Proposed Teachers aid material for self guided visit to the Marine Education Centre at Ricketts Point (Source material - Bob Whiteway)

1- Introduction to the Sanctuary

The Sanctuary was established in November 2002 to protect the rich marine life here - It is 3.2 km long by 500m out to sea. The water is up to 5m deep. It is one of 24 Marine Protected Areas in Victoria. The image below shows the sanctuary boundaries.

Ricketts Point Habitat Mapping 2007 - 2008

There are rocky undercut reefs with beautiful seaweeds, fish and other sea creatures.

All living and non-living things in the sanctuary are fully protected. There can be no killing, fishing, spear-fishing, taking anything away or damaging of any sort.

Many other activities in the sanctuary are allowed though, such as swimming, sailing, surfing, photography, kayaking, study, etc.

The sanctuary's purpose is to provide a safe haven from human interference for marine species. Since its declaration in 2002, fish biomass alone has increased significantly, and the area is carpeted with algae of all kinds.

Visitors will be able to see some of the following around the rocky reefs.

Zebra Top Shell

Pelican

Green Shore Crab

Neptune’s Necklace

11 Armed Sea Star

Blue Blubber Jelly

Above some of the marine life you are likely to see.

Below. Teacher taking a rock pool ramble on South Triangle Reef

2. Some Aboriginal History

Around 300 members of the Boonwurrung tribe, a clan of which camped around Ricketts Point and nearby, occupied the region for at least 6000 years before white settlement began just 200 years ago. Aboriginals are now known to have lived in Australia for a least 50 000 years! The Boonwurrung were one of five tribes who made up the Kulin Nation.

Today the Kulin people continue to live, practice and strengthen their culture, in urban Melbourne and Central Victoria

Aborigines used fire to hunt out game but left the environment in a state of flourishing good health. Even so, only 37 years after white people arrived in Beaumaris, the local tribe had died out. Whites took their land. Many died from white man's diseases, especially Smallpox.

Eventually the last few Aborigines were made to live in a camp by the Mordialloc Creek.

On Feb 28, 1877, Nancy Dunbar, one of the last two Aboriginals, died of illness, leaving Jimmy Dunbar alone now, except for his 14 dogs.

Nancy and Jimmy Dunbar

THE LAST OF THE MORDIALLOC TRIBE OF ABORIGINES.

Less than a week later, Jimmy fell ill himself and was taken to the Alfred Hospital. His dogs went with him and waited outside … but he never came out.

Jimmy was buried in the Melbourne Cemetery in March 1877 – Sadly no one knows where exactly.

Aboriginals had a rich culture and traded and fought with nearby tribes of other nations.

Their main tools were spears, boomerangs, stone axes, bone needles and flint cutting stones. Tthe men fished, (using spears from canoes), and hunted game – kangaroos, wallabies, wombats, bandicoots, possums, koalas, mice, quolls; frogs; snakes, lizards, goannas, etc. and birds such as emus ducks and swans.

Meanwhile the women and children gathered shellfish, etc. from the sea and fruits, leaves, tubers, grubs, and more from the land.

3. Plants of the foreshore

If you walk along the foreshore you will be surrounded by native plants. Many are edible. Students could, under strict supervision * learn some of their names and try eating some as the Aborigines did: Pig face – water source and edible leaves and base of flower; Boobialla – sweet, purple berries, Seaberry Saltbush – crimson berries, Coast Saltbush – leaves, Coast Banksia - flower spikes used to make 'cordial'.

Coastal Banksia

Pigface

Boobiala

Bower Spinach

Seaberry Saltbush

Saltbush (male)

See how enough salt can kill any living thing and how these plants survive in such a salty environment (* See the MCRP video on these topics.)

Shells and the skeletons and cases of various marine animals could be displayed and discussed.

4. Geology

(This is simplified for juniors)

Marine life is rich here, because the area is rocky. How could rocks possibly attract seaweeds and sea creatures and how did rocks get here?

Answer: Sand brought by rivers and placed on the sea floor gradually changed into rock. It took a very long time. It happened here in Beaumaris.

10 mya Black Rock Sandstone formed from river sand dumped on the sea floor. It was made of iron rich sands and was therefore hard; deep brown in colour.

6 mya Red Bluff Sandstone - Rivers brought sandy gravels and clays that turned into softer rock; often yellow and orange in colour. These sea floor rocks were pushed up by tectonic forces such as an earth quake to form the cliffs, and then some later subsided to form the rocky sea floor.

