



Welcome to the Broome Community Seagrass Monitoring Project



The Broome Community Seagrass Monitoring Project (BCSMP) has been established in Roebuck Bay to provide an early warning of change in the marine ecosystem. It is part of the global Seagrass-Watch assessment and monitoring program. Every three months a group of dedicated volunteers ventures out onto the mudflats to monitor the seagrass and gather valuable data. These monitoring efforts assist coastal managers with planning. Joining them is a wonderful way to explore the fascinating world within the seagrass ecosystem. **Everyone is welcome!**



There are many different kinds of seagrasses and in Roebuck Bay we have two main species: an oval, broad-leaved Seagrass *Halophila ovalis* and a longer, thin-leaved species, *Halodule uninervis*. They are the primary food source of the Dugong & the Green Turtle, which frequent Roebuck Bay.

Why is seagrass so important?

Seagrass communities are one of the most productive and dynamic ecosystems globally, and important habitats and feeding grounds for marine animals. About 40 times as many animals occur in seagrass meadows as on bare sand. Seagrass provides a nursery and shelter for fish and prawns, creating value for fisheries. Seagrass plants support many herbivores, including dugong and turtle species, and detritus-based food chains as the seagrass decomposes. Seagrass filters flow into the coastal environment and helps remove harmful nutrients and sediment pollution from coastal run-off. It helps stabilise sediment and improves water clarity.



Did you know?

Roebuck Bay is the richest known benthic mudflat in the world. It was declared a Ramsar site in 1990: a wetland of international significance.

The total number of water birds using Roebuck Bay each year is estimated to be over 300,000.

Eleven mangrove species are found in the Bay.

One square metre of seagrass can produce up to 10 litres of oxygen per day.

Seagrass is one of the most effective carbon sinks, yet the world is losing it faster than rainforests.

Seagrasses are flowering plants that have evolved to live in the sea. They have flowers, fruits, seeds, stems and rhizome-like roots.

Seagrasses reproduce by pollination underwater and one species produces the longest pollen grain on the planet.

Australia has the highest number of seagrass species of any continent in the world

The anchor and chain from one cruise ship can destroy an area of seagrass the size of a football field.

Adult dugongs can eat up to 40kg of seagrass per day and leave grazing trails, which are easy to see at low tide.



Karajarri Rangers monitoring seagrass



Warla Sea cucumber



Mangalagun Brittle Star

Seagrass under threat

Seagrass is being lost around the world at the rate of two football fields every hour through human impacts such as pollution, run-off, dredging and coastal development. Another major threat to seagrass is *Lyngbya majuscula*, a blue-green alga which blooms when nutrient levels and temperatures are elevated. It forms thick, slimy mats smothering the seagrass and other organisms. *Lyngbya* is toxic, causing skin & lung irritations to humans. BCSMP will be monitoring *Lyngbya*.



Lyngbya majuscula on Roebuck Bay



Theunis Piersma



Simon Penn

Ngaji Gurrjin. Nyamba Yawuru nagulagun buru

Welcome to Yawuru Sea Country

Nagulagun Buru is Yawuru sea country, the coastal region where Yawuru people have lived for thousands of years. Like all Yawuru country, it comes from *Bugarrigarra* (the Dreaming). *Nagulagun* includes all that lives in the sea: the fishes, turtles, dugongs; the habitats they live in: the seabed, the reefs, the sandbar, the mangroves, and the seagrass beds. It is also the currents, tides, and whirlpools of our saltwater country.



Shell midden



Ngangarr Dugong dugon



Debra Glasgow



Julia Rau

Gurlibil



**Roebuck Bay is the heart of
*Yawuru nagulagun buru***

Yawuru people have been harvesting and trading the resources of the sea for thousands of years, following rules that have protected the species. Shell middens line the coastal dunes and pindan cliffs of Roebuck Bay, revealing both the richness and extent of the Yawuru marine economy. Favoured marine foods include fishes, turtle, turtle eggs, dugong, shark, a wide variety of shellfish, as well as birds and their eggs.

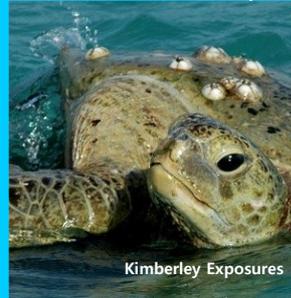


Seagrass Watch Level 1 Training



Snubfin Dolphin *Orcaella heinsohni* Deb Thiele

Gurlibil Green Turtle *Chelonia mydas*



Kimberley Exposures



Wandanyjirr Banded sea snake
Laticauda sp.



I learnt to read the sea.
I saw today, it is good for bluebone ...
there's all different seasonal shifts for molluscs, fin fish and crustaceans ... oyster, *birrga-birrga*, cockles, *bunymmin, li, mulj* (like periwinkle in the mangroves), *njiwa* (green crab in the long bombs, taste like prawns), *umung-umung* (hermit crab) ... you never starve.

Kevin Puertolano

Yawuru people have observed many changes to *Yawuru nagulagun buru*.

Sadly, we know that our Bay is changing, under pressure from urbanisation, tourism, pearling, agricultural and industrial developments. No longer is there the abundance of fish, or shellfish that we used to harvest daily from the foreshore. Cockles are no longer present in the Bay. The seagrass beds are diminishing, and it is much harder to catch salmon from the foreshore. Our Yawuru rangers are working with the Broome Community Seagrass Monitoring Project to record these changes and to protect and manage the Bay to ensure that our cultural traditions are maintained and the Bay becomes a healthy marine environment. We thank you for your support in looking after our country. Galiya.



Jirringyiliny

Fragaura sp.

The Broome Community Seagrass Monitoring Project is co-managed by

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