undamaged by predators.

Ram's Horn Squid – *Spirula spirula* are short and cylindrical to about 6cm long. They are a deep water species but their coiled internal shells are common in the flotsam sometimes colonized by barnacles.



Photo – Jane Elek

The skeletons of urchins (tests) are rarer finds on beaches. Urchins are all Echinoderms – spiny skinned creatures related to sea stars



Heart urchins – *Echinocardium cordatum* – grow to about 9cm and live under the surface of the sand in mucus-lined burrows, preferring low energy beaches. They eat organic debris and their short laid back spines help trap air.

Sand Dollars or Sea Biscuits – *Clypeaster australasiae* - are flattened urchins growing to a diameter of about 14cm. They have short spines and bury themselves under a thin layer of sand emerging at night to feed on planktonic organisms and detritus.



The tests of other urchins from rocky reefs may be washed ashore after rough seas, usually minus their spines. Two common species are **Egg Urchins** – *Holopneustes spp.* (far left) -and **Purple Urchins** – *Heliocidaris erythrogramma* (left). Egg urchins are often found tangled up in kelp, their habitat when alive.

The egg cases of sharks and rays are also relatively common among the flotsam.

Crested Horn Sharks lay a spiral case with long tendrils to help keep the egg in place. **Port Jackson Sharks** have a similar egg case without tendrils and the mother screws the egg into a rocky crevice with her mouth.

Skates and rays lay “mermaid purses” with twisted tendrils which often break off as the case dries.