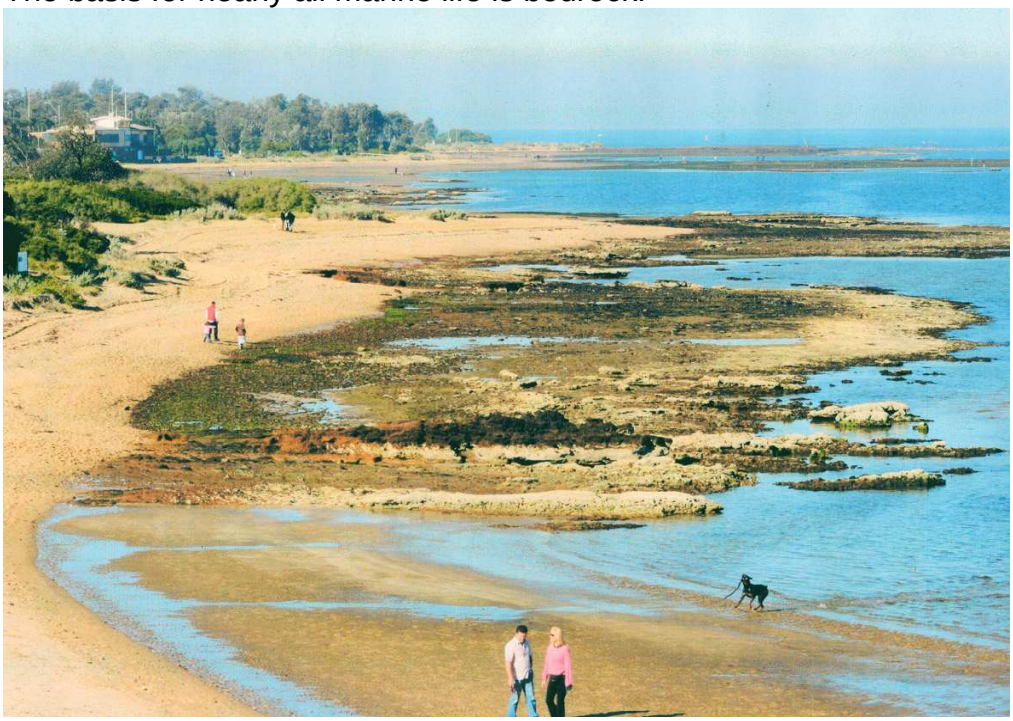
Cliffs north of the BYC (showing both Black Rock and Red Bluff Sandstone)

5. The 5 S's.

Their is an important link between rocks and ecosystems

Plants and animals come where there is rock. (Emphasise this point)

The basis for nearly all marine life is bedrock.



Exposed reefs at low tide

NO ROCKS means NO SEAWEEDS and therefore VERY FEW ANIMALS

WHY?
Because seaweeds and many animals need this rock to anchor on. Otherwise they would be washed up on the beach and die. Fortunately, there are plenty of rocky reefs in the area around Ricketts Point. They provide shelter and food for the crawling and swimming animals

Beautiful underwater seaweed meadows abound on the Ricketts Point reef system.

[Sea grasses are different. They are land plants that have gone back in to the sea and can put their roots down into sand].

Actually, five groups invade a rocky reef. All these groups begin with the letter ‘S’ and we call this view of the marine cycle, the 5 S’s

1. **Seaweeds** – Red, Green and Brown (They all need to anchor via a holdfast). They make food (sugars) using sunshine, carbon dioxide, and water.
2.


The holdfast of a kelp.


Seaweeds

2. **Sessile** (Still) animals – (need to anchor) sponges, corals, anemones, mussels, squirts, etc. These animals filter small particles of food from the water.


Anemone


Mussels

3. **Slow movers** – shellfish, sea stars, sea urchins, who find food and shelter here.


Nudibranch (Sea Slug)


Sea Star

4. **Swift movers** - shrimps, crabs, octopus, sharks, rays, fish, seals, etc. These animals generally eat other animals.


Decorator Crab


Zebra fish

5. **Sea birds** - Gulls, terns, cormorants, herons, pelicans, swans, etc. They feed on the reef animals, rest, preen their feathers on the reefs


Pelican


Pacific Gull

These five groups (except for microscopic life) make up the marine ecosystem

Ideas for teachers . Announce to class:
When out on the reef – try to find at least one example of each of the 5 Ss

Before a reef walk, ask group to :

*Wear soft shoes, walk not run and, step gently
*Always replace rocks gently and the right way up
*Avoid blue ringed octopus.
*Try to find at least one of each of the S's

For senior groups only:

When at seagrass, note that plant life originated in the sea, many adapted to land and developed flowers. Of the many thousands of land-adapted plant species, only three returned to the sea, namely the Mangroves, Saltmarsh plants and Seagrass.


Mangroves


Sarcornia (salt marsh)


Sea Grasses

All are represented in Port Phillip Bay, the latter two can be seen here at and around the South Triangle Reef at Ricketts Point.

On a walk teachers could help students find things, comment on marine species (eg 'This is the Eleven - armed Seastar. It is carnivorous, feeding on mussels etc.

The Marine Education Centre has a projector system and carries some supporting videos. See the resources section of the marinecare.org website